AGENDA

CITY OF ORMOND BEACH, FLORIDA

CITY COMMISSION MEETING
March 21, 2023
7:00 PM
Mayor Bill Partington

Zone 1 - Commissioner Lori Tolland
Zone 2 - Commissioner Travis Sargent
Zone 3 - Commissioner Susan Persis
Zone 4 - Commissioner Harold Briley

COMMISSION CHAMBERS
22 South Beach Street, Ormond Beach, FL 32174
Phone: 386-677-0311 **Web: www.ormondbeach.org**

---

1. CALL TO ORDER

2. INVOCATION

3. PLEDGE OF ALLEGIANCE

4. PRESENTATIONS AND PROCLAMATIONS

A. Adams, Cameron & Co. REALTORS

B. Government Finance Professionals Week

5. AUDIENCE REMARKS - REGARDING ITEMS NOT ON THE AGENDA

6. APPROVAL OF MINUTES

A. Minutes from City Commission meeting - March 7, 2023

7. CONSENT AGENDA

The action proposed is stated for each item on the Consent Agenda. Unless a City Commissioner removes an item from the Consent Agenda, no discussion on individual items will occur and a single motion will approve all items.

A. **RESOLUTION NO. 2023-59:** A RESOLUTION ACCEPTING A BID FROM GT DISTRIBUTORS, INC. REGARDING THE PURCHASE OF FIREARMS AND ACCESSORIES, UNDER BID NO. 2023-06; AUTHORIZING THE EXECUTION OF A PURCHASE AUTHORIZATION AND PAYMENT THEREFOR; REJECTING ALL OTHER BIDS; AND SETTING FORTH AN

EFFECTIVE DATE.

Staff Contact: *Jesse Godfrey, Police Chief, (386) 676-3500*

B. **RESOLUTION NO. 2023-60:** A RESOLUTION AUTHORIZING AN ADDITIONAL EXPENDITURE OF FUNDS TO PURCHASE ONE (1) 2023 FORD POLICE RESPONDER F-150 CREW CAB; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Kevin Gray, Deputy Public Works Director, (386) 676-3325*

C. **RESOLUTION NO. 2023-61:** A RESOLUTION AUTHORIZING THE SOLE SOURCE PROCUREMENT OF TRAFFIC CALMING SPEED TABLES FROM TRAFFICLOGIX CORP.; AUTHORIZING THE APPROVAL AND EXECUTION OF A PURCHASE AUTHORIZATION AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

D. **RESOLUTION NO. 2023-62:** A RESOLUTION ACCEPTING A PROPOSAL FROM MEAD & HUNT, INC. TO PROVIDE ENGINEERING DESIGN SERVICES REGARDING THE WATER RECLAMATION FACILITY ULTRAVIOLET DISINFECTION CONVERSION PROJECT; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION THERETO; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Shawn Finley, Public Works Director, (386) 676-3292*

E. **RESOLUTION NO. 2023-63:** A RESOLUTION ACCEPTING THE BID OF RIC-MAN CONSTRUCTION FLORIDA, INC. REGARDING THE 2023 STORM AND SEWER LINING PROJECT, UNDER BID NO. 2023-15; REJECTING ALL OTHER BIDS; AUTHORIZING THE EXECUTION OF A CONTRACT AND PAYMENT THEREFOR; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

F. **RESOLUTION NO. 2023-64:** A RESOLUTION ACCEPTING A PROPOSAL FROM BOMAR CONSTRUCTION, INC. FOR CONSTRUCTION MANAGEMENT SERVICES REGARDING THE PERFORMING ARTS CENTER RENOVATION PROJECT; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION AND PAYMENT THEREFOR; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

G. **RESOLUTION NO. 2023-65:** A RESOLUTION APPROVING AND ADOPTING A STORMWATER MASTER PLAN; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

H. **RESOLUTION NO. 2023-66:** A RESOLUTION ACCEPTING THE PROPOSAL OF AMERICAN JANITORIAL, INC., REGARDING PROFESSIONAL JANITORIAL SERVICES; AUTHORIZING THE

EXECUTION OF AN AGREEMENT AND PAYMENT THEREFOR; REJECTING ALL OTHER PROPOSALS; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Robert Carolin, Leisure Services Director, (386) 676-3279*

I. **RESOLUTION NO. 2023-67:** A RESOLUTION ACCEPTING THE PROPOSAL OF TRAUMA SKATEBOARDS, LLC REGARDING MANAGEMENT AND OPERATION OF THE CONCESSION STAND AT THE NOVA SKATE COURT; AUTHORIZING THE EXECUTION OF AN AGREEMENT; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Robert Carolin, Leisure Services Director, (386) 676-3279*

J. **Intent to Bid - CDBG - North Ridgewood Ave. East Side Sidewalk Improvements**

Staff Contact: *Shawn Finley, Public Works Director, (386) 676-3292*

Disposition: Approve as recommended in the City Manager memorandum dated March 21, 2023.

K. **Request for Proposals Utility Rate and Impact Fee Update**

Staff Contact: *Shawn Finley, Public Works Director, (386) 676-3292*

Disposition: Approve as recommended in the City Manager memorandum dated March 21, 2023.

L. **Approval of Travel by the City Commission**

Staff Contact: *Joyce Shanahan, City Manager, (386) 676-3200*

Disposition: Approve as recommended in the City Manager memorandum dated March 21, 2023.

M. **City Manager Status Report, March 2023**

Staff Contact: *Joyce Shanahan, City Manager, (386) 676-3200*

Disposition: Approve as recommended in the City Manager memorandum dated March 21, 2023.

8. PUBLIC HEARINGS

A. **ORDINANCE NO. 2023-16:** AN ORDINANCE AMENDING CHAPTER 1, GENERAL ADMINISTRATION, ARTICLE IV, SCHEDULE OF DEVELOPMENT REVIEW AND IMPACT FEES, SECTION 1-28, UTILITY INSTALLATION FEES, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY UPDATING THE FEE SCHEDULE FOR METER COSTS; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

B. **ORDINANCE NO. 2023-17:** AN ORDINANCE AMENDING CHAPTER 2,

DISTRICT AND GENERAL REGULATIONS, ARTICLE III, GENERAL REGULATIONS, SECTION 2-50, ACCESSORY USES, SUBSECTION (N), FENCES AND WALLS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, TO ALLOW A FENCE OR WALL SETBACK LESS THAN THREE FEET (3') TO A RIGHT-OF-WAY WITH REVIEW AND APPROVAL OF THE SITE PLAN REVIEW COMMITTEE; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

C. **ORDINANCE NO. 2023-18:** AN ORDINANCE AMENDING CHAPTER 4, PLAN REVIEW AND SUBDIVISION, ARTICLE I, SITE PLAN REVIEW PROCEDURES, SECTION 4-03, SITE PLAN REVIEW COMMITTEE (SPRC) ESTABLISHED, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY AMENDING THE SPRC COORDINATING LIAISON AND UPDATING THE PROCESS FOR NEIGHBORHOOD MEETINGS; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.**(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

D. **RESOLUTION NO. 2023-68**: A RESOLUTION APPROVING A SPECIAL EXCEPTION DEVELOPMENT ORDER AUTHORIZING TWO PARKING SPACES IN THE SOUTHEAST CORNER OF THE PARKING LOT OF THE ORMOND MEMORIAL ART MUSEUM AND GARDENS AT 78 EAST GRANADA BOULEVARD TO BE USED FOR THE PLACEMENT OF A COTTAGE STYLE GARDEN SHED; AUTHORIZING THE EXECUTION AND ISSUANCE OF A DEVELOPMENT ORDER; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

9. FIRST READING OF ORDINANCES

A. **ORDINANCE NO. 2023-19:** AN ORDINANCE EXTENDING TEMPORARY EMERGENCY ADMINISTRATIVE PROCEDURES TO PROVIDE FOR THE CONTINUED EXPEDITIOUS AND COORDINATED MANAGEMENT OF BUILDING PERMIT APPLICATIONS AND FEES; WAIVING SPECIFIC PERMITS AND FEES ISSUED FOR THE REMOVAL OF CERTAIN TREES; ESTABLISHING A METHOD OF ENFORCEMENT OF THE FLORIDA BUILDING CODE SUCH THAT ON-SITE PERMITS MAY BE ISSUED BY APPROPRIATE CITY STAFF FOR REPAIR OF DAMAGE CAUSED BY HURRICANE IAN; PROVIDING FOR THE REPEAL OF ALL ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY, AND SETTING FORTH AN EFFECTIVE DATE. **(FIRST AND ONLY READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

B. **ORDINANCE NO. 2023-20:** AN ORDINANCE EXTENDING TEMPORARY

EMERGENCY ADMINISTRATIVE PROCEDURES TO PROVIDE FOR THE CONTINUED EXPEDITIOUS AND COORDINATED MANAGEMENT OF BUILDING PERMIT APPLICATIONS AND FEES; WAIVING SPECIFIC PERMITS AND FEES ISSUED FOR THE REMOVAL OF CERTAIN TREES; ESTABLISHING A METHOD OF ENFORCEMENT OF THE FLORIDA BUILDING CODE SUCH THAT ON-SITE PERMITS MAY BE ISSUED BY APPROPRIATE CITY STAFF FOR REPAIR OF DAMAGE CAUSED BY HURRICANE NICOLE; PROVIDING FOR THE REPEAL OF ALL ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY, AND SETTING FORTH AN EFFECTIVE DATE. **(FIRST AND ONLY READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

10. SECOND READING OF ORDINANCES

A. **ORDINANCE NO. 2023-14:** AN ORDINANCE AMENDING SECTION 2-221, LEISURE SERVICES ADVISORY BOARD, OF ARTICLE VI, BOARDS, COMMISSIONS, COMMITTEES AND OTHER AGENCIES, OF CHAPTER 2, ADMINISTRATION, OF THE CODE OF ORDINANCES, BY AMENDING COMPOSITION AND TERMS; PROVIDING TERMS AND CONDITIONS; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Susan Dauderis, City Clerk, (386) 676-3340*

11. REPORTS, SUGGESTIONS, REQUESTS

12. ADJOURNMENT

Website Address – www.ormondbeach.org

NOTICE – Pursuant to Section 286.0105 of the Florida Statutes, if any person decides to appeal any decision made by the City Commission with respect to any matter considered at this public meeting, such person will need a record of the proceedings and for such purpose, such person may need to ensure that a verbatim record of the proceedings is made, including the testimony and evidence upon which the appeal is to be based.

For special accommodations, please notify the City Clerk's Office at least 72 hours in advance. Phone: 386-677-0311

Help for the hearing impaired is available through the Assistive Listening System. Receivers can be obtained from the City Clerk's Office.

In accordance with the Americans with Disabilities Act (ADA), persons with a disability, such as a vision, hearing or speech impairment, or persons needing other types of assistance, and who wish to attend City Commission meetings or any other board or committee meeting may contact the City Clerk's Office in writing, or may call 386-677-0311 for information regarding available aids and services.

MINUTES
ORMOND BEACH CITY COMMISSION
HELD AT CITY HALL COMMISSION CHAMBERS

March 7, 2023	**7:00 p.m.**	**Commission Chambers**

Present: Mayor Bill Partington, Commissioners Lori Tolland, Travis Sargent, Susan Persis and Harold Briley, City Manager Joyce Shanahan, City Attorney Randy Hayes, Assistant City Manager Claire Whitley and City Clerk Susan Carroll Dauderis.

A G E N D A

1. CALL TO ORDER

2. INVOCATION

3. PLEDGE OF ALLEGIANCE

4. AUDIENCE REMARKS - REGARDING ITEMS NOT ON THE AGENDA

5. APPROVAL OF MINUTES

A. Minutes from City Commission meeting - February 21, 2023

6. CONSENT AGENDA

The action proposed is stated for each item on the Consent Agenda. Unless a City Commissioner removes an item from the Consent Agenda, no discussion on individual items will occur and a single motion will approve all items.

A. **RESOLUTION NO. 2023-56:** A RESOLUTION AUTHORIZING THE APPROVAL OF THE PURCHASE OF GASOLINE AND DIESEL FUEL FOR CITY VEHICLES, UNDER COUNTY OF VOLUSIA ITB NO. 19-B-70EM; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Kevin Gray, Deputy Public Works Director, (386) 676-3325*

B. **RESOLUTION NO. 2023-57:** A RESOLUTION AUTHORIZING THE APPROVAL AND EXECUTION OF A PURCHASE AUTHORIZATION FOR THE PURCHASE OF ONE 2023 HARLEY DAVIDSON ELECTRA GLIDE MOTORCYCLE, UNDER FLORIDA SHERIFFS ASSOCIATION BID NO. FSA22-VEL30.0; DECLARING VEHICLE #M95 TO BE SURPLUS PROPERTY, AND AUTHORIZING THE DISPOSITION THEREOF; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Kevin Gray, Deputy Public Works Director, (386) 676-3325*

C. **RESOLUTION NO. 2023-58:** A RESOLUTION AUTHORIZING THE EXECUTION OF A SERVICE AGREEMENT BETWEEN THE CITY AND ORMOND BEACH HISTORICAL SOCIETY, INC., REGARDING OPERATION OF A “WELCOME CENTER” AT THE MACDONALD HOUSE; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Robert Carolin, Leisure Services Director, (386) 676-3279*

D. **Intent to Bid - 2023 Annual Shell Parking Restoration Plan**

Staff Contact: *Alex Schumann, City Engineer, (386) 676-3302*

Disposition: Approve as recommended in the City Manager memorandum dated March 7, 2023.

E. **Intent to Bid - Nova Community Park - Outdoor Fitness Trail**

Staff Contact: *Shawn Finley, Public Works Director, (386)*

676-3292

Disposition: Approve as recommended in the City Manager memorandum dated March 7, 2023.

7. PUBLIC HEARINGS

A. **ORDINANCE NO. 2023-15:** AN ORDINANCE AMENDING PARAGRAPH C, OFFICIAL ZONING MAP, OF SECTION 2-01, ESTABLISHED, OF ARTICLE 1, ESTABLISHMENT OF ZONING DISTRICTS AND OFFICIAL ZONING MAP, OF CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY AMENDING THE OFFICIAL ZONING MAP TO REZONE ONE PARCEL OF REAL PROPERTY TOTALING 0.30± ACRES LOCATED AT 101 FIESTA DRIVE (VOLUSIA COUNTY PARCEL NUMBER 4220-01-00-0450) FROM R-3, SINGLE-FAMILY MEDIUM DENSITY, TO B-1, PROFESSIONAL OFFICE/HOSPITAL; AUTHORIZING REVISION OF OFFICIAL ZONING MAP; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

B. **ORDINANCE NO. 2023-16:** AN ORDINANCE AMENDING CHAPTER 1, GENERAL ADMINISTRATION, ARTICLE IV, SCHEDULE OF DEVELOPMENT REVIEW AND IMPACT FEES, SECTION 1-28, UTILITY INSTALLATION FEES, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY UPDATING THE FEE SCHEDULE FOR METER COSTS; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

C. **ORDINANCE NO. 2023-17:** AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE III, GENERAL REGULATIONS, SECTION 2-50, ACCESSORY USES, SUBSECTION (N), FENCES AND WALLS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, TO ALLOW A FENCE OR WALL SETBACK LESS THAN THREE FEET (3') TO A RIGHT-OF-WAY WITH REVIEW AND APPROVAL OF THE SITE PLAN REVIEW COMMITTEE; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

D. **ORDINANCE NO. 2023-18:** AN ORDINANCE AMENDING CHAPTER 4, PLAN REVIEW AND SUBDIVISION, ARTICLE I, SITE PLAN REVIEW PROCEDURES, SECTION 4-03, SITE PLAN REVIEW COMMITTEE (SPRC) ESTABLISHED, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY AMENDING THE SPRC COORDINATING LIAISON AND UPDATING THE PROCESS FOR NEIGHBORHOOD MEETINGS; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Steven Spraker, Planning Director, (386) 676-3341*

8. FIRST READING OF ORDINANCES

A. **ORDINANCE NO. 2023-14:** AN ORDINANCE AMENDING SECTION 2-221, LEISURE SERVICES ADVISORY BOARD, OF ARTICLE VI, BOARDS, COMMISSIONS, COMMITTEES AND OTHER AGENCIES, OF CHAPTER 2, ADMINISTRATION, OF THE CODE OF ORDINANCES, BY AMENDING COMPOSITION AND TERMS; PROVIDING TERMS AND CONDITIONS; AND SETTING FORTH AN EFFECTIVE DATE.

Staff Contact: *Susan Dauderis, City Clerk, (386) 676-3340*

9. REPORTS, SUGGESTIONS, REQUESTS

10. ADJOURNMENT

M I N U T E S

Item #1 – Meeting Call to Order

Mayor Partington called the meeting to order at 7:00 p.m.

Item #2 – Invocation

Father Roy Allison, St. James Episcopal Church, provided the invocation.

Item #3 – Pledge of Allegiance

Mayor Partington led the Pledge of Allegiance.

Item #4 – Audience Remarks

Ms. Lauren D. Driscoll, 8 Wakefield Place, Palm Coast, 32164, explained she was a dog trainer from Pet Peeves in Bunnell. She stated she previously volunteered to train service dogs for first responders. She discussed her background in Emergency Medical Services (EMS) and reviewed the importance of therapy dogs. She noted she had a six-month program to help choose a dog and train the dog based on needs.

Mr. David Randall, 99 Chrysanthemum Drive, stated he was speaking as president of the Fire Department Union. He discussed the new leadership within the union and the loss of Ethan Wilson. He thanked the Commission, City Manager, Assistant City Manager, Police Chief and Fire Chief for their support.

Item #5 – Approval of Minutes

Mayor Partington advised the minutes of the February 21, 2023, meeting had been sent to the Commission for review and were posted on the city's website for public viewing. He asked for any corrections, additions, or omissions. He stated that hearing no corrections, the minutes would stand approved as presented.

Commissioner Briley moved, seconded by Commissioner Tolland, for approval of the February 21, 2023, City Commission meetings minutes.

The motion passed by voice vote.

Item #6 – Consent Agenda

Mayor Partington advised the actions proposed for the items on the Consent Agenda were so stated on the agenda. He asked if any member of the Commission had questions or wished to discuss any items separately.

Commissioner Tolland requested Item 6E be pulled from the Consent Agenda.

Commissioner Persis moved, seconded by Commissioner Briley, for approval of the consent agenda, absent Item 6E.

Call Vote:	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes

Carried.	Mayor Partington	Yes

Item #6E – Disposition Item – Intent to Bid – Nova Community Park Outdoor Fitness Trail

Commissioner Tolland discussed her desire to include a mental wellness component to fitness trails. She mentioned QR codes and potential signage.

Mr. Shawn Finley, Public Works Director, stated it was a great idea and suggested staff bring back a separate project.

Mayor Partington suggesting adding the QR code to the directory signage planned; whereby Mr. Finley stated it would be easier to bring back as a separate project and explained staff would space out the signage in a logical manner.
Mayor Partington requested for Commissioner Tolland to collaborate with Mr. Finley and Ms. Joyce Shanahan, City Manager.

Commissioner Persis moved, seconded by Commissioner Sargent, for approval of Disposition Item 6E.

Call Vote:	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
Carried.	Mayor Partington	Yes

Comments on the Consent Agenda

There were no comments on the Consent Agenda.

Item #7 – Public Hearings

Mayor Partington opened the Public Hearings.

Item #7A –101 Fiesta Drive, Zoning Map Amendment

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2023-15

AN ORDINANCE AMENDING PARAGRAPH C, OFFICIAL ZONING MAP, OF SECTION 2-01, ESTABLISHED, OF ARTICLE 1, ESTABLISHMENT OF ZONING DISTRICTS AND OFFICIAL ZONING MAP, OF CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY AMENDING THE OFFICIAL ZONING MAP TO REZONE ONE PARCEL OF REAL PROPERTY TOTALING 0.30± ACRES LOCATED AT 101 FIESTA DRIVE (VOLUSIA COUNTY PARCEL NUMBER 4220-01-00-0450) FROM R-3, SINGLE-FAMILY MEDIUM DENSITY, TO B-1, PROFESSIONAL OFFICE/HOSPITAL; AUTHORIZING REVISION OF OFFICIAL ZONING MAP; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; AND SETTING FORTH AN EFFECTIVE DATE. **(SECOND READING)**

Commissioner Briley moved, seconded by Commissioner Sargent, for approval of Ordinance No. 2023-15, on second reading, as read by title only.

Call Vote:	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
Carried.	Mayor Partington	Yes

Item #7B – LDC Amendment: Section 1-28, Utility Installation Fees (Meters)

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2023-16

AN ORDINANCE AMENDING CHAPTER 1, GENERAL ADMINISTRATION, ARTICLE IV, SCHEDULE OF DEVELOPMENT REVIEW AND IMPACT FEES, SECTION 1-28, UTILITY INSTALLATION FEES, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY UPDATING THE FEE SCHEDULE FOR METER COSTS; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Mr. Steven Spraker, Planning Director, explained the item was for a Land Development Code (LDC) amendment, specifically to update the meter costs.

Commissioner Persis moved, seconded by Commissioner Sargent, for approval of Ordinance No. 2023-16, on first reading, as read by title only.

Call Vote:	Commissioner Briley	Yes
	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
	Commissioner Persis	Yes
Carried.	Mayor Partington	Yes

Item #7C – LDC Amendment: Section 2-50(n) Fences and Walls

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2023-17

AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE III, GENERAL REGULATIONS, SECTION 2-50, ACCESSORY USES, SUBSECTION (N), FENCES AND WALLS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, TO ALLOW A FENCE OR WALL SETBACK LESS THAN THREE FEET (3') TO A RIGHT-OF-WAY WITH REVIEW AND APPROVAL OF THE SITE PLAN REVIEW COMMITTEE; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Mr. Spraker stated the item was an amendment to the LDC regarding fences and rights-of-way. He explained there was a three-foot setback and the amendment would allow the Site Plan Review Committee allow multiple departments to review.

Mayor Partington stated the change was a positive amendment to the LDC.

Commissioner Tolland and Commissioner Briley agreed with Mayor Partington.

Commissioner Sargent moved, seconded by Commissioner Tolland, for approval of Ordinance No. 2023-17, on first reading, as read by title only.

Call Vote:	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes
Carried.	Mayor Partington	Yes

Item #7D – Land Development Code Amendment: Section 4-03, Site Plan Review Committee (SPRC) Established

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2023-18

AN ORDINANCE AMENDING CHAPTER 4, PLAN REVIEW AND SUBDIVISION, ARTICLE I, SITE PLAN REVIEW PROCEDURES, SECTION 4-03, SITE PLAN REVIEW COMMITTEE (SPRC) ESTABLISHED, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY AMENDING THE SPRC COORDINATING LIAISON AND UPDATING THE PROCESS FOR NEIGHBORHOOD MEETINGS; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

Mr. Spraker explained the item was an LDC amendment to update the process for neighborhood meetings to establish a meeting coordination process.

Commissioner Tolland expressed her support of the item.

Commissioner Persis moved, seconded by Commissioner Briley, for approval of Ordinance No. 2023-18, on first reading, as read by title only.

Call Vote:	Commissioner Sargent	Yes
	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
Carried.	Mayor Partington	Yes

Mayor Partington closed the public hearings.

Item #8 – First Reading of Ordinances

Item #8A – Amendment to the Composition of the Leisure Services Advisory Board

City Clerk Susan C. Dauderis read by title only:

ORDINANCE NO. 2023-14

AN ORDINANCE AMENDING SECTION 2-221, LEISURE SERVICES ADVISORY BOARD, OF ARTICLE VI, BOARDS, COMMISSIONS, COMMITTEES AND OTHER AGENCIES, OF CHAPTER 2, ADMINISTRATION, OF THE CODE OF ORDINANCES, BY AMENDING COMPOSITION AND TERMS; PROVIDING TERMS AND CONDITIONS; AND SETTING FORTH AN EFFECTIVE DATE.

Mayor Partington stated the revised Ordinance includes what the Commission requested at a prior meeting including the flexibility with two alternates to assist with the Leisure Services Advisory Board (LSAB) getting a quorum at the meetings.

Commissioner Tolland stated Mr. Doug Wigley, LSAB member, was not in favor of the item. She requested clarification that the alternate members were selected by the different youth sports organizations and not the Commission; whereby, Mr. Randy Hayes, City Attorney, explained ultimately it was the Commission who appointed the members to serve but noted he did not expect the practice to change and the youth sports organizations would still present a nominee.

Commissioner Sargent moved, seconded by Commissioner Persis, for approval of Ordinance No. 2023-14, on first reading, as read by title only.

Call Vote:	Commissioner Persis	Yes
	Commissioner Briley	Yes
	Commissioner Tolland	Yes
	Commissioner Sargent	Yes
Carried.	Mayor Partington	Yes

Item #9 – Reports, Suggestions, Requests

Events and Thanks

Ms. Shanahan reviewed all upcoming events including future workshops, Ormond Beach Police Department accreditation, Florida Department of Transportation (FDOT) Zoom meeting, Spring Bird Walks, St. Patrick's Day crafts, Earth Day tree give-away, Celtic Festival, Art in the Park and Police Unity Tour. She commended the Leisure Services staff on the renaming of the South Ormond Neighborhood Center (SONC) to the Joe and Elwillie Daniels SONC.

Ms. Claire Whitley, Assistant City Manager, thanked Mr. Randall for his comments during Audience Remarks. She complimented the police department and discussed her ride-along.

Commissioner Briley discussed the events he attended including a Black History Month celebration at AME New Bethel, State of the County address, Taste of Ormond and the SONC renaming.

Commissioner Tolland reviewed the events she attended including the State of the County address and the SONC renaming.

The entire Commission thanked Mr. Daniels for all he and his late-wife contributed to the community.

Commissioner Persis discussed the events she attended including a Police Swearing-in Ceremony and Taste of Ormond.

Mayor Partington reviewed the events he attended including a Police Swearing-in Ceremony, FDOT LPGA informational open house, Black History Month celebration at AME New Bethel, State of the County address, Taste of Ormond, Volusia County Sheriff Mike Chitwood press conference and the Purim Celebration at Temple Beth-El.

Reuse Water

Ms. Shanahan stated during the dry season there was higher demand on the reuse water system and noted staff was putting out messages on who can water and when.

Andy Romano Beachfront Park

Ms. Shanahan provided an update on Andy Romano Beachfront Park and explained staff would be removing the construction screening to allow the park to be as open as possible.

Therapy Dogs

Ms. Shanahan stated staff was pursuing therapy dogs for the police and fire departments and noted the police department was actively pursuing a dog.

Commissioner Tolland and Commissioner Persis discussed their support of the therapy dogs and Ms. Driscoll's comments.

Requests

Commissioner Tolland inquired if the Commission would consider allowing Mr. Dwight Selby to be an ambassador or liaison to the beachside condominiums for potential septic-to-sewer conversions. She requested the Mayor bring an idea to promote Narcan being readily available in public spaces to the Opioid Abatement Funding Advisory Board.

Commissioner Tolland, Commissioner Sargent and Mayor Partington discussed their support of a new Police Athletic League (PAL) building and parking area.

Commissioner Sargent inquired about expediting the Cassen Park dock repairs; whereby, Ms. Shanahan stated staff was waiting on the contractor.

Commissioner Persis inquired about the security of Commission Chambers since they were planning on updating the audio/visual aspect of the Commission Chambers; whereby, Ms. Shanahan stated the facility was secure and safe and did look into automatic door locks. She requested the Commission consider moving the August 1, 2023 meeting to August 3, 2023; whereby, Mayor Partington stated the Commission's calendar would be brought back before them at the March 21, 2023 meeting and it could be discussed then.

Mayor Partington stated he would speak with Ms. Shanahan and Mr. Hayes regarding the septic-to-sewer ambassador request as he was concerned about Ormond Beach taxpayers subsidizing the costs. He explained he was debating the idea of suggesting an amendment to the by-laws of the Opioid Abatement Funding Advisory Board to allow for an alternate member so those who are passionate about the topic, like Commissioner Tolland, could fill in when he was unavailable. He stated he would speak with the board about the promotion of Narcan.

Mayor Partington stated he was pleased and excited to announce he would not seek reelection as Mayor in the 2024 election as he would run for the open Florida House of Representative, District 28. He discussed the honor of serving the community and explained he would remain engaged as mayor for the remainder of his term.

Item #10 – Adjournment

The meeting was adjourned at 7:58 p.m.

APPROVED: March 21, 2023

BY: _____
Bill Partington, Mayor

ATTEST:

_____
Susan Carroll Dauderis,
City Clerk

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.A
Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2023-59
Strategic Goal:	Public Safety – Other		
Department :	Police Department		
Subject:	Bid Award - Upgrade to Firearms and Accessories Award to GT Distributors, Inc		
Budget Impact:	The amount of this purchase is $71,881.93 and $75,000 was budgeted in the Fiscal Year 2022-2023 budget, within 305-Public Safety Vehicle & Equipment Fund.		
Summary:	On January 10, 2023, the Commission approved Bid 2023-06, for the police department to request bids to upgrade their firearms and associated accessories. On February 22, 2023, Bid 2023-06 opening occurred. During the opening, the Police Department selected GT Distributors, Inc, and would like to move forward as GT Distributors, Inc., was the only company whose bid was under the amount budgeted by the police department for the purchase. GT Distributors, Inc, is a vendor that the police department has previously utilized and has been reliable.		
Recommended Action:	The Police Department is requesting approval to award this bid to GT Distributors, Inc. for the purchase of upgraded firearms and accessories.		
Staff Contact:	Jesse Godfrey, Police Chief, (386) 676-3500		

Approval:

Kelly McGuire, Finance Director	3/8/2023	Kelly A. McGuire
Claire Whitley, Assistant City Manager	3/8/2023	
Joyce Shanahan, City Manager	3/14/2023	Joyce Shanahan

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Jesse Godfrey, Police Chief

Date: March 21, 2023

Subject: Bid Award - Upgrade to Firearms and Accessories Award to GT Distributors, Inc

Commission Goal: Public Safety – Other

Introduction

The Ormond Beach Police Department's (OBPD) intent is to move forward and purchase updated handguns, holsters, optics and accessories, from GT Distributors, Inc. for each sworn Ormond Beach Police Officer.

Background

The OBPD currently provides each officer with a 40 caliber Glock handgun. The two models issued, depending on the Officer's assignment, are a Glock 22 or Glock 27. The majority of these handguns are approximately 10 years old. Currently, department handguns are equipped with "iron sights" that are attached to the handgun's slide, rather than the newer optical sights technology.

In 2022, OBPD conducted tests and evaluations of multiple handgun platforms and optical sights, and used these tests and evaluations to select a new handgun platform and a tactical optics system. The selection was made by a committee, using input from multiple officers who participated in the tests. On February 22, 2023, bids for the purchase were opened and the police department would like to move forward GT Distributors, Inc.

Discussion

The handguns currently issued by the Police Department are 40 caliber weapons with a stacked magazine. After a testing and evaluation process, the selection committee determined that a smaller caliber weapon would offer improved mechanics and performance for department officers. The new platforms selected are the Glock 34 and 43, depending on assignment. Both are 9mm caliber handguns. During the test and evaluation period, the committee also selected the Trijicon RMR Adjustable LED reflex

sight. New holsters and accessories will be required to accommodate the change in weapons systems and the addition of optics.

Budget Impact

The amount of this purchase is $71,881.93 and $75,000 was budgeted in the Fiscal Year 2022-2023 budget, within 305-Public Safety Vehicle & Equipment Fund.

Citizen Impact

The replacement ensures the police department has the necessary equipment to continue to provide critical high quality services to the community.

Recommendation

The Police Department is requesting approval to award this bid to GT Distributors, Inc. for the purchase of upgraded firearms and accessories.

Attachments:

1. 23-59 Firearms purch from GT Distributors (P23-0047G)
2. FINAL BID 2023-06 Upgrade of Firearms and accessories (7)
3. Bid 2023-06 Addendum No 1 (1)
4. BID 2023-06 Upgrade of Firearms and accessories (9)
5. GT Distributors - Glock Firearms
6. BID 2023-06 Tabulation

Approvals:

Kelly A. McGuire

Kelly McGuire, Finance Director — Date: March 08, 2023

Claire Whitley, Assistant City Manager — Date: March 08, 2023

Joyce Shanahan

Joyce Shanahan, City Manager — Date: March 14, 2023

RESOLUTION NO. 2023-59

A RESOLUTION ACCEPTING A BID FROM GT DISTRIBUTORS, INC. REGARDING THE PURCHASE OF FIREARMS AND ACCESSORIES, UNDER BID NO. 2023-06; AUTHORIZING THE EXECUTION OF A PURCHASE AUTHORIZATION AND PAYMENT THEREFOR; REJECTING ALL OTHER BIDS; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City advertised for bids (Bid No. 2023-06) regarding the purchase of firearms and accessories for each sworn police officer ("the Project") pursuant to section 2-300, *Code of Ordinances*, and

WHEREAS, the City's professional staff have reviewed the bids received and have determined that the bid submitted by GT Distributors, Inc. with bid in the amount of $71,881.93 is the lowest responsible and responsive bid (a copy of said bid being attached hereto and incorporated herein by reference), and

WHEREAS, the City Manager has certified that funds for this purchase have been appropriated to the credit of the Public Safety Vehicle & Equipment Fund and have not been appropriated for any other purpose, and

WHEREAS, the City Commission concurs with the foregoing recommendations, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The bid submitted by GT Distributors, Inc. to provide the equipment at a total cost not to exceed $71,881.93 is hereby accepted.

SECTION TWO. All other bids relative to the aforedescribed Project shall be deemed rejected upon the execution of a Purchase Authorization with GT Distributors, Inc.

SECTION THREE. The Mayor and the City Manager are hereby authorized and directed to execute a Purchase Authorization with GT Distributors, Inc. for the purchase of firearms and accessories at the said price, and to pay the cost thereof from the Public Safety Vehicle & Equipment Fund.

SECTION FOUR. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3330

INVITATION TO BID

BIDDER ACKNOWLEDGEMENT FORM

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID

BID TITLE: **Upgrade of Firearms and accessories**

BID NUMBER: **2023-06**

BID OPENING DATE & TIME: **February 15, 2023 at 3:00 PM**

BID OPENING LOCATION: **City Hall Training Rm, Ormond Beach City Hall 22 S. Beach Street**

PRE-BID MEETING DATE & TIME: N/A

PRE-BID MEETING LOCATION: N/A

Bids Received After The Above Date And Time Will Not Be Accepted.

BIDDER'S NAME: G T DISTRIBUTORS, INC.

BIDDER'S MAILING ADDRESS: 1124 NEW MEISTER LN., STE 100

CITY-STATE-ZIP: PFLUGERVILLE, TX 78660

F.E.I.N. or S.S. NUMBER: 74-2339528

PHONE NUMBER: 512-451-8298

EMAIL: txbids@gtdist.com

If returning as a "No Bid", please state reason (s): _____

I certify that this Bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Bid for the same materials, supplies, or equipment, and is in all respects fair and made without collusion or fraud. I agree to abide by all conditions of this Bid and certify that I am authorized to sign this Bid for the Bidder. In submitting a Bid to the City of Ormond Beach, the Bidder offers and agrees that if the Bid is accepted, the Bidder will convey, assign or transfer to the City of Ormond Beach all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Ormond Beach. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Bidder.

X _____
AUTHORIZED SIGNATURE (MANUAL)

DAVID CURTIS
NAME (TYPED)

BIDS MANAGER
TITLE

02/14/2023
DATED

City of Ormond Beach

Upgrade of Firearms and accessories

Bid No. 2023-06

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

G T DISTRIBUTORS, INC.
COMPANY NAME

AUTHORIZED SIGNATURE

DAVID CURTIS
NAME

BIDS MANAGER
TITLE

02/14/2023
DATE

City of Ormond Beach

Upgrade of Firearms and accessories
Bid No. 2023-06

BID RESPONSE FORM

THIS BID IS SUBMITTED TO:
(Name and Address of Owner)

Purchasing Coordinator
City of Ormond Beach
22 S. Beach Street
Ormond Beach, Florida 32174
Phone: (386) 676-3223

The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with the CITY in the form included in the Bid Documents to complete all Work as specified or indicated in the Bid Documents for the Contract Price and within the Contract Time indicated in this Bid and in full accordance with the Bid Documents.

BIDDER certifies that he has investigated the requirements to do business in the jurisdiction where the project is located, and that he is either qualified to do business or will obtain such prequalification prior to award of the contract.

BIDDER accepts all of the terms and conditions of the General Conditions. BIDDER will sign the Agreement (Contract) and submit the Contract security (when applicable) and other documents required by the Contract Documents within ten (10) days after the date of CITY's Notice of Award.

In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

BIDDER has examined copies of all the Bid Documents and of the following Addenda:

Addendum Date	Addendum Number
_____	_____
_____	_____
_____	_____

Receipt of all of which is hereby acknowledged.

BIDDER has examined the site and locality where the Work is to be performed, when applicable, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as BIDDER deems necessary.

BID RESPONSE FORM
(continued)

This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the CITY.

THIS BID IS SUBMITTED BY:

COMPANY NAME: G T DISTRIBUTORS, INC.

VENDOR/CONTRACTOR LICENSE NUMBER: 74-2339528

ADDRESS: 1124 NEW MEISTER LN., STE 100

PFLUGERVILLE, TX 78660

PHONE NO.: 512-451-8298 EMAIL: txbids@gtdist.com

SUBMITTER'S NAME: DAVID CURTIS
(Typed or Printed in Ink)

TITLE: BIDS MANAGER

AUTHORIZED SIGNATURE: I, _____ hereby
(Original Signature)
declare that I have read and fully understand the Invitation to Bid, including the General Conditions, Specifications and Drawings (when applicable) and that I am duly authorized to sign and submit this bid.

The CITY reserves the right to reject any and all bids, to waive informalities, and to accept any bid or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

City of Ormond Beach

Upgrade of Firearms and accessories

Bid No. 2023-06

BIDDING SPECIFICATIONS

The use of any manufacturer's name, trade name, brand name, or catalog number in this specification is for the sole purpose of describing and establishing the minimum requirements for levels of quality, standards of performance and design required, and is in no way intended to prohibit the bidding of any other manufacturer's items of equal quality and interoperability. The City's Police Chief or his designee shall be the sole judge of the quality and interoperability of alternate products proposed and his decision will be final.

The BIDDER will complete the Work, as described herein, for the following price(s):

BID SCHEDULE

Item No:	Description:	Quantity:	Unit:	Unit Price:	Total Price:
1.	Glock Gen 5 34 9mm Fixed Sights MOS-3 #GLOCK-PA345s202MO	78	EA	$502.75	$39,214.50
2.	Glock 43X Black 5.5lb LE GNS MOS-2 #GLOCK-PX43580702FRM	10	EA	$400.90	$4,009.00
3.	Glock mag G43x/G48 10rd #GLOCK-47575*	20	EA	$18.00	$360.00
4.	Glock Gen 5 17 9 mm Magazine 17 Rounds #GLOCK-39328*	20	EA	$21.00	$420.00
5.	Safariland 7360RDS 7TS Holster w/Light G34 #SAF-7360RDS-68325-4	78	EA	$110.41	$8,611.98
6.	Model 7371 7TS ALS® Concealment Paddle #SAF-7371-895-411*	10	EA	$41.25	$412.50
7.	Trijicon RMR adj LED Sight = 6.50 MOA Red #TRI-RM07-C-700679*	78	EA	$430.00	$33,540.00
8.	Ameriglo 2XL Tall MOS/Suppressor set #AG-GL-330*	78	EA	$58.90	$4,594.20
9.	C&H Red Dot Adapter Plate Glock MOS #CH-GL-RSH*	78	EA	$64.10	$4,999.80
10.	Trade in allowance Gen4 Clock 22 With NS-3 Mages & Box	73	EA	$(291.85)	$(21,305.05)
11.	Trade in allowance Glock 27 Gen3 With 2 Mags & Box	10	EA	$(312.50)	$(3,125.00)

12. Freight	1	EA	$ 150.00	$ 150.00

TOTAL BID FOR CONTRACT $ 71,881.93

(Figures)

(Words)

*NOTES:
- All firearms must be fully functional to receive the full trade credit.
- The agency is responsible for packaging and freight on all trades with G T Distributors, Inc.
- Trade assumes 3 standard capacity mags
  Subtract $5.00 for missing box
  Subtract $18.00 for missing magazine

City of Ormond Beach

Upgrade of Firearms and accessories
Bid No. 2023-06

CITY OF ORMOND BEACH, FLORIDA

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[✓] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[✓] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

G T DISTRIBUTORS, INC.
COMPANY NAME

AUTHORIZED SIGNATURE

DAVID CURTIS
NAME (PRINT OR TYPE)

BIDS MANAGER
TITLE

02/14/2023
DATE

CITY OF ORMOND BEACH
DRUG-FREE WORKP

: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more Bids which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a Bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie Bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

Give each employee that engages in providing the commodities or contractual services that are under proposal a copy of the statement specified in subsection (1).

In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

G T DISTRIBUTORS, INC.
COMPANY NAME

ED SIGNATURE

DAVID CURTIS
NAME (PRINT OR TYPE)

Quote	QTE0168498
Date	2/14/23
Page:	1

GT Distributors - Austin
1124 New Meister Ln., Ste 100
Pflugerville TX 78660
(512) 451-8298 Ext. 0000

Bill To:

Ormond Beach Police Department (FL)
170 W Granada Blvd
Accounts Payable
Ormond Beach FL 32174

Ship To:

Ormond Beach Police Department (FL)
170 W. Granada Blvd.
Attn: Ofc. Shane Jarrell
Ormond Beach FL 32174

Purchase Order No.	Customer ID	Salesperson ID	Shipping Method	Payment Terms	Req Ship Date	Master No.
GLOCK TRD BID 22	010053	BC	FEDEX-GROUNDN	NET 30	0/0/00	2,713,441

Quantity	Item Number	Description	UOM	Unit Price	Ext. Price
78	GLOCK-PA345S202MO	Glock Gen 5 34 9mm Fixed Sights MOS-3 Mag:	EA	$502.75	$39,214.50
10	GLOCK-PX4350702FRM	GLOCK 43X Black 5.5lb LE GNS MOS-2 Mags	EA	$400.90	$4,009.00
20	GLOCK-47575*	Glock mag G43X/G48 10rd	EA	$18.00	$360.00
20	GLOCK-39328*	Glock Gen 5 17 9MM Magazine 17 Rounds	EA	$21.00	$420.00
78	SAF-7360RDS-68325-4	Safarilan 6360RDS 7TS Holster w/Light G34 M(	EA	$110.41	$8,611.98
10	SAF-7371-895-411*	Model 7371 7TS ALS® Concealment Paddle H(	EA	$41.25	$412.50
78	TRI-RM07-C-700679*	Trijicon RMR Adj LED Sight - 6.50 MOA Red D(	EA	$430.00	$33,540.00
78	AG-GL-330*	Ameriglo 2XL Tall MOS / Suppressor set (17-41	EA	$58.90	$4,594.20
78	CH-GL-RSH*	C&H Red Dot Adapter Plate Glock MOS to RMF	EA	$64.10	$4,999.80
73	TRADE-IN:	Used Gen4 Glock 22 w/NS-3 Mags & Box	EA	($291.85)	($21,305.05)
10	TRADE-IN:	Used Glock 27 Gen 3 w/2 Mags & Box	EA	($312.50)	($3,125.00)
1	GUN TRADE NOTE 1		Each	$0.00	$0.00
		All firearms must be fully functional to receive the full trade credit.			
1	GUN TRADE NOTE 2		Each	$0.00	$0.00
		The agency is responsible for packaging and freight on all trades with G T Distributors Inc.			
1	GUN TRADE NOTE 3	Trade assumes 3 standard capacity mags	Each	$0.00	$0.00
		Subtract $5.00 for missing box Subtract $18.00 for missing magazine			

QUOTE IS GOOD FOR 30 DAYS. IN ORDER TO RECEIVE QUOTED PRICE PLEASE PRESENT A COPY OF QUOTE AT POINT OF SALE IN STORES OR REFERENCE QUOTE NUMBER ON PO OR REQUISITION

Your salesman is Brian Canova.
Thank you!

Subtotal	$71,731.93
Misc	$0.00
Tax	$0.00
Freight	$150.00
Total	$71,881.93

Addendum No. 1

February 15, 2023

TO: Perspective Bidders and Others Concerned

SUBJECT: Addendum #1 BID 2023-06 Upgrade to Firearms and accessories

TO ALL BIDDERS: You are requested to make all changes and/or additions contained in this Addendum to the Bidding Documents. Failure to acknowledge this Addendum in Proposal may result in rejection of bid.

Due Date changed to 2/22/2023 at 10:00 AM

The foregoing changes are hereby incorporated into the Bidding Contract Documents for the City of Ormond Beach – BID 2023-06 Upgrade to Firearms and accessories, for the City of Ormond Beach.

City of Ormond Beach, Florida

City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3330

INVITATION TO BID

BIDDER ACKNOWLEDGEMENT FORM

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID

BID TITLE: **Upgrade of Firearms and accessories**

BID NUMBER: **2023-06**

BID OPENING DATE & TIME: **February 15, 2023 at 3:00 PM**

BID OPENING LOCATION: **City Hall Training Rm, Ormond Beach City Hall 22 S. Beach Street**

PRE-BID MEETING DATE & TIME: N/A

PRE-BID MEETING LOCATION: N/A

Bids Received After The Above Date And Time Will Not Be Accepted.

BIDDER'S NAME: _____

BIDDER'S MAILING ADDRESS: _____

_____

CITY-STATE-ZIP: _____

F.E.I.N. or S.S. NUMBER: _____

PHONE NUMBER: _____

EMAIL: _____

If returning as a "No Bid", please state reason (s): _____

_____

I certify that this Bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Bid for the same materials, supplies, or equipment, and is in all respects fair and made without collusion or fraud. I agree to abide by all conditions of this Bid and certify that I am authorized to sign this Bid for the Bidder. In submitting a Bid to the City of Ormond Beach, the Bidder offers and agrees that if the Bid is accepted, the Bidder will convey, assign or transfer to the City of Ormond Beach all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Ormond Beach. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Bidder.

X _____
AUTHORIZED SIGNATURE (MANUAL)

_____
NAME (TYPED)

_____
TITLE

_____
DATED

GENERAL CONDITIONS

PUBLIC ENTITY CRIMES: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid on a contract to provide any goods or services to a public entity, may not submit a Bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit Bids on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

DISCRIMINATION: Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid or proposal on a contract to provide any goods or services to a public entity, may not submit a bid or proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit bid or proposal on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

PUBLIC RECORDS/NON-CONFIDENTIALITY OF BIDS AND/OR PROPOSALS. The City of Ormond Beach cannot and does not warrant the confidentiality of any information submitted in response to this solicitation. Florida law provides that municipal records shall at all times be open for personal inspection by any person, Section 119.01, F.S., The Public Records Law. Information and materials received by the City of Ormond Beach in connection with all Proposers' response shall be deemed to be public records subject to public inspection upon award, recommendation for award, or 10 days after bid opening, whichever occurs first. Section 119.071, F.S.

NOTIFICATION OF BIDS AND RFP'S: The City uses the services of DemandStar (www.demandstar.com) for notification of its Bids and RFP's on-line on the Internet. If you have received a copy of this Bid/RFP from any source other than DemandStar, please be aware that you may not have received the latest version of the Bid/RFP or any related addendums.

SUBMISSION OF BIDS: All Bids shall be submitted in a sealed envelope. The Invitation to Bid (ITB) number, title, and opening date shall be clearly displayed on the outside of the sealed envelope. The delivery of said Bid to the Purchasing Office on or before the specified opening date and time is solely and strictly the responsibility of the Bidder. Any Bid received by the Purchasing Office after the specified date and time will not be accepted. Bids must be submitted on forms provided by the City. No other forms will be accepted. Telephone, telefax and telegraph Bids will not be considered. No Bid may be modified after opening. **No Bid may be withdrawn after opening for a period of ninety (90) days unless otherwise specified.**

EXECUTION OF BID: Bid must contain a manual signature of authorized representative in the space(s) provided. Bids must be typed or printed in ink. Use of erasable ink is not permitted. All corrections made by Bidder to any Bid entry must be initialed. The company name and Federal Employer Identification Number (F.E.I.D.) or Social Security (S.S.) number shall appear in the space(s) provided.

BID OPENING: Bids shall be opened and the name of the Bidders and the bid amounts shall be read publicly. Bid amounts announced at the bid opening are subject to change due to math errors made by Bidders

BID TABULATION: Any Bidder wishing to receive a copy of the Bid tabulation is required to enclose a stamped, self-addressed envelope with their Bid response. Bid opening tabulations will be posted on DemandStar.com.

CLARIFICATION/CORRECTION OF BID ENTRY: The City of Ormond Beach reserves the right to allow for the clarification of questionable entries and for the correction of obvious mistakes.

INTERPRETATION: Any questions concerning conditions and specifications shall be directed to the Purchasing Coordinator. Those interpretations which may affect the eventual outcome of this Bid will be furnished in writing to all prospective Bidders. No interpretation shall be considered binding unless provided in writing by the City of Ormond Beach.

MINORITY POLICIES: The City of Ormond Beach, Florida, encourages the full participation of Disadvantaged and Women Business Enterprises (D&WBE) in the provision of goods and services.

LICENSES AND PERMITS: The vendor is responsible for obtaining all necessary permits and licenses to comply with all Federal, State, and Local laws, rules and regulations required to perform work in accordance with the specifications.

LOCAL VENDOR PREFERENCE: The City *may* give a local preference in the amount of three percent (3%) of the bid price or $25,000, whichever is less. The bid price shall include not only the base bid price but all alternatives which are part of the bid and actually purchased or awarded. A Local Vendor Affidavit of Eligibility shall accompany the bid submittal to be considered valid.

PRICING: Firm prices shall be proposed and include FOB DESTINATION, all packing, handling, shipping charges and delivery to any point within the City of Ormond Beach to a secure area or inside delivery. Prices shall be valid for ninety (90) days from date of Bid opening. In the event there is a discrepancy between the unit price and the extended amount, the unit price will prevail.

ADDITIONAL TERMS AND CONDITIONS: The City of Ormond Beach reserves the right to reject Bids containing any additional terms or conditions not specifically requested in the original conditions and specifications.

TAXES: The City of Ormond Beach is exempt from Federal Excise Taxes and all sales taxes.

DISCOUNTS: All discounts EXCEPT THOSE FOR PROMPT PAYMENT shall be considered in determining the lowest net cost for Bid evaluation purposes. If a Bidder offers a discount, it is understood that the discount time will be computed from the date of satisfactory delivery, at the place of acceptance, and receipt of correct invoice, at the office specified, whichever occurs last.

SILENCE OF SPECIFICATIONS: The apparent silence of any specification and any supplemental specifications as to any details or the omission from same of any detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and that only materials of first quality and correct type, size, and design are to be used. All workmanship is to be first quality. All interpretations of the specifications shall be made upon the basis of this statement.

ASSIGNMENT: Any purchase order or contract issued pursuant to a Bid and the monies which may become due thereunder are <u>not</u> assignable except with the prior written approval of the City Manager or City Commissioner, whichever authorized the purchase.

LIABILITY: The vendor shall hold and save the City of Ormond Beach, its officers, agents, and employees harmless against claims by third parties resulting from the vendor's or supplier's breach of contract or negligence, including all attorney's fees and costs, and shall pay any and all damages, fees, and costs assessed on behalf of the City. The City expressly reserves all rights, privileges and benefits of sovereign immunity.

PATENTS AND ROYALTIES: The Bidder, without exception, shall indemnify and save harmless the City of Ormond Beach and its employees from liability of any kind, including cost and expenses for or on account of any copyrighted, patented, or unpatented invention, process, or article manufactured or used in the performance of the contract, including its use by the City of Ormond Beach. If the Bidder uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the Bid prices shall include all royalties or cost arising from the use of such design, device, or materials in any way involved in the work.

SAFETY WARRANTY: The selling dealer, distributor, supplier, and manufacturer shall be responsible for compliance with all Federal, State and local laws, rules and regulations concerning the equipment and/or service specified and the use thereof, applicable and

effective on the date of manufacture including safety and environmental standards as apply to both private industry and governmental agencies.

WARRANTY: The Bidder agrees that, unless otherwise specified, the services furnished under the Bid shall be covered by the most favorable commercial warranty for comparable services, and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the City of Ormond Beach by other provision of the Bid.

AWARDS: The City reserves the right, in its sole discretion, as the best interest of the City may require, to make award(s) by individual item, group of items, all or none, or a combination thereof; on a geographical basis and/or with one or more vendors or contractors; or to reject any and all Bids or waive any minor irregularity or technicality in the Bids received.

NON-APPROPRIATION OF FUNDS: In the event sufficient budget funds are not available for a new fiscal period, the CITY shall notify the VENDOR/CONTRACTOR of such occurrence and the contract shall terminate on the last day of the current fiscal period, without any penalty or expense to the CITY of any kind whatsoever.

OTHER AGENCIES: All Bidder(s) awarded contracts from this bid or proposal may, permit any municipality or other government agency to participate in the contract under the same prices, terms, and conditions, if agreed to by both parties.

It is understood that at no time will any city, municipality, or other agency be obligated for placing an order for any other city, municipality, or agency: nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further, it is understood that each agency will issue its own purchase orders to the awarded bidder(s).

COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW:

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the City to

perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City. (e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32175.
(386)677-0311
CITYCLERK@ORMONDBEACH.ORG
Or
www.ormondbeach.org/prr

Ref: Fla. Stat. §119.0701(2016)

THE CITY OF ORMOND BEACH RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS, AND TO WAIVE INFORMALITIES, AS MAY BE DEEMED TO BE IN THE BEST INTEREST OF THE CITY.

DEFINITIONS:

BIDDER - The term used herein refers to any individual, company or other entity submitting a Bid to the CITY in response to an Invitation to Bid (ITB).

CITY/OWNER - The terms CITY or OWNER herein refers to the City of Ormond Beach, Florida, and its duly authorized representatives.

CONTRACT MANAGER - The term refers to the CITY representative(s) who will be acting on the CITY's part to manage all the Contract actions.

FURNISH - The terms "furnish", "furnish and install", "install", and "provide" or words with similar meaning shall be interpreted, unless otherwise specifically stated, to mean "furnish and install, complete in place and ready for service".

PROJECT - The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

PROJECT MANUAL - The term "Project Manual" includes Bid Requirements, General Conditions, Scope of Work, Specifications, Risk Management requirements and any associated attachments.

SPECIFICATIONS - The term refers to those portions of the Project Manual consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

SUPPLIER - The term used herein refers to any individual, company or other entity supplying services pursuant to the terms, conditions, and quotations of a Bid or Proposal.

VENDOR, CONTRACTOR, or VENDOR/CONTRACTOR - The term(s) used herein refers to any individual, company, or other entity that is awarded a contract by the CITY, pursuant to the terms, conditions, and quotations of a bid/proposal.

WORK - The entire, completed job or the various separately identifiable parts thereof, required to be furnished under the Contract Documents. Work is the result of providing goods and/or services, furnishing labor and/or furnishing and incorporating materials and equipment into the construction, as required by the Contract Documents.

NON-APPROPRIATION OF FUNDS: In the event sufficient budget funds are not available for a new fiscal period, the CITY shall notify the VENDOR/CONTRACTOR of such occurrence and the contract shall terminate on the last day of the current fiscal period, without any penalty or expense to the CITY of any kind whatsoever.

City of Ormond Beach

Upgrade of Firearms and accessories
Bid No. 2023-06

GENERAL INSTRUCTIONS:

Bid Delivery: Submit one (1) signed and unbound original of the complete Bid packet and one (1) electronic file, with all required attachments, by the closing date and time. Deliver Bids to: Rob Hart, Purchasing Coordinator, Ormond Beach City Hall Room 101, 22 South Beach Street, Ormond Beach, Florida 32174. **Make sure the bid number is clearly visible on the outside of the delivery package. Bids delivered after the time and date specified will not be accepted.** For any question regarding bid delivery contact the purchasing office at 386-676-3223.

Technical Questions: Submit all technical questions regarding this Bid to the City's Purchasing Coordinator, Robert Hart, by e-mailing rob.hart@ormondbeach.org.

Rejection Rights: The City of Ormond Beach reserves the right, at any time, to modify, waive or otherwise vary the terms and conditions of this Bid including, but not limited to, the deadlines for submission and submission requirements. The City further reserves the right to reject any or all submittals, to cancel or withdraw this Bid at any time and to negotiate with any party prior to or after submittal of Bid.

Cost of Bid Preparation: No reimbursement will be made by the City of Ormond Beach for any costs incurred in the preparation of the Bid, proposal or presentation.

Bids to be in Effect: Each Bid shall state that it is valid for a period of not less than ninety (90) days from date of receipt.

Equipment: Contractor shall own and have in good repair all equipment necessary to perform the described services in particular and the equipment necessary to complete related tasks. The City will not provide any equipment to do this work.

Registration And Risk Management Requirements: Any Vendor delivering a product or Contractor doing work for the City of Ormond Beach, on City property shall be **registered** to do business in the City of Ormond Beach and shall provide **proof of**, abide by and maintain, for the entire life of the Contractual Agreement, including any and all approved time extensions, such **insurance** as is required by City ordinance, which shall be incorporated in and made part of the contract documents. A vendor using a common carrier is exempt from this requirement. This proof of insurance will be required prior to commencement of any **on-site** work. Refer to **Attachment A** for the City's registration and risk management requirements.

SCOPE OF WORK:

GENERAL

The City of Ormond Beach invites qualified companies to submit Bid for an Upgrade to Firearms and accessories. The successful contractor will be required to provide not less than 95% of the analyses noted in the Bid.

AWARD:

The City reserves the right to award any contract(s) to the bidder(s) which it deems to offer the best overall service; therefore, the City is not bound to award any contract(s) based solely on lowest quoted price. The City also reserves the right to negotiate separately with competing bidders as deemed to be in the City's best interest.

TAXES:

The Contractor is responsible for paying any and all taxes associated with this agreement.

OTHER AGENCIES:

Any bidder(s) awarded a contract resulting from this bid is/are given the privilege and is/are required to permit all public and governmental entities in the State of Florida to participate in the contract under the same terms and conditions.

It is understood that at no time will any agency be obligated for placing an order for any other agency. Each agency will only have the authority to obligate itself and will not be held responsible for bills incurred by any other agency. Further, it is understood that each agency will issue its own purchase order(s) or contract to successful bidder(s).

City of Ormond Beach

Upgrade of Firearms and accessories
Bid No. 2023-06

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME

_____
TITLE

_____
DATE

City of Ormond Beach

Upgrade of Firearms and accessories
Bid No. 2023-06

BID RESPONSE FORM

THIS BID IS SUBMITTED TO:
(Name and Address of Owner)

Purchasing Coordinator
City of Ormond Beach
22 S. Beach Street
Ormond Beach, Florida 32174
Phone: (386) 676-3223

The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with the CITY in the form included in the Bid Documents to complete all Work as specified or indicated in the Bid Documents for the Contract Price and within the Contract Time indicated in this Bid and in full accordance with the Bid Documents.

BIDDER certifies that he has investigated the requirements to do business in the jurisdiction where the project is located, and that he is either qualified to do business or will obtain such prequalification prior to award of the contract.

BIDDER accepts all of the terms and conditions of the General Conditions. BIDDER will sign the Agreement (Contract) and submit the Contract security (when applicable) and other documents required by the Contract Documents within ten (10) days after the date of CITY's Notice of Award.

In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

BIDDER has examined copies of all the Bid Documents and of the following Addenda:

Addendum Date	Addendum Number
_____	_____
_____	_____
_____	_____

Receipt of all of which is hereby acknowledged.

BIDDER has examined the site and locality where the Work is to be performed, when applicable, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as BIDDER deems necessary.

BID RESPONSE FORM
(continued)

This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the CITY.

THIS BID IS SUBMITTED BY:

COMPANY NAME: _____

VENDOR/CONTRACTOR LICENSE NUMBER: _____

ADDRESS: _____

_____

_____

PHONE NO.: _____ EMAIL: _____

SUBMITTER'S NAME: _____
(Typed or Printed in Ink)

TITLE: _____

AUTHORIZED SIGNATURE: I, _____ hereby
(Original Signature)
declare that I have read and fully understand the Invitation to Bid, including the General Conditions, Specifications and Drawings (when applicable) and that I am duly authorized to sign and submit this bid.

The CITY reserves the right to reject any and all bids, to waive informalities, and to accept any bid or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

City of Ormond Beach

Upgrade of Firearms and accessories
Bid No. 2023-06
BIDDING SPECIFICATIONS

The use of any manufacturer's name, trade name, brand name, or catalog number in this specification is for the sole purpose of describing and establishing the minimum requirements for levels of quality, standards of performance and design required, and is in no way intended to prohibit the bidding of any other manufacturer's items of equal quality and interoperability. The City's Police Chief or his designee shall be the sole judge of the quality and interoperability of alternate products proposed and his decision will be final.

The BIDDER will complete the Work, as described herein, for the following price(s):

BID SCHEDULE

Item No:	Description:	Quantity:	Unit:	Unit Price:	Total Price:
1.	Glock Gen 5 34 9mm Fixed Sights MOS-3 #GLOCK-PA345s202MO	78	EA	$_____	$_____
2.	Glock 43X Black 5.5lb LE GNS MOS-2 #GLOCK-PX43580702FRM	10	EA	$_____	$_____
3.	Glock mag G43x/G48 10rd #GLOCK-47575*	20	EA	$_____	$_____
4.	Glock Gen 5 17 9 mm Magazine 17 Rounds #GLOCK-39328*	20	EA	$_____	$_____
5.	Safariland 7360RDS 7TS Holster w/Light G34 #SAF-7360RDS-68325-4	78	EA	$_____	$_____
6.	Model 7371 7TS ALS® Concealment Paddle #SAF-7371-895-411*	10	EA	$_____	$_____
7.	Trijicon RMR adj LED Sight = 6.50 MOA Red #TRI-RM07-C-700679*	78	EA	$_____	$_____
8.	Ameriglo 2XL Tall MOS/Suppressor set #AG-GL-330*	78	EA	$_____	$_____
9.	C&H Red Dot Adapter Plate Glock MOS #CH-GL-RSH*	78	EA	$_____	$_____
10.	Trade in allowance Gen4 Clock 22 With NS-3 Mages & Box	73	EA	$_____	$_____
11.	Trade in allowance Glock 27 Gen3 With 2 Mags & Box	10	EA	$_____	$_____

12. Freight	1	EA	$_____	$_____

TOTAL BID FOR CONTRACT **$**_____

(Figures)

_____

(Words)

City of Ormond Beach

Upgrade of Firearms and accessories
Bid No. 2023-06

CITY OF ORMOND BEACH, FLORIDA

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[ ] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[ ] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME (PRINT OR TYPE)

_____
TITLE

_____
DATE

CITY OF ORMOND BEACH
DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" BID: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more Bids which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a Bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie Bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

Give each employee that engages in providing the commodities or contractual services that are under proposal a copy of the statement specified in subsection (1).

In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME (PRINT OR TYPE)

LOCAL VENDOR PREFERENCE

The following is taken from the Code of Ordinances, City of Ormond Beach, Chapter 2, Financial Matters, Division 3, Purchasing, Article IX, Section 2-304:

Except where otherwise provided by federal or state law or other funding source restrictions, purchases of goods and services under the Purchasing Code shall give preference to local businesses as follows:

(a) Under a competitive bid solicitation, the City *may* give a local preference in the amount of three percent (3%) of the bid price or $25,000, whichever is less. The bid price shall include not only the base bid price but all alternatives which are part of the bid and actually purchased or awarded.

(b) A *local business* shall mean a vendor that has a valid occupational license issued by the City of Ormond Beach at least one year prior to bid opening, with a physical business address located within the municipal boundaries of the City of Ormond Beach from which the vendor operates or performs business on a day-to-day basis that is a substantial component of the goods or services being offered and has provided a Local Vendor Affidavit of Eligibility at the time the bid is submitted.

(c) A *Local Vendor Affidavit of Eligibility* shall accompany the bid submittal to be considered valid and shall include, but not be limited to, the following information:
    (1) A physical business and location address;
    (2) A copy of current City of Ormond Beach Local Business Tax Receipt (occupational license) to verify the business location;
    (3) Proof of payment of business tax and real property tax due to the City of Ormond Beach;
    (4) A copy of the firm's most recent annual corporation report to the Florida Division of Corporations;
    (5) Any additional information necessary to verify local status.

(d) *Exemptions:* Goods or services provided under a cooperative purchasing agreement, contracts for professional services subject to Consultants' Competitive Negotiation Act, purchases or contracts funded in whole or part by a governmental entity that does not allow local preferences, purchases made under another agency's agreements or contracts (piggybacking), purchases under emergency or sole source situations and procurements subject to formal proposals including but not limited to request for proposals (RFP) or continuing contract, and request for quotes (RFQ) versus straight competitive bids.

(e) This section shall not be deemed to require the granting of a local preference, and nothing herein prohibits the award of a contract to a non-local vendor where such award is in the public interest.

Local Vendor Affidavit of Eligibility

I certify that my company meets all of the following qualifications to be eligible for the local vendor preference:

a. My company has a physical business address located within the municipal boundaries of the City of Ormond Beach which is used to perform business on a day-to-day basis.
b. My company holds any business (occupational) or contractor license required by the City of Ormond Beach at least one year prior to bid opening.
c. Payment of business tax and real property tax due to the City of Ormond Beach is current
d. My company is in compliance with annual reporting to the Florida Division of Corporations

Company Name:_____

Address: _____

Business or Contractor License Number: _____

Phone Number: _____ Fax Number: _____

Owner's Name: _____ Signature: _____

Sworn to before me this _____ day of _____

Notary Public for the State of _____ My Commission Expires _____

Notary Public Signature: _____ Printed Name: _____

To be approved as a local bidder and receive bid preference on an <u>eligible</u> local project, this affidavit of eligibility, a copy of your local business or contractor license, copy of business tax/real property tax and a copy of the firm's most recent annual corporation report must be submitted with your bonafide BID package. Bid preference is provided at the City's sole discretion.

VENDOR DO NOT COMPLETE BELOW

To be verified and completed by an authorized representative of the City of Ormond Beach's Purchasing Department:

Vendor Certified by:_____ Date: _____

Attachment A
City of Ormond Beach
REGISTRATION AND INSURANCE REQUIREMENTS FOR VENDOR/CONTRACTOR WORKING ON CITY PROJECTS

Registration Requirements

VENDORS doing business within the City Limits must be registered with the City.

Requirements for registering a business are as follows:
Copy of City Business Tax Receipt (where your business is located).
Certificate of Insurance showing General Liability and Workers' Comp (or State Workers' Comp Exemption form).

Application Fee: $25.00 For more information, contact the City's Business Tax Receipt official.

State Certified/Registered Contractors

All registered contractors must be registered with Volusia County. Volusia County Contractor Licensing, 123 W. Indiana Ave., Rm 203, Deland, Fl. 32720 (386) 736-5957 Opt. 2 – (386) 740-5215 Fax. Certified Contractors have the option of registering with Volusia County, or providing information directly to the business tax receipt official.

If you have any questions regarding the above requirements, please contact the business tax receipt official at (386) 676-3234.

Insurance Requirements

[From Ormond Beach Code of Ordinances establishing minimum requirements for risk management, commercial general liability insurance, and comprehensive general liability insurance, as amended by Resolution No. 2021-144 (9/22/21)]:

B. Contractual Provisions Relative to Risk Management

All contracts for any public works to be performed, and service-related contracts, for or on behalf of the City shall include at a minimum, the following, or substantially similar, provisions:

1. Hold Harmless and Indemnity

The Contractor agrees to assume liability for and indemnify, hold harmless, and defend the City, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor, its agents, officers, contractors,

subcontractors, employees, or anyone else employed or utilized by the Contractor in the performance of this Contract. The Contractor's liability hereunder shall include all attorney's fees and costs incurred by the City in the enforcement of this provision.

2. Payment on Behalf of City

The Contractor shall pay all costs of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph. Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

3. Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary. The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such work stoppage will not shift responsibility for any damages from the Contractor to the City.

4. Service Bond

For Service-related contracts only, the City may require the Contractor to secure a service bond with a minimum $25,000 coverage limit for the period of the service agreement. The service bond covers dishonest acts of the contractor's employees against the City. A copy of the bond shall be provided to the City when the agreement commences. Service-related contracts include and are not limited to businesses providing janitorial, pest control, general repair, security, carpet cleaning, locksmith, temporary employment, painting, moving services or other contracts as determined in the discretion of the Risk Manager as necessary to minimize loss.

C. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability

coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation

d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract. ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

D. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM 25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual

aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

E. Policies of Insurance

1. Except as otherwise provided in this Exhibit, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-), in the latest edition of “Best’s Key Rating Guide”, published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers’ Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carrier; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Exhibit shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability including products and completed operations and Automobile Liability policies of insurance and certificates thereof.

PURCHASE AUTHORIZATION
CITY OF ORMOND BEACH
Purchase Requisition Nbr: 2300458
Vendor: G T Distributors, Inc.
Resolution No. 2023-59

Requisition By: Godfrey
Date: 3/21/2023

Reason: Purchase - Upgraded Firearms and accessories

Purchase of 88 Glock Firearms and associated accessories
BID 2023-06
Funding through Fund 305 – Public Safety Vehicles and Equipment

PAY ITEM NUMBER	DESCRIPTION	UNIT	QNT	UNIT PRICE	AMOUNT
1	Glock Gen 5 34 9 mm	EA	78	$502.75	**$39,214.50**
2	Glock 43x Black 5.5lb	EA	10	$400.90	**$4,009.00**
3	Glock mag G43x/G48	EA	20	$18.00	**$360.00**
4	Glock Gen 5 17 9mm Magazine	EA	20	$21.00	**$420.00**
5	Safariland 7360RDS 7TS Holster	EA	78	$110.41	**$8,611.98**
6	Model 7371 7TS ALS® Concealment Paddle	EA	10	$41.25	**$412.50**
7	Trijicon RMR adj LED Sight	EA	78	$430.00	**$33,540.00**
8	Ameriglo 2XL	EA	78	$58.90	**$4,594.20**
9	C&H Red Dot Adapter Plate	EA	78	$64.10	**$4,999.80**
10	Trade in allowance Gen4 Glock 22	EA	73	-$291.85	**-$21,305.05**
11	Trade in allowance Gen 3 Glock 27	EA	10	-$312.50	**-$3,125.00**
12	Freight	EA	1	$150.00	**$150.00**
				Total	**$71,881.93**

TERMS AND CONDITIONS
The attached terms and conditions of the City of Ormond Beach are incorporated herein by reference and are made a part hereof.

SIGNED BY (CITY):

_____
MAYOR

_____
CITY MANAGER

DATED: _____

SIGNED BY (VENDOR):

_____
PRINCIPAL OF COMPANY

_____
WITNESS

DATED: _____

City of Ormond Beach

TERMS AND CONDITIONS - READ CAREFULLY

GENERAL CONDITIONS:
Acceptance of an order includes all terms, quantities, prices, delivery instructions, specifications and conditions stated in the order. The terms and conditions of an order are not to be changed or modified by any verbal understanding. Any such changes must be made by written agreement. The quantity of materials ordered and the prices specified must not be exceeded without written authority being first obtained from the City. Failure of an awarded Vendor to deliver goods and/or services as specified in the order, or failure to comply with any of the terms and conditions therein, may disqualify Vendor from receiving future orders. In case of default by the Vendor, the City may procure the goods and/or services covered by the order from other sources and hold the Vendor responsible for any additional cost occasioned thereby. Purchases of $500 or more require a signed Purchase Order. Invoices must show the Purchase Order number. The City endeavors to make payments within thirty (30) days of receipt of invoice in accordance with the Florida Prompt Payment Act, Florida Statutes, Chapter 218, Part VII.

QUALITY:
All goods and/or services furnished by an order must be as specified and subject to the City's inspection within a reasonable time after delivery at destination. Variations in goods and/or services from those specified in an order must not be made without written authority from the City. Items rejected by the City will be returned at the Vendor's risk and expense. Unless otherwise stated herein, all materials and equipment furnished by the Vendor shall be new and shall not have been in service at any other installation.

PACKING & DELIVERY:
Packages must be plainly marked with shipper's name and order number. Charges are not allowed for boxing or crating unless previously agreed upon in writing. All goods must be shipped F.O.B. Destination. The City will pay no freight or expense charges, except by previous agreement. The delivery must be effected within the time stated in the order. The City reserves the right to cancel this order and purchase elsewhere if the Vendor fails to meet the delivery date specified on Purchase Order. Deliveries shall be made between 8:00 a.m. and 5:00 p.m. on regular working days unless otherwise stated. Transport deliveries must be unloaded and ready for inspection prior to 3:00 p.m. The items will be promptly inspected for damage and defects and conformance with the specifications. Any material or equipment not meeting the specifications, or that has been damaged or injured in the process of transportation, unloading or handling will be rejected and shall be immediately returned to the Vendor at the Vendor's expense.

COMPLIANCE TO LAWS, GUIDELINES, REGULATIONS ,ETC.:
The Vendor must comply with all applicable state, federal, and local laws, guidelines and regulations. This includes, but is not limited to, DOT, OSHA, EPA, DEP and the City's Registration and Insurance requirements when applicable. Also, where applicable, the Vendor agrees to furnish the City with a current Material Safety Data Sheet (MSDS) on or before delivery of each and every hazardous chemical or substance purchased which is classified as toxic under Chapter 422, Florida Statutes. Appropriate labels and MSDS's shall be provided for all shipments. Send MSDS's and other pertinent data to the City at the "Ship to" address.

PUBLIC ENTITY CRIMES: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid on a contract to provide any goods or services to a public entity, may not submit a Bid on a contract with a public entity for

the construction or repair of a public building or public work, may not submit Bids on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

DISCRIMINATION: Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid or proposal on a contract to provide any goods or services to a public entity, may not submit a bid or proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit bid or proposal on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

TAXES: The City of Ormond Beach is exempt from Federal Excise Taxes and all sales taxes.

MEETS SPECIFICATIONS: Unless otherwise specified, all equipment and accessories furnished under these specifications shall be new, the latest model in current production, and shall be of good quality, workmanship and material. The Vendor represents that all equipment offered under this specification shall meet or exceed the minimum requirements specified. Delivery specifications shall be strictly adhered to.

SILENCE OF SPECIFICATIONS: The apparent silence of any specification and any supplemental specifications as to any details or the omission from same of any detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and that only materials of first quality and correct type, size, and design are to be used. All workmanship is to be first quality. All interpretations of the specifications shall be made upon the basis of this statement.

ASSIGNMENT: Any purchase order or contract issued pursuant to a Request for Quotations and the monies which may become due thereunder are not assignable except with the prior written approval of the City Manager or City Commissioner, whichever authorized the purchase.

LIABILITY: The Vendor shall hold and save the City of Ormond Beach, its officers, agents, and employees harmless against claims by third parties resulting from the vendor's or supplier's breach of contract or negligence, including all attorney's fees and costs, and shall pay any and all damages, fees, and costs assessed on behalf of the CITY. The CITY expressly reserves all rights, privileges and benefits of sovereign immunity.

PATENTS AND ROYALTIES: The Vendor, without exception, shall indemnify and save harmless the City of Ormond Beach and its employees from liability of any kind, including cost and expenses for or on account of any copyrighted, patented, or unpatented invention, process, or article manufactured or used in the performance of the contract, including its use by the City of Ormond Beach. If the Vendor uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the quotation prices shall include all royalties or cost arising from the use of such design, device, or materials in any way involved in the work.

ACCEPTANCE: Items may be tested for compliance with specifications. Items delivered not conforming to specifications may be rejected and returned at Vendor's expense.

SAFETY WARRANTY: The selling dealer, distributor, supplier, and manufacturer shall be responsible for compliance with all Federal, State and local laws, rules and regulations concerning the equipment and/or service specified and the use thereof, applicable and effective on the date of manufacture including safety and environmental standards as apply to both private industry and governmental agencies.

WARRANTY: The Vendor agrees that, unless otherwise specified, the supplies and/or services furnished under the Request for Quotations shall be covered by the most favorable commercial warranty for comparable quantities of such supplies and/or services, and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the City of Ormond Beach by other provision of the Request for Quotations.

BID OPENING TABULATION

Project: Upgrade of Firearms and accessories

Bid Number: 2023-06

Date & Time: February 22, 2023 10:00am

Contractor	Bid Bond	Contractor Totals
GT Distributors, Inc	n	$71,881.93
Lawmen & Shooters Supply, Inc	n	$77,238.50
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00
0	0	$0.00

Please Note: The bid proposals are currently being reviewed. All submittals accepted by the City of Ormond Beach are subject to the City's terms and conditions and any and all additional terms and conditions submitted by the bidders are rejected and shall have no force and effect. Bid documents from the bidders listed herein are the only submittals received timely as of the above opening date and time. All other bid documents submitted in response to this solicitation, if any, are hereby rejected as late.

Tabulated by: Robert Hart
Purchasing Coordinator

Opened by: Chris Roos
Captain, Ormond Beach Police Department

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.B
Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2023-60
Strategic Goal:	Public Safety – Purchase latest up-to-date equipment for all first responders		
Department :	Public Works - Fleet Management		
Subject:	Increase PO Amount - 2022 Ford F150 Police Responder to 2023 Model		
Budget Impact:	Adequate funds for the price increase from the 2022 model to the 2023 Ford Police Responder F-150 Crew Cab in the amount of $8,234 is included in the Fiscal Year 2022-2023 budget, Public Safety Vehicle and Equipment Replacement Fund (305).		
Summary:	This item requests approval for an increase in price to purchase a Ford F150 Police responder pickup truck due to the availability of vehicles. As the 2022 year model is no longer available, staff is requesting approval of an additional $8,234 to purchase a 2023 year model.		
Recommended Action:	It is recommended the City Commission authorize the increase in purchase price from the previously approved 2022 model to one 2023 Ford Police Responder F-150 Crew Cab vehicle from Duval Ford, through the Florida Sheriffs' Association Contract FSA20-VEL28.0 specification #257, and approve the disposition of the surplus unit.		
Staff Contact:	Kevin Gray, Deputy Public Works Director, (386) 676-3325		

Approval:

Kelly McGuire, Finance Director	3/8/2023	Kelly A. McGuire
Claire Whitley, Assistant City Manager	3/8/2023	
Joyce Shanahan, City Manager	3/14/2023	Joyce Shanahan

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Kevin Gray, Deputy Public Works Director

Date: March 21, 2023

Subject: Increase PO Amount - 2022 Ford F150 Police Responder to 2023 Model

Commission Goal: Public Safety – Purchase latest up-to-date equipment for all first responders

Introduction

This item requests City Commission approval for an increase in price to purchase a Ford F150 Police responder pickup truck due to the availability of vehicles. The 2022 model is no longer available, so staff is requesting approval of an additional $8,234 to purchase the 2023 model that has been delivered and is in our possession.

Background

On November 16, 2021, the City Commission approved the purchase of one (1) Ford F150 Police responder pickup truck from Duval Ford, LLC in the amount of $37,012 utilizing the Florida Sheriffs Contract FSA20-VEL 28.0, Purchase Order 20220310.

Discussion

The global automotive industry has experienced significant supply shortages over the last several years due to factors such as microchip shortages, supply chain disruptions, and impacts from COVID-19. Due to these logistical challenges, Ford Motor Company was unable to fulfill a large number of the 2022 government orders and converted the remaining orders to 2023 models based on availability of parts. On January 13, 2023, Fleet Operations received notification of a revised non-scheduled FSA Option: Mandatory 2023 Model Year Price Increase of $8,234 totaling $45,246 for the Ford F150 Police Responder requested under Purchase Order 20220310. The F150 Police Responder is currently in our possession at Fleet Operations and is being scheduled to be outfitted with the Emergency Lighting package.

Budget Impact

Adequate funds for the price increase from the 2022 model to the 2023 Ford Police

Responder F-150 Crew Cab in the amount of $8,234 is included in the Fiscal Year 2022-2023 budget, Public Safety Vehicle and Equipment Replacement Fund (305).

Citizen Impact

Maintaining up-to-date public safety vehicles is integral in the effective policing of the City of Ormond Beach.

Recommendation

It is recommended the City Commission authorize the increase in purchase price from the previously approved 2022 model to one 2023 Ford Police Responder F-150 Crew Cab vehicle from Duval Ford, through the Florida Sheriffs' Association Contract FSA20-VEL28.0 specification #257, and approve the disposition of the surplus unit.

Attachments:

1. 23-60 2023 Ford F150 Purchase (P23-0038G)
2. Backup Information from Ford

Approvals:

Kelly A. McGuire

Date: March 08, 2023

Kelly McGuire, Finance Director

Date: March 08, 2023

Claire Whitley, Assistant City Manager

Joyce Shanahan

Date: March 14, 2023

Joyce Shanahan, City Manager

RESOLUTION NO. 2023-60

A RESOLUTION AUTHORIZING AN ADDITIONAL EXPENDITURE OF FUNDS TO PURCHASE ONE (1) 2023 FORD POLICE RESPONDER F-150 CREW CAB; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, Section 2-300(a)(9), Code of Ordinances, allows the City to utilize a competitive bid solicited by any other municipal, county, state or federal governmental agency, or any combination of such agencies, in purchasing items requiring competitive sealed bids; and

WHEREAS, on November 16, 2021, the City Commission approved Resolution No. 2021-179 authorizing the purchase of one (1) 2022 Ford Police Responder F-150 Crew Cab 4x4 W1P under Florida Sheriffs Association Bid No. FSA20-VEL28.0 from Duval Ford, LLC, in the amount of $37,012; and

WHEREAS, subsequent to the approval of Resolution No. 2021-179, Ford Motor Company announced they were unable to fulfill a large number of the 2022 government orders due to logistical challenges and supply shortages, and converted any remaining orders to 2023 models based on availability of parts, without a guaranteed price protection; and

WHEREAS, Duval Ford, LLC, is honoring the original pricing quoted under Florida Sheriffs Association Bid No FSA20-VEL28 with the addition of a mandatory price increase of $8,234 for the 2023 model upgrade, for a total vehicle purchase price of $45,246 (a copy of the quote is attached hereto and incorporated herein by reference); and

WHEREAS, the 2023 Ford F150 Police Responder has been delivered to Fleet Operations and is currently in the city's possession; and

WHEREAS, the City Manager has certified that the funds for an additional expenditure in the amount of $8,234, totaling $45,246 for the total vehicle purchase price, have been appropriated to the credit of the FY 2022-2023 Public Safety Vehicle and Equipment Replacement Fund (305) and have not been appropriated for any other purposes; now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The City Commission hereby approves an additional expenditure of $8,234, totaling $45,246 for the purchase of a 2023 Ford Police Responder F-150 Crew Cab 4x4 W1P from Duval Ford, LLC, and to pay the costs thereof from the FY 2022-2023 Public Safety Vehicle and Equipment Replacement Fund (305).

SECTION TWO. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

Purchase Order

Fiscal Year 2022

EMAILED 12/14/21

THIS NUMBER MUST APPEAR ON ALL INVOICES, PACKAGES AND SHIPPING PAPERS.

Purchase Order # **20220310**

Delivery must be made within doors of specified destination.

BILL TO
City of Ormond Beach
PO Box 277
Ormond Beach, FL 32175-0277

VENDOR
DUVAL FORD LLC
DUVAL FORD
P O BOX 7687
JACKSONVILLE, FL 32238

SHIP TO
Fleet
500 North Orchard Street
Ormond Beach, FL 32174

Vendor Phone Number	Vendor Fax Number	Requisition Number	Delivery Reference
904-388-2144		2200218	

Date Ordered	Vendor Number	Date Required	Freight Method/Terms	Department/Location
11/17/2021	559			TRANSPORTATION

Item#	Description/PartNo	QTY	UOM	Unit Price	Extended Price
	TRUCKS (INCLUDING, DIESEL, GASOLINE, ELECTRIC, HYB The Above Purchase Order Number Must Appear On All Correspondence - Packing Sheets And Bills Of Lading				
1	F-150 crew cap police responder $34,102.00 with a deduct of $195.00 for deletion of spotlight. Commodity Code: 07202 Class 2 Trucks (6,001 - 10,000 lb. GVWR)	1.0	EACH	$33,907.00	$33,907.00
2	Trailer Tow Package Commodity Code: 07202 Class 2 Trucks (6,001 - 10,000 lb. GVWR)	1.0	EACH	$1,089.00	$1,089.00
3	Trailer Brake Controller. Commodity Code: 07202 Class 2 Trucks (6,001 - 10,000 lb. GVWR)	1.0	EACH	$374.00	$374.00
4	Black Platform Running Boards Commodity Code: 07202 Class 2 Trucks (6,001 - 10,000 lb. GVWR)	1.0	EACH	$249.00	$249.00
5	Pre-collision Assist Commodity Code: 07202 Class 2 Trucks (6,001 - 10,000 lb. GVWR)	1.0	EACH	$144.00	$144.00
6	Reverse Sensing System Commodity Code: 07202 Class 2 Trucks (6,001 - 10,000 lb. GVWR)	1.0	EACH	$274.00	$274.00
7	Tailgate Step Commodity Code: 07202 Class 2 Trucks (6,001 - 10,000 lb. GVWR)	1.0	EACH	$374.00	$374.00
8	Spray in Bedliner Commodity Code: 07202 Class 2 Trucks (6,001 - 10,000 lb. GVWR)	1.0	EACH	$594.00	$594.00

CONTINUED ON NEXT PAGE

Purchase Order

Fiscal Year 2022

THIS NUMBER MUST APPEAR ON ALL INVOICES, PACKAGES AND SHIPPING PAPERS.

Purchase Order # 20220310

Delivery must be made within doors of specified destination.

BILL TO
City of Ormond Beach
PO Box 277
Ormond Beach, FL 32175-0277

VENDOR
DUVAL FORD LLC
DUVAL FORD
P O BOX 7687
JACKSONVILLE, FL 32238

SHIP TO
Fleet
500 North Orchard Street
Ormond Beach, FL 32174

Vendor Phone Number	Vendor Fax Number	Requisition Number	Delivery Reference
904-388-2144		2200218	

Date Ordered	Vendor Number	Date Required	Freight Method/Terms	Department/Location
11/17/2021	559			TRANSPORTATION

Item#	Description/PartNo	QTY	UOM	Unit Price	Extended Price
9	Temporary Tag Commodity Code: 07202 Class 2 Trucks (6,001 - 10,000 lb. GVWR)	1.0	EACH	$7.00	$7.00

VENDOR COPY

Total Ext. Price	$37,012.00
PO Total	**$37,012.00**

City of Ormond Beach

Bill To

Requisition 02200218-00 FY 2022

Acct No:
30552102-506400
Review:
Buyer:
Status: Released

Vendor
DUVAL FORD LLC
P O BOX 7687

JACKSONVILLE, FL 32238

Tel#904-388-2144

Ship To
Fleet
500 North Orchard Street

Ormond Beach, FL 32174

Date Ordered	Vendor Number	Date Required	Ship Via	Terms	Department
10/21/21	000559				TRANSPORTATION

LN	Description / Account	Qty	Unit Price	Net Price
	General Notes			
	2022 F-150 4x4 to replace vehicle #085 as approved in the 2021-22 CIP Purchased thru the Florida Sheriffs Contract FSA20-VEH 18.0 Documents on Minute Traq			
001	F-150 crew cap police responder $34,102.00 with a deduct of $195. 00 for deletion of spotlight. Vendor Item Vendor Item No.: S1P	1.00 EACH	33907.00000	33907.00
	1 30552102-506400 E 305VEH -VEHICLE -V52102 -FY 21-22 33907.00			
002	Trailer Tow Package Vendor Item Vendor Item No.: 53A	1.00 EACH	1089.00000	1089.00
	1 30552102-506400 E 305VEH -VEHICLE -V52102 -FY 21-22 1089.00			
003	Trailer Brake Controller. Vendor Item Vendor Item No.: 67T	1.00 EACH	374.00000	374.00
	1 30552102-506400			

City of Ormond Beach

Bill To

Requisition 02200218-00 FY 2022

Acct No:
30552102-506400
Review:
Buyer:
Status: Released

Vendor
DUVAL FORD LLC
P O BOX 7687

JACKSONVILLE, FL 32238

Tel#904-388-2144

Ship To
Fleet
500 North Orchard Street

Ormond Beach, FL 32174

Date Ordered	Vendor Number	Date Required	Ship Via	Terms	Department
10/21/21	000559				TRANSPORTATION

LN	Description / Account	Qty	Unit Price	Net Price
	E 305VEH -VEHICLE -V52102 -FY 21-22		374.00	
004	Black Platform Running Boards	1.00 EACH	249.00000	249.00
	Vendor Item Vendor Item No.: 18B			
	1 30552102-506400 E 305VEH -VEHICLE -V52102 -FY 21-22		249.00	
005	Pre-collision Assist	1.00 EACH	144.00000	144.00
	Vendor Item Vendor Item No.: 43P / 60C			
	1 30552102-506400 E 305VEH -VEHICLE -V52102 -FY 21-22		144.00	
006	Reverse Sensing System	1.00 EACH	274.00000	274.00
	Vendor Item Vendor Item No.: 76R			
	1 30552102-506400 E 305VEH -VEHICLE -V52102 -FY 21-22		274.00	

City of Ormond Beach

Bill To

Requisition 02200218-00 FY 2022

Acct No:
30552102-506400
Review:
Buyer:
Status: Released

Vendor
DUVAL FORD LLC
P O BOX 7687

JACKSONVILLE, FL 32238

Tel#904-388-2144

Ship To
Fleet
500 North Orchard Street

Ormond Beach, FL 32174

Date Ordered	Vendor Number	Date Required	Ship Via	Terms	Department
10/21/21	000559				TRANSPORTATION

LN	Description / Account	Qty	Unit Price	Net Price
007	Tailgate Step Vendor Item Vendor Item No.: 63T	1.00 EACH	374.00000	374.00
	1 30552102-506400 E 305VEH -VEHICLE -V52102 -FY 21-22		374.00	
008	Spray in Bedliner Vendor Item Vendor Item No.: 96W	1.00 EACH	594.00000	594.00
	1 30552102-506400 E 305VEH -VEHICLE -V52102 -FY 21-22		594.00	
009	Temporary Tag Vendor Item Vendor Item No.: TMP	1.00 EACH	7.00000	7.00
	1 30552102-506400 E 305VEH -VEHICLE -V52102 -FY 21-22		7.00	

City of Ormond Beach

Bill To

Requisition 02200218-00 FY 2022

Acct No:
30552102-506400
Review:
Buyer:
Status: Released

Vendor
DUVAL FORD LLC
P O BOX 7687

JACKSONVILLE, FL 32238

Tel#904-388-2144

Ship To
Fleet
500 North Orchard Street

Ormond Beach, FL 32174

Date Ordered	Vendor Number	Date Required	Ship Via	Terms	Department
10/21/21	000559				TRANSPORTATION

LN	Description / Account	Qty	Unit Price	Net Price
	Requisition Link			
	Requisition Total			37012.00

***** Project Ledger Summary Section *****

Account	Amount	Remaining Budget
E 305VEH -VEHICLE -V52102 -FY 21-22	37012.00	348688.00

***** General Ledger Summary Section *****

Account	Amount	Remaining Budget
30552102-506400	37012.00	348688.00
Police Patrol	Machinery & Equipment	

***** Approval/Conversion Info *****

Activity	Date	Clerk	Comment
Queued	10/21/21	Chris Roos	
Queued	10/21/21	DW Smith	
Pending		Christopher Byle	
Pending		Kelly McGuire	
Pending		Rob Hart	

ORMOND BEACH (PD)

Prepared for:		Contract Holder	DATE:
	ORMOND BEACH (PD) DANNY MCLLRATH 386-676-3510 Danny.McIlrath@ormondbeach.org	*DUVAL FLEET* *Bambi Darr* *(Work) 904-381-6596* *(Fax) 904-387-6816* bambi.darr@duvalfleet.com *5203 Waterside Dr. Jax, FL 32210*	9/29/22
		PLEASE CONFIRM RECEIPT OF QUOTE VIA EMAIL	
		We appreciate your interest and the opportunity to quote. Pricing per FLORIDA SHERIFFS ASSOCIATION LIGHT VEHICLE CONTRACT FSA20-VEL28.0 Heavy Equipment and Trucks FSA20-VEH 18.0. If you have any questions regarding this quote please call! Note, Vehicle will be ordered white exterior unless specified on purchase order. Shipping and invoicing instructions are required on agency purchase order.	

Labor	Code	Equipment	Price
0	SPEC 257	2022 FORD F-150 POLICE RESPONDER CREW CAB 4X4- W1P	$ 34,102.00
0	NSO	NON SCHEDULED FSA OPTION: MANDATORY 2023 MODEL YEAR PRICE INCREASE	$ 8,234.00
0	998	3.5L V6 GAS ENGINE	NC
0	150A	EQUIPMENT GROUP: XL	NC
0	67P	REMOTE KEYLESS ENTRY (INCL 4 KEY FOBS)	NC
0	INCL	BACKUP CAMERA	NC
0	D51R	DELETE SPOT LIGHT	$ (195.00)
0	53A	TRAILER TOW PACKAGE	$ 1,089.00
0	67T	TRAILER BRAKE CONTROLLER	$ 374.00
0	18B	BLACK PLATFORM RUNNING BOARDS	$ 249.00
0	43P	PRE-COLLISION ASSIST WITH PEDESTRIAN DETECTION (2022 MODEL CHANGED TO 60C)	$ 144.00
0	76R	REVERSE SENSING SYSTEM	$ 274.00
0	63T	TAILGATE STEP	$ 374.00
0	96W	SPRAY IN BEDLINER	$ 594.00
0	TMP	TEMPORARY TAG	$ 7.00
0			
0	JS	EXTERIOR: ICONIC SILVER	NC
0	PB	INTERIOR: BLACK CLOTH FRONT SEATS/ NO CONSOLE/ REAR VINYL SEATS	NC
0		VINYL FLOOR	NC
	VENDOR COMMENTS	PLEASE CLEARLY NOTATE ON YOUR PURCHASE ORDER WHERE DUVAL FORD IS TO SHIP YOUR VEHICLE, HOW THE VEHICLE IS TO BE TITLED, AND WHERE THE INVOICE IS TO BE MAILED.	
UNIT COST			$ 45,246.00
TOTAL QUANTITY	1	*TOTAL PURCHASE*	$ 45,246.00

Philip Podgorny
GM, Commercial and Government Sales

16800 Executive Plaza Drive
Dearborn, Michigan 48126

To: Ford Dealership Government Sales Managers

Thank you for all that you do to proudly represent the Ford brand and promote the long-standing relationship with our governmental entities. The government industry has always been a passion for Ford Motor Company as evidenced by our commitment to the products, people and processes in the marketplace. More important is the dedication of the Ford dealer network and relationships you have developed over the years to achieve roughly 50% market share in the government industry.

As you know, this past year has presented an extremely challenging environment for the global automotive industry due to the continuing global microchip shortage, major disruptions in the supply chain due to the war in Eastern Europe and other factors and the lingering impact of Covid. This unprecedented combination of events has contributed to logistical challenges and unpredictable manufacturing plant downtime. Given the high order submissions and unforeseen plant downtime, we will not be able to build all the unscheduled 2022 MY vehicles currently in the Government order bank. We will be prioritizing all 2022 MY vehicles that have been Purchase Order verified and re-submitted as a 2023 MY. Any unscheduled units that have not been Purchased Order verified will not be built.

Compounding matters, we are experiencing record inflation, greater than at anytime in the last forty years. Inflation, as well as significant impacts on raw material costs are affecting new vehicle pricing. Given these circumstances, we will not guarantee price protection on unscheduled Purchase Order verified 2022 MY orders that are re-entered into the 2023 MY order bank. We appreciate your understanding as we work through these challenging times, and you can be assured that we are closely monitoring such global events and will communicate any implications beyond the 2023 MY at the appropriate time.

Additional information on the 2022 MY process will be communicated in the updated dealer policy letter. Please contact your Government Sales Manager for complete details. Thank you again for your loyalty and support of the Ford brand.

Sincerely,

Philip Podgorny
General Manager
Commercial and Government Sales

Nathan Oscarson
Manager, Government Sales

ORMOND BEACH (PD)

Prepared for:		Contract Holder	DATE:
	ORMOND BEACH (PD) DANNY MCLLRATH 386-676-3510 Danny.McIlrath@ormondbeach.org	*DUVAL FLEET* *Bambi Darr* *(Work) 904-381-6596* *(Fax) 904-387-6816* bambi.darr@duvalfleet.com *5203 Waterside Dr. Jax, FL 32210*	1/19/23
		PLEASE CONFIRM RECEIPT OF QUOTE VIA EMAIL	
	We appreciate your interest and the opportunity to quote. Pricing per FLORIDA SHERIFFS ASSOCIATION LIGHT VEHICLE CONTRACT FSA22-VEL30.0 Heavy Equipment and Trucks FSA22-VEH 20.0. If you have any questions regarding this quote please call! Note, Vehicle will be ordered white exterior unless specified on purchase order. Shipping and Invoicing instructions are required on agency purchase order.		

Labor	Code	Equipment	Price
0	SPEC 228	2023 FORD F-150 POLICE RESPONDER CREW CAB 4X4- W1P	$ 42,995.00
0	998	3.5L V6 GAS ENGINE	NC
0	150A	EQUIPMENT GROUP: XL	NC
0	67P	REMOTE KEYLESS ENTRY (INCL 4 KEY FOBS)	NC
0	INCL	BACKUP CAMERA	NC
0	D51R	DELETE SPOT LIGHT	$ (195.00)
0	53A	TRAILER TOW PACKAGE	$ 1,324.00
0	67T	TRAILER BRAKE CONTROLLER	$ 274.00
0	18B	BLACK PLATFORM RUNNING BOARDS	$ 249.00
0	NON CONTRACT	PRE-COLLISION ASSIST WITH PEDESTRIAN DETECTION	$ 144.00
0	NON CONTRACT	REVERSE SENSING SYSTEM	$ 274.00
0	63T	TAILGATE STEP	$ 374.00
0	96W	SPRAY IN BEDLINER	$ 594.00
0	TMP	TEMPORARY TAG	$ 7.00
0			
0	JS	EXTERIOR: ICONIC SILVER	NC
0	PB	INTERIOR: BLACK CLOTH FRONT SEATS/ NO CONSOLE/ REAR VINYL SEATS	NC
0		VINYL FLOOR	NC
	VENDOR COMMENTS	PLEASE CLEARLY NOTATE ON YOUR PURCHASE ORDER WHERE DUVAL FORD IS TO SHIP YOUR VEHICLE, HOW THE VEHICLE IS TO BE TITLED, AND WHERE THE INVOICE IS TO BE MAILED.	
UNIT COST			$ 46,040.00
TOTAL QUANTITY	1	*TOTAL PURCHASE*	$ 46,040.00

* THESE ITEMS ARE NOT ON NEW CONTRACT

ITEM	CODE	OPTION	PRICE	Labor/Hr @ $100
228w	W1P	WESTERN ZONE	$ 43,045	
228n	W1P	NORTHERN ZONE	$ 42,995	
228c	W1P	CENTRAL ZONE	$ 43,045	
228s	W1P	SOUTHERN ZONE	$ 43,045	
ROW	CODE	OPTION	PRICE	
	W1P 150A	SuperCrew® 4x4 Responder – 5.5' Box (W1P) (67p) Keyless Entry - 2 Remote Keys, (998) V6 Turbo engine, Led Spotlight, 18" Silver Aluminum wheels		
1	D51R	Spotlight Delete	$ (195.00)	
2	19A	Interior Upgrade Package • Floor Console without shifter Note: Maintains Column Shifter • Color-coordinated Carpet w/Carpeted Matching Floor Mats • Cloth Seats – Police-Grade, Heavy-Duty Cloth – Front and Rear	$ 594.00	
3	50M	Interior wrok surface. Req. interior upgrade package. • Positional flat work space in the console that provides comfortable support by raising, rotating or sliding orward to either the driver or passenger sides.	$ 194.00	
4	61p	Power passenger Seat 8 way	$ 294.00	
5	47p	Police Engine Idle Feature • This feature allows you to leave the engine running and prevents your vehicle from unauthorized use when outside of your vehicle. Allows the key to be removed from ignition while vehicle remains idling.	$ 259.00	
6	524.582	SYNC® 4 with Enhanced Voice Recognition • 8" LCD Capacitive Touchscreen with Swipe Capability • Ford Digital Assistant • Connected Navigation (w/Free 90-Day Trial)	$ 324.00	
7	534	Complete Trailer Tow Package (534) Usage: Towing capability up to 10,700 lbs. Availability: • Optional Includes: (53a) • 4-pin/7-pin wiring harness, Ball mount, 2" ball, pin and Clip • Auxiliary transmission oil cooler • Engine Oil Cooler • Class IV trailer hitch receiver • Pro Trailer Backup Assist (47E) • Tailgate LED • Smart Trailer Tow Connector NOTE: Ordering the Trailer Tow Package does not include Trailer Tow Mirrors. Trailer Tow Mirrors are a standalone option and must be ordered separately. (Option Code: 54Y.59S) NOTE: Ordering the Trailer Tow Package does not include Integrated Brake Controller (67T). Integrated Brake Controller (67T) is a standalone option and must be ordered separately.	$ 1,624.00	
8	67T	Integrated Trailer Brake Controller	$ 274.00	

9	53A	Trailer Tow Package – Incl. Pro Trailer Backup Assist (47E) Note: Ordering the Trailer Tow Package does not include Trailer Tow Mirrors. Trailer Tow Mirrors are a standalone option and must be ordered separately. (Option Code: 54Y.59S) Note: Ordering the Trailer Tow Package does not include Integrated Brake Controller (67T). Integrated Brake Controller (67T) is a standalone option and must be ordered separately.	$	1,324.00
10	85H	Backup Alarm System, may be dealer installed	$	144.00
11	18B	Black Platform Running Boards	$	249.00
12	91B	BLIS® – Blind Spot Monitoring System with Cross-traffic Alert	$	589.00
13	435	Power-Sliding Rear-Window Note: (Req. rear window privacy glass/rear window defroster (924/57Q)	$	349.00
14	17C	Chrome front and rear bumpers, requires 595 fog lamps	$	174.00
15	55B	BoxLink™ (includes four (4) premium locking cleats)	$	79.00
16	942	Daytime Running Lamps (DRL) Note: The non-controllable 942 Daytime Running Lamps (DRL) replace the standard Daytime Running Lamps (DRL) (On/Off Cluster Controllable)	$	44.00
17	41H	Engine Block Heater	$	89.00
18	595	Fog Lamps	$	139.00
19	168	Color-coordinated Carpet w/Carpeted Matching Floor Mats	$	144.00
20	67P	Remote Keyless-Entry Key Fob (w/o Keypad, less PATS) – (Includes 4-Key Fobs) Note: Available with Keyed Alike. However, key fobs are "not" fobbed alike when ordered with Keyed Alike	Included	
21	54r.59s.53a	Manual-folding, Power Glass Sideview Mirrors with Heat, Turn Signal, Auto-Dimming Feature (Driver's Side), High-Intensity LED Security Approach Lamps, LED Sideview mirror lights and Black Skull Caps (incl. interior auto-dimming rearview mirror) (req. Rear-Window, Fixed Privacy Glass with Defroster 924.57Q) Note: LED sideview mirror lights are not directional police spot lamps	$	1,804.00
22	54Y.59s.91B	Manual-folding, Manually Telescoping, Power Glass Trailer Tow Mirrors with Heat, Turn Signal, High-Intensity LED Security Approach Lamps, LED Sideview mirror lights and Black Skull Caps (Req. 53A Trailer Tow Pkg. and Rear-Window, Fixed Privacy Glass with Defroster 924.57Q) Note: LED sideview mirror lights are not directional police spot lamps	$	1,159.00
23	62E	Keyed Alike 1435x	$	49.00
24	62B	Keyed Alike 1284x	$	49.00
25	62D	Keyed Alike 0135x	$	49.00
26	62F	Keyed Alike 0576x	$	49.00
27	62J	Keyed Alike 1111x	$	49.00
28	62C	Keyed Alike 1294x	$	49.00
29	62G	Keyed Alike 0151x	$	49.00
30	924.57Q	Rear-Window, Fixed Privacy Glass with Defroster	$	319.00
31	63T	Tailgate Step (with Tailgate Lift Assist)	$	429.00
32	96P	Drop-in Bedliner	$	349.00

33	94R	Red / Blue LED Warning Strobes – custom accessory, pre-installed; includes two (2) LED warning lights visible on either side of stop light bar and two (2) LED lights visible between lower windshield and hood (Driver side – Red / Passenger side – Blue) Note: Not available with Amber LED Warning Strobes 94S	$ 649.00
34	94S	Amber LED Warning Strobes – custom accessory, pre-installed; includes two (2) LED Amber warning lights visible on either side of stop light bar and two (2) LED Amber lights visible between lower windshield and hood Note: Not available with Red/Blue LED Warning Strobes 94R	$ 599.00
35	94w	LED Warning Beacons by Sound Off Signal – Amber/White Strobe Color (includes center high-mounted stop light bar and (2) roof mounted beacons that provide 360 degree visibility) Note: Not available with Red/Blue LED Warning Lights (94R) Note: Rear white lights can be turned on solid to provide additional work area lighting	$ 599.00
36	90R	Stowable Loading Ramps (req. 55B BoxLinkTM; NA with Tonneau Pickup Box Cover – Hard, Soft or Retractable (96X/96T/96J) or Aluminum Crossbed Storage Toolbox by Weather Guard (90B/90P))	$ 594.00
37	96W	Spray-in Bedliner	$ 594.00
38	ADDITIONAL OPTIONS - INTERIOR		Price
39	STLIGHT	Streamlight Rechargeable Stinger Flashlight- 75712	$ 170.00
40	INV500	500 Watt Inverter: supplier TBD	$ 475.00
41	INVSW	Inverter Dash Switch	$ 75.00
42	INV1000	1000 Watt Inverter: supplier TBD	$ 770.00
43	INV1500	1500 Watt Inverter: supplier TBD	$ 799.00
44	INV2000	2000 Watt Inverter: supplier TBD	$ 885.00
45	INV3000	3000 Watt Inverter : supplier TBD	$ 1,140.00
46	DSI-12/1200N	Dimensions 1200 watt Pure Sine Wave	$ 1,794.00
47	DSI-REMOTE	Remote control for Dimensions	$ 205.00
48	SAFET	Safety Kit Incl; First Aid Kit, Triangle Kit & Fire Extinguisher (Specify monting location) B500T, PET449, 6430	$ 331.00
49	WTECH2	Weather Tech Laser Cut Floor Liners- 2 Piece	$ 195.00
50	WTECH4	Weather Tech Laser Cut Floor Liners- 4 Piece	$ 346.00
51	ADDITIONAL OPTIONS EXTERIOR		Price
52	VV	Vent Shades	$ 210.00
53	TINT 1	Window Tint On Front 2 Windows Including Windshield Strip	$ 225.00
54	TINT 2	Tint All Windows 4 Door Including Windshield Strip	$ 460.00
55	DECAL 1	Graphics- Basic Fleet Package	Call For Price
56	DECAL 2	Graphics- Customized Package With Unit numbers	Call For Price
57	Boards RC	Aries 3" Tubular Running Boards for Regular Cab F150-Black [203045]	$ 495.00
58	Boards SCC	Airies 4" Oval running baords for Extended and Crew Cab F150 [223044]	$ 585.00
59	RKE	Programmed Integrated Key Transmitter Fob	$ 365.00
60	PKE	Programmed Key with Pats Technology, Fleet Key	$ 225.00
61	2 Tone BLR	Ttwo tone for a two door truck from belt line over roof	$ 2,050.00

123	WK0514FDT15F150H	Window Bars - Setina - Window Armor - Horizontal	$	590.00
124	DP81FT21	Door Panels - Pro-gard - Door panels - F150 only	$	580.00
125	DK0598FDT	Door Panels - Setina - Door panels - F150 only	$	580.00
126	PB81FT16HD	Push Bumper - Pro-gard - Push Bumper - F150 Only	$	750.00
127	PB400	Push Bumper - Setina - Push Bumper - F150 Only	$	770.00
128	PB450	Push Bumper Lighted, Setina with 4 lights	$	1,426.00
129	GUN LOCK AND CARGO / WEAPON STORAGE			Price
130	SGRF-MNT-K	TROY PRODUCTS theft-deterrent dual weapon gun mount. Includes two (2) butt plates, two (2) lock and two (2) handcuff style locks with #2 key and push-button override switch.	$	650.00
131	G5000	Gun Lock - Pro-gard - Vertical Partition Mount Single Weapon Tri-Lock Gunrack w/HK	$	575.00
132	G7210	Gun Lock - Pro-gard - Vertical Partition Mount Dual Weapon Tri-Lock Gunrack w/HK	$	650.00
133	GK10271UHKSSCAXL	Gun Lock - Setina - Single T-Rail Mount Universal XL , Handcuff Key Override	$	575.00
134	GK10342UHKSSCAXL	Gun Lock - Setina - Dual T-Rail Mount 2 Universal XL , Handcuff Key Override	$	650.00
135	Warranty			Price
136	NFGB575	Extended Service Plan Base Care, Zero Deductible. Five Year, 75000 Mile. Call Dealer for plan specifics and optional Terms.Price Guide Aug 2022. For hybrid vehicles OEM battery warranty is 8yr. 100,000 miles	$	1,145.00
137	NFGB5100	Extended Service Plan Base Care, Zero Deductible. Five Year, 100000 Mile. Call Dealer for plan specifics and optional Terms.Price Guide Aug 2022. For hybrid vehicles OEM battery warranty is 8yr. 100,000 miles	$	1,370.00
138	NGGE575	Extended Service Plan Extra Care, Zero Deductible. Five Year, 75000 Mile. Call Dealer for plan specifics and optional Terms.Price Guide Aug 2022. For hybrid vehicles OEM battery warranty is 8yr. 100,000 miles	$	1,255.00
139	NFGE5100	Extended Service Plan Extra Care, Zero Deductible. Five Year, 100000 Mile. Call Dealer for plan specifics and optional Terms.Price Guide Aug 2022. For hybrid vehicles OEM battery warranty is 8yr. 100,000 miles	$	1,600.00
140	NFGP575	Extended Service Plan Premium Care, Zero Deductible. Five Year, 75000 Mile. Call Dealer for plan specifics and optional Terms.Price Guide Aug 2022. For hybrid vehicles OEM battery warranty is 8yr. 100,000 miles	$	1,540.00
141	NFGP5100	Extended Service Plan Premium Care, Zero Deductible. Five Year, 100000 Mile. Call Dealer for plan specifics and optional Terms.Price Guide Aug 2022. For hybrid vehicles OEM battery warranty is 8yr. 100,000 miles	$	1,920.00
142	FINAL DELIVERY			Price
143	OZN	Out of Zone purchase and Delivery. Does not include unique shipping circumstances when final product demands shipping outside the state of Florida. Note: Emmissions codes for specific region.	$	446.00
144	TTO	Tag and Title processing and handling fee. Tags are processed at the local tag office and affixed to vehicle prior to delivery. Cost includes electronic administrative fee, manual processing courier, and Fedex related expense.	$	48.00
145	TMP	30 Day Florida Temporary Tag. Requires (TTO) Tag/Title Option	$	7.00
146	TX	Transfer Tag Charge: (Florida only) Please send scan of agency registration with tag ID clearly indicated. Requires (TTO) Tag/Title Option, includes (TMP)	$	90.00

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.C
Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2023-61
Strategic Goal:	Transportation – Other		
Department :	Public Works - Engineering		
Subject:	Sole Source Procurement of Speed Tables from Traffic Logix		
Budget Impact:	Funding in the amount of $50,000 was included in the Fiscal Year 2022-2023 budget within the 308-Transportation Improvement Fund for the Neighborhood Traffic Calming Project.		
Summary:	As part of the City's traffic calming program, staff has identified a number of roadways that would benefit from the procurement and installation of speed tables. The roadways proposed for this year's project are within the program's annual budget and will effectively address residents' safety concerns on these streets. Staff requests approval to sole source purchase fifteen speed tables from TrafficLogix Corporation in the amount of $49,255.		
Recommended Action:	Staff recommends approval of the resolution for the City's purchase of speed tables through TrafficLogix Corporation.		
Staff Contact:	Alex Schumann, City Engineer, (386) 676-3302		

Approval:

Kelly McGuire, Finance Director	2/28/2023	
Claire Whitley, Assistant City Manager	3/15/2023	
Joyce Shanahan, City Manager	3/16/2023	

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Alex Schumann, City Engineer

Date: March 21, 2023

Subject: Sole Source Procurement of Speed Tables from Traffic Logix

Commission Goal: Transportation – Other

Introduction

This is a request to the Commission to approve the sole source procurement of speed tables from Traffic Logix.

Background

Traffic calming is a combination of mainly physical measures that reduces the negative effect of motorized vehicle use and improves conditions for non-motorized street users. Traffic calming measures have inherent advantages, including the reduction of speed, increased safety, reduction of cut-through traffic, and enhancement of the street environment.

In June 2020, the City Commission authorized staff to initiate a traffic calming program that addresses citizen concerns related to vehicle volumes and speeds in the City neighborhoods. The City's Traffic Calming program includes a thorough process that begins with a request from a resident. Our Engineering Department then evaluates the requests for traffic calming measures. Included in this evaluation is a traffic study, specific to the requested street, that records traffic volume and speeds on that roadway segment. Also included in this evaluation is a review of crash history and other environmental factors. The results of all evaluations are then compared and ranked, these rankings provide the list for each year's recommended streets for traffic calming. Those streets with the highest warrant are then selected for outreach to the surrounding neighbors to ensure that the request represents the consensus of those residents most affected. The selection and recommendation is then made to help achieve traffic calming goals within the City of Ormond Beach.

The streets to be provided with speed tables under this procurement include:

- South Saint Andrews Dr
- Washington St (between Tomoka & Division)

- Ormond Parkway
- Neptune Ave (between Halifax and John Anderson)
- South Perrott Dr
- Tomoka Ave (between Perrott & US1)

TrafficLogix has provided the City with speed tables since the inception of the program and the City has not had a competitive price or matching product submitted through the procurement process.

Discussion

Staff receives many traffic-calming requests. Those streets included in this group of installations are ones that have demonstrated the greatest need for traffic calming through the Engineering Department's analysis, which includes a review of traffic speed, traffic volume, history of crashes, and other environmental considerations. Staff is currently receiving and reviewing requests for next fiscal year's installation of traffic calming devices. The selected improvements will be initiated and approved though neighborhood meetings and surveys.

Staff recommends the purchase of fifteen (15) speed tables from TrafficLogix to adequately alleviate traffic calming concerns on the listed streets. The quote from TrafficLogix Corporation for the 15 speed tables is $49,255.

Budget Impact

Funding in the amount of $50,000 was included in the Fiscal Year 2022-2023 budget within the 308-Transportation Improvement Fund for the Neighborhood Traffic Calming Project.

Citizen Impact

The procurement and installation of these speed tables will make city streets safer for motorists and pedestrians alike.

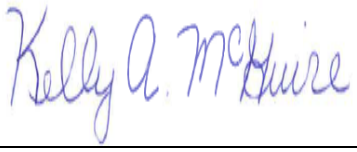
Recommendation

Staff recommends approval of the resolution for the City's purchase of speed tables through TrafficLogix Corporation.

Attachments:

1. 23-61 Speed Table purch-TrafficLogix (P23-0015G)
2. Traffic Logix Speed Tables
3. Speed Humps (15) MUTCD
4. Sole Source Justification

Approvals:



Kelly McGuire, Finance Director

Date: February 28, 2023



Claire Whitley, Assistant City Manager

Date: March 15, 2023



Joyce Shanahan, City Manager

Date: March 16, 2023

RESOLUTION NO. 2023-61

A RESOLUTION AUTHORIZING THE SOLE SOURCE PROCUREMENT OF TRAFFIC CALMING SPEED TABLES FROM TRAFFICLOGIX CORP.; AUTHORIZING THE APPROVAL AND EXECUTION OF A PURCHASE AUTHORIZATION AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, in 2020 the city initiated a traffic calming program in neighborhoods where speed is an ongoing concern, and

WHEREAS, the city desires to purchase fifteen (15) additional traffic calming tables at a cost of $49,255.00 from TrafficLogix Corp. so that they are compatible with the previously purchased equipment making this a sole source procurement pursuant to Section 2-300(g) of the *Code of Ordinances*, and

WHEREAS, the City Manager has certified that the money to purchase the equipment is appropriated in the Transportation Improvement Fund (308), now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The Mayor and City Manager are hereby authorized and directed to approve and execute a Purchase Authorization for the sole source procurement of fifteen (15) traffic calming tables from TrafficLogix Corp. at a cost of $49,255.00 and to pay the cost thereof from the Transportation Improvement Fund.

SECTION TWO. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____

BILL PARTINGTON
Mayor

ATTEST:

_____

SUSAN CARROLL DAUDERIS
City Clerk

PURCHASE AUTHORIZATION
CITY OF ORMOND BEACH
Purchase Requisition Nbr: 2300449
Vendor: Traffic Logix Corporation
Resolution No. 2023-61

Requisition By: Schumann
Reason: Sole Source Procurement of traffic calming speed tables
Date: March 21, 2023
Purchase of: Traffic Logix speed tables and associated installation items
Funding through Fund 308 – Transportation Improvement Fund

PAY ITEM NUMBER	DESCRIPTION	UNIT	QNT	UNIT PRICE	**AMOUNT**
1	10.5Lx18Wx3" speed table w/ MUTCDarrows	EA	15	$2,943.00	**$44,145.00**
2	400mL 1:1 Dispenser - Adhesive Applicator Gun	EA	2	$65.00	**$130.00**
3	SDS-Plus Shank RotaryHammer Drill Bit.9/16"Bit, 16 Drilling Depth, 18-3/4" Overall Length.	EA	2	$65.00	**$130.00**
4	Freight	EA	1	$4,850.00	**$4,850.00**
				Total:	**$49,255.00**

SIGNED BY (CITY):

_____
MAYOR

_____
CITY MANAGER

DATED: _____

SIGNED BY (VENDOR):

_____
PRINCIPAL OF COMPANY

_____
WITNESS

DATED: _____

City of Ormond Beach

TERMS AND CONDITIONS - READ CAREFULLY

GENERAL CONDITIONS:
Acceptance of an order includes all terms, quantities, prices, delivery instructions, specifications and conditions stated in the order. The terms and conditions of an order are not to be changed or modified by any verbal understanding. Any such changes must be made by written agreement. The quantity of materials ordered and the prices specified must not be exceeded without written authority being first obtained from the City. Failure of an awarded Vendor to deliver goods and/or services as specified in the order, or failure to comply with any of the terms and conditions therein, may disqualify Vendor from receiving future orders. In case of default by the Vendor, the City may procure the goods and/or services covered by the order from other sources and hold the Vendor responsible for any additional cost occasioned thereby. Purchases of $500 or more require a signed Purchase Order. Invoices must show the Purchase Order number. The City endeavors to make payments within thirty (30) days of receipt of invoice in accordance with the Florida Prompt Payment Act, Florida Statutes, Chapter 218, Part VII.

QUALITY:
All goods and/or services furnished by an order must be as specified and subject to the City's inspection within a reasonable time after delivery at destination. Variations in goods and/or services from those specified in an order must not be made without written authority from the City. Items rejected by the City will be returned at the Vendor's risk and expense. Unless otherwise stated herein, all materials and equipment furnished by the Vendor shall be new and shall not have been in service at any other installation.

PACKING & DELIVERY:
Packages must be plainly marked with shipper's name and order number. Charges are not allowed for boxing or crating unless previously agreed upon in writing. All goods must be shipped F.O.B. Destination. The City will pay no freight or expense charges, except by previous agreement. The delivery must be effected within the time stated in the order. The City reserves the right to cancel this order and purchase elsewhere if the Vendor fails to meet the delivery date specified on Purchase Order. Deliveries shall be made between 8:00 a.m. and 5:00 p.m. on regular working days unless otherwise stated. Transport deliveries must be unloaded and ready for inspection prior to 3:00 p.m. The items will be promptly inspected for damage and defects and conformance with the specifications. Any material or equipment not meeting the specifications, or that has been damaged or injured in the process of transportation, unloading or handling will be rejected and shall be immediately returned to the Vendor at the Vendor's expense.

COMPLIANCE TO LAWS, GUIDELINES, REGULATIONS ,ETC.:
The Vendor must comply with all applicable state, federal, and local laws, guidelines and regulations. This includes, but is not limited to, DOT, OSHA, EPA, DEP and the City's Registration and Insurance requirements when applicable. Also, where applicable, the Vendor agrees to furnish the City with a current Material Safety Data Sheet (MSDS) on or before delivery of each and every hazardous chemical or substance purchased which is classified as toxic under Chapter 422, Florida Statutes. Appropriate labels and MSDS's shall be provided for all shipments. Send MSDS's and other pertinent data to the City at the "Ship to" address.

PUBLIC ENTITY CRIMES: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid on a contract to provide any goods or services to a public entity, may not submit a Bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit Bids on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

DISCRIMINATION: Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid or proposal on a contract to provide any goods or services to a public entity, may not submit a bid or proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit bid or proposal on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

TAXES: The City of Ormond Beach is exempt from Federal Excise Taxes and all sales taxes.

MEETS SPECIFICATIONS: Unless otherwise specified, all equipment and accessories furnished under these specifications shall be new, the latest model in current production, and shall be of good quality, workmanship and material. The Vendor represents that all equipment offered under this specification shall meet or exceed the minimum requirements specified. Delivery specifications shall be strictly adhered to.

SILENCE OF SPECIFICATIONS: The apparent silence of any specification and any supplemental specifications as to any details or the omission from same of any detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and that only materials of first quality and correct type, size, and design are to be used. All workmanship is to be first quality. All interpretations of the specifications shall be made upon the basis of this statement.

ASSIGNMENT: Any purchase order or contract issued pursuant to a Request for Quotations and the monies which may become due thereunder are not assignable except with the prior written approval of the City Manager or City Commissioner, whichever authorized the purchase.

LIABILITY: The Vendor shall hold and save the City of Ormond Beach, its officers, agents, and employees harmless against claims by third parties resulting from the vendor's or supplier's breach of contract or negligence, including all attorney's fees and costs, and shall pay any and all damages, fees, and costs assessed on behalf of the CITY. The CITY expressly reserves all rights, privileges and benefits of sovereign immunity.

PATENTS AND ROYALTIES: The Vendor, without exception, shall indemnify and save harmless the City of Ormond Beach and its employees from liability of any kind, including cost and expenses for or on account of any copyrighted, patented, or unpatented invention, process, or article manufactured or used in the performance of the contract, including its use by the City of Ormond Beach. If the Vendor uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the quotation prices shall include all royalties or cost arising from the use of such design, device, or materials in any way involved in the work.

ACCEPTANCE: Items may be tested for compliance with specifications. Items delivered not conforming to specifications may be rejected and returned at Vendor's expense.

SAFETY WARRANTY: The selling dealer, distributor, supplier, and manufacturer shall be responsible for compliance with all Federal, State and local laws, rules and regulations concerning the equipment and/or service specified and the use thereof, applicable and effective on the date of manufacture including safety and environmental standards as apply to both private industry and governmental agencies.

WARRANTY: The Vendor agrees that, unless otherwise specified, the supplies and/or services furnished under the Request for Quotations shall be covered by the most favorable commercial warranty for comparable quantities of such supplies and/or services, and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the City of Ormond Beach by other provision of the Request for Quotations.

Traffic Logix Corporation
3 Harriett Lane
Spring Valley, NY 10977 USA
Tel: (866) 915-6449
Fax: (844) 405-6449
www.trafficlogix.com

Quote Number QUO-22283-S2Z3K6
Created Date 2/10/2023
Expiration Date 3/31/2023
Prepared by Sean Coupland

QUOTATION

Contact: Cole Buck
Phone: (386) 676-3296
Email: Cole.Buck@OrmondBeach.Org

City of Ormond Beach FL
22 S. Beach Street
Ormond Beach, Florida 32174
USA

Shipping Address:
501 N Orchard Street
Ormond Beach, Florida 32174
United States

Standard Features (Included)

- Prices Shown include - Required Adhesive, Bolts and Anchors (Specified as 7")
- Color and Markings as Indicated MUTCD Arrows

Special Notes

Speed Humps (15) 10.5 X 18 X 3 MUTCD. All hardware included.

Quote Line Items – All Prices shown are in $ US Dollar

Product	Product Code	Quantity	Sales Price	Total Price
10.5Lx18Wx3" speed table w/ MUTCDarrows	SH10518A	15.00000	$2,943.00	$44,145.00
400mL 1:1 Dispenser - Adhesive Applicator Gun	PU-APGUN	2.00000	$65.00	$130.00
SDS-Plus Shank Rotary-Hammer Drill Bit.9/16"Bit, 16 Drilling Depth, 18-3/4" Overall Length.	23596	2.00000	$65.00	$130.00

Totals

Subtotal:	$44,405.00
Freight:	$4,850.00
Grand Total:	**$49,255.00**

Traffic Logix Corporation
3 Harriett Lane
Spring Valley, NY 10977 USA
Tel: (866) 915-6449
Fax: (844) 405-6449
www.trafficlogix.com

Quote Number QUO-22283-S2Z3K6
Created Date 2/10/2023
Expiration Date 3/31/2023
Prepared by Sean Coupland

Terms: 1% - 10 days – Net 30

Payment: MC, VISA, AMEX. Credit card payments over $10K will include an additional 2% fee.

Tax: IF TAX EXEMPT, Please Provide Tax Exempt Certificate with Order

Freight: Freight quotation is valid for a period of 21 days after it is issued. Beyond that, freight quotations will require confirmation or adjustment.

Changes/Returns: 30% for standard orders and 50% on custom orders.

Delivery Requirements

Please Indicate the availability of the following as this determines the freight costs:

1. Do You have a Loading Dock? - Yes/No
2. Do you have a Forklift and Pallet Jack to unload? - Yes/No
3. Can access be gained by a 53-foot truck for delivery? - Yes/No
4. Is the delivery address a Construction site? - Yes/No
5. Is the delivery address a Military site? - Yes/No
6. If shipping to Military site, is a U.S. Driver required? - Yes/No

Quote Acceptance Information

Signature _____

Name _____

Title _____

Date _____

Thank you for choosing Traffic Logix. Please sign and return to:

scoupland@trafficlogix.com
Sean Coupland
Senior Manager Sales

Please complete to set up new account: https://trafficlogix.com/business-application-form/

City of Ormond Beach

SOLE SOURCE JUSTIFICATION FORM

Requisition No.: _____ Date: 1/20/2023

Vendor: Traffic Logix Cost: $ 46,462.00

Requested by: Cole Buck Department: Engineering

Per City Ordinance Sec. 2-300(g)- A contract may be made without competition when the department head or division manager certifies to the purchasing agent or the finance director's designee in writing that after conducting a good faith review of available sources, that there is only one (1) source for the required item(s) or service(s). The purchasing agent or the finance director's designee shall conduct negotiations as appropriate as to price, delivery and terms. A record of sole procurements shall be maintained as a public record.

Describe the product or service being requested in detail:
Traffic Logix Eighteen-foot (18') by ten and a half foot (10.5') by three-inch (3") speed humps. The quote includes MUTCD arrows, freight cost, and installation hardware.

Explain why the requested product or service is the only one that can satisfy your requirements (attach additional sheets, if necessary):
Staff was unable to find any comparable products/suppliers for additional quotes.

Explain why this vendor is the only practicably available source for this purchase, and identify what steps were taken to find other sources (attach additional sheets, if necessary):
This vendor has been utilized by the City in previous projects, so their product is tested and verified to be effective. They custom size their speed humps/tables to staff's specifications. Through a thorough search for different quotes and products online, we could not find any additional products that meet our specifications.

STATEMENT OF NEED:
My department's recommendation for sole source is based upon an objective review of the product/service required and is in the best interest of the City of Ormond Beach. I know of no conflict of interest on my part or any other individual's part, nor do I have any personal involvement in any way with the supplier(s) involved. No gratuities, favors or compromising action have taken place. Neither has my personal familiarity with particular brands, types of equipment, materials or firms been a deciding influence on my request to sole source this purchase when there are other known suppliers to exist.

_____
Signature (Dept. Director or Division Manager)

Deputy City Engineer
Title

Under Florida Statute 838.22(2) It is unlawful for a public servant, with corrupt intent, to obtain a benefit for any person or to cause unlawful harm to another, to circumvent a competitive bidding process required by law or rule by using a sole-source contract for commodities or services. (3) It is unlawful for any person to knowingly agree, conspire, combine, or confederate, directly or indirectly, with a public servant to violate subsection (1) or subsection (2). (4) It is unlawful for any person to knowingly enter into a contract for commodities or services which was secured by a public servant acting in violation of subsection (1) or subsection (2). **(5) Any person who violates this section commits a felony of the second degree, punishable as provided in s. 775.082, s. 775.083, or s. 775.084.**

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.D
Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2023-62
Strategic Goal:	Water Quality & Environment – Other		
Department :	Public Works - Engineering		
Subject:	Water Reclamation Facility UV Disinfection Conversion Process Design		
Budget Impact:	These design services are included in the budget within Fund 435-Wastewater Impact Fee Fund in the amount of $272,800. Construction costs, which are not included in this item, are estimated to be $3,000,000. Grant funding for design and construction of this project through the FDEP provides for a 50% match of funds, up to $1,500,000.		
Summary:	This is a request to award a work authorization to Mead & Hunt, for design services related to the conversion of the disinfection at the City's Water Reclamation Facility to ultraviolet disinfection.		
Recommended Action:	Staff recommends award of the work authorization for engineering services to Mead & Hunt, Inc. for the not-to-exceed amount of $272,800.		
Staff Contact:	Shawn Finley, Public Works Director, (386) 676-3292		

Approval:

Kelly McGuire, Finance Director	3/8/2023	Kelly A. McGuire
Claire Whitley, Assistant City Manager	3/14/2023	
Joyce Shanahan, City Manager	3/14/2023	Joyce Shanahan

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Shawn Finley, Public Works Director

Date: March 21, 2023

Subject: Water Reclamation Facility UV Disinfection Conversion Process Design

Commission Goal: Water Quality & Environment – Other

Introduction

Request to award a work authorization to Mead & Hunt, Inc. (Mead & Hunt), for design services related to the conversion of the disinfection at the City's Water Reclamation Facility (WRF) to ultraviolet (UV) disinfection.

Background

The advanced wastewater treatment process at the City's WRF utilizes sodium hypochlorite to provide disinfection within the chlorine contact chambers. The use of chlorine requires constant monitoring to ensure disinfection and minimization of disinfection byproducts. Recent volatility in the chemical market had a dramatic effect on the operating cost of the system. City staff explored the use of alternate methods for disinfection of the wastewater and are proposing the conversion of the chlorine contact chambers to UV treatment through the installation of an UV light treatment system.

The proposed conversion of the WRF from chlorine to an UV light treatment system was included in the State of Florida's Fiscal Year 2022-2023 budget for funding through the Florida Department of Environmental Protection (FDEP). The grant provides for a 50% match of funds to complete the design and construction, up to $1,500,000.

Discussion

Staff developed a scope of work and negotiated a proposal from Mead & Hunt for design of the project. Mead & Hunt pre-qualified, in the category of wastewater treatment, through the RFP process when the city selected professional service providers for its continuing contracts, as provided by Fla. Stat. Sec. 287.055(2)(g). Mead & Hunt's extensive experience with the city's wastewater treatment plant allows them to provide a well suited economic design proposal for the facility.

Along with the scope of work to include design, permitting and bidding services, staff negotiated a professional services fee of $272,800 for design of the project. Construction costs are estimated to be $3,000,000.

Budget Impact

These design services are included in the budget within Fund 435-Wastewater Impact Fee Fund in the amount of $272,800. Construction costs, which are not included in this item, are estimated to be $3,000,000. Grant funding for design and construction of this project through the FDEP provides for a 50% match of funds, up to $1,500,000.

Citizen Impact

Disinfection of treated effluent is a critical element in the production of reclaimed water. UV systems provide reliable disinfection of waste effluent and significantly reduce the use of chemicals before the water is distributed as reclaimed water to city customers.

Recommendation

Staff recommends award of the work authorization for engineering services to Mead & Hunt, Inc. for the not-to-exceed amount of $272,800.

Attachments:

1. 23-62 WRF UV Disinvection conversion - Mead & Hunt (P23-0046G)
2. Mead Hunt Work Authorization

Approvals:

Kelly A. McGuire

Date: March 08, 2023

Kelly McGuire, Finance Director

Date: March 14, 2023

Claire Whitley, Assistant City Manager

Joyce Shanahan

Date: March 14, 2023

Joyce Shanahan, City Manager

RESOLUTION NO. 2023-62

A RESOLUTION ACCEPTING A PROPOSAL FROM MEAD & HUNT, INC. TO PROVIDE ENGINEERING DESIGN SERVICES REGARDING THE WATER RECLAMATION FACILITY ULTRAVIOLET DISINFECTION CONVERSION PROJECT; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION THERETO; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City solicited a proposal from Mead & Hunt, Inc., an engineering firm under continuing contract with the City, to provide engineering design services regarding the water reclamation facility ultraviolet disinfection conversion project ("the Project") in accordance with the provisions of Section 2-300(c) of the *Code of Ordinances*, and

WHEREAS, the appropriate City staff have reviewed the proposal received and determined that the proposal submitted by Mead & Hunt, Inc. to provide engineering design services for the aforedescribed project at a cost not to exceed $272,800.00 is in the best overall interest of the City, and recommends that the said proposal (a copy being attached to the Work Authorization which is attached hereto and incorporated herein by reference) be accepted, and

WHEREAS, the City Commission concurs in the said determination and recommendation, and

WHEREAS, the City Manager has certified that the money for the payment of the Project has been deposited to the credit of the Wastewater Impact Fee Fund (435) and has not been appropriated for any other purpose, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The proposal submitted by Mead & Hunt, Inc. to provide engineering design services regarding the water reclamation facility ultraviolet disinfection project at a cost not to exceed $272,800.00 is hereby accepted.

SECTION TWO. The Mayor and the City Manager are hereby authorized and directed to execute a Work Authorization between the City and Mead & Hunt, Inc. to provide engineering design services for the Project at the said price, and to pay the cost therefor from the Wastewater Impact Fee Fund.

SECTION THREE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

WORK AUTHORIZATION

In accordance with and incorporating the terms of the Continuing Contract dated March 20, 2017 between the City of Ormond Beach, Florida, and Mead & Hunt, Inc., the following Scope of Work and Schedule of Payments are agreed to by the parties to the Agreement:

Project Title: WRF Ultraviolet Disinfection Conversion

Project Description: Professional engineering services for design of the modification and conversion of the existing chlorine disinfection system to an Ultraviolet disinfection system. The design includes plans for demolition of existing structures, structural modifications, electrical, and instrumentation system design, as detailed in the attached proposal and fee schedule.

Estimated Project Construction Cost: $3,000,000

Schedule of Payments and Fee Basis

Required Work Task	Fee Basis	Fee
Project Management	Fixed Fee	$13,600.00
Preliminary Design	Fixed Fee	$26,500.00
Design	Fixed Fee	$200,000.00
Permitting	Fixed Fee	$14,600.00
Bidding Services	Fixed Fee	$12,600.00
Grant Administration	Fixed Fee	$4,000.00
Reimbursable Expenses	Actual Cost	$1,500.00
Total Fee Authorized:	**Not To Exceed**	**$272,800.00**

Funding Source: Wastewater Impact Fee Fund (435)

Estimated Time for Completion: 300 Days From Authorization to Proceed

CITY OF ORMOND BEACH

By: _____
Bill Partington
Mayor

Date: _____

By: _____
Joyce A. Shanahan
City Manager

Date: _____

MEAD & HUNT, INC.

By: _____
Brad T. Blais, P.E.
Vice President

Date: _____

I. COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract transfer, at no cost to the City, all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174 (386) 676-3331
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

II. VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Section 448.09, *Florida Statutes*, makes it unlawful for any person to knowingly employ, hire, recruit, or refer, either for herself or himself, or on behalf of another, for private or public employment within the state, an alien who is not duly authorized to work in the United States. Contractor warrants that it is registered with the U.S. Department of Homeland Security's E-Verify system, and is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.
2. Contractor agrees that if the contractor enters into an agreement with a subcontractor, the subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and contractor warrants it shall maintain any such affidavits for the duration of the contract. If the City has a good faith belief that a subcontractor knowingly violated Section 448.09 (1), the City shall promptly notify the contractor and order the contractor to immediately terminate the contract with the subcontractor.
3. In the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and as provided by statute, the contractor may not be awarded a public contract for at least one (1) year after the date of termination. The contractor may also be held liable for any additional costs incurred by the City as a result of the termination of the contract.

February 17, 2023

Shawn Finley
Public Works Director
City of Ormond Beach
501 N. Orchard Street
Ormond Beach, FL 32174

Email: Shawn.Finley@ormondbeach.org
Hard Copy Mailed Only on Request

SUBJECT: City of Ormond Beach
WRF UV Conversion
Scope of Services and Fee Estimate

Dear Shawn,

We are pleased to offer the enclosed scope of services and fee estimate for design and bidding assistance for the above referenced project. The project involves design and bidding or CMAR assistance for construction of a new U/V disinfection system at the City's water reclamation facility. The project is a major upgrade and process change wherein the existing chlorine disinfection process will be modified and converted to an Ultraviolet (U/V) disinfection system. This design effort includes demolition of existing structures, structural modifications to the existing chlorine contact chamber, maintenance of process and operations (MOPO), electrical and instrumentation system design.

Thank you for this opportunity to continue to be of service. If you have any questions or require additional information, please contact me.

Sincerely,
MEAD & HUNT, Inc.

Brad T. Blais, P.E.
Client Manager

Anant Sriram. P.E.
Project Manager

BTB/AS/mdg

Attachments: Scope of Services and Fee Estimate

CITY OF ORMOND BEACH
SCOPE OF SERVICES
FOR
WRF UV CONVERSION

This Task Order is in conformance with the Continuing Contract for Municipal Utility Services, RFQ 2017-01 dated March 20, 2017, between the City of Ormond Beach (CITY) and Mead & Hunt, Inc. (MEAD & HUNT) and is referred to herein as the Contract.

GENERAL

The project involves the conversion of existing chlorine disinfection system to UV (Ultraviolet) disinfection system at the CITY's Advanced Wastewater Treatment Facility (AWTF). The proposed UV system will be installed within the same footprint of the existing Chlorine Contact Chamber (CCC). It is anticipated that major structural and electrical upgrades will be required to facilitate this conversion. This project includes modification of channels and divider walls to maintain flow while constructing the new improvements, electrical distribution system upgrades, U/V arrays for an 8 MGD design flow (16 MGD peak), new I&C processes, sampling equipment, and the decommissioning and removal of the existing chemical feed building and associated equipment once construction of the proposed UV system is completed.

SCOPE OF SERVICES

After receipt of authorization to proceed, MEAD & HUNT will provide the following services:

PHASE 1 – PROJECT MANAGEMENT

Project Coordination and Invoicing

MEAD & HUNT'S Project Manager (PM) will initiate the project and manage the budget and schedule, manage project staffing, and schedule quality management processes for work products. It is assumed that these services will cover the estimated 10-month project design.

Project Kick-Off Meeting

MEAD & HUNT will conduct a project kick-off meeting with the project team and CITY staff to review project goals, scope of work, project schedule and administrative issues. Following the meeting, MEAD & HUNT will prepare a written summary of the project meeting and distribute to the attendees.

Deliverables – Project Management

- Kick-Off Meeting Agenda and Summary

PHASE 2 – PRELIMINARY DESIGN

Preliminary Design Report

MEAD & HUNT will prepare a draft Preliminary Design Report (PDR) evaluating design alternatives and budget level pricing. The preliminary design concepts detailed in the PDR will be viable options for a comparison of alternatives. The PDR will include an initial engineer's opinion of probable construction cost (EOPCC) and confirmation of project permitting requirements. The PDR will include sections addressing CITY comments as provided in Exhibit 1.

UV Transmittance (UVT) samples will be taken from the filter effluent for determining the basis of design UVT for the UV disinfection system. Samples will either be analyzed by a UV system manufacturer or an external laboratory.

A draft PDR will be submitted to the CITY for review and comment. It is assumed the CITY will conduct their review in a two-week period and a meeting will be held at the end of the CITY's review.

MEAD & HUNT will schedule and attend a draft PDR review meeting to review the CITY's comments on the draft PDR. Comments received will be incorporated into the final PDR and subsequent design documents.

Deliverables – Preliminary Design

- Draft Preliminary Design Report
- Preliminary Design Review Meeting Summary
- Final Preliminary Design Report

PHASE 3 – PROJECT DESIGN

Task 1 – 60% Design Development

MEAD & HUNT will develop 60% drawings and specifications that reflect the proposed improvements detailed in the final PDR. The CITY standard front-end contract documents will be used and coordinated with MEAD & HUNT's technical Six Digit specifications. MEAD & HUNT will provide a 60% engineer's opinion of probable construction cost (EOPCC). The 60% design will address CITY comments as provided in Exhibit 1.

The 60% submittal package will be submitted to the CITY for review and comment. The submittal will include the items shown in the deliverable section below. It is assumed the CITY will conduct their review in a two-week period, and a meeting will be held at the end of the CITY's review.

MEAD & HUNT will schedule and attend a 60% design review meeting to review the CITY's comments on the design drawings and specifications. Comments received will be incorporated into the 90% design documents.

Deliverables – 60% Design

- 60% Design Drawings
- 60% Specifications
- 60% EOPCC

Task 2 – 90% Design Development

Based on the CITY's 60% review comments and discussions at the 60% review meeting, MEAD & HUNT will advance the 60% design drawings to 90% completion. MEAD & HUNT will advance the 60% technical specifications to the 90% level for construction of the new components and facilities. MEAD & HUNT's 60% EOPCC will be updated for the 90% submittal.

The 90% submittal package will be prepared and submitted to the CITY and permitting agencies for review and comment. The submittal will include the items shown in the deliverable section below. It is assumed the CITY will conduct their review in a two-week period, and a meeting will be held at the end of the CITY's review.

MEAD & HUNT will schedule and attend a 90% design review meeting to review the CITY's comments on the design drawings and specifications. Comments received will be incorporated into the 100% design documents.

Deliverables – 90% Design

- 90% Design Drawings
- 90% Specifications
- 90% EOPCC

Task 3 – 100% Design Development

Based on the CITY's 90% review comments and discussions at the 90% review meeting, MEAD & HUNT will advance the 90% design drawings to 100% completion. MEAD & HUNT will advance the 90% technical specifications to the 100% level for construction. MEAD & HUNT's 90% EOPCC will be updated for the 100% submittal.

The 100% submittal package will be submitted to the CITY for review and comment. The submittal will include the items shown in the deliverable section below.

Deliverables – 100% Design

- 100% Design Drawings
- 100% Specifications
- 100% EOPCC

PHASE 4 – PERMITTING

FDEP – Minor Modification Permit

MEAD & HUNT will prepare and submit the permit application in accordance with the specific permit Requirements. Permit applications will be submitted after the 90% design has been reviewed and accepted by the CITY. The CITY/ will receive one (1) electronic copy of final applications and permits. Permit fees will be paid by the CITY.

MEAD & HUNT will respond to up to one (1) Request for Additional Information (RAI) as part of the permit application process. Follow up phone calls or meetings with the regulators to assist with the responses are included in the task. Responses will be limited to clarifications related to the submittals in accordance with the documented permit requirements or those identified in the pre-application meeting. MEAD & HUNT will respond to RAIs in a timely manner to minimize any potential schedule impacts.

Deliverables – Permitting

- FDEP – Minor Modification Permit

PHASE 5 – BIDDING OR CONSTRUCTION MANAGER AT RISK (CMAR) SUPPORT SERVICES

MEAD & HUNT will provide bidding assistance or CMAR support services, based upon the City's preferred delivery methodology. It is estimated that both processes will require approximately a similar level of engineering effort; however, the CMAR process will require more meetings than the bidding process. We are familiar with both delivery processes and will provide necessary support to facilitate competitive bids via a traditional design-bid-build or alternative CMAR process.

PHASE 6 – Grant Administration

MEAD & HUNT will assist CITY in preparation of grant execution agreement with FDEP and any compliance with the grant terms and conditions.

SERVICES DURING CONSTRUCTION

Not included at this time.

PHASE 7 – SUBCONSULTANTS AND REIMBURSABLES

Items under this phase include out-of-pocket direct job expenses such as reproductions, postage, etc. Items included in this phase will be billed at actual cost plus 15%.

EXCLUSIONS

This scope of services excludes all items not specifically described herein.

SCHEDULE

Mead & Hunt estimates the work included in this task order will be completed in accordance with the following schedule:

Phase/Task	Duration to Complete	Starting upon
Phase 1 – Project Management	*300 days*	*Receipt of Notice to Proceed*
Phase 2 – Preliminary Design	*60 days*	*Kickoff Meeting*
Phase 3 – Project Design	*180 days*	*Client approval of PDR*
Phase 4 – Permitting	*60 days*	*Client approval of 90% Design*
Phase 5 – Bidding Services	*60 days*	*Client approval of Bid Documents*
Phase 6 – Grant Administration	*120 days*	*Client approval of 90% Design*

The above timeframes *do not* include Client and agency review time.

COMPENSATION

The not-to-exceed cost for this Scope of Services is $272,800.

The above fee is based on the following breakdown:

Phase/Task	Fee/Cost	Basis
Phase 1 – Project Management	*$13,600*	*Lump Sum*
Phase 2 – Preliminary Design	*$26,500*	*Lump Sum*
Phase 3 – Project Design		
Task – 60% Design	*$92,300*	*Lump Sum*
Task – 90% Design	*$61,100*	*Lump Sum*
Task – 100% Design	*$46,700*	*Lump Sum*
Phase 4 – Permitting	*$14,600*	*Lump Sum*
Phase 5 – Bidding Services	*$12,600*	*Lump Sum*
Phase 6 – Grant Administration	*$4,000*	
Subtotal	*$271,300*	
Phase 6 – Subconsultants/Reimbursables	*$1,500*	*Time & Expenses*
TOTAL	***$272,800***	

AUTHORIZATION:

The scope of services and compensation stated in this proposal are valid for a period of thirty (30) days from date of submission. If authorization to proceed is not received during this period, this proposal may be withdrawn or modified by MEAD & HUNT.

PURSUANT TO FLORIDA STATUTE SECTION 558.0035, AN INDIVIDUAL EMPLOYEE OR AGENT OF MEAD & HUNT INC. MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.

IF THE CONTRACTOR (MEAD & HUNT, INC.) HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S (MEAD & HUNT, INC.'s) DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT (PROPOSAL), CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT CITY HALL, CITY OF ORMOND BEACH, 22 S. BEACH STREET, ORMOND BEACH, FL 32174, City Clerk, Colby J. Cilento, (386) 676-3225, colby.cilento@ormondbeach.org.

EXHIBIT 1
CITY REQUESTED COMMENTS TO BE INCLUDED/ADDRESSED IN PROJECT SCOPE

1. Phase 2 - Preliminary Design Report:

1.1. Identification of Concrete channel lining material between UV units per FDEP guidelines
1.2. Potential UV Reactor Train(s) Configuration layouts
1.3. Contingency plans advising how the City should respond in the event of:
  1.3.1. Lamp Breakage
  1.3.2. Low-Low Operation UV does, high-high turbidity
  1.3.3. Failure of the upstream treatment processes or the UV systems
  1.3.4. Power Supply interruptions
  1.3.5. Total UV Disinfection system failure

1.4. Power Supply Reliability Upgrade Requirements to satisfy “A looped power-distribution system” per FDEP Requirements
  1.4.1. Includes reviewing the City’s existing MCC’s capacity to handle the additional load from UV
  1.4.2. City currently believes a new distribution panel tied back to the main Plant’s switchgear will be needed
  1.4.3. Includes evaluating if a secondary feed and new transformer from FPL will be required
  1.4.4. Includes advising of any modifications needed to the main Plant’s switchgear
  1.4.5. Includes confirmation that the existing WRF’s generator is sized to handle the added load of the UV system
1.5. UV Verification Probe with Grab Samples as required by FDEP
  1.5.1. Includes identifying a location of where a Permit required reference probe should be installed.
  1.5.2. Includes advising the City’s if their existing PACE lab testing agreement should be modified
1.6. Operator Certification Requirements and Needed Training for the proposed UV system
1.7. Peak Factor Loading Requirements
  1.7.1.10 State Standards WW-2014 edition will be utilized and/or other applicable references
1.8. Required Testing Parameters
  1.8.1. FDEP recommends testing for iron, calcium, aluminum, manganese, and magnesium concentrations. Please advise in the scope who will be responsible for gathering the samples and who will be paying for the testing.

1.9. Hydraulic Testing
  1.9.1. Per FDEP, Equipment Validation Testing results from the vendor(s) needs to include the following:
    1.9.1.1. Approach length to first reactor
    1.9.1.2. Downstream length following the last reactor
    1.9.1.3. Spacing between reactors
    1.9.1.4. Presence and Operation of any cleaning devices
1.10. Advise of recommended Storage Area(s) and overall storage conditions for the UV bulbs.
1.11. Future filtration Impacts on UV
  1.11.1. City is currently looking at upgrading to Diamond Filters in the future. Report should mention if changing/upgrading the existing filter units will impact any proposed UV system
1.12. UV Performance Guarantee Specification
  1.12.1. Include a reference specification guarantee in the PDR for City reference/review purposes.
  1.12.2. Include any validation testing reports from the selected manufacturer(s) in the Appendix of the PDR
1.13. SCADA / Applicable Alarms per FDEP requirements should be documented in the PDR
1.14. Appendix Section
  1.14.1. Reference O&M manuals of selected manufacturer(s) if possible
  1.14.2. Reference Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse – Third Edition
  1.14.3. Reference the Alternative Treatment Technology Report for Recycled Water – September 2015 edition

2. Phase 3: Project Design

2.1. Necessary design elements from the PDR to be incorporated into the design
2.2. Structural modifications to the Chlorine Contact Tank
  2.2.1. Concrete walkway modifications for construction and maintenance/access of the UV equipment and channel “lining” material needed per Permit requirements
2.3. Mechanical modifications to the Chlorine Contact Tank (weirs, gates, channels, the existing mesh light-blocking covers, etc.)
2.4. Electrical modifications in/on the Chlorine Contact Tank to support the UV system
2.5. Electrical modifications to plant’s main Switchgear & new MCC (assumed needed)
2.6. SCADA System Upgrade Needs in order to monitor the alarms required by FDEP

2.7. Demo of the existing chlorine feed building/structure and the existing chemical skids/piping items in the existing region
2.8. Any Contingency Plan Needs as Outlined by the PDR
2.9. Any required Chlorine Contact Tank Bypass needs for Construction efforts
2.10. Any required Temporary Power needs for Construction efforts
2.11. Includes all coordination meetings (with FPL, Schneider etc.), as required to address power feeds/transformers and modifying the existing Plant's Main Switchgear (if required)

Mead & Hunt

CITY OF ORMOND BEACH
OB WRF UV CONVERSION
CITY OF ORMOND BEACH
ESTIMATED MANHOUR SCHEDULE
February 17, 2023

		Brad	Anant	Keff	Matt G.	Richard P.	Doris	Sheryl	Bill B.		
Phase	**Description**	**Senior Associate, Principal**	**Project Engineer**	**Project Engineer**	**Engineer II**	**Technician III**	**Administrative Assistant**	**Senior Economist**	**Senior Engineer**	**Mileage**	**Total Task ($)**
	Hourly Rate	$ 220.00	$ 186.00	$ 186.00	$ 155.00	$ 140.00	$ 101.00	$ 167.00	$ 175.00		
1	**Project Management**										
	Project Coordination		35				35				$ 10,045.00
	Internal Kick-Off Meeting	2	2	2	2				2		$ 1,844.00
	External Kick-Off Meeting	2	2		6						$ 1,742.00
	Subtotals	**4.0**	**39.0**	**2.0**	**8.0**	**0.0**	**35.0**	**0.0**	**2.0**		**$ 13,600.00**
2	**Preliminary Design**										
	Draft Preliminary Design Report	2	16	10	70	16	6				$ 18,972.00
	QA/QC Preliminary Design Report	3		2	5						$ 1,807.00
	Draft Preliminary Design Report Meeting	3	3		3						$ 1,683.00
	Final Preliminary Design Report		5		12						$ 2,790.00
	QA/QC Final Design Report	2			5						$ 1,215.00
	Subtotals	**10.0**	**24.0**	**12.0**	**95.0**	**16.0**	**6.0**	**0.0**	**0.0**		**$ 26,500.00**
3	**Project Design**										
	Prepare 60% documents	4	40	70	84	280	10		48		$ 82,970.00
	60% QA/QC	4	5	12	10	16					$ 7,832.00
	60% Review Meeting	2	2	2	2						$ 1,494.00
	Prepare 90% documents	8	40	40	75	120	10		30		$ 51,325.00
	90% QAQC	4	8	12	10	15					$ 8,250.00
	90% Review Meeting	2	2	2	2						$ 1,494.00
	Prepare 100% documents	12	30	30	50	75	10		16		$ 35,860.00
	100% QAQC	8	5	12	10	15					$ 8,572.00
	100% Review Meeting	3	3	3	3						$ 2,241.00
	Subtotals	**47.0**	**135.0**	**183.0**	**246.0**	**521.0**	**30.0**	**0.0**	**94.0**		**$ 200,038.00**
4	**Permitting**										
	FDEP Wastewater Minor Mod Permit	2	8		40	16	10				$ 11,378.00
	Pre-Application Meeting	3	3		3						$ 1,683.00
	Final FDEP Wastewater Minor Mod Permit				10						$ 1,550.00
	Subtotals	**5.0**	**11.0**	**0.0**	**53.0**	**16.0**	**10.0**	**0.0**	**0.0**		**$ 14,600.00**
5	**Bidding or CMAR Assistance**										
	Prepare plans and specs for bidding or CMAR pricing	2	4	8	8	8					$ 5,032.00
	Attend pre-bid or CMAR coordination meetings	4	12		2		2				$ 3,624.00
	Address questions and prepare addenda	2	2		10		4				$ 2,766.00
	Evaluate bids, bid tab, or CMAR pricing		4				4				$ 1,148.00
	Subtotals	**8.0**	**22.0**	**8.0**	**20.0**	**8.0**	**10.0**	**0.0**	**0.0**		**$ 12,600.00**
6	**Grant Adminstration**										
	Preparation of quaterly grant reports and administration							24			$ 4,008.00
	Subtotals							**24.0**			**$ 4,000.00**
	TOTAL ALL TASKS	**74.0**	**231.0**	**205.0**	**422.0**	**561.0**	**91.0**	**24.0**	**96.0**		**$ 271,300.00**
											$ 271,300.00
7	**Subconsultant/Reimbursables Breakdown:**										$ 1,500
	Description	Amount									
	Survey Allowance										**$ 272,800**
	Geotech Allowance										
	SUE Allowance										
	Printing/Reproduction/Postage	$ 1,500.00									
	Total	**$ 1,500.00**									

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.E
Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2023-63
Strategic Goal:	Water Quality & Environment – Other		
Department :	Public Works - Engineering		
Subject:	Bid Award - 2023 Storm and Sewer Lining		
Budget Impact:	The Stormwater work totals $523,400.48, funding of $500,000 is available from the 107-Stormwater Fund. Additional funding of $23,400.48 is needed from reserves. The sanitary sewer, manhole and sewer inspection work totals $457,063.12, funding of $450,000 is available from the 409-Water & Wastewater Renewal & Replacement Fund. Funding of $7,063.12 from the 409-Water & Wastewater Renewal & Replacement Fund reserves will be needed.		
Summary:	The 2023 storm and sewer pipe lining project is a combination of three scheduled CIP projects: annual stormwater piping, sanitary sewer inflow & infiltration and manhole rehabilitation. Each project is intended to repair and extend the life of deteriorated pipes and manholes located throughout the City.		
Recommended Action:	Staff recommends awarding Bid 2023-15 to Ric-Man Construction Florida, for the base bid at the contract amount of $980,463.61.		
Staff Contact:	Alex Schumann, City Engineer, (386) 676-3302		

Approval:

Kelly McGuire, Finance Director	2/28/2023	Kelly A. McGuire
Claire Whitley, Assistant City Manager	3/3/2023	
Joyce Shanahan, City Manager	3/14/2023	Joyce Shanahan

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Alex Schumann, City Engineer

Date: March 21, 2023

Subject: Bid Award - 2023 Storm and Sewer Lining

Commission Goal: Water Quality & Environment – Other

Introduction

This is a request for award of a bid for the 2023 Storm and Sewer Lining Project, Bid No. 2023-15.

Background

This item is a combination of three regularly scheduled Capital Improvement Projects (CIP). The Storm Drain Pipe Lining, the Sanitary Sewer Inflow and Infiltration lining which rehabilitates Sanitary Sewer Pipes, and the Sanitary Sewer Manhole repair. Without routine rehabilitation and repair, these systems can cause undermining and result in the failure of roadway pavement or other infrastructure, and may create unsafe surface voids.

Storm Drain Pipe Lining

The Storm Drain Pipe Lining project is a scheduled CIP for the repair of storm drain pipes located in various areas of the City. The City has been successfully rehabilitating pipe systems with cured-in-place pipe lining. The cured-in-place pipe lining creates a form-fitted, corrosion resistant replacement pipe inside the existing deteriorated pipe, which improves flow characteristics. The cured-in-place liner has the advantage of being seamless; having no pipe joints eliminates the possibility of undermining due to leaking joints or root intrusion, which occurs with older corrugated storm pipes. Since the liner is installed between existing manhole structures or catch basins, and formed inside the existing pipe, no excavation or site restoration is required with the pipe lining process.

Sanitary Sewer Inflow and Infiltration Lining

The Sanitary Sewer Inflow and Infiltration project is a scheduled CIP for the repair of aging sewer pipes located in various areas of the City. Failing sewer pipes can cause undermining and result in the failure of roadway pavement or other infrastructure, and may create unsafe surface voids. The City has been successful through rehabilitation of

these pipe systems with cured-in-place pipe lining. The cured-in-place pipe lining creates a form-fitted, corrosion resistant replacement pipe inside the existing deteriorated pipe, which improves flow characteristics. The cured-in-place liner has the advantage of being seamless; having no pipe joints eliminates the possibility of undermining due to leaking joints or root intrusion, which occurs with the older metal or clay sewer pipes that are being lined. Since the liner is installed between existing manhole structures and formed inside the existing pipe, no excavation or site restoration is required with the pipe lining process. The sanitary sewer segments identified are within the roadways of Granada Blvd and Sundance Trail.

Sanitary Sewer Manhole Repair

Finally, included in this project is the rehabilitation of 31 manhole structures. These structures are generally in good condition, but have hairline cracks that allow water and sand to enter the collection system. As with sewer piping, the corrosive gasses found within a sewer can cause long-term degradation of sanitary sewer manholes. This degradation can lead to increased infiltration of groundwater at the manhole, which causes longer run times at pump stations, placing more wear on the pumps and more power consumption. Infiltration also results in a greater volume of water flowing to the Wastewater Treatment Plant, which increases operation costs at the plant. A second issue that can occur is further infiltration of sand into the manhole, undermining the roadway surrounding the manhole. This erosion of the road bed is one cause of asphalt sinking around manhole lids. Past manhole rehabilitation used the injection of a chemical grout through the manhole structure into the soil behind the manhole. The chemical grout reacts with the water, sealing the cracks from the outside.

Discussion

The project includes the rehabilitation of approximately 5,030 linear feet of storm drain pipe of various sizes, 3,093 linear feet of sanitary sewer pipe of various sizes, repair of 31 manholes of varying depth, and inspection of 23,374 linear feet of sanitary sewer system. Staff has prepared the bidding documents and specifications for the proposed work. Location maps of the proposed work have been attached as an exhibit to this memo.

On February 15, 2023, bids for this project were opened, and seven (7) bids were received. Base bids ranged from a high of $1,955,183 and a low of $980,463.61. The low bidder was selected based on the base bid. The low bidder is Ric-Man Construction Florida, Inc, of Deerfield Beach, Florida for a total of $980,463.61. The bid tabulation has been included for reference. Ric-Man Construction Florida, Inc, has successfully performed work for the City in the past and is recommended by staff for this project.

Budget Impact

The Stormwater work totals $523,400.48, funding of $500,000 is available from the 107-Stormwater Fund. Additional funding of $23,400.48 is needed from reserves. The sanitary sewer, manhole and sewer inspection work totals $457,063.12, funding of $450,000 is available from the 409-Water & Wastewater Renewal & Replacement Fund. Funding of $7,063.12 from the 409-Water & Wastewater Renewal & Replacement Fund reserves will be needed.

Citizen Impact

This project provides critical maintenance to existing infrastructure, protecting the public and ensuring proper functioning of the City's wastewater collection and stormwater conveyance systems. The construction activities associated are low impact and involve mainly a pipe cleaning and lining truck and crew, which is typically staged around an upstream and downstream manhole in the street in order to access the pipe that is being rehabilitated. Minor traffic delays are expected as the lining process can take several hours and it is often necessary to continue the process through the evening to not interrupt the curing process. The end result is an improved drainage pipe that allows more stormwater to flow through pipes, reducing the possibility of roadway and neighborhood flooding.

Recommendation

Staff recommends awarding Bid 2023-15 to Ric-Man Construction Florida, for the base bid at the contract amount of $980,463.61.

Attachments:

1. 23-63 Storm - Sewer Lining - RicMan (P23-0040G)
2. 2023 Storm, Sewer Lining
3. 2023 SS Lining
4. 2023 Storm & Sewer Lining- Bid tabulation

Approvals:

Kelly A. McGuire

Date: February 28, 2023

Kelly McGuire, Finance Director

Date: March 03, 2023

Claire Whitley, Assistant City Manager

Joyce Shanahan

Date: March 14, 2023

Joyce Shanahan, City Manager

RESOLUTION NO. 2023-63

A RESOLUTION ACCEPTING THE BID OF RIC-MAN CONSTRUCTION FLORIDA, INC. REGARDING THE 2023 STORM AND SEWER LINING PROJECT, UNDER BID NO. 2023-15; REJECTING ALL OTHER BIDS; AUTHORIZING THE EXECUTION OF A CONTRACT AND PAYMENT THEREFOR; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City advertised for bids (Bid No. 2023-15) regarding the 2023 storm and sewer lining project ("Project") in accordance with Section 2-300, *Code of Ordinances*, and

WHEREAS, the appropriate City staff members have reviewed the seven bids received and have determined that the bid submitted by Ric-Man Construction Florida, Inc. with a base bid of $980,463.61 plus a bid alternate at $97,890.81, for a total bid in the amount of $1,078,354.42 is the lowest responsible and responsive bid (a copy of said bid being attached hereto and incorporated herein by reference), and

WHEREAS, Section 2-300(i), *Code of Ordinances*, provides that a bid may be accepted or rejected, in whole or in part, and the appropriate City staff members recommend awarding the base bid only, and

WHEREAS, the City Manager has certified that funds for the Project have been appropriated to the credit of the Stormwater Fund and Fund reserves (107) and the Water & Wastewater Renewal & Replacement Fund and Fund reserves (409) and that these funds have not been appropriated for any other purpose, and

WHEREAS, the City Commission concurs in the said determination and recommendation, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The bid submitted by Ric-Man Construction Florida, Inc. to provide services for the Project at a cost not to exceed $980,463.61 is hereby accepted.

SECTION TWO. All other bids to provide services for the Project are hereby rejected upon the execution of a contract with Ric-Man Construction Florida, Inc.

SECTION THREE. The Mayor and the City Manager are hereby authorized and directed to execute a contract between the City and Ric-Man Construction Florida, Inc. for the performance of the Project at the said price, and to pay the cost therefor from the Stormwater Fund and Fund reserves and the Water & Wastewater Renewal & Replacement Fund and Fund reserves.

SECTION FOUR. This Resolution shall take effect immediately upon its adoption.

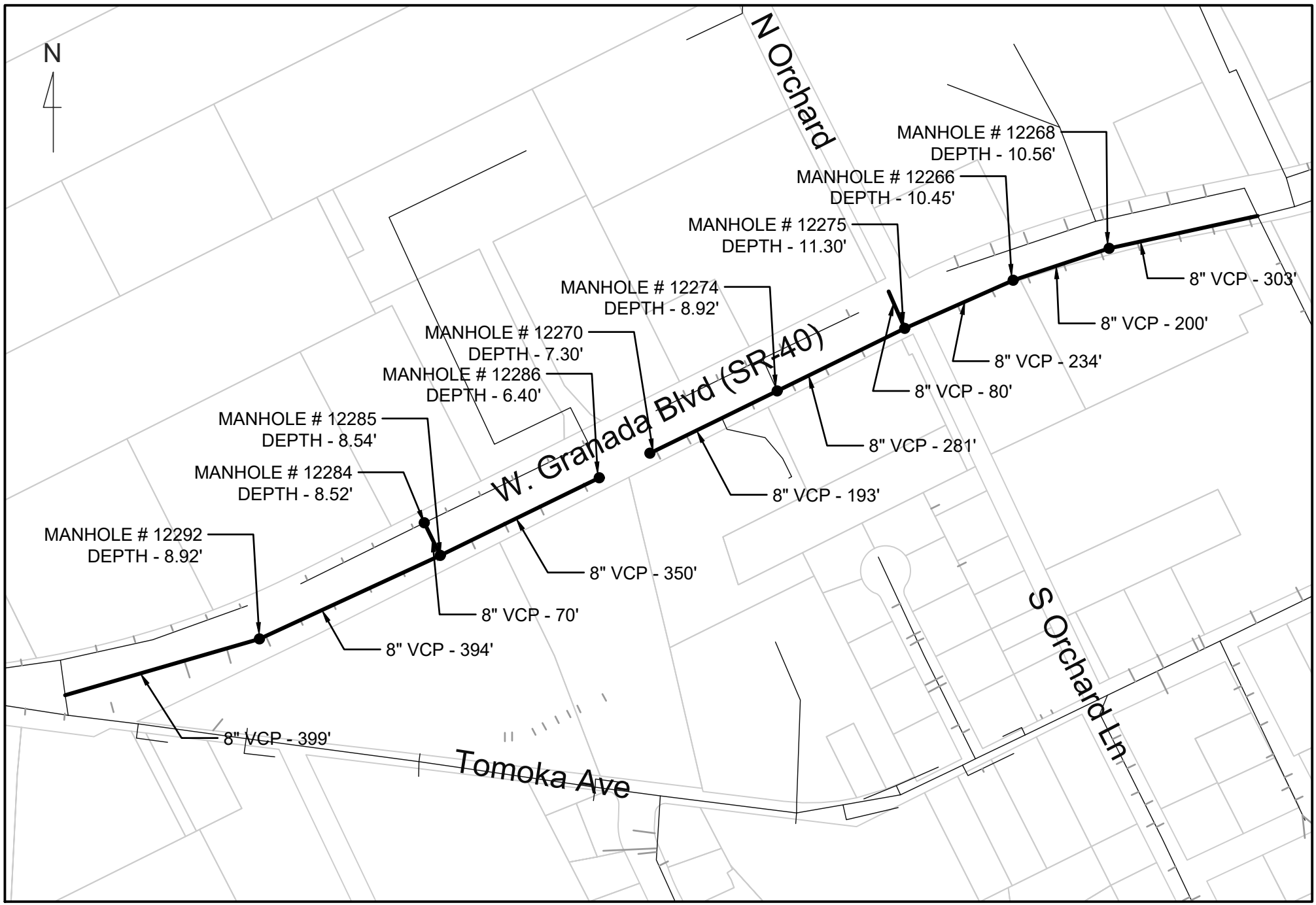
APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

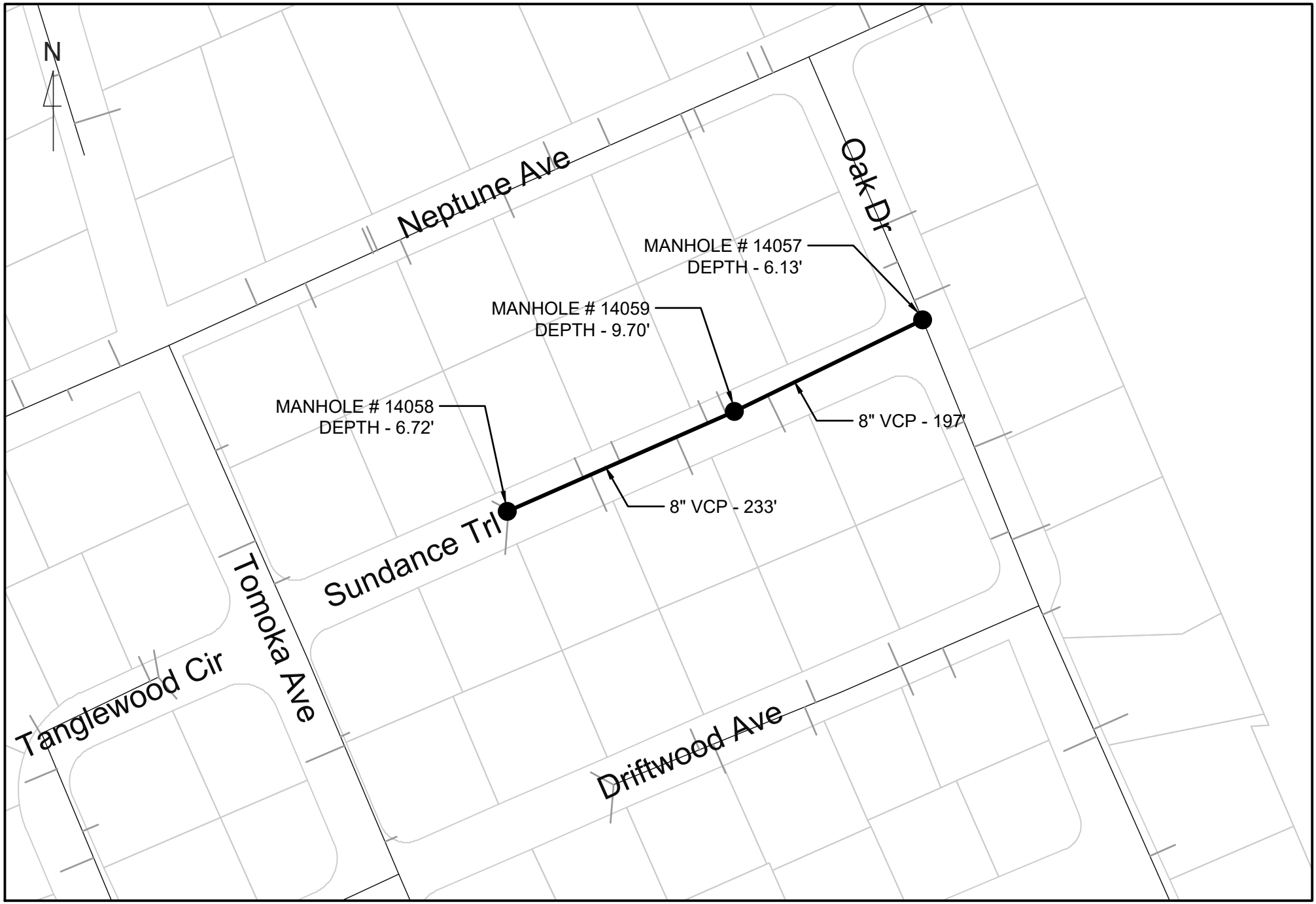
2022 / 2023 STORM & SEWER LINING



SEWER

SHEET 1

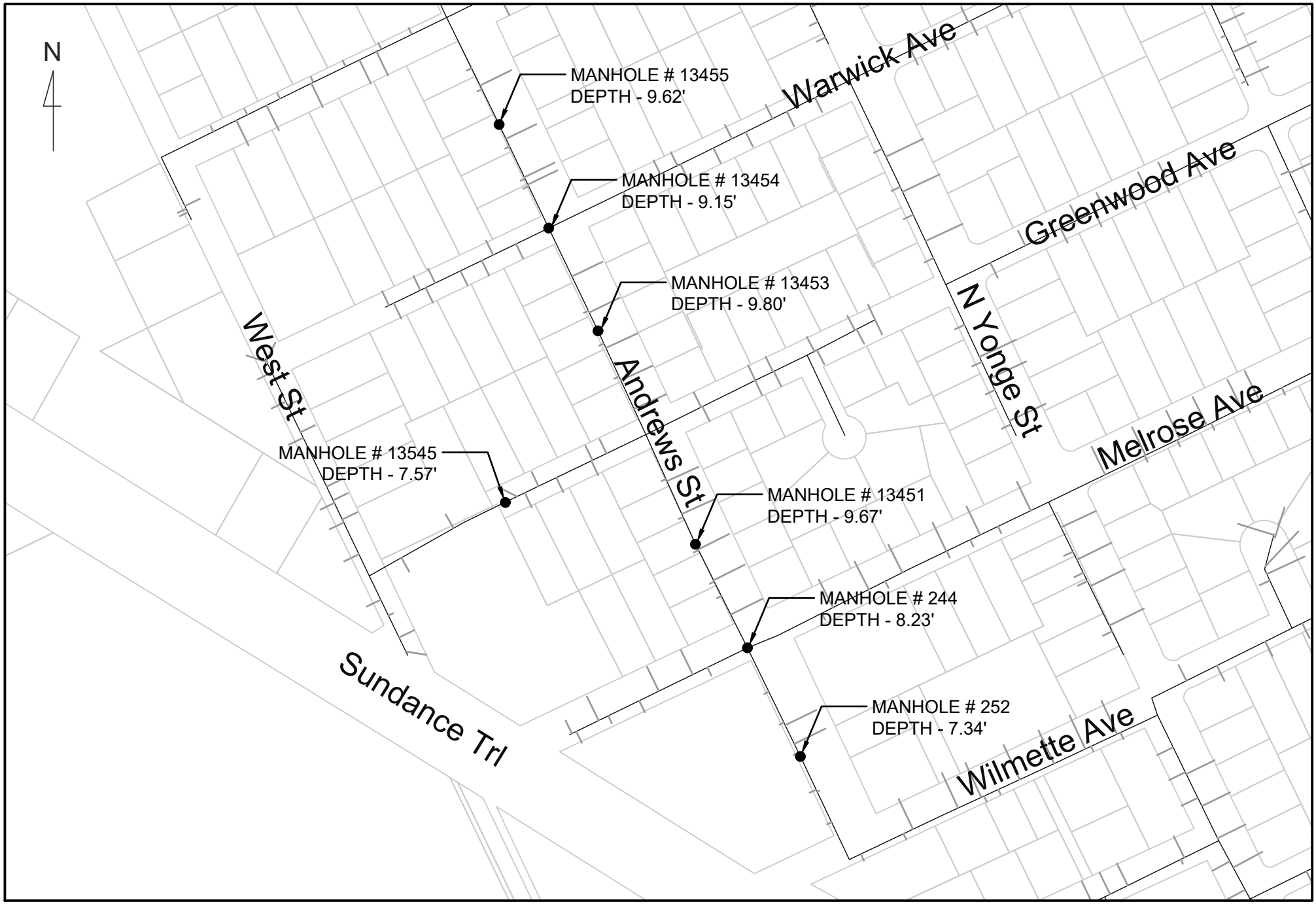
2022 / 2023 STORM & SEWER LINING



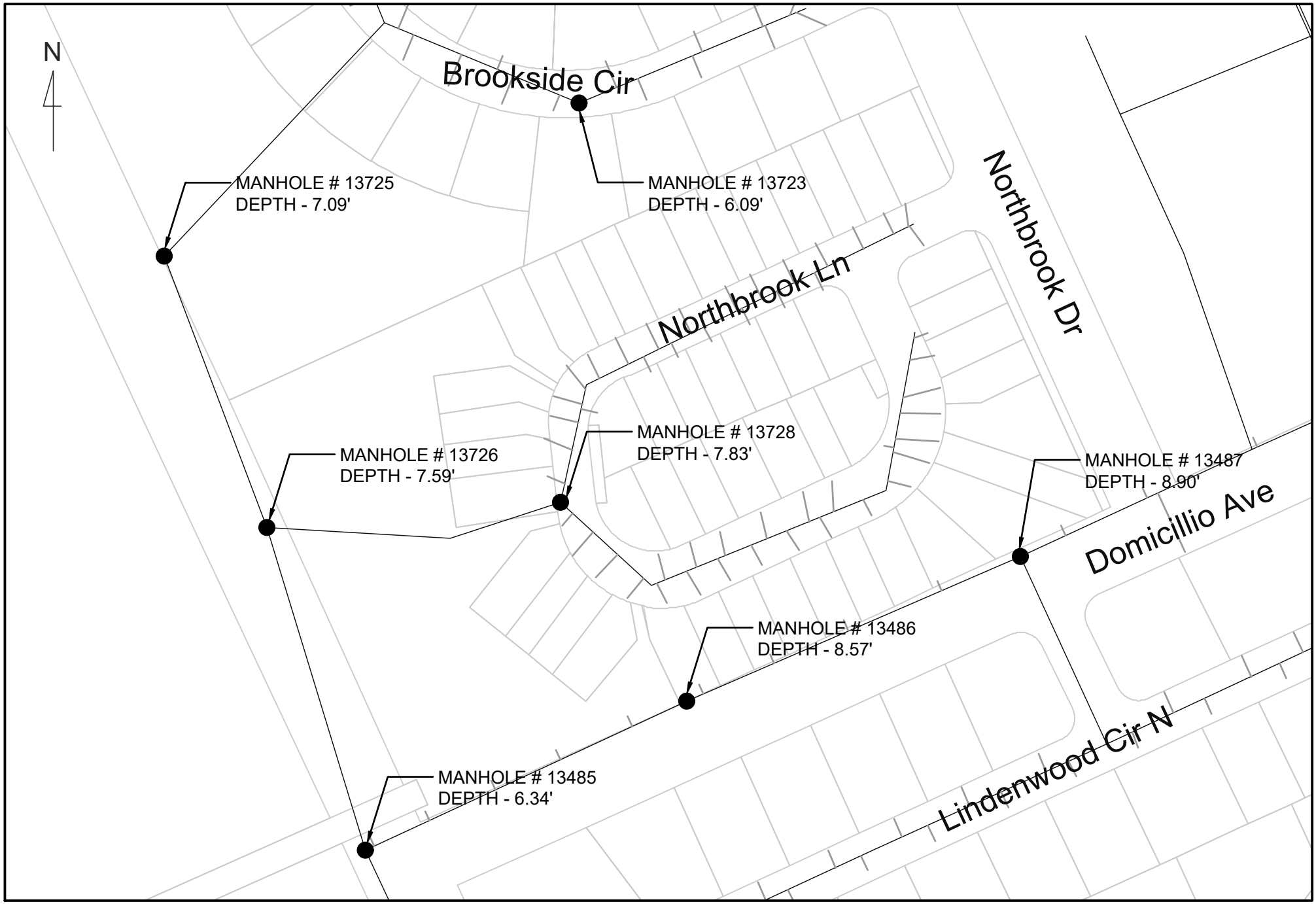
SEWER

SHEET 2

2022 / 2023 STORM & SEWER LINING



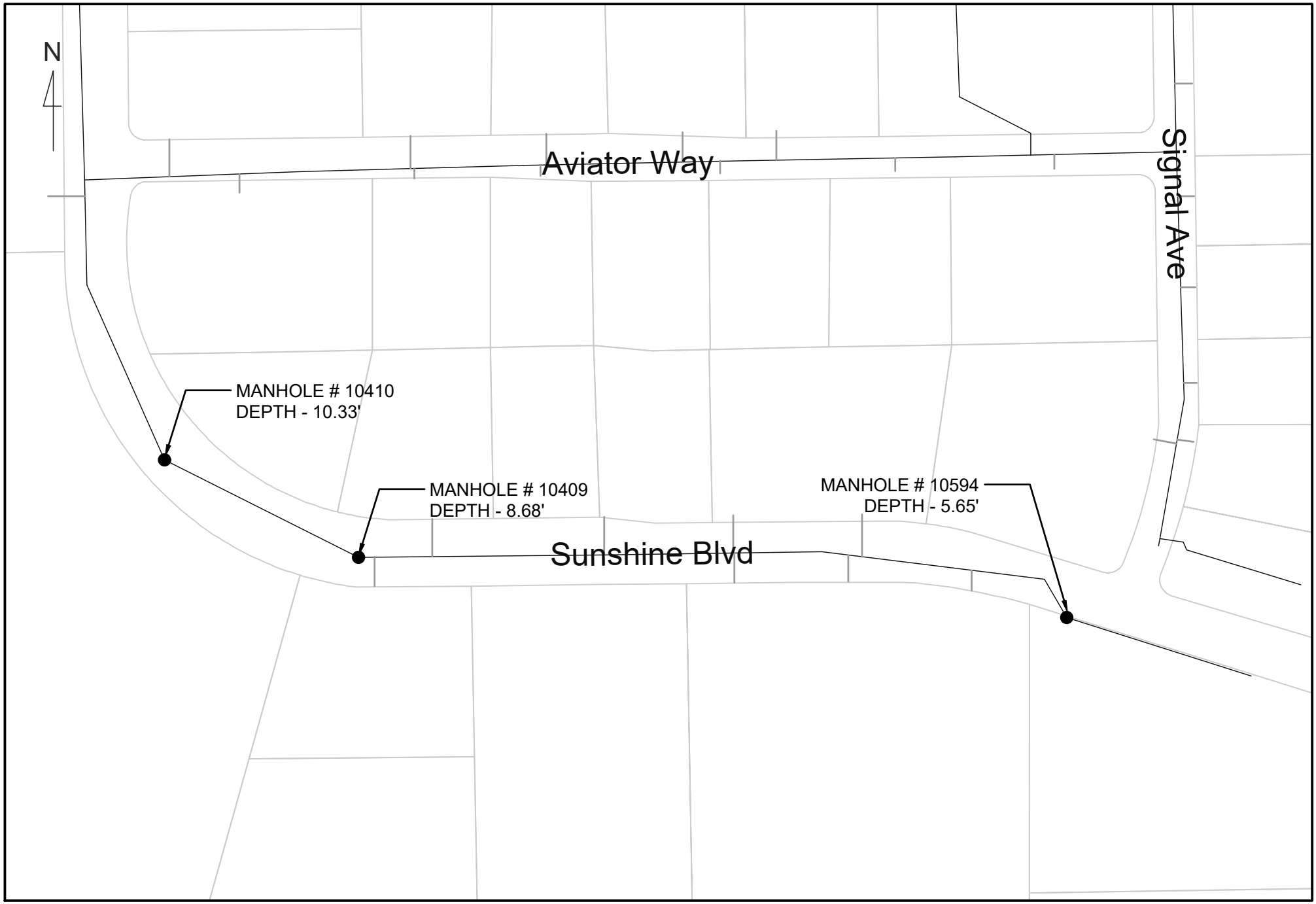
2022 / 2023 STORM & SEWER LINING



SEWER

SHEET 4

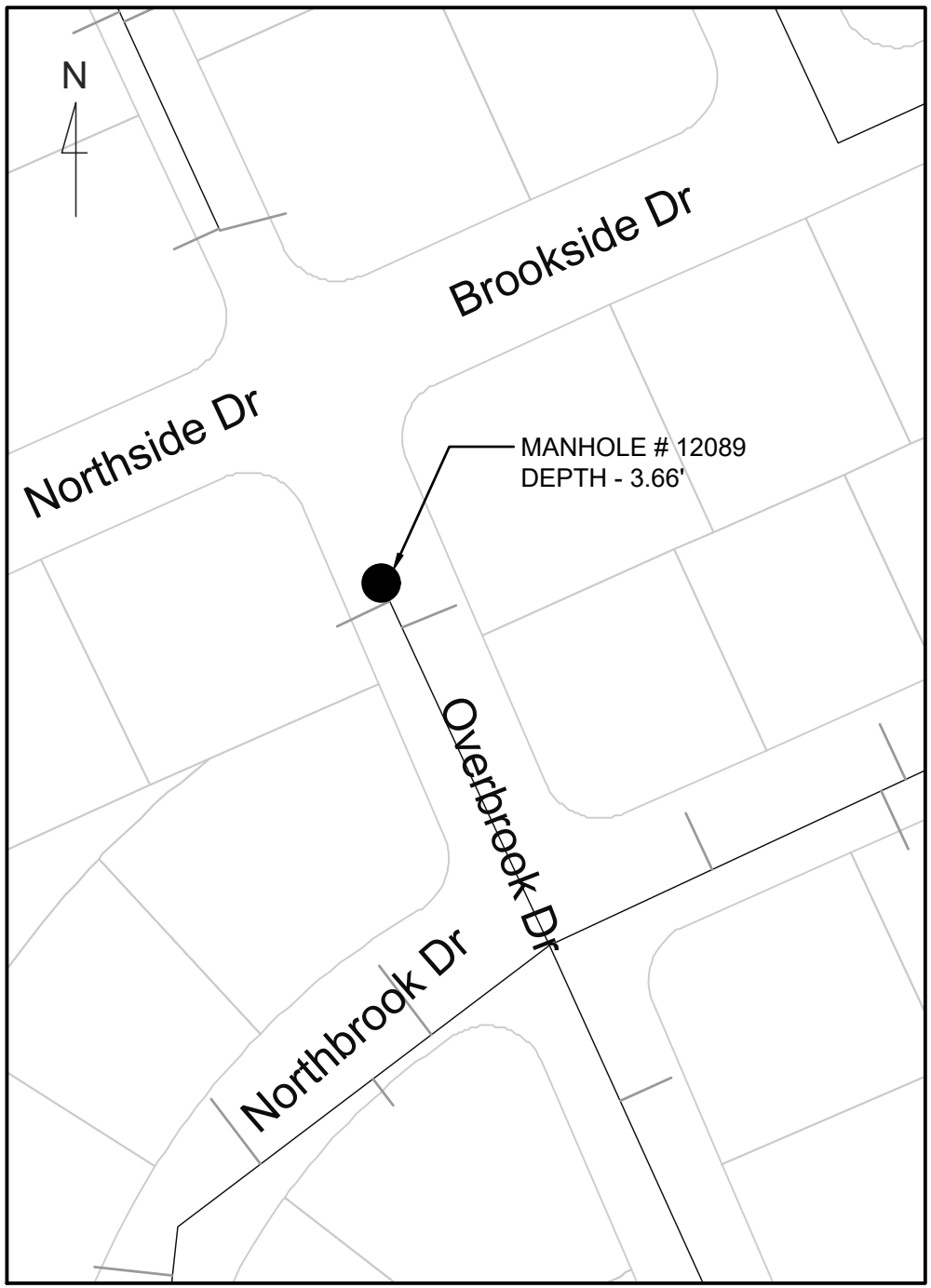
2022 / 2023 STORM & SEWER LINING

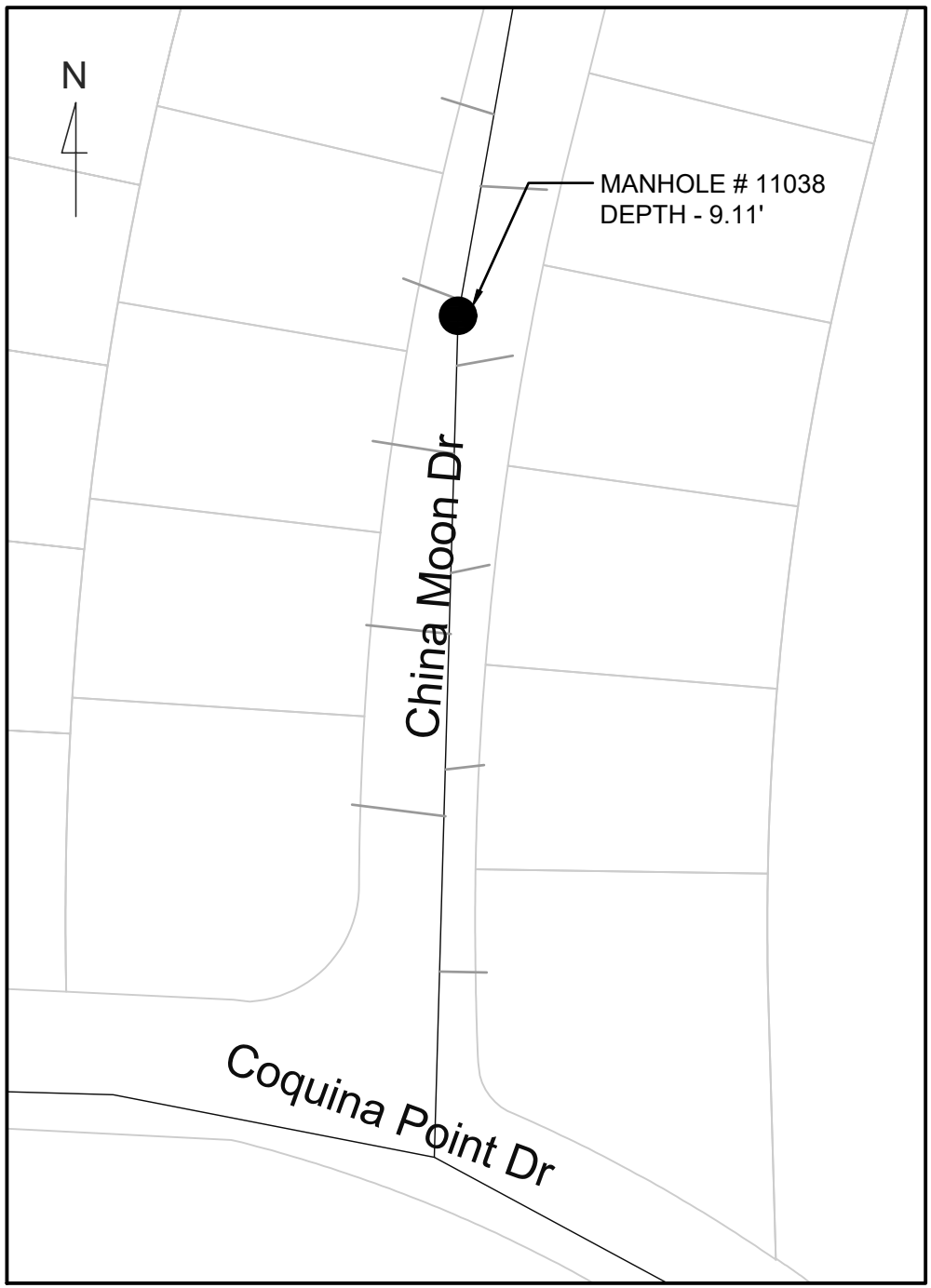


SEWER

SHEET 5

2022 / 2023 STORM & SEWER LINING

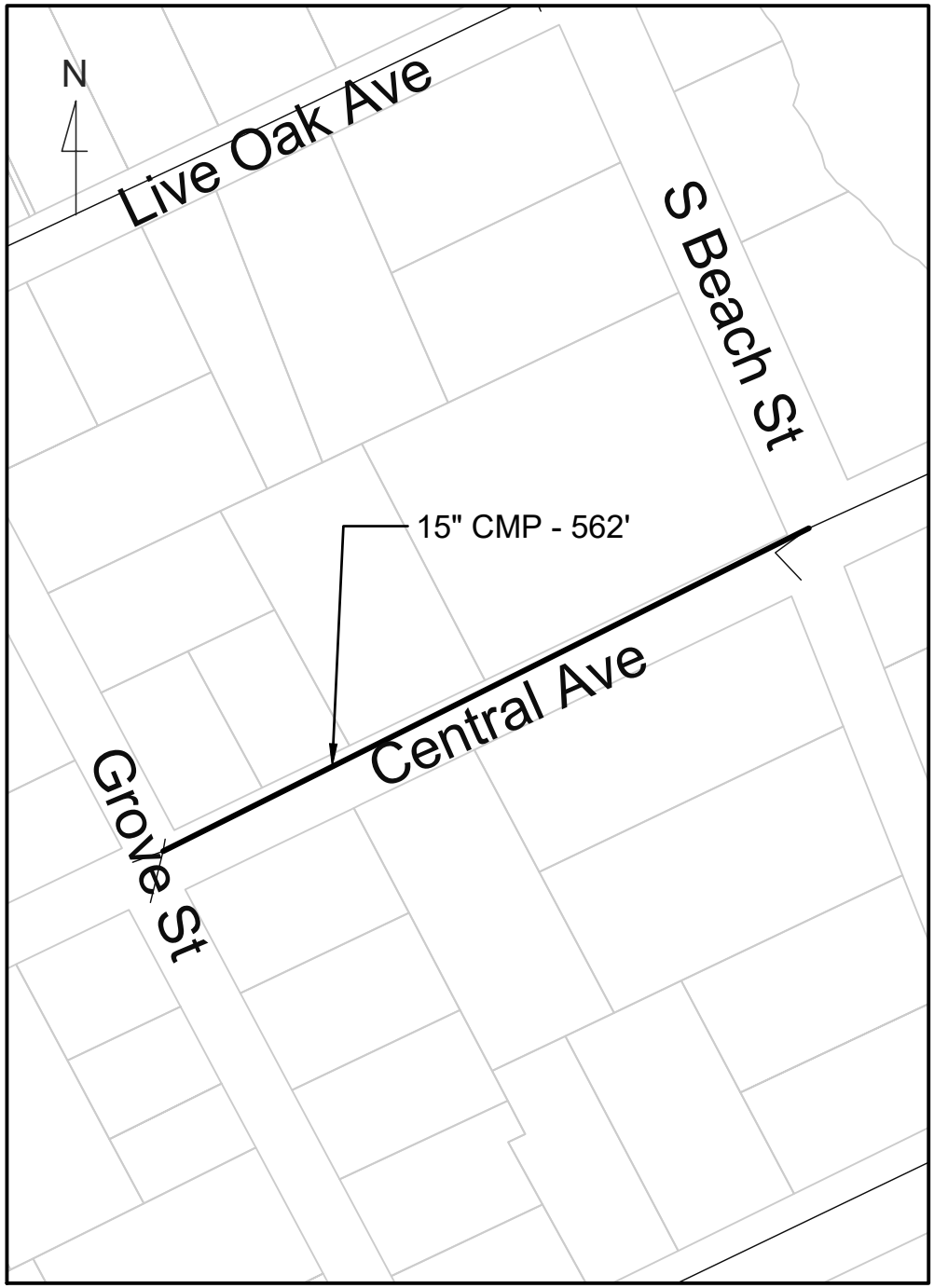


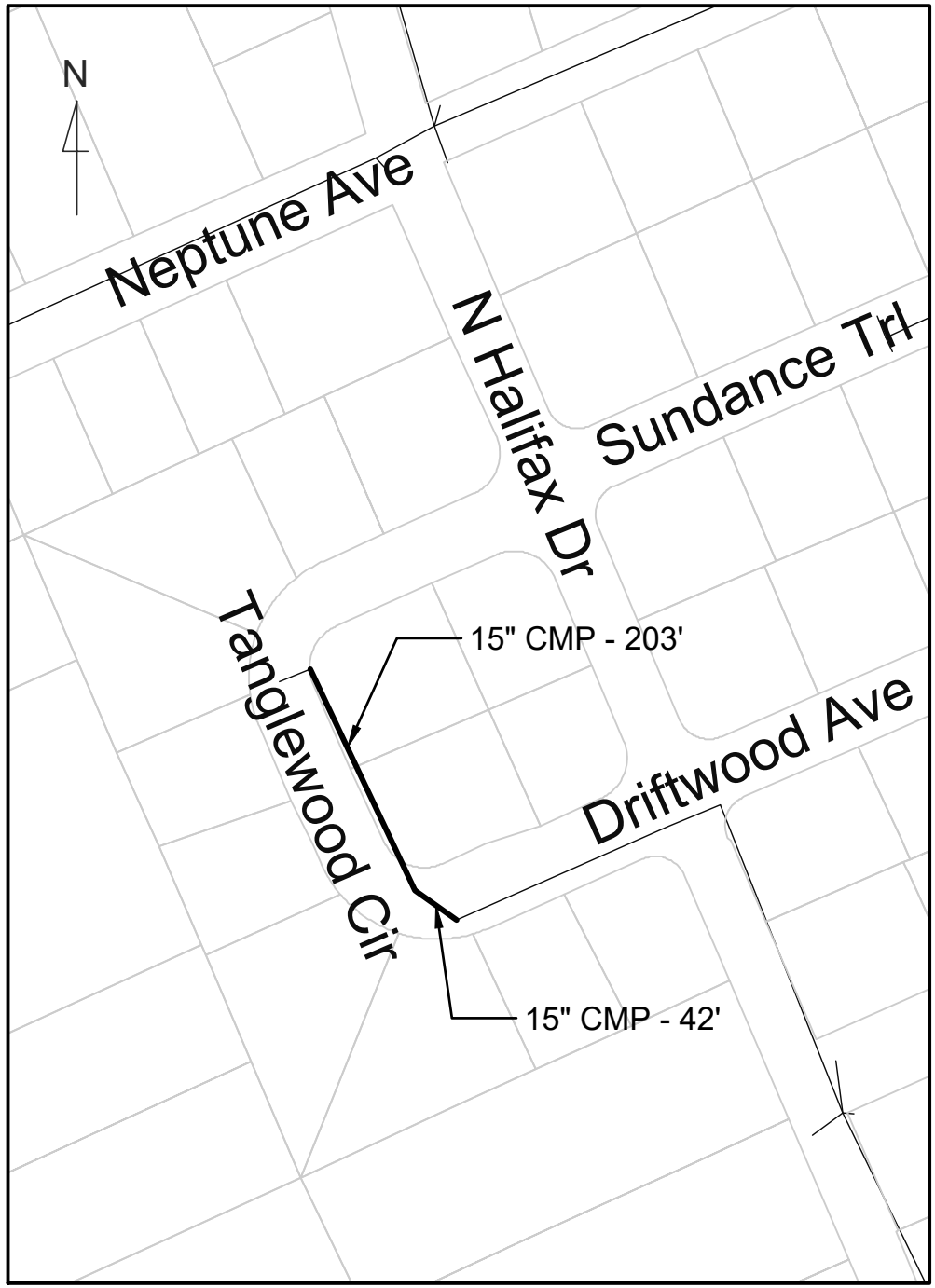


SEWER

SHEET 6

2022 / 2023 STORM & SEWER LINING

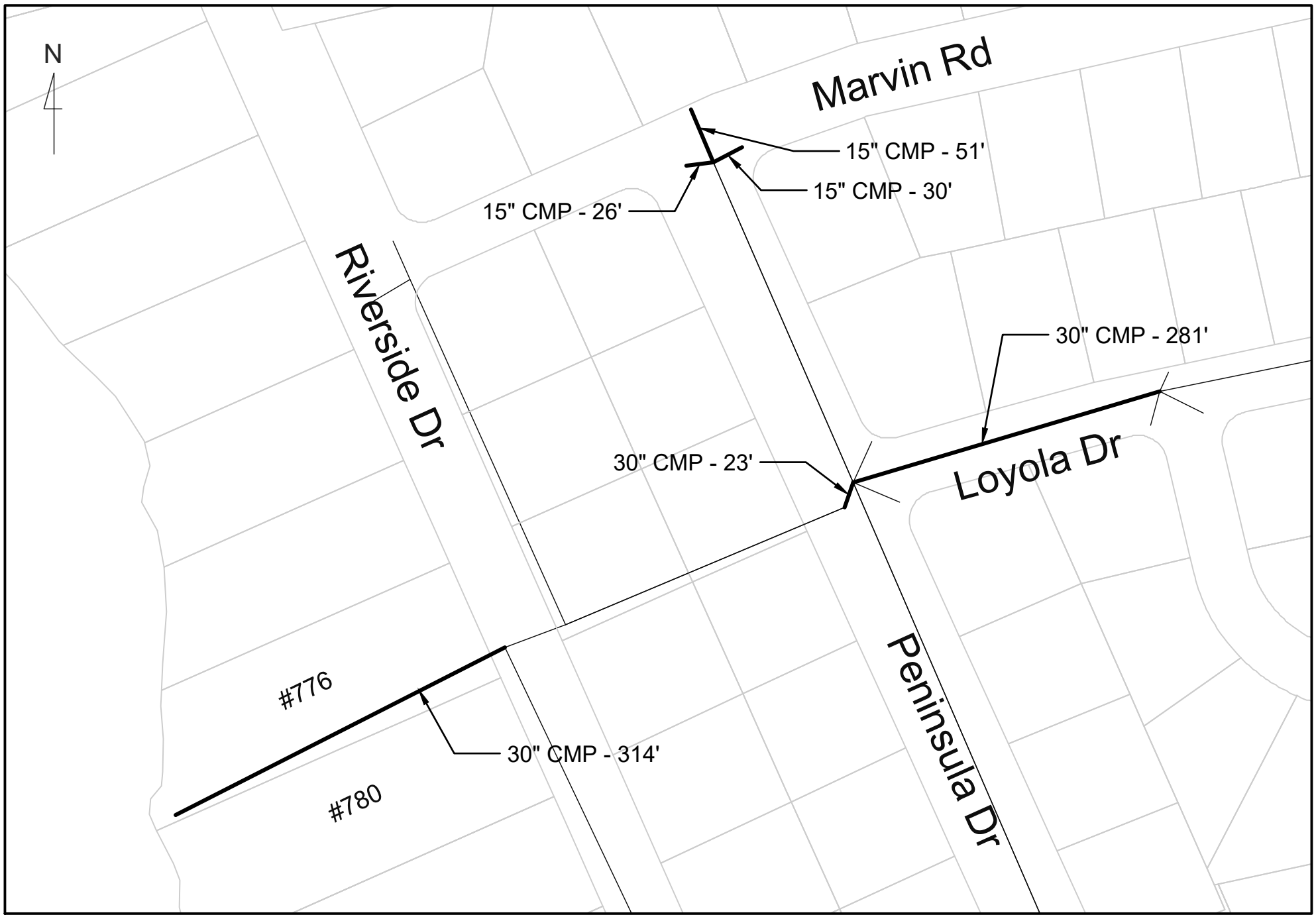




STORM

SHEET 1

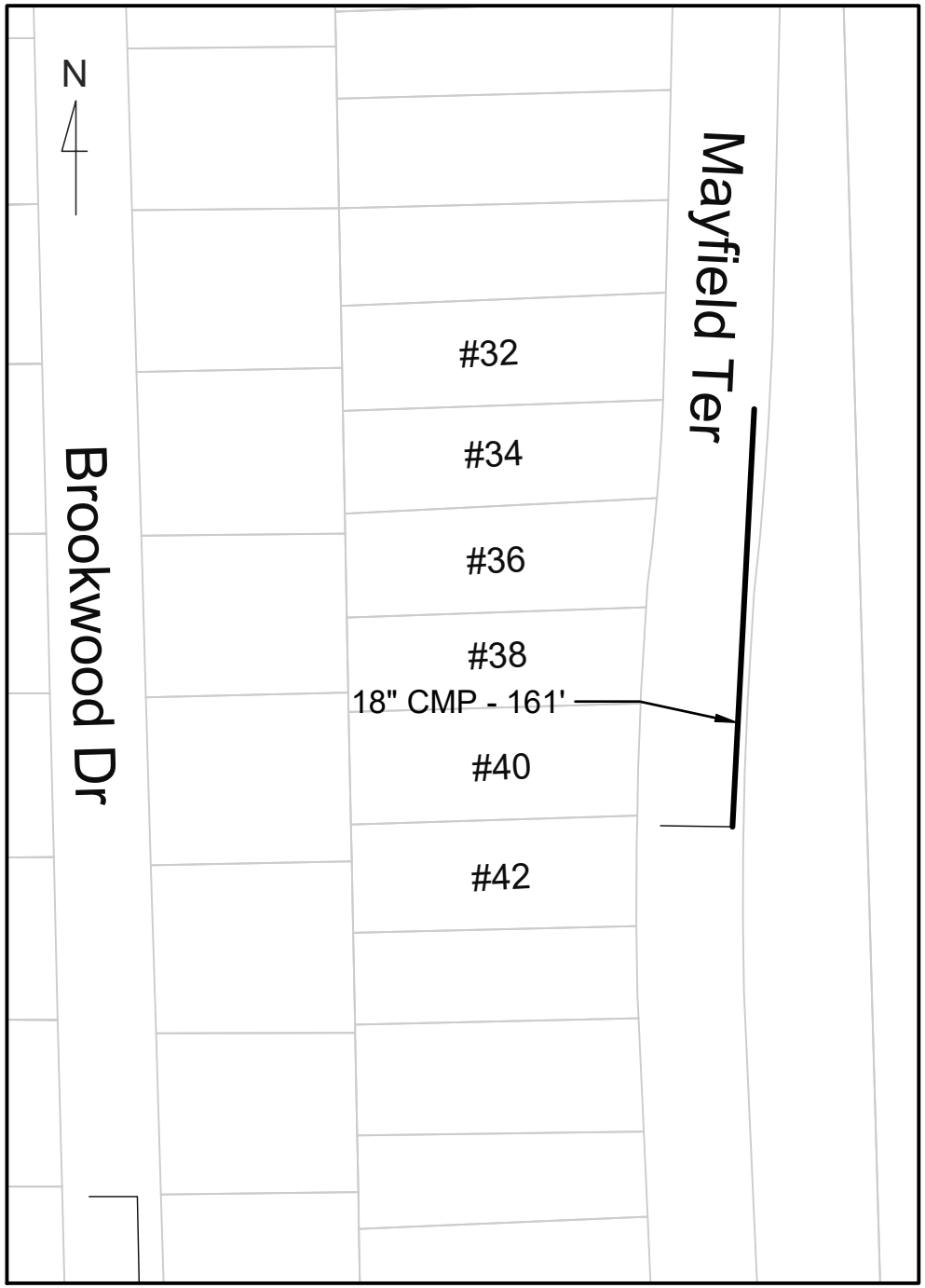
2022 / 2023 STORM & SEWER LINING

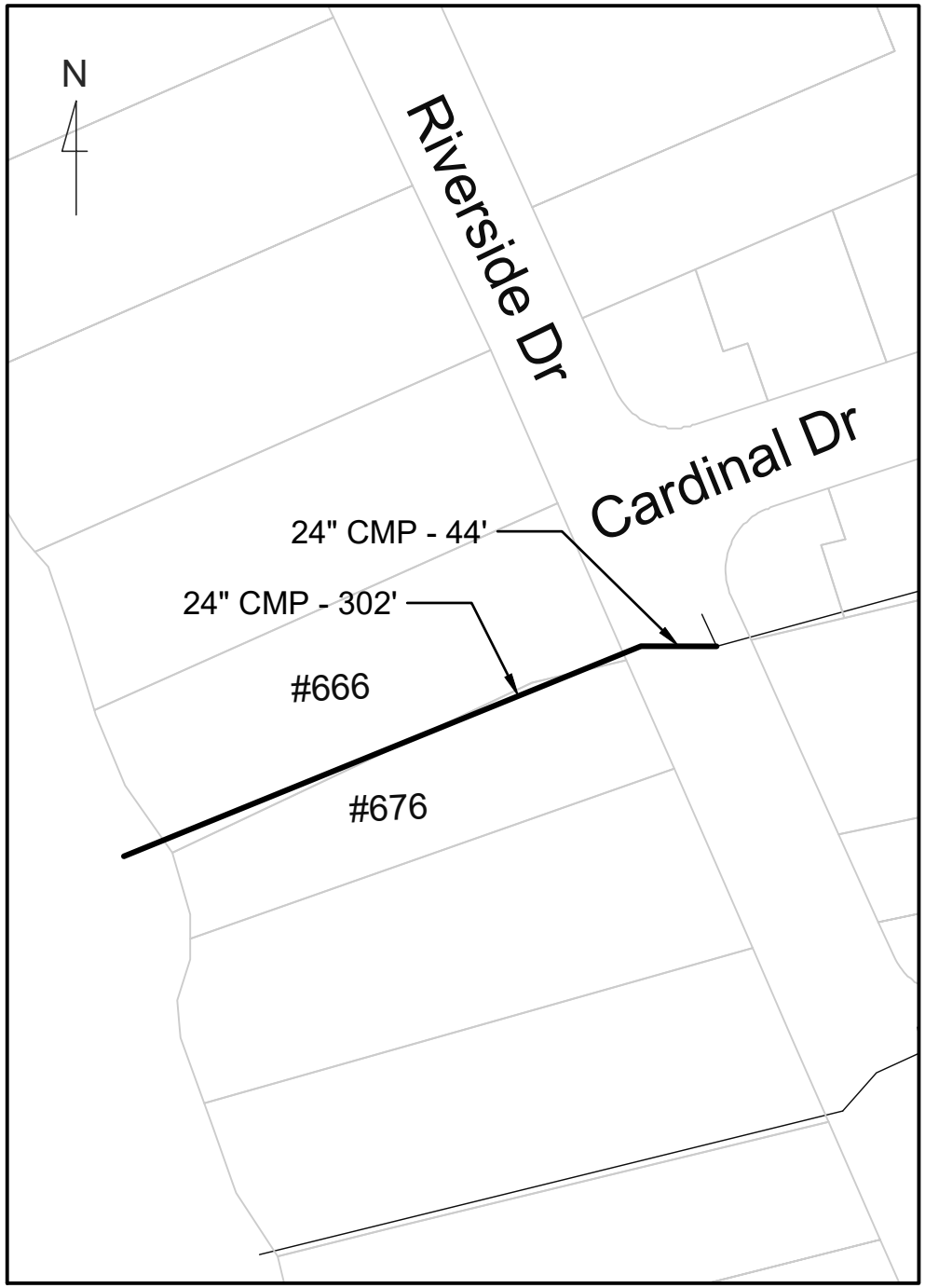


STORM

SHEET 2

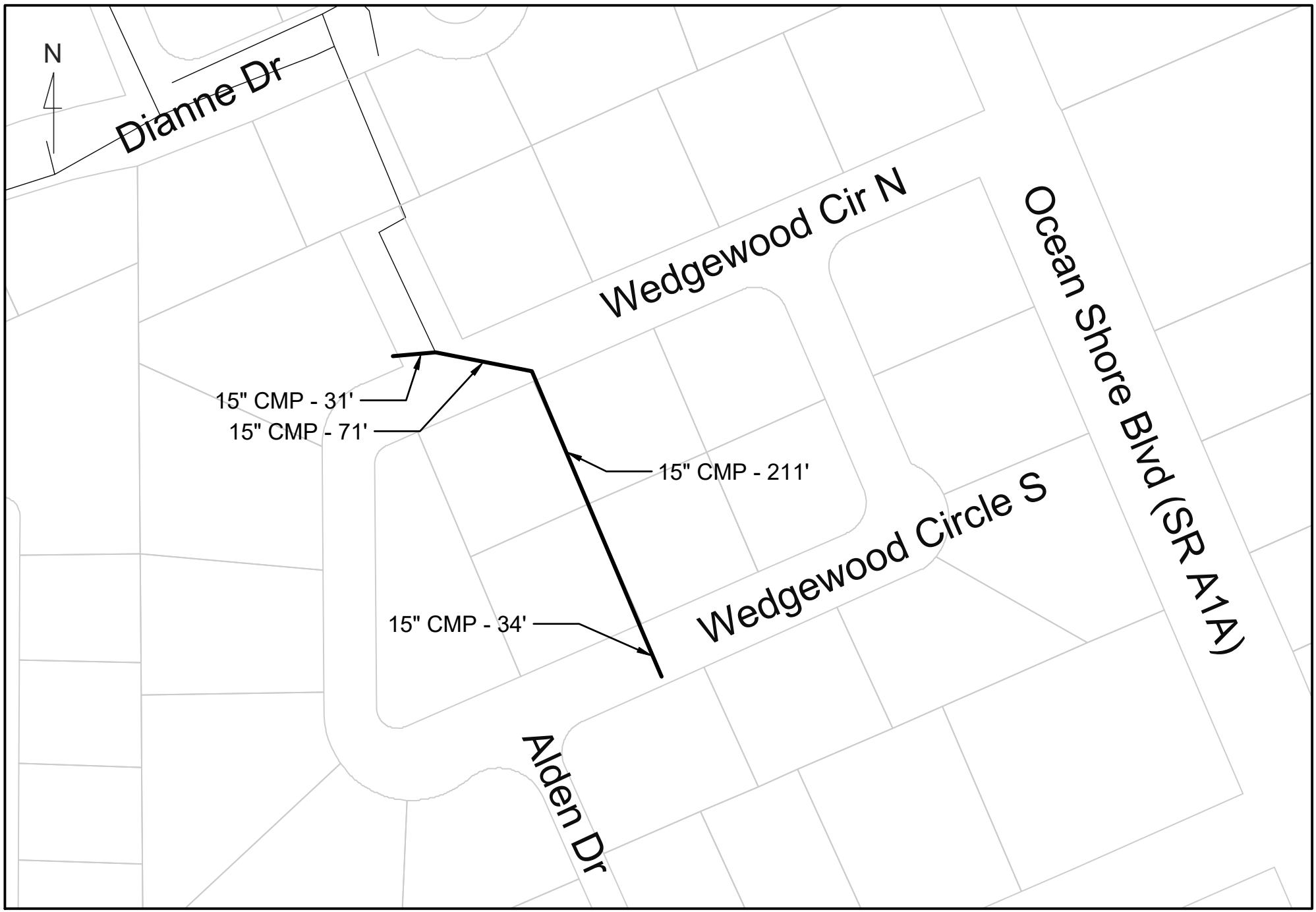
2022 / 2023 STORM & SEWER LINING





STORM

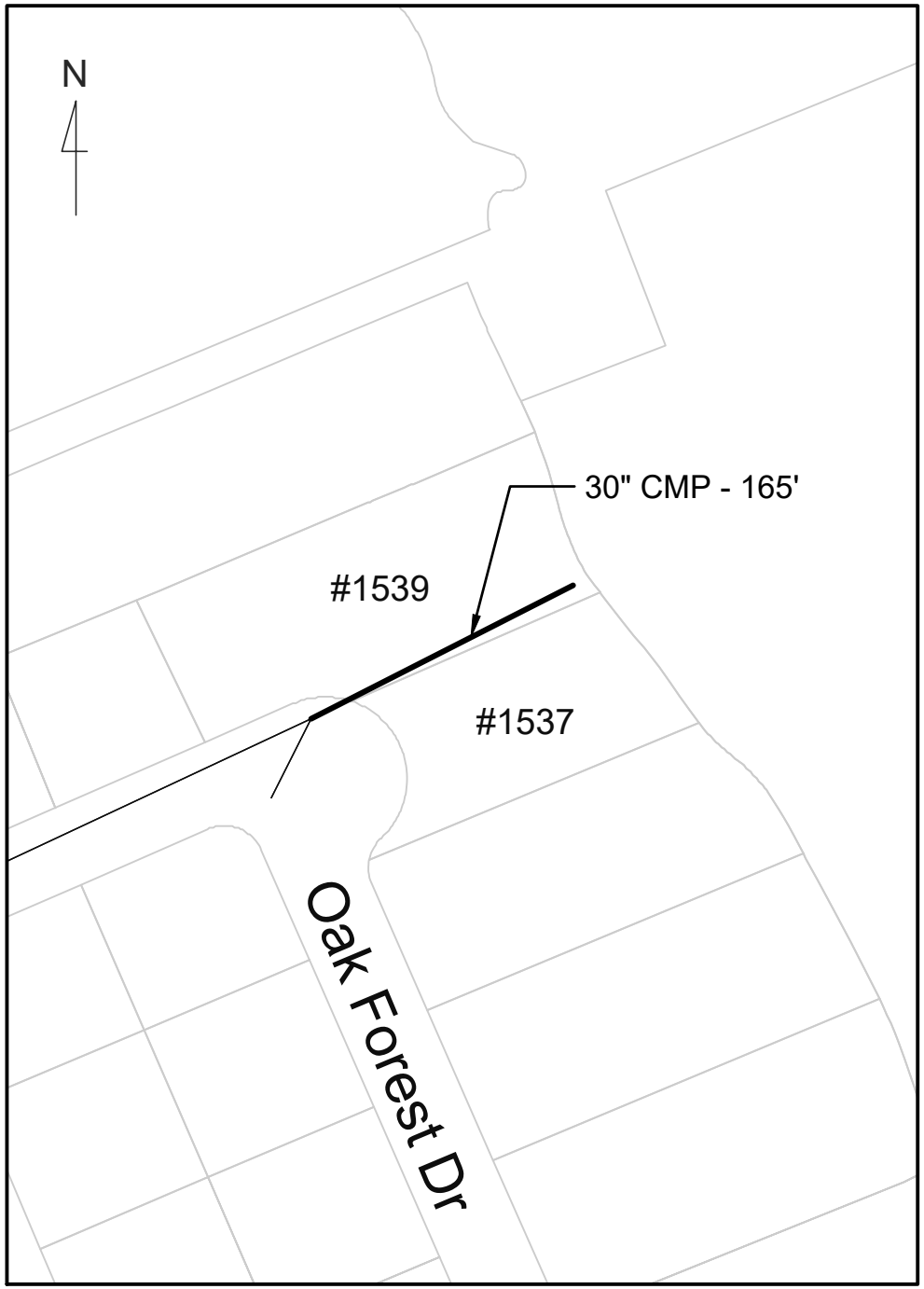
2022 / 2023 STORM & SEWER LINING

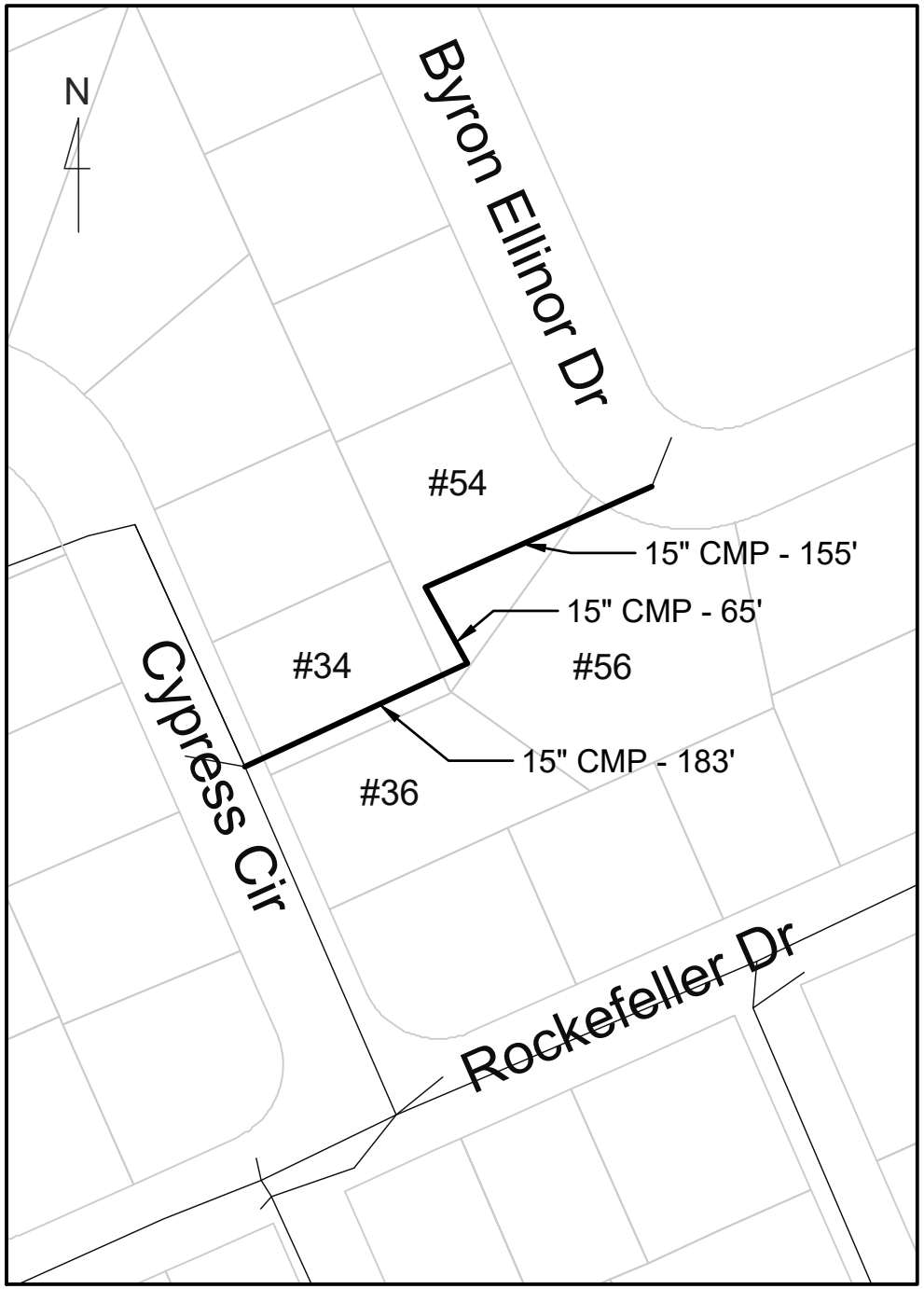


STORM

SHEET 4

2022 / 2023 STORM & SEWER LINING





STORM

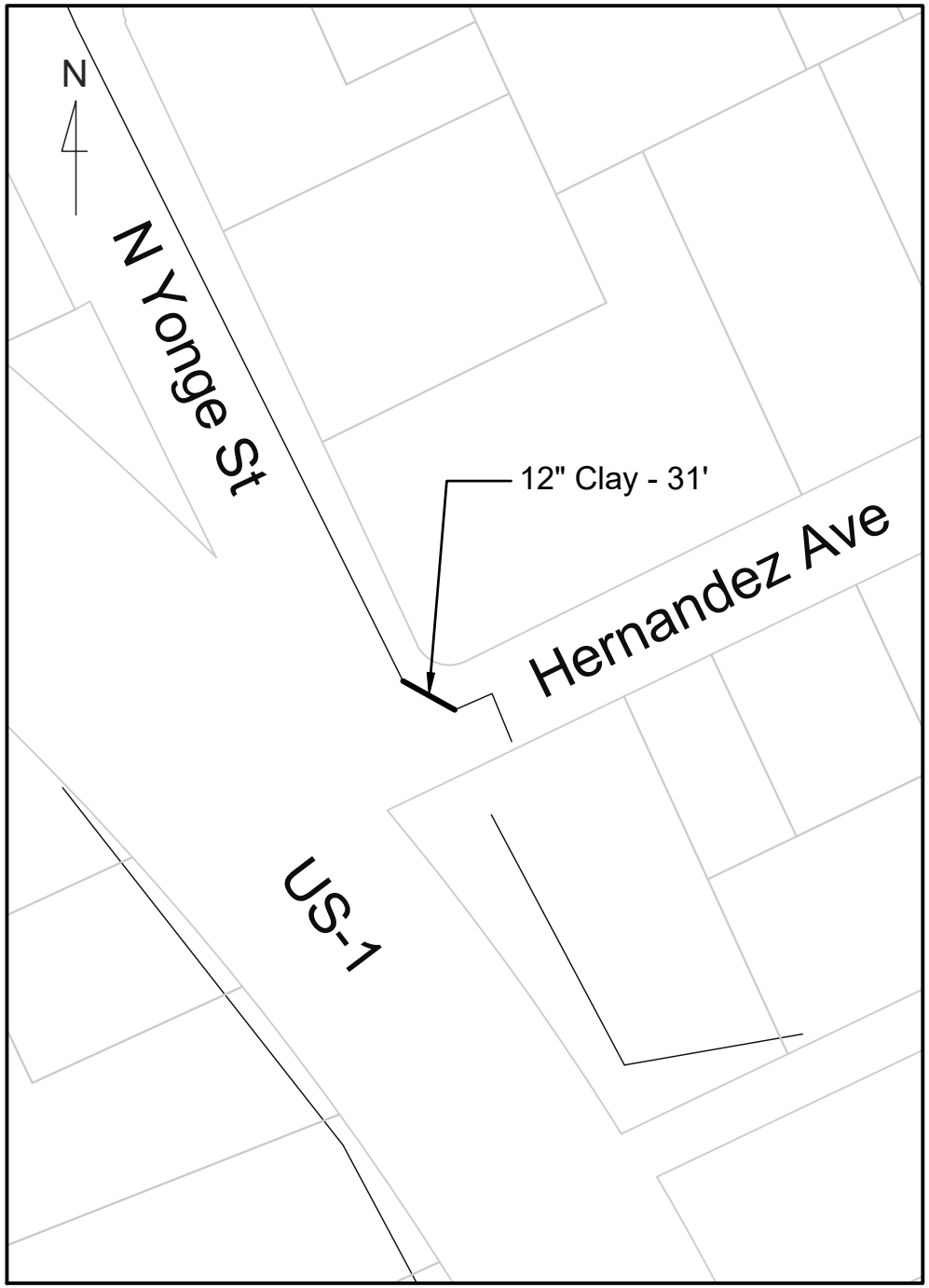
2022 / 2023 STORM & SEWER LINING

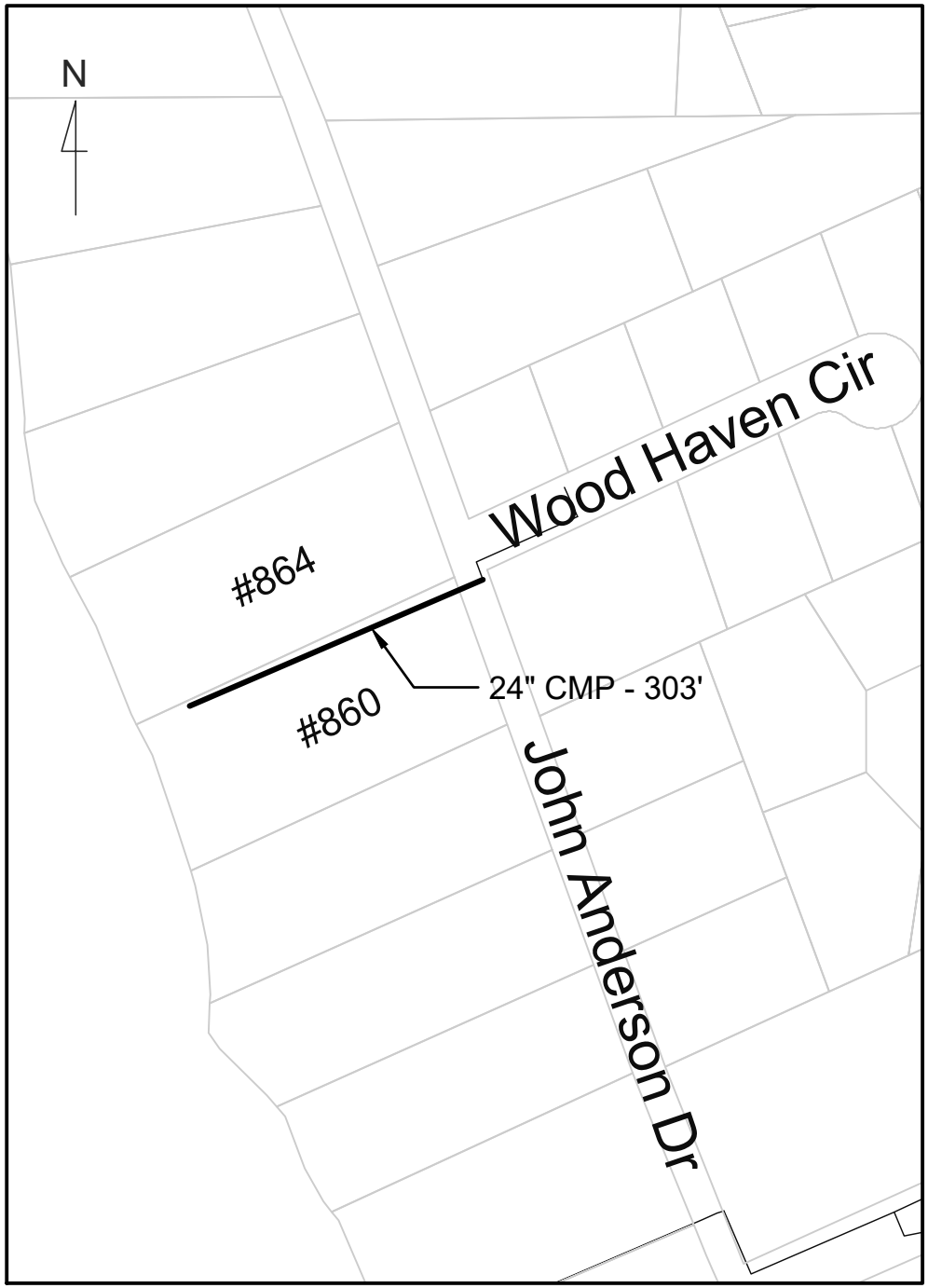


STORM

SHEET 6

2022 / 2023 STORM & SEWER LINING

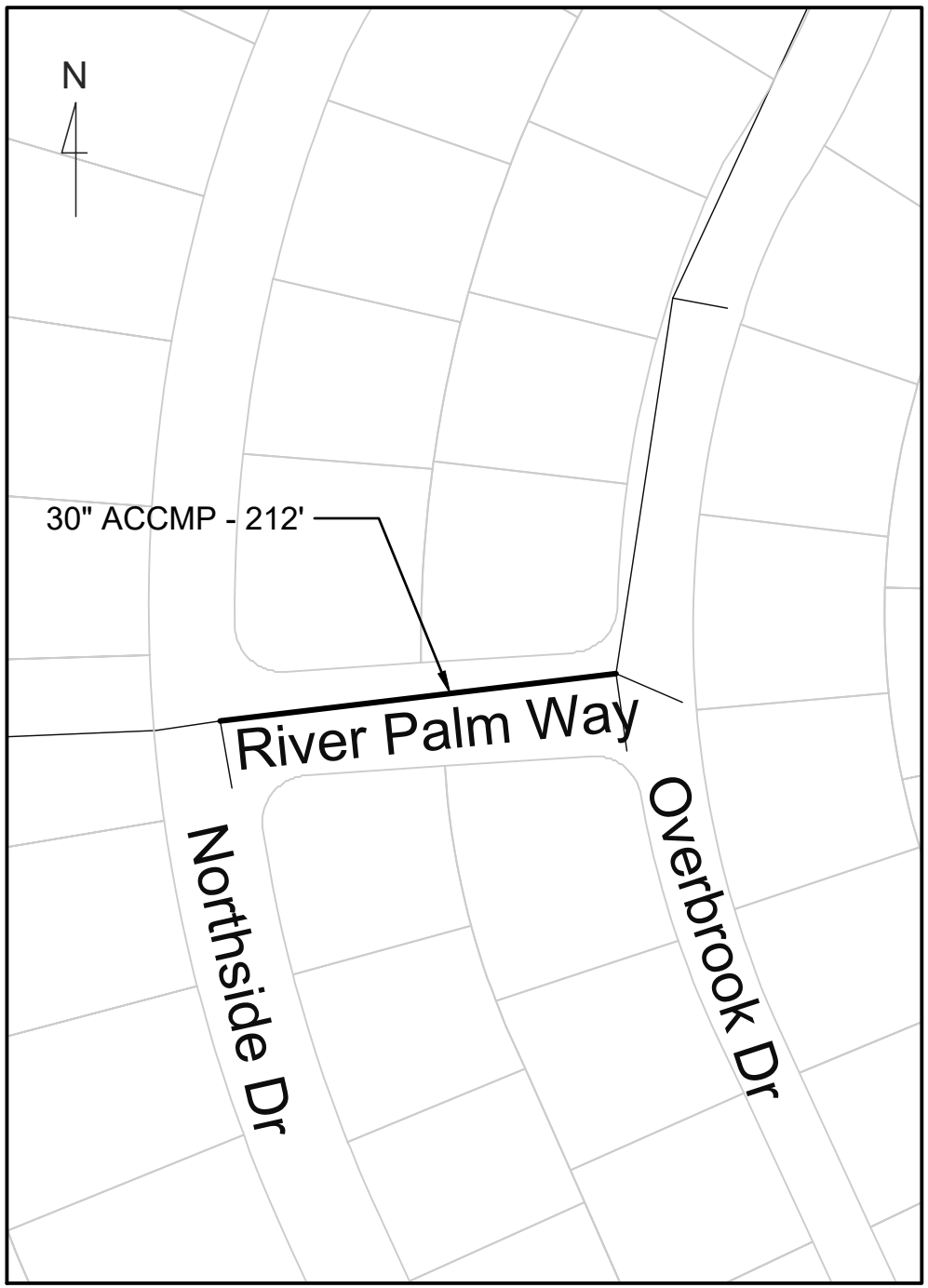


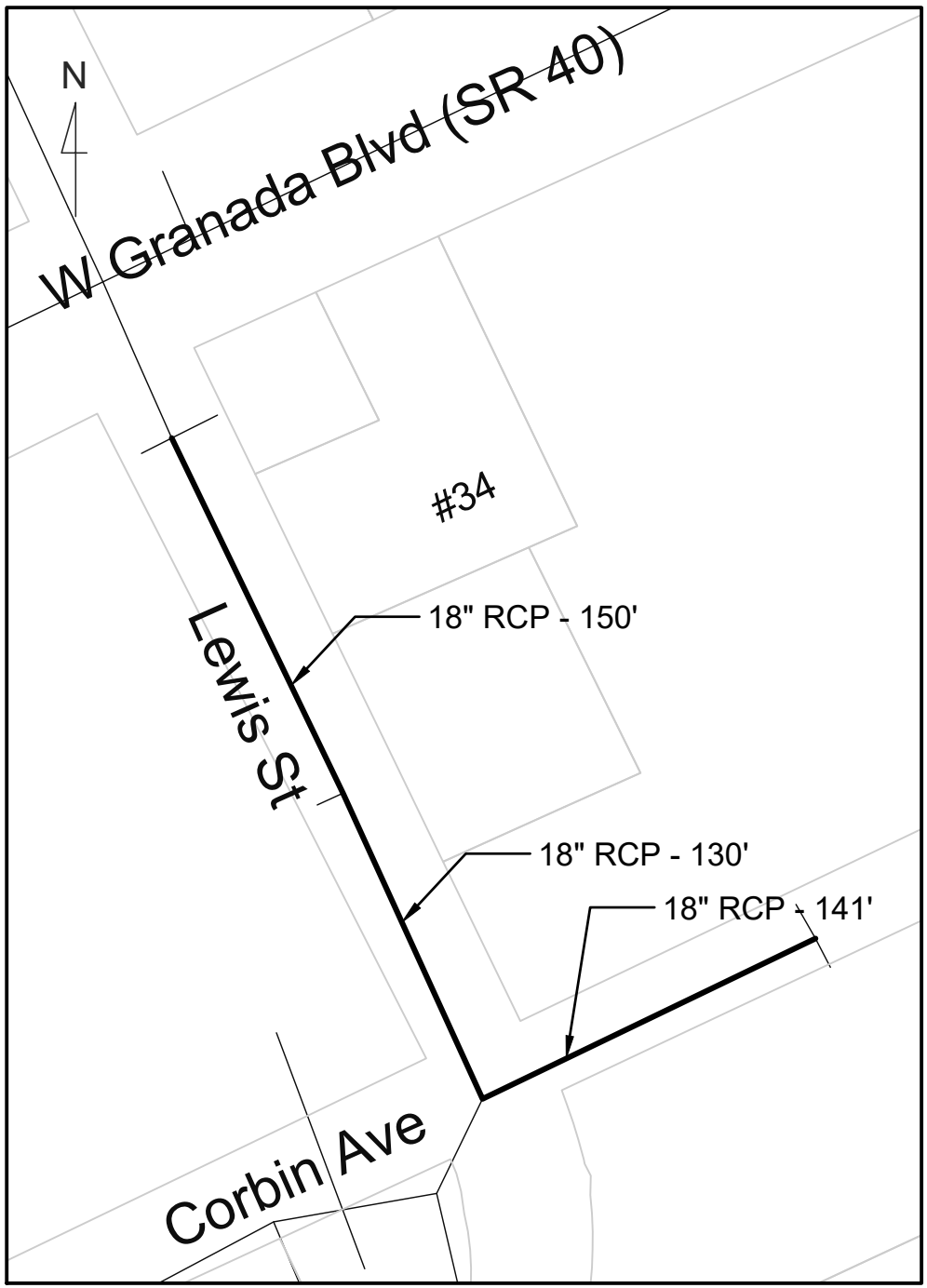


STORM

SHEET 7

2022 / 2023 STORM & SEWER LINING

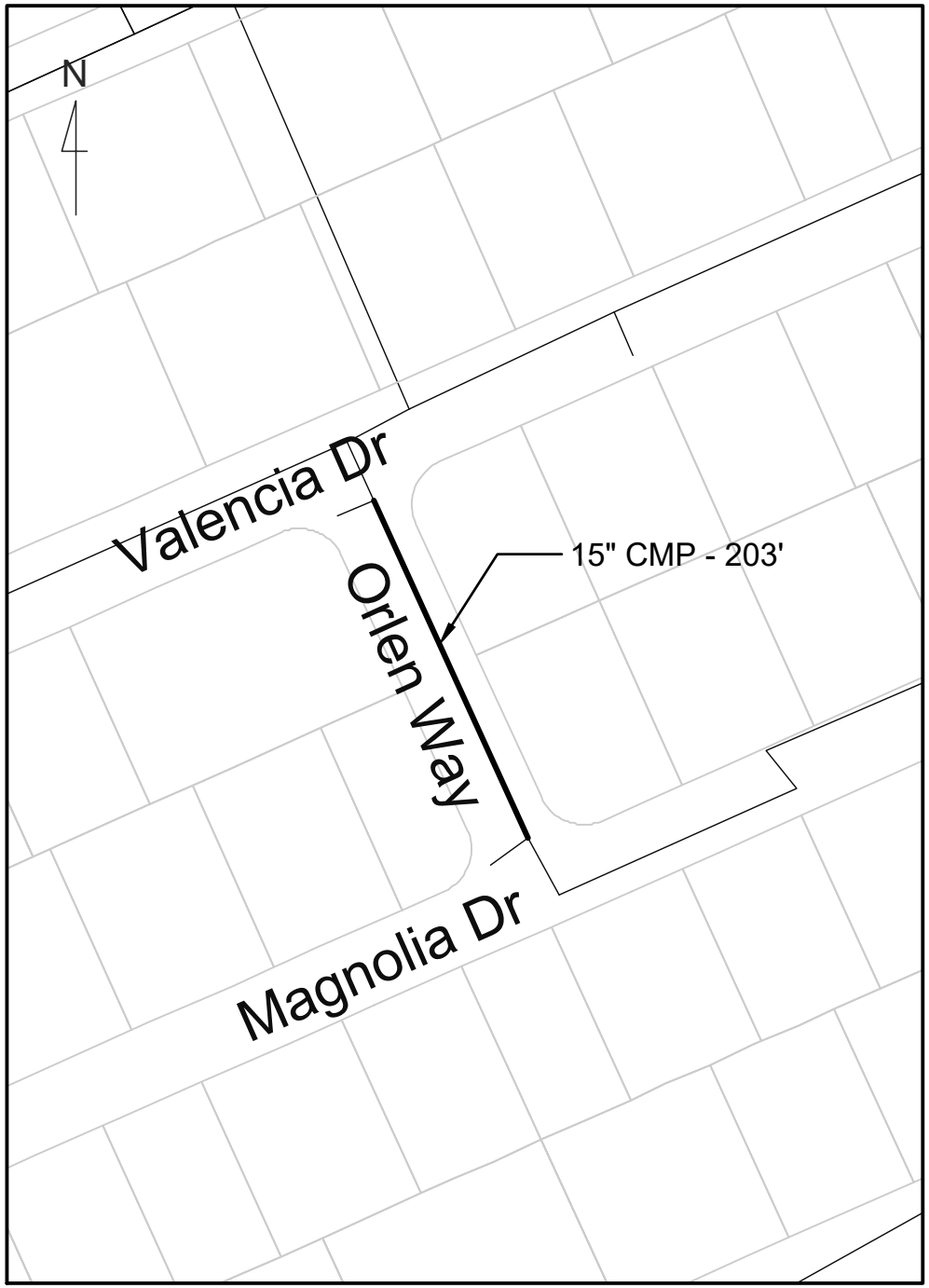


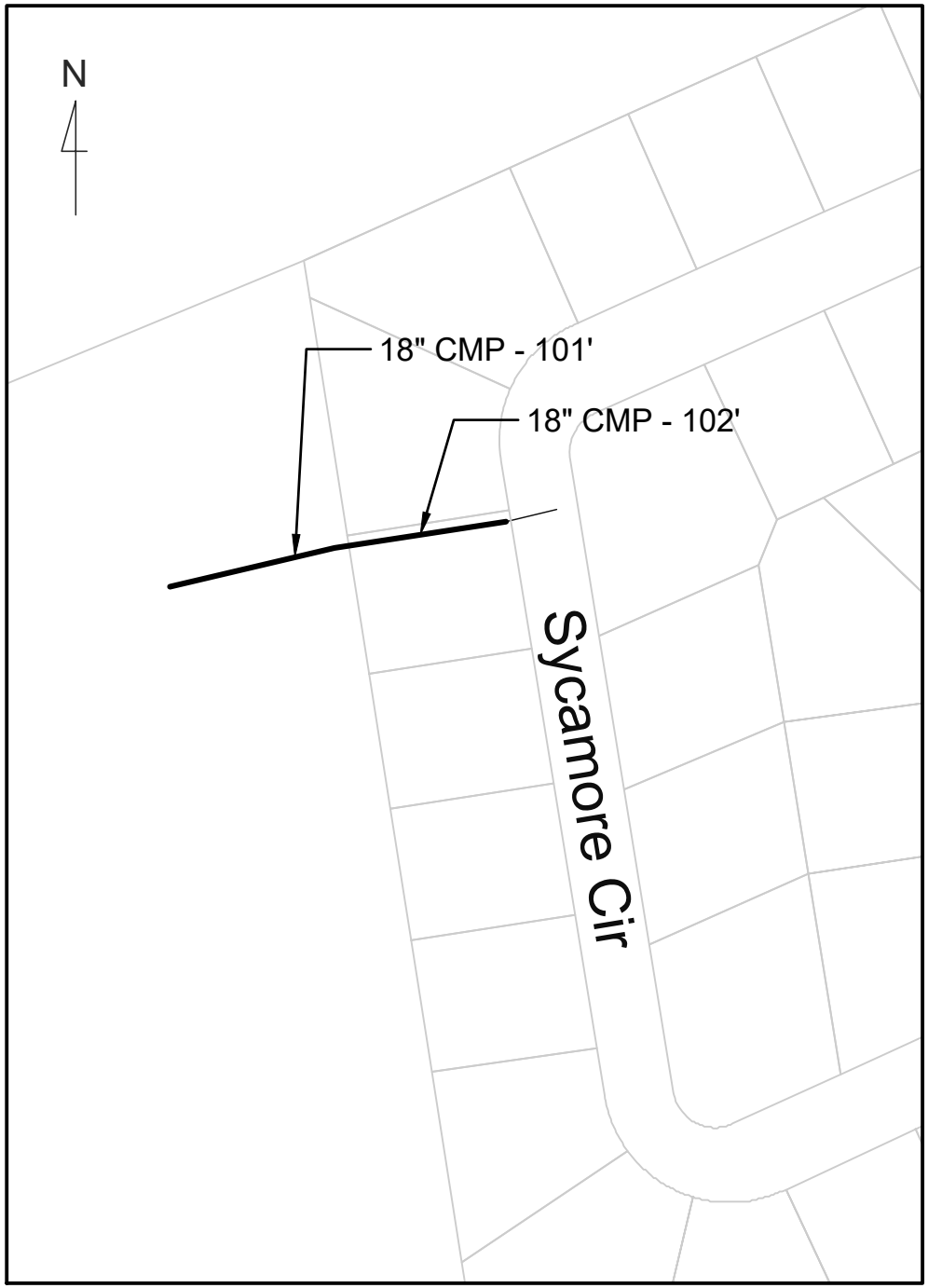


STORM

SHEET 8

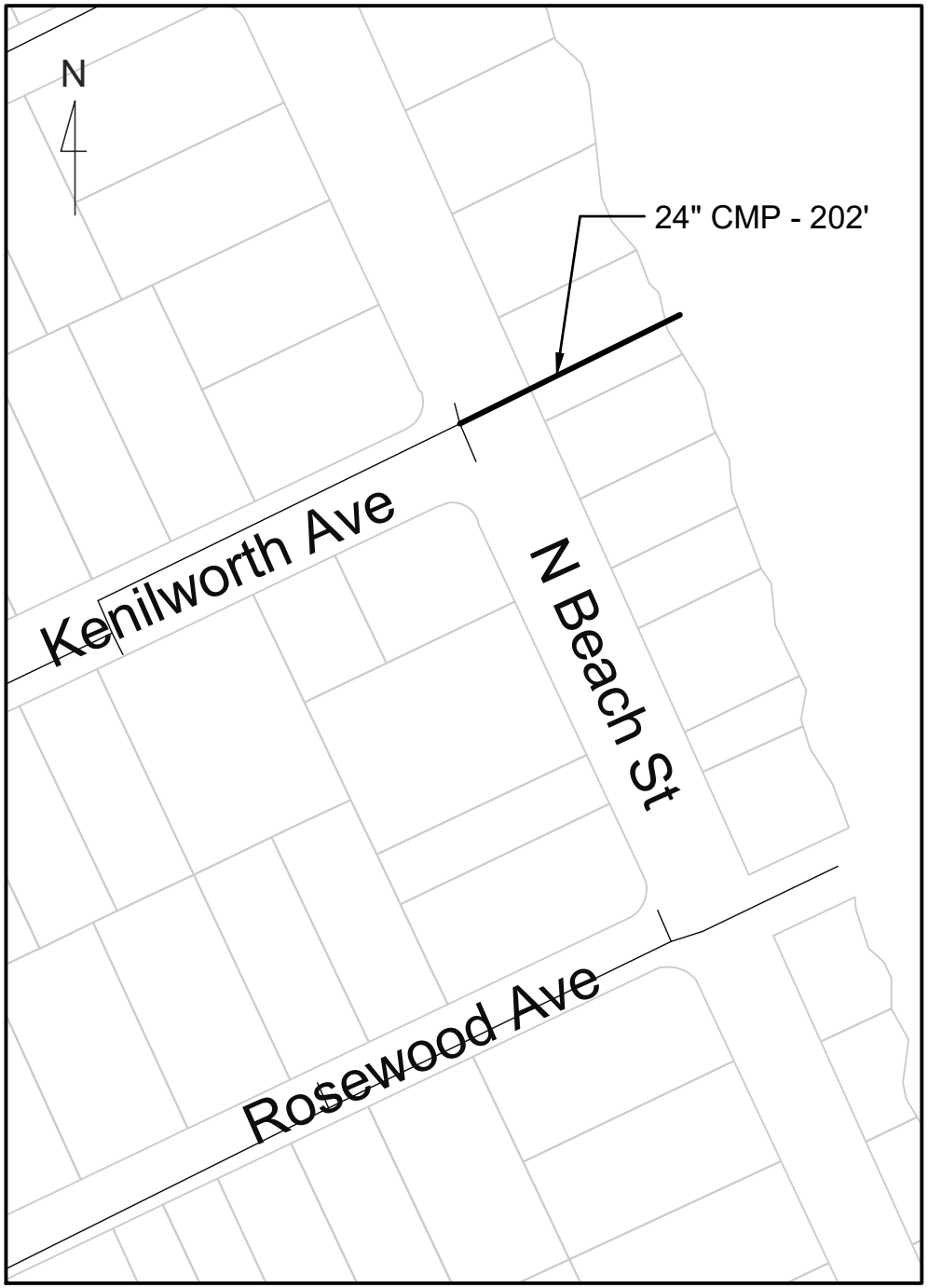
2022 / 2023 STORM & SEWER LINING

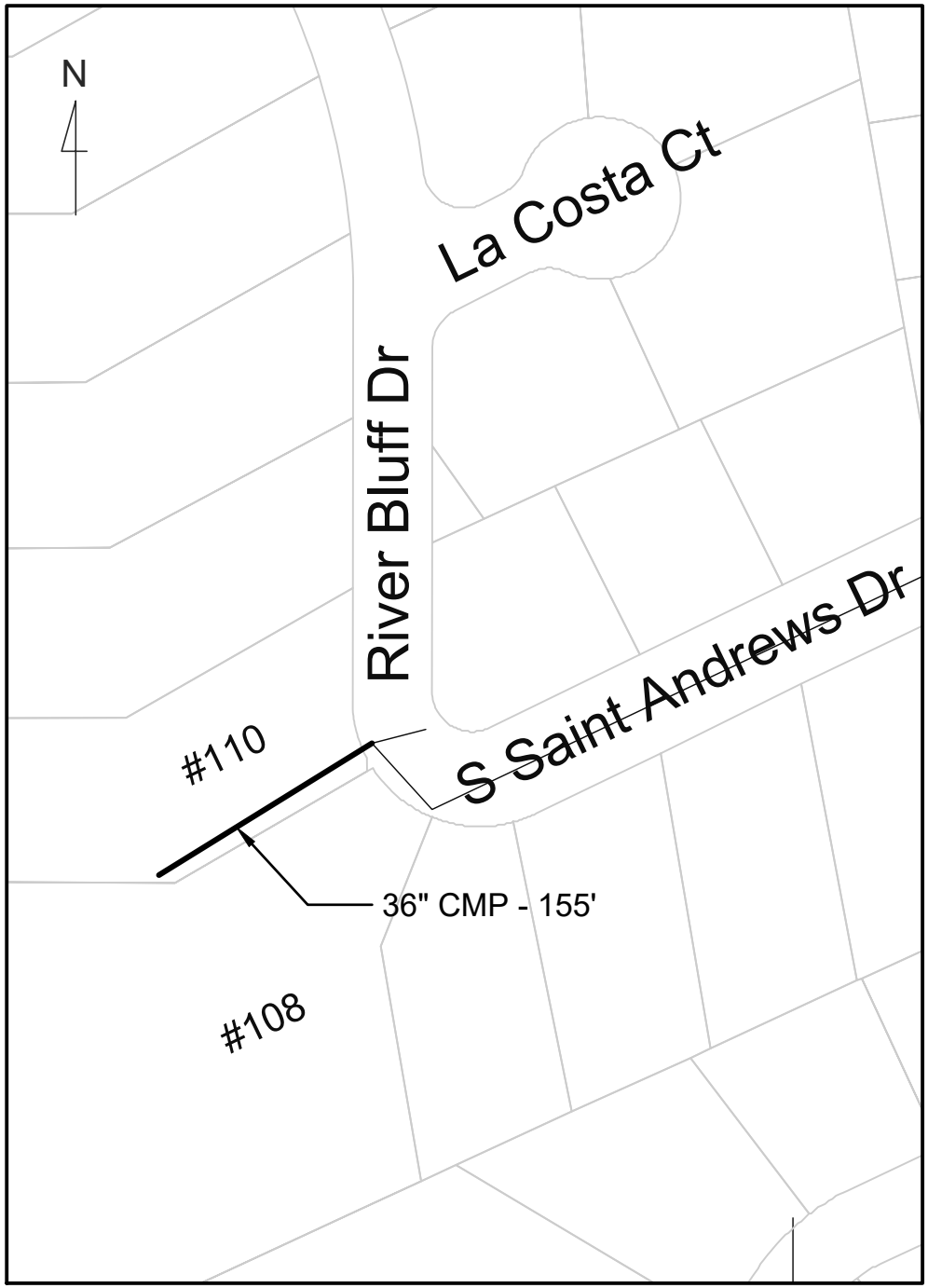




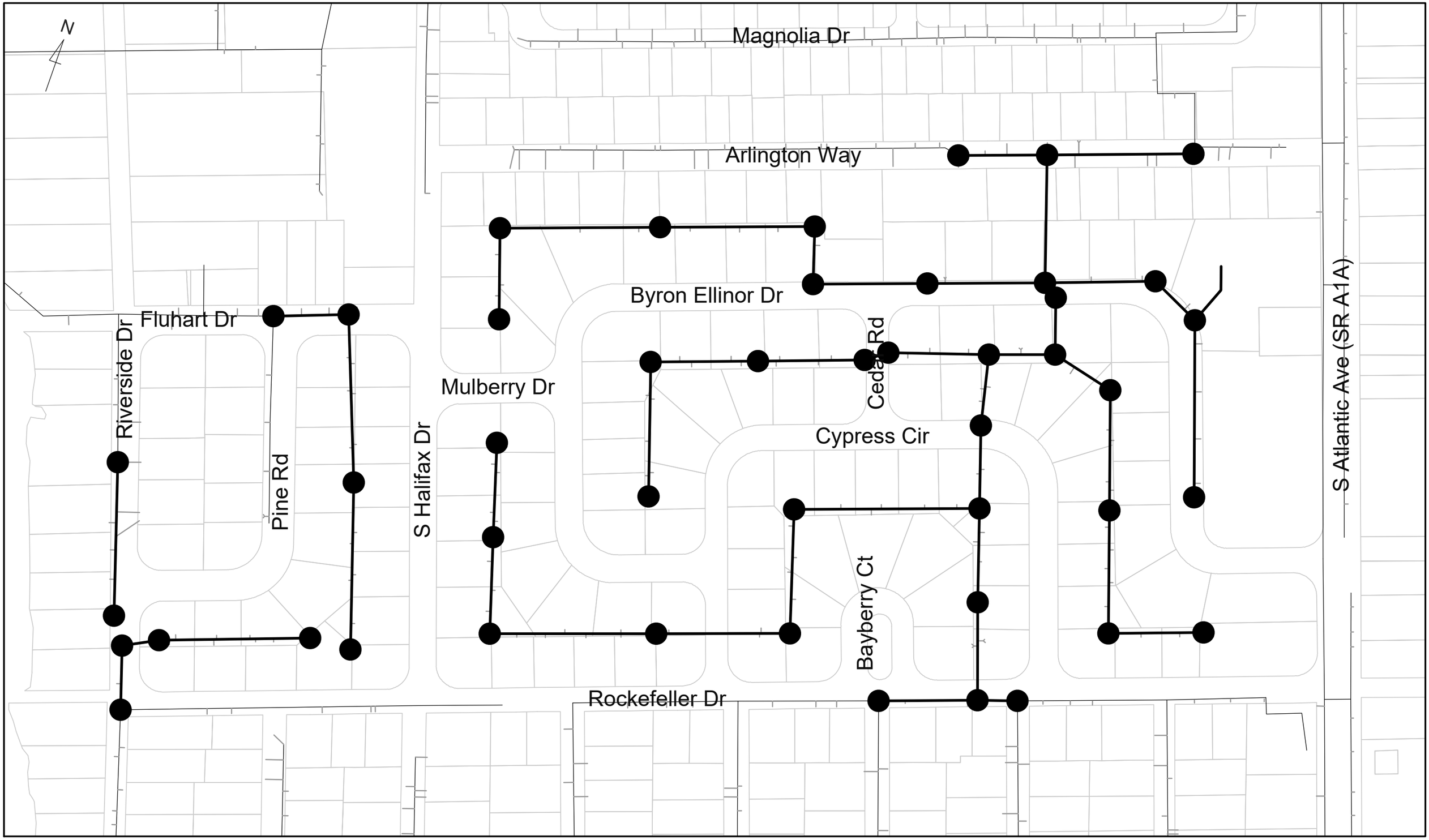
STORM

2022 / 2023 STORM & SEWER LINING



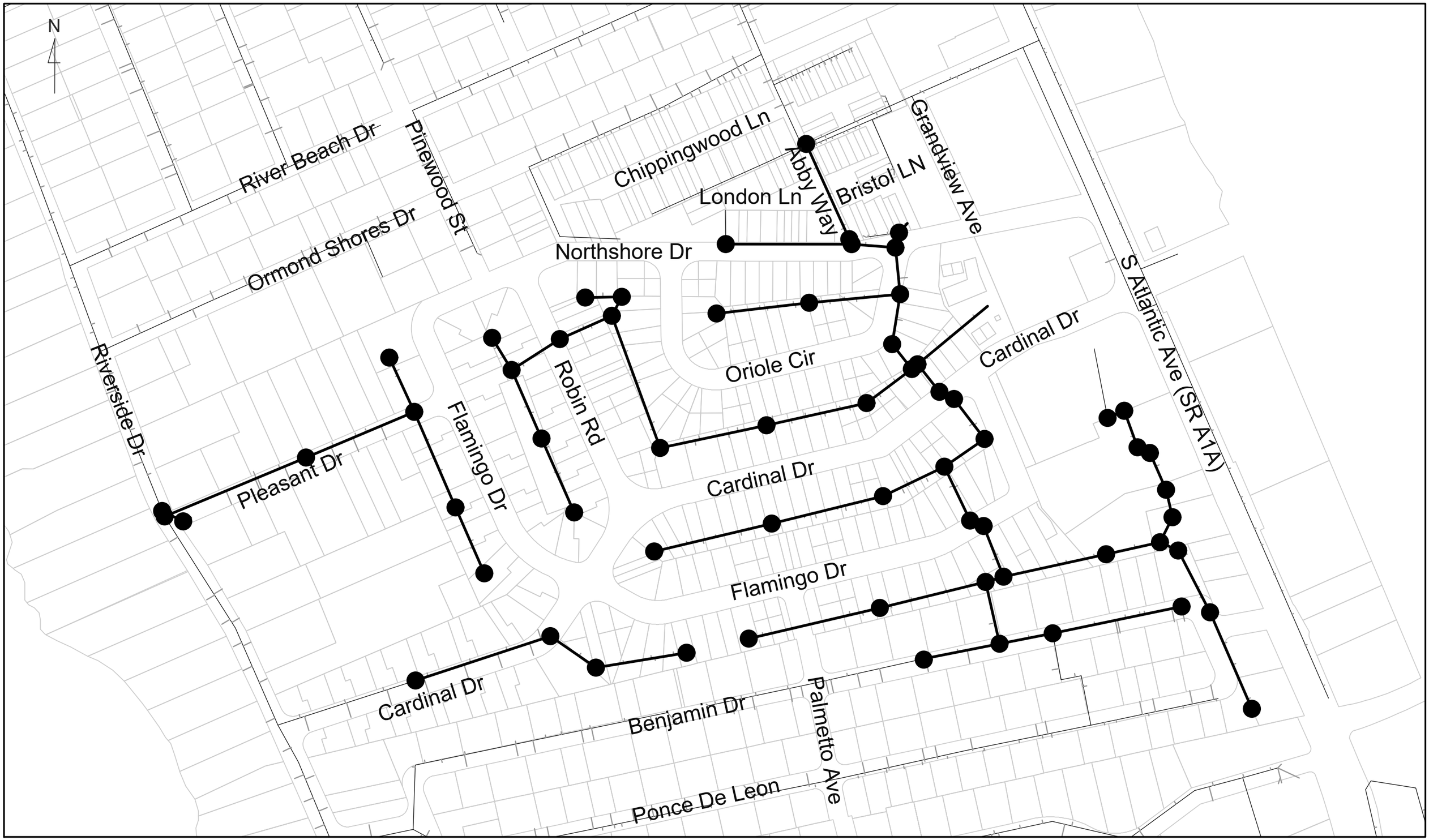


2022 / 2023 STORM & SEWER LINING



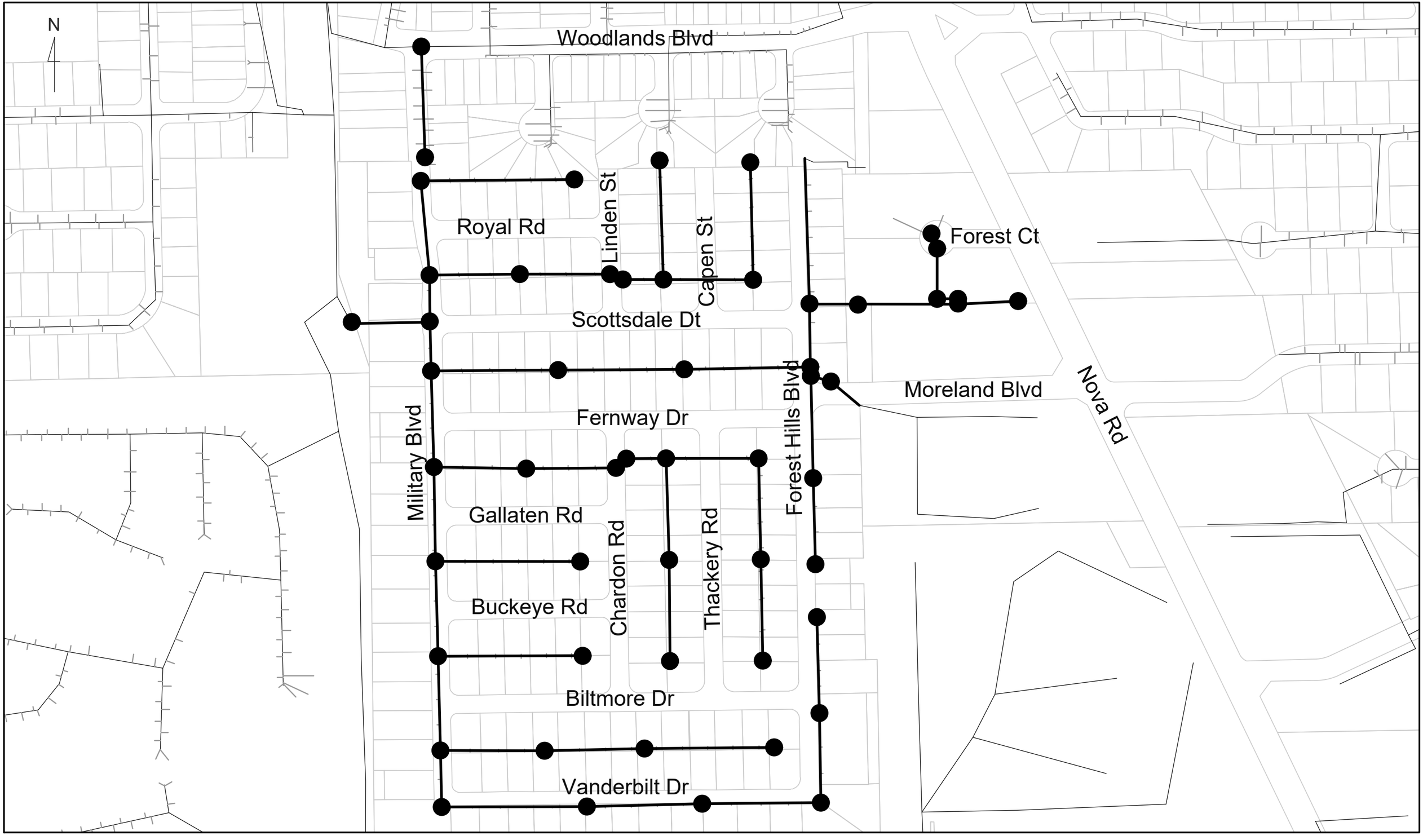
SEWER INSPECTIONS

2022 / 2023 STORM & SEWER LINING



SEWER INSPECTIONS

2022 / 2023 STORM & SEWER LINING



SEWER INSPECTIONS

SECTION 00300
BID

CONTRACTORS NAME Ric-Man Construction Florida, Inc LICENSE NO. CGC 1514965

PROJECT IDENTIFICATION: **2023 Storm & Sewer Lining**

CONTRACT IDENTIFICATION AND NUMBER: Bid No. 2023-15

THIS BID IS SUBMITTED TO:
(Name and Address of Owner)

City of Ormond Beach
22 South Beach Street Rm 101
Ormond Beach, Florida 32174

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

2. BIDDER certifies that he has investigated the requirements to do business in the jurisdiction where the project is located, and that he is either qualified to do business or will obtain such prequalification prior to award of the contract.

3. BIDDER accepts all of the terms and conditions of the Instructions to Bidders (Section 00100) including, without limitation, those dealing with the disposition of Bid Security, Public Entity Crimes, and Minority Policies. This Bid will remain open for 90 days after the day of Bid opening. BIDDER will sign the Agreement and submit the Contract security and other documents required by the Contract Documents within ten (10) days after the date of OWNER'S Notice of Award.

4. In submittingthis Bid, BIDDER represents, as more fully set forth in the Agreement, that:

(a) BIDDER has examined copies of all the Contract Documents and of the following addenda:

Date	Number
1/19/2023	1
1/26/2023	2
2/8/2023	3

(receipt of all of which is hereby acknowledged) and also copies of the Advertisement to Bid and the Instructions to Bidders;

(b) BIDDER has examined the site and locality where the Work is to be performed. the legal requirements (federal. state and local laws. ordinances. rules and regulations) and the conditions affecting cost. progress or performance of the Work and has made such independent investigations as BIDDER deems necessary.

(c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person. firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER; and

5. BIDDER will complete the Work for the following price(s):

BID SCHEDULE

STORM				
Item Description	**Item Quantity**	**Units**	**Unit Price**	**Total Estimated Price**
Cured in place liner- 12" CMP, 7.5mm	31	LF	$94.47	$2,928.57
Cured in place liner- 15" CMP, 9.0mm	1731	LF	$67.23	$116,375.13
Cured in place liner- 18" CMP, 10.5mm	1040	LF	$78.16	$81,286.40
Cured in place liner- 24" CMP, 12.0mm	1078	LF	$108.85	$117,340.30
Cured in place liner- 30" CMP, 13.5mm	995	LF	$145.32	$144,593.40
Cured in place liner- 36" CMP, 15.0mm	317	LF	$192.04	$60,876.68

SEWER				
Item Description	**Item Quantity**	**Units**	**Unit Price**	**Total Estimated Price**
Cured in place liner-8" VCP, 6.0mm	3093	LF	$41.38	$127,988.34

MANHOLES				
Item Description	**Item Quantity**	**Units**	**Unit Price**	**Total Estimated Price**
LINING OF MANHOLES, EPOXY	256	VF	$493.38	$126,305.28
CONDITION I/WALL RESTORATION WITH CEMENT UNDERLAYMENT	37	VF	$567.38	$20,993.06
CONDITION II/WALL RESTORATION WITH CEMENT UNDERLAYMENT	104	VF	$18.50	$1,924.00
CONDITION III/WALL RESTORATION WITH CEMENT UNDERLAYMENT	115	VF	$18.50	$2,127.50
WATER INFILTRATION/CHEMICAL GROUTING	20	GAL	$246.69	$4,933.80
BENCH REPAIR/REFORM EXISTING FLOW CHANNEL(S)	8	EA	$61.67	$493.36
BENCH REPAIR/COMPLETE REPLACEMENT	8	EA	$61.67	$493.36
REPLACEMENT OF MANHOLE RING & COVER (IN ASPHALT)	6	EA	$1,726.81	$10,360.86

SANITARY SEWER INSPECTION, Elinore Heights/Village				
Item Description	**Item Quantity**	**Units**	**Unit Price**	**Total Estimated Price**
INSPECT 6-INCH SANITARY SEWER	527	LF	$7.59	$3,999.93
INSPECT 8-INCH SANITARY SEWER	16613	LF	$5.77	$95,857.01
INSPECT 10-INCH SANITARY SEWER	2001	LF	$5.90	$11,805.90
INSPECT 12-INCH SANITARY SEWER	972	LF	$6.63	$6,444.36
INSPECT 15-INCH SANITARY SEWER	751	LF	$8.75	$6,571.25
ROOT CUT MEDIUM, PIPE DIAMETER 6"-10"	1925	LF	$6.05	$11,646.25
ROOT CUT MEDIUM, PIPE DIAMETER 12"-15"	175	LF	$14.43	$2,525.25
ROOT CUT BALL, PIPE DIAMETER 6"-10"	370	LF	$10.71	$3,962.70
ROOT CUT BALL, PIPE DIAMETER 12"-15"	40	LF	$26.36	$1,054.40
INSPECT MANHOLE	114	EA	$154.18	$17,576.52

TOTALBASE BID $ 980,463.61
(Figures)

NINE HUNDRED EIGHTY THOUSAND FOUR HUNDRED SIXTY THREE DOLLARS AND SIXTY ONE CENTS.
(Words)

ALTERNATE NO.1,

SANITARY SEWER INSPECTION, Forest Hills				
Item Description	**Item Quantity**	**Units**	**Unit Price**	**Total Estimated Price**
INSPECT 8-INCH SANITARY SEWER	12505	LF	**$5.92**	**$74,029.60**
INSPECT 10-INCH SANITARY SEWER	158	LF	**$7.26**	**$1,147.08**
ROOT CUT MEDIUM, PIPE DIAMETER 6"-10"	1270	LF	**$9.09**	**$11,544.30**
ROOT CUT BALL, PIPE DIAMETER 6"-10"	245	LF	**$10.35**	**$2,535.75**
INSPECT MANHOLE	56	EA	**$154.18**	**$8,634.08**

TOTALBID ALTERNATE $ **97,890.81**
(Figures)

NINETY SEVEN THOUSAND EIGHT HUNDRED NINETY DOLLARS AND EIGHTY ONE CENTS
(Words)

BIDDER acknowledges that the quantities are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents.

BIDDER agrees that the Work will be substantially completed within 120 calendar days after the date when the Contract Time commences to run, and completed within 150 calendar days after the date when the Contract Time commences to run.

BIDDER recognizes that time is of the essence to complete this Project and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The BIDDER also recognize the delays, expense and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER has determined and BIDDER agrees to accept that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER THREE HUNDRED Dollars ($ 300) for each calendar day that expires after the time specified above for substantial completion until the Work is substantially complete. After substantial completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified above for completion and readiness for final payment or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining work. In the event the CONTRACTOR is terminated or abandons the work prior to the scheduled date for final completion, the CONTRACTOR may be liable for both liquidated damages attributable to delay and for excess completion costs.

6. The following documents are attached to and made a condition of this Bid:

   (a) Required Bid Security in the form of

   (1) a certified check drawn in favor of the City of Ormond Beach in the amount of 5 percent of the total bid; or

   (2) a Bid Bond in the amount of 5 percent of the total bid.

   (b) Equipment, Material, and Subcontractors List

   (c) All information required by the Trench Safety Act (Part VI, Chapter 553, Florida Statutes).

   (d) Drug Free Workplace Certificate

   (e) Conflict, Non-Conflict of Interest, Litigation Statement

   (f) Local Vendor Preference

   (g) Verification of Employment Status Using E-Verify System

7. Communications to the BIDDER concerning this Bid shall be addressed to:

Mailing Address: 3100 SW 15th street
Street Address: 3100 SW 15th street
City, State, Zip Code: Deerfield Beach, Fl 33442
Email: tjohnson@ric-manfl.com
Telephone No.: 954.426.1221 Fax No.: 954.426.1226

8. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract DOCUMENTS have the meanings assigned to them in the General Conditions.

SUBMITTED on February 15th, 2023.

If BIDDER is:

An Individual

By _____
(Individual's Name - Signature)

_____(SEAL)
(Individual's Name - Typed or Printed)

doing business as _____

Business address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Partnership

By _____(SEAL)
(Firm Name)

_____
(General Partner - Signature)

_____
(General Partner - Typed or Printed)

Business Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Corporation

By Ric-Man Construction Florida, Inc
(Corporation Name)

Florida
(State of Incorporation)

By _____
(Name of Person Authorized to Sign - Signature)

Michael Fischer
(Name of Person Authorized to Sign - Typed or Printed)

COO
(Title)

(Corporate Seal)

Attest _____

Business address: 3100 SW 15th st. Deerfield Beach, Fl 33442

Phone No.: 954.426.1221

Fax No.: 954.426.1226

If BIDDER is:

A Joint Venture

By _____
(Name - Signature)

_____
(Name - Typed or Printed)

Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

By _____
(Name - Signature)

_____
(Name - Typed or Printed)

Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

2023 Storm & Sewer Lining
ORMOND BEACH, FLORIDA

EQUIPMENT AND SUBCONTRACTORS LIST

List the names of the manufacturers whose product is proposed for use. No more than one manufacturer's name shall be inserted for each item of material and/or equipment listed. Failure to list materials and equipment supplier may result in the Bid being rejected as incomplete and nonresponsive. If any Subcontractors are proposed to be used for any portions of the Work, the names, addresses, phone numbers and work classifications of each such Subcontractor must be listed. The failure to list all Subcontractors proposed for the work may result in the Bid being rejected as incomplete and nonresponsive. If more than one manufacturer or subcontractor is listed, selection will be made by the OWNER. If none is listed, those listed as the "Basis for Design" will be used.

Materials and Equipment:

Item	Supplier
Liner	Global Materials Company 2051 Blue Heron Blvd Riviera Beach, Fl 38404 ph. 1888.797.3736

Subcontractors:

Work Classification: Manhole Rehabilitation

Name: US Infra Rehabilitation Services

Address: 9169 Highland ridgeway Tampa, FL 33647

Phone Number: 740.707.1991 Fax Number: N/A

Subcontractors:

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

TRENCH SAFETY STANDARDS

If this project includes trench excavation in excess of five (5) feet in depth, the following trench safety standards will be in effect during the period of construction of the project:

The Occupational Safety and Health Administration's excavation safety standards, 29 C.F.R.s. 1926.650 Subpart P, and any regulation promulgated there under are hereby incorporated as the standard for this project.

The Bidder hereby certifies that the Contractor performing the trench excavation will comply with the applicable trench safety standards.

The Bidder further certifies that the cost (which is included in his unit cost) of compliance with applicable trench safety standards is:

	Estimated Quantity	Units	Unit Price	Total Estimated Price
ITEM				
1. Trench Excavation	N/A	L.F.	N/A	N/A
2. Sheeting/Shoring	N/A	S.F.	N/A	N/A

2/15/2023

Name (signature) Date

Michael Fischer

Name (typed or printed)

COO

Title

DRUG-FREE WORKPLACE CERTIFICATION

Identical Or "Tie" Bids: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

2/15/2023

Name (signature) Date

Michael Fischer

Name (typed or printed)

COO

Title

2023 Storm & Sewer Lining
ORMOND BEACH, FLORIDA

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1

[x] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2

[ ] The undersigned firm has had no litigation on any project in the last five (5) years.

[x] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

Ric-Man Construction Florida, Inc
COMPANY NAME

AUTHORIZED SIGNATURE

Michael Fischer
NAME (PRINT OR TYPE)

COO
TITLE

2/15/2023
DATE

3100 SW 15th Street
Deerfield Beach, Florida 33442
Office:(954)426-1221
Fax:(954)426-1226

1.3.6 - Disputes, Litigation and Resolution

RMCF has had no litigation filed against it within the last 5 years from a Regulatory Agency, Owner or State institution over the last 5 years.
The following cases were filed by Subcontractors and listed below with disposition for each:

1 - Poseidon Dock and Dredge v. Ric-Man Construction Florida, Inc.
Case # JAMS Arbitration 1460005499
Court 11th Circuit-Miami- Dade
Disposition- Settled in Arbitration
Description- Breach of contract action for extra work claimed on a Seawall project in Miami Beach

2 - Everest Indemnity Insurance Co v. Ric-Man Construction Florida, Inc.
Case No. 2017- 012756-CA-01
Court: 11th Circuit- Miami-Dade
Disposition- Settlement with Prejudice- Voluntary Dismissal
Description- Plaintiff sought damages on behalf of condominium to existing lift station claiming Ric-Man caused sewer back-up into client's condominium as a result of 72" force main installation work being performed for Miami-Dade County, WASD.

LOCAL VENDOR PREFERENCE

The following is taken from the Code of Ordinances, City of Ormond Beach, Chapter 2, Financial Matters, Division 3, Purchasing, Article IX, Section 2-304:

Except where otherwise provided by federal or state law or other funding source restrictions, purchases of goods and services under the Purchasing Code shall give preference to local businesses as follows:

(a) Under a competitive bid solicitation, the City *may* give a local preference in the amount of three percent (3%) of the bid price or $25,000, whichever is less. The bid price shall include not only the base bid price but all alternatives which are part of the bid and actually purchased or awarded.

(b) A *local business* shall mean a vendor that has a valid occupational license issued by the City of Ormond Beach at least one year prior to bid opening, with a physical business address located within the municipal boundaries of the City of Ormond Beach from which the vendor operates or performs business on a day-to-day basis that is a substantial component of the goods or services being offered and has provided a Local Vendor Affidavit of Eligibility at the time the bid is submitted.

(c) A *Local Vendor Affidavit of Eligibility* shall accompany the bid submittal to be considered valid and shall include, but not be limited to, the following information:
   (1) A physical business and location address;
   (2) A copy of current City of Ormond Beach Local Business Tax Receipt (occupational license) to verify the business location;
   (3) Proof of payment of business tax and real property tax due to the City of Ormond Beach;
   (4) A copy of the firm's most recent annual corporation report to the Florida Division of Corporations;
   (5) Any additional information necessary to verify local status.

(d) *Exemptions:* Goods or services provided under a cooperative purchasing agreement, contracts for professional services subject to Consultants' Competitive Negotiation Act, purchases or contracts funded in whole or part by a governmental entity that does not allow local preferences, purchases made under another agency's agreements or contracts (piggybacking), purchases under emergency or sole source situations and procurements subject to formal proposals including but not limited to request for proposals (RFP) or continuing contract, and request for quotes (RFQ) versus straight competitive bids.

(e) This section shall not be deemed to require the granting of a local preference, and nothing herein prohibits the award of a contract to a non-local vendor where such award is in the public interest.

2023 Storm & Sewer Lining
ORMOND BEACH, FLORIDA

LOCAL VENDOR AFFIDAVIT OF ELIGIBILITY

I certify that my company meets all of the following qualifications to be eligible for the local vendor preference:

a. My company has a physical business address located within the municipal boundaries of the City of Ormond Beach which is used to perform business on a day-to-day basis.
b. My company holds any business (occupational) or contractor license required by the City of Ormond Beach at least one year prior to bid opening.
c. Payment of business tax and real property tax due to the City of Ormond Beach is current
d. My company is in compliance with annual reporting to the Florida Division of Corporations

Company Name: _____

Address: _____

Business or Contractor License Number: _____

Phone Number: _____ Fax Number: _____

Owner's Name: _____ Signature: _____

Sworn to before me this _____ day of _____

Notary Public for the State of _____ My Commission Expires _____

Notary Public Signature: _____

Printed Name: _____

To be approved as a local bidder and receive bid preference on an eligible local project, this affidavit of eligibility, a copy of your local business or contractor license, copy of business tax/real property tax and a copy of the firm's most recent annual corporation report must be submitted with your bonafide BID package. Bid preference is provided at the City's sole discretion.

VENDOR DO NOT COMPLETE BELOW

To be verified and completed by an authorized representative of the City of Ormond Beach's Purchasing Department:

Vendor Certified by: _____ Date: _____

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.
2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.
3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.
4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.
5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

Ric-Man Construction Florida, Inc
COMPANY NAME

AUTHORIZED SIGNATURE

Michael Fischer
NAME (PRINT OR TYPE)

COO
TITLE

2/15/2023
DATE

END OF BID

SECTION 00410
BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we Ric-Man Construction Florida, Inc.

(hereinafter called Principal) and

Amerisure Mutual Insurance Company

(hereinafter called the Surety) a corporation chartered and existing under the Laws of the State Michigan of with its principal offices in the County of Oakland and authorized to do business in the State of Florida, in the full and just sum of Five Percent of the attached bid Dollars ($ 5%) good and lawful money of the United States of America, to be paid upon demand of the City of Ormond Beach, Florida, to which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally and firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted to the City of Ormond Beach, Florida, a bid for work to be done on the **2023 STORM & SEWER LINING (BID No. 2023-15)** in, and for the City and

WHEREAS, the Principal desires to file this bond in accordance with law, in lieu of a certified or cashier's check otherwise required to accompany this Bid.

NOW, THEREFORE: the conditions of this obligation are such that if the Bid be accepted the Principal shall within ten (10) days after the receipt of notification of the acceptance thereof execute a contract in accordance with the Bid and upon the terms, conditions and unit or lump sum prices set forth therein, in the form and manner required by the Owner, and execute a sufficient and satisfactory Contract Bond payable to the Owner, in an amount not less than the total contract price, as indicated by the approximate quantities shown in the Bid, in form and with security satisfactory to the said City, then this obligation to be void; otherwise to be and remain in full force and virtue in law; and the Surety shall upon the failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid City upon demand the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this 15th day February, 2023.

Ric-Man Construction Florida, Inc.
(Principal)

By: _____

ATTEST:

_____ *(SEAL)*

Amerisure Mutual Insurance Company
(Surety)

By: _____
Jeffrey A. Chandler, Attorney-in-Fact

END OF SECTION

AMERISURE MUTUAL INSURANCE COMPANY
AMERISURE INSURANCE COMPANY
AMERISURE PARTNERS INSURANCE COMPANY

AMERISURE SURETY

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company are corporations duly organized under the laws of the State of Michigan (herein collectively the "Companies"), and that the Companies do hereby make, constitute and appoint:

ALAN P. CHANDLER, ROBERT TROBEC, JEFFREY A. CHANDLER, IAN J. DONALD, T.J. GRIFFIN,

KATHLEEN M. IRELAN, SUSAN L. SMALL, JOHN L. BUDDE, STEVEN K. BRANDON

BRYAN FORMSMA and WENDY LEE HINGSON

its true and lawful Attorney(s)-in Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge, for and on its behalf and as its act and deed, bonds or others writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts or suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

ONE HUNDRED MILLION ($100,000,000.00) DOLLARS

This Power of Attorney is granted and signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company at meetings duly called and held on February 17, 2022.

"**RESOLVED**, that any two of the President & Chief Executive Officer, the Chief Financial Officer & Treasurer, the Senior Vice President Surety, the Vice President Surety, or the General Counsel & Corporate Secretary be, and each or any of them hereby is authorized to execute, a Power of Attorney qualifying the attorney-in-fact named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that President & Chief Executive Officer, Chief Financial Officer & Treasurer or General Counsel & Corporate Secretary each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company;

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto electronically/digitally or by facsimile, and any such Power of Attorney or certificate bearing such electronic/digital or facsimile signatures or electronic/digital or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached;

FURTHER RESOLVED, that any work carried out by the attorney-in-fact pursuant to this resolution shall be valid and binding upon the Company."

By: _____
Michael A. Ito, Senior Vice President

By: _____
Aaron Green, Vice President

IN WITNESS WHEREOF, Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 17th day of May, 2022.

Amerisure Mutual Insurance Company
Amerisure Insurance Company
Amerisure Partners Insurance Company

State of Illinois
County of Kane

On this 17th day of May, 2022, before me, a Notary Public personally appeared Michael A. Ito, of Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company and Aaron Green of Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.

OFFICIAL SEAL
M KENNY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 12/04/2025

_____
M.Kenny, Notary Public

I, Shannon K. Anderson, the duly elected Vice President, General Counsel & Corporate Secretary of Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney executed by said Companies, which remains in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 15th day of February 2023

_____
Shannon K. Anderson, Vice President, General Counsel & Corporate Secretary

BID OPENING TABULATION

Project: 2023 Storm and Sewer Lining

Bid Number: 2023-15

Date & Time: February 15, 2023 2:00pm

Contractor	Addendum 1	Addendum 2	Addendum 3	Bid Bond	Contractor Totals	Additive Alternate #1
Gulf Coast Underground	y	y	y	y	$1,955,183.00	$73,895.10
Ric-Man Construction	y	y	y	y	$980,463.61	$97,890.81
National Water Main Cleaning	y	y	y	y	$1,099,752.00	$56,513.25
LMR Construction	y	y	y	y	$1,095,320.20	$94,637.00
Atlantic Pipe Services	y	y	y	y	$1,496,809.26	$76,558.25
Inliner	y	y	y	y	$1,097,798.00	$49,324.00
Vortex Services	y	y	y	y	$1,425,757.50	$72,332.50
0	0	0	0	0	$0.00	$0.00
	0	0	0	0	$0.00	$0.00
	0	0	0	0	$0.00	$0.00
	0	0	0	0	$0.00	$0.00
	0	0	0	0	$0.00	$0.00
	0	0	0	0	$0.00	$0.00
	0	0	0	0	$0.00	$0.00
0	0	0	0	0	$0.00	$0.00
0	0	0	0	0	$0.00	$0.00
0	0	0	0	0	$0.00	$0.00

Please Note: The bid proposals are currently being reviewed. All submittals accepted by the City of Ormond Beach are subject to the City's terms and conditions and any and all additional terms and conditions submitted by the bidders are rejected and shall have no force and effect. Bid documents from the bidders listed herein are the only submittals received timely as of the above opening date and time. All other bid documents submitted in response to this solicitation, if any, are hereby rejected as late.

Tabulated by: Robert Hart
Purchasing Coordinator

Opened by: Dan D'Amato
Civil Engineer

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.F
Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2023-64
Strategic Goal:	Quality of Life – Other		
Department :	Public Works - Engineering		
Subject:	Work Authorization - Construction Management Services to Bomar Construction, Inc., for Performing Arts Center Renovations		
Budget Impact:	Funding is available as follows: County of Volusia ECHO Grant $600,000, which requires the recipient to contribute an equal match of $600,000. For this project, The Friends of the PAC raised $191,500 toward the required ECHO Grant match, and the City of Ormond Beach budgeted $520,000 toward the required ECHO Grant match in Fund 301-General Capital Improvements Fund, for a total of $1,311,500. Although the Friends of the PAC initially agreed to fund any amount above $1.2 million ($600,000 from ECHO plus the $600,000 required match), they are now unable to do so (letters attached). Therefore, the City would need to fund the deficit of $406,865 through General Fund Reserves. Doing so would reduce the reserve level to 15.34%, which would leave $128,000 available above the benchmark of 15%.		
Summary:	This project, partially funded through Volusia County ECHO funds and a Friends of the PAC donation, includes renovation of the lobby; creation of a donor wall, improving the appearance of the exterior façade; modifications to the lobby stairway for both public safety and aesthetics; modifications to the restrooms to ensure full accessibility; the addition of a major art installation; upgrades of floor, window, and wall coverings in the lobby, concession, and hallways; and a canopy for shelter at the entrance during inclement weather.		
Recommended Action:	Staff is recommending the work authorization be issued to Bomar in the amount of $1,726,865, for renovations to the Performing Arts Center.		
Staff Contact:	Alex Schumann, City Engineer, (386) 676-3302		

Approval:

Kelly McGuire, Finance Director 3/9/2023



Claire Whitley, Assistant City Manager	3/14/2023	
Joyce Shanahan, City Manager	3/14/2023	

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Alex Schumann, City Engineer

Date: March 21, 2023

Subject: Work Authorization - Construction Management Services to Bomar Construction, Inc., for Performing Arts Center Renovations

Commission Goal: Quality of Life – Other

Introduction

This is a request for approval of a work authorization for construction management services to Bomar Construction, Inc. (Bomar), for the renovations to the Performing Arts Center (PAC), located at 399 North US-1.

Background

This project, partially funded through Volusia County ECHO funds, includes renovation of the lobby; creation of a donor wall, improving the appearance of the exterior façade; modifications to the lobby stairway for both public safety and aesthetics; modifications to the restrooms to ensure full accessibility; the addition of a major art installation; upgrades of floor, window, and wall coverings in the lobby, concession, and hallways; and a canopy for shelter at the entrance during inclement weather.

On November 1, 2022, the City Commission approved a contract with Bomar for pre-construction phase services. These services included assistance with finalizing plans and specifications, value engineering, and construction oversight from the design architect. The final plans and specifications are attached.

The Friends of the PAC have a long history of providing enhancements, such as updating the sound system, stage curtains and lighting to the PAC.

In March of 2019, the Friends of the PAC requested that the City Commission allow them to fundraise for the renovations to the lobby and main hallway of the PAC. They also asked for a commitment from the City of Ormond Beach to make this a future Capital Improvement Project using their funds from fundraising for matching funds to apply for future grants.

Over the last three years, the Friends of the Performing Arts Center have both raised

and personally donated funds towards this project, applied for and received a grant from the Daytona Racing and Recreational District, and contracted and paid RLF Architects $95,000 for renderings and architectural plans for the City of Ormond Beach to use for the ECHO grant application.

Inflation has caused the cost of the project to increase significantly. The anticipated cost of the project increased from $1,311,500 to approximately $1,726,865. The Friends of the PAC will receive $100,000 upon completion of the project from Daytona Racing and Recreational District grant which they are committed to giving to the City of Ormond Beach. The Friends of the PAC will continue to work diligently at fundraising to help offset any additional costs.

Discussion

In 2022, the City Commission approved a contract with Bomar, for construction management services on a continuing contract basis. Under this contract, Bomar acts as a general contractor and contracts with specialty subcontractors through a competitive bidding process. Bomar submits a maximum construction price based on the competitive bids, including a construction management fee.

Staff chose to utilize the construction management services contract for this project as:

1. Construction time is reduced under this method; work can commence immediately following contract execution.
2. Providing full-time on-site supervision and direction to all subcontractors in efforts to minimize damage.
3. Scheduling subcontractors and material deliveries efficiently to reduce overall construction duration.

This current proposal provides for the immediate construction of the PAC Renovations at a guaranteed maximum price of $1,726,865. Bomar has previously completed many facility renovations, including the Ormond Memorial Arts Museum & Gardens.

Budget Impact

Funding is available as follows: County of Volusia ECHO Grant $600,000, which requires the recipient to contribute an equal match of $600,000. For this project, The Friends of the PAC raised $191,500 toward the required ECHO Grant match, and the City of Ormond Beach budgeted $520,000 toward the required ECHO Grant match in Fund 301-General Capital Improvements Fund, for a total of $1,311,500. Although the Friends of the PAC initially agreed to fund any amount above $1.2 million ($600,000 from ECHO plus the $600,000 required match), they are now unable to do so (letters attached). Therefore, the City would need to fund the deficit of $406,865 through General Fund Reserves. Doing so would reduce the reserve level to 15.34%, which would leave $128,000 available above the benchmark of 15%.

Citizen Impact

The PAC opened in 1991 and since that time it has been attracting tourists, local

residents and winter residents from all over the country and has solidified its place as a cultural institution and a valuable community resource for children and adults to learn and participate in dance and theatrical performances. The studio offers an area for show rehearsals and theatrical and dance classes. Prior to the pandemic, attendance averaged 40,000 guests annually. In addition to performances, the PAC offers gallery space for curated art shows for local artists, county school students, individuals with disabilities, an annual photography show and a venue for seminars and other public and civic group meetings.

Recommendation

Staff is recommending the work authorization be issued to Bomar in the amount of $1,726,865, for renovations to the Performing Arts Center.

Attachments:

1. 23-64 PAC constr mgmt - Bomar (P23-0031G)
2. Bomar Work Authorization
3. Letters

Approvals:

Kelly A. McGuire

Kelly McGuire, Finance Director — Date: March 09, 2023

Claire Whitley, Assistant City Manager — Date: March 14, 2023

Joyce Shanahan

Joyce Shanahan, City Manager — Date: March 14, 2023

RESOLUTION NO. 2023-64

A RESOLUTION ACCEPTING A PROPOSAL FROM BOMAR CONSTRUCTION, INC. FOR CONSTRUCTION MANAGEMENT SERVICES REGARDING THE PERFORMING ARTS CENTER RENOVATION PROJECT; AUTHORIZING THE EXECUTION OF A WORK AUTHORIZATION AND PAYMENT THEREFOR; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, pursuant to the Continuing Engineering Services Agreement between the City and Bomar Construction, Inc. the appropriate City staff members have negotiated with Bomar Construction, Inc. to provide construction management services for the Performing Arts Center renovation project ("the Project"), as described on the attached Work Authorization and Scope of Work, at a cost not to exceed $1,726,865.00, and

WHEREAS, the City Manager has certified that funding for the project will be derived from the General Fund (301), a Volusia ECHO Grant, and a donation from the Friends of the Performing Arts Center, and these funds will not be appropriated for any other purpose, and

WHEREAS, the City Commission concurs with the foregoing recommendations, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The proposal submitted by Bomar Construction, Inc. to perform the Project at a total cost not to exceed $1,726,865.00 is hereby accepted.

SECTION TWO. The Mayor and the City Manager are hereby authorized and directed to execute a Work Authorization with Bomar Construction, Inc. for the performance of

the Project at the said price, and to pay the cost thereof from the General Fund, Volusia ECHO grant funds and a donation from the Friends of the Performing Arts Center.

SECTION THREE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

WORK AUTHORIZATION

In accordance with and incorporating the terms of the Contract for Construction Management Services on a Continuing Basis dated September 7, 2022 between the City of Ormond Beach, Florida, and Bomar Construction, Inc., the following Scope of Work and Schedule of Payments are agreed to by the parties to the Agreement:

Project Title: Performing Arts Center Renovations – Construction Phase Services

Project Description: Construction Management Services at the Performing Arts Center to include lobby renovations; aesthetic and safety modifications to the lobby stairway; upgrades to flooring, window, and wall coverings in the lobby, concession, and hallways; modifications to the restroom to provide full accessibility, creation of an art installation and donor wall, improving the appearance of the exterior façade, installation of a covered walkway at the entrance, as detailed in the attached proposal dated February 2, 2023.

Schedule of Payments and Fee Basis

Required Work Task	Fee Basis	Fee
Performing Arts Center Renovations	Guaranteed Maximum Price	$1,726,865.00
Total Fee Authorized:	**Not to Exceed**	**$1,726,865.00**

Funding Source: General Fund (301), ECHO Grant, Friends of the PAC

Estimated Time for Completion: 9 Months from Authorization to Proceed

AUTHORIZED:
CITY OF ORMOND BEACH

By: _____
Bill Partington
Mayor

Date: _____

By: _____
Joyce A. Shanahan
City Manager

Date: _____

ACCEPTED:
BOMAR CONSTRUCTION, INC.

By: _____
Leonard Marinaccio, III
President

Date: _____

I. COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract transfer, at no cost to the City, all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174 (386) 676-3331
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

II. VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Section 448.09, *Florida Statutes*, makes it unlawful for any person to knowingly employ, hire, recruit, or refer, either for herself or himself, or on behalf of another, for private or public employment within the state, an alien who is not duly authorized to work in the United States. Contractor warrants that it is registered with the U.S. Department of Homeland Security's E-Verify system, and is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.
2. Contractor agrees that if the contractor enters into an agreement with a subcontractor, the subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and contractor warrants it shall maintain any such affidavits for the duration of the contract. If the City has a good faith belief that a subcontractor knowingly violated Section 448.09 (1), the City shall promptly notify the contractor and order the contractor to immediately terminate the contract with the subcontractor.
3. In the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and as provided by statute, the contractor may not be awarded a public contract for at least one (1) year after the date of termination. The contractor may also be held liable for any additional costs incurred by the City as a result of the termination of the contract.

Bomar Construction, Inc.

CGC 1517931
27 S. Orchard St., Ormond Beach, FL 32174
(386) 677-8736 Fax: (386) 677-7726

February 20, 2023

RE: City of Ormond Beach
Performing Arts Center Renovation

Dear Mr Schumann:

We are pleased to submit our proposal for the Ormond Beach Performing Arts Center (PAC) Renovation as indicated in the exhibits contained herein for the guaranteed maximum price of One Million, Seven Hundred Twenty Six Thousand, Eight Hundred Sixty Five Dollars and Zero Cents ($1,726,865.00).

We have based our Guaranteed Maximum Price on the following exhibits, which are attached hereto:

Exhibit “A”	Clarifications & Qualifications
Exhibit “B”	GMP Cost Breakdown
Exhibit “C”	Drawing List

Upon receipt of an executed contract and approval of all applicable permits, we anticipate the construction duration to be 26 weeks to substantial completion.

We are available to meet with you at your convenience to discuss this proposal and to answer any questions you may have. Thank you again for this opportunity to be of service and we look forward to working with you and all the City of Ormond Beach staff in building this very important project.

Sincerely,

Leonard Marinaccio III, President

Attachments

EXHIBIT "A"

Bomar Construction Inc.
Renovations to Ormond Beach Performing Arts Center
399 US Highway 1
Proposal Clarification and Qualifications

1. GMP includes cost of performance and payment bond.
2. Our proposal assumes all labor and supplies readily available during the construction timeline. We are not held liable for delays on labor, materials and or equipment that may arise due to the Covid-19 pandemic shutdowns or stay at home orders.
3. GMP is based on the attached list of drawings
4. Counter shutters based on Cornell Model ESC10 with manual push up operation.
5. Glass railing included as subject to approval similar to VIVA SHOE system. Glass is clear laminated. No ceramic coatings or patterns.
6. Price includes removal of approximately 2500 SF of stamped concrete around fountain, replacement with 2500 SF of 4" broom finish gray concrete.
7. No work for fountain included.
8. Ticket windows included as fabricated and install by local glazing contractor. Not by specified manufacturer (CRL)
9. Price includes Dittmer covered walkway system in 1 color selected from manufacturer's standard colors. No custom color included.
10. Covered walkway roof spills to grade, no underground collection system included.
11. Walkway foundations included as 4'x4'x4', after walkway engineering is completed foundations could change.
12. Door operator for pair of storefront doors 101A only, no other door operators included.
13. Price includes Pittcon column covers, Fry Reglet specified
14. GMP assumes construction start within 90 days

<u>ITEMS NOT INCLUDED in GMP:</u>

- Hazardous material study or removal/replacement of hazardous materials
- Cost of Impact or utility fees
- Price does not include after hours or phasing of areas.
- Removal of existing furnishings, art work, supplies, etc. (by owner)
- Power or water consumption costs
- Exterior pressure cleaning or painting (except for Shotcrete area)
- Florida product approval code or Volusia county acceptance of Dittmer walkway system
- Salvaging of items during demolition. (None included)
- Sitework other than concrete at fountain
- Television and mounting bracket
- STC testing

- STC cores for wood doors
- Electrified panic devices or access control system
- Roofing
- Repairs or service of existing A/C equipment

ALLOWANCES included in GMP:

• Building permits	$ 5,000
• Remove and reinstall 6 speakers in hallway	$ 2,000.
• Delegated Engineering (any engineering required for grading design around fountain, Covered walkway foundations, Curtainwall, etc)	$15,000.
• Firewatch	$17,500.
• Landscape restoration	$ 5,000.
• Metal Coping over existing stone	$10,000.
• Any changes made to HVAC design after RLF reviews pre demolition Test and Balance report.	$45,000

Exhibit "B"

ORMOND BEACH

PERFORMING ARTS CENTER

GMP BREAKDOWN

Non-Allowance Work		
Concrete @ Fountain Area		31,800.00
Demolition		40,520.00
Termite Control		1,000.00
Interior Concrete		7,500.00
Misc Metals		2,500.00
Glass Railings		54,154.00
Column Covers		63,110.00
Rough/Finish Carpentry		10,250.00
Millwork		47,440.00
Caulking & Sealants		5,000.00
HM, Wood Doors & Hardware		86,890.00
OH Coiling Doors		14,459.00
Glass & Glazing/Storefront		67,100.00
Framing & Drywall		84,800.00
Acoustical Ceilings		4,800.00
Stucco (Stone wall)		25,000.00
Ceramic Tile, Resilient & Carpet		95,500.00
Painting & Wall Covering		45,000.00
Toilet Partitions/Accessories		21,269.00
Roller Shades		11,321.00
Signage		20,190.00
Fire Extinguishers		500.00
Access Panels		2,000.00
Ticket Windows		2,055.00
Art Rails		21,524.00
Covered Walkway		139,000.00
Fire Sprinklers		19,430.00
Plumbing		53,595.00
HVAC		61,500.00
Electrical		274,562.00
Supervision/Project Manager (breakout attached)		86,016.00
General Conditions (breakout attached)		43,700.00
P&P Bond		12,500.00
Misc Insurance		14,400.00
Subtotal Non-Allowance		1,470,385.00
Allowance Work		
Building Permit		5,000.00
Remove & Install Speakers		2,000.00
Delegated Engineering		15,000.00
Firewatch		17,500.00
Landscape Restoration		5,000.00
Metal Coping over existing Stone		10,000.00
HVAC design changes post T&B		45,000.00
SubTotal Allowance		99,500.00
Total Non-Allowance + Allowance		1,569,885.00
Contractor O&P		156,980.00
GRAND TOTAL		**1,726,865.00**

Supervision / Project Manager Costs:			
Superintendent	26	weeks	52,736.00
Project Manager (@50%)	26	weeks	33,280.00
Total Supervision /Project Manager			**86,016.00**
General Conditions Costs:			
Clerical	1	LS	750.00
Laborer	18	weeks	12,600.00
Phone & Data	26	weeks	1,200.00
Plans & Prints	1	LS	1,500.00
Travel Expense	26	weeks	2,600.00
Layout	1	LS	2,250.00
Trucking / Dumpsters	26	weeks	9,000.00
First Aid	1	LS	250.00
Temporary Signage	1	LS	1,200.00
Cleaning	1	LS	3,000.00
Temp Toilets	26	weeks	1,200.00
Temp Protection	1	LS	2,650.00
Equipment Rental	1	LS	2,500.00
Punchlist Expense	1	LS	3,000.00
Total General Conditions			**43,700.00**

EXHIBIT "C"

Drawing List

DRAWINGS PREPARED BY - Rogers, Lovelock + Fritz, Inc.

Sheet	Description	Date	Revision
…	COVER SHEET	1/9/23	
GI101	ARCHITECTURAL ABBREVIATIONS AND SYMBOLS	1/9/23	
GC101	LIFE SAFETY PLANS	1/9/23	
AD100	EXISTING CONDITIONS PICTURES	1/9/23	
AD101	EXISTING CONDITIONS PICTURES	1/9/23	
AD102	DEMOLITION FLOOR PLANS	1/9/23	
AD111	DEMOLITION REFLECTEDCEILING PLANS	1/9/23	
AE101	FLOOR PLANS	1/9/23	
AE111	REFLECTED CEILING PLANS	1/9/23	
AE111A	ENLARGED REFLECTED CEILING PLAN	1/9/23	
AE201	BUILDING ELEVATIONS	1/9/23	
AE401	ENLARGED CANOPY PLANS	1/9/23	
AE402	ENLARGED RESTROOMPLANS	1/9/23	
AE421	STAIR DETAILS	1/9/23	
AE511	SECTIONS AND DETAILS	1/9/23	
AE601	DOOR SCHEDULEAND DETAILS	1/9/23	
AE602	EXTERIOR CANOPY AND STOREFRONT DETAILS	1/9/23	
AE801	PARTITION TYPES AND MOUNTING DETAILS	1/9/23	
AF601	FINISH SCHEDULE AND FINISH IDENTIFICATION	1/9/23	
IN101	FLOOR PATTERN PLAN, FIRST FLOOR	1/9/23	
IN111	WALL FINISH PLAN, FIRST FLOOR	1/9/23	
IN201	INTERIOR ELEVATIONS	1/9/23	
IN501	INTERIOR SECTIONS AND DETAILS	1/9/23	
PP001	PLUMBING SYMBOLS AND ABBREVIATIONS	1/9/23	
PP101	PLUMBING PLANS	1/9/23	
PP500	PLUMBING DETAILS AND SCHEDULES	1/9/23	
PP600	SANITARY RISER DIAGRAM	1/9/23	
PP601	DOMESTIC WATER RISER DIAGRAM	1/9/23	
FX001	FIRE SUPPRESSION SYMBOLS AND ABBREVIATIONS	1/9/23	
FX101	FIRE SUPPRESSION PLANS	1/9/23	
MH001	MECHANICAL ABBR, SYMBOLS, SCHEDULES, AND GNRL NOTES	1/9/23	
MH101	MECHANICAL FLOOR PLAN -LEVEL 1	1/9/23	
MH401	SECTIONS	1/9/23	
MH501	MECHANICAL DETAILS	1/9/23	
ED101	ELECTRICAL DEMOLITION PLAN - FIRST &SECOND FLOOR	1/9/23	
EG001	ELECTRICAL LEGENDS, GENERAL NOTES & ABBREVIATIONS	1/9/23	
EL101	LIGHTING PLAN -FIRST & SECONDFLOOR	1/9/23	
EL501	LUMINAIRESCHEDULE &LIGHTINGDETAILS	1/9/23	
EP101	POWER & FIREALARM PLAN -FIRST & SECONDFLOOR	1/9/23	
EP601	SINGLE LINEDIAGRAM, PANELSCHEDULE ANDDETAILS	1/9/23	

March 4, 2022

Dear Members of the Ormond Beach City Commission:

The Friends of the Ormond Beach Performing Arts Center are invested and deeply committed to the Ormond Beach Performing Arts Center renovations to upgrade the PAC lobby and main hallway. This upgrade will ensure the facility functionality aesthetics, while increasing revenue along with enhancing the patron experience. The goal is to make the PAC the center of the Cultural Arts in Ormond Beach. Over the last three years we have accomplished:

- Applying and receiving a commitment for approximately $420,000 from the Daytona Beach Racing and Recreational District over the next three years
- Fundraising over $4,000
- Personal donations of $5,000
- $30,000 from the Friends of the Ormond Beach Performing Arts Center saving accounts
- Contracted and paid RLF, an architecture and engineering and interiors firm, $95,000 for the renderings and architectural plans for the City of Ormond Beach to use for an ECHO grant application
- Multiple individual meetings with City of Ormond Beach Commissioners
- Hundreds of volunteer hours from the members of the Friends of the Ormond Beach Performing Arts Center Board

Still yet to do:

- Continue to work diligently at fundraising to ensure the City of Ormond Beach only has to cover the $600,000 match for the ECHO grant. (Thank you)

The Friends of the Ormond Beach Performing Arts Center will issue a check to the City of Ormond Beach for $150,000 at the start of construction and is committed to covering the costs over and above the $1.2M ECHO grant.

To reimburse the City of Ormond Beach, the Friends of the Ormond Beach Performing Arts Center will use the committed grant dollars over the next three years from the Daytona Beach Racing and Recreational District and our fundraising to fund the project.

As you can see, we have been working very hard to make this project come to fruition and are extremely grateful to be contributing partners with the City of Ormond Beach for the benefit of our amazing City and our wonderful residents.

Sincerely,

Lucy Jackman

THE Friends OF THE
ORMOND BEACH PERFORMING ARTS CENTER
Creatively Serving & Preserving the Arts in Ormond Beach

February 27, 2023

Mr. Robert Carolin
City of Ormond Beach
399 North US Highway #1
Ormond Beach, FL 32174

Dear Mr. Carolin:

I am writing this letter to inform you that the Friends of the Performing Arts Center is prepared to pay $191,500 to the City of Ormond Beach, to help offset the costs related to the unexpected overages for the PAC renovation project. Unfortunately, our organization did not anticipate this amount of overage and does not possess enough funds to cover the $500,000 dollars the project is estimated to be short.

Thank you for the City's amazing support of this project. If you have any question or need anything further, please do not hesitate to reach out to me.

Let's put on a show,

Lucy Jackman
875 Wilmette Avenue
Apartment #709
Ormond Beach, FL 32174

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.G
Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2023-65
Strategic Goal:	Water Quality & Environment – Other		
Department :	Public Works - Engineering		
Subject:	Adoption of the 2023 Stormwater Master Plan Update		
Budget Impact:	The Stormwater Master Plan Update identifies costs and proposed scheduling for implementation of the recommended projects that will be used by staff in preparation of the five-year Capital Improvement Plan. Funding sources will be identified at the time the projects are included in the 5 year CIP.		
Summary:	The Stormwater Master Plan provides staff with a forward-looking document that builds upon prior plans by recommending solutions for the stormwater program. The plan looks for improvements to existing stormwater operation and maintenance, and guides the stormwater CIP for the next 10 years. Since the completion of the 2007 Stormwater Master Plan, almost all recommendations and projects have been implemented.		
Recommended Action:	Staff recommends the City Commission adopt the Stormwater Master Plan Update and its recommendations.		
Staff Contact:	Alex Schumann, City Engineer, (386) 676-3302		

Approval:

Kelly McGuire, Finance Director	2/28/2023	Kelly A. McGuire
Claire Whitley, Assistant City Manager	3/3/2023	
Joyce Shanahan, City Manager	3/14/2023	Joyce Shanahan

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Alex Schumann, City Engineer

Date: March 21, 2023

Subject: Adoption of the 2023 Stormwater Master Plan Update

Commission Goal: Water Quality & Environment – Other

Introduction

This is a request for the City Commission to formally adopt the 2023 Stormwater Master Plan Update.

Background

In April of 1996, the City of Ormond Beach contracted with a consultant to provide a Stormwater Master Plan (1997). One of the main goals of the Stormwater Master Plan was to create a document that would be used as a planning tool for the City's stormwater program, specifically its Capital Improvement Program (CIP); whereby, staff could identify and schedule improvements recommended in the master plan in the City's five year CIP. This master plan was subsequently updated in June 2007, where goals and objectives were reviewed and updated.

The Stormwater Master Plan provides staff with a clear, comprehensive, and forward-looking document that builds upon prior master plans by recommending solutions for the stormwater program associated with on-going drainage issues throughout the City, sea level rise issues, and storm surge protection for areas susceptible to storm surge from hurricanes. The report looks for improvements to the existing stormwater operation and maintenance program. This document helps guide the City's stormwater CIP for the next decade. Since the completion of the 2007 Stormwater Master Plan, the City has implemented almost all recommendations and projects.

Discussion

The Stormwater Master Plan report is divided into twelve (12) components including, but not limited to: review of previous master plan reports, regulatory review, flooding assessment, water quality assessment, future climate impacts, best management practices, program operations and maintenance, and recommendations. The plan looks

at potential sea level rise, regulatory changes, and development projections in order to determine stormwater needs to the year 2030. Recommended projects are reflected as short term projects (1-5 years), intermediate term projects (6-10 years), and long term projects (>10 years). An executive summary is included in the beginning of the document which provides a concise summary of the key findings of the plan along with the summary sheets for the recommended projects within the specific utility components of the plan.

The updated Stormwater Master Plan was presented to the City Commission at a workshop on February 7, 2023. A copy of the master plan and project maps are attached.

Budget Impact

The Stormwater Master Plan Update identifies costs and proposed scheduling for implementation of the recommended projects that will be used by staff in preparation of the five-year Capital Improvement Plan. Funding sources will be identified at the time the projects are included in the 5 year CIP.

Citizen Impact

The updated stormwater master plan will identify solutions to known drainage issues, allowing staff to address these problems and improve the quality of life for Ormond Beach residents.

Recommendation

Staff recommends the City Commission adopt the Stormwater Master Plan Update and its recommendations.

Attachments:

1. 23-65 Adopt Stormwater Master Plan (P23-0043G)
2. 2023 Ormond Beach SWMP Update

Approvals:

Kelly A. McGuire

Date: February 28, 2023

Kelly McGuire, Finance Director

Date: March 03, 2023

Claire Whitley, Assistant City Manager



Date: March 14, 2023

Joyce Shanahan, City Manager

RESOLUTION 2023-65

A RESOLUTION APPROVING AND ADOPTING A STORMWATER MASTER PLAN; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City's consultant, Geosyntec Consultants, Inc., was authorized to prepare the City's Stormwater Master Plan ("the Project"), and

WHEREAS, the City's consultant has completed the Project, and

WHEREAS, the City's professional staff have reviewed, and recommend approval of, the Stormwater Master Plan prepared by the consultant, and

WHEREAS, the City Commission finds the Stormwater Master Plan to be consistent with its goals and objectives and in the overall best interest of the citizens of the City of Ormond Beach, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The City Commission hereby approves the Stormwater Master Plan, a copy of which is attached hereto and incorporated herein by reference, and hereby adopts the same as the official Stormwater Master Plan for the City of Ormond Beach.

SECTION TWO. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____

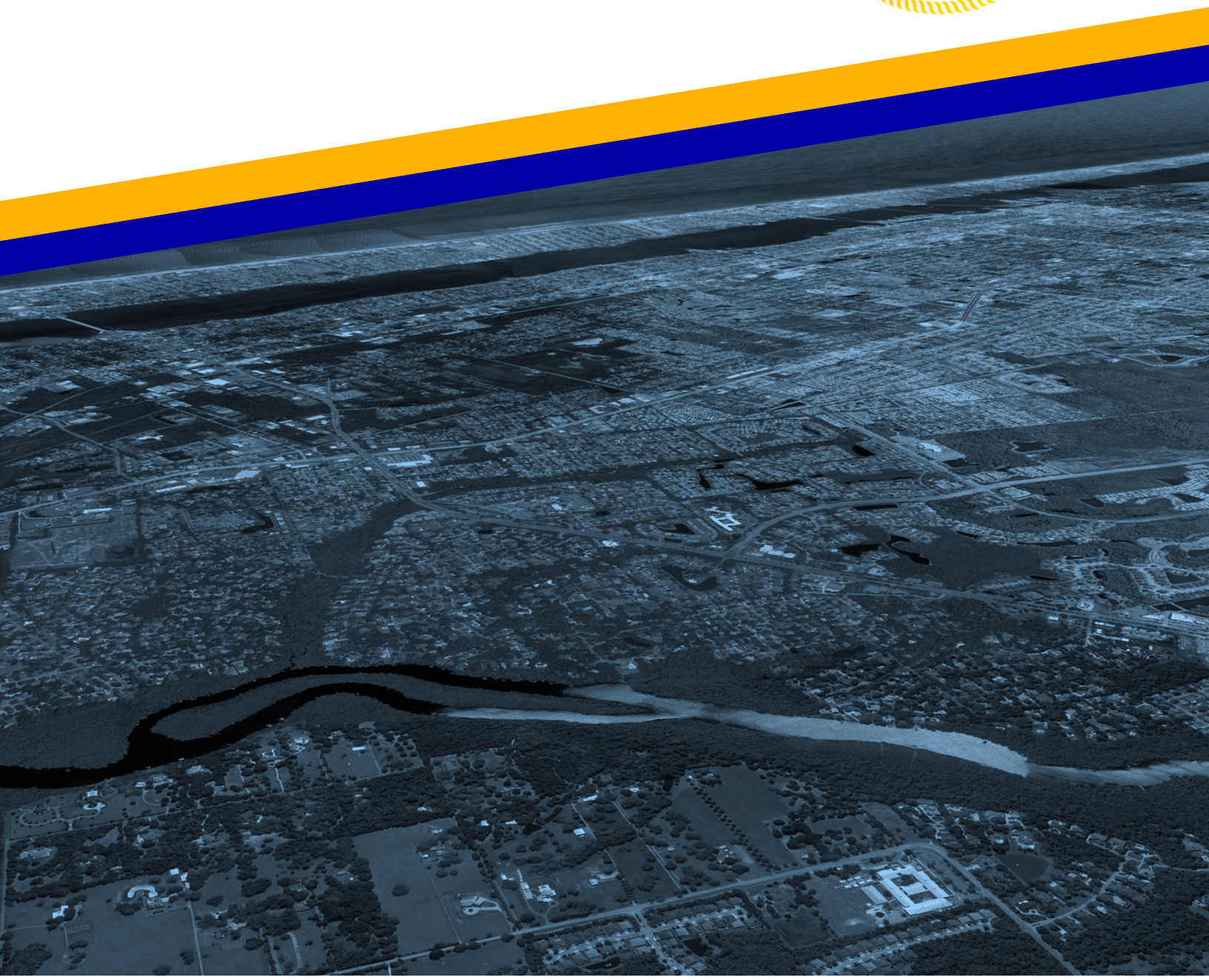
BILL PARTINGTON
Mayor

ATTEST:

_____

SUSAN CARROLL DAUDERIS
City Clerk

Stormwater Master Plan



Submitted by:
Geosyntec Consultants, Inc.
3504 Lake Lynda Drive, Suite 155
Orlando, Florida 32817

March 2023

Geosyntec consultants

engineers | scientists | innovators

Geosyntec consultants

engineers | scientists | innovators

ORMOND BEACH STORMWATER MASTER PLAN UPDATE

Prepared for:

City of Ormond Beach
22 S Beach Street
Ormond Beach, FL 32174

Prepared by:

Geosyntec Consultants, Inc.
3504 Lake Lynda Drive, Suite 155
Orlando, Florida 32817

In Association with:

Watershed Management Services, LLC
Janicki Environmental, Inc.
Brizaga, Inc.

Project FW3672

March 2023

ORMOND BEACH STORMWATER MASTER PLAN UPDATE

Prepared for:
City of Ormond Beach
22 S Beach Street
Ormond Beach, FL 32174

Prepared by:
Geosyntec Consultants, Inc.
3504 Lake Lynda Drive, Suite 155
Orlando, Florida 32817

The engineering material and data contained within the enclosed report was prepared by Geosyntec Consultants, Inc. for sole use by the City of Ormond Beach. This report was prepared under the supervision and direction of the respective undersigned, whose seal as a registered professional engineer is affixed below.

Mark Ellard, PE, CFM, D.WRE, ENV SP
Project Manager
Florida PE #48073



Mark Ellard, PE, CFM, D.WRE, ENV SP
Senior Principal

Project Number: FW3672
March 2023

TABLE OF CONTENTS

1. INTRODUCTION 1-1
1.1 Background and Purpose 1-1
1.2 Mission Statement 1-1
1.3 Master Plan Outline 1-4

2. REVIEW OF PREVIOUS MASTER PLAN REPORTS 2-1
2.1 REVIEW OF 2007 STORMWATER MASTER PLAN UPDATE 2-1
2.1.1 Drainage Infrastructure Evaluation and Improvement Recommendations 2-2
2.1.2 Capital Plan 2-3
2.1.3 Recommendations and Progress 2-3
2.1.4 Water Quality Analyses and Recommendations 2-5
2.1.5 Land Development Code Review 2-5
2.2 REVIEW OF 2010 STORMWATER MASTER PLAN ADDENDUM 2-9

3. REGULATORY REVIEW 3-1
3.1 Federal Requirements 3-1
3.1.1 Federal Clean Water Act 3-1
3.1.2 National Flood Insurance Program 3-2
3.2 State of Florida Requirements 3-3
3.2.1 Department of Economic Opportunity - Growth Management 3-3
3.2.2 Florida Department of Environmental Protection (FDEP) 3-4
3.2.3 St. Johns River Water Management District (SJRWMD) 3-13
3.3 City of Ormond Beach Regulatory Framework 3-15
3.3.1 2025 Comprehensive Plan 3-15
3.3.2 Code of Ordinances 3-18
3.3.3 Land Development Code 3-18
3.3.4 City of Ormond Beach Low Impact Design Manual (2013) 3-19
3.4 Adequacy of Existing Stormwater Management Legal Authority 3-20
3.5 Recommendations 3-29

4. FLOODING ASSESSMENT 4-1
4.1 Topography 4-1
4.3 Soils 4-3
4.5 Land Cover 4-5
4.7 Floodplains 4-7
4.9 Hydrology 4-9
4.10 Existing Infrastructure Inventory 4-11

4.11 Drainage System Assessment 4-14
4.13 Flooding Complaints 4-16
4.14 Flooding Problem Areas 4-16
4.16 Flood Assessment Recommendations 4-19

5. WATER QUALITY ASSESSMENT 5-1
5.1 Introduction 5-1
5.2 Study Area 5-1
5.3 Water Quality and Ecological Data Review Methods 5-1
5.3.1 Data Sources 5-1
5.3.2 Initial Water Quality Data Review 5-5
5.3.3 Analysis of Surface Water Quality Status 5-5
5.3.4 Analysis of Surface Water Quality Trends 5-6
5.3.5 Evaluation of Water Quality Impairments and TMDLs 5-6
5.4 Ecological and Water Quality Review Results 5-12
5.4.1 Review of Ecological Reports 5-12
5.4.2 Water Quality Status 5-14
5.4.3 Trends at the Long-term Stations 5-18
5.4.4 Water Quality Impairments and TMDLs 5-28
5.6 Pollutant Loading Estimation Methods 5-47
5.6.1 Nonpoint Source Loads 5-47
5.6.2 Onsite Sewage Treatment and Disposal Systems (OSTDs) 5-54
5.6.3 Point Source Loads 5-56
5.8 Pollutant Loading Estimates 5-57
5.8.1 Source Contributions to Pollutant Loads 5-57
5.8.2 Spatial Variability in Pollutant Loads 5-66
5.8.3 Temporal Variability in Pollutant Loads 5-69
5.8.4 Unit Area Nonpoint Source Loads 5-72
5.9 Conclusions 5-77
5.10 Water Quality References 5-79

6. FUTURE CLIMATE IMPACT ASSESSMENT 6-1
6.1 Sea Level Rise Scenarios and Infrastructure Upgrades 6-1
6.1.1 Sea Level Rise Scenarios 6-1
6.1.2 Sea Level Elevation Recommendations 6-4
6.2 Stormwater Management Trends relative to Sea Level Rise and Resilience 6-6
6.2.1 Sea Level Rise Planning Curves 6-6
6.2.2 Infiltration and Inflow 6-7

6.2.3 Freeboard 6-8
6.2.4 Seawall Ordinances 6-9
6.2.5 Low Impact Development 6-11
6.2.6 Stormwater Credit and/or Trading Programs 6-12
6.2.7 Future Conditions Groundwater Mapping 6-13
6.2.8 Capacity and Conveyance 6-14
6.3 Infrastructure and Ecosystem Resilience 6-16
6.3.1 At-Risk Assets Associated with Significant Flooding Events 6-16
6.3.2 Adaptation & Mitigation Strategies 6-51
6.3.3 Ecosystem Resiliency 6-57
6.4 Key Resilience Recommendations 6-58

7. BEST MANAGEMENT PRACTICES 7-1
7.1 Changes in Stormwater Characteristics from Urban Development 7-1
7.1.1 Changes in Urban Hydrology 7-1
7.1.2 Changes in and Calculating Stormwater Pollutant Loadings 7-4
7.2 Introduction to Stormwater Management 7-7
7.2.1 Stormwater Management Goals 7-7
7.2.2 Stormwater Best Management Practices (BMPs) 7-7
7.3 Introduction to Low Impact Design BMPs 7-10
7.3.1 What is "Low Impact Design" (LID)? 7-10
7.3.2 Advantages of LID BMPs 7-12
7.3.3 Need for Stormwater Manual with LID BMPs 7-14
7.4 Catalog of BMPs 7-14
7.4.1 Site Planning BMPs 7-14
7.4.2 Source Control BMPs 7-17
7.4.3 Structural Stormwater BMPs 7-19
7.5 BMP Pollutant Load Reduction Effectiveness 7-22
7.5.1 Using BMPTRAINS to Calculate BMP Treatment Effectiveness 7-23
7.6 Active / Real Time Control System Evaluation 7-24
7.7 Maintenance BMPs 7-26
7.8 Future Considerations 7-26

8. PROGRAM OPERATIONS AND MAINTENANCE 8-1
8.1 Stormwater Infrastructure Inventory 8-1
8.1.1 Common Maintenance Activities and Schedules 8-4
8.2 Division Operations and Maintenance: System Maintenance 8-7
8.2.1 Preventive Maintenance 8-7

8.2.2 Corrective Maintenance 8-10
8.2.3 Reactive Maintenance Activities 8-11
8.2.4 Pre-storm and Post-storm Maintenance Activities 8-12
8.2.5 Routine Maintenance Tasks and Crews 8-12
8.2.6 Written Standard Operating Procedures 8-16
8.2.7 Equipment 8-16
8.2.8 Disposal of Stormwater Sediments 8-18
8.3 Recommendations 8-19

9. IMPROVEMENT PROJECT AND BMP RECOMMENDATIONS 9-1
9.1 Flooding Project Recommendations 9-1
9.2 Water Quality Project Recommendations 9-3
9.3 Future Climate Impact Project Recommendations 9-7

10. FLOOD IMPROVEMENT PROJECT SOLUTION CONCEPTUALIZATION 10-1
10.1 Sanchez to SR 40 from Ridgewood to River 10-1
10.2 Woodridge Drive Outfall 10-20
10.3 South Arbor Drive and Grove Street (including Capri Circle) 10-29
10.4 Durrance Acres 10-39
10.5 Cumberland 10-49
10.6 North Highway US1 Drainage 10-64
10.7 Ormond Lakes 10-73
10.8 Alanwood Drive and Beach Street 10-83
10.9 Trails – Dry Well /French Drains 10-90
10.10 Orchard Business Park 10-97
10.11 Railroad Crossing – East Fork of Thompson Creek 10-103
10.12 Railroad Crossing – St. Andrews Discharge 10-110
10.13 Orchard Street and Jeanette Drive 10-117
10.14 Flood Improvement Project Summary 10-126

11. CAPITAL IMPROVEMENT PROJECT RECOMMENDATIONS 11-1
11.1 Background 11-1
11.3 CIP Project Prioritization 11-3
11.4 CIP Program Recommendations 11-5
11.5 CIP FUNDING 11-7
11.6 CIP PROJECT RECOMMENDATIONS 11-8

12. CONCLUSIONS AND RECOMMENDATIONS 12-I

LIST OF TABLES

Table 2-1 - 2007 SMPU Recommendations and Status Summary 2-4

Table 5-1 - List of parameters analyzed for WBIDs within the City of Ormond Beach for status, trends and evaluation of impairment relative to Florida standards (62-302 F.A.C.) 5-3

Table 5-2 - List of WBIDs associated with the City of Ormond Beach and surrounding area ... 5-8

Table 5-3- Florida water quality criteria (F.A.C. 62-302) for nutrients, chlorophyll, specific conductivity, dissolved oxygen saturation and bacteria, as applied to each of the WBIDs in the City of Ormond Beach 5-10

Table 5-4 - Florida water quality criteria (F.A.C. 62-302) for metals, as applied to each of the WBIDs in the City of Ormond Beach. Note "H" = Hardness; Manganese has no applicable standard for class 3F/3M 5-11

Table 5-5 - List of the overall dominant taxa, and the most dominant of the selected species encountered at each station in the Tomoka River/Basin (FWC 1999) 5-12

Table 5-6 - Current TMDLs for WBIDs in the vicinity of the City of Ormond Beach 5-28

Table 5-7 - Tomoka (T-) and Halifax (H-) River basins and their associated land areas ranked in descending order 5-47

Table 5-8 - Number of acres in each specified Halifax River Basin and land use category 5-51

Table 5-9 - Number of acres in each specified Tomoka River Basin and land use category 5-52

Table 5-10 - Mean annual total nitrogen loads (lbs/year) and percent contribution to the total watershed total nitrogen load for each basin in the Halifax and Tomoka watersheds 5-60

Table 5-11 - Mean annual total phosphorus loads (lbs/year) and percent contribution to the total watershed total phosphorus load for each basin in the Halifax and Tomoka watersheds 5-61

Table 5-12 - Mean annual BOD loads (lbs/year) and percent contribution to the total watershed BOD load for each basin in the Halifax and Tomoka watersheds 5-62

Table 5-13. Total pollutant loads (lbs/month) for each basin in the Halifax and Tomoka watersheds 5-66

Table 5-14 - Mean annual unit area loadings of total phosphorus in each basin, ranked in decreasing order 5-76

Table 5-15 - Mean annual unit area loadings BOD in each basin, ranked in decreasing order. 5-77

Table 6-1 - Relative sea level rise rates (in feet, based from 2000) for the 2013 U.S. Army Corps of Engineers and the NOAA 2017 sea level rise projections for Daytona Beach, Florida, which is the nearest station with a projection to Ormond Beach. This table demonstrates the differences between the projections 6-3

Table 6-2 - Table of inundation maps that includes the map number, flooding scenario, sea level rise curve, and year of the map 6-18

Table 6-3 - Table of inundation charts for at-risk City-owned and/or operated assets..... 6-19

Table 7-1 - Mean Annual Runoff Coefficients (C Values) as a Function of DCIA Percentage and Non-DCIA Curve Number (CN) for Cocoa Beach..... 7-5

Table 7-2 - Florida Stormwater Event Mean Concentrations in mg/l (from BMPTRAINS model) 7-6

Table 7-3 - BMPs Used within Florida for Stormwater Management..... 7-9

Table 8-1: Stormwater Infrastructure..... 8-3

Table 8-2 - Stormwater BMP Inspection and Maintenance Activities and Schedule..... 8-5

Table 8-3 - Labor hours associated with common O&M activities (Values are person hours). 8-14

Table 8-4 - Common Maintenance Activities for The City's Existing Stormwater System Components 8-15

Table 9-1: Basins ranked for water quality improvement 9-4

Table 10-1 - Flood Improvement Concept: Sanchez to SR 40 from Ridgewood to River - Preliminary Engineer's Opinion of Probable Implementation Costs 10-19

Table 10-2 - Flood Improvement Concept: Woodridge Drive Outfall - Preliminary Engineer's Opinion of Probable Implementation Costs..... 10-28

Table 10-3 - Flood Improvement Concept: South Arbor Drive and Grove Street (including Capri Circle) - Preliminary Engineer's Opinion of Probable Implementation Costs..... 10-38

Table 10-4 - Flood Improvement Concept: Durrance Acres - Preliminary Engineer's Opinion of Probable Implementation Costs 10-48

Table 10-5 - Flood Improvement Concept: Cumberland - Preliminary Engineer's Opinion of Probable Implementation Costs 10-63

Table 10-6 - Flood Improvement Concept: North Highway US1 Drainage - Preliminary Engineer's Opinion of Probable Implementation Costs..... 10-72

Table 10-7 - Flood Improvement Concept: Ormond Lakes - Preliminary Engineer's Opinion of Probable Implementation Costs 10-82

Table 10-8 - Flood Improvement Concept: Alanwood Drive and Beach Street - Preliminary Engineer's Opinion of Probable Implementation Costs..... 10-89

Table 10-9 - Flood Improvement Concept: Trails - Dry Well / French Drains - Preliminary Engineer's Opinion of Probable Implementation Costs..... 10-96

Table 10-10 - Flood Improvement Concept: Orchard Business Park - Preliminary Engineer's Opinion of Probable Implementation Costs..... 10-102

Table 10-11 - Flood Improvement Concept: Railroad Crossing - East Fork of Thompson Creek - Preliminary Engineer's Opinion of Probable Implementation Costs 10-109

Table 10-12 - Flood Improvement Concept: Railroad Crossing - St. Andrews Discharge - Preliminary Engineer's Opinion of Probable Implementation Costs 10-116

Table 10-13 - Flood Improvement Concept: Orchard Street and Jeanette Drive - Preliminary Engineer's Opinion of Probable Implementation Costs 10-125

Table 10-14 - Flood Improvement Project Summary 10-126

Table 11-1 – Proposed 10 Year CIP Recommendations 11-6

LIST OF FIGURES

Figure 1-1 – Vicinity Map 1-2

Figure 1-2 - City Map 1-3

Figure 4-1 – Topography Map 4-2

Figure 4-2 – Soils Map 4-4

Figure 4-3 – Land Cover Map 4-6

Figure 4-4 – Floodplains Map 4-8

Figure 4-5A – Yearly Rainfall and Evapotranspiration Totals 4-10

Figure 4-5B – Monthly Average Rainfall and Evapotranspiration Totals 4-10

Figure 4-6 – Major Drainage Basins Map 4-12

Figure 4-7 – Drainage Infrastructure Map 4-13

Figure 4-8 – Drainage System Rehabilitation Assessment 4-15

Figure 4-9 – Drainage Complaints Map 4-17

Figure 5-1 - Map showing the location of the City of Ormond Beach (gray shading) 5-2

Figure 5-2 - Sampling stations within the City of Ormond Beach boundary with long-term water quality data in the IWR dataset (Run 58) 5-4

Figure 5-3 - Map showing the location of the City of Ormond Beach (gray shading) and its associated WBIDs. Dots indicate stations with available water quality data 5-9

Figure 5-4 - FIM sampling locations in the Tomoka River/Basin (from FWC 1999) 5-13

Figure 5-5. USGS study area location and sampling grid zones used in the study (from Turtora and Schotman 2010) 5-15

Figure 5-6. Average value at each long-term station for indicated parameters over the recent 7.5 year period 5-17

Figure 5-7 - Results of trend tests for total nitrogen at the long-term stations 5-19

Figure 5-8 - Results of trend tests for total phosphorus at the long-term stations 5-20

Figure 5-9 - Results of trend tests for chlorophyll *a* (corrected for pheophytin) at the long-term stations 5-21

Figure 5-10 - Results of trend tests for specific conductivity at the long-term stations 5-23

Figure 5-11 - Results of trend tests for salinity at the long-term stations 5-24

Figure 5-12 - Results of trend tests for DO concentration at the long-term stations 5-25

Figure 5-13 - Results of trend tests for DO% saturation at the long-term stations 5-26

Figure 5-14 - Results of trend tests for Secchi depth at the long-term stations 5-27

Figure 5-15 - Time-series of dissolved oxygen saturation data in WBID 2645 – Mizners Branch. Horizontal line indicates state water quality threshold for class 3F waters (38%) 5-31

Figure 5-16 - Annual Geometric Means (AGMs) for TN, TP and chlorophyll *a* in WBID 2634, as well as arithmetic means for chlorophyll *a* 5-32

Figure 5-17 - The relationship of chlorophyll *a* to TN (top) and TP (bottom) at WBID 2634 . 5-33

Figure 5-18 - Annual Geometric Means (AGMs) for TN (top), TP (middle) and chlorophyll *a* (bottom) relative to NNC (horizontal reference lines) in WBID 2634A 5-35

Figure 5-19 - The relationship of chlorophyll *a* with TN (top) and TP (bottom) in WBID 2634A 5-36

Figure 5-20 - Annual Geometric Means (AGM) of TN (top) and TP (bottom) and) for WBID 2363B 5-39

Figure 5-21 - Relationship of chlorophyll *a* to TN (top) and TP (bottom) in WBID 2363B 5-40

Figure 5-22 - Annual geometric means for TN (top), TP (middle) and chlorophyll *a* (bottom) in WBID 2363C 5-42

Figure 5-23 - Relationship of chlorophyll a to TN (top) and TP (bottom) in WBID 2363C..... 5-43

Figure 5-24 - Annual geometric means for chlorophyll *a* in WBID 2363J. Horizontal reference line represents the state criterion..... 5-44

Figure 5-25 - The relationship of chlorophyll a to TN (top) and TP (bottom) in WBID 2363J 5-45

Figure 5-26 - Time-series of Enterococci concentrations in WBID 8118 between 2012 and 2019 5-46

Figure 5-27 - LSPC model basins 5-48

Figure 5-28 - Box and whisker plot displaying monthly rainfall values for the period 2015-2019 at the Daytona International Airport 5-49

Figure 5-29 - Monthly total rainfall for the period 2015-2019 at the Daytona International Airport 5-49

Figure 5-30 - Distribution of Land Use Classes in the Halifax River (left) and Tomoka River watersheds (right)..... 5-50

Figure 5-31 - Land Use in the Halifax and Tomoka River Watersheds (SJRWMD, 2014) 5-53

Figure 5-32 - OSTDs in the Halifax and Tomoka River Watersheds (FLWMI, 2016)..... 5-55

Figure 5-33 - Point sources in the Halifax River Watershed. No point sources occur in the Tomoka River Watershed..... 5-56

Figure 5-34 -Relative contribution of Nonpoint Source, OSTDs, and Point Source loadings to total mean annual TN (top), TP (middle) and BOD (bottom) loads in Halifax River watershed basins 5-58

Figure 5-35 - Relative contribution of Nonpoint Source, OSTDs, and Point Source loadings to total mean annual TN (top), TP (middle) and BOD (bottom) loads in Halifax River watershed basins 5-59

Figure 5-36 - Contributions to total TN (top), TP (middle), and BOD (bottom) annual loads by the City of Ormond Beach relative to other jurisdictions in the Halifax River watershed..... 5-64

Figure 5-37 - Contributions to total TN (top), TP (middle), and BOD (bottom) annual loads by the City of Ormond Beach relative to other jurisdictions in the Halifax River watershed..... 5-65

Figure 5-38 - Halifax River Watershed basin-specific mean monthly TN (top), TP (middle) and BOD (bottom) loads..... 5-67

Figure 5-39 - Tomoka River Watershed basin-specific mean monthly TN (top), TP (middle) and BOD (bottom) load 5-68

Figure 5-40 - Monthly average total watershed loads for TN (top), TP (middle) and BOD (bottom) in the Halifax River watershed 5-70

Figure 5-41 - Monthly average total watershed loads for TN (top), TP (middle) and BOD (bottom) in the Tomoka River watershed 5-71

Figure 5-42 - Basin specific mean annual TN loads (left) and mean annual unit area TN loads (right) predicted by the LSPC model in the Halifax and Tomoka River watersheds 5-72

Figure 5-43 - Basin specific mean annual TP loads (left) and mean annual unit area TP loads (right) predicted by the LSPC model in the Halifax and Tomoka River watersheds 5-73

Figure 5-44 - Basin specific mean annual BOD loads (left) and mean annual unit area BOD loads (right) predicted by the LSPC model in the Halifax and Tomoka River watersheds 5-73

Figure 5-45 - Mean annual unit area loads of TN (top), TP (middle), and BOD (bottom) in Halifax River watershed basins 5-74

Figure 5-46 - Mean annual unit area loads of TN (top), TP (middle), and BOD (bottom) in Tomoka River watershed basins 5-75

Figure 6-1. Historic sea level and future projections for Ormond Beach using the USACE sea level rise projections. 6-2

Figure 6-2 - Historic sea level and future projections for Ormond Beach using the NOAA sea level rise projections. 6-3

Figure 6-3 - Sea level rise planning grid for Ormond Beach utilizing the USACE sea level rise projections 6-5

Figure 6-4 - Sea level rise planning grid for Ormond Beach utilizing the NOAA sea level rise projections 6-5

Figure 6-5 - Water / Wastewater Plant At-Risk Asset Example 6-20

Figure 7-1 - More Water Faster 7-2

Figure 7-2 - Stormwater Flow Changes Associated with Urbanization 7-3

Figure 7-3 - How Impervious Cover Affects the Water Cycle 7-3

Figure 7-4 - Goals of the Site Assets Inventory 7-15

Figure 7-5 - Impacts of Future Sea Level Rise on Drainage Infrastructure 7-27

Figure 7-6 - Impacts of Sea Level Rise on Groundwater Tables in Coastal Areas 7-28

Figure 9-1 – Flood Improvement Project Locations 9-2

Figure 9-2 - Basin specific mean annual TP loads (left) and mean annual unit area TP loads (right) predicted by the LSPC model in the Halifax and Tomoka River watersheds 9-3

Figure 10-1 - Flood Improvement Project Concept Map - Sanchez to SR 40 from Ridgewood to River 10-17

Figure 10-2 - Flood Improvement Project Concept Map - Woodridge Drive Outfall 10-26

Figure 10-3 - Flood Improvement Project Concept Map - South Arbor Drive and Grove Street (including Capri Circle) 10-36

Figure 10-4 - Flood Improvement Project Concept Map - Durrance Acres 10-46

Figure 10-5 - Flood Improvement Project Concept Map - Cumberland 10-61

Figure 10-6 - Flood Improvement Project Concept Map - North Highway US1 Drainage 10-70

Figure 10-7 - Flood Improvement Project Concept Map - Ormond Lakes 10-80

Figure 10-8 - Flood Improvement Project Concept Map - Alanwood Drive and Beach St. ... 10-87

Figure 10-9 - Flood Improvement Project Concept Map - Trails - Dry Well / French Drains 10-94

Figure 10-10 - Flood Improvement Project Concept Map - Orchard Business Park 10-100

Figure 10-11 - Flood Improvement Project Concept Map - Railroad Crossing - East Fork of Thompson Creek 10-107

Figure 10-12 - Flood Improvement Project Concept Map - Railroad Crossing - St. Andrews Discharge 10-114

Figure 10-13 - Flood Improvement Project Concept Map - Orchard St. and Jeanette Drive 10-123

LIST OF APPENDICES

Appendix A: Summary Report of the Review of the City's Comprehensive Plan, Code of Ordinances, and Land Development Code

Appendix B: Water Quality Assessment Data

Appendix C: Inundation Charts for At-Risk City-Owned and/or Operated Assets

ACRONYMS AND ABBREVIATIONS

AAE	Adaptation Action Elevation
ACCMP	Asphalt Coated Corrugated Metal Pipe
AGM	Annual Geometric Mean
ASCE	America Society of Civil Engineers
BAM	Biosorption Activated Media
BFE	Base Flood Elevation
BMAP	Basin Management Action Plan
BMP	Best Management Practice
BMPTRAINS	Best Management Practice Treatment Options for Removal on an Annual Basis by those Interested in Nutrients in Stormwater
BOCC	Board of County Commissioners
BOD	Biological Oxygen Demand
CCTV	Closed Circuit Television
CIP	Capital Improvement Project
CMP	Corrugated Metal Pipe
CN	Curve Number
CRS	Community Rating System
CWA	Clean Waterways Act
DCIA	Directly Connected Impervious Area
DEM	Digital Elevation Model
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
ECFR2C	East Central Florida Regional Resilience Collaborative
EMC	Event Mean Concentration
EPA	Environmental Protection Agency
ERP	Environmental Resource Permit
FAC	Florida Administrative Code
FCWA	Federal Clean Waters Act
FDEM	Florida Division of Emergency Management
FDEP	Florida Department of Environmental Protection
FDOH	Florida Department of Health

FEMA	Federal Emergency management Agency
FDOT	Florida Department of Transportation
FFE	Finished Floor Elevation
FIM	Fisheries Independent Monitoring
FIRM	Flood Insurance Rate Map
FLUCFCS	Florida Land Use Cover and Forms Classification System
FLWMI	Florida Water Management Inventory
FS	Florida Statues
FWC	Florida Fish and Wildlife Conservation Commission
FWQA	Federal Water Quality Act
FY	Fiscal Year
FYN	Florida Yards and Neighborhoods
GI	Green Infrastructure
GIS	Geographical Information System
GLM	General Linear Model
GPS	Global Positioning System
HAZUS	FEMA Natural Hazards Risk Assessment Program
HDPE	High Density Polyethylene Pipe
HSPF	Hydrological Simulation Program–Fortran
I&I	Infiltration and Inflow
IWR	Impaired Waters Rule
lbs/yr	Pounds per Year
LDC	Land Development Code
LID	Low Impact Design or Redevelopment
LiDAR	Light Detection and Ranging
LOS	Level of Service
LTRP	Long-Term Recovery Plan
LSPC	Loading Simulation Program in C++
MBI	Mitigation Bank Instrument
MCM	Minimum Control Measures
MDAS	Mining Data Analysis System
MF	Membrane Filtration

mg/L	Milligrams per Liter
m	Meter
ml	Milliliter
MOM	Maximum of Maximums
MPIL	Master Pay Item List
MPN	Most Probable Number
MS	Multi-Sector
MS4	Municipal Separate Storm Sewer System
MSDP	Master Storm Drainage Plan
NAVD	North American Vertical Datum
NCB	Northern Coastal Basins
NFIP	National Flood Insurance Program
NGVD	National Geodetic Vertical Datum
NNC	Numeric Nutrient Criteria
NOAA	National Oceanic and Atmospheric Administration
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
OM / O&M	Operations and Maintenance
OSTD	Onsite Sewage Treatment and Disposal System
PCMP	Polymeric Corrugated Metal Pipe
PDRP	Post-Disaster Redevelopment Plan
psu	Practical Salinity Unit
PVC	Polyvinyl Chloride
R2CTPO	River to Sea Transportation Planning Organization
RCP	Reinforced Concreate Pipe
RLP	Repetitive Loss Properties
RTV	Required Treatment Volume
SCS	Soil Conservation Service
SFHA	Special Flood Hazard Area
SFRCCC	Southeast Florida Regional Climate Change Compact
SJRWMD	St. John River Water Management District

SLOSH	Seas, Lakes, and Overland Surges from Hurricanes
SMPU	Stormwater Master Plan Update
SOP	Standard Operating Procedure
SPRC	Site Plan Review Committee
SR	State Road
SWMP	Stormwater Management Program
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TPTV	Ten Percent Threshold Value
TSS	Total Suspended Solids
UMAM	Uniform Mitigation Assessment Method
ug/L	Micrograms per Liter
umhos/cm	Micromhos per Centimeter
USACE	US Army Corps of Engineers
USGS	United State Geological Survey
UV / U/V	Ultraviolet
VCP	Vitrified Clay Pipe
WBID	Water Body Identification
WMD	Water Management District
WTE	Waste to Energy
WQS	Water Quality Standards
WWTP	Wastewater Treatment Plant

1. INTRODUCTION

1.1 Background and Purpose

The City of Ormond Beach is 23,518 acres (36.7 square miles) of the northeastern portion of Volusia County. As a coastal community in Volusia County, Ormond Beach is bordered by the Atlantic Ocean on the east. The Halifax and Tomoka Rivers, both water quality impaired, flow through the City with branching creeks. The majority of the City of Ormond Beach consists of residential, commercial, and wetland land uses. The terrain of the residential areas near the Halifax and Tomoka Rivers is relatively flat, along with a high water-table, which when combined would create challenges in stormwater runoff management. The City is under the water resource jurisdiction of the St. Johns River Water Management District (SJRWMD). The City is essentially built out in the eastern portions, with development continuing in the central and western portions.

The purpose of this SMPU is to guide the stormwater program into the future and provide an update since the last completed update performed in 2007. Since that time, many projects and program enhancements have been implemented. Numerous flooding and water quality project needs still exist which must be factored into the new 10 year planning cycle. Also, regulatory requirements have evolved since the last update that will require new strategies to effectively address. Lastly, the City must plan to implement resiliency measures to adapt to the uncertain changes in future sea level rise and related hydrologic changes.

A general map of the City relative to its geographical setting is shown on the vicinity map on **Figure 1-1**. A current aerial based map of the City is included on **Figure 1-2**.

1.2 Mission Statement

The 2021 SMPU must protect the health, safety, and welfare of the Citizens of City of Ormond Beach by:

(i) Protecting and improving the City's surface water resources;

(ii) Protect the City's potable water supply;

(iii) Protecting public and private property;

(iv) Protecting and restoring the local ecology; and

(v) Planning and incorporating wise and strategic investments into the stormwater management system.

Figure 1-1 – Vicinity Map

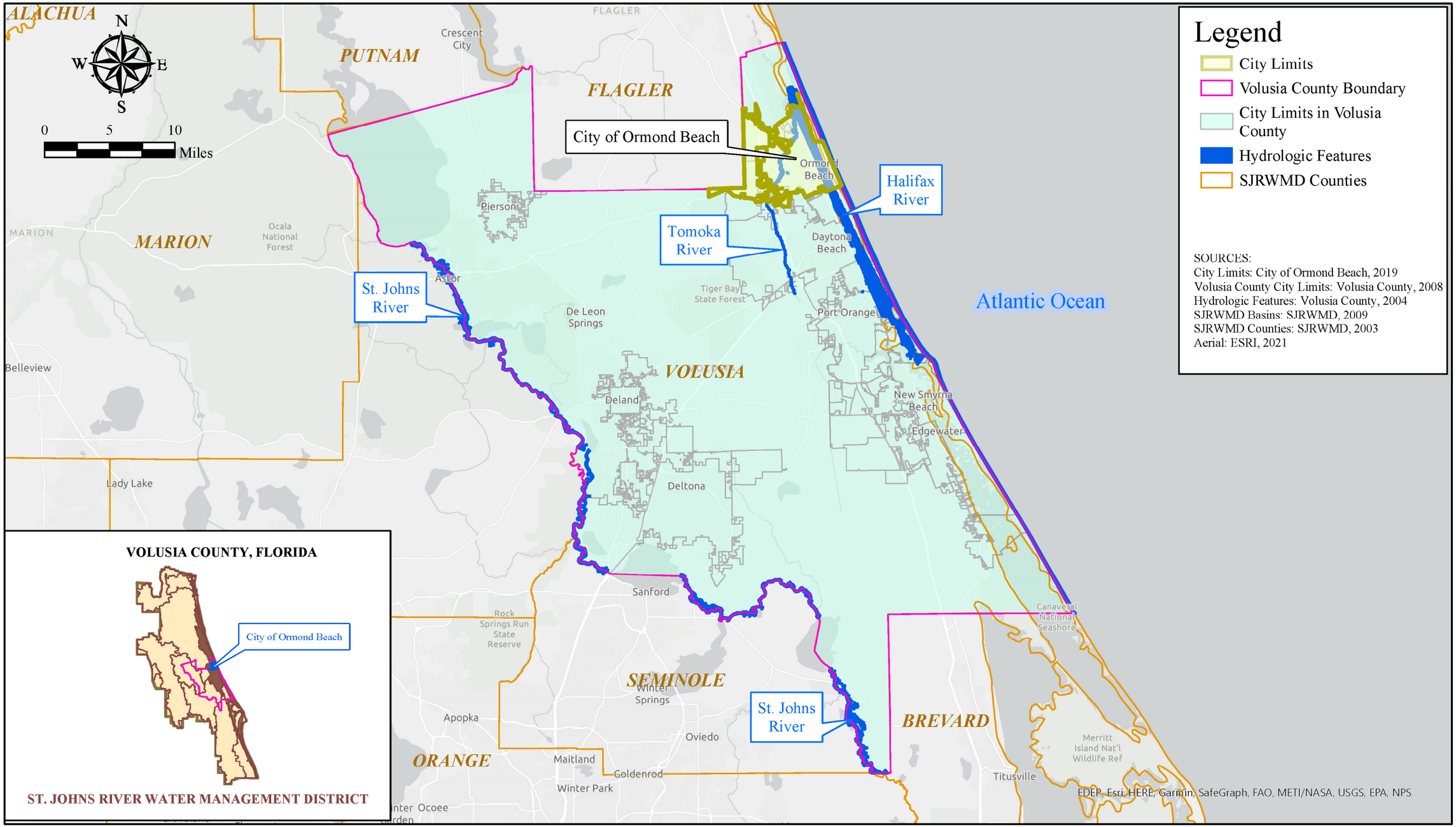
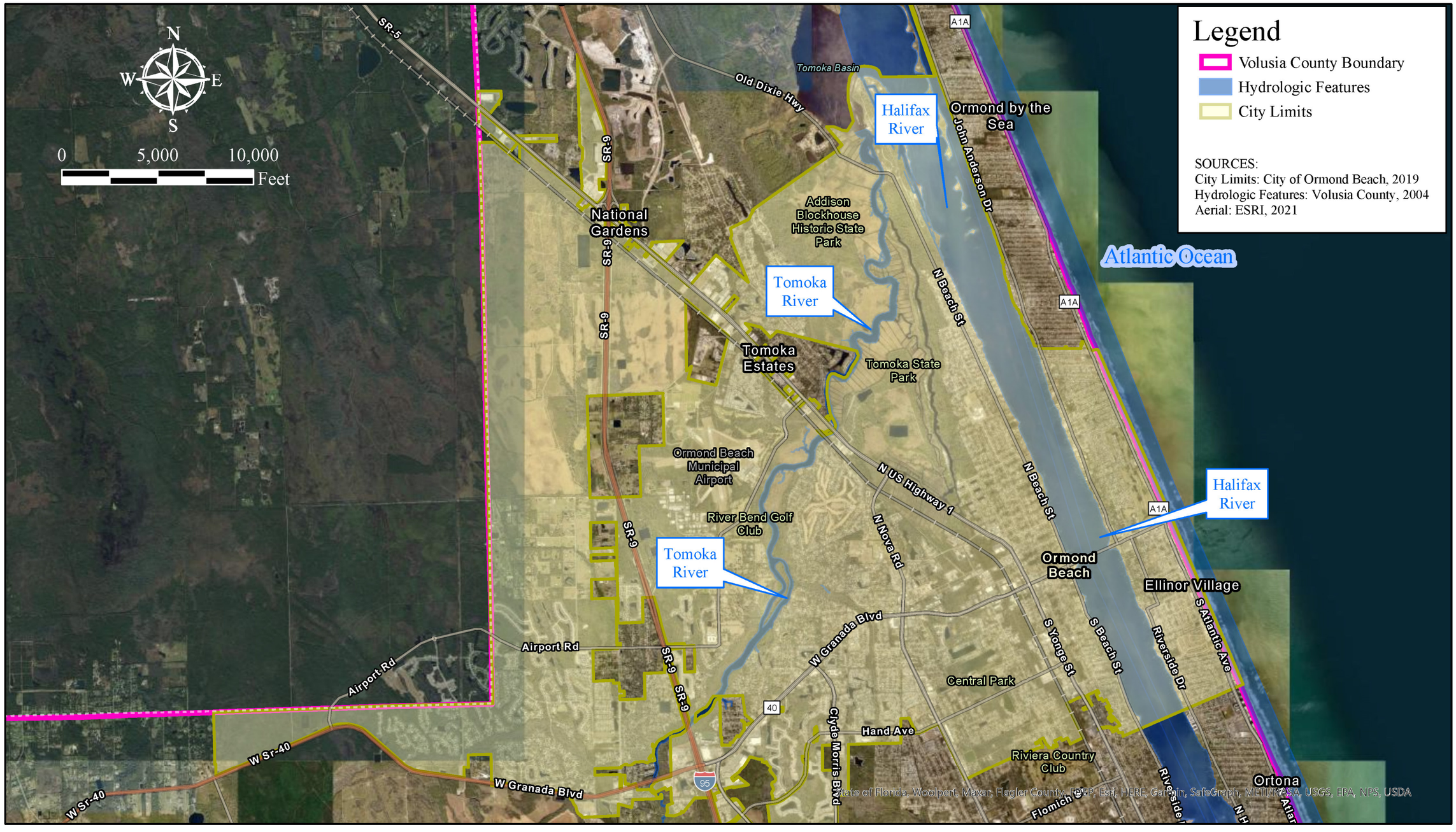


Figure 1-2 - City Map



1.3 Master Plan Outline

This Stormwater Master Plan Update (SMPU) is organized into the following sections that address various key aspects of stormwater management and the City's program. These are as follows:

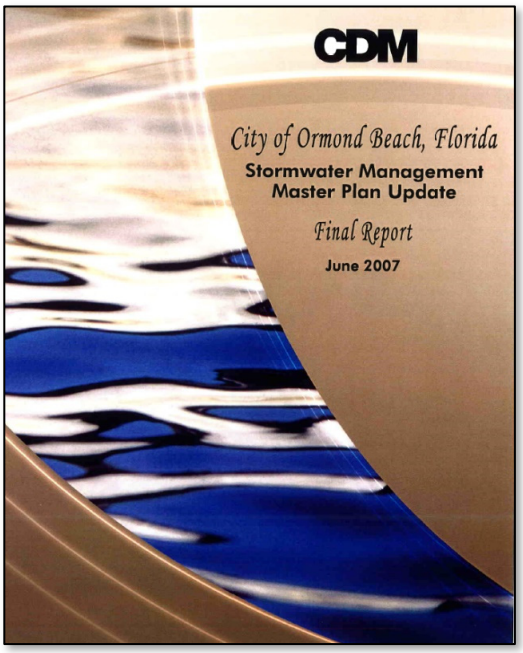
1. **Introduction** – this section
2. **Review of 2007 Stormwater Master Plan Update (and 2009 Storm Addendum)** – this section provides a look back at the previous master plan update and provides a completion or progress status on the previous recommendations.
3. **Regulatory Review** – provides summary of the various stormwater regulations the City is subject to and provides recommendations for enhancements moving forward with the program. This effort was assisted by subconsultant partner Watershed Management Services.
4. **Flooding Assessment** – provides an overview of various City characteristics which impact flooding and provides a summary of various flooding conditions which warrant action including infrastructure maintenance and flooding problems area improvements.
5. **Water Quality Assessment** – provides a summary of current conditions relative to water quality in an around the City. Specific water quality concerns related to impaired waters are quantified and general recommendations made for addressing water quality deficiencies. This effort was assisted by subconsultant partner Janicki Environmental.
6. **Future Climate Impact Assessment** – provides an overview of conditions which may impact the management of stormwater in the future and provides a preliminary screening of the vulnerability of City assets to flood related future conditions. This effort was assisted by subconsultant partner Brizaga.
7. **Best Management Practices** – provides an overview of various stormwater best management practice applications relevant to the City. This effort was assisted by subconsultant partner Watershed Management Services.
8. **Program Operations and Maintenance** – provides an overview of the City's stormwater operations and maintenance program and provides recommendations for enhancement to be proactive moving forward. This effort was assisted by subconsultant partner Watershed Management Services.
9. **Improvement Project and BMP Recommendations** – provides a summary of actions that are warranted for the program to address over the next planning period including flooding, water quality, and future climate impact issues. This provides the basis for the CIP recommendation in the CIP section.
10. **Flood Improvement Project Solution Conceptualization** – provides details on the 13 primary flood improvement areas identified, including conceptual improvements and costs, with recommendations for moving forward under the proposed CIP program.

11. **Capital Improvement Project Recommendations** – provides a prioritized schedule of project implementation over a 10 year CIP planning period. Also, includes information of external funding options that may aid the City in funding the projects.
12. **Conclusions and Recommendations** – provides a summary of the stormwater master plan update results.

2. REVIEW OF PREVIOUS MASTER PLAN REPORTS

2.1 REVIEW OF 2007 STORMWATER MASTER PLAN UPDATE

Geosyntec Consultants was tasked with reviewing the recommendations within the 2007 Stormwater Master Plan Update (2007 SMPU) and 2009 Storm - Stormwater Flooding Investigation Study (2010 SMPU Addendum) completed by CDM. Problem areas within the City of Ormond Beach corporate limits study area with drainage issues were identified (11 in total) and recommendations provided for each. Also, water quality issues within the study area, noted in EPA records, were discovered to predate water quality regulations. Therefore, the 2007 SMPU provided recommendations to retrofit those areas to reduce the pollutant loading. It should be noted that problem areas located on preexisting channel was proposed to help drain the wetland before possibly flooding of the houses along Southern Trace Boulevard. It should be noted that the City proposed the installation of an underdrain exfiltration system along Southern Trace Boulevard, east of Traceway Court, and around the cul-de-sac.



- **Sandpiper Lane:** There is an "inadequate" outfall for the lot-line ditch located off of Sandpiper Lane. Replacing the existing 4-inch pipe with a larger size (15-inch was recommended) would allow the ditch to drain faster. However, detailed modeling would need to be completed.
- **Pearl Drive Area:** A localized area along Heritage Circle experienced yard flooding, which based on data once contained a tributary of the Tomoka in the area. The drainage easement west of the area should have continued east of the Pearl Drive area. The 2007 SMPU recommended installing an inlet at the property where the most flooding occurs and connecting into the Heritage Circle pipe that discharges into the nearby drainage easement.
- **Military Boulevard:** The west side of Military Boulevard experienced road and yard flooding. It was recommended to add inlets along the west side of Military Boulevard and connect them to the existing inlets on the east side of the road with cross drains. These additions, however, would require the installation of an additional outfall to the nearby wetlands and river, and the upsizing of one existing outfall structure due to capacity concerns from the City.
- **Harvard Drive and Marvin Drive:** The pond located on the Seabreeze Senior High School property overflowed and backed up into the City's stormwater drainage system that is connected to the pond, which then led to flooding in the area. However, since it is on private property and designed to provide stormwater treatment for the school, it was the responsibility of the school district to resolve the local flooding. For these reasons, the 2007 SMPU did not provide recommendations.

- **Putnam-Sanchez Area:** Due to this development being built on a wetland system, having no storage area to contain stormwater runoff, and being located within the 100 year floodplain, the Putnam-Sanchez area has been reported to have historical yard flooding. Based on the topography, the development will experience flooding during the 10-year storm event. The 2007 SMPU mentioned that since this development is within the 100-year floodplain, the improvements could include the demolition of purchased homes in the area to add/create storage, move homes outside of the floodplain, or raise homes to an elevation where flooding will not occur during a major storm event. However, the 2007 SMPU did not provide specific recommendations for this area.
- **Burns Drive:** Burns Drive and several streets that intersect suffered from having an inadequate drainage system. The area consists of dirt and paved roads with a small 12-inch by 18-inch elliptical CMP segment that drains to Park Ridge Ditch. Due to the size of these pipes and the clogging that occurred from sediment and debris, it was recommended to upsize pipes in the area, pave the southern portion of Burns Drive, and provide regular maintenance due to heavy tree coverage in the area.
- **Kings's Crossing:** Flooding occurred in the development due to the inadequate drainage of the surrounding wetland during storm events. The addition of a control structure on the southern portion of the wetland located east of the FDOT pond would provide drainage of accumulated runoff to the development's existing drainage system. This recommendation would help prevent the possible flooding of homes along Lionshead Drive and Kingsbridge Crossing.

2.1.1 Drainage Infrastructure Evaluation and Improvement Recommendations

For drainage issues located in privately owned subdivisions within the City, under the City's Land Development Code (LDC), the City has the right to address long standing issues. However, these issues can have negative effects on the overall system and cause flooding within areas. The 2007 SMPU recommended that the City provide routine inspections and a regular maintenance schedule for those specific areas. Some of those areas are listed below with the suggested recommendations:

- **Tomoka Avenue and Center Street:** Channel segments within this area experienced erosion. The realignment of pipes to reduce turbulence, lining the channel with rip-rap or other erosion control, dredging the channel and increasing pipe size were some of the recommendations provided by the 2007 SMPU.
- **Breakaway Trails:** The private residential subdivision uses a series of wetland areas that are drained by open channels. These channels are privately maintained by Breakaway Trails. However, flooding concerns from Briargate (located upstream of Breakaway Trails) occurred possibly due to suspected lack of maintenance. The 2007 SMPU mentioned the City complete regular inspections of the channels within and surrounding Breakaway Trails.
- **Park Ridge Ditch:** It is reported that the Park Ridge Ditch, which conveys runoff from a large area, suffered loss of capacity. The stormwater collected in the nearby wetland, which did not infiltrate fast enough to handle incoming stormwater. Even though it is the responsibility of the private owner, the 2007 SMPU did recommend two alternatives. One was to reestablish the Park Ridge Ditch so that it may direct stormwater into the nearby

system maintained by the City. The second was to redesign the ditch south of the Park Ridge Ditch. However, the 2007 SMPU preferred the reestablishment of the Park Ridge Ditch since a large area currently drains to the ditch and plans for future development in the area are in development.

- **Lake Walden:** This stormwater pond is located within a closed system without an emergency outfall. The stormwater runoff from the nearby large area could be controlled by either by a control structure that would direct flow to the nearby floodplain associated with Misner's Branch, or it could be pumped by a permanently installed pump station which would discharge into the wetland floodplain. Again, as the 2007 SMPU points out, this is privately owned, and the City has not assumed any responsibility for maintaining this system.

Overall, as mentioned by the 2007 SMPU, the recommendations mentioned above would require further study and review of permitting requirements prior to any implementation.

2.1.2 Capital Plan

The 2007 SMPU developed a detailed Capital Improvement Program (CIP) and schedule to accomplish the CIPs identified in the 2007 SMPU. The identified projects within the CIP were recommended for funding based on required maintenance or renovation/construction, multi-year commitment previously identified by the City Commission, and previously identified within the previous SMPU. It should be noted that previously identified projects (from the original stormwater master plan) were still on the schedule for completion at the time of the 2007 SMPU. Below is the prioritization of the recommended stormwater drainage improvements projects with associated conceptual costs based on City staff input and City Commission overall goals listed from highest priority to lowest:

1. Fleming Avenue ($134,550)
2. Burns Street ($226,200)
3. Orchard Street and Jeanette Drive ($284,635)
4. Southern Trace ($113,100)
5. Sand Piper Lane ($105,560)
6. Military Boulevard ($288,405)
7. Pearl Drive Area ($284,635)
8. King's Crossing ($109,330)

2.1.3 Recommendations and Progress

The recommendations presented in the 2007 SMPU are summarized in **Table 2-1** below, along with the current status from City of Ormond Beach to date.

Based on the foregoing, and the evaluation data provided on Table 2-1, continuing with the CMP pipe rehabilitation and further consideration of improvements to the Orchard Street and Jeanette Drive problem area are warranted under this current 2021 SMPU.

Table 2-1 - 2007 SMPU Recommendations and Status Summary

PRIORITY RANKING	PROBLEM AREA	CDM DESCRIPTION	CURRENT STATUS FROM CITY	CANDIDATE FOR 2021 CIP ?
-	Pipe Rehabilitation	Pipe Rehabilitation	- All noted pipe sections were lined - Still have several thousand feet of CMP that needs Rehabilitation	Yes
1	Fleming Avenue	No drainage at Fleming Avenue and Center Street intersection	- Plans designed through an HMGP grant, but the benefit cost ratio appears to be too low to move forward with construction - No report flooding - Water remains high in the structures in the area of Aaron Circle	No
2	Burns Street	Flooding, inadequate drainage system, system gets easily clogged	- Flooding is minor - Maintenance is occurring frequently (once/week)	No
3	Orchard Street and Jeanette Drive	Flooding	- Residents are still complaining of flooding from the ditch system - Previous analysis indicated that the pipe under Sandy Oaks Blvd was higher than the inverts of the swale	Yes
4	Southern Trace	Flooding	- No complaints have been received since the 2007 SMPU	No
5	Sand Piper Lane	Flooding, ponding in the flowway	- No complaints have been received since the 2007 SMPU	No
6	Military Boulevard and Scottsdale Drive	Flooding	- Outfalls were replaced with A200 at the same 18-inch pipe size - No more reports of flooding	No
7	Pearl Drive and Heritage Circle Area	Flooding	- Pond still occurs in the low spots - No more reports of flooding	No
8	King's Crossing	Flooding	- Pond still overflows into the wetlands - No impacts to homes or call associated with flooding	No

2.1.4 Water Quality Analyses and Recommendations

Concerning water quality issues within the area, it was noted in the 2007 SMPU that several areas within the City were constructed prior to regulations concerning stormwater treatment. There are several waterways that were on the FDEP's TMDL Verified list, which included the Halifax River, an estuary located within the Halifax River, and the Tomoka River.

The 2007 SMPU recommended the use of "end of pipe" type units to aid in increasing water quality where further development is not feasible; some include the conventional baffle box and vortex separation. For instance, the use of a baffle box at the Rockefeller Drive-Riverside Drive intersection's outfall structure would be ideal, due to its size and it would provide treatment prior to entering the Halifax River. The 2007 SMPU also developed a ranking system to aid the City in prioritizing the need of "end of pipe" unit installations and areas that required treatment the most.

The 2007 SMPU recommended the installation of 98 baffle boxes to assist with end of pipe treatment throughout the overall City stormwater system. The installations of the baffle boxes were prioritized based on pipe sizes: eight were noted high priority (diameter greater than 36 inches), 21 noted at medium priority (diameter greater than 24 inched or less than or equal to 36 inches), and 69 noted as low priority (diameter less than or equal to 24 inches). Based on the 2020 GIS provided by the City, a total of 21 baffle boxes have been installed throughout the City; seven in locations recommended by the 2007 SMPU (one high priority, four medium priority, and two low priority). The remaining 14 locations do not appear to correspond to the 2007 SMPU recommendations and may have been installed prior to 2007 (no install date information was avialble in the City GIS).

Identification of feasible opportunities to install baffle boxes, particularly second-generation nutrient filtering types, remains a valid recommendation. These should be considered as part of area-based water quality assessment and BMP recommendation efforts.

2.1.5 Land Development Code Review

The 2007 SMPU reviewed the specific areas within the LDC per the request from the City and provided recommendations. Each one is reiterated below:

- **Rainfall Depth:** The 25 year/24-hour SCS Type II design storm is designated within the LDC to be used to calculate inflow into retention or detention systems, and the maximum outfall outflow rate. The 2007 SMPU pointed out that the volume for the total storm is not specified within the LDC. Therefore, it was recommended to use the greatest total volume of 8.6 inches (the SJRWMD storm volume) to satisfy requirements of both the SJRWMD and FDOT.

  Review Comment: Based on review this was not done and is still warranted. This would be useful supplemental data to support Section 3.18(h)(3)b, Detention basin design criteria which states:

  1. General design methodologies. The design method used for detention basin design shall be determined by the area of the project size and all contributing areas in accordance with SCS method, type II, Florida Modified Distributions.

  2. Detention basin design analysis.

(iv) For inflow calculations the following methods shall be utilized:

A. Twenty-five-year (25-year) storm-developed conditions SCS method consistent with subsection (h)(3)b1 of this section; and

B. Five-year (5-year) storm developed conditions rational method to be used for analysis of pipe system. This simulation shall be run with tailwater conditions at the twenty-five-year (25-year) storm event elevation.

3. Storage required.

(i) The storage required shall be that volume necessary to store the difference between the twenty-five-year (25-year) SCS storm developed condition runoff and the twenty-five-year (25-year) SCS storm existing-condition runoff.

- **Minimum Floor Elevations:** The minimum height of structures listed within the LDC varied (i.e. 12 inches and 18 inches). The 2007 SMPU recommended setting the minimum height of structures to 18 inches above the maximum for base flood elevations, road crowns, and sidewalk grade.

  Review Comment: Review did not turn up direct reference to any minimum height of structures in Section 3-20 Floodplain Management and Protection. Typical requirement of FEMA regulations is the floor elevation is 1' to 2' above the base flood elevation. Current language includes:

  (i) Buildings and structures.

  (1) Design and construction of buildings, structures and facilities exempt from the Florida Building Code. Pursuant to subsection (d)(3) of this section, buildings, structures, and facilities that are exempt from the Florida Building Code, including substantial improvement or repair of substantial damage of such buildings, structures and facilities, shall be designed and constructed in accordance with the flood load and flood resistant construction requirements of ASCE 24. Structures exempt from the Florida Building Code that are not walled and roofed buildings shall comply with the requirements of subsection (o) of this section.

  (2) Buildings and structures seaward of the coastal construction control line. If extending, in whole or in part, seaward of the coastal construction control line and also located, in whole or in part, in a flood hazard area:

  a. Buildings and structures shall be designed and constructed to comply with the more restrictive applicable requirements of the Florida Building Code, Building section 3109 and section 1612 or Florida Building Code, Residential section R322.

  b. Minor structures and non-habitable major structures as defined in F.S. § 161.54 shall be designed and constructed to comply with the intent and applicable provisions of this section and ASCE 24.

  (3) Critical facilities. New or substantially improved critical facilities shall be, to the extent possible, located outside of flood hazard areas. New critical facilities shall be permitted in flood hazard areas if there is no feasible alternative location. Where permitted:

a. The elevation required for the lowest floor, lowest horizontal structural member of the lowest floor, or dry floodproofing, as applicable, shall be at or above the base flood elevation, plus 2 feet, or the 500-year flood elevation, whichever is higher.

It is noted that revisions were made by the City to be consistent with ASCE 24 to match Building Code. Section 3-20(a)(4) Coordination with the Florida Building Code. This section is intended to be administered and enforced in conjunction with the FBC. Where cited, ASCE 24 refers to the edition of the standard that is referenced by the FBC. ASCE 24 requires BFE plus one foot for most residential and commercial structures. ASCE 24 requires all critical facilities to be built BFE plus 2 feet.

- **Lot Grading and Minimum Grading Requirements:** The 2007 SMPU pointed out that the LDC discusses grading and filling, but does not provide specifications on minimum slope requirements, and existing storage and flowways. To provide clarification on these items, the 2007 SMPU recommended to the City the following:
    - Offsite grading must maintain existing lot of 100 year storage.
    - Lot grading maintains existing flows and slopes for offsite areas
    - Lot grading must provide retention of the difference between pre and post development conditions for the 25year /24-hour design storm.
    - Rational Method can used with the following assumptions:
        - Impervious Runoff Coefficient: 0.95
        - Pervious Runoff Coefficient: 0.20

  Review Comment: Review of Section 3-10 did not indicate any of the recommended language, so that recommendation still stands.

- **Maximum Impervious Lot Coverage:** As of 2007, the City of Ormond Beach had adopted a uniform maximum impervious lot coverage of 75% for ALL types of residential districts. It should be noted that most municipalities use different limitations on the maximum impervious lot coverage for different set zoning districts. At that time the City desired to change the uniform maximum requirement from 75% to 50%. The 2007 SMPU recommended only doing so for residential development and redevelopment.

  Review Comment: Based on review, this was not done. All of the zoning districts allow a uniform maximum impervious area of 75%, except for Light Industrial which is 80%. The regulatory review in Chapter 3 also recommends reducing maximum imperviousness to the 50 – 60% range.

- **Detention and Retention Basins Storage Requirements:** The City was currently implementing that the total volume of retention to be provided would be equivalent to one inch of runoff over the entire project area. However, the 2007 SMPU recommended that the total volume of retention to be provided should be that necessary to store the difference between the 25-year/24 hour storm developed condition and the 25-year/24 hour storm existing condition.

  Review Comment: This recommendation appears to have been implemented. However, keep in mind that Comprehensive Plan Policy 2.2.12 states: Stormwater management

systems shall be designed to ensure that post-development runoff does not exceed pre-development levels, in terms of the volume, rate, timing and pollutant load of runoff. This is not being done in the LDC.

Also, Section 3-18(h) includes the following design requirements for detention and retention basins:

2) Lesser developments. The following shall apply for a proposed development which consists of no more than five thousand (5,000) square feet of impervious area and which is proposed for a parcel of record which is less than one (1) acre in total size:

a. The volume of retention to be provided shall be equivalent to one inch (1") of runoff over the entire project area, including both pervious and impervious areas.

(3) Standard development. The following shall apply for a proposed development which consists of more than five thousand (5,000) square feet of impervious area and/or which is proposed for a parcel of record, under single ownership, which is one (1) acre or more in total size:

a. Total retention. All detention/retention facilities must have a positive discharge except as approved by the city engineer. If total retention is allowed, the basin must recover to its design low water stage within seventy-two (72) hours. To provide the city with assurances, a double ring infiltrometer test must be performed at the same elevation as the bottom of the basin and a safety factor of four (4) shall be applied to the design.

b. Detention basin design criteria.

3. Storage required.

(i) The storage required shall be that volume necessary to store the difference between the twenty-five-year (25-year) SCS storm developed condition runoff and the twenty-five-year (25-year) SCS storm existing-condition runoff.

It is acknowledged the pollution loading was not included. Over the past, the details of pollution loading associated with detention and retention system designs were reviewed by the water management district.

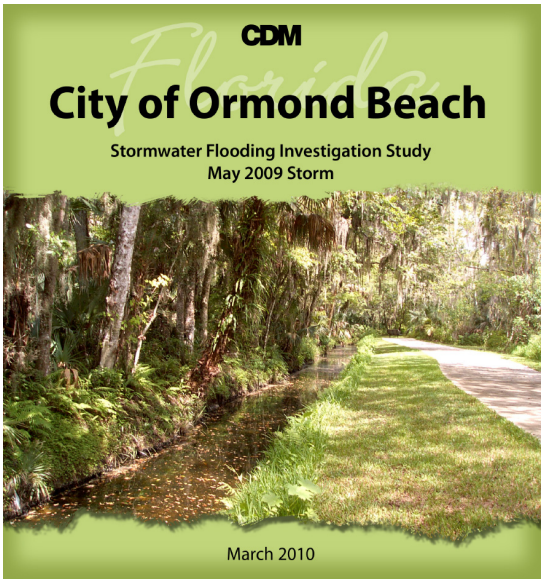
- **Maintenance of Private Flowways:** The lack of maintenance in privately maintained areas could attribute to issues in other areas within the overall system significantly. It was noted that it is important that entire flowway be unrestricted to prevent future issues that may occur with the increase of future developments. It was recommended that the City Attorney review *Section 3-18, J, 2* of the LDC and provide guidance to the City's Stormwater Department.

  Review Comment: Based on review, it is unsure if this was implemented as language in Section 3-18 (j)(2) is the same:

  (2) The systems maintained by the owner shall have adequate easements to permit the city to inspect and, if necessary, to take corrective action should the owner fail to properly maintain the system. Before any corrective action is taken by the city, the city engineer shall give the owner written notice of the nature of the existing defects. If the owner fails, within thirty (30) days from the date of mailing of such notice, to commence

corrective action or to appeal the matter of such notice to commence corrective action or to appeal the matter to the city commission, the city may take necessary corrective action, the cost of which shall become a lien on the property, together with interest at the rate of eight percent (8%) per annum, until paid.

2.2 REVIEW OF 2010 STORMWATER MASTER PLAN ADDENDUM



Geosyntec Consultants was tasked with reviewing the recommendations within the 2010 - Stormwater Flooding Investigation Study May 2009 Storm (2010 SMPU Addendum) completed by CDM. The purpose of theis efforts was to investigate measures to mitigate widespread flooding associated with the May 2009 storm (May 17th to May 24th). This investigation included modelling to evaluate alternatives for flooding relief in the Laurel Creek area. Other areas that experienced flooding during the storm were also evaluated by making use of volumetric analysis to provide an explanation of possible reasons for the problem and to propose solutions.

A summary of the areas evaluated is provided below, as well as the outcome and current status:

1. **Laurel Creek Area** – Improvements recommended to add lake interconnections, add water control structures, increase capacity. flap gates, drawdown with pump system. Area addressed by a subsequent capital project. Considered addressed.
2. **Riverside Drive** – Problem cited as homes constructed in depressional areas. Recommendation made to place inlets in depressional areas and connect to existing nearby trunklines. Considered addressed.
3. **John Anderson Drive** – Problem cited as lack of infrastructure, homes constructed in depressional areas. Recommendation made to place inlets in depressional areas and connect to existing nearby trunklines. It is noted that a project was under design in 2010 to correct some of the issues. Considered addressed.
4. **Hernandez and Dix Avenues** – One house flooded with problem attributed to maintenance and capacity. Recommended that issue was attributable undersized pipes, maintenance and surcharge issues. Issues being addressed by current SMPU project recommendation for Sanchez to SR 40 from Ridgewood to River (see Section 10). Recommendations to increase the pipe sizes in this area to a minimum of 18-inches is warranted. Considered addressed by a current CIP recommendation.
5. **Mound Avenue** – Problem cited as depressional area with lack of capacity/outfall. Recommendation made to place inlets in depressional areas and connect to existing nearby trunklines. Considered addressed.
6. **Putnam and Sanchez Avenues** – Problem flooding due to area in Thompson Creek floodplain area. Issues being addressed by current project recommendation for

Cumberland (see Section 10). Recommendations to increase the pipe sizes in this area to a minimum of 18-inches is warranted. Considered addressed by a current CIP recommendation.

7. **Ormond Lakes Area** – Problem attributed to maintenance issues associated with outfall pipe. Some maintenance of the outfall system performed at that time reportedly helped conditions. Recommended modeling of Ormond Lakes system to confirm/determine issues. Being addressed by current project recommendation for Ormond Lakes (see Section 10). Considered addressed by a current CIP recommendation.

8. **Hand Avenue Design Modeling Assistance** – This effort was done to support the Zev Cohen and Neal Schaffer design efforts being performed at that time. Considered addressed.

Based on the foregoing, each of the 8 areas addressed by the 2010 report have either been addressed previously or are being addressed by project recommendations under this current SMPU (see Section 10).

3. REGULATORY REVIEW

This chapter provides a summary of the current Federal, State, Regional, and City laws and regulations that affect the management of stormwater and the protection or restoration of the City's water bodies. A major focus is on restoring impaired waters such as the Halifax River and the Tomoka River and meeting the stormwater total nitrogen (TN) and total phosphorus (TP) load reductions set forth in the adopted Total Maximum Daily Loads (TMDLs). This section also includes an analysis of the current regulatory framework's ability to provide adequate legal authority to regulate development and redevelopment activities, to minimize stormwater impacts, to specify stormwater requirements, and to provide for adequate stormwater review, inspection, compliance, and enforcement. A technical memorandum *Summary Report of the Review of the City's Comprehensive Plan and Land Development Regulations* provides detailed comments and recommendations, including specific language, to revise portions of the City's Comprehensive Plan, Code of Ordinances, and Land Development Code.

3.1 Federal Requirements

3.1.1 Federal Clean Water Act

The Federal Clean Water Act (FCWA) was first adopted in 1972 and amended in 1977 and 1987. The 1987 amendments included the first federal requirements for the control of stormwater discharges which had been found to be a major source of water pollution throughout the country. The sections of the FCWA that affect land use decisions, the management of stormwater, and the health of the City's surface water bodies include the following:

- Section 301 – prohibits discharges of pollutants to surface waters without a permit.
- Section 303 – establishes the process for states to adopt Water Quality Standards (WQS) and requirements for states to periodically report to US EPA the quality of surface waters. Water bodies that are not meeting their applicable water quality standards are placed on the state's 303(d) list of impaired water bodies. For each impaired water body, states must develop and adopt Total Maximum Daily Loads (TMDLs) that establish pollutant loading limits for pollutants that are causing violations of WQS. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet WQS
- Section 304 – requires states to establish Water Quality Standards (WQS) to protect the designated uses of surface water bodies. Water Quality Standards are risk-based requirements which set site-specific allowable pollutant levels for individual water bodies, such as rivers, lakes, streams and wetlands. States set WQS by designating uses for the water body (e.g., recreation, water supply, aquatic life, agriculture) and applying water quality criteria (numeric pollutant concentrations and narrative requirements) to protect the designated uses. An antidegradation policy is also issued by each state to maintain and protect existing uses and high-quality waters.
- Section 305 - requires states to assess the quality of their surface waters and to submit a report to US EPA every two years. This reporting has now been combined with the Section 303(d) reporting allowing states to produce an Integrated Report on the health of the state's

water bodies that also identifies the water bodies that are not meeting their applicable water quality standards.

- Sections 208 and 319 – these sections required states to assess the impact of nonpoint sources of pollution (e.g., stormwater, septic tanks, erosion) and to develop and implement Nonpoint Source Management Programs. Federal grant funds were awarded to states for the implementation of these programs. These grants can be used by local governments to reduce nonpoint source pollutant loadings.
- Section 402 – establishes the National Pollutant Discharge Elimination System (NPDES) permits program. The initial permits issued in the 1970s and early 1980s focused on domestic and industrial wastewater discharges. These permits used technology-based permit standards for municipal and industrial sources. However, Water Quality Based Effluent Limits are set for discharges to impaired water bodies. Both types of permit limits typically include numeric effluent limitations for specific pollutants. A numeric limitation quantifies the maximum pollutant load or concentration allowed in the discharge - e.g., 30 mg/L of biochemical oxygen demand. Exceeding a numeric limitation constitutes a violation of the permit, and the discharger is subject to fines as laid out in Section 309. Facilities must periodically monitor their effluent (i.e., collect and analyze wastewater samples), and submit Discharge Monitoring Reports to the appropriate agency, to demonstrate compliance

  The 1987 FWQA expanded the program to cover stormwater discharges explicitly, both from municipal separate storm sewer systems (MS4) and industrial sources, including construction sites. The MS4 NPDES permits require regulated municipalities to use Best Management Practices to reduce pollutants to the "Maximum Extent Practicable." Very comprehensive Phase I MS4 permits are required for large local governments (>100,000 population) while less burdensome and comprehensive Phase II MS4 permits are required for small governments, universities, military bases and other specified land uses. The City of Ormond Beach has a Phase II MS permit that was first issued on October 10, 2003. It must be renewed every five years and the Cycle 4 permit was issued on March 12, 2019.
- Section 404 - requires that a discharger of dredged or fill material obtain a permit, unless the activity is eligible for an exemption. Essentially, all discharges affecting the bottom elevation of a jurisdictional water body require a permit from the U.S. Army Corps of Engineers (USACE). These permits are an essential part of protecting streams and wetlands, thereby reducing fill and habitat destruction. Wetlands are vital to the ecosystem in filtering streams and rivers and providing habitat for wildlife. In December 2020, EPA approved Florida's application and rules to implement the Federal Section 404 permitting program.

The US EPA implements its statutory authority through the development and adoption of rules within Title 40 of the Code of Federal Register.

3.1.2 National Flood Insurance Program

The National Flood Insurance Program (NFIP) was created by the U.S. Congress in 1968 through passage of the National Flood Insurance Act of 1968 (P.L. 90-448). The program enables property owners in participating communities to purchase insurance protection, administered by the

government, against losses from flooding, It also requires flood insurance for all loans or lines of credit that are secured by existing buildings, manufactured homes, or buildings under construction within the participating community.

Participation in the NFIP is based on a partnership between local communities and the federal government. The intent is to reduce future flood damage through community floodplain management ordinances and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection. If a community will adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas (SFHA), the federal government will make flood insurance available within the community as a financial protection against flood losses. The SFHAs and other risk premium zones applicable to each participating community are depicted on Flood Insurance Rate Maps (FIRMs). The most recent FIRMs for the City of Ormond Beach were adopted between 2014 and 2017. The City's NFIP requirements are found in Section 3-20 of Article II, Environmental Protection Standards, of Chapter 3, Performance Standards, of the City's Land Development Code.

3.2 State of Florida Requirements

The State of Florida has a long history of enacting legislation and rules to manage growth and development, the discharge of pollutants, and the protection, management, and restoration of its surface and ground waters.

3.2.1 Department of Economic Opportunity - Growth Management

In 1985, Chapter 163, F.S., was amended by the **Local Government Comprehensive Planning and Land Development Regulation Act** which required all local governments to adopt local comprehensive plans and implementing regulations. These must be consistent with the goals and policies of the State Comprehensive Plan (Ch 187, F.S.) and regional plans. Numerous state and regional agencies review the local plans and submit their objections, recommendations and comments to the Department of Community Affairs for transmittal to the local government which revises the local plan to incorporate the objections, recommendations and comments. Local governments face state sanctions which could result in the loss of state funding if adopted local plans are not consistent with the state and regional plans.

Florida's revised growth management system was built around three key requirements: consistency, concurrency and compactness. The consistency requirement establishes the "integrated policy framework", whereby the goals and policies of the State Plan frame a system of vertical consistency. State Agency Functional Plans and Regional Planning Council regional plans must be consistent with the goals and policies of the state plan while local plans are required to be consistent with the goals and policies of the state and appropriate regional plan.

Concurrency is the most powerful policy requirement built into the growth management system. It requires state and local governments to abandon their long-standing policy of deficit financing growth by implementing a "pay as you grow system". Once local plans and LDRs are adopted, a local government may approve a development only if the public facilities and services (infrastructure) needed to accommodate the proposed development can be in place concurrently with the development. Public facilities and services subject to the concurrency requirements are roads, stormwater management, solid waste, potable water, wastewater, parks and recreation and,

if applicable, mass transit. Level of service standards acceptable to the community must be established for each of the types of public facilities.

Compact urban development goals and policies are built into the State Comprehensive Plan and into Regional Plans. Such policies as separating rural and urban land uses, discouraging urban sprawl, encouraging urban in-fill development, making maximum use of existing infrastructure and encouraging compact urban development form the basis for this requirement.

By 2010, the results of the revised comprehensive planning process were seen in the large reduction in infrastructure deficits at the state and local level. However, Chapter 163, F.S., was amended by Chapter 2011-139, Laws of Florida. No longer were consistency, concurrency, and compactness drivers of comprehensive plans. Major revisions included:

- The name of the part II, chapter 163 act is changed from the "Local Government Comprehensive Planning and Land Development Regulation Act" to the "Community Planning Act." §163.3161(1), F.S. This reflects the shift from State oversight to local government control of the planning and growth management process. The State's new role is to focus on "protecting the functions of important state resources and facilities.".
- The Act's purpose moves from "control future development" to "manage future development consistent with the proper role of local government.". A new purpose statement focuses on recognizing and protecting "the traditional economic base of the state, agriculture, tourism, and military presence" while also encouraging "economic diversification, workforce development, and community planning."
- The required content of Comprehensive Plans did not change greatly. However, the premise of concurrency is shifted away from an emphasis on public facilities being available concurrent with development to their being provided so as to achieve and maintain the adopted level of service standards. Additionally, restrictions on plan amendments were eliminated and the implementing state rules for Comprehensive Plans were deleted. Accordingly, the importance of the City's Comprehensive Plan, Code of Ordinances, and Land Development Code in directing planned development to ensure protection of the City's infrastructure, Levels of Service, and protection of natural resources is paramount.

The City of Ormond Beach's 2025 Comprehensive Plan was adopted on December 7, 2010.

3.2.2 Florida Department of Environmental Protection (FDEP)

Chapter 403, F.S., entitled *Environmental Control*, is Florida's primary environmental protection law. It provides the legal authority for most of the rules and programs implemented by the Florida Department of Environmental Protection. Chapter 373, F.S., entitled *Water Resources*, provides additional legal authority for some FDEP programs and for most rules and programs of Florida's Water Management Districts. The following sections discuss programs or rules that have a significant impact on the management of stormwater and the protection and restoration of water bodies. Rules to implement statutory requirements are adopted by FDEP into Chapter 62 of the Florida Administrative Code (F.A.C.).

3.2.2.1 Surface Water Quality Standards – Chapter 62-302, F.A.C.

"Water quality standards" (WQS) are defined as standards composed of designated present and future most beneficial uses (classification of waters), the numerical and narrative criteria, including Site Specific Alternative Criteria, applied to the specific water uses or classification, the Florida anti-degradation policy, special protection of Outstanding Florida Waters, and the moderating provisions, such as variances, mixing zone rule provisions, or exemptions. Florida's surface water quality standards system, first adopted in March 1979 and subsequently revised, are published in Chapter 62-302 F.A.C (and enumerated in the table in Section 62-302.530 F.A.C.). They are designed to protect the designated beneficial uses of surface water bodies by protecting ecosystem health.

The FDEP classifies Florida waters into six classes depending on their designated uses They are arranged from the most stringent level of protection to the least stringent level of protection as follows:

- Class I - Potable Water Supplies;
- Class II - Shellfish Propagation or Harvesting;
- Class III - Fish Consumption, Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife;
- Class III-Limited – Fish Consumption; Recreation or Limited Recreation; and/or Propagation and Maintenance of a Limited Population of Fish and Wildlife;
- Class IV - Agricultural Water Supplies;
- Class V - Navigation, Utility and Industrial Use.

During the past decade, Florida's WQS have changed substantially with the addition of numeric nutrient criteria for all surface water bodies, springs, and estuaries; biological criteria; and a revision of the dissolved oxygen criteria. Additionally, total maximum daily loads (TMDLs) for nutrient-impaired waters represent site-specific numeric criteria. In 2016, revised human health based WQS were adopted. However, FDEP initiated rulemaking in February 2018 to consider proposed revisions to these human health-based surface water quality criteria. The department intends to conduct a statewide fish consumption survey to accurately determine the amount and types of fish commonly eaten by Floridians in advance of criteria development and adoption. The human health-based criteria listed in Rule 62-302.530, F.A.C., will be revised based on the results of the survey and any additional relevant data and information collected by the department.

Of special interest to stormwater managers was the recent adoption of the Class III-Limited classification. This classification includes non-perennial streams, man-made or physically altered canals/ditches with poor habitat used primarily as water conveyances for flood control, irrigation, etc., and tidal creeks. These "water bodies" are solely covered by narrative criterion. However, local governments must apply for the reclassification of these former Class III water bodies to Class III-Limited waters which requires the submission of proper documentation. Fortunately, at this time, none of the City of Ormond Beach's stormwater management system is classified as a water body.

3.2.2.2 Wetlands Protection or Mitigation – Chapters 62-330, 62-331, 62-340, 62-342, 62-345, F.A.C.

Florida wetlands are defined as those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or possess characteristics that are associated with reducing soil conditions.

The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological or reproductive adaptations, area able to grow, reproduce or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto.

However, just as the general term wetland has been subject to varying opinions so have some of the concepts of the definition. To further clarify and standardize the intent of the definition, a methodology for identifying and delineating wetlands is provided in Chapter 62-340, F.A.C.

Permitting requirements for projects that will disturb wetlands are found in the Environmental Resource Permitting rules, Chapter 62-330, F.A.C. A wetland enhancement, restoration, creation and/or preservation project that serves to offset unavoidable wetland impacts is known as wetland mitigation or compensatory mitigation. The ecological benefits of a mitigation project should compensate for the functional loss resulting from the permitted wetland impact. The Uniform Mitigation Assessment Method (UMAM) in Chapter 62-345, F.A.C., provides a standardized procedure for assessing the ecological values and functions of wetlands and other surface waters.

In 2018, the Florida Legislature amended state law to allow Florida to request assumption of the Federal wetlands protection program from the US EPA and USACE. On July 21, 2020, FDEP completed the rule making process to revise Chapter 62-330, FAC, and to create Chapter 62-331, FAC, to allow assumption of the Federal Section 404 wetlands permitting program from EPA. The final rules, along with the state's application for assumption, were sent to EPA and the US USACE for review to ensure the state's requirements meet or exceed federal requirements. In December 2020, EPA approved Florida's application and rules to implement the Federal Section 404 permitting program.

Mitigation banking is a practice in which an environmental enhancement and preservation project is conducted by a public agency or private entity ("banker") to provide mitigation for unavoidable wetland impacts within a defined region (mitigation service area). The bank is the site itself, and the currency sold by the banker to the impact permittee is a credit, which represents the wetland ecological value equivalent to the complete restoration of one acre. The number of potential credits permitted for the bank and the credit debits required for impact permits are determined by the permitting agencies. UMAM is the method of assessment for banks established after February 2, 2004.

Section 373.4136, F.S., establishes Mitigation Banks and the Mitigation Bank rule, Chapter 62-342, F.A.C., provide the framework for permitting banks. Mitigation banks are authorized by a state permit, issued by either a water management district or the department, and by the U.S. Army Corps of Engineers as a Mitigation Bank Instrument (MBI).

3.2.2.3 Stormwater Management (Environmental Resource Permitting) – Chapter 62-330, F.A.C.

Stormwater management is needed to minimize the impacts of development and urbanization on our water resources. The impacts of urbanization include:

- Reduced ground water recharge
- Reduced rainfall interception, evaporation, and transpiration from trees
- Increased stormwater peak discharge rate
- Increased stormwater volume
- Increased stormwater pollutant loading
- Increased frequency, duration, and magnitude of flooding
- Reduced water levels in wetlands, rivers, lakes
- Altered salinity regimes in estuaries

In the beginning, and even today, the primary focus of stormwater management is on "drainage" – ensuring that properties and lives are not harmed by the flooding from the increased stormwater. However, during the 1970s, research conducted at the University of Central Florida quantified the pollutant loads in stormwater discharges and the benefits from using innovative stormwater treatment practices known as Best Management Practices or BMPs to reduce pollutant loadings.

Recognizing that it was much easier and cheaper to prevent stormwater pollution that to restore polluted water bodies, and that Florida's growth was booming, Florida became the first state in the United States to adopt a statewide rule requiring that stormwater from all new development and redevelopment be managed for both flood control and water quality protection.

Florida's stormwater treatment rule was implemented in February 1982. The technology-based rule was based on a "performance standard" or goal and the adoption of design criteria for various stormwater treatment BMPs that would achieve the desired flood control and pollutant load reductions. The performance standard initially was set at 80% average annual load reduction of Total Suspended Solids. This provided equitability with the minimum level of treatment for point sources, such as wastewater discharges, which was secondary treatment.

Since the science of stormwater treatment was new, the design criteria for the BMPs were changed several times during the 1980s as more data on BMP effectiveness in reducing stormwater pollutants became available. In 1989, the Florida Legislature directed FDEP to adopt a "State Water Implementation" rule to ensure consistency among rules adopted by FDEP, water management districts, and local governments. Chapter 62-40, FAC, was first adopted in 1990. Section 62-40.431 outlines the goals of the state's stormwater management program and the roles and responsibilities of FDEP, the water management districts, special districts, and local governments. The overall goal of the program is set forth in Section 62-40.431(2)(a):

The primary goals of the state's stormwater management program are to maintain, to the maximum extent practical, during and after construction and development, the pre-development stormwater characteristics of a site; to reduce stream channel erosion, pollution, siltation, sedimentation and flooding; to reduce stormwater pollutant loadings discharged to waters to preserve or restore designated uses; to reduce the loss of fresh water resources by encouraging the recycling of stormwater; to enhance ground water recharge by promoting infiltration of stormwater in areas with appropriate soils and geology; to maintain the appropriate salinity regimes in estuaries needed to support the natural flora and fauna; and to address stormwater management on a watershed basis to provide cost effective water quality and water quantity solutions to specific watershed problems.

The minimum stormwater treatment performance standards for the state's stormwater program are set in Section 62-40.432(2):

(a) When a stormwater management system complies with rules establishing the design and performance criteria for such systems, there shall be a rebuttable presumption that the discharge from such systems will comply with state water quality standards. The Department and the Districts, pursuant to Section 373.418, F.S., shall, when adopting rules pertaining to stormwater management systems, specify design and performance criteria for new stormwater management systems which:

1. Achieve at least 80 percent reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards.

2. Achieve at least 95 percent reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards in Outstanding Florida Waters.

3. If a District or the Department adopts basin-specific design and performance criteria in order to achieve an adopted TMDL or the pollutant load reduction goals established in a watershed management plan, such design and performance criteria shall replace those specified in subparagraphs 1. and 2. above.

(b) Erosion and sediment control plans detailing appropriate methods to retain sediment on-site shall be required for land disturbing activities.

(c) The pollutant loading from older stormwater management systems shall be reduced as necessary to restore or maintain the designated uses of waters.

In 1994, the Florida legislature created the Environmental Resource Permitting (ERP) program. These permits integrated requirements for stormwater quantity (flood control), stormwater quality (treatment), and wetlands protection into a single permit. The Environmental Resource Permitting (ERP) Program regulates activities in, on or over surface waters or wetlands, as well as any activity involving the alteration of surface water flows. This includes new activities in uplands that generate stormwater runoff from upland construction, as well as dredging and filling in wetlands and other surface waters. Environmental Resource Permit applications are processed by either the department or one of the state's water management districts, in accordance with the division of responsibilities specified in operating agreements between the department and the water management districts. The ERP Program is in effect throughout the state.

In 2012, the Legislature enacted section 373.4131, F.S., which directed FDEP and the WMDs to create a Unified Statewide Stormwater Rule to bring greater consistency to the requirements for stormwater and wetlands protection. In 2013, Chapter 62-330, F.A.C., was adopted. As part of the rule adoption, an Applicant's Handbook, Volume I, was adopted for use by FDEP and all of the WMDs. Additionally, each WMD adopted an Applicant's Handbook, Volume II, that is applicable only to those ERP activities that involve the design of a stormwater management system that requires a permit under Chapter 62-330, F.A.C. More specifically, it provides specific, detailed BMP design and performance methodologies designed to meet the water quality and quantity requirements of stormwater management systems. ***Unfortunately, however, the new rule did not update the BMP design criteria to ensure that the minimum treatment levels in Chapter 62-40.432, F.A.C., are met. Additionally, it doesn't include design criteria for Low Impact Design (LID) BMPs.***

The implementation of Florida's TMDL program has led to increased stormwater treatment requirements for projects that are located within the watersheds of Verified Impaired Water Bodies or water bodies with an adopted TMDL. ***As set forth in Section 373.414(1)(b)3, F.S., once a water body is impaired, a permit for new discharges can't be issued unless the discharge does not add any additional pollutant loading for the pollutant(s) causing the water body impairment. This is called the "Net Improvement" performance standard and it applies to all projects within the City of Ormond Beach since they all ultimately discharge to the Halifax or Tomoka Rivers, impaired water bodies with an adopted TMDL. However, the current ERP rules do not clearly state when the Net Improvement performance standard must be met.***

Another concern with respect to ensuring the Net Improvement performance standard is met is the enactment by the Legislature in 2016 of Section 403.814(12). This established a new general permit for projects up to 10 acres in size with up to 2 acres of impervious surface. Application for this general permit is via a web site with no site-specific stormwater plans or calculations submitted and no review by either FDEP or WMD staff. The stormwater system is "self-certified" by the design engineer that it meets all applicable requirements. A review of over 1000 self-certification projects revealed that less than 5% were meeting the Net Improvement performance standard (Livingston, 2014). Consequently, the author concluded that stormwater pollutant loads discharged to impaired waters are increasing and the requirement to meet Net Improvement set forth in all adopted BMAPs is being violated. ***If these projects discharge into the City's stormwater management system, then the City's taxpayers become responsible for reducing the increased stormwater pollutant loadings in the future.***

In 2020, the Florida Legislature passed Senate Bill 712, also known as the Clean Waterways Act, which amended Section 373.4131, F.S. The amendments require FDEP and the WMDs to initiate rulemaking by January 1, 2021 to update stormwater design and operations regulations. This includes increasing nutrient removal, adding design criteria for Low Impact Design BMPs, and establishing consistent application of the "Net Improvement" performance standard. The bill also requires FDEP to review and evaluate the "10/2" self-certification general permit to ensure compliance with state water quality standards, and to submit to the Legislature recommendations for improvements. While the FDEP recommended changes to the 10/2 statutory language that would have prohibited the 10/2 GP from being used in watersheds of impaired waters, the Legislature made no changes to this law.

Unfortunately, the state ERP rules have not been updated in over 20 years and they do not effectively address preventing additional pollutant loading from new development or redevelopment into impaired water bodies. Hopefully, DEP will adopt a new statewide stormwater rule next year. However, Part X.B of the City's MS4 permit establishes requirements for the City to undertake relative to impaired water bodies, those with an adopted TMDL, and those with an adopted BMAP. Specifically, for water bodies with an adopted TMDL the City must revise its SWMP to include a schedule for implementing structural and non-structural BMPs and other program activities. If the City wants to protect its residents from having to pay for expensive stormwater retrofitting projects to restore impaired water bodies, it is in the City's best interest to ensure, as part of its site review process, that Net Improvement is being done on projects that discharge to impaired water bodies, especially those for those that will discharge to the City's MS4.

3.2.2.4 NPDES Stormwater Permits - Chapters 62-621 and 62-624, F.A.C.

The National Pollutant Discharge Elimination System (NPDES) was developed by the U.S. Environmental Protection Agency (US EPA), as part of the Clean Water Act of 1972. The 1987 Clean Water Act Amendments established the NPDES stormwater permitting program which was developed in two phases. Phase I was implemented in 1990, and addresses requirements for municipal storm sewer systems (MS4s) for large municipalities (population ≥ 100,000) and other industrial activities that disturbs >5 acres of land. Phase II was promulgated in 1999, and addresses additional sources, including MS4s not regulated under Phase I, and small construction activities disturbing between 1 and 5 acres of land.

Operators of a regulated MS4 are required to:

- Reduce the discharge of pollutants to the "maximum extent practicable" (MEP)
- Protect or restore water quality
- Satisfy the water quality requirements of the Clean Water Act

In October 2000, the FDEP was authorized by the US EPA to implement the NPDES stormwater permitting program in the State of Florida. FDEP's authority to administer the NPDES program is set forth in Section 403.0885, F.S. The NPDES stormwater program regulates point source discharges of stormwater from municipal, industrial, and construction activities that discharge into surface waters or into permitted MS4s. As the NPDES stormwater permitting authority, FDEP is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, and performing compliance and enforcement of these activities.

The City of Ormond Beach has a Phase II MS permit (FLR04E036) that was first issued on October 10, 2003. It must be renewed every five years. The Phase II MS4 permits are a generic or general permit issued by FDEP as set forth in Section 62-621.300(7)(1), F.A.C. The general permit requires the permittee to develop, implement, and enforce a stormwater management program (SWMP) that includes the six minimum control measures.

1. Public Education and Outreach
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination

4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

For each control measure. the City must provide:

- List of measurable goals
- A schedule for implementation/completion
- Identification of the responsible entity/Department

Additionally, FDEP is requiring written Standard Operating Procedures for each of the six Minimum Control Measures and permit administration and reporting. Annual Reports summarizing the Stormwater Management Program (SWMP) implementation efforts are required for Years 2 and 4 of the five-year permit term. The most recent Year 4 report was submitted on November 9, 2017. The Annual Report requirements affect several different City Departments (e.g., Planning & Building, Code Enforcement, Information Technology, Leisure Services, Public Works, and Stormwater Management) and extensive communication and coordination is needed between the Stormwater Department and these other Departments. A written Standard Operating Procedure is needed to ensure all City Department's responsible for tracking implementation of Minimum Control Measures are aware of what they need to track, how to track it, and how to report it to the Stormwater staff responsible for the NPDES MS4 permit Annual Report. Example SOPs can be obtained through request to the FDEP's NPDES MS4 administrator.

To obtain coverage under the General Permit, the permittee must submit a Notice of Intent that sets forth the activities that the permittee will undertake during the next five years in each of the six control measures along with its permit fee. The City of Ormond Beach submitted its NOI for its 4th cycle permit on August 10, 2018. FDEP reissued the MS4 permit on March 12, 2019.

Section V.B. of the Generic Permit sets forth additional requirements the permittee must meet if their MS4 discharges into a Verified Impaired Water Body for which a TMDL and BMAP have been adopted. Since the City's MS4 discharges into Halifax and Tomoka Rivers, each of which has an adopted TMDL with TN and TP load reductions, the City's SWMP must be revised to specify how it will implement its obligations for reducing stormwater pollutant loadings.

In 2020, FDEP initiated rulemaking to modify the Phase II MS4 Generic Permit. A draft revised GP has been published and the City should participate in the rule making as it proceeds. The current draft has additional requirements for small MS4s, especially related to impaired water bodies and water bodies with adopted TMDLs or BMAPs.

3.2.2.5 Florida Watershed Management Program – Impaired Waters, TMDLs, BMAPs

In 1999, Section 403.067, Florida Statutes, was enacted by the Legislature. This is known as the "Florida Watershed Restoration Act." It establishes the legal framework for Florida's Impaired Waters, Total Maximum Daily Load (TMDL), and Basin Management Action Plan (BMAP) programs. In 2004, the Act was amended to add greater specificity on TMDL implementation through existing regulatory and management programs or through the development, adoption, and implementation of BMAPs.

To implement this program, FDEP implemented the Rotating Basin Cycle in 2000. The state's 29 major basins were divided into five Groups (Group 1,2,3,4,5) in which a five-year cycle of activities is conducted. The activities include watershed assessment, targeted monitoring, development and adoption of the Verified List of Impaired Surface Waters, development and adoption of TMDLs, and TMDL implementation including the development and adoption of BMAPs where appropriate.

The Watershed Approach includes the following steps:

1. Assess the quality of surface waters--are they meeting water quality standards? (Surface Water Quality Standards - Chapter 62-302)
2. Determine which waters are impaired--that is, which ones are not meeting water quality standards for a particular pollutant or pollutants. (Impaired Waters Rule (IWR) - Chapter 62-303)
3. Establish and adopt, by rule, a TMDL for each impaired water for the pollutants of concern--the ones causing the water quality problems. (TMDLs - Chapter 62-304)
4. Develop, with extensive local stakeholder input, Basin Management Action Plans (BMAPs) that create a "blueprint" or restoring impaired waters by reducing pollutant loadings to meet the allowable loadings established in a Total Maximum Daily Load (TMDL).
5. Implement the strategies and actions in the BMAP
6. Measure the effectiveness of the BMAP, both continuously at the local level and through a formal re-evaluation every five years.
7. Adapt--change the plan and change the actions if things aren't working
8. Reassess the quality of surface waters continuously.

Water bodies within the City of Ormond Beach are in Group 5 – Upper East Coast Basin. Subsequent sections will discuss in more depth each of the activities within the Rotating Basin Cycle. Other local governments are addressing this need through their Site Plan Review process by informing developers and their consultants that their project is within the watershed of an impaired water body and they need to meet the Net Improvement standard. This is especially true for projects that will discharge to the City's MS4.

3.2.2.5.a. Identification of Impaired Surface Waters, Chapter 62-303, F.A.C.

Chapter 62-303, F.A.C., also known as Impaired Waters Rule (IWR), was first adopted on April 16, 2001. This rule was most recently revised on October 17, 2016. The IWR specifies the procedures and process for the development and adoption of Florida's 303(d) list of Impaired Water Bodies. It includes requirements to place a water body on the Planning List of Potentially Impaired Waters, which include waterbodies that may not be meeting water quality standards but for which insufficient scientific data are available to determine what pollutants are causing the impairment judge. Most waters on the Planning List are placed on the Study List (62-303.390, F.A.C.) where they ae scheduled for additional monitoring so they can be assessed for the Verified List. The rule also includes the requirements to place a water body on the Verified List of Impaired

Waters, those water bodies that are not meeting WQS and for which the pollutants causing the impairment have been determined.

The Verified List of Impaired Waters is adopted by the FDEP Secretary and must be approved by the US EPA. Once on the Verified List, the water body is scheduled for the development of a Total Maximum Daily Load (TMDL).

Assessments for the Upper East Coast Basin first were adopted in 2009 as part of the first cycle of the rotating basin approach. The waters were reassessed in Cycle 2 in 2012 and the most recent assessment was adopted in 2018. The Halifax and Tomoka Rivers are Verified Impaired for nutrients.

Once a water body is verified as impaired, the City must ensure that all future development and redevelopment meet the "Net Improvement" stormwater treatment performance standard to ensure no additional TN or TP loading is discharged from the City's MS4 to these water bodies.

3.2.2.5.b. Total Maximum Daily Loads (TMDLs) – Chapter 62-304, F.A.C.

A TMDL is a scientific determination of the maximum amount of a given pollutant that a surface water can absorb and still meet the water quality standards that protect human health and aquatic life. As discussed above, water bodies that do not meet water quality standards are identified as "impaired" for the particular pollutants of concern - nutrients, bacteria, mercury, etc. - and TMDLs must be developed, adopted and implemented to reduce those pollutants and clean up the water body. Florida TMDLs are adopted in Chapter 62-304, F.A.C.

In 2013, TMDLs were developed for the Halifax and Tomoka Rivers and adopted by the FDEP and approved by EPA. The Halifax River TMDL requires a TN reduction of 9% for the waters adjacent to the City of Ormond Beach. The Tomoka River TMDL requires a 30% reduction in TN and TP stormwater pollutant loadings.

3.2.2.5.c. Basin Management Action Plans (BMAPs)

Section 403.067(7), F.S., sets forth the legal framework for implementing TMDLs within Florida. FDEP **may** develop and adopt a Basin Management Action Plan (403.067(7)(a)) or use existing regulatory and other management programs specified in 403.067(7)(b) to implement a TMDL. BMAPs establish a five-year blueprint by specifying projects, programs, or other activities that will be undertaken to reduce pollutant loadings of the causative pollutant(s). FDEP and the affected stakeholders collaborate to develop BMAPs or other implementation approaches. An impaired water body with an adopted TMDL may have more than one BMAP if the water body is impaired for multiple pollutants.

Progress assessments of adopted BMAPs are conducted every five years and the BMAP is revised to set forth the projects, programs, and other activities that will be implemented during the next five years to continue progress in reducing pollutant loadings to achieve the TMDL.

To date, FDEP has not adopted a BMAP for either the Halifax or Tomoka Rivers.

3.2.3 St. Johns River Water Management District (SJRWMD)

The mission of the St. Johns River Water Management District is "to protect our natural resources and support Florida's growth by ensuring the sustainable use of Florida's water for the benefit of

the people of the District and the state." To meet that mission statement, the district's daily work is focused on four main core missions:

- Water Supply
- Flood Protection
- Water Quality
- Natural Systems

While each of these are important to the City of Ormond Beach the two programs that directly affect the City's stormwater management program are Water Supply and Stormwater Management (Flood Protect + Water Quality).

3.2.3.1 Consumptive Use Permit (CUP) – Chapter 40C-2, F.A.C.

Consumptive use permitting regulations ensure that existing water users, our water resources and the environment are protected. Each permit applicant is required to submit a water conservation plan, providing measures to reduce water use and preserve water resources for other beneficial uses as well as investigate and use the lowest acceptable quality source of water.

A **consumptive use permit** typically allows water to be withdrawn from groundwater or surface water for reasonable-beneficial uses — such as public supply (drinking water), agricultural and landscape irrigation, commercial use and power generation — in a manner that does not interfere with other existing legal water uses and protects water resources from harm (such as saltwater intrusion and drying up of wetlands, lakes and springs).

The consumptive use permitting program requirements are set forth in Chapter 40C-2, F.A.C. and the CUP Applicant's Handbook. These require water conservation to prevent wasteful uses, requires the reuse of reclaimed water instead of higher-quality ground water where appropriate, and sets limits on how much water can be withdrawn from water bodies and the aquifer. These limits are intended to protect existing residents' water supplies and protect springs, lakes and rivers from harm.

In some cases, a CUP may be required for a stormwater management system if it includes provisions for stormwater harvesting and the use of stormwater for non-potable purposes.

3.2.3.2. Environmental Resource Permits (ERP) – Chapter 62-330, F.A.C.

An **environmental resource permit** authorizes new development or construction activities to occur in a manner that will prevent adverse flooding, manage stormwater, and protect water quality, wetlands and other surface waters. The ERP is implemented cooperatively by the FDEP and the five water management districts (WMDs) depending upon the type of project. Most ERPs are issued by the WMDs and general permits are frequently used to expedite permitting.

Unless specifically exempt (62.330.051, F.A.C) or below the permitting thresholds (62-330.020, F.A.C., anyone proposing construction of new facilities such as residential, commercial, governmental or institutional, or anyone proposing work in, on or over wetlands or other surface waters, must obtain an ERP prior to beginning construction. The ERP rule criteria are designed to protect stormwater quantity, stormwater quality and wetland functions. If wetland or other surface water impacts will occur, mitigation will likely be required to offset adverse impacts to wetland or

other surface water functions. The requirements are set forth in Chapter 62-330, F.A.C., and in the ERP Applicant's Handbook Volume I and the SJRWMD Permit Information Manual.

3.3 City of Ormond Beach Regulatory Framework

The City's primary regulatory framework for development and stormwater management are set forth in the City's:

- 2025 Comprehensive Plan
- Code of Ordinances
- Land Development Code (LDC)
- City of Ormond Beach Low Impact Design Manual (2013)

Additional requirements are established in the the Downtown Master Plan Report Update (2019) and Downtown Community Redevelopment District Master Plan (2007). The primary requirements set forth in these documents will be described in the following sections.

A detailed review of the City's Regulatory Framework was conducted as part of this Stormwater Master Plan update. The purpose of the review is to identify Comprehensive Plan Goals, Objectives, Policies, Ordinances, or LDC requirements that can be revised to improve the effectiveness of the City's Stormwater Management Program and meet its TMDL obligations to reduce stormwater pollutant loadings discharged to the Halifax and Tomoka Rivers. The review identifies potential revisions of the current language that will further reduce the stormwater impacts of new development and redevelopment. In particular, focus is on changes that will promote low impact design, also termed green infrastructure: reductions in impervious surfaces, the use of swales or other retention BMPs, the incorporation of low impact development principles, reduction in flow and volume of stormwater, increase in natural hydrology, and adherence to the principles of the UF/IFAS Florida Yards and Neighborhoods (FYN) program in new landscaping.

3.3.1 2025 Comprehensive Plan

The 2025 Comprehensive Plan was adopted on December 7, 2010. The Comprehensive Plan consists of the following elements:

- Future Land Use Element
- Coastal Management Element
- Conservation Element
- Recreation and Open Space Element
- Housing Element
- Public School Facilities Element
- Utilities Element
    - Portable Water
    - Sanitary Sewer
    - Drainage

  - Aquifer Recharge
  - Solid Waste
- Transportation Element
- Cultural Affairs Element
- Plan Administration
- Capital Improvements Element
- Intergovernmental Coordination Element

Each of the Elements include Goals, Objectives, and Policies that are implemented through the City's Code of Ordinances and Land Development Code.

The major goal of the Future Land Use Element is "to achieve the highest quality of life for all the residents of the City, its visitors and businesses by managing growth in a manner that is consistent with sound social, economic, fiscal, and environmental principles." Additionally, there are Goals for the protection of open space, natural resources, and environmental quality. To achieve these goals, several policies encourage "innovative design standards", "smart growth", "sustainability", and "innovative land use regulations." However, neither the Comprehensive Plan nor the Land Development Code encourage "Low Impact Design or Development (LID)" which include the newest tools to develop sustainably and manage stormwater with innovative BMPs.

Goal 7 of the Land Use Element focuses on the Downtown Community Redevelopment Area and the associated 2009 DRA Master Plan. This includes the use of regional stormwater systems in this area to support intensive redevelopment of existing sites. However, the Plan does not include recommendations for using LID principles and stormwater BMPs during redevelopment in combination with regional systems to achieve the Plan's goals and objectives.

Stormwater management is one of the primary components of the Utilities Element. It includes three Objectives and 36 Policies that provide direction for stormwater management associated with new development or redevelopment. **Most significant is Policy 2.2.12 which states "Stormwater management systems shall be designed to ensure that post-development runoff does not exceed pre-development levels, in terms of the volume, rate, timing and pollutant load of runoff."** This is an excellent policy that is consistent with the State's stormwater management goals as set forth in Chapter 62-40.432, F.A.C. **The policy establishes a very high Level of Service standard (LOS) for stormwater management but it is not consistent with the Stormwater LOS set forth in the Capital Improvements Element. In addition, the requirements of the City's Land Development Code do not implement or achieve this level of stormwater management.**

The Conservation Element has 12 Goals and 34 Objectives that set forth requirements for the conservation of natural resources through sustainable development practices. To achieve the Goals and Objectives, the use of Low Impact Development principles and BMPs need to be better promoted. **Goal 12 of the Conservation Element, entitled Low Impact Development, includes five Policies that promote LID principles and BMPs to minimize stormwater impacts on the City's receiving waters. In addition, the City has adopted a Low Impact Development Manual to support this Goal. We recommend the City revise the Policies in this goal along**

with the LID Manual so that they are consistent with Florida LID terminology, principles and BMPs. LID BMP terminology and design, construction, and operational criteria are found in the Draft 2010 Applicant's Handbook (https://publicfiles.dep.state.fl.us/dwrm/slerp/StatewideStormwater_2010TACDraft.pdf), the Alachua County Stormwater Treatment Manual (https://www.alachuacounty.us/Depts/epd/WaterResources/Documents/ADACompliant/Alachua County-SWM Manual.pdf), and the BMPTRAINS User Manual (https://stars.library.ucf.edu/bmptrains/25/).

The Coastal Zone Management Element includes Goals, Objectives, and Policies to better protect and sustain the City's coastal natural systems. Objective 4.2, Estuarine Water Quality, include several policies that establish an "anti-degradation" approach to maintaining existing water quality. However, this level of protection is not required by the LDC, especially with respect to stormwater discharges for new development or redevelopment.

The Capital Improvements Element specifies how the City will Invest in key public facilities. For a five-year period, this element identifies the investments needed to maintain and upgrade existing public facilities and needed new facilities; set priorities; and identify the revenue sources to pay for these investments. The City of Ormond Beach adopts a Five-Year Capital Improvements Program (CIP) as part of the City's annual budgeting process.

One of the key concepts in the Capital Improvements Element is the Level of Service Standards established for potable water, sanitary sewer, solid waste, parks and recreation, transportation, and stormwater management. **Policy I.3.2 sets forth the current stormwater management LOS standard:**

> The difference in the volume of run-off for 25 years frequency, 24-hour duration storm event between pre-development and post-development conditions shall be retained on-site. The difference between the pre-development and post-development conditions for peak run-off rates for the 100-year frequency, 24-hour duration rainfall event shall be retained on-site. Individual development facility capacity shall be maintained so that there is no potential flooding increase above the base year elevation. There shall be no degradation of water quality of Class III waters. An equal or greater volume of storage capacity must be created for any volume of the regulatory flood that would be displaced by fill or structures. The velocity of the regulatory flood must not be adversely altered on any watercourse. Areas not filled are to generally be left in their natural state. However, such areas may be used to meet landscaping and/or retention requirements, provided that the design is consistent with the then-existing City standards and ordinance requirements. Fill limitations consistent with the Land Development Code and the performance standards for each wetland classification established by the Conservation Element shall be enforced for all developments lying within areas of special flood hazard, as defined by the 100-year floodplain boundaries of the FEMA FIRM maps.

This is a "drainage" LOS standard not a stormwater management LOS. There is no stormwater treatment LOS even though it includes the clause "no degradation of water quality of Class III waters." This is inconsistent with **Policy 2.2.12 which states "Stormwater management systems shall be designed to ensure that post-development runoff does not exceed pre-development levels, in terms of the volume, rate, timing and pollutant load of runoff."**

3.3.2 Code of Ordinances

The City's Code of Ordinances consists of 24 chapters. Of relevance to this document is Article V, Stormwater Drainage Utility, in Chapter 22, Water and Sewers.

Article V consists of three Divisions – Generally, Rates and Charges, and Stormwater Pollution Prevention. Key aspects of Article V include the following:

- Creation of the City's Stormwater Utility
- Definitions of stormwater management terms relevant to the Stormwater Utility
- Specifies the duties of the Stormwater Utility Director
- Inspection and maintenance of privately owned stormwater systems
- Enforcement of stormwater requirements
- Establishment of Stormwater Utility rates and charges
- Exemptions from rates and charges
- Use of Stormwater Utility fees for stormwater system construction, operation, and maintenance
- Division 3, Stormwater Pollution Prevention, serves as the City's NPDES MS4 Illicit Discharge Ordinance that specifies what can and can't be discharged into the MS4 along with enforcement options.

Based on the 2020 Florida Stormwater Association Stormwater Utility Survey, 47% of the local governments with stormwater utilities provide some type of a credit for private stormwater systems.

3.3.3 Land Development Code

The City's Land Development Code (2019) sets forth explicit regulations to implement the Goals, Objectives, and Policies in the City's Comprehensive Plan and Code of Ordinances. In 2019, the City had Municode revise the LDC to correct internal references and references to the Florida Statutes. The LDC consists of the following four chapters:

- Chapter 1 General Administration
- Chapter 2 District and General Regulations
- Chapter 3 Performance Standards
- Chapter 4 Plan Review and Submission

Chapter 1 establishes applicability and enforcement provisions for implementing the LDC and issuing development orders and building permits. The LDC applies to all development and redevelopment with the City's prior authorization required before any development activity or change in land use can occur. The LDC's definitions are included in Article III. Stormwater concurrency requirements are established in Section 1.32(4) of Article V which states the following level-of-service standards, procedures and data base criteria shall apply in reviewing applications for stormwater management concurrency:

a. The existing level-of-service measured by storm event as determined by the city engineer.

b. The adopted level-of-service standards for stormwater management, based on the Utilities Element, the Capital Improvements Element and chapter 3, article II of this Land Development Code.

c. The city engineer will certify that all projects meet the requirements of chapter 3, article II of this Land Development Code, prior to the issuance of a final development order. The determination will be on a site-specific basis.

Zoning Districts and associated general requirements are established in Chapter 2. These have a direct impact on stormwater management needs since they establish maximum levels of density and intensity of development on a parcel of land. In particular, they establish the maximum amounts of impervious surface and the minimum amount of pervious area and open space. Of course, there is a direct relationship between imperviousness, perviousness and stormwater volume, peak discharge rate, and pollutant loading.

Performance standards are established in Chapter 3 for landscaping, environmental protection, off-street parking and loading, signs, utility and infrastructure design, and architectuaral design. Section 3-18, Surface Water Runoff Control, establishes the City's requirements for stormwater management and the content of a stormwater management plan that must be reviewed and approved by the City Engineer. The stormwater management plan must meet the performance standards, general design standards, and specific design standards specified in Section 3-18. Inspection and enforcement procedures also are established. . Chapter 3 also includes Section 3-20, Floodplain Management and Protection, which establishes the City's requirements for meeting the National Flood Insurance Program requirements.

Article V of Chapter 3, Utility and Infrastructure Design Standards, sets for the City's requirements for construction streets, street lighting, potable water systems, sanitary sewer systems, reclaimed water systems, and stormwater management systems.

Chapter 4 sets forth the City's plan review process for individual site developments and for subdivision. The chapter specifies the information that must be submitted as part of the plan review process. It establishes the City's Site Plan Review Committee along with requirements for site inspections and performance guarantees.

In essence, any changes in the use of land, or construction or reconstruction of a structure, or alteration of the impervious area require the submittal of a stormwater management plan for review and approval by the City Engineer. ***While the City has a Low Impact Development Manual, the City's Comprehensive Plan and LDC do not provide incentives for the use of LID approaches and BMPs such as credits for integrating them into a site's landscaping or open space.***

3.3.4 City of Ormond Beach Low Impact Design Manual (2013)

We commend the City for developing a Low Impact Design Manual to provide an alternative approach to stormwater management. However, very few projects use this alternative. We suggest this is because of several reasons:

1. The Manual requires a treatment volume of 2.3" which is the City's 95th percentile storm. This establishes an exceedingly high level of stormwater treatment (from 95% to 98% load reduction) and a corresponding very high required treatment volume. For example, the

required treatment volume to achieve 80% average annual load reduction varies from 0.22 inches to 1.43 inches depending on the site's %DCIA and non-DCIA CN.

2. The Manual is based on the 1999 Prince George's County (MD) LID Manual. This Manual uses unfamiliar stormwater terminology such as Integrated Management Practices instead of the customary use of BMP – Best Management Practice. Stormwater design engineers are very resistant to change, especially if it will create project and permitting delays.
3. The design criteria for the LID BMPs in the manual are from Maryland, an area with very different soil types and rainfall patterns than Florida. In 2010, FDEP published the Statewide Stormwater Treatment Rule Applicant's Handbook that included LID BMPs. The LID BMP design, construction, and operational criteria were based on a 10 year LID research and monitoring program in Florida. In 2018, Alachua County adopted its Stormwater Treatment Manual which incorporates the latest DEP/WMD approved LID BMP requirements.
4. The City's Land Development Code includes incentives to use LID BMPs: ***We commend the City for having a Low Impact Development Manual and for providing incentives for using LID BMPs in Section 3-18(l)(8). Namely, the fees associated with conceptual plan review are waived and the LID-related plan check process is expedited.***

If the City wants to promote the use of LID BMPs, we suggest that they revise their LID Manual to be consistent with the requirements in the Alachua County Stormwater Treatment Manual and revise their LDC to provide incentives for using LID BMPs.

However, we recommend the City wait until FDEP and the WMDs complete the revisions to the stormwater treatment regulations and Applicant Handbooks since they will include the latest state approved design, construction, and operation criteria for LID BMPs.

3.4 Adequacy of Existing Stormwater Management Legal Authority

The City's NPDES MS4 permit requires the development and implementation of a Stormwater Management Program (SMP). An effective SMP must have a strong foundation that includes legal authority, sound technical basis, effective staffing and administration, and dedicated funding.

The foundation must ensure effective implementation of the following components of the SMP:

- Flood control
- Stormwater treatment
- Erosion and sediment control
- Stormwater system inspection, operation, and maintenance
- Stormwater plan and engineering requirements
- Site plan and stormwater plan review
- Compliance and enforcement

Flood control – The traditional approach to flood control or drainage is to require that the post-development peak discharge rate does not exceed the pre-development peak discharge rate for a specific design storm. The requirements of the SJRWMD ERP program include:

- Design storm - For new construction projects that are not exempt and with greater than 50% imperviousness, the design storm is the mean annual 24-hour storm. This requirement is aimed at reducing riparian erosion and scouring. Additionally, all projects must control the 25-year, 24-hour duration storm.
- Peak discharge rate – All projects must ensure the post-developed peak discharge rate does not exceed the pre-developed peak discharge rate for the design storm. Exceptions include projects that discharge directly into the constructed portions of the Intracoastal Waterway or the Atlantic Ocean.

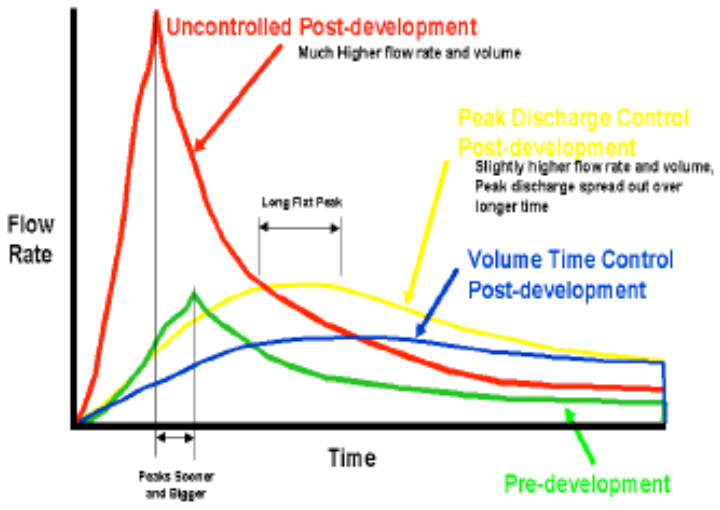
The City's flood control requirements are set forth in its stormwater Level of Service standard in the Policy 1.3.2 of the Capital Improvements Element of the Comprehensive Plan. It states:

> The difference in the volume of run-off for 25 years frequency, 24-hour duration storm event between pre-development and post-development conditions shall be retained on-site. The difference between the pre-development and post-development conditions for peak run-off rates for the 100-year frequency, 24-hour duration rainfall event shall be retained on-site. Individual development facility capacity shall be maintained so that there is no potential flooding increase above the base year elevation.

The City's Flood Damage Prevention requirements are found in Section 3-20 of Article II of Chapter 3 in the LDC. These ensure that all development and redevelopment meet the requirements of the Federal Flood Insurance Program.

Analysis: If we are correctly interpreting the City's flood control requirements, we commend the City for addressing both stormwater volume and peak discharge rate. As seen in the discussion below, flood control can be substantially improved by requiring volume control and peak discharge control.

Recent studies show that the traditional approach of controlling the post-development peak discharge rate alone does not prevent, and may not reduce, flooding due to cumulative effects of the increased stormwater volume from multiple projects within a watershed. Instead, this traditional drainage approach simply changes the timing and the location of the flooding within a watershed as shown in red in the adjacent figure.



Consequently, an alternative approach to flood control, Volume and Time Control, is now gaining support. As shown in the figure on the right, the post-development peak discharge rate AND the volume discharged over a critical time frame must not exceed the pre-development conditions.

While this slightly increases the size of the stormwater facility, it reduces flooding more evenly throughout a watershed (Cunningham, 2004).

Stormwater treatment – Florida's stormwater treatment requirements are "technology-based" rules. They include:

- a performance standard representing the minimum level of stormwater pollutant load reduction needed to ensure that stormwater discharges do not cause or contribute to violations of WQS. This is 80% average annual load reduction of nutrients with 95% reduction needed for direct discharges to Outstanding Florida Waters. Additionally, for projects within the watershed of an impaired water body, a water body with an adopted TMDL, or a water body with an adopted BMAP, the minimum level of treatment is "Net Improvement." Namely, the post-development pollutant loading must not exceed the pre-development pollutant loading.
- BMP design, construction, and operation criteria that ensure that the stormwater system will meet the stormwater treatment performance standards. Because stormwater treatment is still a relatively new field, BMP criteria need to be updated periodically as new information is obtained on the relationship between design and actual treatment effectiveness.

The requirements for stormwater treatment for systems built within the area of the St. Johns River WMD are set forth in Chapter 62-330, F.A.C., and in the ERP Applicant's Handbook Volume I and the SJRWMD Applicant's Handbook Volume II.

The City's stormwater treatment requirements are set forth in the:

- Comprehensive Plan through Policy 2.2.12 which states "Stormwater management systems shall be designed to ensure that post-development runoff does not exceed pre-development levels, in terms of the volume, rate, timing and pollutant load of runoff",
- Policy 1.3.2 of the Capital Improvements Element which establishes the following stormwater LOSS:

  The difference in the volume of run-off for 25 years frequency, 24-hour

  duration storm event between pre-development and post-development conditions shall be retained on-site. The difference between the pre-development and post-development conditions for peak run-off rates for the 100-year frequency, 24-hour duration rainfall event shall be retained on-site. Individual development facility capacity shall be maintained so that there is no potential flooding increase above the base year elevation. **There shall be no degradation of water quality of Class III waters**.
- In the LDC, Section 3-18, Surface Water Runoff Control, establishes several design standards including:
  - Lesser developments: a. The volume of retention to be provided shall be equivalent to one inch (1") of runoff over the entire project area, including both pervious and impervious areas. b. For those soil or groundwater table conditions which do not permit the percolation of this volume of water within seventy-two

(72) hours following the storm event, the city engineer may approve detention with an acceptable filtration system in lieu of retention.

- Standard developments: Total retention. All detention/retention facilities must have a positive discharge except as approved by the city engineer. If total retention is allowed, the basin must recover to its design low water stage within seventy-two (72) hours.

- The City's Low Impact Development Manual requires a net reduction in runoff leaving the site for at least the volume of water produced by the quality design storm event that results from the 95th percentile 24-hour runoff event which is specified as 2.3".

Another aspect of stormwater treatment is the City's requirements from their NPDES Stormwater MS4 permit. This permit requires the City to implement a Stormwater Management Program to reduce stormwater pollutant loadings discharged to receiving waters. Implementation of the MS4 permit involves several of the City's Departments (e.g., Planning and Building, Public Works, Information Technology, Public Information Office, Recreation, and Stormwater Utility) as does preparation and submittal of the permits Annual Report. ***This requires clearly assigned roles and responsibilities with extensive communication and coordination between the Stormwater Utility and these other Departments.***

Analysis: As discussed above, the City's legal framework establishes several separate stormwater treatment LOS requirements. These are in conflict with each other and clarification of how they are implemented is needed. Additionally, these treatment volumes are not consistent with those of the SJRWMD nor do they meet the minimum level of treatment set forth in Chapter 62-40.432, F.A.C. **Furthermore, *they are not consistent with the requirements of the MS4 permit which requires compliance with all adopted TMDLs and BMAPs. The city needs to ensure that all new development and redevelopment meet the Net Improvement performance standard of not adding any new stormwater pollutant loading.***

Essentially, the City defers to the stormwater requirements of the SJRWMD. However, the 2007 report entitled *Evaluation of Current Stormwater Design Criteria Within the State of Florida* concluded that the BMPs and their design criteria in the current Applicant's Handbook do not meet the minimum level of stormwater treatment. Furthermore, the current ERP Applicant Handbook doesn't include any of the recently developed and verified Low Impact Design BMPs. These LID BMPs are now included in the BMPTRAINS software that FDEP and the WMDs have approved for use in calculating pre-development stormwater loadings, post-development stormwater loadings, and the effectiveness of various BMP treatment trains in reducing stormwater pollutant loading.

We recommend the City revise its Stormwater Treatment LOS to be consistent with the requirements in Chapter 62-40.432, F.A.C., and the MS4 permit with respect to impaired water bodies. We also recommend that the City consolidate all of its stormwater requirements into a City Stormwater Management Manual, including its LID BMP criteria.

Currently, if someone wants to use LID BMPs they must follow the requirements in the City's LID Development Manual. However, as previously discussed, few projects use this alternative approach. We believe this is because of the very high stormwater treatment volume, the terminology that is used in the manual being unfamiliar to Florida stormwater designers, and the

LID BMPs that are not based on Florida-approved LID design criteria. Additionally, approval is at the discretion of the City Engineer. In essence this creates potential project delays, thus few developers are willing to use LID BMPs. ***If the City wants to encourage and promote LID BMPs, it needs to adopt a revise its LID Manual requirements to be consistent with Florida stormwater terminology and LID BMP design and operational criteria.*** This will provide certainty in the design, planning, and permitting aspects of a project. Additionally, the LDC needs to be revised to provide incentives for using LID BMPs. These include integration of LID BMPs into landscaping and open space areas. One of the most powerful incentives is an expedited review process for projects with a stormwater system composed of a series of LID BMPs integrated into a BMP treatment train.

The creation of the 10/2 self-certification general permit means that many projects are not meeting the Net Improvement performance standard since the requirement is not clearly stated in the ERP program. Most projects within the City are less than 10 acres with less than 2 acres of impervious area so they can qualify for the 10/2 General Permit. ***Therefore, the City needs to modify its site plan approval process and redevelopment requirements to ensure that all new development and redevelopment discharging to impaired water bodies provide advanced stormwater treatment. This can be done by ensuring all site plan and building permits applicants are informed of the City's impaired water bodies and adopted TMDLs and the need to meet "Net improvement."***

Finally, with respect to the City's MS4 permit, ***a written Standard Operating Procedure is needed to ensure all City Department's responsible for tracking implementation of Minimum Control Measures are aware of what they need to track, how to track it, and how to report it to the Stormwater Utility staff responsible for the NPDES MS4 permit Annual Report.***

Ensuring that impaired waters, especially those with adopted TMDLs and BMAPS, are restored and that new development and redevelopment do not increase stormwater pollutant loading require FDEP, the WMDs, and local governments to cooperatively assure this occurs. For local governments, the reward is that their citizens will not be paying for retrofitting projects to reduce stormwater pollutant loads from the City's MS4.

Erosion and Sediment Control – Erosion and sediment control on construction sites is a requirement of the State's ERP program, the NPDES Construction General Permit (CGP) which applies to all construction projects of one acre or larger, and the City's Phase II MS4 permit. The performance standard for erosion and sediment control is to retain sediment on-site and to ensure that discharges do not violate WQS. Erosion and sediment control requirements are set forth in Part IV of SJRWMD ERP Applicant's Handbook Volume I. They address both ERP and NPDES CGP requirements.

The City's erosion and sediment control requirements are set forth in:

- Section 22-159.04 of Chapter 22, Article V of the Code of Ordinances. This requires "the BMP plan shall include, but is not limited to, an erosion control plan and stormwater mitigation plan. Soil erosion and sedimentation shall be controlled on-site and shall not be allowed to impact offsite properties."
- Section 3-09, Land Clearing, of Article I, Landscaping, in Chapter 3 of the LDC.
- Section 3-16, (c) (6), Erosion and Sedimentation Control, which requires implementing state approved BMPs to limit sedimentation of water bodies.

- Section 3-18 (e)(5) d of the LDC which specifies requirements for a project's stormwater management plan: A plan for the control of erosion and sedimentation which describes in detail the type and location of control measures, the stage of development at which they will be put into place or used, and provisions for their maintenance;

Analysis: The City's erosion and sediment control requirements are very general, basically requiring compliance with those of the SJRWMD and the NPDES CGP. ***However, the City's legal framework does not specify the requirements of the City's MS4 permit with respect to the CGP. We recommend that Section 22-159.04 be revised to add:*** All construction sites that disturb one or more acres shall obtain coverage from FDEP under the NPDES Construction Generic Permit and provide documentation that the project has received coverage.

We also recommend that the application in Section 3-09(b)(2) be revised to include: e. An erosion and sediment control plan to minimize erosion and retain all sediment on-site. If the cleared area is greater than one acre, the owner shall obtain coverage under the NDPES Construction Generic Permit and submit a copy of the permit before any clearing begins.

We recommend that Section 3-09(c)(2) be revised to read: (8) Erosion and sediment controls as required by the NPDES Construction Generic Permit Stormwater Pollution Prevention Plan ~~Silt fences~~ shall be implemented ~~placed around the perimeter of the cleared area~~ and inspected by the city prior to fill being placed on the site

We recommend that Section 3-16, (c) (6) be revised to read: a. Best management practices, such as those described in the State of Florida's Erosion and Sediment Control Manual for Designer and Reviewers, latest edition ~~department of environmental protection's state development manual~~ shall be incorporated into development designs to limit the amount of sediment reaching all surface waters. These practices shall be used in agriculture, silviculture, construction, dredge and fill operations, and stormwater management systems.

c. All projects that disturb one or more acres of land shall apply for and obtain coverage under the NPDES Construction Generic Permit and develop and implement the required Stormwater Pollution Prevention Plan.

Stormwater Inspection, Operation, and Maintenance – To continue performing their functions and meeting permit conditions, all stormwater systems need to be inspected and maintained on a regular basis. The legal requirements for a privately owned BMP operation and maintenance entity are set forth in Part V, Operation and Maintenance-Specific Requirements, of the SJRWMD ERP Applicant's Handbook Volume I. Upon completion of construction, a Registered Professional must submit an "As Built Certification" and a request for "Conversion to Operation Phase". If the permittee is not the legal operation and maintenance entity, the permittee must submit the "Request for Transfer of the ERP to the Perpetual Operation Entity". The Operation and Maintenance (OM) Entity must meet the requirements in Section 12.3 of the Applicant's Handbook. Inspections must be done as set forth in the SJRWMD ERP and the results sent to the WMD electronically using the "Operation and Maintenance Inspection Certification." Another important aspect of OM is access to conduct the maintenance activities. Section 2.4 of the Applicant's Handbook Volume II specifies the easements that are required to ensure maintenance can be achieved by stormwater system owners.

The City's inspection authority or requirements are found in:

- Sec. 22-151.08 of Chapter 22, Article V of the Code of Ordinances authorizes City employees or contractors to enter lands to conduct stormwater system inspections
- Section 22-159.07 of Chapter 22, Article V of the Code of Ordinances grants authority for inspecting stormwater management systems.
- Section 3-18(d)(5) of the LDC requires an initial inspection before approval the stormwater plan, a bury inspection before burial of any underground components, erosion control inspections as needed, and a final inspection when the stormwater system is completed.

The City's BMP maintenance requirements are found in:

- Section 22-151.05 of Chapter 22, Article V of the Code of Ordinances requires the stormwater utility to inspect, operate, and maintain public stormwater systems.
- Section 22-151.06 of Chapter 22, Article V of the Code of Ordinances requires property owners to operate and maintain their privately owned stormwater systems.
- Section 22-159.08 of Chapter 22, Article V of the Code of Ordinances requires all BMPs to be operated and maintained to function in accordance with permitted design or performance criteria and in compliance with federal, state or local permit conditions and regulations.
- Section 3-18(j) of the LDC requires privately owned stormwater systems to have adequate easements to permit the city to inspect and, if necessary, to take corrective action should the owner fail to properly maintain the system.

Analysis: In general, the City's inspection, operation, and maintenance requirements for private stormwater management systems are consistent with those of the ERP program. To ensure that stormwater systems within the City can be maintained and operating properly, we recommend the City require copies of the legal OM documents submitted to the SJRWMD during the site plan approval process. For projects that are not permitted by the SJRWMD, the City should ensure similar documents to ensure that the OM entity is legally established.

The City also should adopt the inspection schedule and maintenance recommendations contained in the Phase I MS4 permits. This will ensure that new and existing BMPs are inspected on a regular basis and that maintenance is being done to ensure the BMPs operate correctly. ***Finally, to ensure that private stormwater systems are being inspected and maintained properly, the City should require that the SJRWMD "Operation and Maintenance Inspection Certification" form be submitted electronically to the City Engineer. The City should then randomly inspect ten percent of the systems submitted each year to ensure the systems are functioning properly.***

Stormwater Plan and Engineering Requirements – Agencies require the submittal of a stormwater management plan that includes flood control and stormwater treatment calculations and the construction/engineering plans for the stormwater system. In the ERP program, submittal requirements are set forth in Chapter 4, Preparation and Submittal of Applications and Notices, of Applicant's Handbook Volume I. The amount of information to be submitted is project specific and also determined by the type of permit, general or individual.

The City's stormwater plan requirements are found in Section 3-18(e), Contents of Surface Water Management Plan, of the LDC. This establishes minimum requirements and requires compliance with the plan required by the SJRWMD. In both the ERP and the City's requirements, the erosion and sediment control plan must be submitted as part of the stormwater management plan submittal.

However, we found very few specific engineering standards for the stormwater systems that will be built and usually connected to the City's MS4. We did find Standard Details (2015) for retention systems, wet retention (actually detention), underdrains, and skimmers.

Analysis: The City's stormwater plan requirements are consistent with those of the SJRWMD. ***However, that will not meet the nutrient load reductions required by the TMDLs for the Halifax and Tomoka Rivers. Since the City's MS4 discharges to these impaired water bodies with adopted TMDLs, we recommended the City change its codes to require the submittal of pre-development and post-development stormwater pollutant loadings to demonstrate compliance with the Net Improvement requirement. This can be easily accomplished by using the BMPTRAINS software, available for free from the UCF Stormwater Management Academy, which has been approved by FDEP and the WMDs.*** The City needs to review and possibly expand its Standard Details to provide better guidance to the development community.

Site Plan and Stormwater Plan Review – Besides having very clear and specific requirements for the design, construction, and maintenance of stormwater management systems, it is very important that the plans be reviewed by agency or city staff to ensure that all requirements are met. The State's ERP program uses General Permits, Individual Permits, and Conceptual Permits to authorize stormwater systems. Chapters 62-330.401 through 62-330.635, F.A.C., contain the procedures to submit a notice to use a general permit, the procedures for their review, the general conditions that apply to them, and the terms and specific conditions of each general permit. The procedures for processing Individual Permits or Conceptual Permits are found in Chapter 62-330.090, F.A.C. Additional information on permit processing and review procedures are found in Chapter 5, Processing of, and Agency Action on, Applications and Notices, of Applicant's Handbook Volume I.

Section 3-18 (c) of the LDC identifies the activities that are exempt and those that need a permit demonstrating they comply with the City's stormwater requirements. Article I in Chapter 4 of the LDC establishes the City's plan review and submission procedures. Site plans are reviewed by the Site Plan Review Committee (SPRC) which is established in Section 4-03 of the LDC. The Site Plan review process is set forth in Section 4-05 while the information requirements are set in Section 4-06. Site plans must be submitted for all development applications prior to issuance of a building permit.

Once the site plan has received final approval from the SPRC, the City Commission can approve a Development Order.

Chapter 4 also includes Article II, Subdivisions, that specifies the procedures for the approval of proposed subdivisions along with requirements for their construction, including enforcement procedures.

Analysis: The City's site plan review and building permit application process ensure that projects are consistent with the City's Comprehensive Plan, Code of Ordinances, and LDC. Applicant's are also advised to contact the SJRWMD and possibly FDEP to ensure meeting their regulations.

Because the City's MS4 discharges to the Halifax and Tomoka Rivers, impaired water bodies with an adopted TMDL, we recommend the City site plan review and building permit processes provide notification to all applicant's that they must meet the Net Improvement stormwater treatment performance standard. Additionally, they should require the submittal of a project's pre-development TN and TP loadings and its post-development TN and TP loadings. This information is needed for the City's MS4 annual reporting. The BMPTRAINS software available for free from the UCF Stormwater Management Academy can be used for these calculations.

It is recognized that the infill projects normally seen by the City have been condieed in the past to not lend themselves to LID due to high ground water table making LID difficult unless significant fill is added to the site. Leveraging a wider range of LID BMPs can provide an expanded tool box to manage stormwater in these areas.

Compliance and Enforcement - To ensure the integrity of any entity's legal authority, especially with respect to regulatory programs, it is essential to have effective compliance and enforcement mechanisms that can resolve problems quickly. In the ERP program, Section 373.430, F.S., sets forth the civil fines or criminal penalties that may be imposed on any person who violates any provisions of Chapter 373 or 403, F.S., the rules adopted thereunder, or orders of the Agency. Three levels of penalties are included:

- Whoever commits a violation specified in 373.430 (1) is liable for any damage caused and for civil penalties as provided in Section 373.129, F.S.
- Any person who willfully commits a violation specified in paragraph 373.430 (1)(a), which is pollution, is guilty of a felony of the third degree, punishable as provided in Section 775.082(3)(e),F.S., and Section 775.083.(1)(g), F.S., by a fine of not more than $50,000 or by imprisonment for 5 years, or by both, for each offense. Each day during any portion of which such violation occurs constitutes a separate offense.
- Any person who commits a violation specified in paragraph (1)(a) due to reckless indifference or gross careless disregard is guilty of a misdemeanor of the second degree, punishable as provided in Section 775.082(4)(b),F.S., and Section 775.083.(1)(g), F.S., by a fine of not more than $5,000 or 60 days in jail, or by both, for each offense.
- Any person who willfully commits a violation specified in paragraph (1)(b) or paragraph (1)(c) is guilty of a misdemeanor of the first degree, punishable as provided in Section 775.082(4)(a),F.S., and Section 775.083.(1)(g), F.S., by a fine of not more than $10,000 or by 6 months in jail, or by both, for each offense.

Chapters 1 and 2 of the City's Code of Ordinances establish general penalty provisions for violations of the City's legal framework. Chapter 2, Article VII, Code Enforcement, establishes the Code Enforcement processes and its classification of violations and civil fines. Within Article V, Stormwater Utility, of the Code of Ordinances, Section 22-151.09, Enforcement; liens; fines and emergency abatement, establishes enforcement processes and penalties for violations of the City's stormwater management requirements. In addition, Section 22-159.09 in Division 3 of Article V, Stormwater Pollution Prevention, established enforcement procedures and penalties for violating this section of the Ordinance. As stated in Section 22-159.10, enforcement may include citation for civil penalties or action for injunctive relief. Penalties established in Section 22-159.11

include a Class IV offense, civil penalties of up to $2,000 for each offense, or use of the Code Enforcement Board penalties.

Within the LDC, Aricle II, Administration and Enforcement, establish the City's administrative procedures for enforcement of the City's development orders and building permits to ensure compliance with the Comprehensive Plan and LDC. Section 3-18 (k), Enforcement and violations, establishes the City's compliance authority for stormwater management. This section states:

- Commencing development activity without prior approval of a stormwater management plan or is conducted contrary to an approved plan shall be deemed a public nuisance and may be restrained by injunction of otherwise abated in a manner provided by law.
- When the city engineer determines that development activity is not being carried out in accordance with the requirements of this article, he shall issue a written notice of violation to the owner of the property
- Violators of the LDC shall be punishable by a fine of not less than $100.00 nor more than $500.00 or by imprisonment in the county jail for a period not to exceed sixty (60) days, or by both such fine and imprisonment.
- Such person shall be guilty of a separate offense for each day during which the violation occurs or continues.
- The violator may be required to restore any altered conditions of the land to their undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the city commission may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

Additional compliance and enforcement procedures for subdivisions are found in Section 4-20 of Article II of Chapter 4. Of special interest is the ability of the City Engineer to issue stop work orders upon failure of the applicant or his engineer to coordinate the construction of the required improvements prescribed by this article.

Analysis: Both the ERP program and the City have adequate legal authority to ensure compliance with stormwater management requirements. However, we only find language authorizing the use of Stop Work Orders for construction of subdivisions, not all developments. ***Evaluation of enforcement tools in stormwater programs has shown that the most effective tool is the Stop Work Order since it halts all work on a site until it is brought back into compliance. We recommend Stop Work Orders be added as an enforcement tool for ensuring stormwater management systems are properly constructed, operated, and maintained.***

3.5 Recommendations

As seen in the "Analysis" parts of Section 7.4, several components of the City's legal framework for its stormwater management program need revising. This was discovered during the comprehensive review of the City's legal framework. This review is required by Section III.A.2 of Florida's Phase I MS4 permits. It also should be done by any local government that wants to improve its land use and stormwater management programs to promote more sustainability and the use of Low Impact Development (LID) approaches and BMPs.

The review identified potential changes to the City's existing Comprehensive Plan, Code of Ordinances, and Land Development Code that will further reduce the stormwater impacts of new development and redevelopment. In particular, recommendations focus on changes to the code that will require higher stormwater load reductions for projects discharging to impaired water bodies and promoting low impact developments, also termed green infrastructure: reductions in impervious surfaces, the use of swales or other retention BMPs, the incorporation of low impact development principles, reduction in flow and volume of stormwater, increase in natural hydrology, and adherence to the principles of the UF/IFAS Florida-Friendly Landscaping program in new landscaping.

The *Summary Report of the Review of the City's Comprehensive Plan and Land Development Regulations* summarizes recommended revisions to the City's legal framework, including specific language revisions, was provided as a separate Technical Memorandum. There are two significant issues that need to be addressed:

- Ensuring stormwater load reductions for impaired water bodies
- City of Ormond Beach stormwater Levels of Service.

Requirements for Stormwater Treatment in Impaired Water Bodies

To meet the City's stormwater pollutant load reductions in the Halifax and Tomoka River TMDLs, it is crucial that all future redevelopment and development provide advanced stormwater treatment. The current legal authority does not recognize this issue nor the City's obligations once a TMDL is adopted by FDEP. The *Summary Report of the Review of the City's Comprehensive Plan and Land Development Regulations* includes specific recommendations to revise current language to address this issue and ensure that all future development and redevelopment meet the "Net Improvement" performance standard.

City of Ormond Beach Stormwater Levels of Service Standards

The City's multiple stormwater Levels of Service Standards (LOS) are confusing and inconsistent. The City's stormwater treatment requirements are set forth in the:

- Comprehensive Plan through Policy 2.2.12 which states "Stormwater management systems shall be designed to ensure that post-development runoff does not exceed pre-development levels, in terms of the volume, rate, timing and pollutant load of runoff",
- Policy 1.3.2 of the Capital Improvements Element which establishes the following stormwater LOS standard:

  The difference in the volume of run-off for 25 years frequency, 24-hour duration storm event between pre-development and post-development conditions shall be retained on-site. The difference between the pre-development and post-development conditions for peak run-off rates for the 100-year frequency, 24-hour duration rainfall event shall be retained on-site. Individual development facility capacity shall be maintained so that there is no potential flooding increase above the base year elevation. **There shall be no degradation of water quality of Class III waters**.

- In the LDC, Section 3-18, Surface Water Runoff Control, establishes several design standards including:

- Lesser developments: a. The volume of retention to be provided shall be equivalent to one inch (1") of runoff over the entire project area, including both pervious and impervious areas. b. For those soil or groundwater table conditions which do not permit the percolation of this volume of water within seventy-two (72) hours following the storm event, the city engineer may approve detention with an acceptable filtration system in lieu of retention.
- Standard developments: Total retention. All detention/retention facilities must have a positive discharge except as approved by the city engineer. If total retention is allowed, the basin must recover to its design low water stage within seventy-two (72) hours.

- The City's Low Impact Development Manual requires a net reduction in runoff leaving the site for at least the volume of water produced by the quality design storm event that results from the 95th percentile 24-hour runoff event which is specified as 2.3".

As can be seen, the Stormwater LOS standards above are quite different from each other. Additionally, they are inconsistent with Policy 2.2.12 of the Comprehensive Plan. The city needs to ensure that all future development and redevelopment will help to decrease stormwater pollutant loadings as needed to meet the City's TMDL obligations. **Therefore, we recommend the following Stormwater Treatment LOS standard:**

Stormwater Treatment LOS

Use site appropriate BMPs, especially LID BMPs integrated into a BMP treatment train, to meet the following levels of treatment, as applicable to the development project and its location:

1. Projects that discharge directly or indirectly to surface waters - Reduce the post-development annual average stormwater total nitrogen load by at least 70% and the annual average stormwater total phosphorus load by at least 80%.

2. Projects that directly discharge to Outstanding Florida Waters – Reduce the post-development annual average total nitrogen and total phosphorus load by at least 95%.

3. Projects within watersheds of Verified Impaired Water Bodies or Water Bodies with Adopted Nutrient Total Maximum Daily Loads (TMDLs) – Either meet the performance standard in 1 or 2 above or reduce the post-development average annual nitrogen and phosphorus load to at least 10 percent less than the pre-development average annual nitrogen and phosphorus load, whichever provides the highest amount of average annual nutrient load reduction (Net Improvement Performance Standard).

In addition to the two major issues above, there are five other areas that merit revisions to make the City's stormwater management program more effective:

1. **Revisions to address incorrect references to laws, rules, or programs: to update terminology and definitions; and to update other information that is referenced.** Examples include references to old FDEP or SJRWMD rule chapters, replacing "drainage" with "stormwater management", etc.
2. **Adoption of the *Florida-Friendly Landscape Guidelines For Model Ordinance Language For Protection Of Water Quality And Quantity*.** Section 403.9337, F. S.,

requires all local governments located within the watershed of a water body that is listed as impaired for nutrient pollution to adopt FDEP's Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes. Volusia County has adopted the ordinance in Article VIII, Florida-friendly Fertilizer Use, of Chapter 50, Environment. **To highlight Florida-friendly fertilizer use within the City, we recommend they adopt the Volusia County Ordiance by reference within Article I, Landscaping, of Chapter 3, Performance Standards, of the LDC**.. However, the City wishes to minimize nutrient pollution from fertilizers and irrigation needs, the city needs to focus on landscape design. **Accordingly, we recommend the City adopt the *Florida-Friendly Landscape Guidelines For Model Ordinance Language For Protection Of Water Quality And Quantity*. .** By adopting the Florida-Friendly landscape design as its standard and continuing to conduct the education program set forth in the MS4 permit, the City will then qualify for a 3% TN load reduction credit in its TMDL pollutant load reduction allocation.

3. **Revisions to consolidate the stormwater requirements into a single City of Ormond Beach Stormwater Manual.** This will ensure that all stormwater requirements are in one place making it easier for both the regulated community and the City staff to implement stormwater requirements. It will also allow updating of the Ormond Beach Low Impact Development Design Manual to make it consistent with Florida LID BMP design, construction, and maintenance guidelines and terminology. This will reduce the current manual's stormwater treatment volume and make the use of LID BMPs more palatable to stormwater design professionals. The Stormwater Manual also could include up-to-date engineering standards and recommendations including desired Standard Construction Details and Stormwater Management System Details.

4. **Revisions to ensure effective implementation and reporting of the City's NPDES MS4 permit.** The City needs to develop a Standard Operating Procedure to ensure all City Department's responsible for tracking implementation of the MS4 permit's Minimum Control Measures are aware of what they need to track, how to track it, and how to report it to the Stormwater Staff responsible for the NPDES MS4 permit Annual Report.

5. **Revisions to promote and provide incentives to use LID approaches and BMPs during development and redevelopment**. To provide the development community with certainty in the design and permitting processes, the City needs to adopt a stormwater manual that has design and operational criteria for LID BMPs. This can be done quite easily by modifying the recently adopted Alachua County Stormwater Manual for use in Ormond Beach. However, the City may want to wait until FDEP and the WMDs complete the revisions to the stormwater treatment regulations and Applicant Handbooks since they will include the latest state approved design, construction, and operation criteria for LID BMPs.

6. **Additional incentives are needed in the LDC to promote LID BMPs**. Examples include allowing LID BMPs to be included within required open space or landscaped areas, or increased density intensity for mixed use developments or residential development. One of the most powerful incentives is an expedited plan review process for projects with stormwater system composed of a series of LID BMPs integrated into a BMP treatment train.

4. FLOODING ASSESSMENT

There are various physical and hydrological characteristics that influence the way in which flood waters are managed in the City. These characteristics area discussed in this section along with flood related issues City has identified based on collected data from residents as well as staff observations.

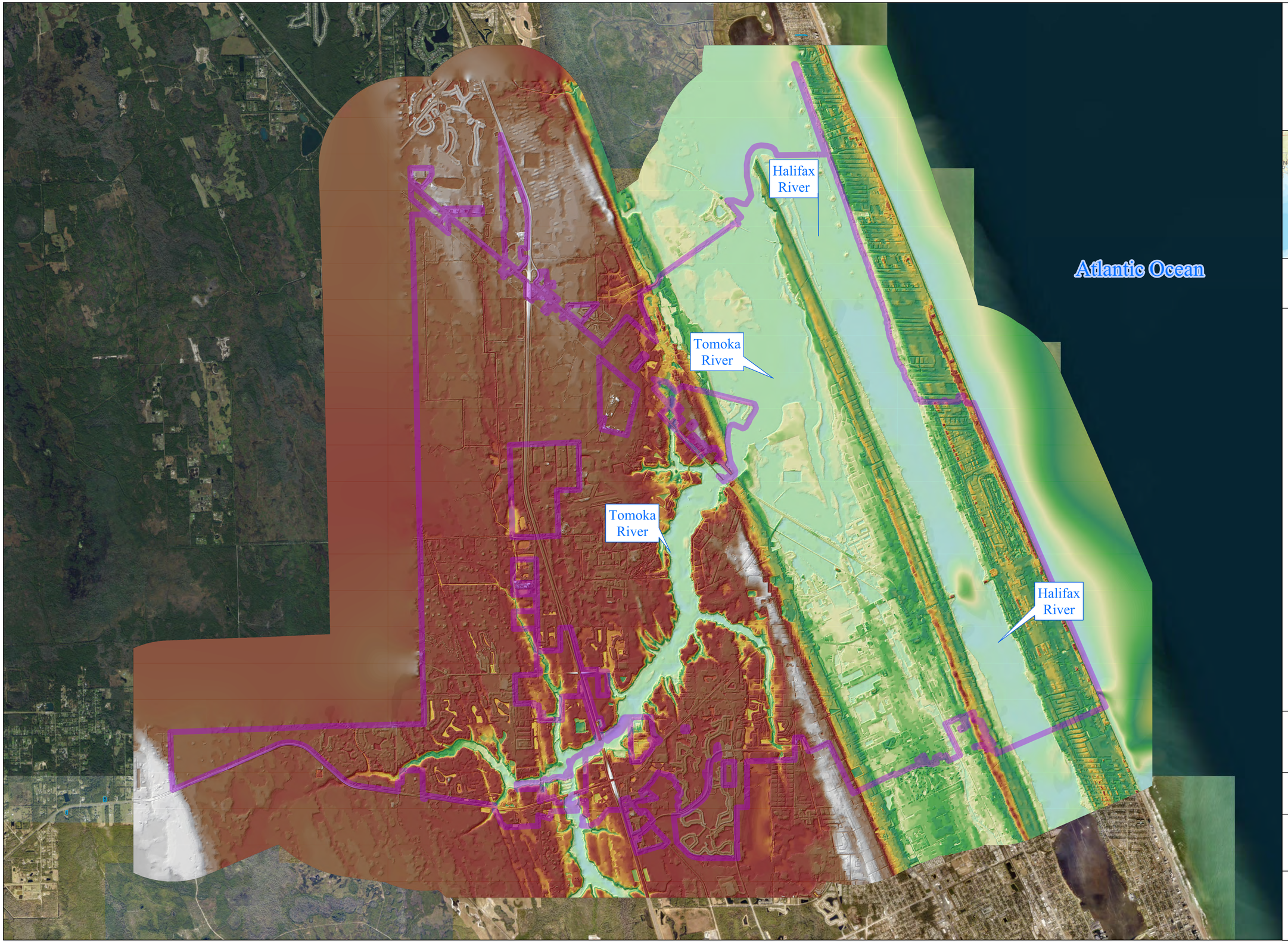
4.1 Topography

Topography is a critical factor in stormwater management. Topography influences the direction and rate of surface runoff derived from rainfall events. Areas with steep slopes tend to increase velocities and can facilitate faster drainage. Areas of mild slopes induce lower velocities but may be more difficult to drain. Low lying elevations in depressional areas tend to store or detain runoff. Generally, the topography in Ormond Beach leads to positive outfall for runoff to the ocean or river. Isolated land locked areas that do not otherwise have a man-made storm drainage outfall can be a challenge to manage, however there are no significant land locked areas in the City. Ambient topography directly impacts the design of drainage facilities such as storm sewer pipes and stormwater management facilities.

Throughout the City, elevations increase from east to west ranging from mean sea level at the Halifax River and Atlantic Ocean side to a height of 30-25 feet NAVD along the central ridge and in the western portions of the City near the I-95 corridor. Around the time of the 2007 SMPU, updated topographical data sets have been collected for the greater Volusia County are including Ormond Beach. This LiDAR based topographical data from 2006 was obtained for the City vicinity from the National Oceanic and Atmospheric Administration (NOAA) Digital Coast web service. This data, available in GIS compatible format, provides more contiguous topographical details of the ground surface across the City. The vertical datum of this LiDAR based data is based on the North America Vertical Datum (NAVD) of 1988. It is noted that as of the date of this report the State of Florida Division of Emergency management (FDEM) in conjunction with the United States Geological Survey (USGS) is currently in the process of obtaining new higher resolution LiDAR throughout the state including Volusia County. This should be available for local use within the next two years, with current estimates indicating later in 2021.

Elevation can impact design criteria associated with various water quality best management practices. Higher elevation areas may have increased depths to water table which may facilitate retention and infiltration practices for treatment. Low lying areas may require a positive outfall and accordingly detention along with Low Impact Design (LID) practices may be applicable. Elevation plays an important role in coastal resiliency. Generally, the higher the parcel elevation the less at risk it may be from sea level rise. However, City facilities such as roadways, drainage and other utilities can still be impacted which in turn impacts the parcel. Lower elevation areas are particularly sensitive to rising seas and ambient groundwater table, as they may not be built to avoid increase flood levels and water ponding. Elevation is an important aspect of floodplain code which seeks to require structures and other municipal facilities at elevations higher than predicted flood levels (often tied to the 100 year / 1% annual chance storm event). Elevation requirements for individual parcels and public infrastructure must consider surrounding areas so that unintended flood impacts do not get shifted to other sites.

A digital elevation model (DEM) derived from the 2007 LiDAR data is shown on **Figure 4-1**.



CITY OF ORMOND BEACH FLORIDA



N W E S

0 2,000 4,000 Feet

Legend

Ponds

City Limits

Digital Elevation Model (ft NAVD88) (2006)

Value

69

-7

SOURCES:
Topographic Data: Volusia County, 2006
City Limits: City of Ormond Beach, 2019

Figure 4-1

Topography Map
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

4.3 Soils

With regard to stormwater management, soils play an important role estimating the amount of rainfall excess (runoff) generated for a particular storm event. The amount of soil storage available above the water table and the rate of which rainfall can percolate downward are important factors contributing to surface runoff. More freely draining soils with deeper water table tend to infiltrate more rainfall and generate less runoff. Conversely, poorly draining soils with high water tables have to potential to generate significantly more runoff for a given area. Soil conditions also impact stormwater practices to rely on infiltration to address runoff.

The National Resource and Conservation Service (NRCS) maintains a database of soil type characteristics throughout the US, including Brevard County. Soil types are generally grouped into specific categories based on characteristics. Among the characteristics described for each various soil type are the soil hydrological classifications which provide information on how a particular soil type will react to rainfall. These hydrological classes are defined as follows:

- **Hydrologic Soil Group A** - freely draining, low runoff potential, deeper water tables.
- **Hydrologic Soil Group B** - moderately draining, moderate runoff potential, moderate depth to water table.
- **Hydrologic Soil Group C** – moderately poorly draining, moderately low runoff potential, higher relative water table depth.
- **Hydrologic Soil Group D** – poorly draining, high runoff potential, shallow water table.
- **Dual hydrologic class soils A/D, B/D, C/D** – these are soils for which draining characteristics may vary during the course of the year. For example the soil may act as an A soil during the dry season but act more like a D soil during the wet season when the groundwater table seasonally rises (hence A/D classification).
- **Urban Land** – areas defined where development has occurred which may have effectively altered the natural soils conditions. Care must be taken when representing these areas for runoff estimation purposes.

Many water quality BMPs rely on retention of runoff and infiltration into the ground for their effectiveness. Proper accounting of soil infiltration capacity is a critical design component. Areas with high water tables and poorly draining soils are more suitable to BMPs which rely on detention and filtration for their effectiveness, although LID BMPs can help mitigate storm runoff volume. In coastal communities, higher ambient groundwater tables resulting from sea level rise reduces the soil storage capacity between land surface and the groundwater table. This can lead to more runoff generated for a given rainfall depth over a given area. Likewise, changes in future hydrological patterns, such as more frequent and/or more intense rainfall events, can more easily exceed soil infiltration rate capacity and likewise lead to increased runoff. City stormwater regulations and code should be sensitive to actions that may change soil conditions, reducing availability of infiltration and soil storage, and impact runoff. This may include over compaction of pervious area soils during construction and increases in impervious area sealing off the connection of runoff to soils. Likewise, recognition of future changes in sea levels and hydrology should be accounted for in design criteria to ensure drainage facilities associated with redevelopment will function well into the future.

A soils map is shown on **Figure 4-2**.

Halifax River

Tomoka River

Tomoka River

Halifax River

Atlantic Ocean



N
W E
S

0 2,000 4,000 Feet

Legend

City Limits

Hydrologic Features

Hydrogroup

- A
- A/D
- B/D
- C/D
- D
- Water

SOURCES:
Soils Data: Volusia County, 2019
Hydrologic Features: Volusia County, 2004
City Limits: City of Ormond Beach, 2019

Figure 4-2

Soils Map
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

4.5 Land Cover

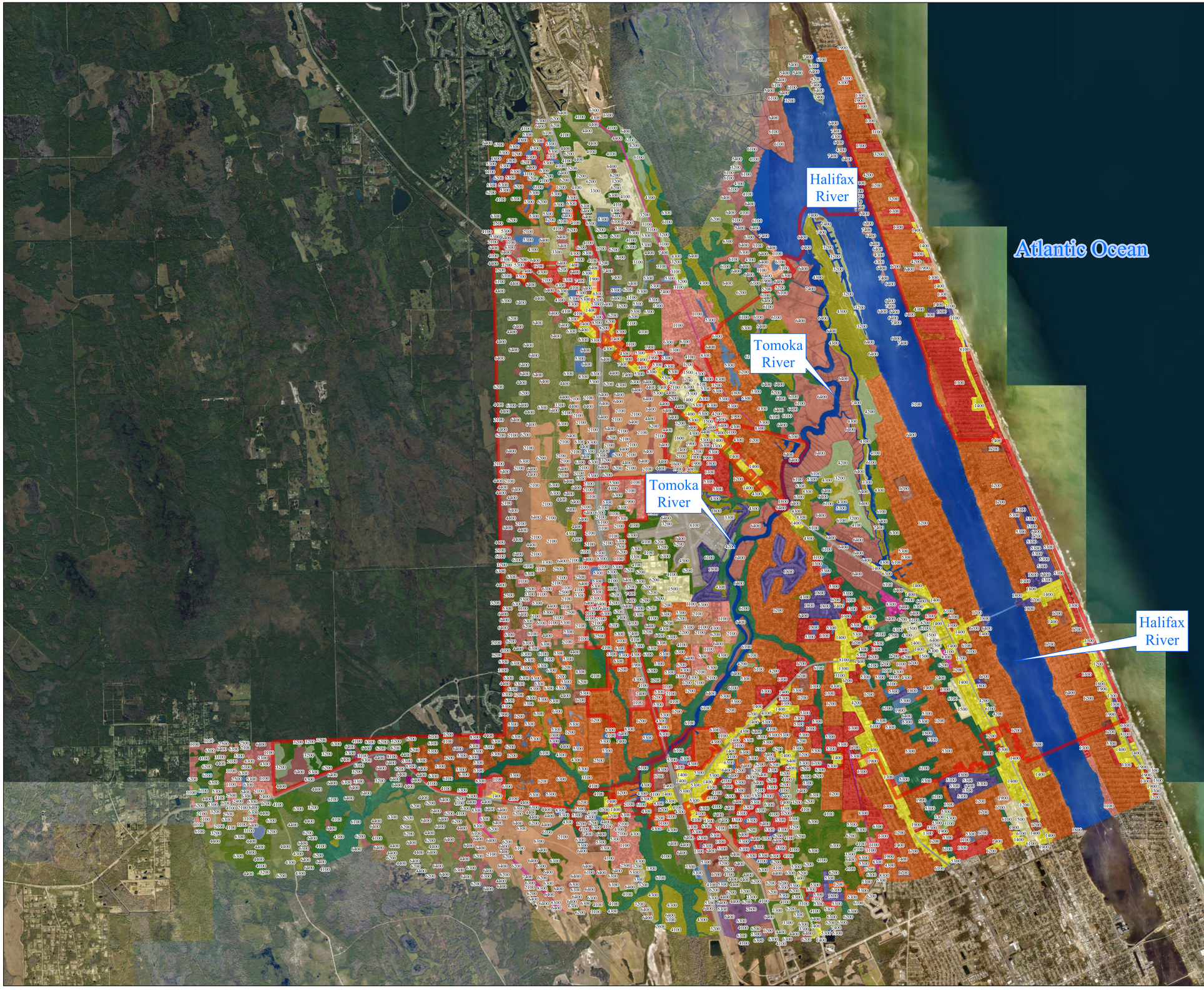
Land cover is a critical factor in stormwater management. From a hydrological standpoint, the type of land cover dictates the relative imperviousness of a given parcel. The more impervious area, the more runoff is generated for a given area. Another important component of impervious area is that portion of it which is directly connected. Directly Connected Impervious Area (DCIA) is that portion of the overall impervious area that is connected to directly drain to a stormwater discharge point, whether that be a stormwater sewer, a BMP, or an outfall location. In DCIA areas, it can generally be assumed that all runoff is routed to the stormwater sewer system. Non-DCIA areas (impervious areas which are not directly connected) still may have runoff flow across pervious areas where additional infiltration of runoff may occur if given enough time or area to infiltrate.

For the purposes of stormwater management, landuse data is commonly used for determination of land cover. In eastern Florida, GIS datasets from the SJRWMD are commonly used. These landuse features are based on Land Use Cover and Forms Classification System (FLUCFCS) designations established by State agencies. Generally, there are broad assumptions of relative imperviousness for landuses, but actual imperviousness can vary widely depending on the parcel and location.

Impervious area GIS data coverages are helpful to more accurately define the relative imperviousness of various landuses. Currently, the City is nearly completely built-out in the east with limited pervious areas. Newer development in the west generally sets aside more open space areas, but still impervious area increases requiring mitigation through stormwater practices. Redevelopment, even on the parcel by parcel level, can further reduce the available pervious areas in the City if not carefully considered. Where increasing impervious area is a concern, stormwater management practices that focus on increasing open space, decreasing DCIA, and distributing stormwater management facilities may be advantageous. Reducing impervious area help reduce flood risk.

Reducing impervious areas can help reduce runoff volumes and accordingly impacts form pollutant loads. Where distributed stormwater management practices are advantageous, water quality controls should be promoted. Integration of water quality practices such as LID and green infrastructure into landscaping and open spaces can help to achieve impervious area reduction strategies. Reducing impervious area helps improve runoff quality. Reduction in impervious area may help to mitigate impacts of future sea level rise and changes in hydrology by promoting more distributed infiltration and buffer the impacts of intense storm events. In a community that is essentially built-out, redevelopment strategies must address stormwater management concerns. Where reductions in impervious areas are desired to address the above issues, City regulation and code can be adjusted to help ensure impervious area is not increasing and even encourage reductions. This applies not only to large scale redevelopment, but also strategies on the parcel level where cumulative impacts of small increases in impervious area can combine to cause more significant impacts.

A land cover map based on SJRWMD GIS data is shown below on **Figure 4-3**.



Landuse Code and Description

- 1100,Residential Low Density
- 1200,Residential Medium Density
- 1300,Residential High Density
- 1400,Commercial and Services
- 1500,Industrial
- 1600,Extractive
- 1700,Institutional
- 1800,Recreational
- 1900,Open Land
- 2100,Cropland and Pastureland
- 2200,Tree Crops
- 2300,Feeding Operations
- 2400,Nurseries and Vineyards
- 2500,Specialty Farms
- 2600,Other Open Lands <Rural>
- 3100,Herbaceous
- 3200,Shrub and Brushland
- 3300,Mixed Rangeland
- 4100,Upland Coniferous Forests
- 4200,Upland Hardwood Forests
- 4300,Upland Mixed Forests
- 4400,Tree Plantations
- 5100,Streams and Waterways
- 5200,Lakes
- 5300,Reservoirs
- 5400,Bays and Estuaries
- 6100,Wetland Hardwood Forests
- 6200,Wetland Coniferous Forests
- 6300,Wetland Forested Mixed
- 6400,Vegetated Non-Forested Wetlands
- 7400,Disturbed Lands
- 8100,Transportation
- 8200,Communications
- 8300,Utilities

CITY OF ORMOND BEACH ★ FLORIDA ★



N
W E
S

0 2,000 4,000 Feet

Legend

- City Limits

SOURCES:
Landuse Data: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 4-3

Land Cover Map
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

4.7 Floodplains

Regulatory floodplains are delineated for communities by the Federal Emergency Management Agency (FEMA) to indicate relative flooding risk. Generally, properties within regulatory designated floodplain areas have higher flood insurance premiums and in many cases are required to have flood insurance by mortgage and financing institutions. Periodically, FEMA will commission countywide floodplain studies to update regulatory floodplain information based on more recent data such as new topography and new development. The most recent Flood Insurance Rate (FIS) study for Volusia County, including Ormond Beach, was completed in 2016 (FIS# 12127CV000D, 2016). Floodplains resulting from the 2016 FIS study are shown on **Figure 4-4**.

Inland or riverine (non-storm surge) floodplains are typically delineated based on a specific storm event return period based on annual occurrence probability basis. These are commonly equated to yearly storm return intervals. For example, the 1% annual chance storm event commonly used to define regulatory floodplains corresponds to a 100-year storm return period. It is appropriate to think of this event in terms of having a 1% chance of happening each year rather than a storm that would happen only once every 100 years. FEMA FIS reports typically have additional information on other storm events such as the 500-year, 10-year, 25-year, 50-year, etc. Riverine floodplains can be delineated by detailed methods (Zone AE) wherein Base Flood Elevations (BFEs) are defined. Or they can be delineated through approximate methods (Zone A) where no BFEs are defined but flood risk areas are delineated spatially. In coastal communities, floodplain areas that are influenced by coastal storm surge (Zone VE) are defined by impacts from extreme storm events. The elevations can oftentimes be much higher than corresponding riverine floodplains in the same areas.

FEMA's Community Rating System (CRS) provides a framework whereas the more robust a community's floodplain management program is, the more potential flood insurance discount that communities citizens may receive. The ranking is from 1 (45% discount) to 10 (no discount). According to the Florida Department of Emergency Management, Ormond Beach is currently at a rating of 6 with a 20% discount.

Effective floodplain management reduces risk for citizens. Regulatory floodplains provide sound guidance for finished floor elevations of structures and transportation infrastructure to reduce risk of flooding during extreme events. Coastal delineations also provide sound guidance for regulatory elevations considering storm surge risk as well. Redevelopment efforts in the City should avoid impacts to floodplains. Floodplain areas may be a concern from a water quality standpoint. Extreme storm impacts can disturb the landscape and potentially release pollutants or render treatment BMPs temporarily ineffective. Design of BMPs should consider areas with designated floodplains. With rising sea levels and shallower depths to ambient water table, the extent of floodplains may be expected to increase in the future. Current FEMA practice does not include consideration of changing future conditions when mapping floodplains. Local stormwater planning should consider the additional risk possible from increasing floodplain areas. Current City regulations and code may consider the need to go above and beyond current FEMA requirements to better protect residents from current and future floodplain impacts. Code can encourage compensating storage in currently designated floodplain areas and identify mitigation options in areas where future floodplains may occur. Opportunities to increase the City's CRS rating should also be pursued. It is recognized the current City LDC does address compensatory floodplain storage requirements in Section 3-20 Floodplain Management and Protection.

Halifax River

Tomoka River

Tomoka River

Halifax River

Atlantic Ocean

0.2 PCT ANNUAL CHANCE FLOOD HAZARD

CITY OF ORMOND BEACH FLORIDA



N W E S

0 2,000 4,000 Feet

Legend

City Limits

FEMA Flood Zone

- A
- AE
- AH
- VE
- X
- 0.2 PCT

SOURCES:
Floodplain Data: FEMA FIRM, 2018
City Limits: City of Ormond Beach, 2019

Figure 4-4

Floodplains Map
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

4.9 Hydrology

Understanding the hydrologic cycle is key to overall stormwater management. Rainfall is the primary constituent of focus, but effective management strategies must also take into account groundwater table conditions, surface water variations, and evapotranspiration. Proper accounting of the effects of rainfall on stormwater infrastructure should consider both individual storm events (design event storms) and the impacts from long term (continuous) rainfall trends.

Hypothetical discrete (single event) storm events are typically used to design stormwater infrastructure to a particular LOS. For example, storm sewer systems may be designed to convey a 10-year storm within their structures without surface flooding, stormwater ponds designed to store a 25-year storm without overflowing their banks, and evacuation routes and habitable structures built above a 100-year storm level. Rainfall depths are typically derived from statistical analysis of long-term rainfall data stations and published in reference materials by local water management districts such as the SJRWMD or Federal agencies such as NOAA. Rainfall distributions (pattern of rainfall intensity) are generally referenced from State accepted sources derived based on local or regional research. The duration of design storm events is also important, with 24-hour (1-day) storm events being common for design purposes. More frequent 3 or 4-day duration are also used for design purposes as well as more intense duration such as 1, 2, 4, 6, and 12-hour for example. For water quality purposes, pollutant loading estimates are usually calculated on an annual basis. In that event, annual rainfall totals and long-term model simulations are used.

Evapotranspiration includes evaporation of water from the land surface plus that which is transpired through vegetation. Evapotranspiration is generally not considered on a design storm basis based on the argument that its effects are more long-term based. Seasonal and long-term rainfall trends also influence stormwater management where impacts of evapotranspiration can become more significant. Tree canopy, particularly when densely clustered, can significantly reduce the volume of rain and therefore runoff that needs to be managed. Dense tree canopy can also significantly uptake standing and infiltrating stormwater thereby mitigating groundwater level. Periods of excessive rainfall can increase ambient groundwater table conditions and saturate shallow soils reducing soil storage and increasing runoff. This may cause deviations in level of service for infrastructure.

Rainfall is the most significant factor that drives design storm events used for stormwater infrastructure. Regional variations need to be considered for local relevancy. Design should consider the inherent variability of antecedent (inter-event) rainfall conditions. The performance of water quality BMPs is generally evaluated on an annual basis accounting for yearly rainfall totals over at least several years. Because of that, it is important to properly assess long-term averages of rainfall and evapotranspiration to account for both average and extreme conditions. Future changes in hydrology may come in the form of changes in rainfall depth and/or intensity. Increases in rainfall depths on a storm basis can drive an otherwise functioning drainage infrastructure into a failing LOS in future years. Increases in rainfall intensity (depth per time) have similar results, even if future average depths are the similar. Increases in annual rainfall depth can likewise render water quality BMPs less effective on an annual basis when designed based on flow rate. Current City regulations and code need to adapt to these future uncertainties to provide more resilient guidance to current redevelopment and infrastructure projects to ensure they perform over their service life.

Plots of long-tern rainfall and evapotranspiration data from a nearby gauge station at the Melbourne Airport are shown on **Figure 4-5A** (yearly totals) and **4-5B** (monthly averages). Note that in some cases evapotranspiration for a given period is similar or in excess of actual rainfall.

Figure 4-5A – Yearly Rainfall and Evapotranspiration Totals

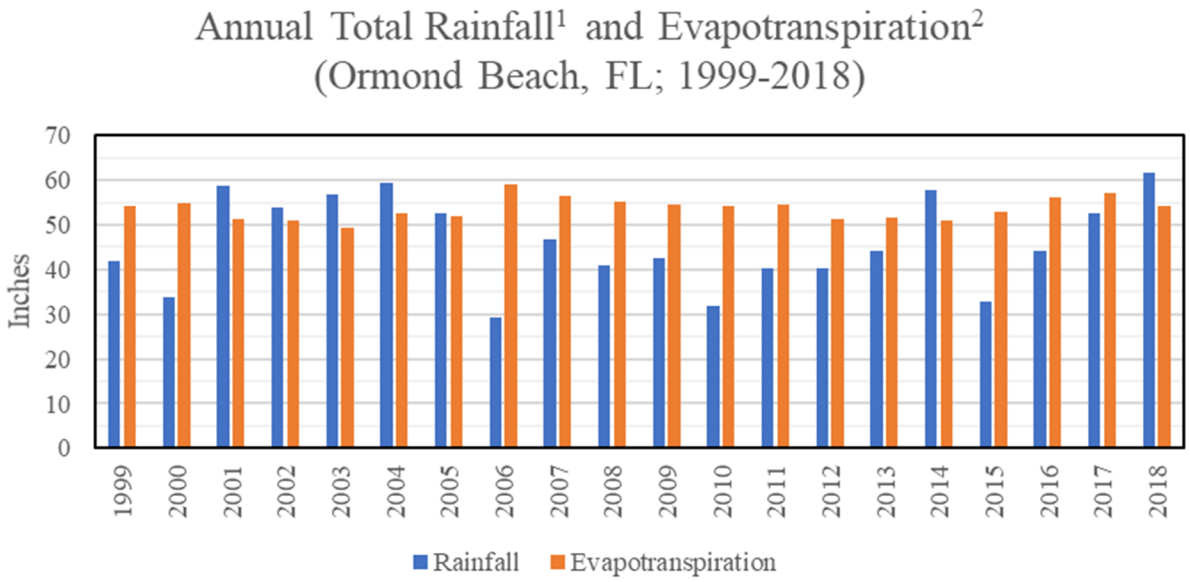
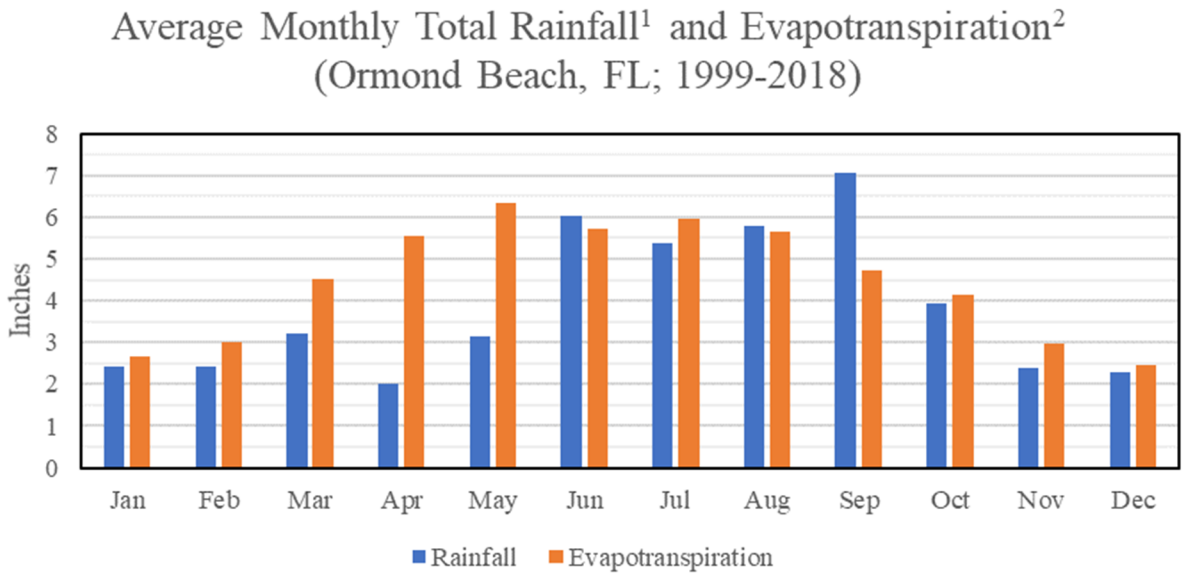


Figure 4-5B – Monthly Average Rainfall and Evapotranspiration Totals



Notes:
1 - SJRWMD (Station 01070077: Ormond Beach at Ormond Beach (RN))
2 - Reference ET from USGS for NEXRAD pixel 133580 covering rainfall station

4.10 Existing Infrastructure Inventory

Several watersheds contribute to the City areas, particularly associated with the Tomoka and Halifax Rivers. Many subbasin areas were delineated previously during the 2007 SMPU and other efforts. The delineated drainage basins in the City are shown on **Figure 4-6**. Within the subbasin drainage is managed by a complex network of drainage infrastructure. This includes stormwater inlets and manholes, pipes, swales and ditches, exfiltration systems, stormwater ponds, and other BMPs. The drainage infrastructure network and outfall locations based on City GIS data are shown on **Figure 4-7**.

The majority of the older portions of the City are serviced by a storm sewer systems with curbside or ditch bottom inlets. Also significant are swale conveyance systems and some limited ditch conveyance also transport the stormwater runoff to outfalls. In the western areas, there is a combination of rural style drainage systems (roadside swales ditches side/cross-drains) as well as traditional subdivision management systems in the newer areas (storm sewers with ponds). Tailwater conditions in the Tomoka River and Halifax River keep many of the larger downstream portions of the storm sewer system surcharged, or beneath river water level. The loading of runoff to the Tomoka and Halifax Rivers, both through direct gravity sheet flow and infrastructure storm sewer, is a primary concern for the City. The stormwater pollutant loads (solids, nutrients, metals, bacteria, etc.) impact the quality of the rivers.

The City's drainage is also impacted by major transportation corridors maintained by others, including I-95, US 1, and SR 40, and concurrence with these drainage system present other coordination challenges. Future improvements to infrastructure drainage systems and other stormwater management projects must take into consideration the jurisdictional aspects of the overall system. Some drainage systems originate in private property areas where the City does not have access rights or easements. Where existing problems need to be addressed and/or future projects impact these areas, coordination with property owners is necessary as drainage and/or stormwater management does not stop at property lines.

Proper accounting for drainage basins and their associated infrastructure allows accurate assessment of the level of service (LOS) a flood management system provides. This includes evaluation of the performance of existing infrastructure and also assessing the need for additional infrastructure where LOS is not being met. Drainage facilities are generally constrained by right of way and State regulation and retrofitting areas with additional infrastructure is challenging. Stormwater management facilities generally have dual purpose in addressing both water quantity (attenuation) and quality (pollutant load reduction) needs. Locations where additional water quality treatment is desired can be facilitated where current drainage infrastructure tie-ins exists. Since stormwater drainage systems are a direct conduit for pollutants into the river, effective load reduction strategies can be focused there. Future sea level rise may impact existing infrastructure that relies on gravity discharge. If the average tailwater elevation in the Halifax and Tomoka Rivers rise, the effectiveness of the stormwater drainage system may be severely impacted resulting in more pipe surcharging and slower drainage. More intense future rain events may also stress existing infrastructure designed to handle less intense rainfall events based on current LOS criteria.



Legend

- City Limits
- 2007 Master Plan Basins

SOURCES:
Drainage Basins: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 4-6

Major Drainage Basins Map
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Halifax River

Tomoka River

Atlantic Ocean

Tomoka River

Halifax River

Tomoka Basin
Ormond by the Sea
National Gardens
Tomoka Estates
Tomoka State Park
Strickland Creek
Ormond Beach Municipal Airport
Ormond Beach
Ellinor Village
Ortona
Holly Hill
Sawgrass Lake
SR-9
SR-5
W Granada Blvd

Flagler County, FDEP, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA



N
W
E
S

0 2,000 4,000 Feet

Legend

- City Limits
- Ponds
- Swales
- Drainage Infrastructure
- Stormwater Pipe

SOURCES:
Drainage Structures: City of Ormond Beach, 2019
Drainage Pipes: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 4-7

Drainage Infrastructure Map
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

The City's drainage infrastructure are only effective when they are maintained properly and sized properly to handle intense storm events the area may experience. However, changes to the overall system must be made as the development trends increase. As development increases, the amount of runoff increases, along with the requirement to direct the stormwater away from roadways and homes. If the area lacks infrastructure, ponding of excess stormwater will occurring leading to flooding within residential areas and/or along roadways.

City regulations and code should be sensitive to the challenges of drainage system design and maintaining future LOS, particularly when retrofitting sites that rely on existing downstream infrastructure. Redevelopment impacts to existing system should be clearly assessed. Drainage related directly to water quality so water quality regulations should always be considered.

4.11 Drainage System Assessment

It is important to maintain the overall system to aide in the prevention of flooding. In addition to maintaining existing infrastructure, system management needs to take into account the service life of various facilities. For example, reinforced concrete storm piping (RCP) typically has a service life of approximately 50 to 75 years (some references even over 100 years) until the need to be significantly rehabilitated or replaced. Corrugated metal pipe (CMP) on the other hand may have an effective service life on the order of 25 to 50 years depending on soil and water conditions. Due to the brackish conditions of the water within the City, salinity content within water can deteriorate metal pipes at a much higher rate than concrete pipes.

Reviewing the City's GIS data associated with drainage infrastructure, specifically the stormwater pipes (refer to **Figure 4-8**, the following was observed:

- Approximately 13.5% of installed pipes are corrugated metal pipes
    - Corrugated metal pipes appear to be attributed to include the following: ACCMP (Asphalt Coated Corrugated Metal Pipe), ALCMP, PACCMP, PALCMP, PCMP (Polymeric Corrugated Metal Pipe)
- Many pipes within the City's GIS, particularly in the eastern, older areas of the City where flooding problems are typically noted, were referenced as having older installed dates ranging from 1953 to 1979 (many which would be meeting or exceeding service life).

During discussions with the City and based on previous recommendations within the 2007 SMPU, installed CMPs were being replaced by reinforced concrete pipes (RCPs). The City has been working towards replacing and upsizing installed CMPs with RCPs. The CIPs mentioned in Chapter 10 support this continued effort since these areas include CMPs that are undersized, failing, or have installed dates that are unknown or from the 1950s to 1970s. It is recommended that the City prioritize continued replacement of CMP pipes as part of stormwater program efforts.

Based on analysis of the current City GIS data summarized on **Figure 4-8**, there is upwards of approximately 144,000 feet of CMP that may be candidates to replace ranging from 6" to 54" and representing approximately $13,855,000 in CMP replacements to be addressed by the City. This does not take into account pipes that may have recently been replaced that are not updated in the City's GIS data. This is considered a longer-term program need than the current proposed 10 year master planning period. A 20 to 30 year planning period may be appropriate given the variance in age (service life) and actual conditions of any given pipe runs. The County should develop a detailed CMP assessment and replacement tracking system to monitor progress.

Installed Pipes within City Limits

Year Range	CMP			NonCMP		
	Pipe Type	Total Length (ft)	Total Length Installed (FT)	Pipe Type	Total Length (ft)	Total Length Installed (FT)
Unknown	ACCMP	795.85	56496.72	A2000	35.35	96932.06
				A2000 PVC	57.07	
	CMP	54932.81		CLAY	1331.27	
				DIP	65.76	
				HDPE	3636.45	
				PHDPE	1431.54	
	PACCMP	224.66		PVC	3508.93	
				RCP	86470.59	
				SLOT	4.77	
	PCMP	543.40		SRCP	352.79	
				Unknown	37.53	
1953 - 1959	CMP	4738.35	4738.35	RCP	9784.10	9784.10
1960 - 1969	CMP	7906.92	7906.92	CLAY	573.95	29281.94
				RCP	28560.86	
				SRCP	147.14	
1970 - 1979	ACCMP	8213.27	27892.93	CIP	126.96	64755.36
	CMP	18283.34		PVC	1641.18	
	PACCMP	502.11		RCP	62789.93	
	PCMP	894.20		SRCP	197.30	
1980 - 1989	ACCMP	9667.62	34111.42	CLAY	59.19	89250.13
	CMP	11666.97		DIP	25042.78	
				HDPE	414.56	
	PACCMP	7514.26		PERF ALUM	74.84	
				PHDPE	1125.51	
	PALCMP	798.37		PPVC	218.80	
				PVC	1025.00	
	PCMP	4464.19		RCP	61131.14	
				SRCP	158.33	
1990 - 1999	ACCMP	3730.64	10110.54	CAP	629.26	279785.87
	ALCMP	621.70		DIP	237.75	
	CMP	1962.58		HDPE	13653.71	
				PERF PIPE	344.83	
	PACCMP	2099.95		PHDPE	4537.25	
				PPVC	90.45	
	PALCMP	230.00		PVC	9802.07	
				RCP	226987.45	
	PCMP	1465.67		SRCP	4295.08	
				Unknown	19208.03	
2000 - 2009	ACCMP	70.42	2439.32	A2000PVC	538.94	268464.18
				DIP	28.48	
	CMP	1942.45		HDPE	21618.35	
				METAL	53.49	
				PHDPE	6830.14	
	PALCMP	76.24		POLY	67.98	
				PPOLY	199.45	
				PPVC	1072.69	
				PVC	8430.14	
	PCMP	350.21		RCP	225883.13	
				SLOT DRAIN	248.16	
				SRCP	3493.23	
2010 - 2018	CMP	319.68	319.68	A2000	390.08	87323.85
				A2000 PVC	1359.66	
				ALUMINUM	44.64	
				CPP	8636.11	
				DIP	259.51	
				HDPE	21896.97	
				PHDPE	7352.51	
				PVC	4580.37	
				RCP	42803.99	
	CMP Total	14401S.88		**Non-CMP Total**		925577.49

Corrugated Metal Pipe: Estimated Conversion to Reinforced Concrete Pipe (RCP) Costs

Diameter (inches)	Total Length	Replacement Diameter (inches)	Average Unit Rate for Replacement (LF)	Cost
6	207	12	$63.17	$13,086.31
8	799	12	$63.17	$50,480.04
10	1127	12	$63.17	$71,187.27
11 x 18	203	12 x 18 (15)	$105.17	$21,322.24
12	19008	12	$63.17	$1,200,735.31
12 x 18	1238	12 x 18 (15)	$105.17	$130,221.58
12 x 29	207	12 x 18 (15)	$105.17	$21,724.15
12 x 36	184	12 x 18 (15)	$105.17	$19,300.08
13 x 22	204	14 x 23 (18)	$102.30	$20,861.46
14 x 23	87	14 x 23 (18)	$102.30	$8,850.77
15	28753	15	$101.21	$2,910,065.08
15 x 21	760	14 x 23 (18)	$102.30	$77,715.47
16 x 20	432	14 x 23 (18)	$102.30	$44,234.89
18	28884	18	$77.01	$2,224,368.44
18 x 20	60	19 x 30 (24)	$113.70	$6,793.27
18 x 28	150	19 x 30 (24)	$113.70	$17,002.21
18 x 29	2726	19 x 30 (24)	$113.70	$309,981.05
18 x 30	217	19 x 30 (24)	$113.70	$24,649.73
18 x 36	27	19 x 30 (24)	$113.70	$3,050.84
21	1025	24	$89.46	$91,734.77
21 x 27	118	24 x 38 (30)	$144.32	$17,005.37
22 x 27	22	24 x 38 (30)	$144.32	$3,213.58
22 x 36	142	24 x 38 (30)	$144.32	$20,497.89
24	31592	24	$89.46	$2,826,231.36
25 x 41	29	29 x 45 (36)	$187.97	$5,487.84
25 x 42	28	29 x 45 (36)	$187.97	$5,218.63
26 x 33	52	29 x 45 (36)	$187.97	$9,712.06
26 x 45	28	29 x 45 (36)	$187.97	$5,340.37
27	528	30	$110.56	$58,361.31
29 x 41	29	29 x 45 (36)	$187.97	$5,439.74
29 x 42	1162	29 x 45 (36)	$187.97	$218,408.67
29 x 45	889	29 x 45 (36)	$187.97	$167,183.36
30	11865	30	$110.56	$1,311,759.69
34 x 54	46	34 x 53 (42)	$312.45	$14,369.09
35 x 49	93	34 x 53 (42)	$312.45	$29,155.18
35 x 55	74	34 x 53 (42)	$312.45	$22,987.25
36	8040	36	$133.54	$1,073,704.01
36 x 46	75	38 x 60 (48)	$325.00	$24,407.36
36 x 48	716	38 x 60 (48)	$325.00	$232,641.78
37 x 57	68	38 x 60 (48)	$325.00	$22,110.76
39 x 54	27	38 x 60 (48)	$325.00	$8,684.39
39 x 58	45	38 x 60 (48)	$325.00	$14,689.20
42	361	42	$156.93	$56,609.64
48	1287	48	$187.28	$240,974.12
53 x 147	49	58 x 91 (72)	$479.66	$23,284.01
54	355	54	$479.66	$170,487.42
		TOTAL		**$13,855,329.02**



N
W E
S

0 2,000 4,000 Feet

Legend

- Problem Area
- City Limits

CMP: Year Installed

- Year Unknown
- 1953 - 1959
- 1960 - 1969
- 1970 - 1979
- 1980 - 1989
- 1990 - 1999
- 2000 - 2009
- 2010 - 2018
- Non-CMP Stormwater Pipe

NOTES:
Map only displays pipes within City limits.

SOURCES:
Drainage Structures: City of Ormond Beach, 2019
Drainage Pipes: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

NOTE:
The pipes included in the CMP category are the following field codes from the City GIS data:
- ACCMP
- ALCMP
- CMP
- PACCMP
- PALCMP
- PCMP

Figure 4-8

Drainage System Rehabilitation Assessment
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

4.13 Flooding Complaints

Residents provided their concerns and experiences with flooding occurrences within the City during a public meeting on January 27, 2020 and residential field meetings on February 25, 2020 and June 25, 2020. These concerns were documented with comment cards, email correspondence with City personnel, and field notes.

Based on the 16 specific complaints gathered, the majority of the complaints (75%) were in regard to flooding caused by tropical storm or a hurricane. Flooding that occurred by rainstorm events was reported within 69% of the complaints. These are shown on **Figure 4-9.** The flooding that has been reported are the following:

- Overwhelming of drainage structures
- Roadways flooded
- Backyards saturated with excess stormwater
- Accumulated stormwater that reached the base floor elevations of homes (i.e. driveways)
- Accumulated stormwater entering patios and homes

The majority of the flooding occurrences mentioned in the complaints are within specific known flooding problem area identified by the City.

4.14 Flooding Problem Areas

Based on information provided by the City, supplemented by review of complaint logs, there are 13 specific flooding problem area that are deemed to warrant corrective action measures through a capital improvement project (CIP) effort. These are as follows:

1. Sanchez to SR 40 from Ridgewood to River
2. Woodridge Drive Outfall
3. South Arbor Drive and Grove Street (including Capri Circle)
4. Durrance Acres
5. Cumberland
6. North Highway US1 Drainage
7. Ormond Lakes
8. Alanwood Drive and Beach Street
9. Trails - Dry Well / French Drains
10. Orchard Business Park
11. Railroad Crossing - East Fork of Thompson Creek
12. Railroad Crossing - St. Andrews Discharge
13. Orchard Street and Jeanette Drive (carry forward from 2007 SMPU)

Specific problem area review summaries including conceptual improvements and implementation costs for these areas are included in Chapter 10 of this SMPU. The locations of these problem areas are shown on **Figure 4-10**.



1) 491 Leeway Trail, Ormond Beach, FL 32174



2) 58 Indian Head Drive, Ormond Beach, FL 32174



3) 54 Indian Head Drive, Ormond Beach, FL 32174



4) 331 Cumberland Avenue, Ormond Beach, FL 32174 (2007)



5) 341 Cumberland Avenue, Ormond Beach, FL 32174 (2007)



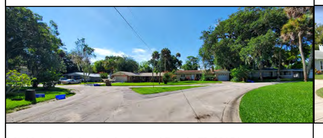
6) 566 North Younge Street, Ormond Beach, FL 32174



7) 330 Greenwood Avenue, Ormond Beach, FL 32174



8) 33 Warwick Avenue, Ormond Beach, FL 32174



9) 19 Arbor Drive South, Ormond Beach, FL 32174



10) 400 South Beach Street, Ormond Beach, FL 32174



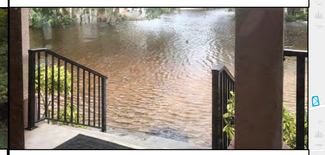
11) 380 South Beach Street, Ormond Beach, FL 32174



12) 350 Cumberland Avenue, Ormond Beach, FL 32174 (2007)



13) 37 Hernandez Avenue, Ormond Beach, FL 32174



14) 530 West Street, Ormond Beach, FL 32174 (2020)



15) 214 Warwick Avenue, Ormond Beach, FL 32174 (2020)



16) 330 Cumberland Avenue, Ormond Beach, FL 32174 (2020)

ID	Address	City, State	State	Zip code	Comment Card	Approximate Date of Photo	Types of Flooding	Name
1	491 Leeway Trail	Ormond Beach	FL	32174	Yes	February 2020	Tropical Storm/Hurricane, Rainy Day	J. Steven Catheart
2	58 Indian Head Drive	Ormond Beach	FL	32174	Yes	May 2011	Tropical Storm/Hurricane, Rainy Day	Charles Genter
3	54 Indian Head Drive	Ormond Beach	FL	32174	Yes	May 2011	Tropical Storm/Hurricane, Rainy Day	Roger Grubk
4	331 Cumberland Avenue	Ormond Beach	FL	32174	Yes	September 2017	Tropical Storm/Hurricane, King Tide/Tidal	Edward & Lorraine Bodigheimer
5	341 Cumberland Avenue	Ormond Beach	FL	32174	Yes	September 2017	Tropical Storm/Hurricane	Brent Rohol
6	566 North Younge Street	Ormond Beach	FL	32174	Yes	May 2011	Rainy Day - Sanchez	Kathleen & Marvin Lowery
7	330 Greenwood Avenue	Ormond Beach	FL	32174	Yes	May 2011	N/A	Linda Rathman
8	33 Warwick Avenue	Ormond Beach	FL	32174	Yes	May 2011	Tropical Storm/Hurricane, King Tide/Tidal, Rainy Day, Western end of Warwick (Resident located on the east)	Eutabeth Hardwood
9	19 Arbor Drive South	Ormond Beach	FL	32174	Yes	August 2020	Tropical Storm/Hurricane, Rainy Day	Stephen A. Oler & Elin C. Grimes
10	400 South Beach Street	Ormond Beach	FL	32174	Yes	August 2019	Tropical Storm/Hurricane, King Tide/Tidal, Rainy Day	Eamon Kealy
11	380 South Beach Street	Ormond Beach	FL	32174	Yes	August 2019	Tropical Storm/Hurricane, Rainy Day	Ellen Bove Carson
12	350 Cumberland Avenue	Ormond Beach	FL	32174	Yes	September 2017	N/A	Gordon Whitley
13	37 Hernandez Avenue	Ormond Beach	FL	32174	Yes	July 2019	N/A	Donald Williamson
14	530 West Street	Ormond Beach	FL	32174	No	Unknown	Tropical Storm/Hurricane, Rainy Day	William F. Cuthbert IV
15	214 Warwick Avenue	Ormond Beach	FL	32174	No	September 2020	Tropical Storm/Hurricane, Rainy Day	Sandy Alderman
16	330 Cumberland Avenue	Ormond Beach	FL	32174	No	September 2020	Tropical Storm/Hurricane, Rainy Day	Leroy & Joanna K. Grasso

N
W E
S

0 2,000 4,000 Feet

Legend

- Parcels
- Flooding Problem Area
- Ponds
- Swales
- City Limits
- PublicMeetingComments

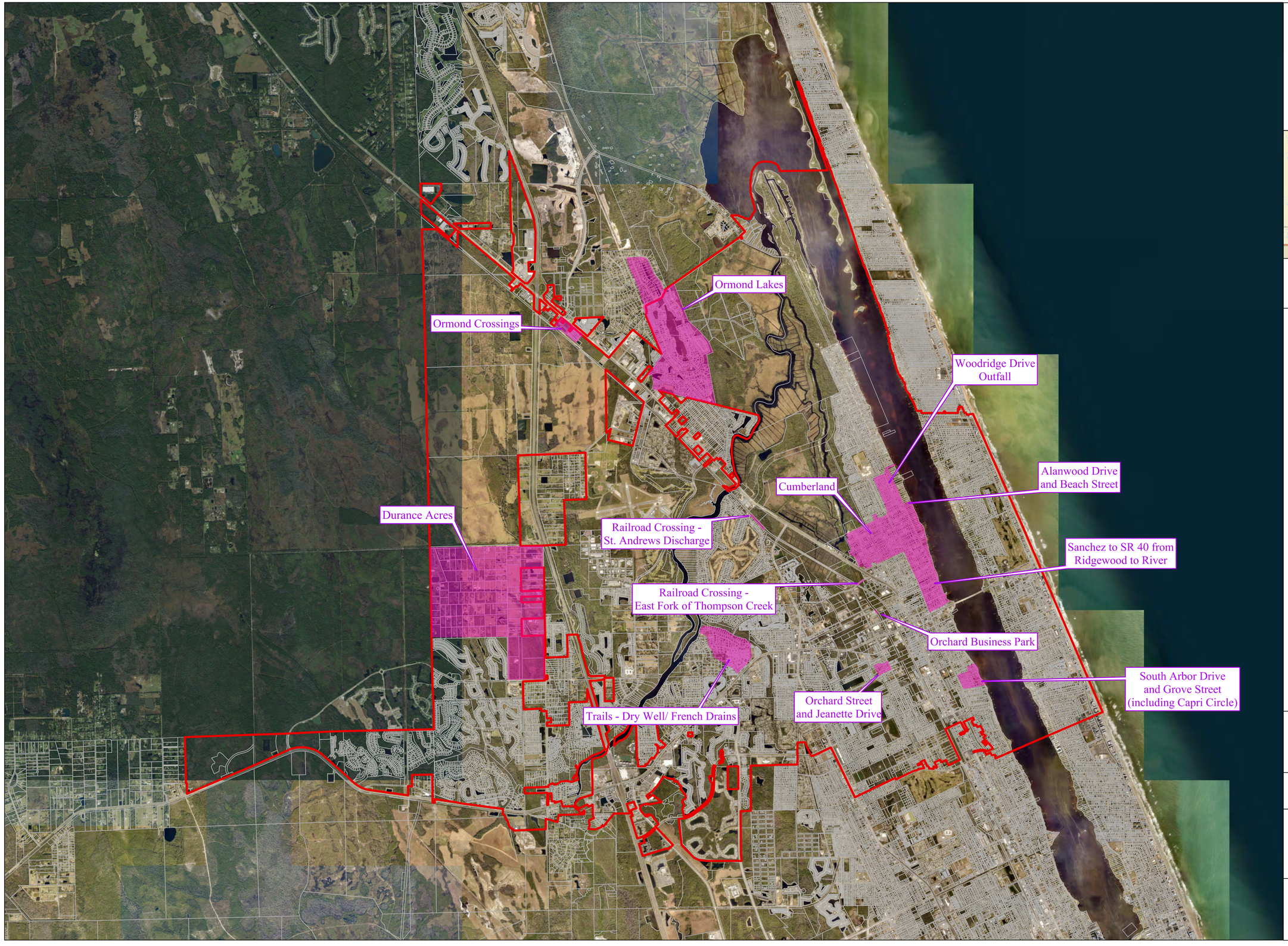
SOURCES:
Parcels: Volusia County, 2019
Complaint Data: City of Ormond Beach Residents, 2020
City Limits: City of Ormond Beach, 2019

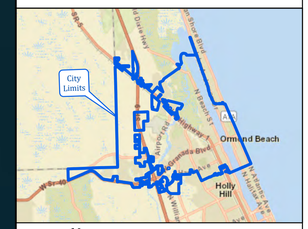
Figure 4-9

Drainage Complaints Map

Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants





N
W E
S

0 1,250 2,500
Feet

Legend

- Parcels
- Problem Area
- City Limits

SOURCES:
City Limits: City of Ormond Beach, 2019
Aerials: ESRI, 2020

Figure 4-10

Flood Problem Areas Map

Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

4.16 Flood Assessment Recommendations

Based on the foregoing flood assessment summary, specific actions are recommended with regard to the following:

- Continued City emphasis on replacing CMP storm sewer pipes throughout the City. Based on an assessment using City GIS data, this is estimated as upwards of 144,000 feet of pipe corresponding to approximately $13,855,000 based on current GIS data.
- Implement CIPs for the 13 problem areas identified. Concepts and projected costs are detailed in Chapter 10 of the SMPU.

Other flood and drainage related recommendations that should be address but that are covered in more detail other Chapters of the SMPU include:

- Evaluate opportunities to address better flood management through regulatory updates to code or NPDES permit requirements (refer to Chapter 3).
- Evaluate opportunities to leverage new and existing drainage infrastructure to address water quality improvement/ pollutant load reduction needs (refer to Chapters 5 and 7).
- Address vulnerability and resiliency of stormwater infrastructure to change in future hydrology and sea level brought about by projected climate change (refer to Chapter 6).
- Enhanced maintenance practices to proactively maintain drainage infrastructure (refer to Chapter 8).

5. WATER QUALITY ASSESSMENT

5.1 Introduction

This technical memorandum was developed by Janicki Environmental, Inc. as a subconsultant to Geosyntec Consultants, Inc. as part of the 2020 Ormond Beach Stormwater Master Plan Update. This effort addresses environmental assessments, including water quality and ecological data evaluation/assessment with respect to issues related to stormwater quality, impairments and TMDLs for the City of Ormond Beach, FL (City). This report begins with an overview of the study area and analytical methodologies employed for the assessments. Ecological data (fish, oysters, seagrass) and water quality status and trends in the vicinity of the City are summarized. Additionally, relationships between various water quality parameters in each examined waterbody are explored. Subsequently, an evaluation of water quality impairments and TMDLs within the City's boundaries is presented. Finally, pollutant loading estimates are described and summarized for the contributing drainage area of the Tomoka and Halifax rivers. Results of the water quality review and pollutant loading estimation are evaluated collectively to determine possible courses of action to mitigate the effects of pollutant loadings on water quality and habitat.

5.2 Study Area

Ormond Beach is located in Volusia County, Florida (**Figure 5-1**). The City is drained by the Tomoka River and is located on the Halifax River lagoon and the Atlantic Ocean. Approximately 18% of the city area is water and the City boundaries include two state parks, the Bulow Creek State Park and the Tomoka State Park.

5.3 Water Quality and Ecological Data Review Methods

This section provides an overview of the data compiled in association with this technical memorandum. Additionally, methods used to review and summarize the data are described.

5.3.1 Data Sources

5.3.1.1 Water Quality

The Florida Department of Environmental Protection (FDEP) maintains the Impaired Waters Rule (IWR) Database for use in assessing Florida waterbodies and water segments relative to applicable water quality standards and designated uses. Each update of the IWR database is called a "Run" and occurs prior to each waterbody assessment. For this effort, we queried Run 58 for the relevant water quality parameters (see **Table 5-1**) collected from sampling sites within the City of Ormond Beach boundary (**Figure 5-2**). In addition, data were obtained from the St. Johns River Water Management District (SJRWMD) via their online Environmental Data Retrieval Tool (http://webapub.sjrwmd.com/agws10/edqt/) to supplement the data contained in the IWR database, in several cases extending the period of record for individual stations.

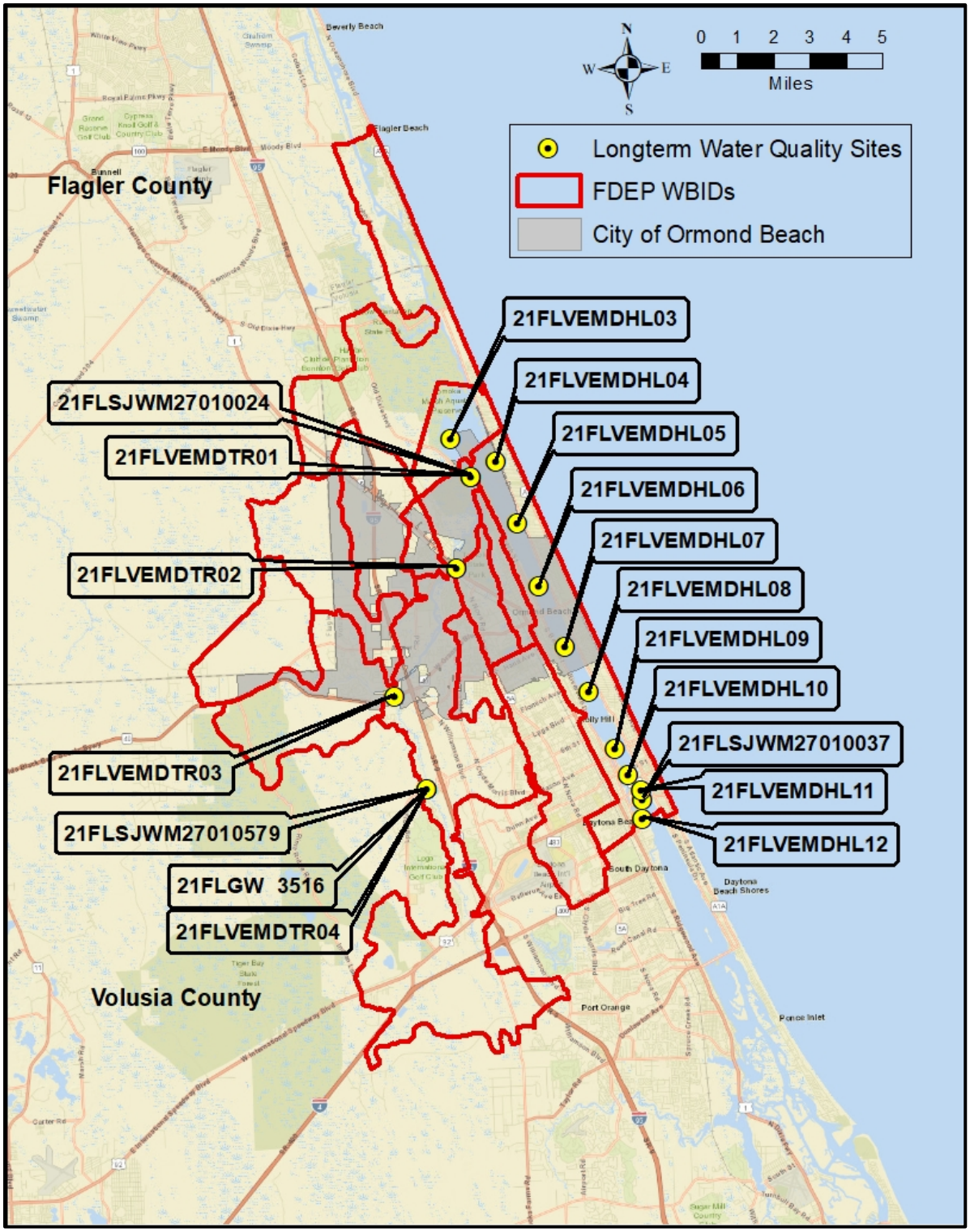
Figure 5-1 - Map showing the location of the City of Ormond Beach (gray shading)



Table 5-1 - List of parameters analyzed for WBIDs within the City of Ormond Beach for status, trends and evaluation of impairment relative to Florida standards (62-302 F.A.C.)

IWR Mastercode	Parameter (units)	Status	Trends	Impairments
CHLAC	Corrected Chlorophyll *a* (µg/L)	X	X	X
TN	Total Nitrogen (mg/L)	X	X	X
TP	Total Phosphorus (mg/L)	X	X	X
COND	Specific Conductivity (µmhos/cm)	X	X	X
SALIN	Salinity (psu)	X	X	
SD	Secchi Depth (m)	X	X	
DO	Dissolved Oxygen (mg/L)	X	X	
DOSAT	Dissolved Oxygen Saturation (%)	X	X	X
AL	Aluminum (µg/L)	X		X
AG	Silver (µg/L)	X		X
CD	Cadmium (µg/L)	X		X
CU	Copper (µg/L)	X		X
FE	Iron (µg/L)	X		X
PB	Lead (µg/L)	X		X
MN	Manganese (µg/L)	X		X
NI	Nickel (µg/L)	X		X
ZN	Zinc (µg/L)	X		X
ECOLI	*Escherichia coli* (/100ml)			X
ENCOC	*Enterococci* (#/100 ml)			X

Figure 5-2 - Sampling stations within the City of Ormond Beach boundary with long-term water quality data in the IWR dataset (Run 58)



5.3.1.3 Biological

The Florida Fish and Wildlife Conservation Commission Fisheries Independent Monitoring (FIM) Program sampled fish at fixed stations in Volusia County between 1993 and 1997. The data were requested from FIM, but they were not readily accessible in a digital format. A report of this sampling was provided (FWC 1999) and is summarized in this technical memorandum. In addition, a study completed by the United States Geological Survey (USGS; Turtora and Schotman 2010) was obtained and is also briefly summarized here.

No seagrass or oyster data were available for the study area.

5.3.2 Initial Water Quality Data Review

The compiled water quality dataset was first purged of potentially unreliable data points as indicated by value qualifiers (e.g. samples analyzed out of hold time, values considered to be estimates only, etc.). Time-series plots were created for each parameter and sampling station to ascertain the frequency of sampling and period of records for each. Additional potentially unreliable data points were identified by out of range outliers (for example, a salinity greater than 100 psu) and these points were removed from the data set. Finally, all negative values, many of which were not flagged by a data qualifier, were removed from the data prior to further analyses. The list of data records removed from the analyzed dataset is provided in **Appendix B**. A brief summary was completed to identify the period of record for each parameter of interest for each WBID within the City's boundaries.

The majority of stations in the IWR dataset had relatively little data or had more recently intensive data that did not provide a long-term data record. For this reason, several stations in the Tomoka and Halifax rivers waterbodies (WBIDs 2634, 2634A, 2363B, and 2363C) with a greater level of data availability were chosen for more detailed evaluations of water quality and long-term trends. These stations are indicated by the yellow dots in Figure 2 and have 20 years or more of available water quality data, including within the most recent five years. Data analyses for status and trends focused largely on these long-term stations. Analyses of regulatory compliance, using the same methodology as FDEP, were conducted on a WBID basis.

5.3.3 Analysis of Surface Water Quality Status

Analyses of water quality status were largely focused on station-specific data. However, a summary of data on a WBID basis was conducted. For each WBID, the summary includes the start and end years of the period of record, the number of samples for each parameter collected in the WBID over the period of record, and the median value for each analyte over the period of record for the WBID. In addition, since the majority of data were collected subsequent to 1990, the number of samples and median value for the period 1990-2019 was also summarized.

Time-series plots were created for data collected 1990 and later (relatively little, if any, data collected prior to 1990) for the key parameters of interest at each of the long-term stations. These plots provide a qualitative view of recent data collection relative to prior data collected at each station.

To visualize spatial patterns that may occur, bar plots were generated for each parameter over a designated period of record across the collection of long-term stations.

5.3.4 Analysis of Surface Water Quality Trends

Temporal trends in water quality were assessed using time-series analyses to examine long-term (period of record) trends in water quality conditions at the station level. The surface water quality parameters (TN, TP, salinity/conductivity, DO, chlorophyll and Secchi depth, as well as metals data where sufficiently available) were assessed to determine their suitability for trend analysis. Trend testing was performed for a station-parameter combination for the available continuous period of record provided at least 60 samples and 5 years of monthly data were available for analysis.

The trend analyses were completed by applying a seasonal Kendall Tau approach. This approach removes seasonal trends that are common in water quality data as a result of seasonal fluctuations in temperature and rainfall and allows better resolution of increasing or decreasing trends in the data, independent of seasonal trends. The core statistical testing procedures were provided by the Environmental Protection Agency's (EPA's) seasonal Kendall Tau Fortran programs available from the EPA Laboratory in Corvallis, Oregon. The authors developed statistical software to drive these core programs and produce the automated outputs.

Trend tests were conducted on water quality samples collected at each of the long-term stations. Monthly average values were used for each parameter derived from daily medians to account for multiple samples taken on the same day, either as replicates or from more than one depth. The procedure applied to the trend testing produces a series of graphical outputs in the detailed statistical appendices for each step in the analysis. Appendix B provides a description of the trend analysis procedures and output.

5.3.5 Evaluation of Water Quality Impairments and TMDLs

As part of the Clean Water Act (CWA), the State of Florida must determine if waters of the state meet their respective designated uses. The Florida Department of Environmental Protection (FDEP) is tasked with enforcing this provision of the CWA and does so through Chapter 62-303 of the Florida Administrative Code (F.A.C) also known as the "Impaired Water Rule". The FDEP uses a process called the Watershed Management Approach to implement the Impaired Water Rule, and the implementation of the Total Maximum Daily Load (TMDL) program. The approach includes assessment, TMDL development, BMAP implementation, and watershed restoration, and utilizes a five-phase cycle rotating through all basins in the state over a 5-year period.

The Watershed Management Cycle consists of the following:

- Phase 1 - Preliminary Basin Assessment: Produce strategic monitoring plans
- Phase 2 - Targeted Monitoring and Listing: Monitor, verify impairment, and adopt Verified List by Secretarial Order
- Phase 3 - Develop and Adopt TMDLs
- Phase 4 - Implement TMDL (Develop BMAP or other implementation option)
- Phase 5 - TMDL Implementation

As part of Phase 2, waterbodies are assessed and categorized into one of the following categories:

- Category 1 - Not impaired (attains all uses)

- Category 2 - Meets standards, not impaired
- Category 3 - Insufficient data
- Category 4 - Does not meet standards, but a TMDL is not needed or is complete
    - 4a - TMDL complete
    - 4b - Waters with Reasonable Assurance
    - 4c - Waters impaired, but not due to a pollutant (natural conditions or hydrologic modifications)
    - 4d - Waters are impaired but pollutant not identified, adverse trend for nutrient or response variable
    - 4e - Waters identified as impaired where there is documentation of ongoing restoration initiative that is not yet complete
- Category 5 - Does not meet standards, is on Verified List.

Waterbodies in Category 5 are impaired if they fail one or more water quality criteria and will remain on the verified list until they meet one of the following criteria:

- It meets the criteria for all parameters it was listed for. (Delisted, moved to Category 2).
- A TMDL is developed determining the required load reductions to meet the criteria (Delisted and moved to Category 4A).
- A restoration plan is put in place to bring the waterbody into compliance. (Delisted and moved to Category 4B or 4E).

The City of Ormond Beach contains multiple FDEP Waterbody Identifiers (WBIDs; **Table 5-2** and **Figure 5-3**). WBIDs 2634 and 2363B have TMDLs issued by the FDEP and are summarized in this technical memorandum. All available data in the Run 58 dataset for WBIDs within the City and more recent SJRWMD data were qualitatively assessed for comparison against current water quality criteria (**Tables 5-3 and 5-4**). Where TMDLs have been adopted, the annual loads specified in the TMDLs were used as the criteria for TN and TP.

Table 5-2 - List of WBIDs associated with the City of Ormond Beach and surrounding area

WBID	Waterbody	Type	Class
2645	Mizners Branch	Stream	3F
2646	Little Tomoka River	Stream	3F
2643	Unnamed Ditches	Stream	3F
2634	Tomoka River	Stream	3F
2634A	Tomoka River	Estuary	3M
2642	Unnamed Branch	Estuary	3M
2640	Unnamed Branch	Estuary	3M
2641	Unnamed Branch	Stream	3F
2647	Holly Hill Ditch	Estuary	3M
2631	Unnamed Ditch	Stream	3F
2635	Groover Branch	Stream	3F
2363B	Halifax River	Estuary	3M
2363C	Tomoka Basin	Estuary	3M
2363J	Palm Coast	Estuary	3M
8118A	Granada Boulevard	Beach	3M
8118	Atlantic Ocean	Coastal	3M

Figure 5-3 - Map showing the location of the City of Ormond Beach (gray shading) and its associated WBIDs. Dots indicate stations with available water quality data

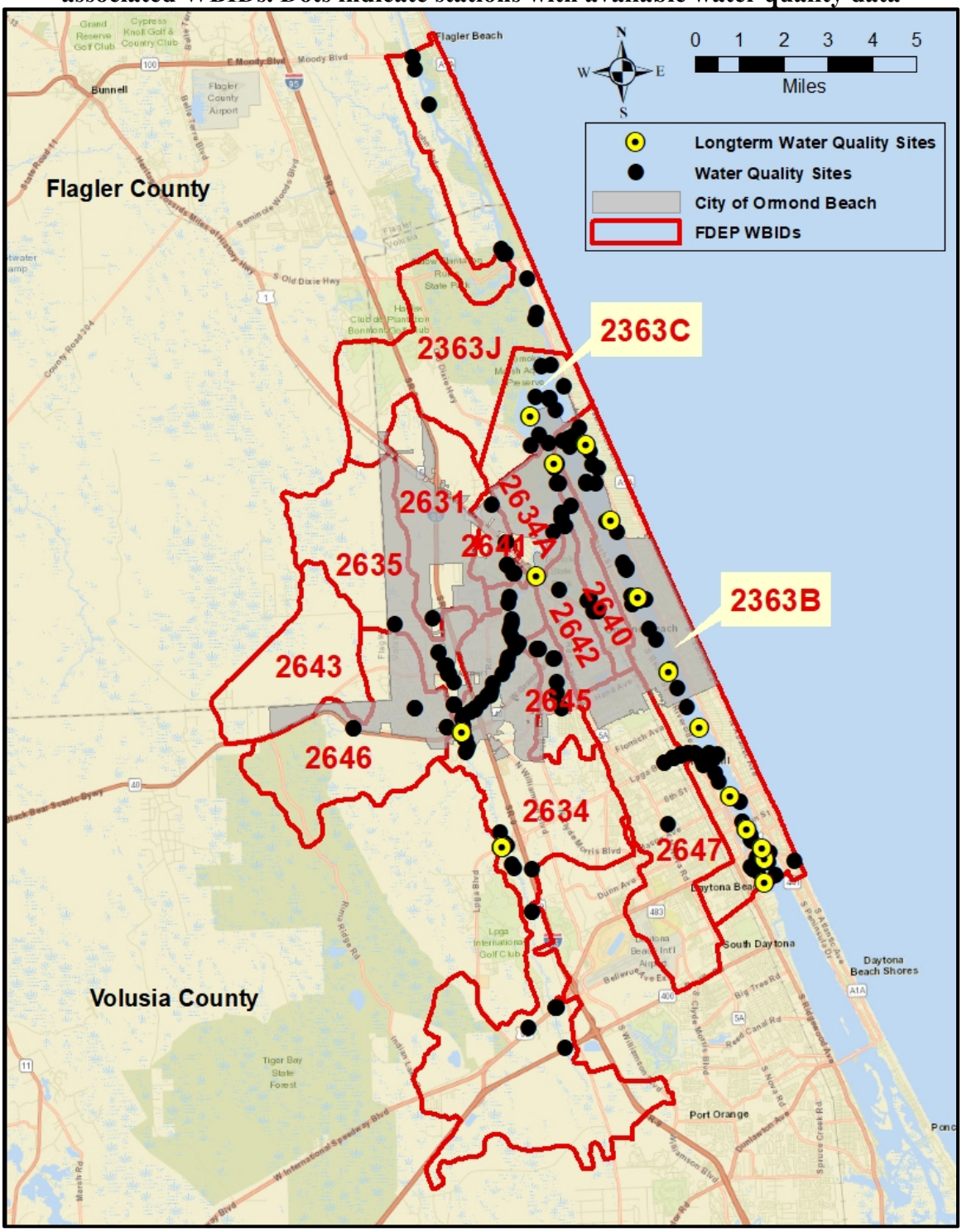


Table 5-3- Florida water quality criteria (F.A.C. 62-302) for nutrients, chlorophyll, specific conductivity, dissolved oxygen saturation and bacteria, as applied to each of the WBIDs in the City of Ormond Beach

WBID	Waterbody	TN (mg/L)	TP (mg/L)	CHLAC (µg/L)	DOSAT (%)	COND (Micromhos/cm)	ECOLI (MPN or MF)	ENCOC (MPN or MF)
2631	Unnamed Ditch – 3F	AGM 1.54	AGM 0.12	AGM 20	No more than 10% daily average values below 38%	Shall not be increased more than 50% above background or to 1275, whichever is greater.	Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 410 in 10% or more of the samples during any 30-day period.	
2634	Tomoka River – 3F	AGM 0.78	AGM 0.065	AGM 20	No more than 10% daily average values below 38%	Shall not be increased more than 50% above background or to 1275, whichever is greater.	Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 410 in 10% or more of the samples during any 30-day period.	
2635	Groover Branch – 3F	AGM 1.54	AGM 0.12	AGM 20	No more than 10% daily average values below 38%	Shall not be increased more than 50% above background or to 1275, whichever is greater.	Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 410 in 10% or more of the samples during any 30-day period.	
2640	Unnamed Branch – 3M			AGM 11	No more than 10% daily average values below 38%			Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 130 in 10% or more of the samples during any 30-day period.
2641	Unnamed Branch – 3F	AGM 1.54	AGM 0.12	AGM 20	No more than 10% daily average values below 38%	Shall not be increased more than 50% above background or to 1275, whichever is greater.	Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 410 in 10% or more of the samples during any 30-day period.	
2642	Unnamed Branch – 3M			AGM 11	No more than 10% daily average values below 42%			Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 130 in 10% or more of the samples during any 30-day period.
2645	Mizners Branch – 3F	AGM 1.54	AGM 0.12	AGM 20	No more than 10% daily average values below 38%	Shall not be increased more than 50% above background or to 1275, whichever is greater.	Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 410 in 10% or more of the samples during any 30-day period.	
2646	Little Tomoka River – 3F	AGM 1.54	AGM 0.12	AGM 20	No more than 10% daily average values below 38%	Shall not be increased more than 50% above background or to 1275, whichever is greater.	Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 410 in 10% or more of the samples during any 30-day period.	
2647	Holy Hill Ditch – 3M			AGM 11	No more than 10% daily average values below 42%			Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 130 in 10% or more of the samples during any 30-day period.
2363B	Halifax River – 3M	AGM 1.13	AGM 0.185	AM 9.0 never to be exceeded	No more than 10% daily average values below 42%			Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 130 in 10% or more of the samples during any 30-day period.
2363C	Tomoka Basin – 3M	AGM 1.20	AGM 0.105	AGM 7.1	No more than 10% daily average values below 42%			Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 130 in 10% or more of the samples during any 30-day period.

WBID	Waterbody	TN (mg/L)	TP (mg/L)	CHLAC (µg/L)	DOSAT (%)	COND (Micromhos/cm)	ECOLI (MPN or MF)	ENCOC (MPN or MF)
2363J	Palm Coast – 3M			AGM 11	No more than 10% daily average values below 42%			Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 130 in 10% or more of the samples during any 30-day period.
2634A	Tomoka River – 3M	AGM 1.24	AGM 0.132	AGM 7.2	No more than 10% daily average values below 42%			Counts shall not exceed the Ten Percent Threshold Value (TPTV) of 130 in 10% or more of the samples during any 30-day period.

Table 5-4 - Florida water quality criteria (F.A.C. 62-302) for metals, as applied to each of the WBIDs in the City of Ormond Beach. Note "H" = Hardness; Manganese has no applicable standard for class 3F/3M

Waterbody Class	Al (mg/L)	Ag (µg/L)	Cd (µg/L)	Cu (µg/L)	Fe (mg/L)	Pb (µg/L)	Ni (µg/L)	Zn (µg/L)
3F		≤ 0.07	$\leq e^{(0.7409[\ln H] - 4.719)}$	$\leq e^{(0.8545[\ln H] - 1.702)}$	≤ 1.0	$\leq e^{(1.273[\ln H] - 4.705)}$	$\leq e^{(0.846[\ln H] + 0.0584)}$	$\leq e^{(0.8473[\ln H] + 0.884)}$
3M	≤1.5	≤2.3	≤8.8	≤ 3.7	≤0.3	≤ 8.5	≤ 8.3	≤ 8.6

5.4 Ecological and Water Quality Review Results

5.4.1 Review of Ecological Reports

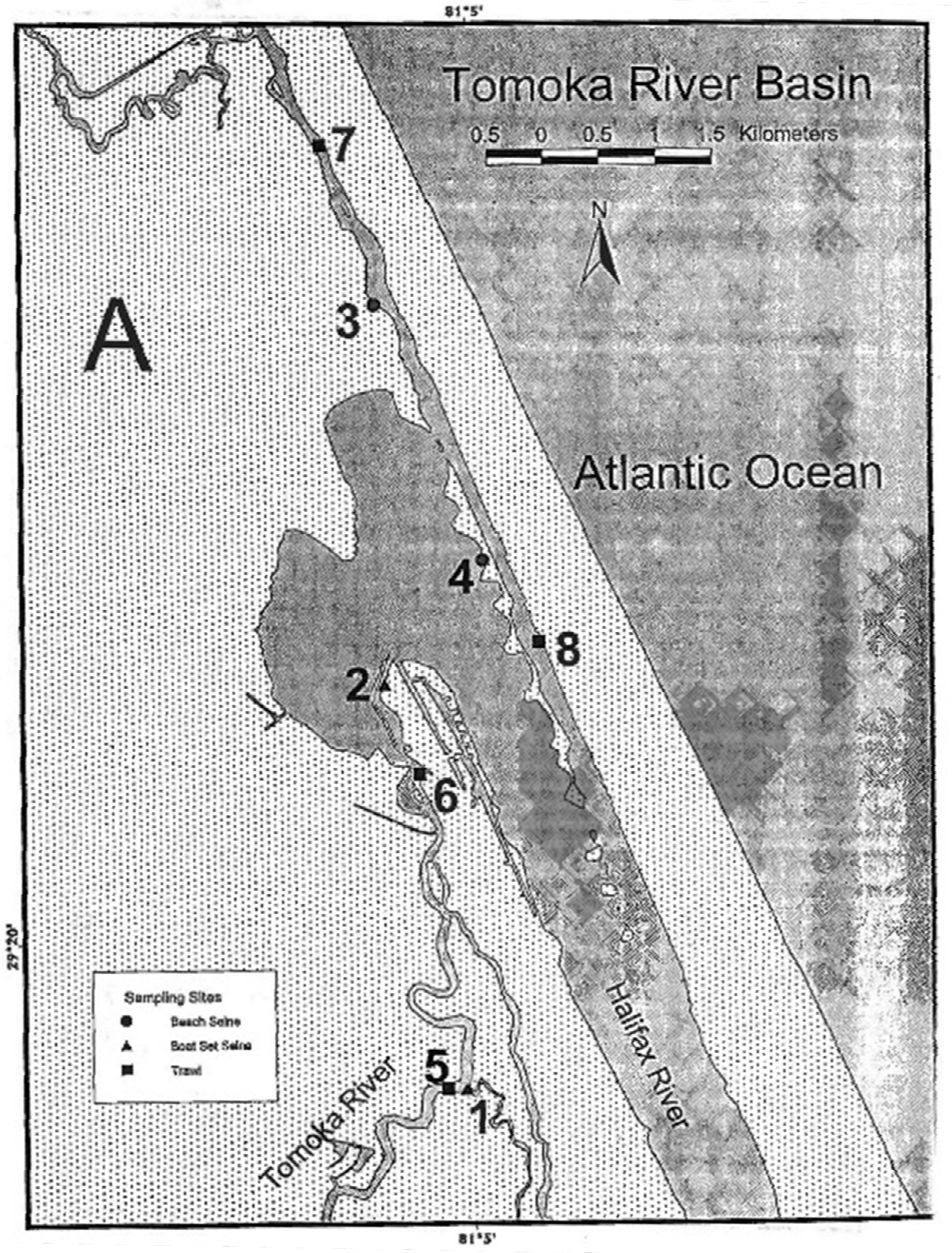
Florida's Fisheries-Independent Monitoring Program (FIM) is a long-term program designed to monitor the relative abundance of fishery resources in major estuarine systems throughout Florida. The FIM program conducted a study of fish in the Tomoka River/Basin, Ponce de Leon Inlet, and Mosquito Lagoon from 1993 to 1997 at a series of 27 fixed stations with monthly trawl and seine sampling from January 1993 through September 1997 (FWC 1999). Fixed-station monitoring was initiated to provide baseline information on ichthyofaunal communities within this estuarine system. Eight of the 27 stations occurred in the Tomoka River/Basin (**Figure 5-4**). In addition to seine and trawl fish collection, environmental and physical data, including salinity, conductivity, and dissolved oxygen (DO) measurements and information on vegetation, were recorded at each station. All fish and selected invertebrates were identified to the lowest possible taxa, counted and measured (up to 20 measurements on most taxa and up to 100 for economically important species). Abundance estimates were calculated as the number of fish per 100 m^2 of area sampled (CPUE). The report provides summary information from the sampling including tabular displays of the five most abundant species collected for each month at each station, numerically dominant selected species (economically important), as well as the physical data ranges and means for the 1993-1997 sampling period overall.

A wide range of salinity/conductivity values were encountered over the sampling period. Mean DO concentrations were similar across the Tomoka stations, occurring roughly around 6 mg/L. Numerically, dominant species encountered in the region varied by sampling site and gear used but included *Anchoa* spp. (anchovies), *Micropogonia undulates* (Atlantic croaker), *Penaeus* spp. (shrimp), *Arius felis* (hardhead catfish), *Leiostromus xanthurus* (spot), and *Menidia* spp. (silverside) (**Table 5-5**). Dominant economically important species (referred to as selected species) included *Penaeus* spp., *Leiostromus xanthurus*, *Callinectes sapidus* (blue crab), *Mugil* spp. (mullet), and *Sciaenops ocellatus* (red drum) (**Table 5-5**).

Table 5-5 - List of the overall dominant taxa, and the most dominant of the selected species encountered at each station in the Tomoka River/Basin (FWC 1999)

Station	Gear Type	Overall Dominant	Selected Dominant
1	Boat Set Seine	*Anchoa* spp.	*Penaeus* spp.
2	Boat Set Seine	*Anchoa* spp.	*Leiostromus xanthurus*
3	Beach Seine	*Anchoa* spp.	*Leiostromus xanthurus*
4	Beach Seine	*Anchoa* spp.	*Leiostromus xanthurus*
5	Trawl	*Micropogonias undulates*	*Penaeus* spp.
6	Trawl	*Micropogonias undulates*	*Penaeus* spp.
7	Beach Seine	*Micropogonias undulates*	*Penaeus* spp.
8	Trawl	*Micropogonias undulates*	*Penaeus* spp.

Figure 5-4 - FIM sampling locations in the Tomoka River/Basin (from FWC 1999)



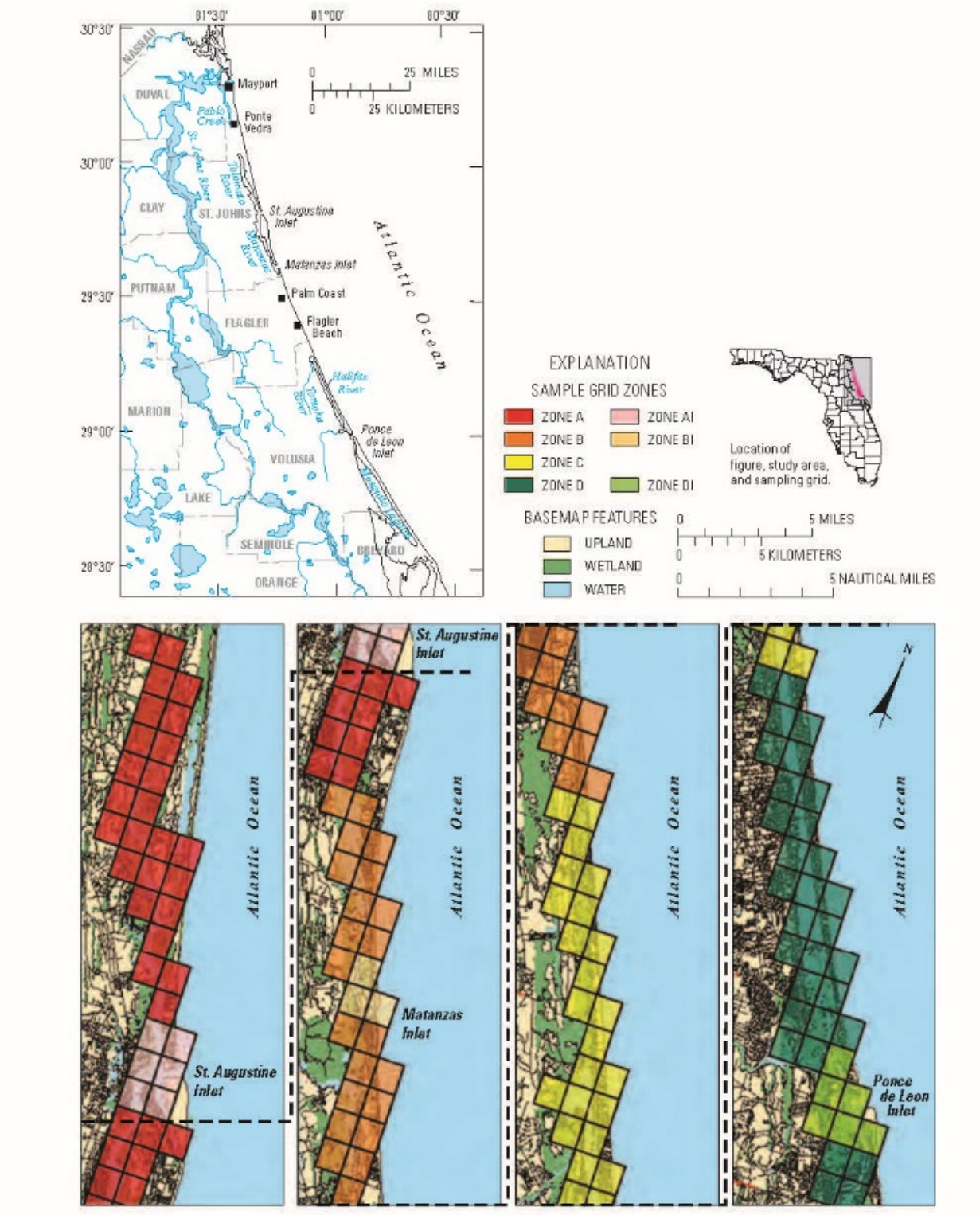
The USGS conducted a survey of juvenile fishes (Turtora and Schotman 2010), in cooperation with the SJRWMD and Volusia County, in the Northern Coastal Basins (NCB) including parts of St Johns, Flagler and Volusia Counties (**Figure 5-5**; Zone C includes the Tomoka River and Basin and portion of the Halifax River; Zone D includes a portion of the Halifax River). Monthly seine and trawl sampling were conducted from a fixed number of grid cells randomly selected from each zone. Methodologies are stated to have followed FWC FIM guidelines. Environmental data collection included water column profiles, shoreline characteristics, and surface water samples for analysis of total nitrogen, total phosphorus and chlorophyll *a*. Data are reported for the period 2002-2004. Dominant and selected species were identified, as well as species abundance by month and sampling zone. Correspondence analyses were used to examine data for seasonal and spatial patterns of species abundance and distribution. Overall, the most abundant taxon collected was *A. mitchilli* (bay anchovy). Other dominant taxa included *L. xanthurus* (spot), *M. undulates* (Atlantic croaker), *Eucinostomus spp*. (mojarras), and *A. hepsetus* (striped anchovy). The 4 most abundant Selected Species were among the 10 most abundant taxa overall, accounting for 28 percent of the total catch: *L. xanthurus*, *M. undulatus*, *Litopenaeus setiferous* (white shrimp), and *Mugil cephalus* (striped mullet). The report states that the Tomoka River and Basin was one of two sampled areas farthest from inlets and appears to function as an oligohaline nursery area. These two areas (including the northern Tolomato River) had the greatest estimated densities of shellfish and juvenile sciaenid (drum) species associated with oligohaline waters (for example, *Micropogonias undulatus*, *Sciaenops ocellatus*, and *Cynoscion nebulosus*). In addition, the absence of seagrass habitat in the NCB was reflected by the absence of a seagrass-fish assemblage.

5.4.2 Water Quality Status

A summary of the primary parameters of interest analyzed for status (Table 1) on a WBID basis is provided in Appendix B. For each WBID, the summary includes the start and end years of the period of record, the number of samples for each parameter collected in the WBID over the period of record, and the median value for each analyte over the period of record for the WBID. In addition, since the majority of data were collected subsequent to 1990, the number of samples and median value for the period 1990-2019 was also summarized. This summary highlights that several of the WBIDs (primarily the ditches and branches) have relatively little data, particularly in more recent (1990-2019) history. Additionally, the summary illustrates that metals have been sampled in these WBIDs at a much-reduced frequency relative to nutrients, chlorophyll and *in situ* parameters such as specific conductivity and DO.

Time-series plots for data collected 1990 and later (relatively little, if any, data collected prior to 1990) for the key parameters of interest at the long-term stations are provide in Appendix B. Note, plots for metals are included for only two stations (WBID 2363B Station 21FLSJWM27010037 and WBID 2634A Station 21FLSJWM27010024) given the paucity of data (or complete lack thereof) for metals at the remaining stations. Several of the metal plots (i.e., cadmium, copper and nickel) suggest elevated levels earlier in the data record, with values lower and leveled off more recently.

Figure 5-5. USGS study area location and sampling grid zones used in the study (from Turtora and Schotman 2010)



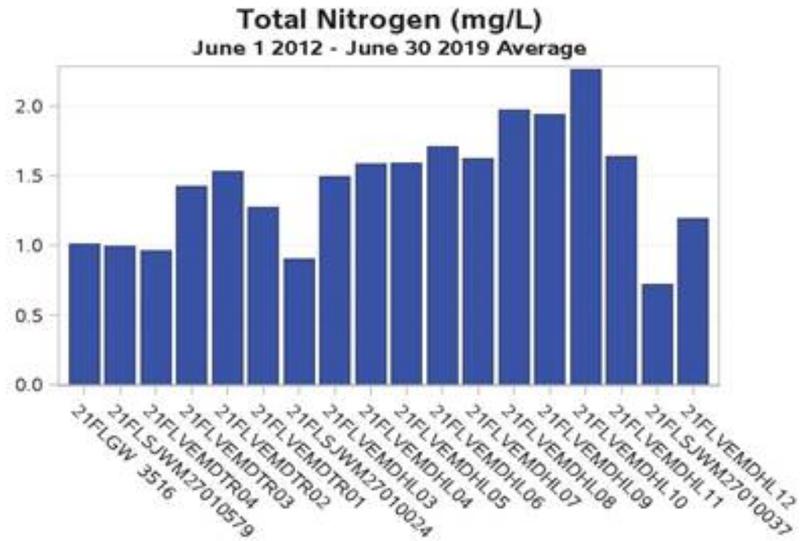
Also, of note, the specific conductivity data at Station 21FLVEMDTR03, which occurs in a WBID classified as predominantly freshwater (WBID 2634), indicates regular intervals of increased conductivity over 10,000 µmhos/cm). Station 21FLVEMDTR04, in the same predominantly freshwater classified WBID, also indicates occurrences of elevated conductivity, but at a reduced frequency. However, such occurrences are not indicated beyond 2010 at the latter station and the majority of records at this station indicate freshwater conditions. Station 21FLVEMDTR04 is more upstream than 21FLVEMDTR03. Two additional stations in this WBID (21FLGW 3516 and 21FLSJWM27010579) did not have any indication of elevated conductivity values post-1990.

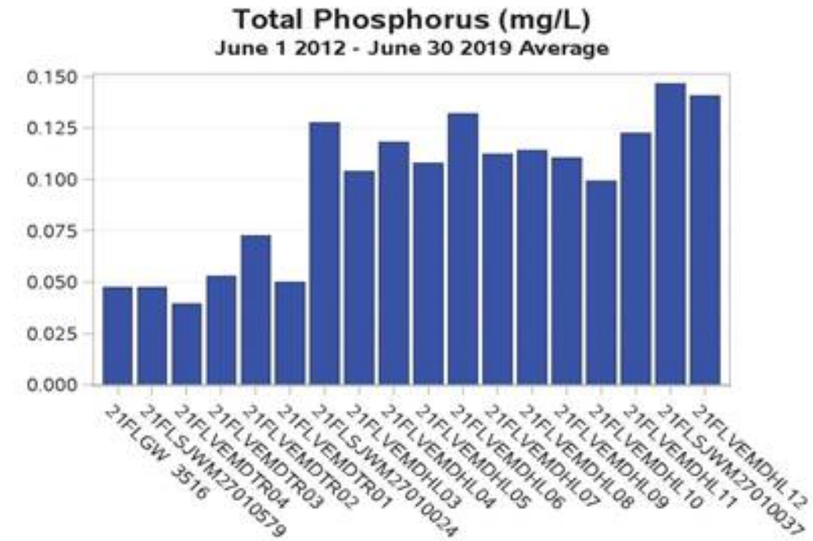
Time-series plots for TN indicate a possible increase in values in the more recent data record (post-2010) at several stations spanning multiple WBIDs. These include all nine long-term stations in WBID 2363B (Halifax River), the one long-term station in WBID 2363C (Tomoka Basin), one of the four long-term stations (21VLVEMDTR03) in WBID 2634 (Tomoka River – 3F), and two of the three long-term stations in WBID 2634A (Tomoka River – 3M). Time-series plots for total phosphorus at these stations do not indicate such a pattern.

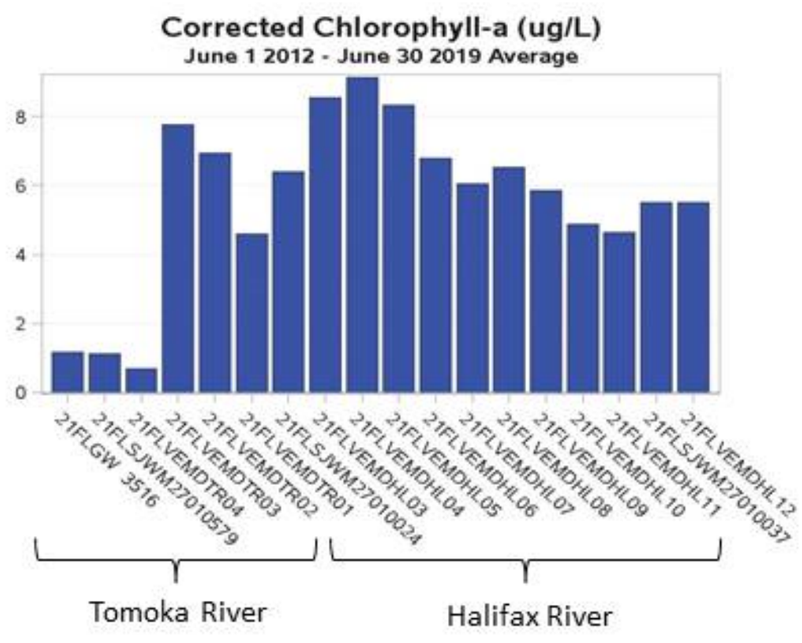
To visualize spatial patterns that may occur, bar plots were generated for average DO saturation, chlorophyll *a*, TN and TP over a 7.5 year period of record for each of the long-term stations. This timeframe of 7.5 years corresponds to the period utilized for impairment assessment by the State of Florida. For reference, the stations occurring in the Tomoka River (3F and 3M) and the Halifax River have been grouped and labeled in Figure 6. The station in-between occurs in the Tomoka Basin.

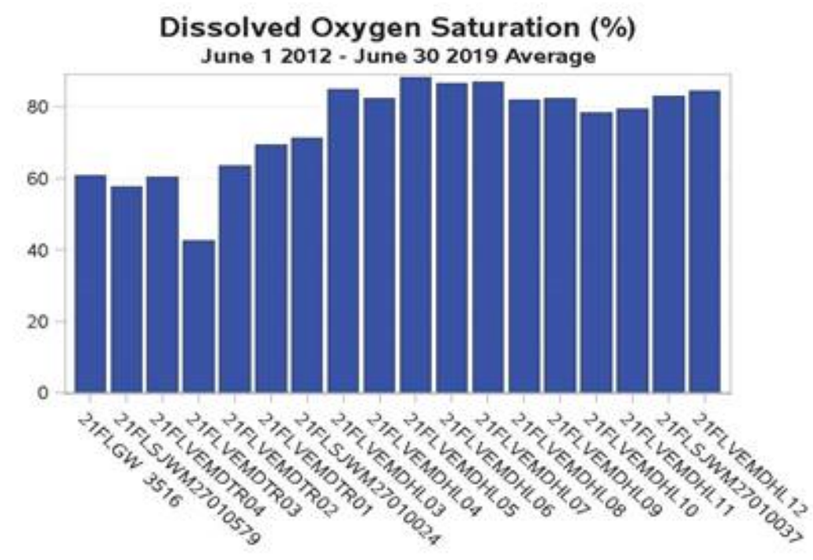
There are several noticeable patterns in the spatial plots in **Figure 5-6**. Dissolved oxygen saturation average values are somewhat lower in the Tomoka River stations than the Halifax River and Tomoka Basin. Average concentrations of TP are lower in the freshwater stretch of the Tomoka River and the upper regions of the marine portion. Chlorophyll averages are markedly lower only in the most upstream freshwater station. However, all chlorophyll averages are below 10 µg/L. There was no evident pattern in averages for total nitrogen; however, many of the averages were greater than the respective standard (which is expressed as an AGM, not the arithmetic mean presented in **Figure 5-6**).

Figure 5-6. Average value at each long-term station for indicated parameters over the recent 7.5 year period









5.4.3 Trends at the Long-term Stations

Detailed results of the trend test procedures for those station/parameter combinations with sufficient data for testing are provided in **Appendix B**. This includes a summary table of calculated statistics and trend patterns, as well as all output produced in the process. Maps displaying the trend test results for each parameter with sufficient data are provided in **Figures 5-7 through 5-14**.

For the purposes of this report, "shallow trends" are defined as statistically significant trends with a rate of change less than 5% of the median value per year, and "steep trends" are defined as statistically significant trends with a rate of change greater than or equal to 5% of the median value per year. Thus, "shallow trends" represent water quality conditions that are changing (either increasing or decreasing) at a lesser rate of change than the rate of change for "steep trends." These are relative terms, and the precise rates of change are presented for each station in the statistical detail **Appendix B**. The terms "steep" and "shallow" do not imply either ecological significance or the lack of ecological significance. Further, we differentiate trends based on the trend direction. The term "degrading trend" is meant to signify declining water quality condition rather than decreasing in magnitude whereas "improving trend" is meant to denote improving water quality rather than increasing in magnitude. It is important to note that an improving trend does not necessarily signify that the water quality parameter is within acceptable levels based on State Standards or the Impaired Waters Rule. Similarly, a degrading trend does not necessarily indicate that water quality conditions are degraded or in exceedance of the threshold. For most parameters, increases in concentration mean degrading water quality, but for some parameters (e.g., DO) increases are related to improving water-quality conditions.

As illustrated in **Appendix B**, and in **Figures 5-6 through 5-13**, there were multiple parameters at each of the long-term stations with sufficient data for trend analyses. Each station had more than 20 years of data available for trend testing. All significant trends were indicated to be "shallow" trends, meaning a rate of change less than 5% of the median value per year.

In terms of nutrients, the majority of the long-term stations had no indication of a statistically significant trend in TN (**Figure 5-7**); one station in the freshwater (2634) portion and two stations in the estuarine (2634A) portion of the Tomoka River had shallow decreasing (improving) levels of TN over the period of record. The two stations in the estuarine portion are very near one another and appear as one arrow in **Figure 5-6**. Similarly, the majority of stations had no trend or decreasing trends in TP (**Figure 5-8**); all stations with a significant trend (decreasing) occurred in the Halifax River (WBID 2363B).

Chlorophyll *a* (corrected for pheophytin) at the majority of the long-term stations had not statistically significant trend (**Figure 5-9**). At two stations in the Halifax River (WBID 2363B), a statistically significant decreasing shallow (improving) trend occurred. However, for two stations in the Tomoka River (one in each of the freshwater and estuarine segments) and one station in the Tomoka Basin, statistically significant, but shallow, increases in chlorophyll *a* were detected.

Figure 5-7 - Results of trend tests for total nitrogen at the long-term stations

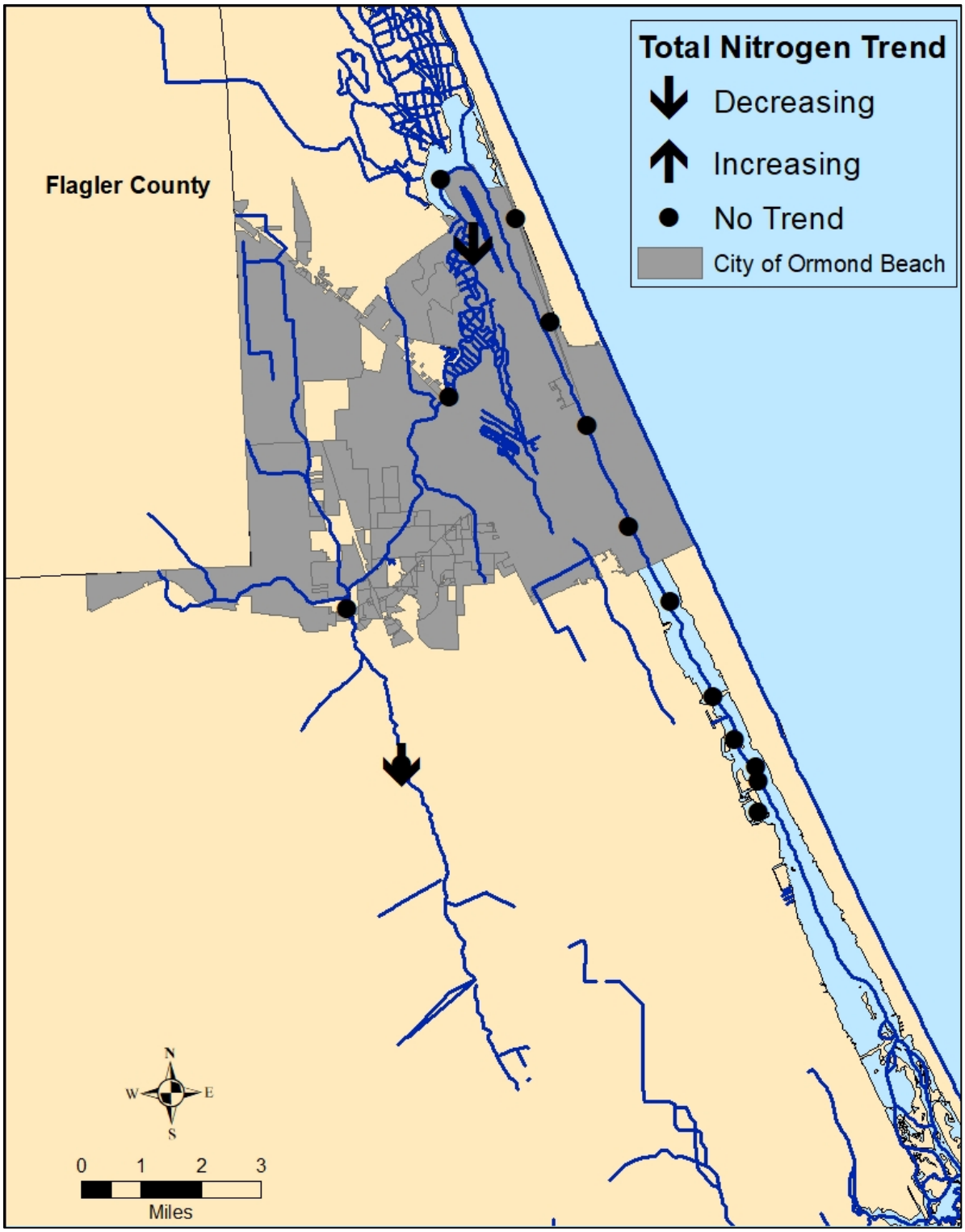


Figure 5-8 - Results of trend tests for total phosphorus at the long-term stations

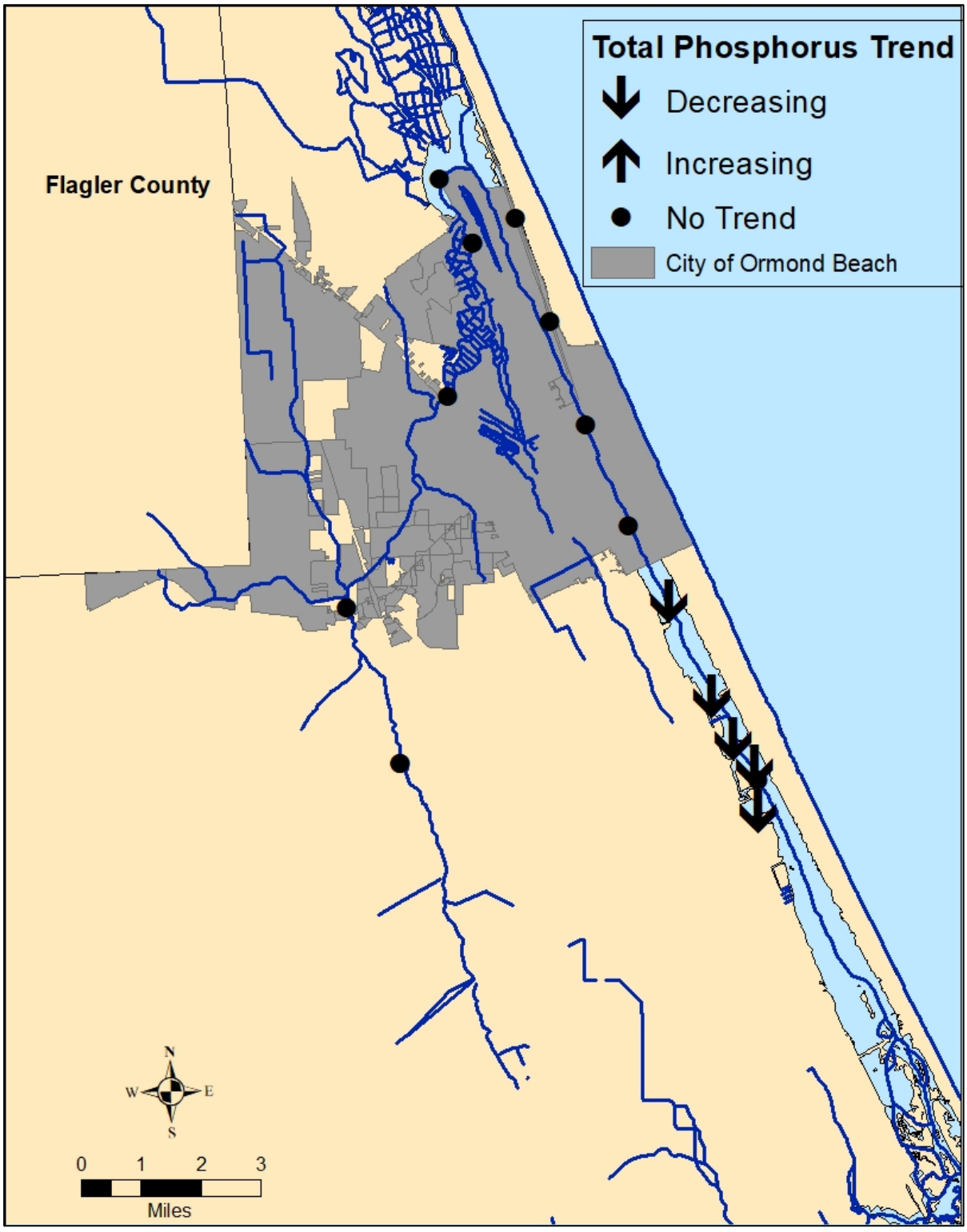
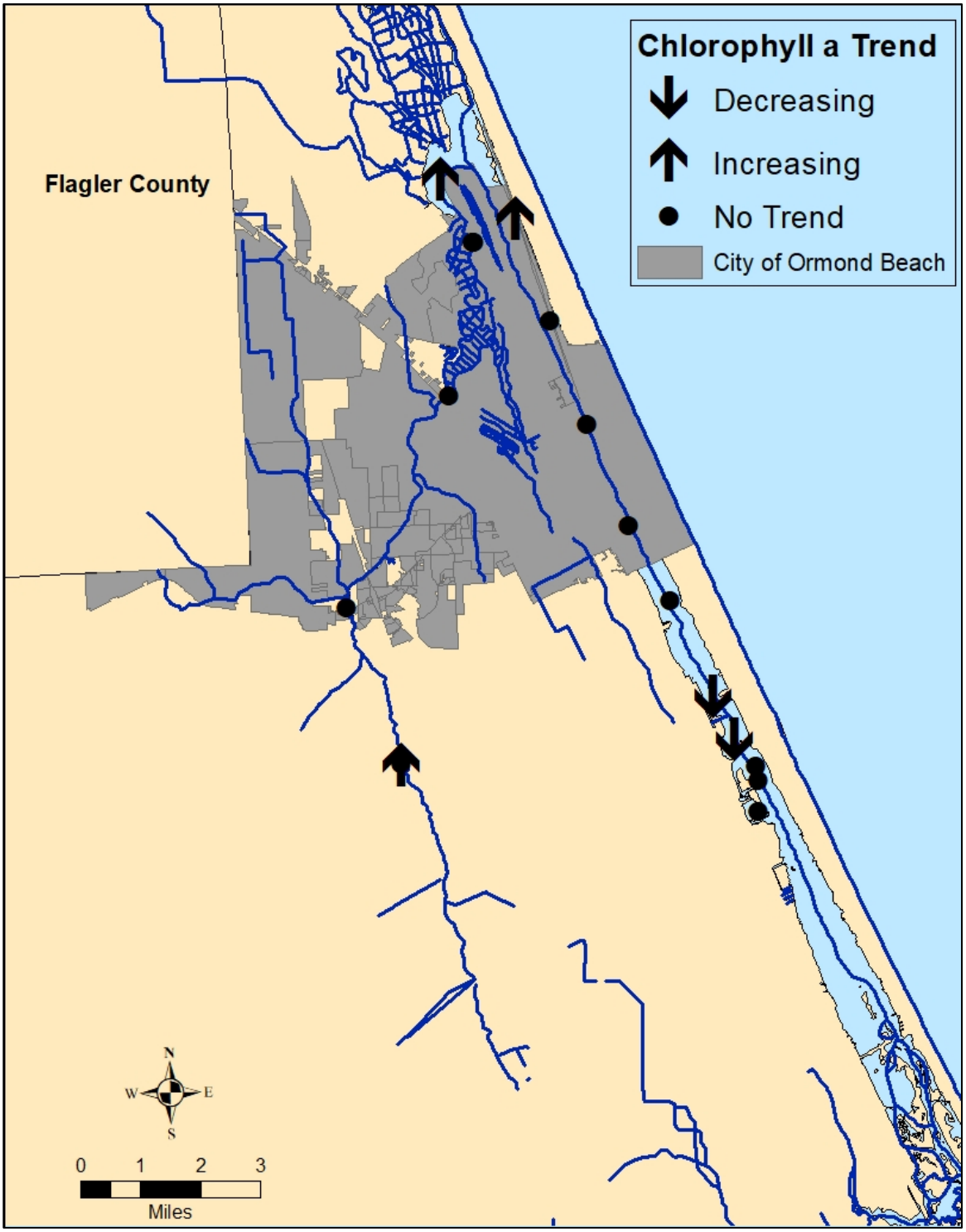


Figure 5-9 - Results of trend tests for chlorophyll *a* (corrected for pheophytin) at the long-term stations



The trend test results indicated no statistically significant trends for specific conductivity (**Figure 5-10**) at all stations except for Station 21FLSJWM27010037 in the Halifax River (WBID 2363B) which had a shallow increasing trend. This same station had a significant increasing trend for salinity (**Figure 5-11**). Another station in the estuarine portion of the Halifax River (2363B) as well as one station in the freshwater portion of the Tomoka River (2634) also had an increasing shallow trend for salinity.

Trend tests were also conducted at each of the long-term stations for DO concentration and saturation (**Figures 5-12 and 5-13**). Note: current state standards base impairment for dissolved oxygen on saturation values, not concentration. While seven of the long-term stations exhibited decreasing trends in DO concentration (and one station an increasing trend), three stations exhibited a declining trend in dissolved oxygen saturation. Two of these declining trends in saturation occur in the Halifax River and one in the freshwater portion of the Tomoka River. An additional two stations in the Halifax River were characterized by increasing trends in dissolved oxygen saturation. These stations occur just to the south of the stations with decreasing trends.

The majority of the long-term stations were characterized by a lack of statistically significant trends in Secchi depth (**Figure 5-14**). For those with statistically significant trends, the slope was positive, indicating an increase in Secchi depth (i.e. clearer water). These improvements were indicated in the Halifax River at two stations, and in both the freshwater and estuarine portions of the Tomoka River.

Figure 5-10 - Results of trend tests for specific conductivity at the long-term stations

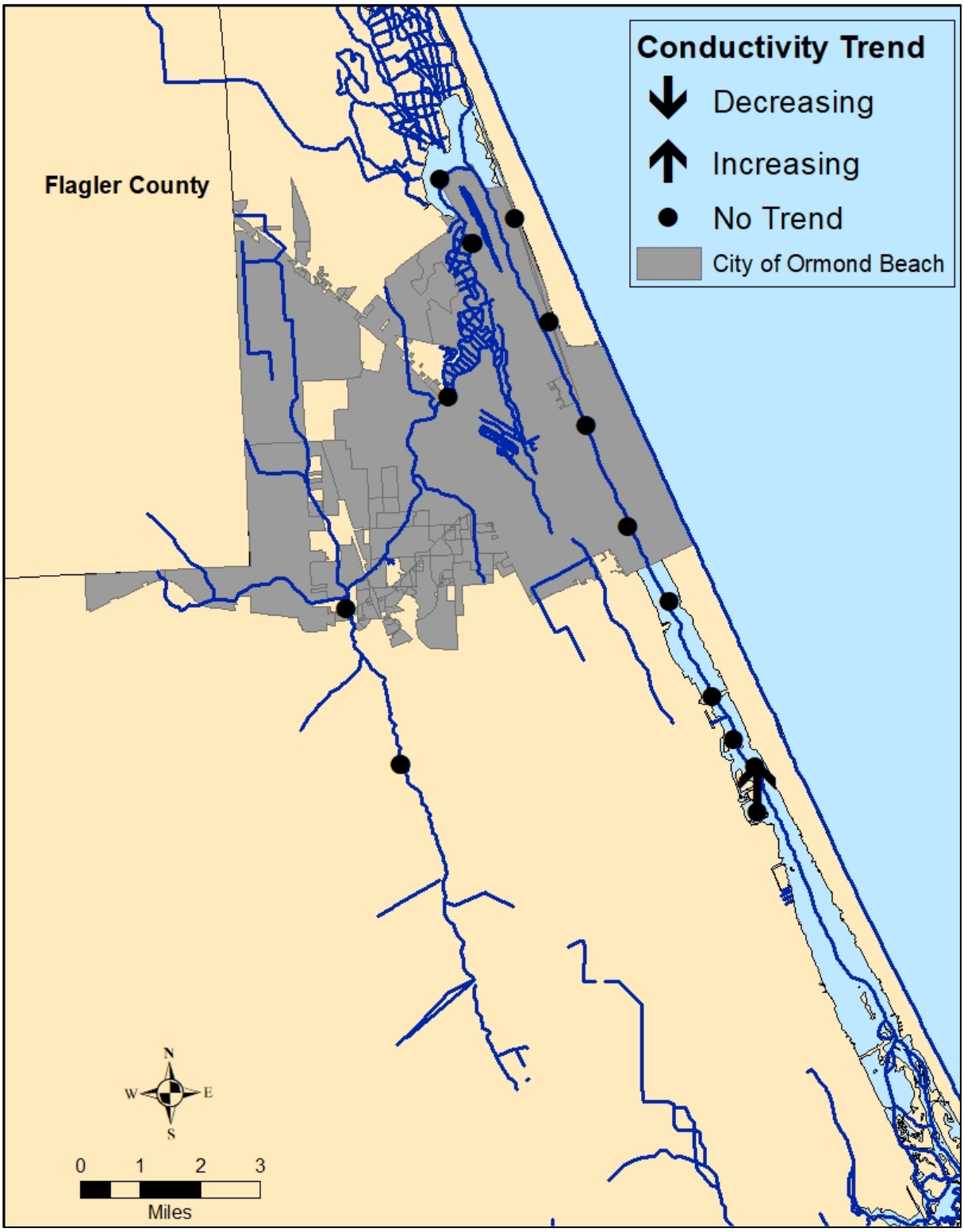


Figure 5-11 - Results of trend tests for salinity at the long-term stations

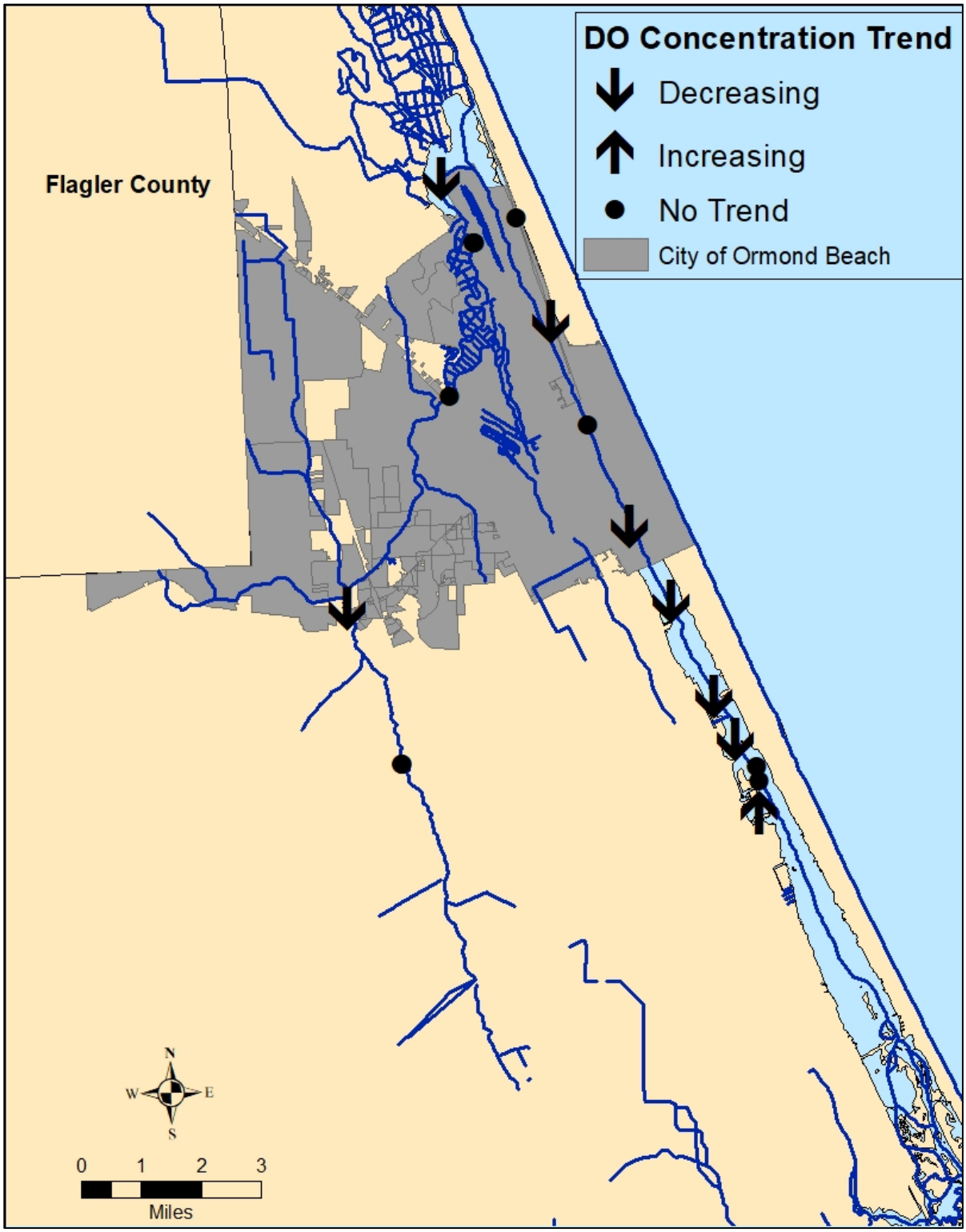


Figure 5-12 - Results of trend tests for DO concentration at the long-term stations

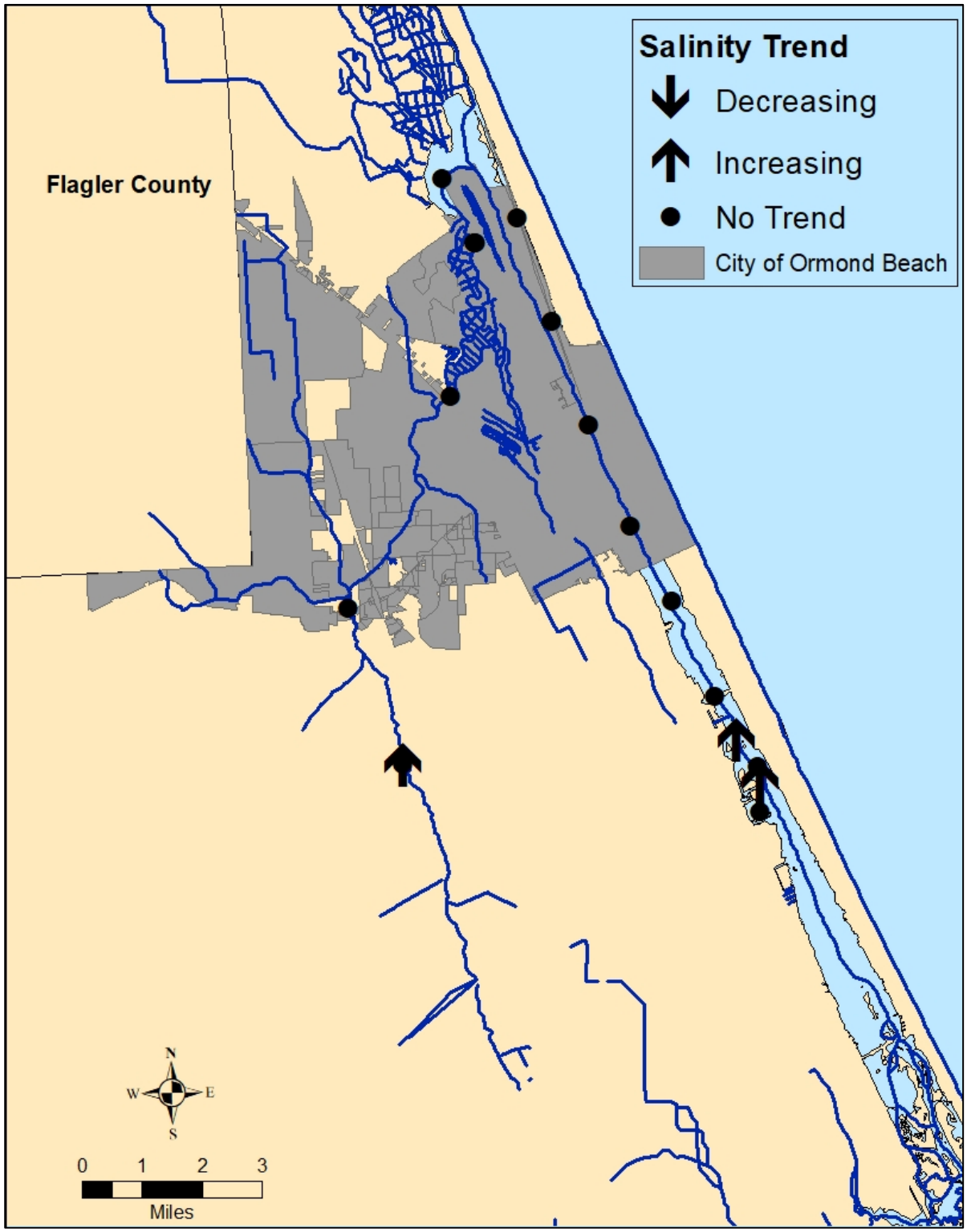


Figure 5-13 - Results of trend tests for DO% saturation at the long-term stations

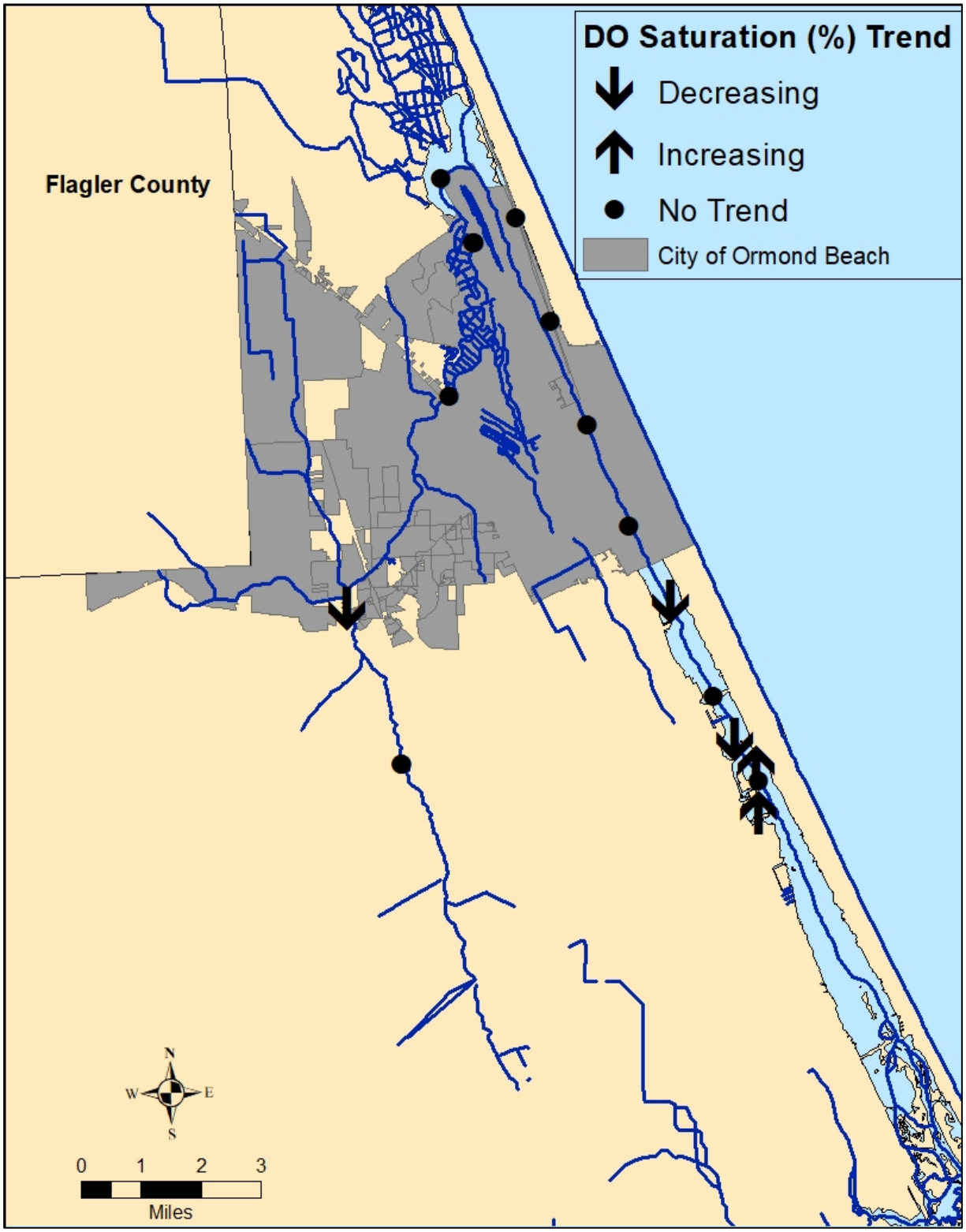
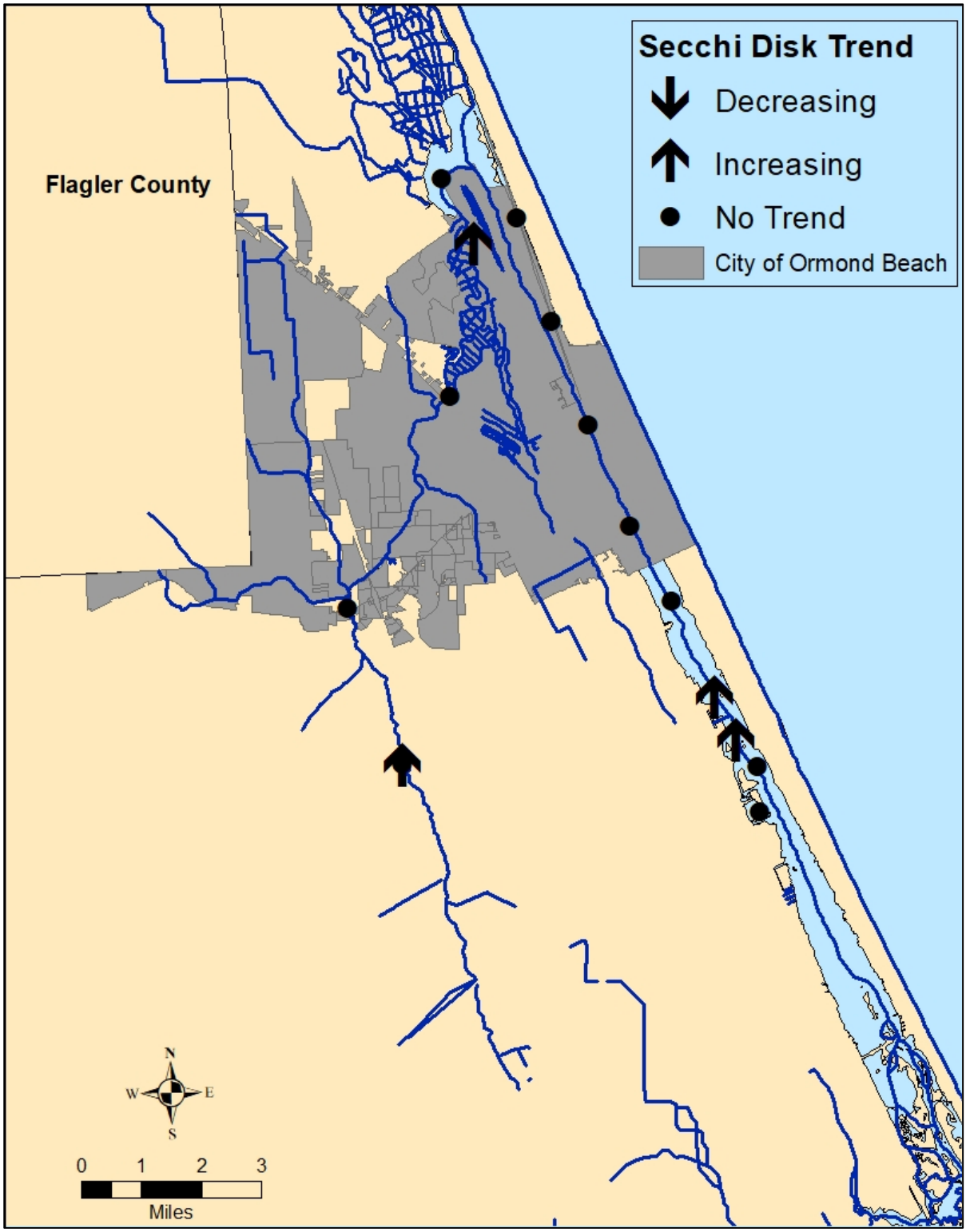


Figure 5-14 - Results of trend tests for Secchi depth at the long-term stations



5.4.4 Water Quality Impairments and TMDLs

5.4.4.1 Existing TMDLs

According to the FDEP's TMDL tracker, both WBID 2634 and 2363B have had TMDLs developed (**Table 5-6**) due to nutrients based on chlorophyll *a* levels. The TMDLs for these WBIDs were approved by FDEP in 2014.

Table 5-6 - Current TMDLs for WBIDs in the vicinity of the City of Ormond Beach

WBID	Basin Name	Type	Class	Impairment
2634	Tomoka River	Stream	3F	Nutrients (TN)
2634	Tomoka River	Stream	3F	Nutrients (TP)
2363B	Halifax River	Estuary	3M	Nutrients (TN)
2363B	Halifax River	Estuary	3M	Nutrients (TP)

Tomoka River (WBID 2634)

The Tomoka River segment (WBID 2634) was verified as impaired for nutrients based on chlorophyll *a* during the second cycle (data from January 1, 2004 – June 30, 2011), and was included on the Verified List of impaired waters for the Upper East Coast Basin that was adopted in February 2012. TN and TP were identified as co-limiting nutrients. The impairment was based on exceeding historic minimum chlorophyll *a* annual averages of 3 µg/L by more than 50 percent (5 µg/L) in at least two consecutive years (2008-2010).

The TMDL document (FDEP 2013a) provided an assessment of nutrient sources in the Tomoka River segment. One NPDES wastewater facility was identified that discharges directly into this portion of the Tomoka River (Tomoka Farms Road Landfill FL0037877). For each month in the assessment period in which a discharge was reported, a load was calculated assuming that the daily maximum reported discharge occurred for the whole month and that TN and TP concentrations in the discharge were equal to 0.93 mg/L and 0.05 mg/L, respectively (the daily maximum concentrations reported in October 2011).

A Loading Simulation Program in C++ (LSPC) watershed model covering the period 1997-2009 was utilized to estimate annual nitrogen and phosphorus loadings from the Tomoka watershed

(FDEP 2013a). These estimates did not include potential contribution of the marine segment of the Tomoka River.

As the nutrient impairment listing was based on exceeding an annual average chlorophyll *a* concentration of 5 µg/L for two consecutive years, a target annual average chlorophyll *a* concentration of 4.5 µg/L was considered as an appropriate protective target and used to develop nutrient reductions. Correlations between annual average concentrations of chlorophyll *a* and inorganic nitrogen (as well as NH_4), TN, and TP were significant. A general linear model (GLM) that included TN and TP explained nearly 67 percent of the variance in annual average chlorophyll

concentrations. As TN/TP ratios indicated co-limitation of nitrogen and phosphorus, similar reductions to TN and TP were applied with the GLM until annual average chlorophyll *a* concentrations were less than 4.5 µg/L. Applying a thirty percent reduction to annual average TN and TP concentrations achieved this target. Simple linear regressions of the watershed model predicted annual average TN load or TP load versus the annual average corrected chlorophyll *a* concentration were not significant at an α level of 0.05, so a TMDL-related load associated with a 30 percent reduction in annual average TN or TP concentrations were not calculated using the LSPC model.

The nutrient TMDL for the Tomoka River is expressed in terms of a percent reduction in total nitrogen and total phosphorus nutrient criteria (30% reduction from NPDES stormwater and 30% reduction in nonpoint source loadings including non-NPDES stormwater discharges) and corresponding concentrations (annual averages TN=0.78 mg/L and TP = 0.065 mg/L). At time of report, only one permitted wastewater discharge occurred in the Tomoka River watershed and reported TN and TP concentrations were below the target concentration.

Halifax River (WBID 2363B)

The Halifax River segment (WBID 2363B) was verified as impaired for nutrients based on chlorophyll a during the second cycle (data from January 1, 2004 – June 30, 2011), and was included on the Verified List of impaired waters in February 2012. TN was identified as the limiting nutrient. The impairment was based on an exceedance of an annual average chlorophyll *a* concentration threshold of 11 µg/L in 2010. The annual average in 2011 is listed as 12 µg/L based on 50 samples ranging from 3.1 to 23.9 µg/L.

The TMDL document (FDEP 2013b) provided an assessment of nutrient sources in the Halifax River segment. At the time of report, two NPDES wastewater facilities were identified that discharge directly into this portion of the Halifax River (Ormond Beach WWTF FL0020532 and Holly Hill WWTF FL0027677), and a third that discharges near the boundary of the WBID (Daytona Beach/Bethune Point WWTF FL0025984) and is north of the tidal node. For each facility, the annual average discharge volume and overall median monthly maximum TN and TP concentrations were used to calculate an annual TN and TP contribution from each facility. As with the Tomoka River TMDL, the LSPC model was utilized to obtain estimates of annual nitrogen and phosphorus loadings to the Halifax River from contributing watersheds (including the Halifax River, WBID 2363B).

As the nutrient impairment listing was based on exceeding an annual average chlorophyll *a* concentration of 11 µg/L and a 50% increase of the historical minimum would also be 11 µg/L, an annual average chlorophyll concentration of 9 µg/L was used as a target to develop nutrient reductions. Based on relationships of TN to chlorophyll, a TMDL requirement of 9% reduction in annual average TN concentration would be required to meet an annual average chlorophyll target of 9 µg/L or lower in the Halifax River watershed.

Annual TN and TP loads from the LSPC watershed model simulation were combined with the annual loads from the three point sources, and the annual summed loads were regressed against the annual average chlorophyll concentration. Neither the regression with TN load nor the TP load were significant at an alpha (α) level of 0.05, and so a TMDL-related load associated with a 9% reduction in the annual TN concentration was not calculated from the model.

Portions of the Halifax River fall within the boundaries of several Phase II MS4 permits. These include the Phase II permits for the city of Holly Hill (FLR04E060), the city of Daytona Beach (FLR04E0115), the city of Ormond Beach (FLR04E036), and Volusia County (FLR04E033). FDOT District 5 is a co-permittee with Volusia County (FLR04E024). Under the TMDL, MS4 permittees would be responsible for a 9% reduction in TN loads associated with stormwater outfalls that they have responsible control over.

The TMDL for the Halifax River is an annual average nutrient concentration of 1.13 mg/L with a percent reduction for NPDES stormwater and nonpoint source discharge of 9% each, as well as a load allocation of 314,376 lbs/yr for wastewater sources.

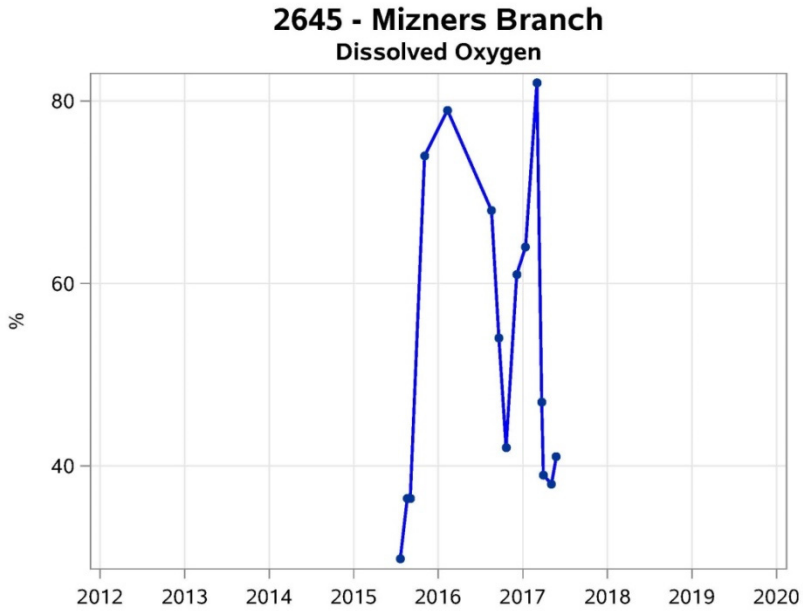
5.4.4.2 Comparison of Currently Available Data to State Criteria

For this technical memorandum, currently available water quality data were analyzed in comparison to state water quality criteria (as summarized in **Table and Table**). Values specified as annual geometric means (AGMs) are not to be exceeded more than once in a three-year period; metrics specified as an annual arithmetic mean (AM) are not to be exceeded in any year. Those entries not indicating AGM or AM are values never to be exceeded. As the impairment assessment period is 7.5 years, the timeframe January 1, 2012 through June 30, 2019 was used to compare available data to current state water quality criteria (**Table and Table**). The output of all comparisons performed is provided in **Appendix B**. This includes time-series of data in the assessment period, tables of AGMs for TN, TP and chlorophyll *a*, and tables of the 5umber of samples versus the number of criterion failures for remaining parameters. In addition, plots of annual average or AGM (as specified in **Table**) were created for each WBID across the period of record since 1990. These bar graphs may be found in **Appendix B** and allow a visualization of annual data against reference lines representing state water quality criteria. Finally, the relationship between chlorophyll and nutrients (TN and TP) was assessed in the form of scatter plots with linear regression lines for each of the WBIDs. These plots are located in **Appendix B**. A summary of results by WBID is provided below.

WBID 2645 – Mizners Branch (3F)

Relatively few data were available for the 7.5-year assessment period, with three of those years having data. Data collection was also infrequent prior to the 7.5-year assessment period. None of the six years with TN data had AGMs in exceedance of the state criterion (1.52 mg/L). Of the five years with TP data, two (including one in the recent 7.5-year assessment period) exceeded the state criterion (0.12 mg/L). As these are not two exceedances in a three year period, no impairment would be identified. The same five years had available data for chlorophyll *a*. The AGMs for chlorophyll *a* not exceed the state criterion (20 µg/L) in any instance. No apparent significant relationship between chlorophyll *a* and TN was observed for this WBID; the relationship with TP was indicated to be positive with a relatively shallow slope. Dissolved oxygen saturation data were available for only three years (occurring in the 7.5-year assessment period). Values below the state threshold (38% saturation) occurred in 16.7% of the daily values indicating possible impairment for this parameter (exceeds 10% of the daily values). The values that exceeded the saturation threshold occurred in 2015 and more recent values did not fall below this threshold (**Figure 5-15**).

Figure 5-15 - Time-series of dissolved oxygen saturation data in WBID 2645 – Mizners Branch. Horizontal line indicates state water quality threshold for class 3F waters (38%)



WBID 2646 – Little Tomoka River (3F)

Very few data were available to assess the Little Tomoka River. For the 7.5-year assessment period, there was only one data point in 2013. While the value for chlorophyll *a* did not exceed the water quality criterion, one data point is insufficient for assessing impairment. Data were also collected in 2010 and 2011; the AGM in 2011 did exceed the 20 µg/L criterion at a value greater than 80 µg/L. Data would also be considered insufficient for a valid assessment of TN and TP.

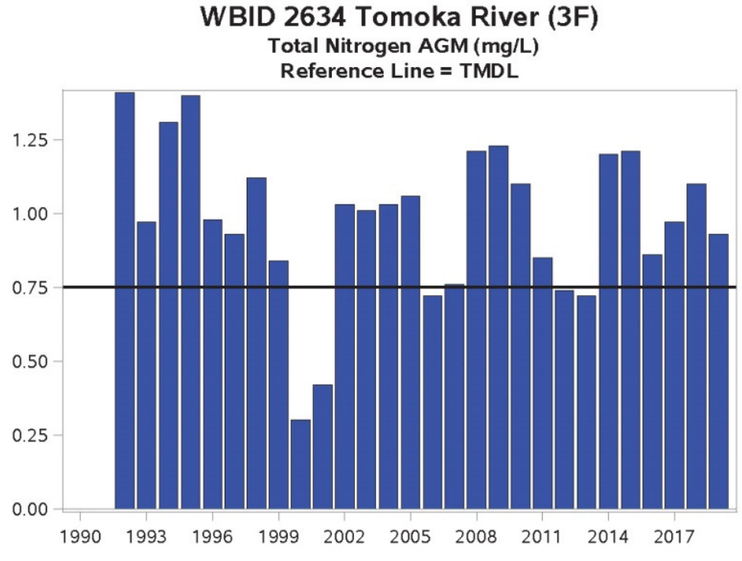
WBID 2643 – Unnamed Ditch (3F)

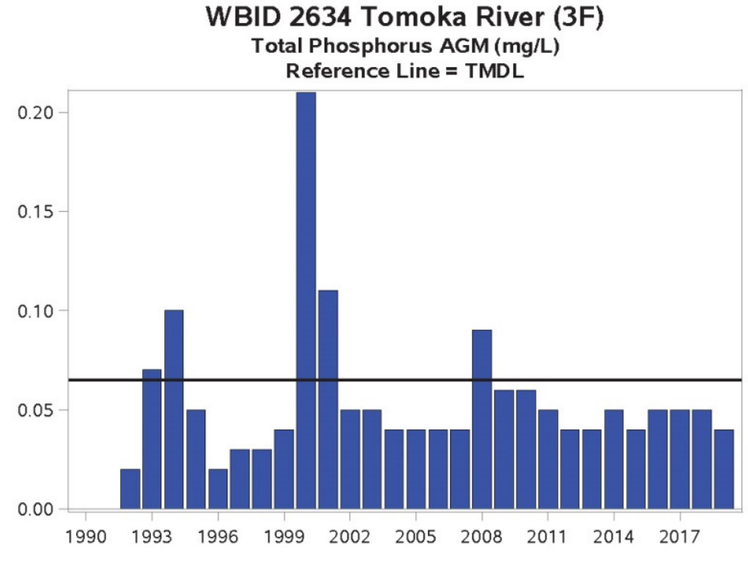
No recent data could be located for this WBID, thus no assessment was completed.

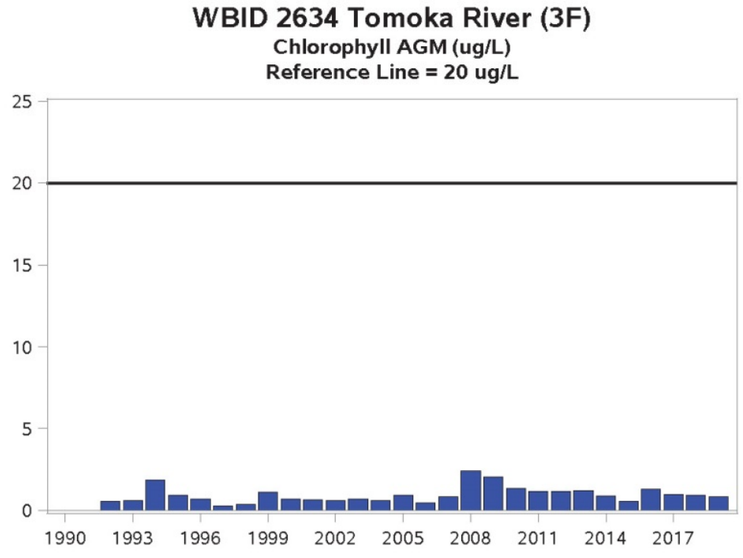
WBID 2634 – Tomoka River (3F)

State water quality criterion for TN and TP in the Tomoka River (freshwater) correspond to the TMDL values. During the recent 7.5 years, the AGMs did not exceed the criterion for TP on a single occasion. The last time two years out of a three year period exceeded the criterion was for 2000-2001 (**Figure 5-16**). However, TN values have frequently exceeded the TMDL threshold, including every year from 2014-2019. As described above, the TN and TP criteria were established based on the intent to achieve a target annual average chlorophyll *a* concentration of 4.5 µg/L. **Figure 5-16** illustrates that this target concentration has not been exceeded since 2010. Shallow, positive relationships between chlorophyll and nutrients were indicated, particularly for TP (**Figure 5-17**). Dissolved oxygen saturation levels were below the threshold value (38%) for less than 10% of the daily values in the recent 7.5 assessment period, thus indicating no impairment for that parameter. The limited available data for metals and bacteria (n=4-10) indicated no exceedances of the specified state water quality criteria in **Tables 5-3 and 5-4**.

Figure 5-16 - Annual Geometric Means (AGMs) for TN, TP and chlorophyll *a* in WBID 2634, as well as arithmetic means for chlorophyll *a*







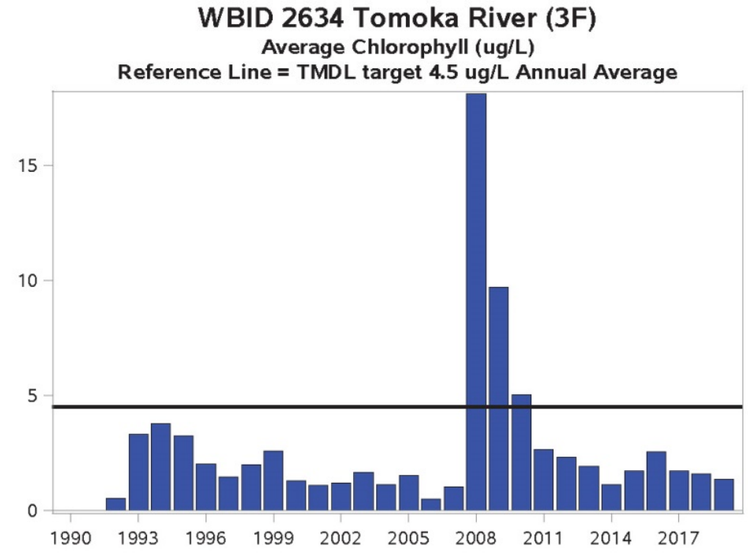
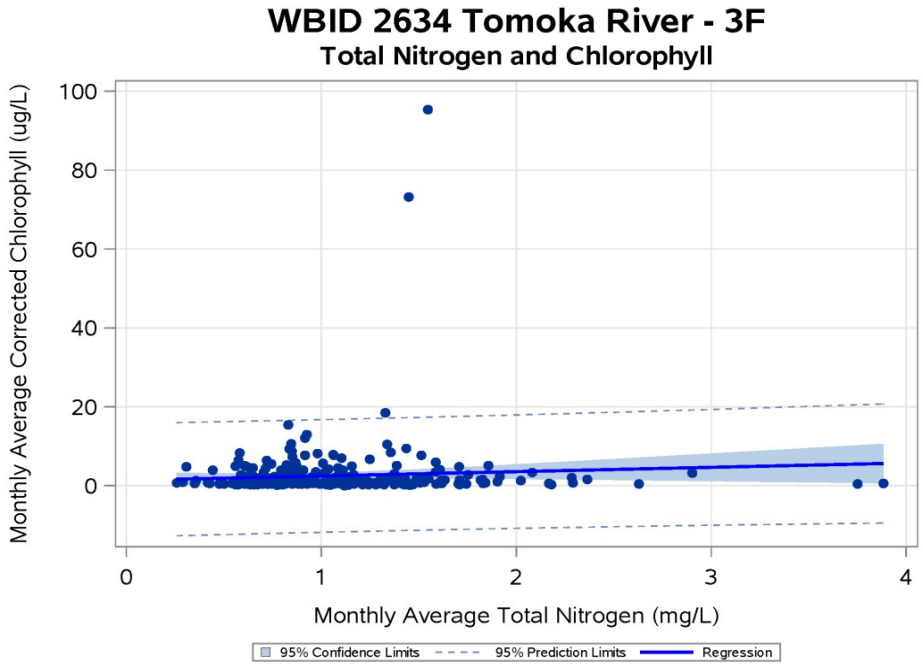
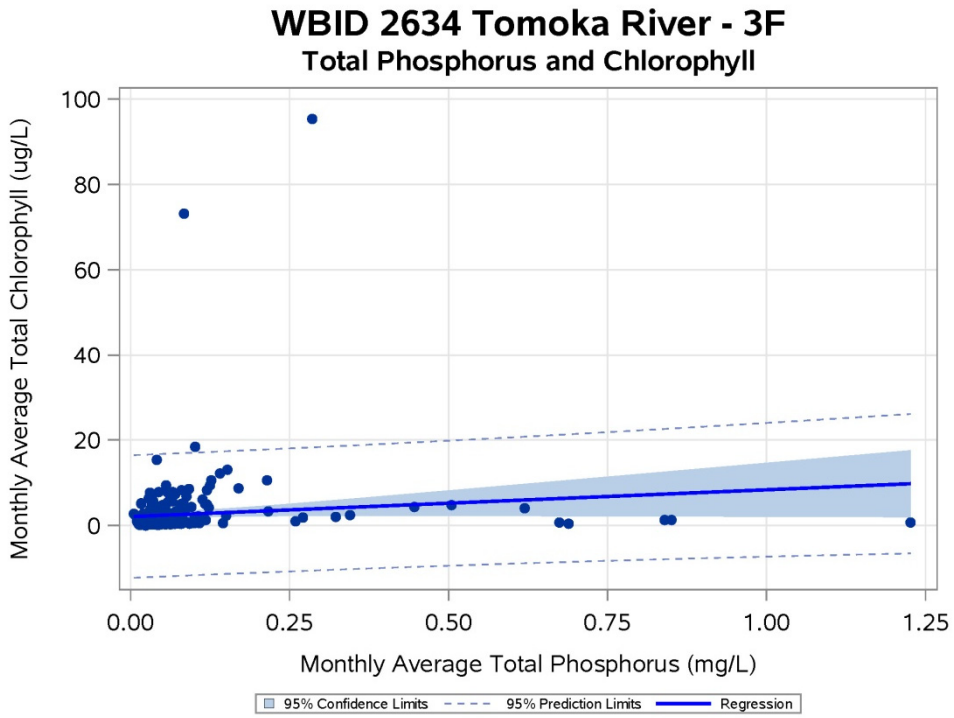


Figure 5-17 - The relationship of chlorophyll *a* to TN (top) and TP (bottom) at WBID 2634





WBID 2634A – Tomoka River (3M)

In the recent 7.5-year assessment period, the marine segment of the Tomoka River exceeded the numeric nutrient criteria (NNC) for TN (1.24 mg/L) once (2015). There have been two timeframes in the period of record since 1990 where the TN NNC for this WBID was exceeded in two out of three years (1990-1994 and 2010-2011) and the majority of AGMs have been below the NNC threshold (Figure 17). The NNC for chlorophyll *a* has been exceeded in three years between 2008 and 2011. However, the chlorophyll *a* criterion was not exceeded at all in the recent 7.5-year assessment period for this report (Figure 23). One TP AGM was in exceedance of the NNC (0.132 mg/L) during the recent 7.5-year assessment period and an exceedance in two out of three consecutive years has not been observed since 2000-2001 (**Figure 5-18**). **Figure 5-19** indicates a positive relationship between chlorophyll *a* and both TN and TP; however, the relationship with TN appears to have a tighter confidence interval. Dissolved oxygen saturation levels exceeded the standard (42%) at a rate less than 10% of the time in the recent 7.5-year assessment period. Thus, no impairment for dissolved oxygen saturation is indicated.

Metal concentration data indicated several exceedances of state water quality criteria in WBID 2634A during the recent 7.5-year period of assessment. Metals criteria are never to exceed values. There was one exceedance of the aluminum standard (1.5 mg/L) in 2013. There were four exceedances each for copper and zinc, which represents roughly 0.5% of the collected samples. The majority of iron values (81%) exceeded the criterion (0.3 mg/L). There were no observed exceedances for cadmium, lead, nickel or silver.

There were limited bacterial data reported during the 7.5-year assessment period. Current standards specify that for class 3M waterbodies, such as this WBID, enterococci are used for the standard. There were zero exceedances of the enterococci standard during the assessment period (2012 – June 2019). Previously, fecal coliforms were used to assess bacterial impairments. There were also no exceedances in the assessment period of the previously utilized fecal standard.

Figure 5-18 - Annual Geometric Means (AGMs) for TN (top), TP (middle) and chlorophyll *a* (bottom) relative to NNC (horizontal reference lines) in WBID 2634A

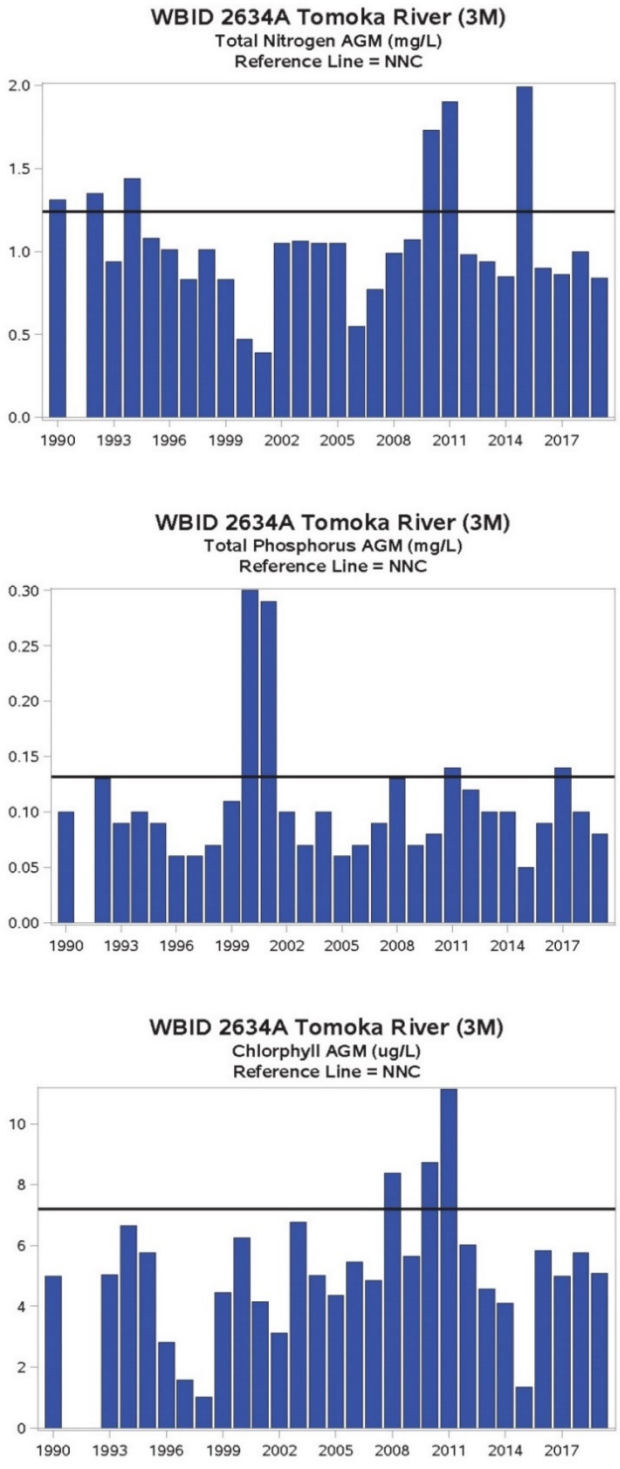
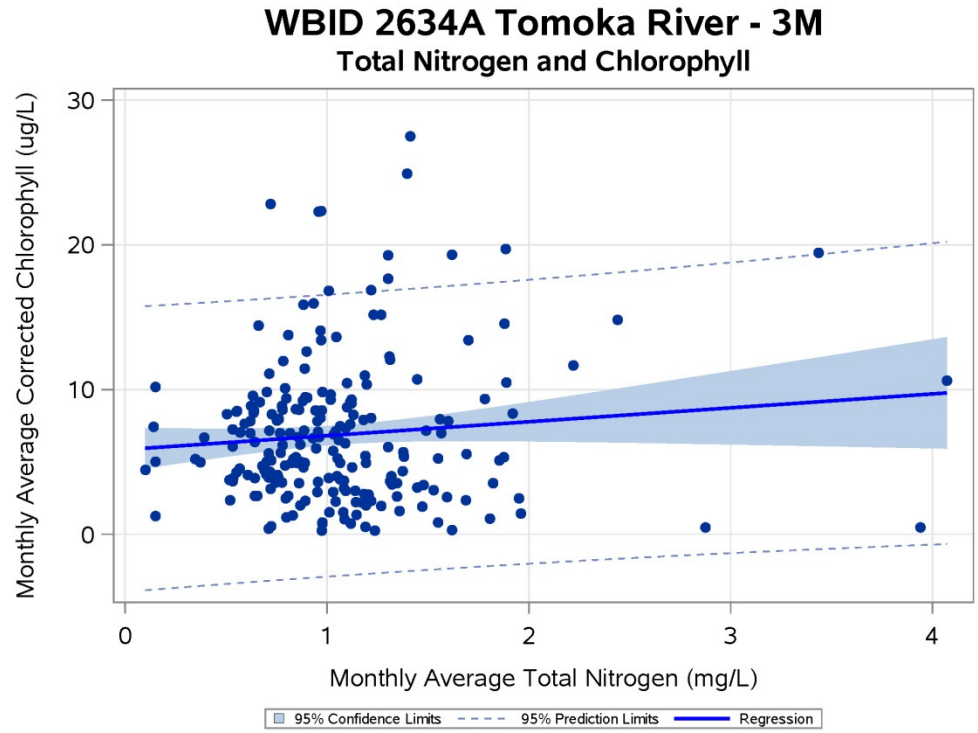
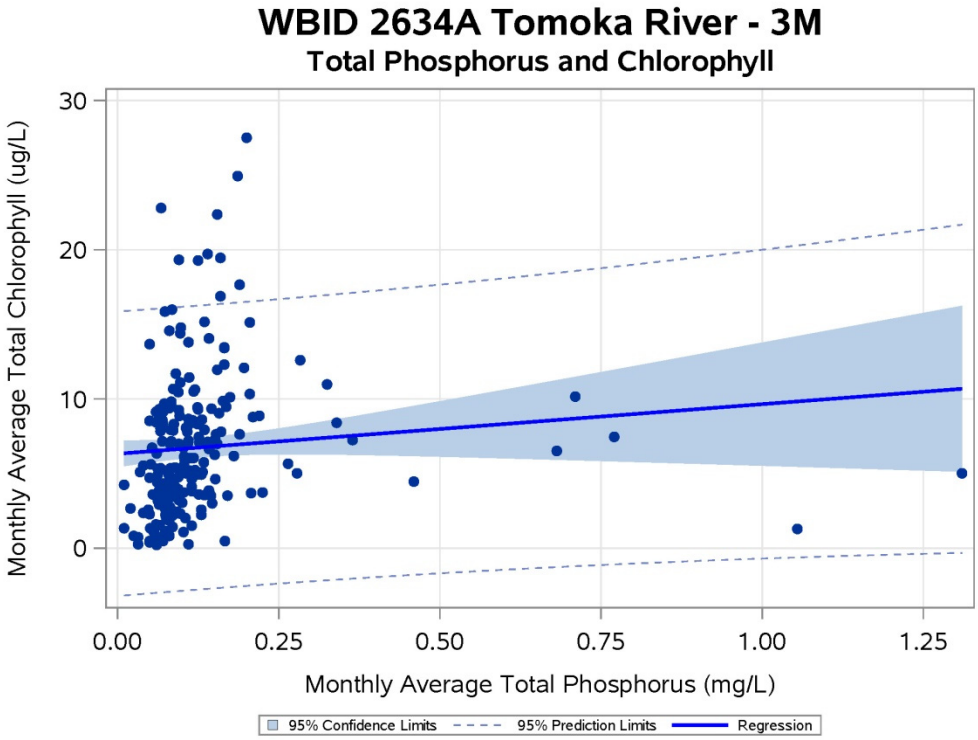


Figure 5-19 - The relationship of chlorophyll *a* with TN (top) and TP (bottom) in WBID 2634A





WBID 2642 – Unnamed Branch (3M)

No NNC have been established for nutrients in WBID 2642. Annual geometric means for chlorophyll *a* were compared to the 11 µg/L standard. There were limited data reported during the recent 7.5-year assessment period, with three years of data between 2015 and 2017. The AGM for 2017 (11.6 µg/L) did exceed the standard. Out of the eight years in the period of record with reported chlorophyll *a* data, three annual geometric means exceeded the criterion at no time did two of these exceedances occur within a three-year period. There was no apparent statistically significant relationship between chlorophyll *a* and TN, but a shallow positive relationship with TP was indicated. While dissolved oxygen saturation data were also limited in the 7.5-year assessment period (n=16 in the same three year timeframe), greater than 10% of the samples exceeded the 42% state criterion indicating impairment for this parameter.

WBID 2640 – Unnamed Branch (3M)

No NNC have been established for nutrients in WBID 2640. Annual geometric means for chlorophyll *a* were compared to the 11 µg/L standard. There was only one year of data reported during the recent 7.5 year-assessment period, and this AGM did not exceed the standard. Two of the five years of data reported prior to the assessment period did exceed the standard, but not within a three-year period. Relationships between chlorophyll *a* and nutrients indicated opposite patterns for TN (negative) and TP (positive). There were no exceedances of the dissolved oxygen saturation threshold in the very limited data (n=5 from a single year) from the recent 7.5-year assessment period.

WBID 2641 – Unnamed Branch (3F)

None of the limited data collected from WBID 2641, whether from the period of record or the recent 7.5 years, indicated exceedances of criteria for TN, TP, or chlorophyll *a*. Positive relationships between chlorophyll *a* and both TN and TP were evident. There were zero exceedances of the dissolved oxygen saturation criterion.

WBID 2647 – Holly Hill Ditch (3M)

No NNC have been established for nutrients in WBID 2647. Annual geometric means for chlorophyll *a* were compared to the 11 µg/L standard. There were five years in the period of record with reported chlorophyll values, two of which occurred in the recent 7.5 year assessment period; none of the AGMs exceeded the criterion. Relationships between chlorophyll *a* and nutrients indicated opposite patterns for TN (negative) and TP (positive). The 42% threshold for dissolved oxygen saturation was exceeded in nearly two thirds of the data reported during the recent 7.5 year assessment period, though sample frequency was low (n=11 total).

WBID 2631 – Unnamed Ditch (3F)

Total N, TP, chlorophyll *a* and dissolved oxygen saturation data from WBID 2631 were only available for 2019, and only from a single sampling event. All four values did not exceed the state criteria but do not represent sufficient data to assess impairment or the relationship between chlorophyll *a* and nutrients. Metals were also analyzed from this single sampling event, and none of the concentrations exceeded applicable standards.

WBID 2635 – Groover Branch (3F)

Chlorophyll *a* and nutrient data were reported for WBID 2635 for three years (2015-2017) out of the recent 7.5-year assessment period, with an additional two to four years of data occurring earlier in the period of record. There were no exceedances for either nutrient or chlorophyll *a* in the recent 7.5 years, an only one exceedance for TN and TP in the period prior. However, approximately one-third of the dissolved oxygen saturation values reported between 2015 and 2017 (n=19) exceeded the threshold indicating an impairment for this parameter. Additionally, two of the five *E. coli* samples from 2017 exceeded the state criterion.

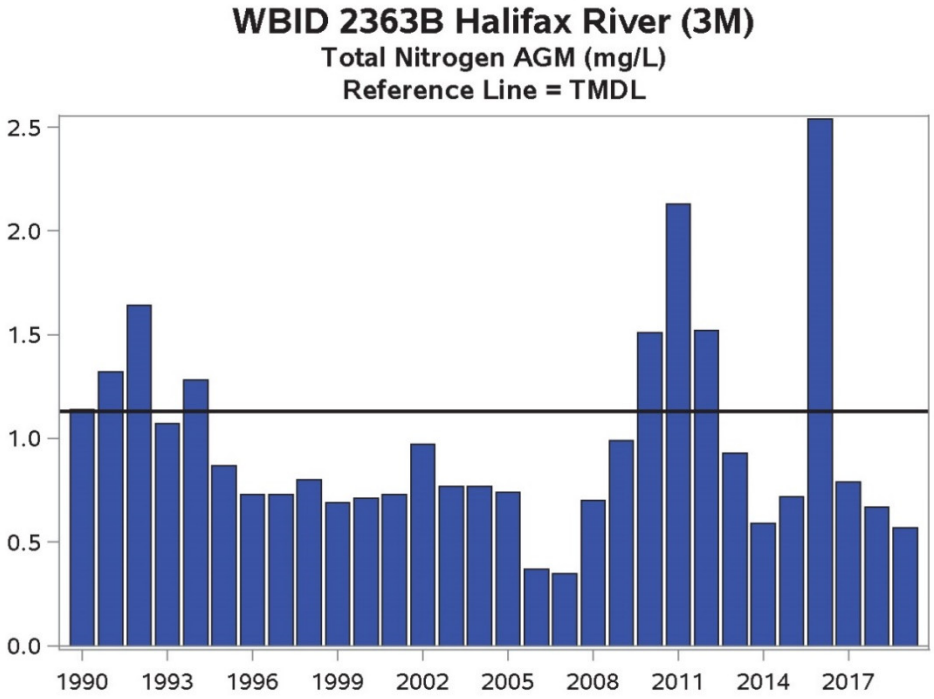
WBID 2363B – Halifax River (3M)

As discussed above, the Halifax River has an existing TMDL for chlorophyll *a* due to nutrients, with TN identified as the limiting nutrient. TN, TP, and chlorophyll *a* data were assessed for indications of impairment over a recent 7.5-year period (2012 to June 2019) for this report. In addition, AGMs were computed for all years in the period of record since 1990 (**Figure 5-20**) for TN and TP. For the more recent 7.5-year period of record, TN and TP criteria were exceeded twice, but not within a three-year period. The two exceedances for TP during this period are the only exceedances in the 1990-2019 period of record. TN had a three-year consecutive (2010-2012) exceedance that extended into the beginning of the 7.5-year period of assessment. Arithmetic means were calculated for each year in the period of record since 1990 for chlorophyll *a* as the state criterion is expressed as an annual mean never to be exceeded. Annual arithmetic means for chlorophyll *a* exceeded the state criterion (9.0 µg/L) six times between 1990 and 2019. In the more recent 7.5 year period of assessment, the chlorophyll *a* criterion was never exceeded. Chlorophyll *a* had a positive relationship with both TN and TP over the period of record in this WBID (**Figure 5-21**). Dissolved oxygen saturation data for the more recent period of assessment indicated a very low incidence of exceedance of the 42% threshold (4 values out of 462) and thus no impairment for this parameter is expected.

Data for several of the metals in the recent 7.5-year assessment period indicated impairment. There were multiple exceedances for copper (13/56), iron (59/93), and zinc (13/56). The remaining metals with data had zero exceedances.

Enterococci data were only reported for the first two years of the recent 7.5-year period of assessment, but no exceedances of the standard were observed. Similarly, no exceedances of the previous fecal coliform standard were detected.

Figure 5-20 - Annual Geometric Means (AGM) of TN (top) and TP (bottom) and) for WBID 2363B



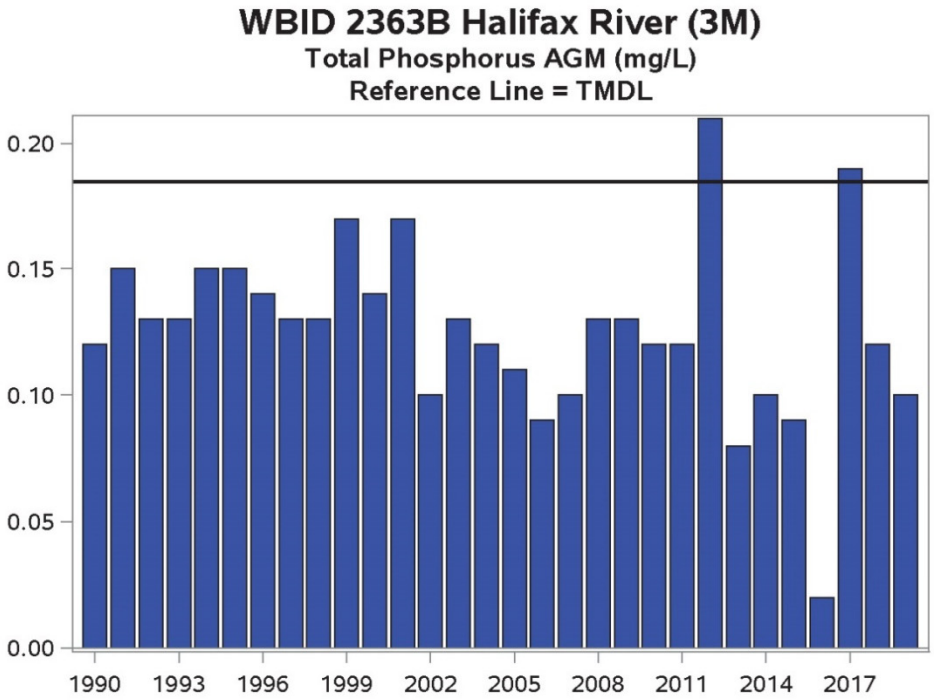
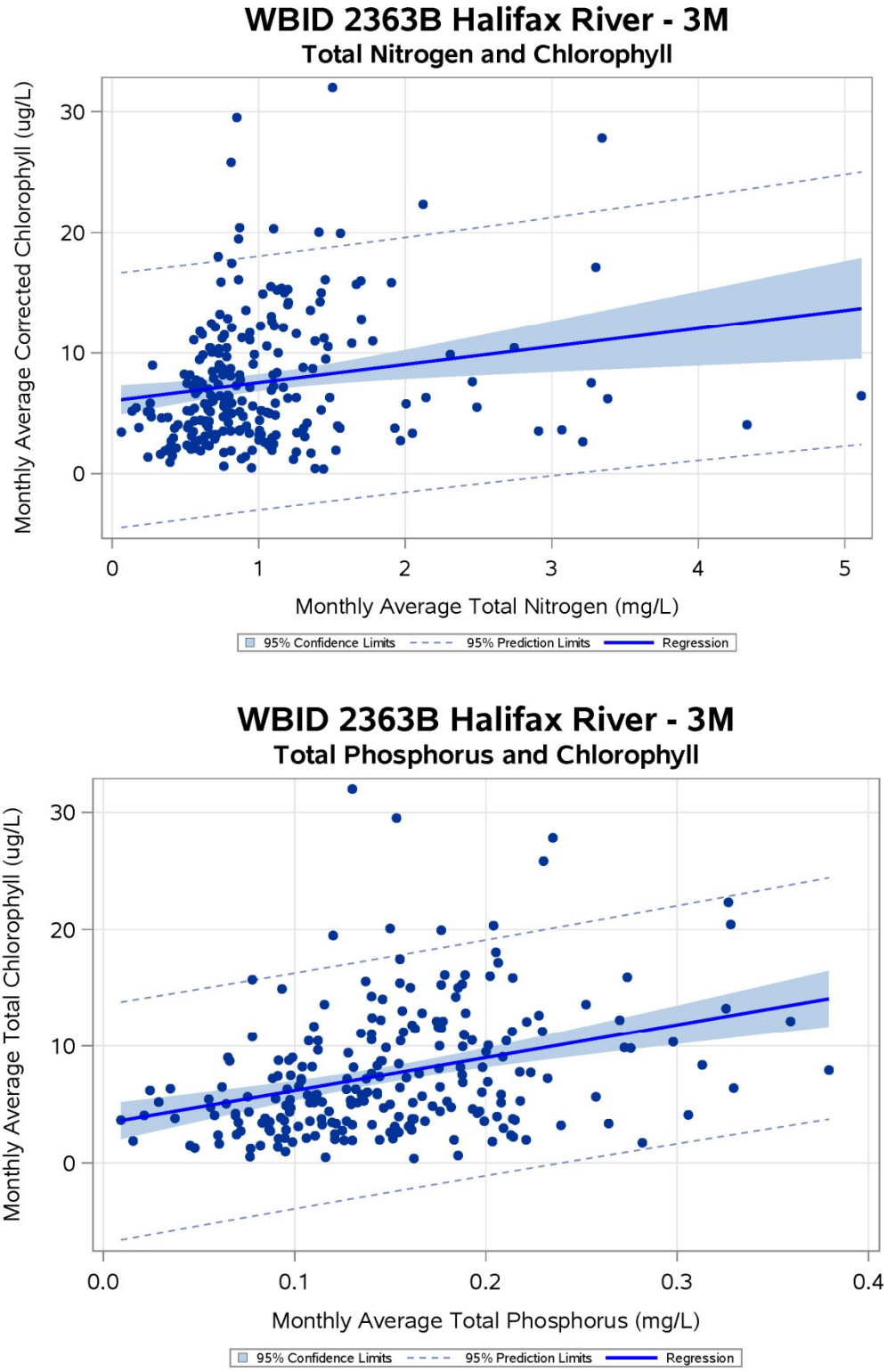


Figure 5-21 - The relationship of chlorophyll *a* to TN (top) and TP (bottom) in WBID 2363B



WBID 2363C – Tomoka Basin (3M)

Annual geometric means for TN, TP and chlorophyll *a* were calculated for the recent 7.5-year period of assessment, as well as for the period of record from 1990-2019 (**Figure 5-22**). There were three exceedances of the TN criterion within the recent 7.5 years and two of these fell within a three-year period (2012-2013). Exceedances of the TN criterion also occurred in the two years prior as well as several years prior to 2005, with two occurring within a three-year period from 1992-1994. Exceedances for TP occurred in two of the 7.5 years of the assessment period, but not within a three-year period. However, an exceedance occurred in 2011 and 2012. Multiple exceedances of the TP criterion occurred prior to 2000. The chlorophyll *a* criterion has been exceeded in multiple years within the recent assessment period, including the years 2016-2018. In addition, exceedances were observed each year in the period 2010-2012. There was a positive relationship between chlorophyll *a* and both TN and TP (**Figure 5-23**). There were no instances of dissolved oxygen saturation values below the threshold value (42%) during the recent 7.5-year assessment period. and so no impairment is indicated for this parameter. There were only three data points for metals, all for iron, during the recent assessment period. Two of these three values exceeded the state criterion. No exceedances of bacterial criteria were identified.

Figure 5-22 - Annual geometric means for TN (top), TP (middle) and chlorophyll *a* (bottom) in WBID 2363C

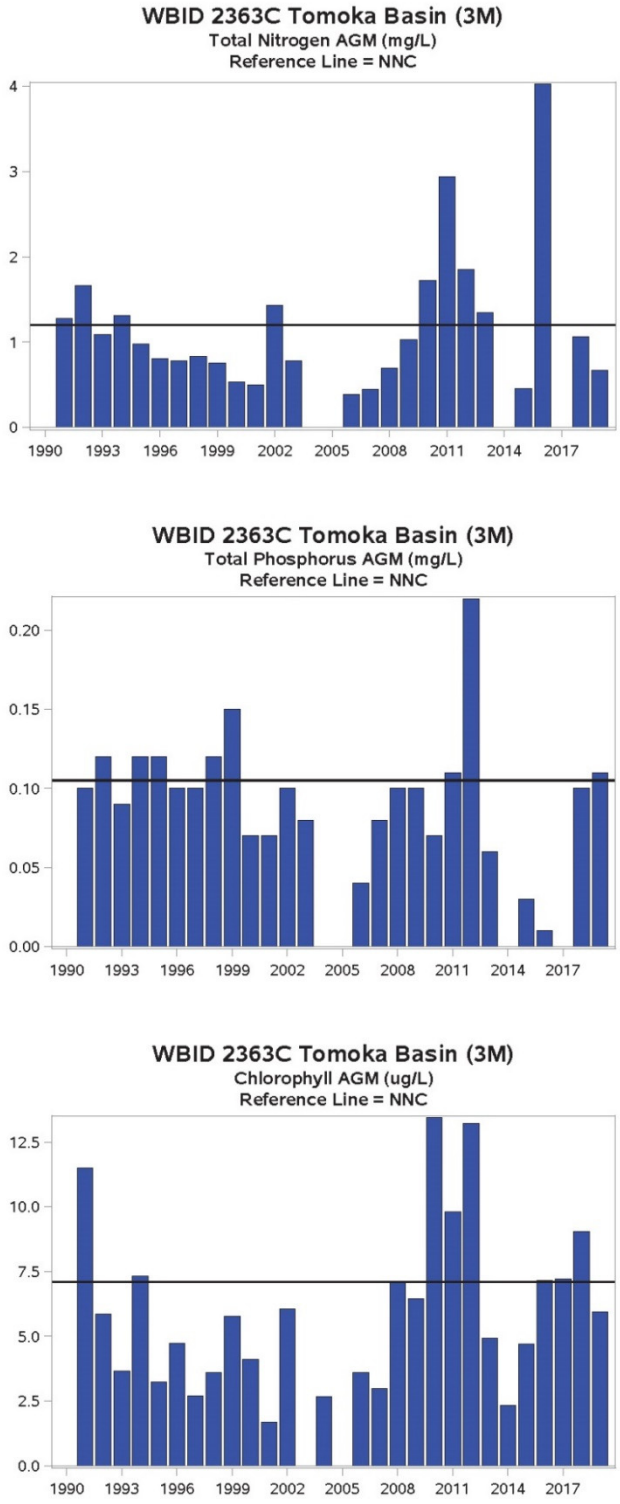
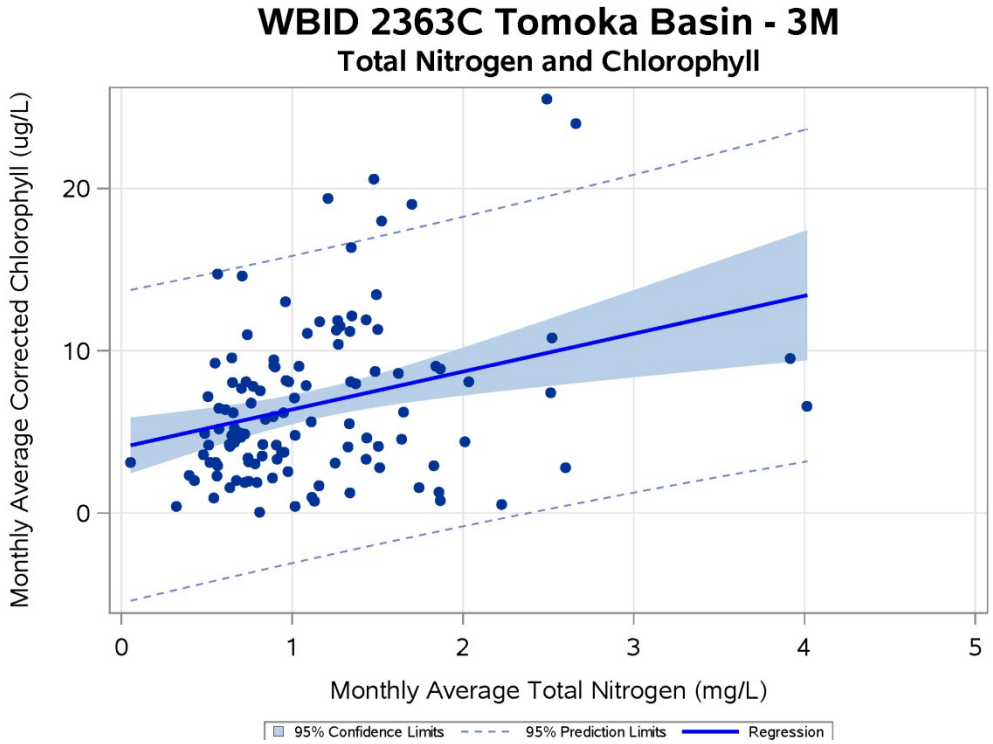
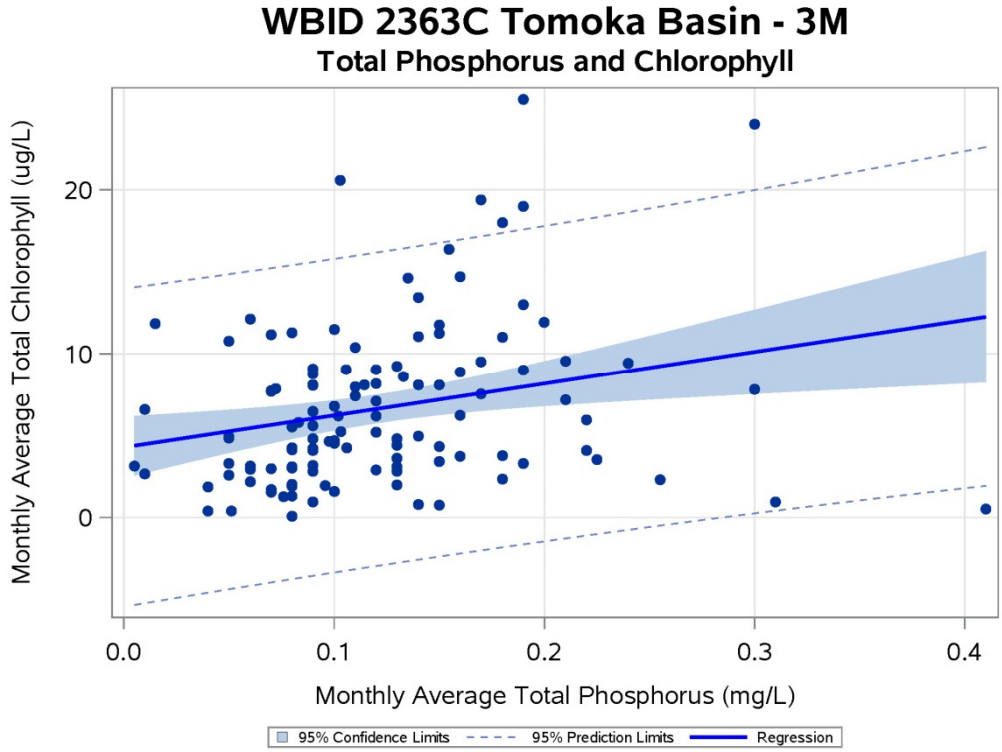


Figure 5-23 - The relationship of chlorophyll a to TN (top) and TP (bottom) in WBID 2363C





WBID 2363J – Palm Coast (3M)

No NNC have been established for nutrients in WBID 2363J. Annual geometric means for chlorophyll *a* were compared to the 11 µg/L standard (**Figure 5-24**). In 2011, the chlorophyll *a* AGM equaled the state criterion. In only one other year (1991) was this criterion exceeded. Both TN and TP exhibited a positive relationship with chlorophyll *a* (**Figure 5-25**). In the most recent 7.5-year assessment period, there were only two values (out of 166) for dissolved oxygen saturation that fell below the threshold (42%). Data for several metals analyzed indicated exceedances of state standards within the recent 7.5-year assessment period, including copper (n=3 exceedances), iron (n=74), lead (n=1), silver (n=1), and zinc (n=3). No exceedances of bacterial criteria were indicated.

Figure 5-24 - Annual geometric means for chlorophyll *a* in WBID 2363J. Horizontal reference line represents the state criterion

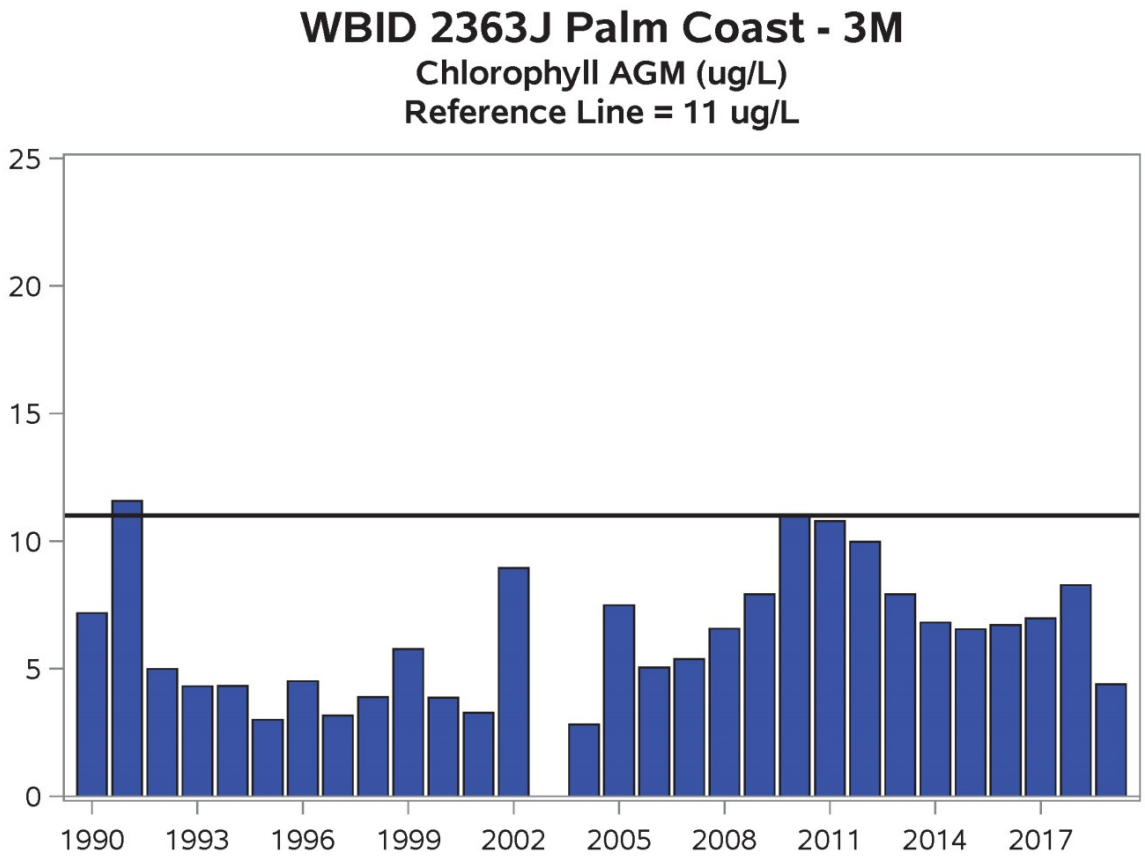
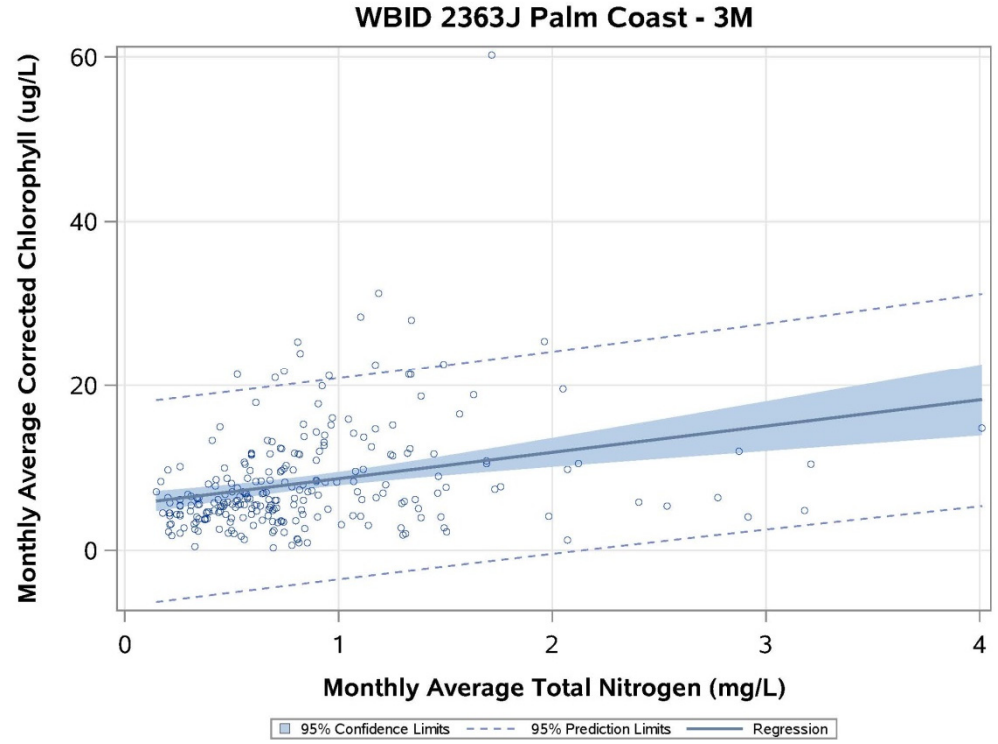
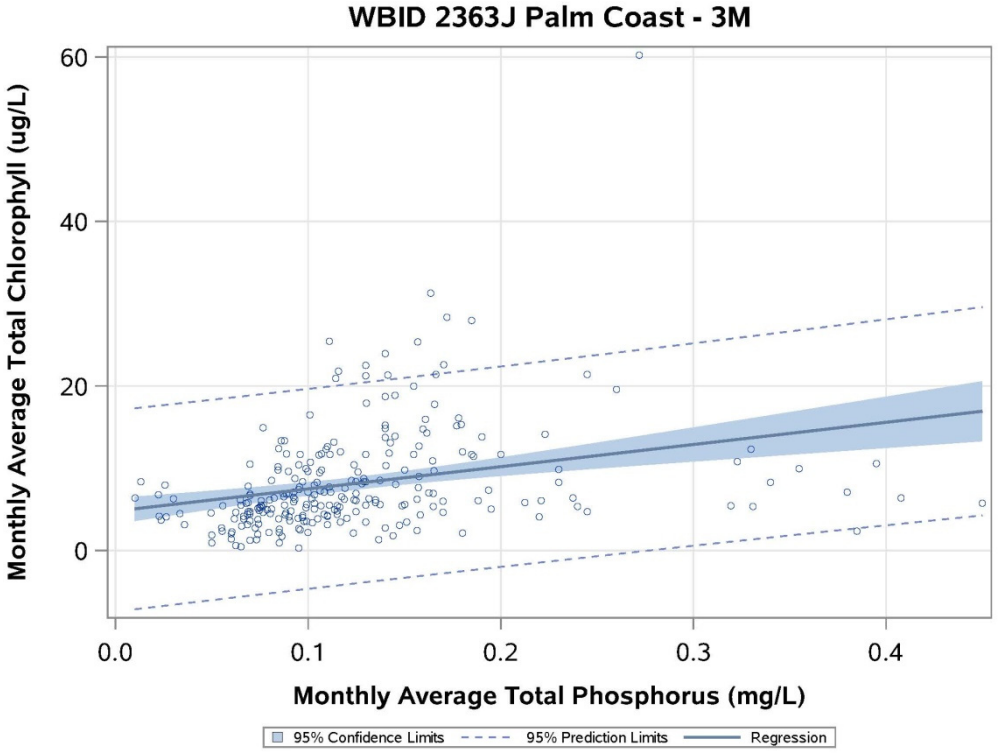


Figure 5-25 - The relationship of chlorophyll a to TN (top) and TP (bottom) in WBID 2363J





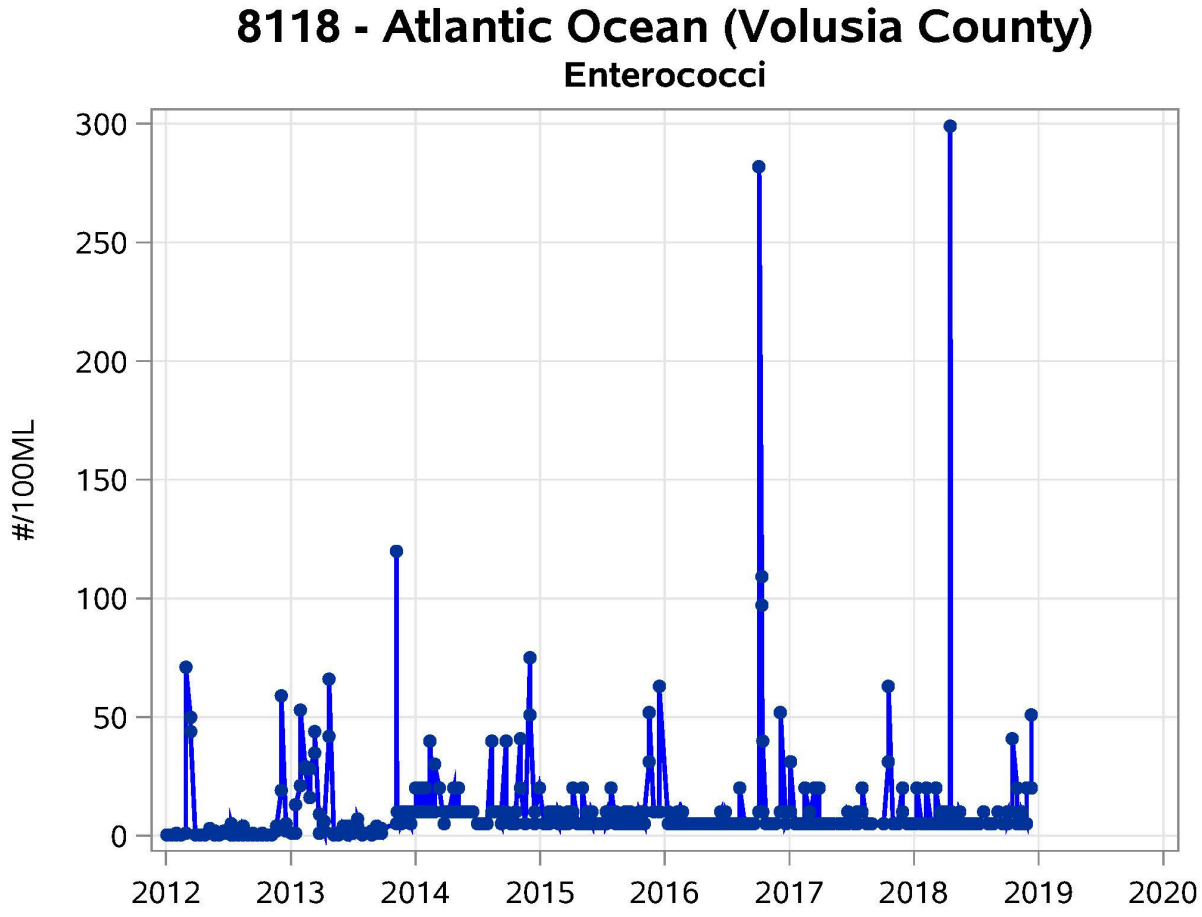
WBID 8118A – Granada Boulevard (3M)

No data could be located for this WBID, thus no assessment was completed.

WBID 8118 – Atlantic Ocean (Volusia County; 3M)

The only applicable data for this WBID that were located were for Enterococci. Out of 359 values in the recent assessment period, 2 exceeded the standard (130 MPN or MF; **Figure 5-26**).

Figure 5-26 - Time-series of Enterococci concentrations in WBID 8118 between 2012 and 2019



5.6 Pollutant Loading Estimation Methods

The assessments completed in this report included investigation of both nonpoint and point source loadings. Nonpoint source loads were estimated using a watershed model, Loading Simulation Program C++ (LSPC) described below in Section 5.1, while point source estimates were derived from Discharge Monitoring Reports and Onsite Sewage Treatment and Disposal System (OSTD) loads were estimated via EPA methods.

5.6.1 Nonpoint Source Loads

Nonpoint source loadings were estimated using the watershed model Loading Simulation Program (LSPC). This section provides a summary of the LSPC watershed model and the various inputs to the model. Section 7.0 provides a summary of the resulting pollutant loading estimates.

5.6.1.1 Model Description

LSPC is a watershed modeling system that includes streamlined Hydrological Simulation Program–Fortran (HSPF) algorithms for simulating hydrology, sediment, and general water quality, as well as a simplified stream fate and transport model. LSPC is derived from the Mining Data Analysis System (MDAS), which was originally developed by EPA Region 3 (under contract with Tetra Tech) and has been widely used for the development of TMDLs (FDEP 2013a and 2013b). The watershed model uses land use data as the basis for representing hydrology and nonpoint source loadings (FDEP 2013a and 2013b). In addition, nonpoint source loadings and hydrologic conditions are dependent on weather conditions, and thus rainfall data are included as an input to the watershed model. The various data inputs utilized in the LSPC model for this technical report are described below.

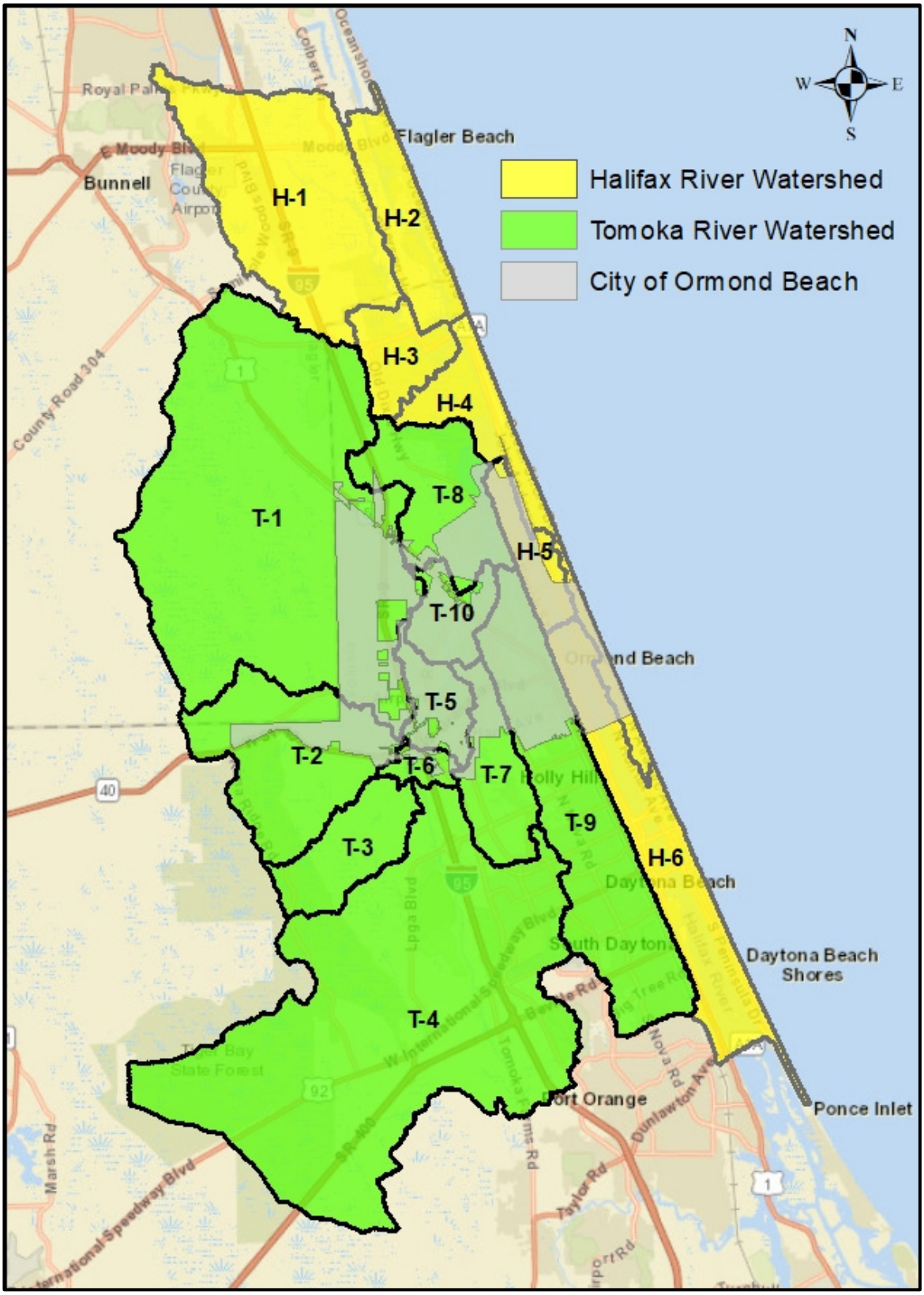
5.6.1.2 Basins

The contributing areas to the Halifax and Tomoka Rivers were delineated as part of the Daytona LSPC model basins for load estimations (**Table 5-7**, **Figure 5-27**).

Table 5-7 - Tomoka (T-) and Halifax (H-) River basins and their associated land areas ranked in descending order

Basin	Area (acres)	Basin	Area (acres)
T-4	39,472	H-2	4,698
T-1	35,727	T-3	4,431
H-1	14,600	T-7	4,212
T-9	13,994	H-3	3,114
T-2	9,777	T-10	2,684
H-6	9,381	T-5	2,486
T-8	6,538	H-5	2,385
H-4	5,232	T-6	951

Figure 5-27 - LSPC model basins



5.6.1.3 Rainfall

Rainfall data were compiled for the period 2015-2019 from a station at the Daytona International Airport and downloaded from the National Oceanographic and Atmospheric Administration. Total annual rainfall was similar across the 2015-2017 period (37-38 inches annually), while rainfall in 2018 and 2019 was greater (49-52 inches annually). Rainfall varied seasonally for this five-year period (**Figure 5-28**) and the greater total rainfall in 2018 and 2019 appear to be largely due to increased rainfall in May of 2018 and October 2019 (**Figure 5-29**) which each had more than 10 inches of rainfall in the given month.

Figure 5-28 - Box and whisker plot displaying monthly rainfall values for the period 2015-2019 at the Daytona International Airport

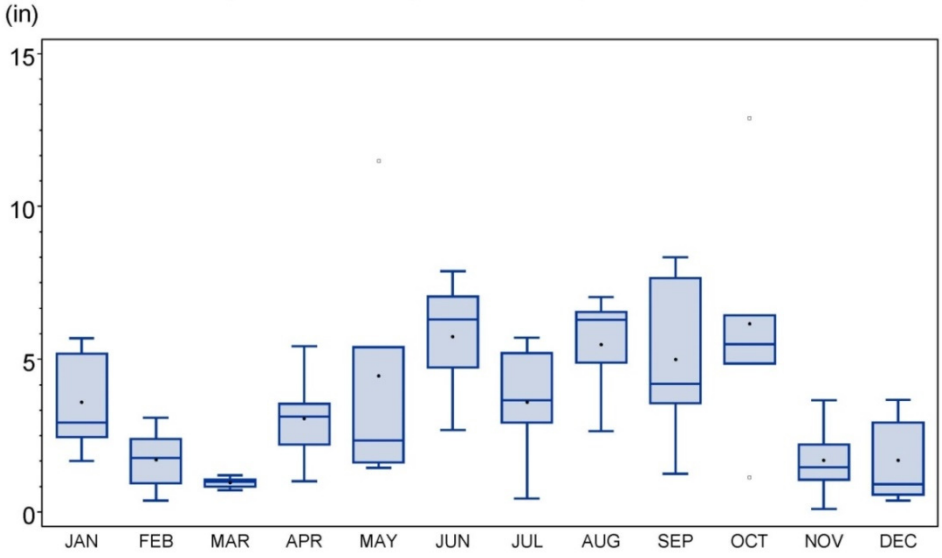
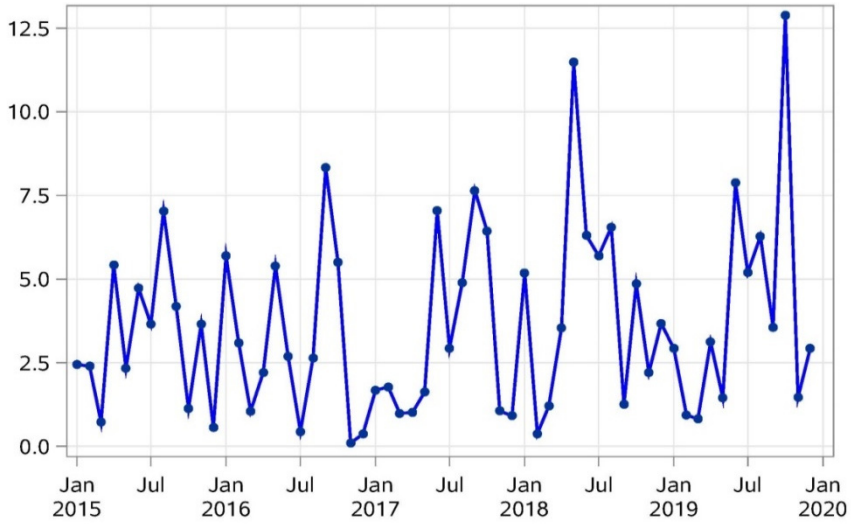


Figure 5-29 - Monthly total rainfall for the period 2015-2019 at the Daytona International Airport



5.6.1.4 Land Use

The St. Johns River Water Management District (SJRWMD) 2014 Florida Land Use dataset was used to determine land use representation for each basin. The various land use codes in both the Halifax and Tomoka River Watersheds were generalized into various Land Use Groups (**Figure 5-30**) including Developed, Agriculture, Uplands, Open Water, Beaches, and Wetlands. The Halifax River Watershed was dominated by Developed lands (38%), followed by Open Water, Wetlands and Uplands near 20% each. The largest land use class in the Tomoka River Watershed is Wetlands (33%), followed by Developed and Uplands; a significantly smaller section of land was characterized as open water in the Tomoka River Watershed.

The land use characterization is summarized by basin within each watershed in **Tables 5-8 and 5-9**, mapped in **Figure 5-31**, and pie charts for each basin are provided in **Appendix B**. In the Halifax River Watershed, basins H-5 and H-6 are characterized largely by Open Water (53 and 42%, respectively), and Developed Lands (37 and 55% respectively), with relatively small contributions from Uplands (0.9 and.75%, respectively) and Wetlands (1.3 and 0.9%, respectively). Halifax River Watershed Basin H-3 had the lowest level of Developed lands (19.7%) and is nearly half Wetlands. The basin with the largest percentage of lands Developed is basin T-9 in the Tomoka River Watershed where more than 81% of the land is developed, mostly as medium and high intensity residential areas.

Figure 5-30 - Distribution of Land Use Classes in the Halifax River (left) and Tomoka River watersheds (right)

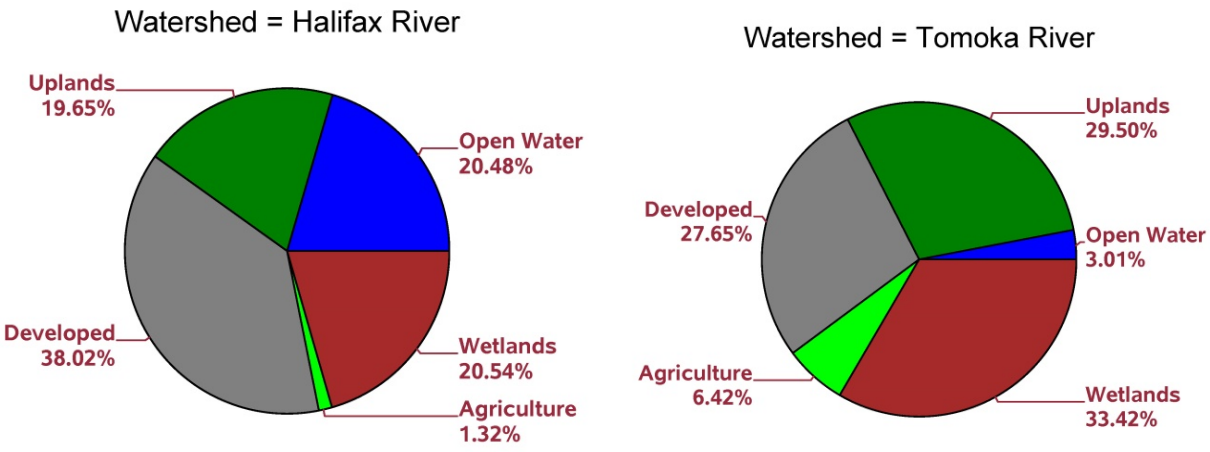


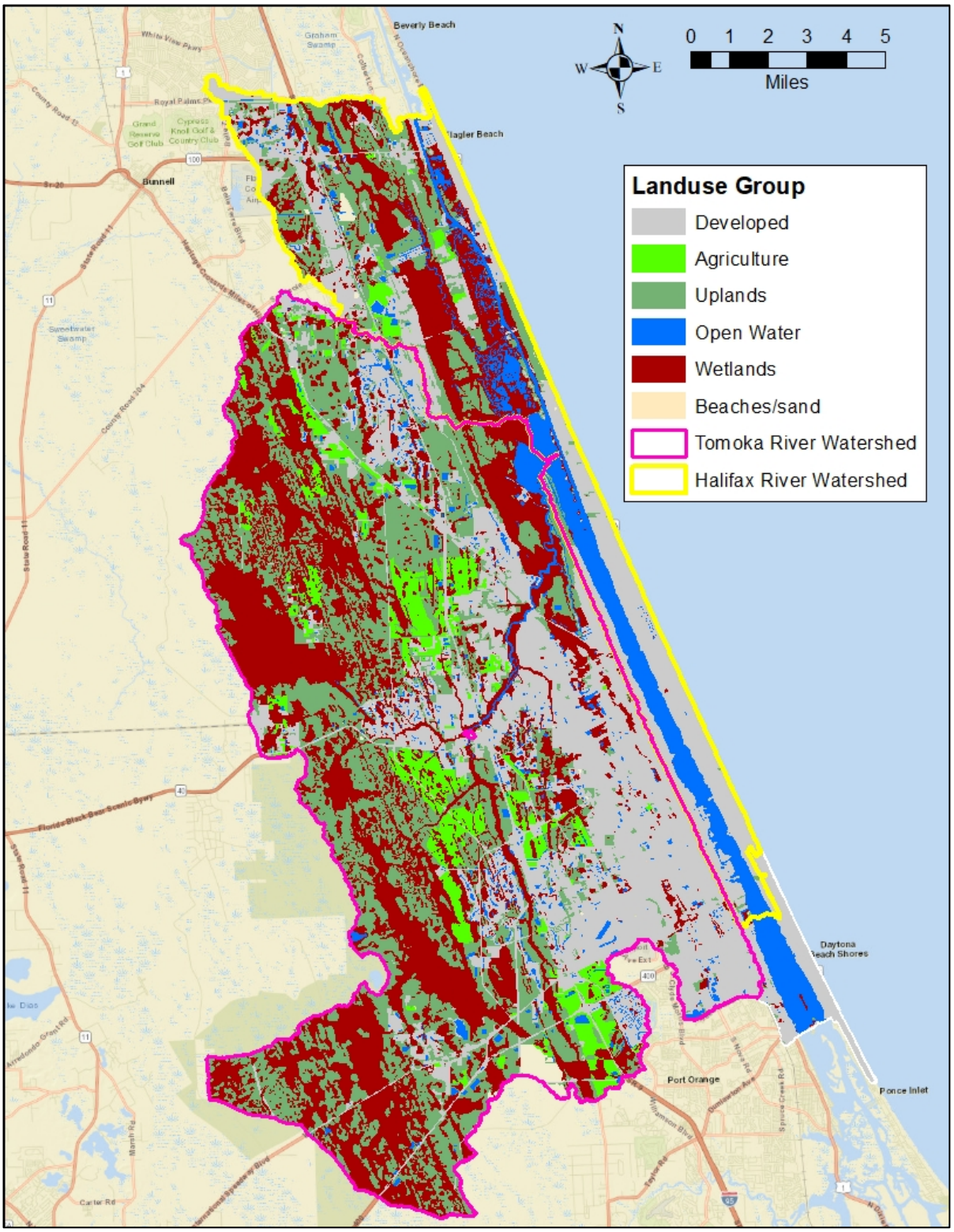
Table 5-8 - Number of acres in each specified Halifax River Basin and land use category

Land Use Class	Land Use Category	Basin					
		H-1	H-2	H-3	H-4	H-5	H-6
Agriculture	Pasture	45	0	0	0	0	0
Agriculture	Row Crop	359	109	4	0	0	0
Developed	Utility Swaths	0	0	0	0	0	0
Developed	Developed, Open Space	665	172	6	205	0	415
Developed	Developed, Low Intensity	113	290	104	4	0	309
Developed	Developed, Medium Intensity	1,828	766	265	1,327	578	2,423
Developed	Developed, High Intensity	1,572	178	155	690	274	2,023
Developed	Quarries/Strip Mines	237	15	2	38	20	0
Developed	Golf Courses	0	33	82	77	0	55
Open Water	Open Water	601	733	230	1,220	1,271	3,984
Uplands	Clearcut/Sparse	808	248	19	321	60	3
Uplands	Deciduous Forest	159	190	436	163	0	7
Uplands	Evergreen Forest	2,714	69	185	120	0	0
Uplands	Mixed Forest	1,428	360	120	91	150	59
Wetlands	Forested Wetland	3,388	678	873	286	0	55
Wetlands	Non-forested Wetland (Salt/Brackish)	0	0	0	0	0	0
Wetlands	Non-forested Wetland (Freshwater)	683	752	632	653	32	27

Table 5-9 - Number of acres in each specified Tomoka River Basin and land use category

Land Use Class	Land Use Category	Basin									
		T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10
Agriculture	Pasture	253	0	55	40	237	0	0	8	0	0
Agriculture	Row Crop	2,997	36	556	881	2,191	134	52	225	39	19
Developed	Utility Swaths	0	0	0	0	0	0	0	0	0	0
Developed	Developed, Open Space	269	63	86	0	646	1	0	65	44	382
Developed	Developed, Low Intensity	1,224	34	428	24	178	134	102	39	325	116
Developed	Developed, Medium Intensity	1,687	434	952	0	1,055	651	30	917	477	5,115
Developed	Developed, High Intensity	1,404	641	309	26	5,713	503	231	1,064	253	5,433
Developed	Quarries/Strip Mines	204	32	26	0	91	7	29	3	79	9
Developed	Golf Courses	430	248	0	0	702	0	0	0	0	333
Open Water	Open Water	626	150	141	4	1,156	168	44	128	755	449
Uplands	Clearcut/Sparse	2,840	81	573	242	1,404	49	10	260	467	147
Uplands	Deciduous Forest	0	46	0	11	31	9	0	0	205	140
Uplands	Evergreen Forest	9,556	85	3242	1,438	10,499	187	209	473	720	45
Uplands	Mixed Forest	387	219	105	128	586	77	43	19	625	328
Wetlands	Forested Wetland	7,548	240	2,019	766	1,2149	425	136	913	1,357	1,064
Wetlands	Non-forested Wetland (Salt/Brackish)	0	0	0	0	0	0	0	0	0	0
Wetlands	Non-forested Wetland (Freshwater)	6,301	374	1,285	872	2,836	142	64	100	1,192	413

Figure 5-31 - Land Use in the Halifax and Tomoka River Watersheds (SJRWMD, 2014)



5.6.1.5 Soils

Hydrologic soil groups were obtained from the National Soil Conservations Service 2007 soils layer. The LSPC model utilizes information regarding solely the dominant soils group within each defined basin. The four possible soil types are:

- Group A Soils: high infiltration rates and consist of soils that are deep and well drained to excessively drained and are often sandy with coarse textures.
- Group B Soils: moderate infiltration rates when wet and consist chiefly of soils that are moderately deep to deep, moderately well to well drained, and moderately fine to moderately coarse textures.
- Group C Soils: slow infiltration rates and are soils with layers impeding downward movement of water, or soils that have moderately fine or fine textures.
- Group D Soils: very slow infiltration rates and soils that are clayey and impede downward movement of water or can be shallow soils over an impervious layer; soils have a high water table.

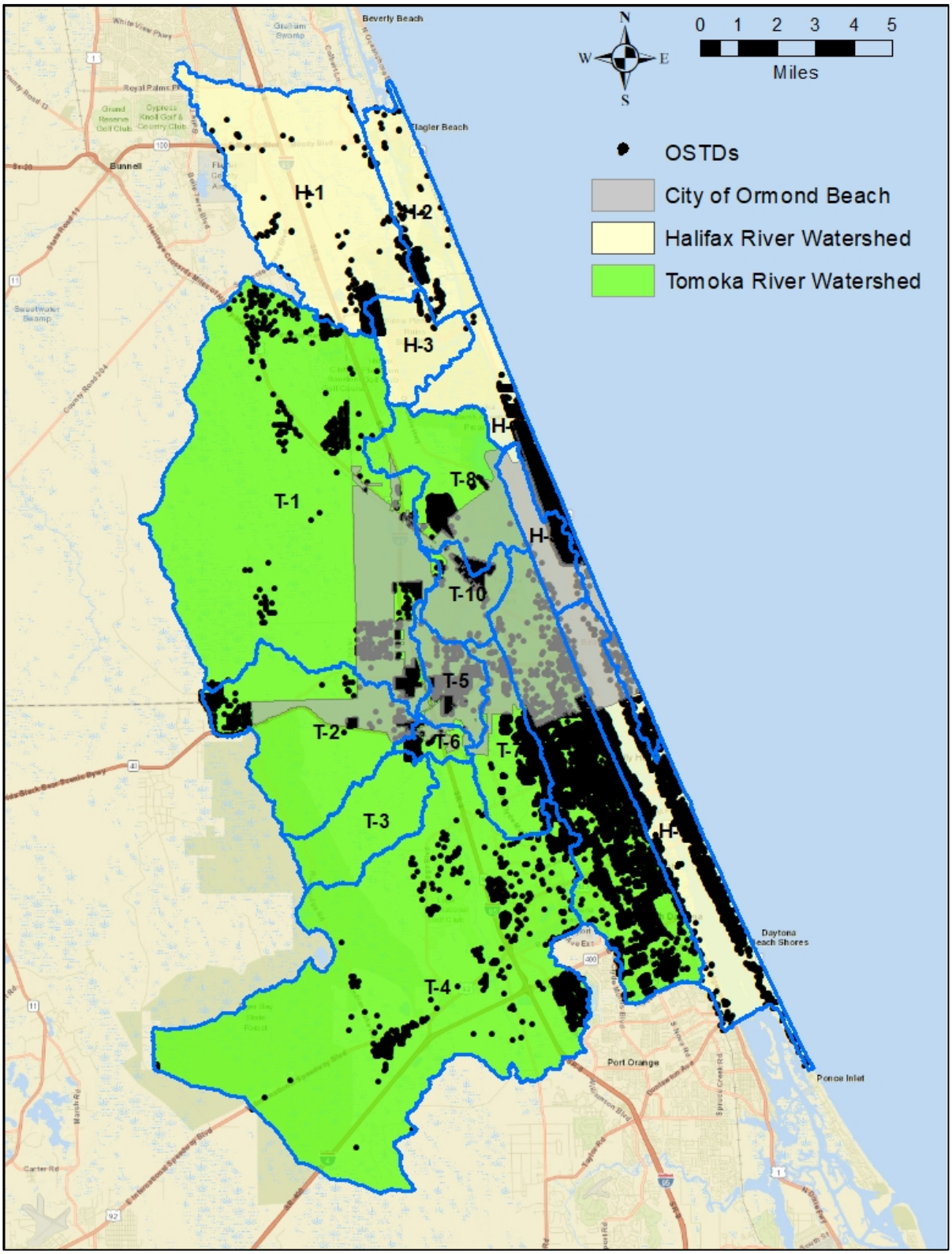
The dominant soils type in the Halifax River watershed is Group A, while in the Tomoka River watershed the dominant type is Group B.

5.6.2 Onsite Sewage Treatment and Disposal Systems (OSTDs)

The Florida Department of Health (FDOH) Florida Water Management Inventory (FLWMI) GIS coverages for Volusia and Flagler Counties were downloaded and used to estimate the number of on-site sewage treatment and disposal systems (OSTDs) within the study area. The FLWMI was completed in 2016 and was undertaken to provide a consistent state-wide coverage of parcel level water supply and wastewater treatment inventories. The FLWMI indicated 10,311 septic tanks located in the Halifax River Watershed and 12,455 septic tanks in the Tomoka River Watershed (**Figure 5-32**). As the FLWMI was created based upon a GIS analysis and not via a census of the OSTDs currently in service which may result in a discrepancy in the modeled loads.

Many factors can affect the nutrient performance of the OSTD including the distance from a waterbody, soil types, and the OSTD design for example. For this effort, we employed the same methodology employed by FDEP for the Halifax River TMDL (FDEP, 2013b). They used the 2.51 people per systems contributed 70 gallons per day with nutrient concentrations of 36 mg/L and 15 mg/L for TN and TP respectively.

Figure 5-32 - OSTDs in the Halifax and Tomoka River Watersheds (FLWMI, 2016)



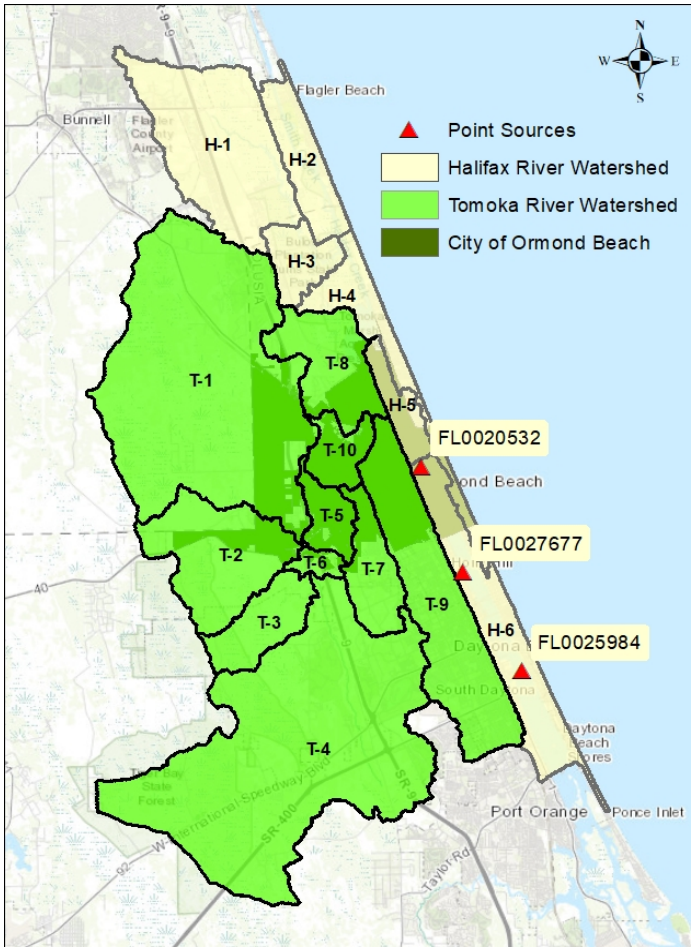
5.6.3 Point Source Loads

There are no permitted point sources in the Tomoka River Watershed, while three point sources occur in the Halifax River Watershed (**Figure 5-33**). These include three NPDES wastewater facilities (WWTF) that discharge in the Halifax River (FDEP 2013b):

- Ormond Beach WWTF (FL0020532) with a permitted annual average discharge of 6.0 MGD, with discharge and reuse;
- Holly Hill WWTF (FL0027677) with a permitted annual average discharge of 2.4 MGD; and
- Daytona Beach/Bethune Point WWTF (FL0025984) with a permitted annual average discharge of 20 MGD.

Discharge Monitoring Reports (DMRs) were used to determine monthly loads from monthly mean flows and concentrations for each WWTF. As these WWTF also supply water as part of a reclaimed water system, only effluent that was discharged to the Halifax River was included. The effects of reclaimed water are not well understood at this time but the use of reclaimed water may be a considerable source of nutrients depending on the type of waste water treatment produced the water.

Figure 5-33 - Point sources in the Halifax River Watershed. No point sources occur in the Tomoka River Watershed



5.8 Pollutant Loading Estimates

This section explores these pollutant loading estimates in terms of the relative contribution to loads by the various sources (nonpoint sources, point sources, and OSTDs), spatial variability, and temporal variability.

5.8.1 Source Contributions to Pollutant Loads

Figures 5-34 and 5-35 illustrate the relative contributions of each loading source to the total annual loads in the Halifax River and Tomoka River watersheds, respectively. **Tables 5-10 through 5-12** provide the percent contribution of each basin to the total mean watershed pollutant load from nonpoint, point and OSTD sources for TN, TP and BOD, respectively. Note that point sources occur in only one basin (Basin H-6) in the Halifax River watershed (and in no basin in the Tomoka River watershed). Additionally, BOD estimates from OSTDs were not included.

In the Halifax River watershed basins with the largest total annual loads (Basins H-6, H-4, and H-5), OSTDs contribute the greatest percentage of TN and TP loadings (**Figure 5-34**). In Basin H-6, OSTD loadings are followed closely by Point Source loadings, which only occur in this basin. Nonpoint source loadings have very little influence on total TN or TP loadings in these three basins of the Halifax River watershed. Annual TN loadings in Basins H-1, H-2, and H-3, smaller in magnitude than the other Halifax River basins, are nearly equally split between Nonpoint source and OSTD loadings, while TP loadings derive largely from OSTDs. As BOD loadings were not estimated for OSTD, the sole contributor of BOD loadings in the Halifax River watershed is nonpoint sources, with the exception of Basin H-6 where point sources contribute the vast majority of BOD loads to the basin (**Figure 5-34**).

In the Tomoka River watershed, there are no permitted point sources, thus all loadings derive from either nonpoint sources or OSTDs (**Figure 5-35**). In Basin T-9, where the largest watershed TN and TP loadings occur, OSTDs constituted the largest source of the loadings. OSTDs are the largest contributing source to total TP loads in the Tomoka River watershed, with nonpoint sources contributing a relatively small percentage of TP loads. The contribution of nonpoint sources to total TN loadings varies in the watershed by basin (**Figure 5-35**). Given no point sources in this watershed, and no inclusion of BOD loadings from OSTDs, all BOD loadings in the Tomoka River watershed are attributed to nonpoint sources.

Figure 5-34 -Relative contribution of Nonpoint Source, OSTDs, and Point Source loadings to total mean annual TN (top), TP (middle) and BOD (bottom) loads in Halifax River watershed basins

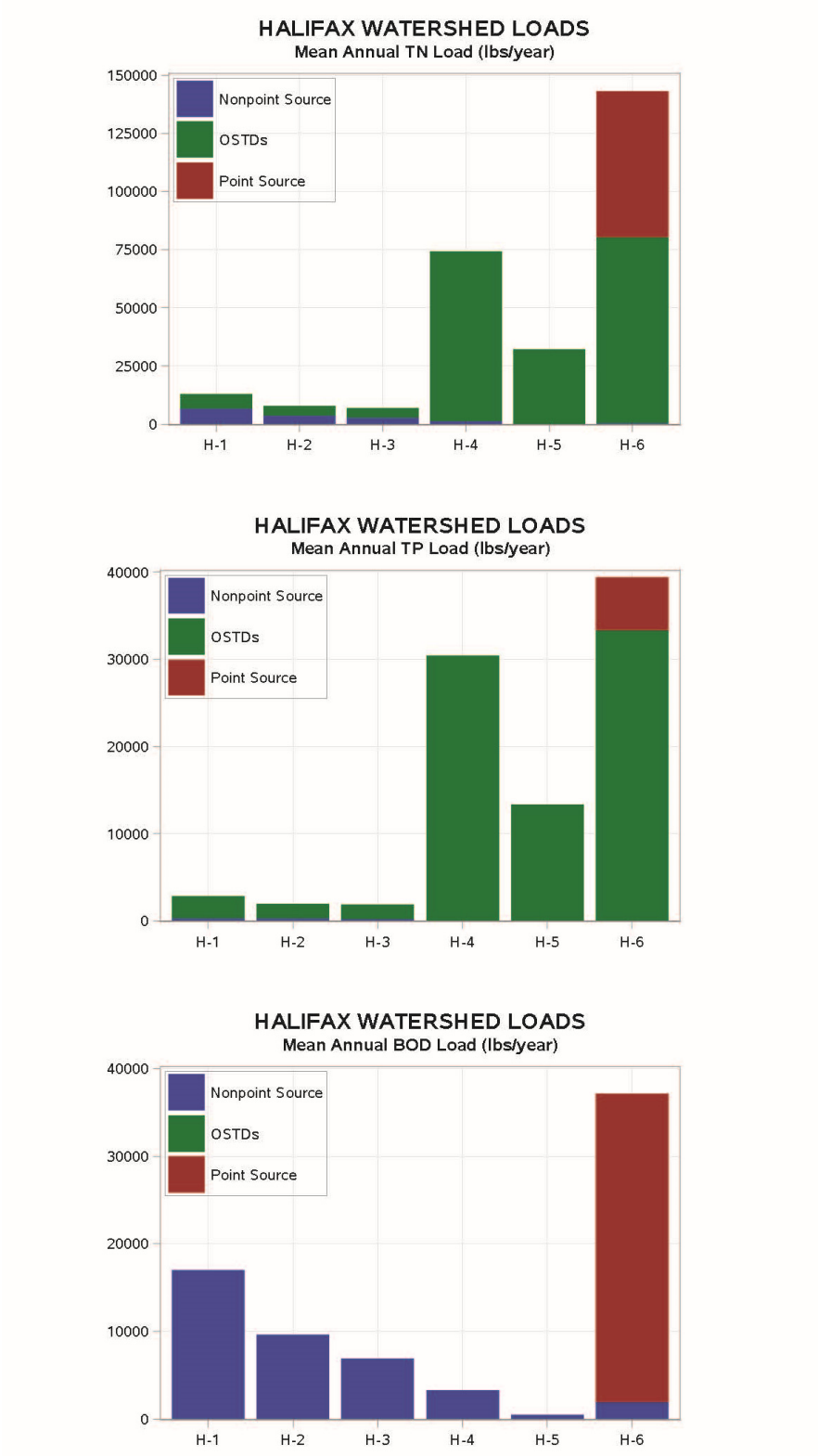


Figure 5-35 - Relative contribution of Nonpoint Source, OSTDs, and Point Source loadings to total mean annual TN (top), TP (middle) and BOD (bottom) loads in Halifax River watershed basins

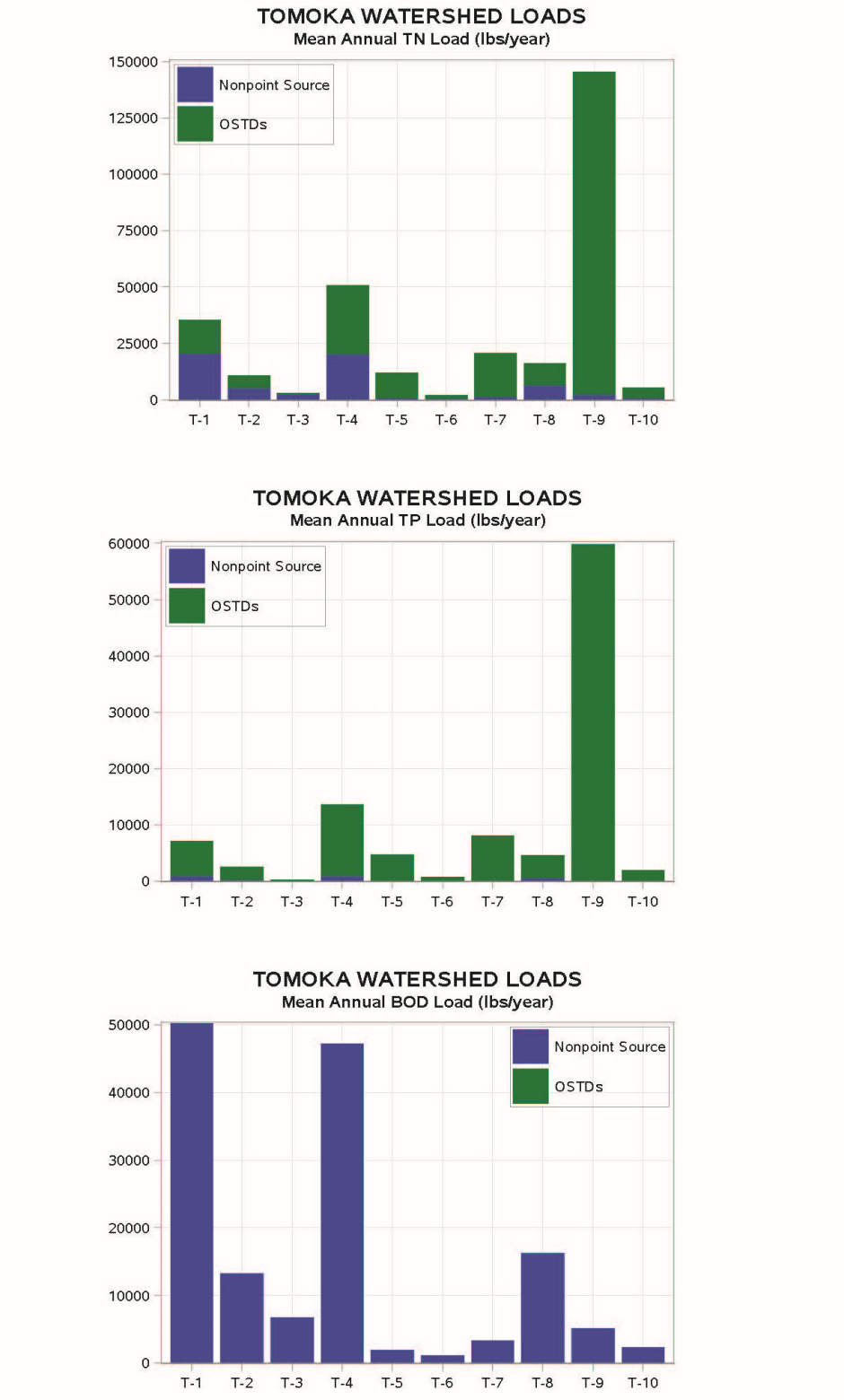


Table 5-10 - Mean annual total nitrogen loads (lbs/year) and percent contribution to the total watershed total nitrogen load for each basin in the Halifax and Tomoka watersheds

Basin	Loading Source					
	Nonpoint		Point		OSTDs	
Halifax River	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
H-1	6,646	52.5%			6,014	47.5%
H-2	3,822	49.8%			3,855	50.2%
H-3	2,990	43.3%			3,913	56.7%
H-4	1,217	1.6%			72,881	98.4%
H-5	131	0.4%			32,036	99.6%
H-6	499	0.3%	62,362	43.6%	80,051	56.0%
Tomoka River						
T-1	20,613	58.4%			14,669	41.6%
T-2	5,229	49.1%			5,416	50.9%
T-3	2,622	90.7%			270	9.3%
T-4	20,419	40.3%			30,301	59.7%
T-5	801	6.7%			11,103	93.3%
T-6	400	18.9%			1,716	81.1%
T-7	1,416	6.8%			19,314	93.2%
T-8	6,495	40.5%			9,561	59.5%
T-9	2,145	1.5%			143,198	98.5%
T-10	839	15.6%			4,530	84.4%

Table 5-11 - Mean annual total phosphorus loads (lbs/year) and percent contribution to the total watershed total phosphorus load for each basin in the Halifax and Tomoka watersheds

Basin	Loading Source					
	Nonpoint		Point		OSTDs	
Halifax River	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
H-1	345	12.1%			2,506	87.9%
H-2	360	18.3%			1,606	81.7%
H-3	256	13.6%			1,630	86.4%
H-4	65	0.2%			30,367	99.8%
H-5	9	0.1%			13,348	99.9%
H-6	37	0.1%	5,983	15.2%	33,355	84.7%
Tomoka River						
T-1	1,031	14.4%			6,112	85.6%
T-2	267	10.6%			2,257	89.4%
T-3	135	54.7%			112	45.3%
T-4	975	7.2%			12,625	92.8%
T-5	39	0.8%			4,626	99.2%
T-6	22	3.0%			715	97.0%
T-7	69	0.9%			8,048	99.1%
T-8	603	13.1%			3,984	86.9%
T-9	106	0.2%			59,666	99.8%
T-10	46	2.4%			1,887	97.6%

Table 5-12 - Mean annual BOD loads (lbs/year) and percent contribution to the total watershed BOD load for each basin in the Halifax and Tomoka watersheds

Basin	Loading Source			
	Nonpoint		Point	
Halifax River	**Mean**	**%**	**Mean**	**%**
H-1	17,015	100.0%		
H-2	9,636	100.0%		
H-3	6,863	100.0%		
H-4	3,262	100.0%		
H-5	500	100.0%		
H-6	1,967	5.3%	35,174	94.7%
Tomoka River				
T-1	50,185	100.0%		
T-2	13,194	100.0%		
T-3	6,662	100.0%		
T-4	47,249	100.0%		
T-5	1,890	100.0%		
T-6	1,117	100.0%		
T-7	3,314	100.0%		
T-8	16,197	100.0%		
T-9	5,129	100.0%		
T-10	2,326	100.0%		

As illustrated in the map in **Figure 5-27**, the City comprises only a portion of the watershed areas investigated in this report. Thus, loadings were also assigned to the City or other jurisdictions, based on area occupied by the City in each of the basins. The relative contributions for the Halifax River watershed are displayed in **Figure 5-36**, while those for the Tomoka River watershed are presented in Figure 40. In the Halifax River watershed, three of the basins (Basins H-2, H-2, and H-3) lie completely outside of the City boundaries. Thus, none of the loadings for these basins are attributed to the City (**Figure 5-36**). Comparatively, the majority of Basin H-5 lies within City boundaries and thus the loadings are largely attributed to the City. Only one of the three point sources that occur in Basin H-6 lie within City boundaries and thus much of the point source loadings are attributed to other jurisdictions.

Similarly, there are basins in the Tomoka River watershed that lie outside the boundaries of the City (for example, Basins T-3 and T-4) and thus, loadings are solely attributed to other jurisdictions in these basins (**Figure 5-37**). On the other hand, other basins (Basin T-5 for example) are nearly entirely within the City boundaries and thus reflect a larger percentage of the total loads (**Figure 5-37**).

For either watershed, those basins with the largest area within the City boundaries would be most affected by any potential loading reduction plans implemented by the City (which would presumably occur within City boundaries). However, coordination with other jurisdictions surrounding the City would increase the impact on loading reduction.

Figure 5-36 - Contributions to total TN (top), TP (middle), and BOD (bottom) annual loads by the City of Ormond Beach relative to other jurisdictions in the Halifax River watershed

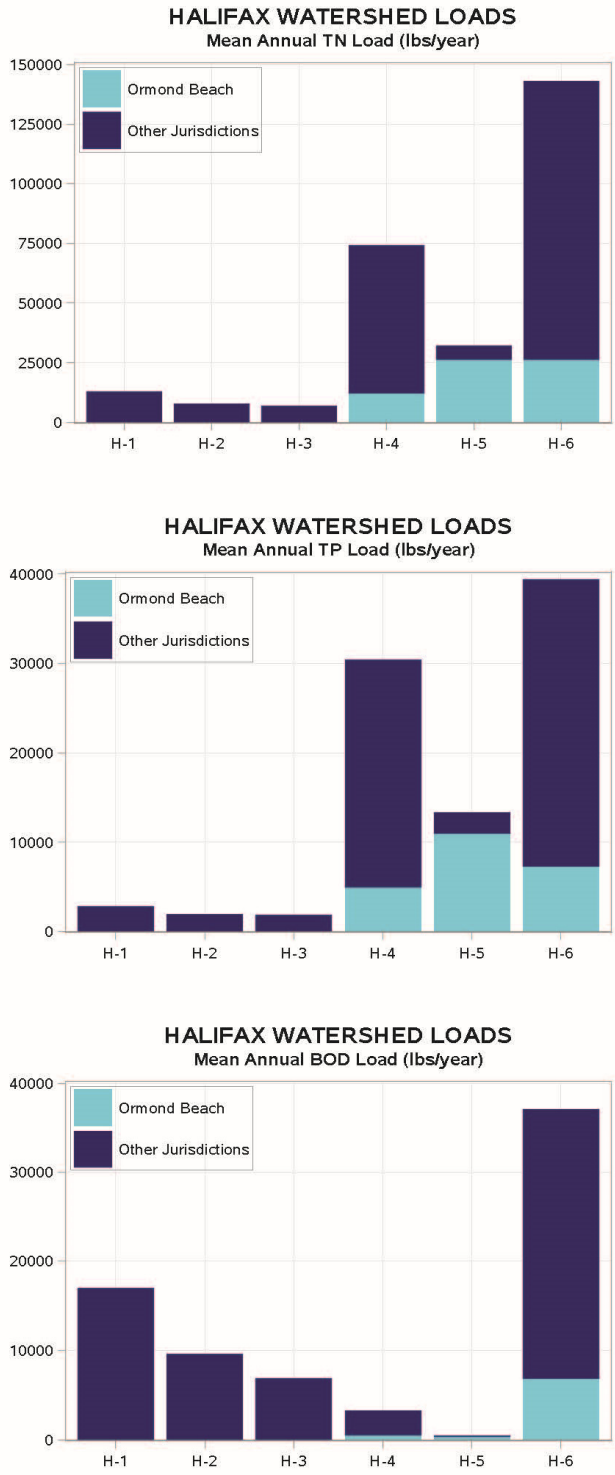
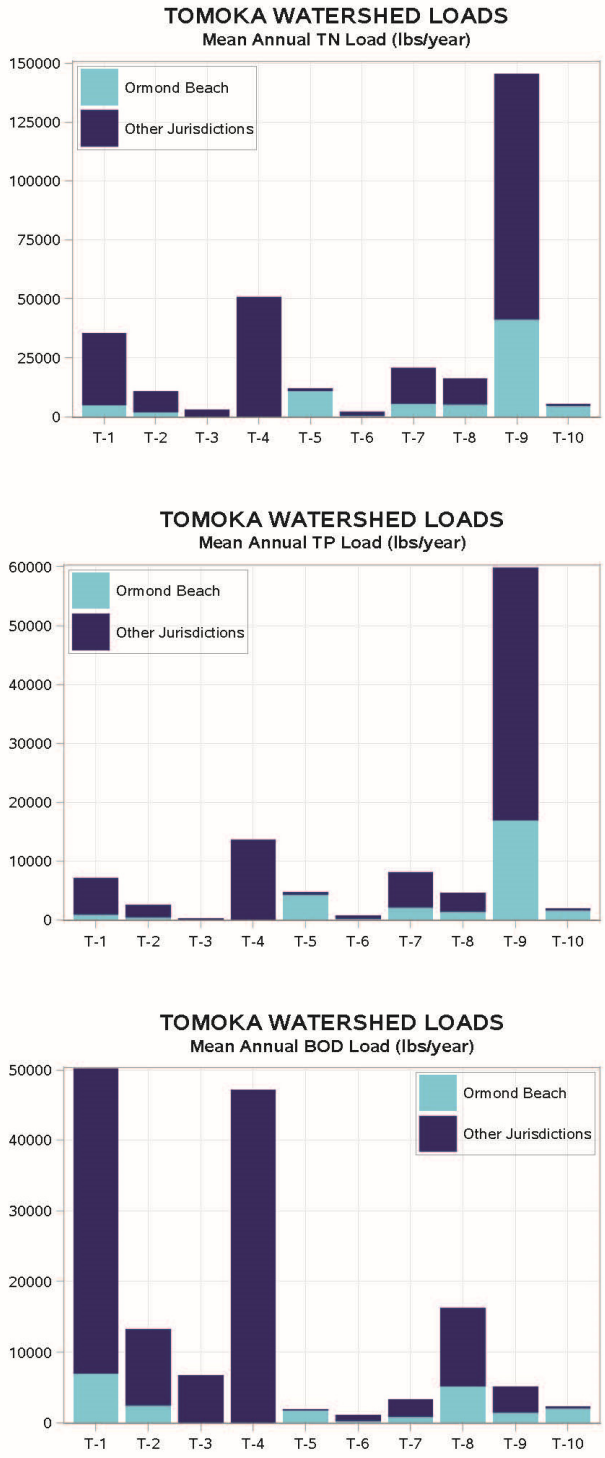


Figure 5-37 - Contributions to total TN (top), TP (middle), and BOD (bottom) annual loads by the City of Ormond Beach relative to other jurisdictions in the Halifax River watershed



5.8.2 Spatial Variability in Pollutant Loads

Spatial variability is evident amongst the basins (**Table 5-13** and **Figures 5-38** and **5-39**). In the Halifax River Watershed, spatial patterns are similar for TN and TP where the largest total mean monthly loads occur in Basin H-6, followed by Basin H-4 (**Figure 5-38**). The only point sources in either watershed occur in Basin H-6 which would contribute to the larger total loads of all three pollutants estimated. Given that rainfall is the same across basins, land use differences likely explain any additional spatial variability amongst basins. As summarized in Table 8 and graphically displayed in **Appendix B**, Basin H-6 has the largest percentage (55.8%) of Developed land use categories in the Halifax River watershed; Basin H-4 contains the second largest percentage (45.1%) of Developed lands in the watershed, followed by Basin H-5 (36.6%). Basin H-6 also has the largest number of OSTDs in the watershed (**Table 5-10**). In terms of BOD in the Halifax River watershed, Basin H-6 had the largest loads of the basins, again likely due to the point sources occurring in this basin. However, Basins H-4 and H-5 have lower values of BOD loads

Table 5-13. Total pollutant loads (lbs/month) for each basin in the Halifax and Tomoka watersheds

Basin	TN Load		TP Load		BOD Load	
Halifax River	**Mean**	**Range**	**Mean**	**Range**	**Mean**	**Range**
H-1	1,055	461 -12,039	238	192 - 1051	1,418	0 - 34,302
H-2	640	297 -3,091	164	123 - 459	803	0 - 7,927
H-3	575	301 -2,809	157	125 - 411	572	0 - 6,657
H-4	6,175	5,590 -8,238	2536	2,328 - 2,705	272	0 - 5,424
H-5	2,681	2,457 -2,907	1113	1,023 - 1,149	42	0 - 732
H-6	11,909	8,028 -17,847	3281	2,721 - 4,520	3,095	671 - 17,058
Tomoka River	**Mean**	**Range**	**Mean**	**Range**	**Mean**	**Range**
T-1	2,940	1,125 - 37,441	595	469 - 3,066	4182	0 - 103,120
T-2	887	415 - 9,619	210	173 - 851	1099	0 - 26,970
T-3	241	21 - 4,717	21	9 - 353	555	0 - 14,058
T-4	4,227	2,323 - 39,172	1133	968 - 3,554	3937	0 -100,232
T-5	992	851 - 2,327	389	355 - 487	157	0 - 3,786
T-6	176	132 - 813	61	55 - 112	93	0 - 2,136
T-7	1,727	1,481 - 4,120	676	617 - 853	276	0 - 6,792
T-8	1338	735 - 5,641	382	306 - 897	1350	0 - 13,770
T-9	12,112	10,979 - 15,772	4981	4,575 - 5,312	427	0 - 9,897
T-10	447	349 - 1809	161	145 - 251	194	0 - 3,938

Figure 5-38 - Halifax River Watershed basin-specific mean monthly TN (top), TP (middle) and BOD (bottom) loads

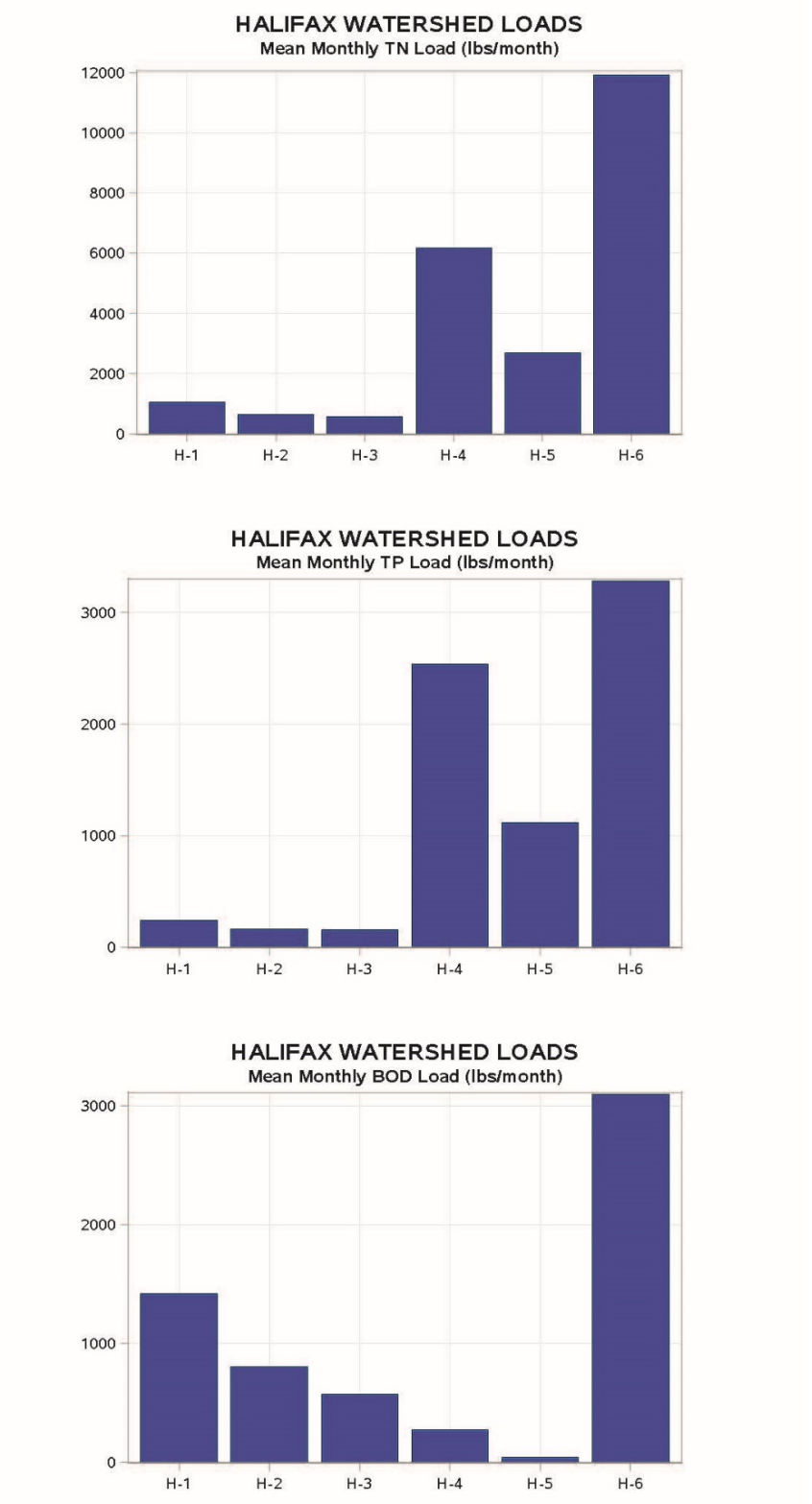
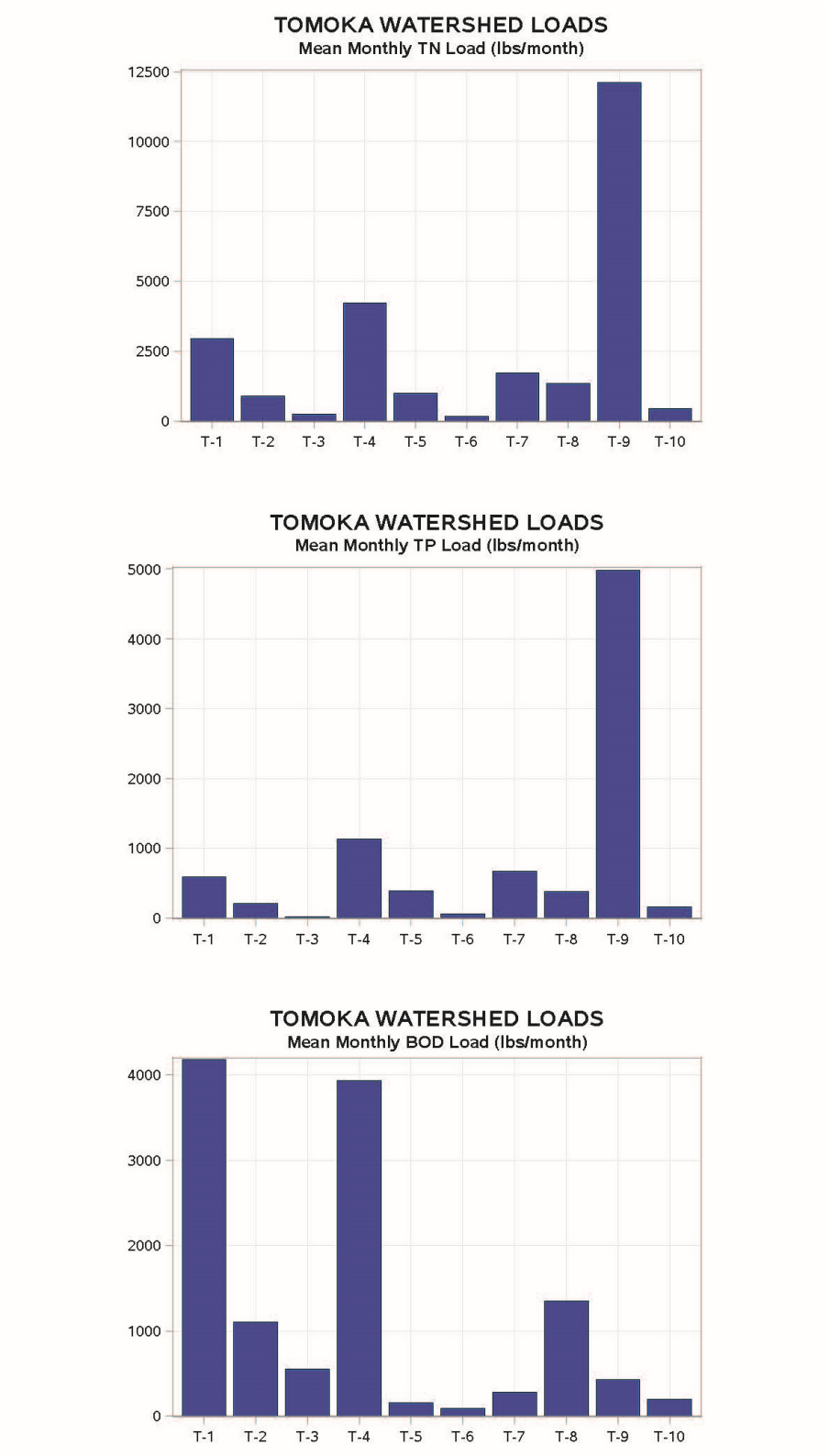


Figure 5-39 - Tomoka River Watershed basin-specific mean monthly TN (top), TP (middle) and BOD (bottom) load



In the Tomoka River watershed, as with the Halifax River watershed, TN and TP displayed similar spatial patterns, while BOD differed (**Figure 5-39**). For TN and TP, the largest mean monthly loads occur in Basin T-9 which are more than double that of the next highest loads occurring in Basin T-4. Basin T-9 has the largest percentage (81.4%) of Developed lands in any basin of either watershed. Basin T-9 also has the largest number of OSTDs in the watershed (**Table 5-10**). In the Tomoka River watershed, BOD loads are the greatest in Basin T-1, followed closely by Basin T-4.

5.8.3 Temporal Variability in Pollutant Loads

A wide range in pollutant loads within a specific basin is indicated in **Table 5-13**. **Appendix B** provides time series plots of total loadings for TN, TP, and BOD over the 2015-2019 period for each basin. These time series largely reflect increases in total loadings during October 2019 and the spring of 2018, which corresponds to the periods of notably higher rainfall (Section 6.1.3, **Figure 5-29**). On an average monthly basis, total TN and TP loads show small levels of variability across months (**Figures 5-40 and 5-41**), with the exception of the month of October where increases are evident in both watersheds. Total average monthly BOD loadings show more variability across months, but also reflect the large increase in October (**Figures 5-40 and 5-41**). BOD loadings are not included from OSTD loadings and thus may reflect more seasonality due to nonpoint source contributions.

Figure 5-40 - Monthly average total watershed loads for TN (top), TP (middle) and BOD (bottom) in the Halifax River watershed

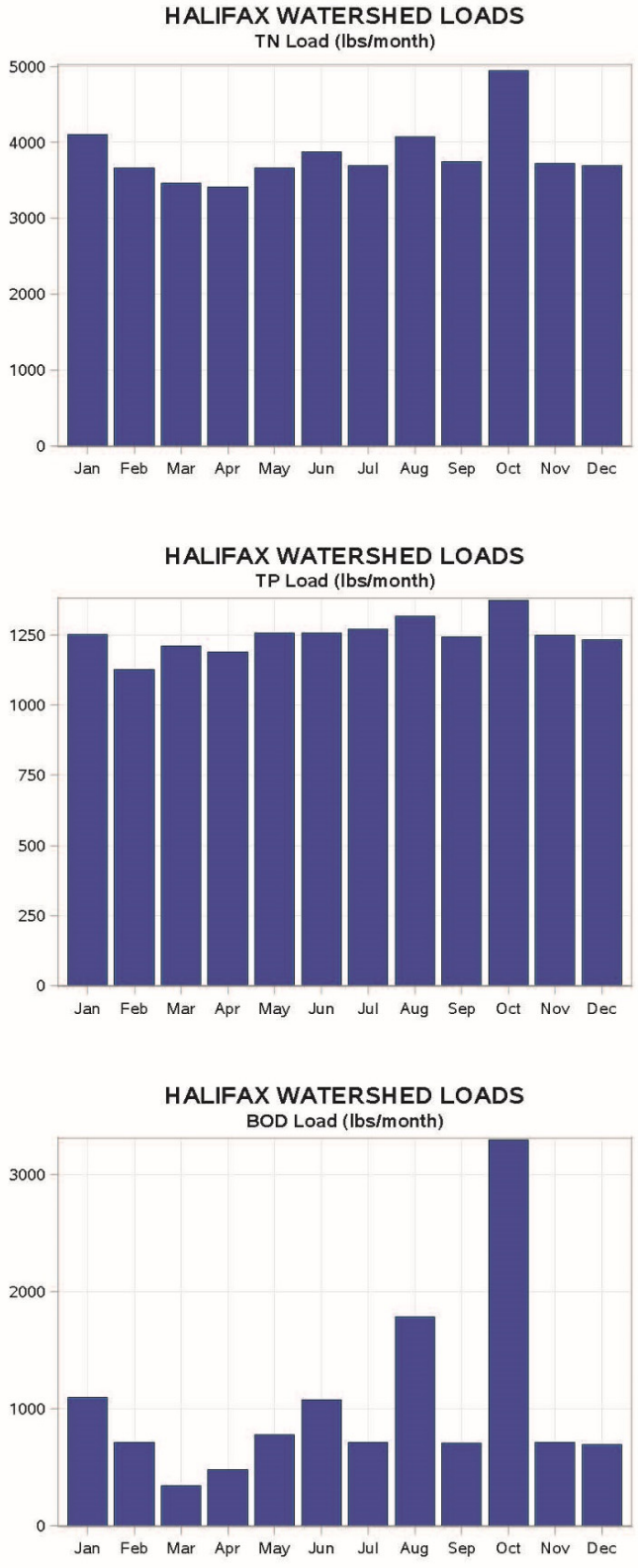
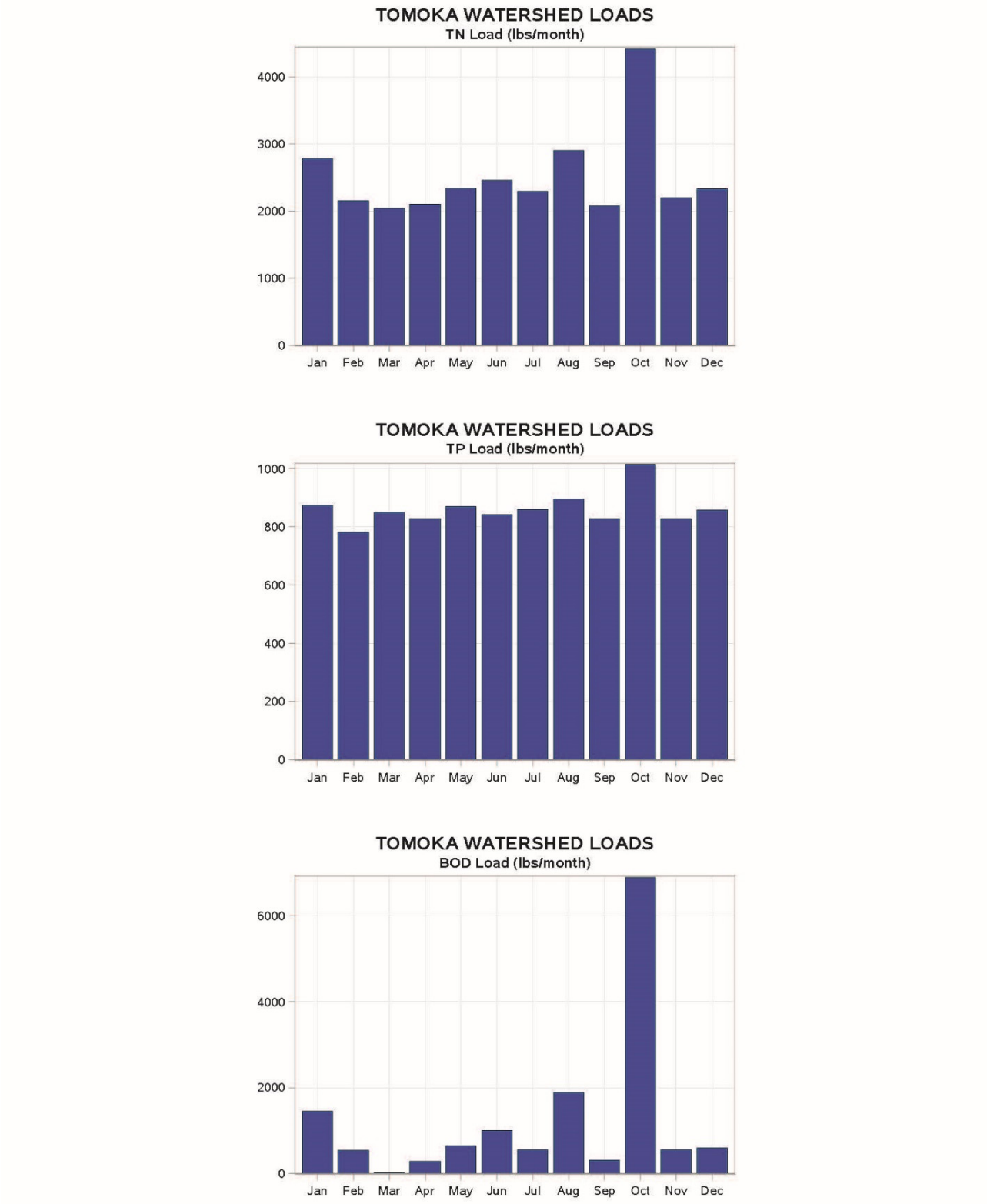


Figure 5-41 - Monthly average total watershed loads for TN (top), TP (middle) and BOD (bottom) in the Tomoka River watershed



5.8.4 Unit Area Nonpoint Source Loads

Given that the basins vary in size (acreage), a comparison of nonpoint source loads predicted from the LSPC was made on a unit area basis. **Figures 5-42 to 5-44** illustrate the comparison of basin mean loads versus mean unit area loads for TN, TP and BOD, respectively. The ranges displayed on the maps use quartiles specific to each parameter group. In the Halifax River watershed, the basins with the largest unit area loads for TP, TN, and BOD are those north of the City boundaries (Basins H-2 and H-3). Basins in the Halifax River watershed had larger unit area loads of TN and BOD from nonpoint sources than basins in the Tomoka River watershed, with the exception of Basin T-8 which does cross the northern boundary of the City. Tomoka River TP unit area nonpoint source loads were also high in Basin T-8 but were also elevated in Basin T-3 (**Figure 5-44**) which falls to the southwest of the City's boundaries. **Figures 5-45 and 5-46** provide a comparison of mean annual unit area nonpoint source loads by basin for the Halifax River and Tomoka River watersheds, respectively.

Figure 5-42 - Basin specific mean annual TN loads (left) and mean annual unit area TN loads (right) predicted by the LSPC model in the Halifax and Tomoka River watersheds

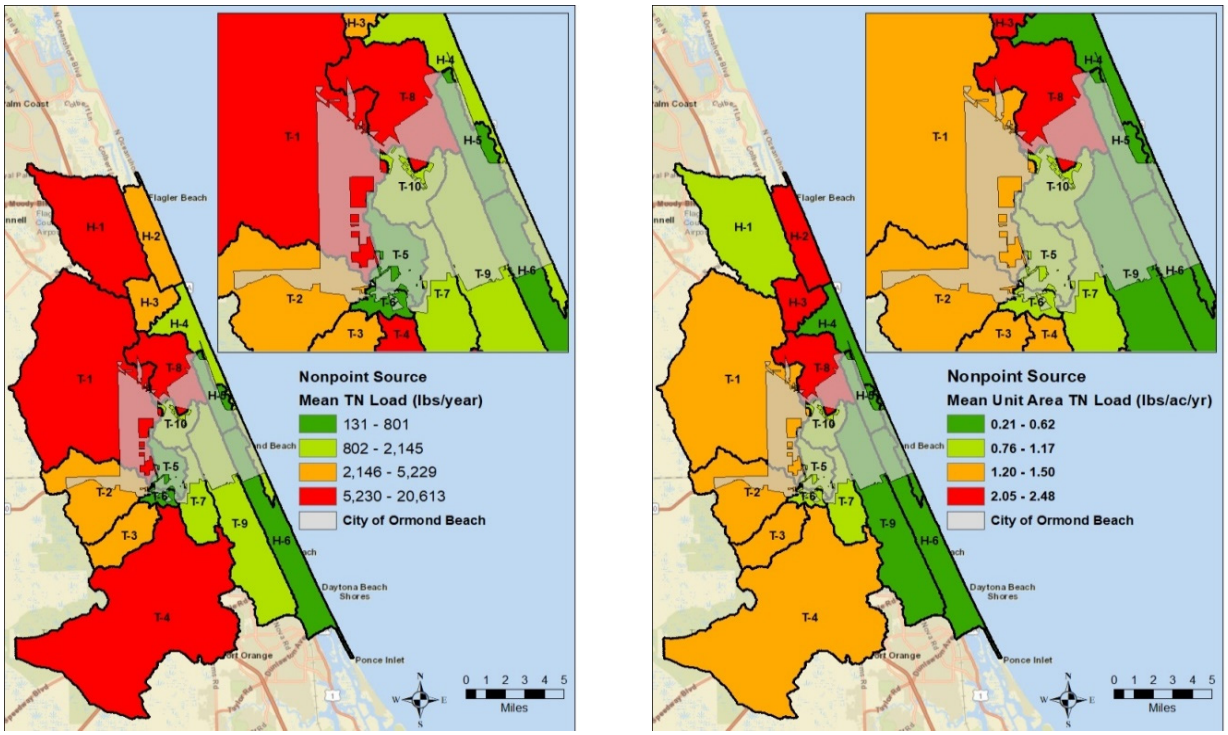


Figure 5-43 - Basin specific mean annual TP loads (left) and mean annual unit area TP loads (right) predicted by the LSPC model in the Halifax and Tomoka River watersheds

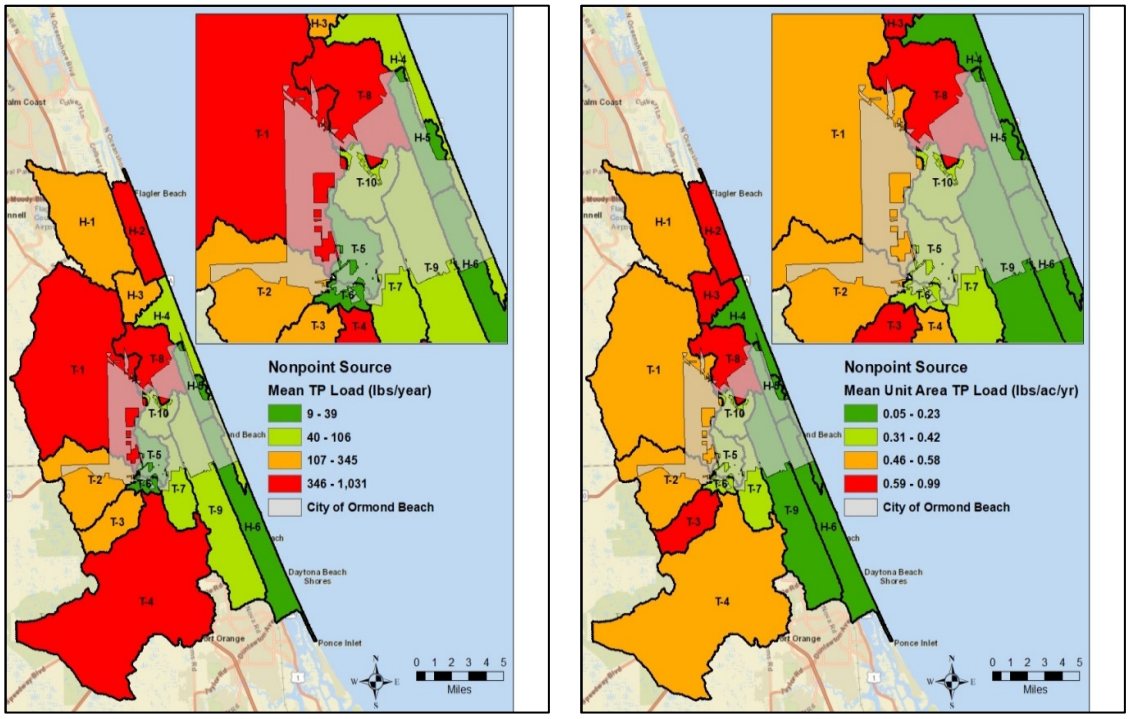


Figure 5-44 - Basin specific mean annual BOD loads (left) and mean annual unit area BOD loads (right) predicted by the LSPC model in the Halifax and Tomoka River watersheds

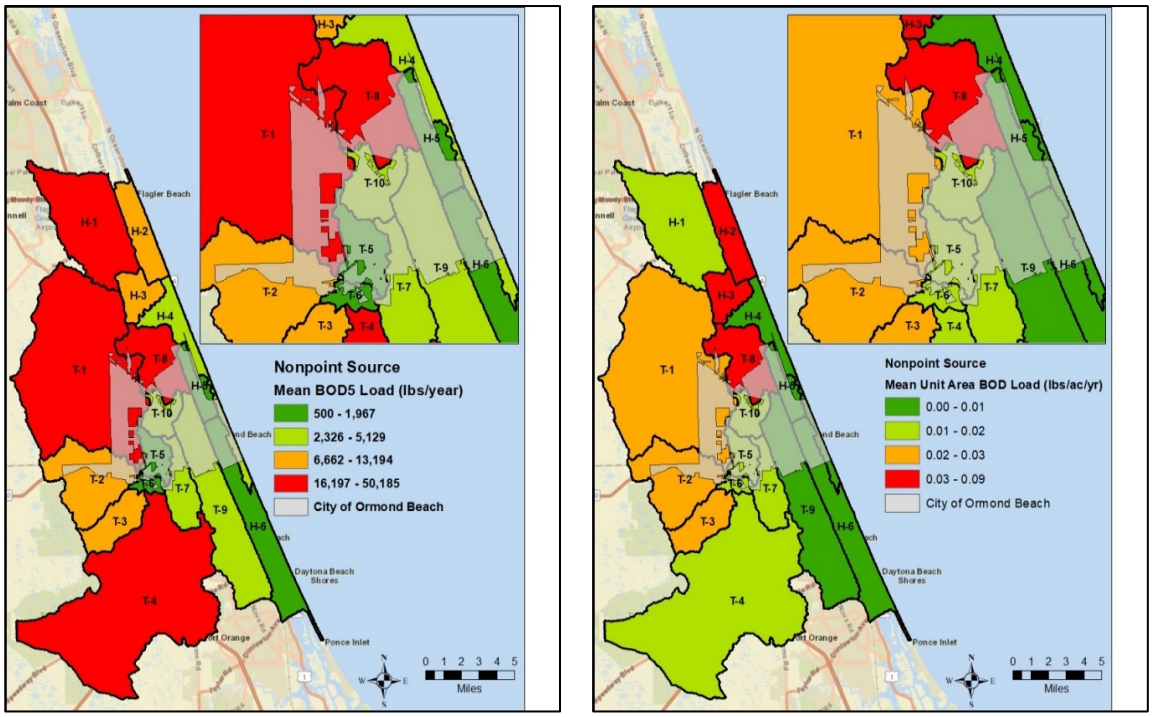


Figure 5-45 - Mean annual unit area loads of TN (top), TP (middle), and BOD (bottom) in Halifax River watershed basins

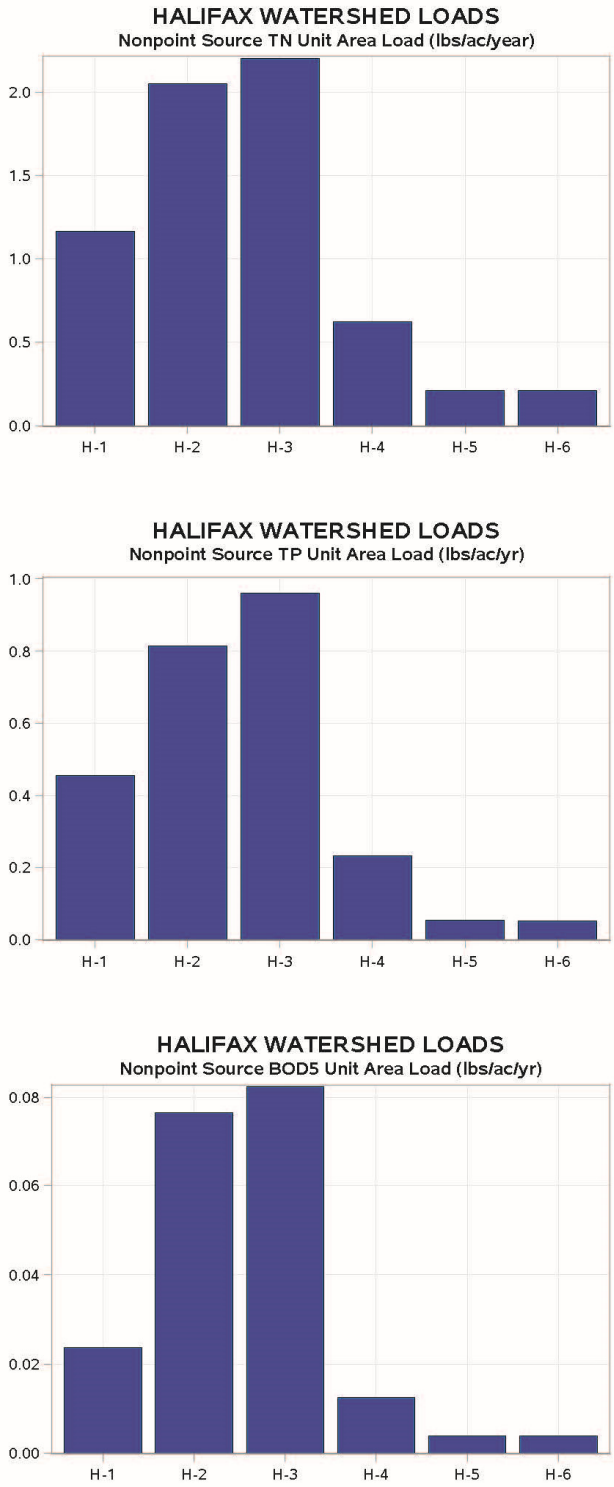
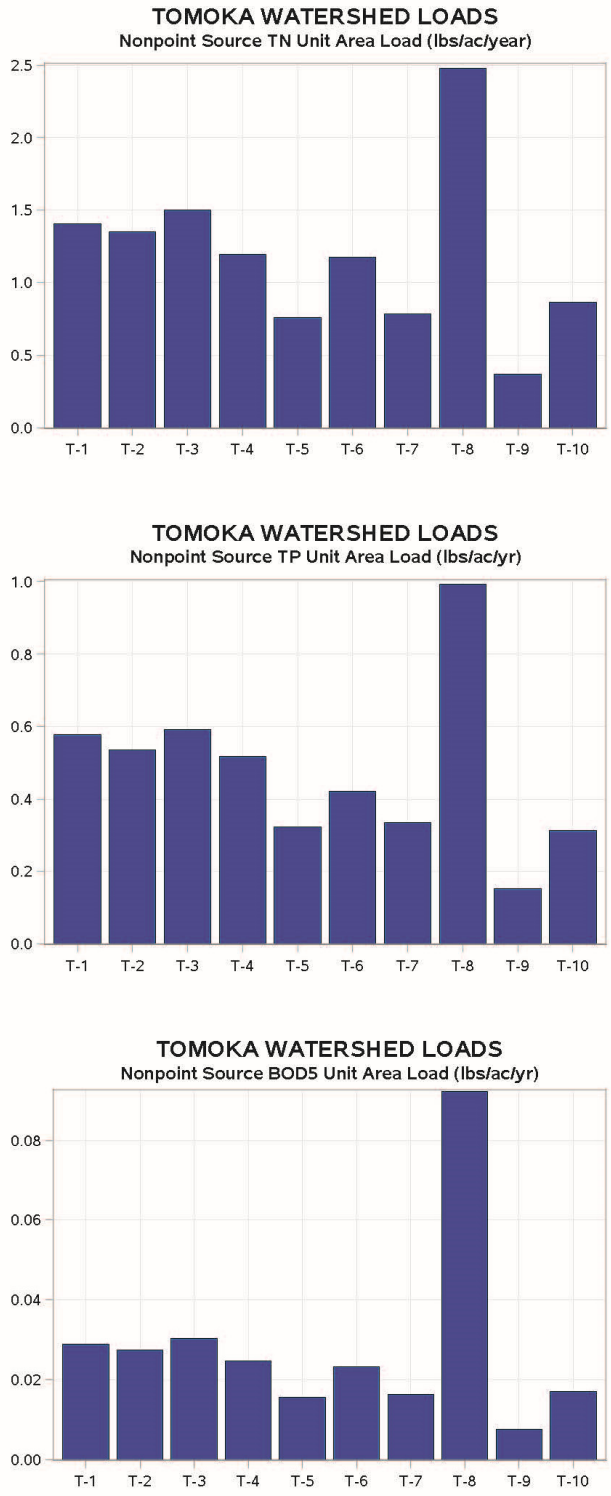


Figure 5-46 - Mean annual unit area loads of TN (top), TP (middle), and BOD (bottom) in Tomoka River watershed basins



To identify areas in need of stormwater improvement, we ranked each parameter's basin unit area load in descending order (**Tables 5-14 -5-15**). It not surprising that they all sort in the same order as the only real factor changing between basins are landuses. The City would be best served if it focused its efforts to reduce the runoff loads from Basins T-8, T-1 and T-2.

Table 5-14 - Mean annual unit area loadings of total phosphorus in each basin, ranked in decreasing order

Watershed	Basin	TP Mean Annual Unit Area Load
Tomoka River	T-8	0.99
Halifax River	H-3	0.96
Halifax River	H-2	0.81
Tomoka River	T-3	0.59
Tomoka River	T-1	0.58
Tomoka River	T-2	0.53
Tomoka River	T-4	0.52
Halifax River	H-1	0.46
Tomoka River	T-6	0.42
Tomoka River	T-7	0.34
Tomoka River	T-5	0.32
Tomoka River	T-10	0.31
Halifax River	H-4	0.23
Tomoka River	T-9	0.15
Halifax River	H-5	0.06
Halifax River	H-6	0.05

Table 5-15 - Mean annual unit area loadings of BOD in each basin, ranked in decreasing order

Watershed	Basin	BOD Mean Annual Unit Area Load
Tomoka River	T-8	0.09
Halifax River	H-3	0.08
Halifax River	H-2	0.08
Tomoka River	T-3	0.03
Tomoka River	T-1	0.03
Tomoka River	T-2	0.03
Tomoka River	T-4	0.02
Halifax River	H-1	0.02
Tomoka River	T-6	0.02
Tomoka River	T-10	0.02
Tomoka River	T-7	0.02
Tomoka River	T-5	0.02
Halifax River	H-4	0.01
Tomoka River	T-9	0.01
Halifax River	H-5	0.00
Halifax River	H-6	0.00

5.9 Conclusions

The primary purpose of this report is to aid the City of Ormond Beach by identifying locations within the Halifax and Tomoka Rivers with degrading water quality and to determine the sources of nutrient loads to each river. Both rivers have a TMDL that addresses nutrients and the City is looking to see where it fits into the overall loadings and focus on areas in need of enhanced nutrient management.

Ecological Analysis

- There were limited ecological data available for this analysis

- Two fisheries reports suggested the Tomoka River serves as an oligohaline nursery area for fishes, supporting an abundance of more freshwater leaning fish (at least in the juvenile life stage).

Long-term water quality trends analysis

- The majority of stations analyzed exhibited no significant trends
- Trend tests at long-term stations within the Halifax River indicate no statistically significant trends for TN, but significant decreasing trends in TP at three locations.
- There were three long-term stations within the Tomoka River that indicated statistically significant improving trends in TN but there were no significant trends for TP.
- At two stations in the Halifax River, a statistically significant decreasing shallow (improving) trend occurred. However, for two stations in the Tomoka River (one in each of the freshwater and estuarine segments) and one station in the Tomoka Basin, statistically significant, but shallow, increases in chlorophyll were detected.
- Several of the long-term stations within the City's boundaries on the Halifax River had statistically significant decreasing (degrading) trends for dissolved oxygen (both concentration and saturation).

Water quality assessments

- The two TMDL WBIDs have not exceeded the annual average chlorophyll *a* since the TMDL was established.
- The TN AGMs exceeded the NNC in the Tomoka River.
- Within the Halifax River, TN and TP criteria were both exceeded twice in this period, though not within a three-year period which is required to deem a waterbody impaired.
- No current impairments for dissolved oxygen saturation or metals were indicated by the analyses conducted in this report for the Tomoka River WBID 2634.
- Within the Halifax River, no impairments for dissolved oxygen or bacteriological criteria was indicated multiple metals had repeated exceedances above established criteria (including copper, iron and zinc).

Pollutant loadings

- For many of the basins examined, the higher proportion of the loads came from outside the City
- Within the City, the three basins with the highest unit area loads are Basins T-8, T-1 and T-2.
- Areas outside the City's jurisdiction contribute the highest unit area loads to the Halifax River
- In many basins, the load from OSTDs exceeds the runoff load.

5.10 Water Quality References

1. [FDEP] Florida Department of Environmental Protection. 2013a. Final TMDL Report: Nutrient TMDL for Tomoka River (Fresh Water), WBID 2634. May 2013.

2. [FDEP] Florida Department of Environmental Protection. 2013b. Final TMDL Report: Nutrient TMDL for Halifax River, WBID 2363B. May 2013.

3. [FWC] Florida Fish and Wildlife Conservation Commission Florida Marine Research Institute. 1999. Fisheries-Independent Monitoring Program: A Summary of Fixed-Station Sampling in the Tomoka River/Basin, Ponce De Leon Inlet, and Mosquito Lagoon, Volusia County Florida, 1993-1997. September 1999.

4. Turtora, Michael, and Schotman, E.M., 2010, Seasonal and Spatial Distribution Patterns of Finfish and Selected Invertebrates in Coastal Lagoons of Northeastern Florida, 2002-2004: U.S. Geological Survey Scientific Investigations Report 2010-5131, 90 p.

6. FUTURE CLIMATE IMPACT ASSESSMENT

Sea level rise and climate change pose a significant threat to the City of Ormond Beach. With portions of the City on the barrier island, a long shoreline along the Halifax River, and low-lying communities surrounding Tomoka State Park, Ormond Beach will not only experience more frequent tidal flooding and coastal inundation associated with storms, but also inland flooding as rainfall patterns change. The natural drainage of stormwater will become more strained, requiring innovative approaches and coordinated stormwater management to reduce flooding risks to the community.

This Chapter reviews resilience considerations and adaptation strategies for the City of Ormond Beach as they relate to sea level rise and climate change, with a specific focus on stormwater management. This Chapter examines projected sea level rise scenarios, seawall height recommendations, stormwater management trends relative to sea level rise and resilience, and infrastructure and ecosystem resilience. Also presented in this chapter is the identification of assets at-risk of experiencing increased flooding and a discussion of adaptation strategies. Stormwater Management Trends Relative to Sea Level Rise.

6.1 Sea Level Rise Scenarios and Infrastructure Upgrades

6.1.1 Sea Level Rise Scenarios

As part of sea level rise preparation and planning, some communities have adopted sea level rise projections as planning curves to guide new construction and major redevelopment with considerations for future conditions. Often, the guidelines established by the use of sea level rise planning curves exceed the minimum requirements of State and Federal agencies. Additionally, communities are using projections while reviewing their stormwater programs to ensure that future capacity and conveyance needs are included in any proposed infrastructure upgrades. Further information on sea level rise planning, as a resilience consideration, is provided in **Section 6.2.1**.

Sea level rise planning curves examine historical data and provide future sea level projections based upon various global carbon dioxide emissions scenarios. The various agencies providing these projections include the National Oceanic and Atmospheric Administration (NOAA, the curves used here are referred to as the NOAA curves or NOAA 2017 curves) and the U.S. Army Corps of Engineers (USACE, the curves used here are referred to as the USACE curves), among others. These agencies utilize varying methodologies and have published projections that vary by region and timeline. Each agency provides projections to the changes in mean sea level over time associated with different emission scenarios. The most up-to-date projections are from NOAA and have been utilized to the extent practicable in this report and within the inundation mapping. To create consistency between this study and the 2017 Resilient Volusia County[1] report, both the USACE and NOAA sea level rise projections are referenced for comparison and where appropriate, respectively in **Figure 6-1** and .

Ormond Beach is located between several tidal gauges. The nearest active tidal gauges are located in Port Canaveral and near Jacksonville, Florida (Mayport). The data from these gauges, as well as the historic data from Daytona Beach Shores, Florida, provide a good representation of the tidal

[1] 2017 Resilient Volusia County, Available at: https://www.r2ctpo.org/wp-content/uploads/Resilient-Volusia-County_final-reduced.pdf

fluctuations and sea level rise projections for Ormond Beach. The range in projections (from low to high), as shown in **Figure 6-1.** Historic sea level and future projections for Ormond Beach using the USACE sea level rise projections. Historic data are from tidal gauges and future projections are based on the best available science and , is generally attributed to uncertainty of how much ice is on land (associated with large glaciers in Greenland and Arctica) that will melt. The historic projections are based on NOAA's linear interpolation of historic sea level rise. In the past 92 years (since 1928), Ormond Beach has experienced approximately 0.8 feet of sea level rise based on the data at Trident Pier, Port Canaveral, FL (1.0 in/decade). However, in the next 50 years, mean sea level is projected to increase by 0.4 to 2.4 feet based on the USACE projections. Using the NOAA sea level rise projections, sea levels may rise between 0.7 and 3.8 feet, corresponding to a rate of 1.7 to 9.1 in/decade. The change in rate underscores the exponential acceleration of sea level rise expected as ice on land melts going into our ocean basins.

In consideration of the 2017 Resilient Volusia County report, Brizaga recommends using a **minimum** of the USACE high projections for planning purposes, which falls within the range between the NOAA intermediate and NOAA high projections. Infrastructure with the adaptative capacity (the ability to adapt) can be built using the lower range of the projection (NOAA intermediate), but critical infrastructure and infrastructure with little to no adaptive capacity should be built considering the NOAA high projection. Therefore, Brizaga recommends utilizing the NOAA high curve for significant and long-term infrastructure planning given the uncertainty in sea level rise estimates.

Figure 6-1. Historic sea level and future projections for Ormond Beach using the USACE sea level rise projections. Historic data are from tidal gauges and future projections are based on the best available science

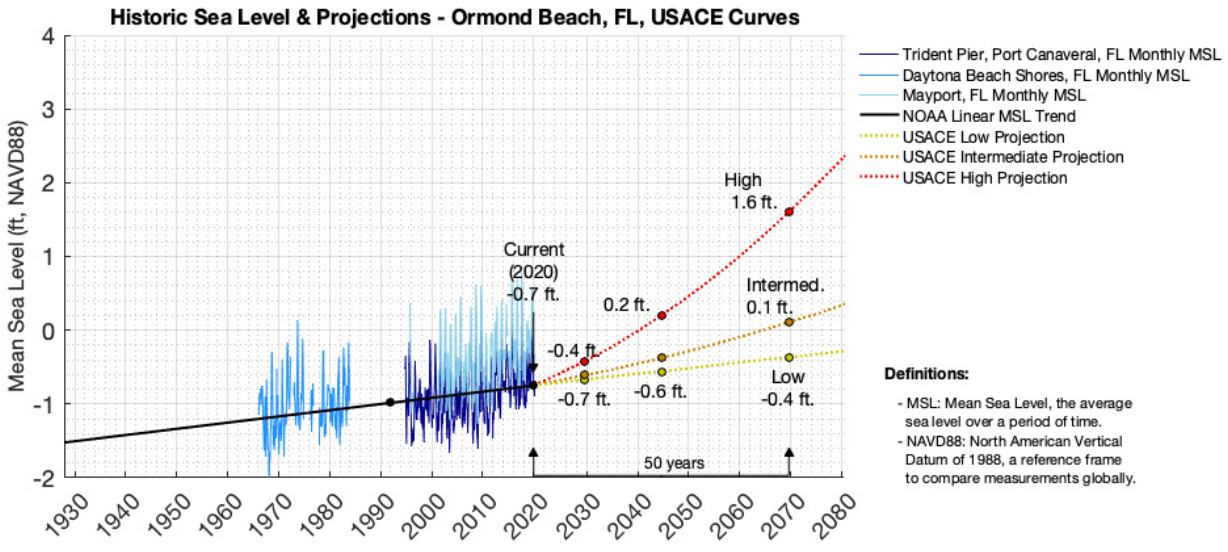
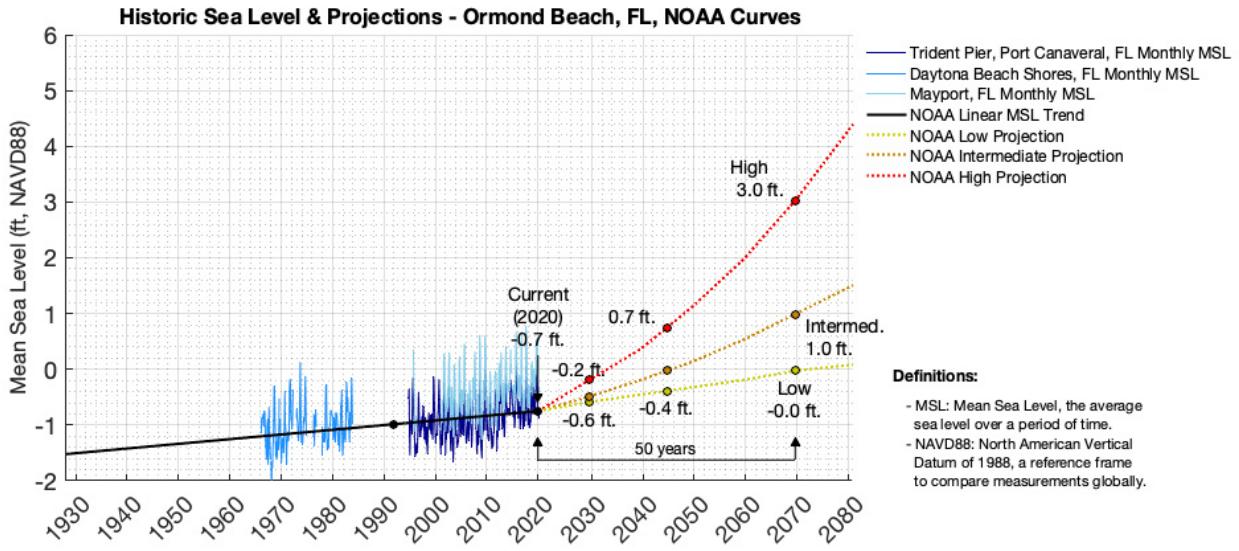


Figure 6-2 - Historic sea level and future projections for Ormond Beach using the NOAA sea level rise projections. Historic data are from tidal gauges and future projections are based on the best available science



The Volusia County resilience assessment published in 2017 utilized the USACE projections, which are lower than the newer NOAA curves as previously noted. Brizaga recommends utilizing the most up-to-date sea level rise projections based on the best available science. The relative sea level rise amounts are shown in the table below (**Table 6-1**). These sea level rise values reference a baseline in the year 2000, which is the current standard of displaying relative sea level rise projections.

Table 6-1 - Relative sea level rise rates (in feet, based from 2000) for the 2013 U.S. Army Corps of Engineers and the NOAA 2017 sea level rise projections for Daytona Beach, Florida, which is the nearest station with a projection to Ormond Beach. This table demonstrates the differences between the projections

(FT.)	USACE 2013 Low	NOAA 2017 Low	USACE 2013 Intermediate	NOAA 2017 Intermediate	USACE 2013 High	NOAA 2017 High
2000	0.0	0.0	0.0	0.0	0.0	0.0
2010	0.1	0.1	0.1	0.2	0.2	0.4
2020	0.2	0.2	0.2	0.5	0.4	0.7
2030	0.2	0.4	0.4	0.7	0.7	1.2
2040	0.3	0.5	0.5	1.0	1.1	1.8
2050	0.4	0.6	0.7	1.3	1.6	2.5
2060	0.5	0.8	0.9	1.7	2.1	3.4
2070	0.5	0.9	1.1	2.1	2.8	4.4

6.1.2 Sea Level Elevation Recommendations

As part of the sea level rise evaluation, seawall ordinance and road raising efforts are reviewed and coastal protection height recommendations are included. Seawalls, rip rap, and other coastal protection are a critical component to local flood resilience, as they behave as the first barrier to overland flows resulting from high water levels. While information regarding seawall ordinances is in **Section 6.2.4**, this section specifically focuses on a height recommendation associated with sea level rise and a review of how other communities have approached this challenge.

Brizaga has developed a sea level rise planning grid (**Figure 6-3**, USACE curves, and

Figure 6-4, NOAA curves), a tool to assist decision makers in determining appropriate elevations when considering sea level rise. As part of the grid, the Adaptation Action Elevation (AAE) is provided. The AAE is an elevation threshold defined by Brizaga as the 98th percentile of the local observed higher high water elevations recorded over the previous 5 years. Therefore, the AAE is projected to increase at the same rate as mean sea level. The AAE is an estimate of the elevation at which the highest tides will reach in a given year, causing tidal flooding should this elevation be exceeded. More colloquially, the threshold can be considered a "King Tide" threshold, and removes extreme events generally associated with meteorological events, such as coastal storms. Locations with an elevation below the AAE and hydrologically connected to the tidal water body may experience significant tidal flooding. The AAE for 2050, based on the NOAA high, projection is 5.0 feet NAVD88. This threshold exceeds the AAE for 2070 using the USACE high projection.

To use the planning grid for a specific structure with a known elevation, the directions are as follows: (1) identify the elevation (in ft. NAVD88); (2) select the sea level rise projection to be used (low, intermediate, or high); (3) select the appropriate sea level threshold (such as Mean Higher High Water[2] or Adaptation Action Point); (4) Determine the project lifetime or planning target date; and finally (5) use the selections from step (2) - (4) to compare to the elevation identified in step (1). If the elevation is unknown, to determine the minimum viable elevation, follow the steps above in reverse.

Brizaga recommends all new seawalls be constructed to a minimum elevations of 4 feet NAVD88, structurally designed with the ability (adaptive capacity) to be increased to 5.5 feet NAVD88 by 2050 (18" above 4 feet NAVD88). The specific implementation mechanism and timeline requires careful consideration and is a policy decision that should include detailed public outreach and engagement. It is recognized that this may impact a significant number of residential lots, and adjacent property owners may be adversely impacted unless the new installation includes considerations along the property line or drainage. Standards can include the requirement for return walls and a french drain along the bulkhead with outfalls (weep holes).

This recommendation is based on seawalls that would be built today, or in the near future. The minimum elevations should be updated as time progresses and the sea level rise projections are updated. Elevation update mechanisms or timelines should be built into any policy or ordinance. Trigger mechanisms may include, but not be limited to, specific time intervals, release of new data/projections, or updates to land use/zoning codes.

[2] Mean Higher High Water is the average of the highest daily water levels observed at a specific location. Tidal water levels are expected to exceed this elevation approximately 180 days per year.

Figure 6-3 - Sea level rise planning grid for Ormond Beach utilizing the USACE sea level rise projections

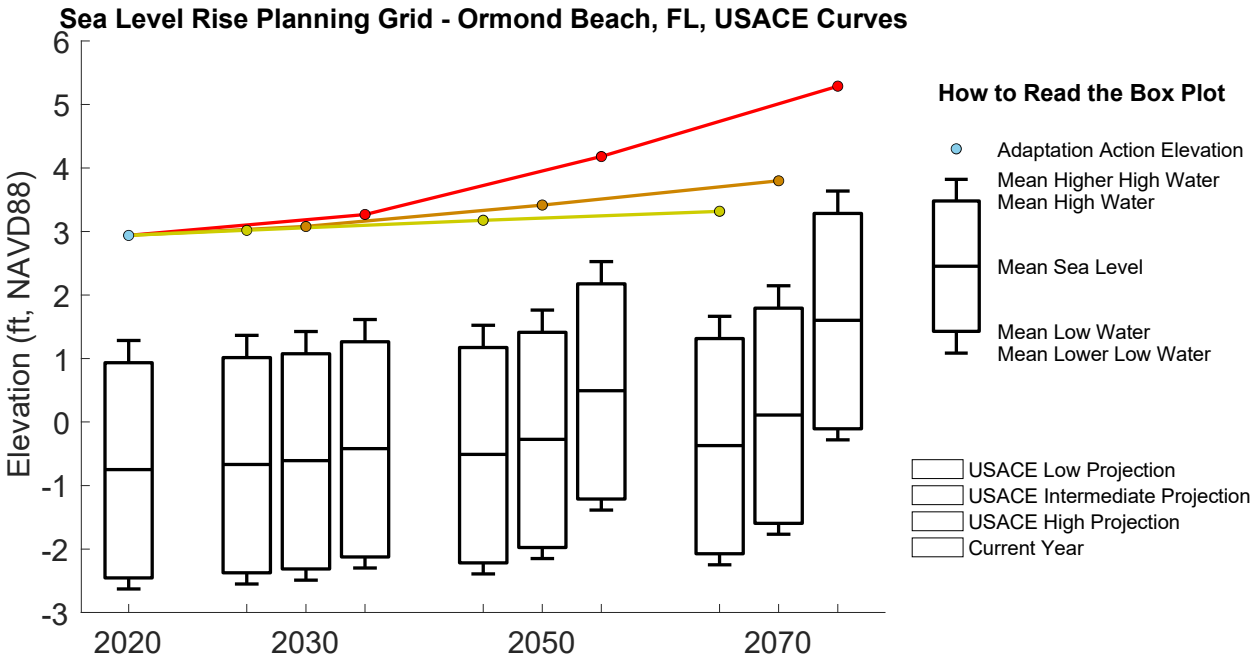
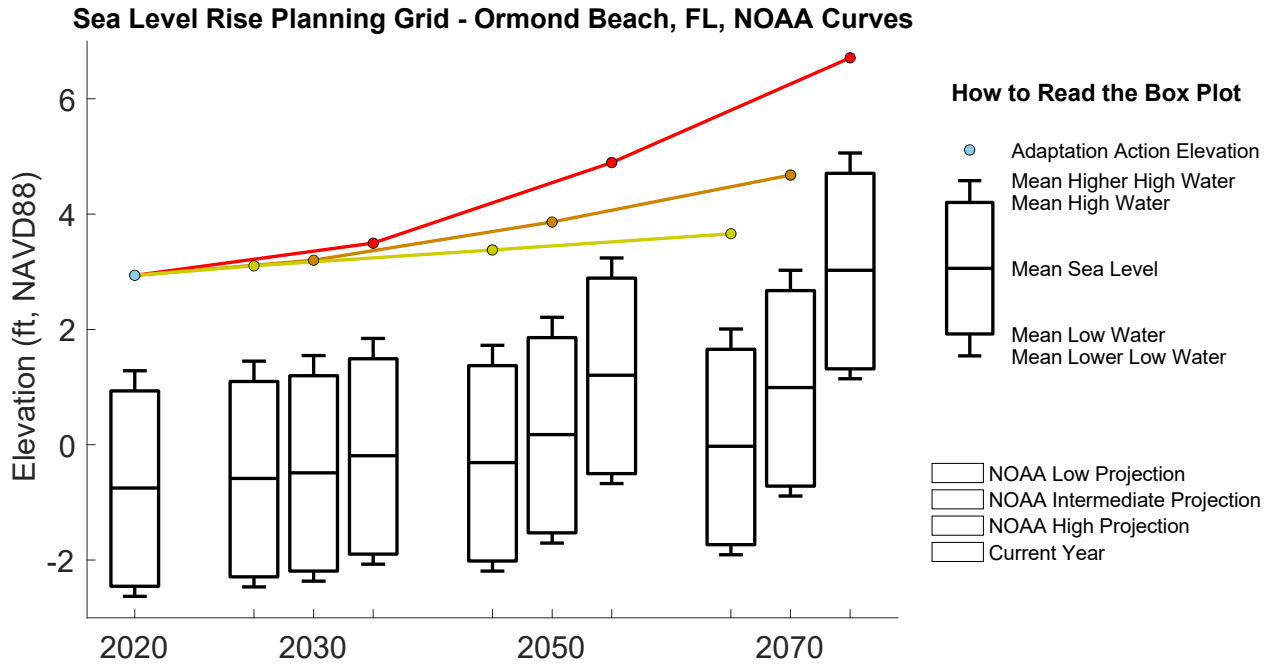


Figure 6-4 - Sea level rise planning grid for Ormond Beach utilizing the NOAA sea level rise projections



6.2 Stormwater Management Trends relative to Sea Level Rise and Resilience

As part of the consideration of sea level rise and climate change, stormwater management trends relative to sea level rise and resilience are explored. For each of the best practices, background, consequences, effectiveness, examples, and how it relates to sea level rise and resilience are provided.

6.2.1 Sea Level Rise Planning Curves

As noted in **Section 6.12**, sea level rise projection selection is an important step in resilience planning. This section dives into more detailed policy and considerations around sea level rise planning curves. Often, communities that utilize sea level rise planning curves to guide planning and construction build facilities that exceed State and Federal requirements. Notably, this improves both the resilience of a structure and its surrounding community and can also reduce potential economic hardships through increased flood insurance, interruption of use, and economic damage due to a flooding event.

How it Works: Sea level rise planning curves examine historical data and provide future sea level projections based upon various global greenhouse gas emissions scenarios. The diverse agencies providing these projections, including the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Army Corps of Engineers (USACE), utilize different methodologies and have published several projections that vary by region and time frame. Implementation of sea level rise planning curves for new construction and substantial improvement of existing construction generally require structures and other facilities to be designed with finished floor elevations and other critical building elements above a baseline elevation that is higher than those provided by FEMA guidance for flood insurance or ASCE minimum design standards.

Consequences of Implementation: When sea level rise planning curves are implemented for building construction, it can be expected that related costs for new construction and substantial improvements will incrementally increase. This is generally due to additional fill required and harmonization with nearby structures and rights-of-way. However, these costs may be offset by decreased flood insurance premiums, reduced capacity requirements for on-site stormwater management, and faster response and recovery times following a major storm event.

Strategy in Practice:

> *Southeast Florida Regional Climate Change Compact:* In 2010, officials from Broward, Miami-Dade, Palm Beach and Monroe Counties collaborated to form the Southeast Florida Regional Climate Change Compact. Section 6 of the Compact introduces the Southeast Florida Regional Climate Change Action Plan which states that, among other environmentally impactful actions, the plan could include "strategies for the coordinated regional preparation for and adaptation to a rapidly changing global environment based upon regional mapping of projected sea-level rise and any resulting amplification of localized impacts of tropical cyclone events" and that "such strategies shall incorporate climate preparation concerns for the regional economy, regional infrastructure and the built environment, social and cultural needs, and natural systems within the four counties party to

this compact."[3] As a result of this action plan, the Compact adopted the unified sea level rise curve which guides the minimum sea level considerations for government facilities throughout the southeast Florida region.[4]

To appropriately consider sea level rise, in 2017 the River to Sea Transportation Planning Organization (R2CTPO)[5], in coordination with the East Central Florida Regional Planning Council, Florida Department of Transportation (FDOT), and the University of Florida GeoPlan Center, performed a screening level Sea Level Rise Vulnerability Assessment of critical facilities and transportation infrastructure. This assessment was an excellent starting point for the communities serviced by the R2CTPO, but did not examine adaptation options, nor provide a recommendation for sea level rise curve adaptation by local governments for planning purposes.

How it Relates to Sea Level Rise and Resilience: Provides elevation and stormwater management design guidelines for both public and private sector infrastructure and development investment. In many cases, selection of a curve can be coordinated across geopolitical boundaries to ensure that a regional approach is taken. Additionally, this can be used to ensure that the future vulnerabilities of above-ground infrastructure are considered.

6.2.2 Infiltration and Inflow

Infiltration and inflow (I&I) refer to stormwater and groundwater seeping into sanitary sewer systems. Though this is not specifically a stormwater management issue, it affects other utility systems critical to a community's well-being and can be alleviated with improved stormwater management. Infiltration is generally characterized by water other than wastewater that enters the sanitary sewer system from the ground through such means as defective pipes, pipe joints, poor connections, while inflow that enters the sanitary sewer system from direct connections to the system such as through manhole covers.

How it Works: Improvements to stormwater management systems with a specific focus on reducing I&I can have a direct benefit to a community through the reduction of costs necessary to treat excess wastewater. While it is much more challenging to remedy infiltration, due to the nature of defects contributing to excess sewer loading, inflow tends to occur on the ground surface and within the pipe network through defective and damaged manhole covers, illegal stormwater connections to the sewer system, and other methods.

Consequences of Implementation: As infiltration and inflow are readily an effect of compromises in the sanitary sewer system, remediation of such systems requires a diagnosis of the problem and identification of specific infrastructure needs. In many cases, it will include road closures, demolition of roadways, and replacement of pipe systems as part of the solution. This can be a costly initiative, however by examining, and in some cases, making repairs to the sanitary sewer system during the construction of the stormwater management system, a significant cost savings can be achieved by condensing the repairs of these systems into a single infrastructure improvement project.

[3] Southeast Florida Regional Climate Change Compact, http://southeastfloridaclimatecompact.org/wp-content/uploads/2014/09/compact.pdf
[4] Unified Sea Leve Rise Projections, http://southeastfloridaclimatecompact.org/wp-content/uploads/2015/10/2015-Compact-Unified-Sea-Level-Rise-Projection.pdf
[5] R2C TPO, Resilient Volusia, https://www.r2ctpo.org/wp-content/uploads/Resilient-Volusia-County_final-reduced.pdf

- *City of Fort Lauderdale:* The City of Fort Lauderdale is currently in the process of rehabilitating their public stormwater and wastewater systems in part to reduce inflow and infiltration. The Go Big, Go Fast initiative includes six (6) projects specifically targeted at infiltration and inflow reduction, with other projects focused on rehabilitation of force mains and lift stations.[6]
- *City of Dania Beach:* The City of Dania Beach pursued a program to correct inflow with a cost of $480,000, which included "fixing 25 manholes, sealing 800 manholes and dishes, repairing 200 public inflow openings, [and] identifying 300 private connections." The City estimated that it saved 200,000 gallons per day as a result of this effort, with a savings of over $250,000 per year, equivalent to a payback period of just under two years.[7]

How it Relates to Sea Level Rise and Resilience: Optimizes the efficiency of the individual infrastructure systems, hardening the network and making it less susceptible to damages or overloading due to increased precipitation and reduced stormwater capacity with sea level rise.

6.2.3 Freeboard

Freeboard is a safety factor, generally considered above the Base Flood Elevation (BFE), and has become a more generalized term as communities begin to consider sea level rise and more frequent flooding. Freeboard can be defined by the extra protection provided above the expected flood level. A freeboard requirement or allowance is the concept of requiring or allowing a building to construct or modify the lowest habitable floor to a minimum or maximum freeboard above the BFE. The elevation of the lowest habitable flood is known as the Finished Floor Elevation (FFE). Where structure height is limited by code, increasing the finished floor elevation may reduce the usable height of a structure. Therefore, increases in freeboard may need to be accompanied by an increase in the allowable structure height so as not to penalize property owners for the mitigation measures taken against flooding. By implementing freeboard ordinances, communities can ensure new or substantially improved construction is built at a level designated to minimize the potential damages caused by extreme flooding events, and thus reducing the performance requirements of public infrastructure systems under such extremes. Beyond coastal zones, freeboard can also be applied to low-lying areas where changing environmental and upland conditions may alter flood levels.

How it Works: Freeboard ordinances create requirements for construction that promote resilience by increasing the threshold at which flooding originating from tidal waters occur, reducing the frequency of such events. In the case of Ormond Beach, there are low-lying areas that are affected by tidal flooding and stormwater runoff where allowing additional freeboard can reduce the likelihood of flooding homes, businesses, and other assets. By implementing an enhanced freeboard ordinance, baseline requirements to consider future flood conditions are placed on private property owners wishing to develop or substantially improve a site.

Consequences of Implementation: Implementation of freeboard ordinances are expected to incrementally increase the cost of construction for development. However, recent studies are

[6] City of Fort Lauderdale, Go Big Go Fast, https://www.fortlauderdale.gov/home/showdocument?id=37106
[7] Dania Beach Inflow Example, http://fwrj.com/techarticles/0114%20tech%203.pdf

beginning to show that the incremental cost of construction is substantially outweighed by the benefits of the additional height of the FFE.[8]

Moreover, raising FFEs can change the floodwater pathway around or through a site, creating a give and take between site-specific and neighborhood-level resilience. These types of practices should be implemented following the "no adverse impact" rule, where the site must sufficiently capture the stormwater on their site to prevent any adverse impacts onto neighboring properties. . In some cases, fill is brought in to increase the elevation of a site. In other cases, properties are built up higher by utilizing stem footings or piles, which would be more appropriate for Ormond Beach. These types of practices tend to be controversial, as it requires changes to land use, zoning, and building codes that have a disproportionate effect on older, lower, or fixed-income properties. These effects may be mitigated by combining this strategy with increased water retention requirements for properties pursuing elevated structures. Programs, such as stormwater credit trading programs or permit incentives, could be offered to encourage a, innovative green infrastructure approach.

Strategy in Practice: The City of Miami Beach currently enforces a freeboard ordinance that requires the lowest finished floor of a new building to be located a minimum of one foot above base flood elevation and a maximum of five feet above the base flood elevation without impact to the height restriction of buildings. Developers are taking advantage of this rule by utilizing the ground level for parking and other uses without the need for additional site area.

How it Relates to Sea Level Rise and Resilience: Strengthens the functionality and increases the life cycle of new construction and ultimately provides substantial improvements.

6.2.4 Seawall Ordinances

In areas with developed waterfront, the clear first line of defense against tidal flooding and storm surge are seawalls. Seawalls are also an integral part of the stormwater management system during these types of events, and the functionality of the stormwater management system is critically dependent upon the effectiveness of the seawall to prevent adjacent water bodies from overtopping them and flowing into the storm sewer system. As such, communities have begun to evaluate how to collectively raise thousands of feet per community, especially considering that most seawalls are privately owned or abut private property.

How it Works: Seawall ordinances create requirements for construction that promote resilience by increasing the threshold at which flooding originating from tidal waters occur, reducing the frequency of such events. Ormond Beach has low-lying waterfront areas around the Halifax River, which is also surrounded by sensitive natural ecosystems. Therefore, preventing the ebb and flow of tidal waters onto land can also help with water quality issues.

By implementing a seawall ordinance, baseline requirements to consider future flood conditions are placed on private property owners wishing to develop or substantially improve a site, specifically along their waterfront. Such requirements ensure that private property owners make the necessary modifications to enable effective public infrastructure improvements as well as

[8] Miami Beach Business Case Analysis Presentation, http://docmgmt.miamibeachfl.gov/WebLink/edoc/258894/200127%20Commission%20Retreat%20ICF%20Business%20Case%20FINAL%20ocrnd.pdf?dbid=0

reduce the overall capacity required of such public stormwater systems, including the installation of check valves.

In some cases, seawall ordinances place a requirement on property owners to improve the performance of the coastal protection system along their waterfront when the existing condition causes flooding on adjacent properties or public rights-of-way.

Consequences of Implementation: Implementation of a seawall ordinance is expected to incrementally increase the cost of construction for new seawalls and development. New seawalls built under such an ordinance, while effective for the individual property, may not provide the overall public benefit of increased resilience until the full length of the waterfront within the vicinity is adequately protected.

These types of practices should be implemented following the "no adverse impact" rule, where construction of elevated seawalls must consider sufficiently capturing the stormwater on their site to prevent any adverse impacts onto neighboring properties. Incorporating these types of approaches have become increasingly controversial, as they require changes to land use, zoning, and building codes that have a disproportionate effect on older, lower, or fixed-income properties. These effects may be mitigated by combining this strategy with increased water retention requirements for properties pursuing elevated seawalls.

It is noted that seawalls higher than 3 feet solid may be considered an issue as they may start to impede sight vision of river or ocean view. The only long-term method to 100% address sea level rise is elevation, so raising seawall height may be the only viable option. New bulkheads designed for higher elevations must include provisions for backfill to that elevation. Site views are a tradeoff that will need to be considered and addressed on a case-by-case basis.

Alternatively, similar types of storm protections can be achieved through the use of living shorelines, particularly along the Tomoka River, the Little Tomoka River, and their tributaries where hard structures are prohibited. These green measures will not only mitigate flooding but will also improve water quality. Locations such as Ormond Beach, with significant waterfront natural infrastructure, reflect tremendous opportunity making programs like these more implementable. Further, programs such as stormwater credit trading programs or permit incentives could be offered to encourage waterfront property owners to utilize a living shoreline or green infrastructure approach. It is noted that living shorelines require substantial real estate to be effective.

Strategy in Practice: The City of Miami Beach has implemented a seawall ordinance requiring that new walls are designed with the ability to be retrofitted to meet future elevation requirements.[9] The City of Fort Lauderdale has also instituted a seawall elevation minimum with specific triggers that require the raising of a seawall.[10] Broward County has recently adopted a seawall ordinance that requires higher seawall elevations throughout unincorporated Broward County and a land use amendment that requires cities with tidally influenced waterbodies to adopt their own seawall ordinances.[11]

How it Relates to Sea Level Rise and Resilience: Seawalls have become a primary defense in flood protection, especially in minimizing the effects of tidal flooding on coastal properties. These

[9] Miami Beach Seawall Ordinance, http://www.mbrisingabove.com/wp-content/uploads/2017/11/2016-4009-Ordinance.pdf
[10] Fort Lauderdale Seawall Ordinance, https://gyr.fortlauderdale.gov/greener-government/climate-resiliency/seawall-maintenance
[11] Broward County Seawall Ordinance and Land Use Amendment, https://www.broward.org/Climate/Pages/USACE.aspx

ordinances will strengthen the functionality and increase the life cycle of new or substantially modified seawalls.

6.2.5 Low Impact Development

The principle of Low Impact Development (LID) "refers to systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat."[12] This principle is also used to refer to green infrastructure, which is intended to collect and provide filtration to stormwater runoff while restoring greenspaces, compared to impervious surfaces. Some examples of technologies used to achieve low impact development are green roofs, permeable pavers, bioretention swales, and soil amendments prior to construction.

How it Works: Low Impact Development (LID) allows for on-site integration of management and treatment options by incorporating the designs into urban features. Common LID fixtures, like bioswales and green roofs, limit the amount of stormwater runoff from a site by absorbing much of the water into the vegetation. On a more industrial level, permeable pavers and cement options greatly decrease runoff and flood risk by allowing stormwater to penetrate the paved surface and flow directly through the soil to the groundwater table. LID can be implemented on private properties through local ordinances and can be included as a component of design on many public redevelopment projects, including stormwater master planning.

Consequences of Implementation: Design and implementation of Low Impact Development requires an additional layer of stormwater management analysis and construction and requires architectural considerations as it is a visible piece of the stormwater management system. For Ormond Beach, these practices would require specific considerations for native plant species due to the harsh environmental conditions.

One method of development that could be considered in the spirit of LID is the acquisition of at-risk properties and their restoration to their natural, undeveloped state. This would provide a designated area that could specifically serve to provide stormwater retention and pre-treatment of runoff, as well as a storm surge buffer area, lessening the risk of flood damage to other nearby properties. With flood mitigation grants becoming more difficult to obtain due to the requirement that the benefits of a proposed project outweigh the cost of doing the project, buy outs in appropriate locations may be eligible for such funding should the City be able to demonstrate that such a project would have a net benefit on the community.

Effectiveness in Practice: The City of Ormond Beach has a *Low Impact Development Design Manual*[13] which details how LID applies to and can be implemented in the City. Additionally, with the City's 2020 Comprehensive Plan, there is a goal of "Low Impact Development," including cost-effective landscape features, bioretention, alternative stormwater management practices, and the use of Integrated Management Practices (IMPs). A specific policy of note is 12.1.5, which states to "Amend the [Land Development Code] and Construction Details to permit LID designs that can significantly reduce development costs through smart site design by: [r]educing impervious surfaces (roadways), curb, and gutters; [d]ecreasing the use of storm drain piping, inlet structures; and [e]liminating or decreasing the size of large stormwater ponds." As noted, these

[12] EPA Low Impact Development, https://www.epa.gov/nps/urban-runoff-low-impact-development
[13] Ormond Beach LID Manual, https://www.ormondbeach.org/DocumentCenter/View/11794/07312013-LID-Full-Manual-Version-1?bidId=

concepts not only improve the resilience of the community by reducing the likelihood of flooding, but also improve water quality and ecosystem resilience by increasing the pretreatment of stormwater. Other coastal communities in the State of Florida that have successfully implemented guidelines for LID include Escambia County[14] in the panhandle and Sarasota County[15] on the gulf coast.

H**ow it Relates to Sea Level Rise and Resilience:** As sea levels rise and stormwater systems are challenged, the use of LID can help to reduce demands on stormwater management infrastructure systems and increase the volume of stormwater treated for water quality, improving the health of natural areas where water is discharged. However, LID effectiveness is expected to decrease with sea level rise, as a higher water table will result in a lower soil storage capacity. In such cases, location-specific analysis is recommended prior to implementation.

6.2.6 Stormwater Credit and/or Trading Programs

Given the focus on Low Impact Development in Ormond Beach, the City has made the case that private property can play a crucial role in stormwater management. In many communities, private property contributes to stormwater runoff collecting in the municipal stormwater management system, increasing the volume that must be treated, stored, and discharged. In the City of Ormond Beach, where 58% of the land is identified as either residential, commercial, institutional, or industrial,[16] it is critical to improve stormwater management practices on private property to provide storage and treatment before runoff flows into the City's utility, natural ecosystems, or Halifax River. This would decrease the service load of the City's system, improving the overall level of service and extending the life of the existing stormwater system.

The City of Ormond Beach already has an existing stormwater utility with a flat fee rate. Through the implementation of a "stormwater credit" program, the City may be able to further reduce the loading demand of the municipal stormwater management system and improve overall water quality by incentivizing private property owners to engage in low impact development and green infrastructure practices. This would require the City to review and modify the existing fee structure of the stormwater utility, potentially weighing different geographical areas of the community based upon location within the watershed and creating mechanisms where property owners can reduce the amount of impervious area utilized in the City's utility fee calculation. Volusia County has stormwater fee credit form based on specific criteria around stormwater management.[17] A percentage discount is available based on meeting specific requirements.

How it Works: A stormwater credit program generally works by creating a market for stormwater management, allowing private property owners to meet local stormwater retention requirements not only through the installation of green infrastructure on their property, but also by purchasing credits from other property owners as well. Implementation of a stormwater credit program requires the City to regulate the minimum capacity of stormwater management systems installed on private property as part of new development. This in turn would ensure that the development

[14] Escambia County LID Manual: https://myescambia.com/docs/default-source/sharepoint-natural-resources-management/Water%20Quality%20Land%20Management/lid/escambia-county-lid-manual_final_93020l6.pdf
[15] Sarasota County LID Manual, https://www.scgov.net/home/showdocument?id=33258
[16] Future Land Use Element, Page 121, https://www.ormondbeach.org/DocumentCenter/View/9416/1a-Future-Land-Use-Element-012015?bidId=
[17] Volusia County Stormwater Management Program, https://www.volusia.org/services/public-works/road-and-bridge/stormwater-management-program.stml

does not add to the burden of the municipal stormwater management system. "To provide more flexibility, cities can allow developers to meet their stormwater retention requirements on their own sites or elect to purchase 'credits' for stormwater retention from others who have voluntarily retrofitted their properties through a stormwater credit-trading program."[18]

Consequences of Implementation: The implementation of a stormwater credit trading program or a similar incentive program in the City of Ormond Beach appears to be a viable method of increasing the amount of green infrastructure and storage of stormwater on private property. Given the low-lying nature and flooding concerns with specific parts of the community, this could help reduce the need for increased stormwater management within the system by shifting the burden to on-site management, especially with larger developments. While initial development costs may increase with new stormwater requirements, the costs can be offset in the longer term through reduced stormwater fees, the purchase of stormwater credits, and decreased public infrastructure needs.

Strategy in Practice: Currently, the Cities of Washington, DC[19]; Philadelphia, PA[20]; and Minneapolis, MN[21]; and Pasco County, FL[22] have stormwater credit trading programs or elements of stormwater credit trading programs in place. As noted, Volusia County has a stormwater fee reduction program for specific measures taken on larger commercial developments.

How it Relates to Sea Level Rise and Resilience: A stormwater credit and/or trading system would incentivize investment into stormwater storage and treatment capacity. As communities deal with the reality of higher sea levels and changes in storm intensity, including more intense rainstorms, regular maintenance and upgrades to the stormwater system will be necessary. A stormwater credit system can offer flexibility by encouraging more on-site storage and allowing the private sector to finance the costs pertaining to stormwater improvements.

6.2.7 Future Conditions Groundwater Mapping

The effective design of stormwater management systems requires the knowledge of several baseline conditions, including the elevation of the water table in the vicinity of any proposed project. As sea levels rise, groundwater elevations in low-lying coastal communities with unconfined aquifers will also increase, including the eastern portions of Ormond Beach, reducing the soil storage capacity of the community. By conducting groundwater studies to evaluate future conditions scenarios, communities can implement updated, proactive stormwater design guidance for private property development to ensure a new stormwater system has the storage capacity to handle future rain events when groundwater elevations are expected to increase from current levels.

For Ormond Beach, most of the groundwater in the area is of local origin, which means it is a result of precipitation that falls in the area. As such, these groundwater issues may be localized to very specific areas that are low-lying and have connectivity to the ocean.[23]

---

[18] Natural Resources Defense Council on Stormwater Credits, https://www.nrdc.org/sites/default/files/stormwater-credit-trading-programs-ib.pdf
[19] Washington, DC Stormwater Credit System, https://doee.dc.gov/src
[20] Philadelphia, PA Stormwater Credit System, http://water.phila.gov/swexp/
[21] Philadelphia, PA Stormwater System, http://www.minneapolismn.gov/publicworks/stormwater/fee/stormwater_fee_stormwaterqualitycredits
[22] Pasco County Stormwater Credit System, https://www.pascocountyfl.net/DocumentCenter/View/1735/Stormwater-Utility-Manual?bidId=
[23] USGS, Volusia County, https://pubs.usgs.gov/fs/2009/3004/pdf/fs2009-3004.pdf

How it Works: Development of a future conditions' groundwater map is an involved scientific and engineering exercise that requires the development of a regional model, calibrated to existing conditions based upon site-specific measurements within the model area. The United State Geological Survey has performed a groundwater budget of Volusia County already. Once the model has been developed, policies can be implemented within the City to require new site development or substantial improvement of a site to consider and comply with updated stormwater requirements aligning with the future conditions groundwater map. This will ensure that additional stormwater storage is provided to offset the increase of groundwater elevations.

Consequences of Implementation: The implementation of a future conditions' groundwater map would be a valuable tool for the City of Ormond Beach, as parts of the City are situated on a barrier island with stormwater discharge dependent upon oceanic water level conditions. Additionally, significant eastern portions of the community are low-lying and surrounded by natural ecosystems that collect stormwater. By creating a future conditions groundwater map, regulations regarding future development and substantial improvements can be implemented to ensure adequate storage is provided on private property, reducing the demand on public infrastructure.

Strategy in Practice: Currently, Broward County[24] utilizes a future conditions' groundwater elevation map to regulate the design and implementation of stormwater management systems for private and public projects alike. The practice ensures that new development has the ability to provide adequate storage for stormwater runoff decades from now, which in turn reduces the demand placed on infrastructure systems today.

How it Relates to Sea Level Rise and Resilience: Informs future conditions for stormwater management infrastructure design. As groundwater levels rise, existing stormwater capacity will decrease. By understanding future groundwater conditions now, municipalities can safeguard their ecosystems and prepare for these additional capacity needs.

6.2.8 Capacity and Conveyance

Stormwater management as a practice is effectively the balance between storage and discharge. As sea levels rise, especially in coastal areas, existing storage is reduced, and more work is required to discharge a constant volume of water. The effect of rising seas will be felt farther inland as water cannot drain as easily, creating a domino effect. As such, low-lying coastal communities are implementing large scale strategies to provide additional stormwater storage and move runoff away from flooded areas swiftly and effectively.

For Ormond Beach, the City limits include the barrier island to the east, Tomoka State Park and Addison Blockhouse Historic State Park to the north, and Flagler County to the west. The natural ecosystems associated with the parks to the north create a natural flow down the Tomoka River into the developed areas of Ormond Beach. Additionally, low-lying communities to the east on the mainland are experiencing tidal flooding, which is also challenging the stormwater system. Currently, additional capacity and conveyance are being considered as part of the lakes and stormwater retention areas and will be an important part of this Master Plan Update.

How it Works: Analysis of stormwater capacity and conveyance creates a baseline framework for developing any stormwater management program and are the fundamental components when

[24] Broward County Future Conditions Groundwater Elevation Map, http://www.broward.org/waterresources/Documents/futuregwelev.pdf

designing innovative systems and practices. Additionally, pretreatment and consideration of water quality are increasingly salient to stormwater management as well.

Consequences of Implementation: Ormond Beach has specific locations of concern in low-lying areas as well as other areas near the coast. However, the topography of the City means that continued development upland can create additional stress on those low-lying areas. Increasing capacity and conveyance can be an expensive undertaking. As a result, evaluating alternative stormwater management practices is also critical.

Strategy in Practice:

- City of Miami Beach, Florida[25]*:* In recent years, the City of Miami Beach has implemented a stormwater management system that consists of raising roads to a new elevation while simultaneously installing new drainage piping underground to offset the storage areas that were lost above the roadway due to the new elevation. This strategy has allowed the City to keep areas that previously flooded during minor rain events to remain dry during similar events. However, this approach will only be effective for a limited amount of time due to the porous nature of the limestone substrate in Miami Beach.

  When combined with sea level rise, the stormwater management system requires additional conveyance. Therefore, the City has installed new pump stations to discharge the runoff at a pace to minimize the flood stages. Additionally, as the City is situated on a barrier island, similar to that of part of Ormond Beach, excess stormwater is discharged to the Biscayne Bay Aquatic Preserve, raising water quality concerns. The City has implemented a three-tiered treatment process to remove debris, suspended solids, and other contaminants prior to discharging into the Bay.[26]

- City of Charleston, South Carolina[27]*:* Similar to Ormond Beach, Charleston, South Carolina is situated on low-lying terrain near the coastline with a stormwater management system whose performance is dependent upon the water level of the adjacent tidally influenced body of water. Notably, the substrate in Charleston is comprised primarily of non-porous clay, enabling the City to create additional areas of underground storage that will not be affected by external water levels. To provide this additional storage, the City of Charleston is drilling a deep tunnel system up to 140 feet below grade to collect stormwater runoff, coupled with a large pump system to discharge the collected runoff into the adjacent river.

- City of Norfolk, Virginia[28]*:* The City of Norfolk is addressing issues with capacity and conveyance in part through the revision of its zoning ordinance. Although the City has more development near the coast, the ordinance works to address a number of issues through a "resilience quotient" that requires new development and redevelopment to meet

[25] Miami Beach Stormwater Program, http://www.mbrisingabove.com/your-city-at-work/stormwater-program/
[26] Miami Beach Stormwater Pumps, http://www.mbrisingabove.com/your-city-at-work/stormwater-program/stormwater-pumps/
[27] Charleston, SC Stormwater Program, https://www.charleston-sc.gov/index.aspx?nid=586
[28] Pew Charitable Trust on flood-resilient Zoning Code, https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/11/norfolks-revised-zoning-ordinance-aims-to-improve-flood-resilience

a minimum threshold of points on a scoring system built to encourage resilience based upon flood risk reduction, stormwater management, and energy resilience.[29]

The information provided for the above studies does not directly address adding storage.

How it Relates to Sea Level Rise and Resilience: As sea level rises and storage capacity is reduced near the coast, and rainfall patterns change creating a need to handle more stormwater in a shorter amount of time, it is critical to stay ahead of the curve to ensure that systems do not regularly exceed capacity. This informs decision-making for stormwater management requirements related to increases caused by sea level rise and changing weather patterns.

6.3 Infrastructure and Ecosystem Resilience

This section examines at-risk assets associated with significant flooding events, adaptation and mitigation strategies associated with sea level rise and climate change, and commentary regarding ecosystem resiliency.

6.3.1 At-Risk Assets Associated with Significant Flooding Events

To evaluate the impact of sea level rise on City-owned assets, a screening-level analysis of basic flood exposure was performed to identify at-risk City-owned assets. To identify the at-risk City-owned assets, Brizaga reviewed the parcels owned or operated by the City of Ormond Beach, as listed by the tax roll of the Volusia County Property Appraiser and identified them within the GIS database prepared for the flood mapping exercise. The flood depths within the parcels were evaluated and recorded for two storm events and tidal flooding in the current year and with 20, 50, and 80 years of sea level rise. A table detailing these storm conditions and the flood depths for each of the City-owned assets are provided on later in this section. It is further understood by Brizaga that there may be additional City owned assets that were not identified by the Property Appraiser's data.

Included in this section below are a series of maps prepared utilizing ArcGIS to identify City-owned assets and depict flooding extents under various tidal and storm surge scenarios. Due to the limited nature of the scope of this task, this exercise was conducted primarily as an elevation-based analysis to evaluate flood depths and does not include modeling of any kind.

Storm Surge elevations for category 1 and 3 hurricanes for the current year (2020) were extracted from the outputs of the Seas, Lakes, and Overland Surges from Hurricanes (SLOSH) model published by NOAA to serve as a baseline condition for flooding. Additional sea level rise based on the selected sea level rise projections were applied to the coastline and simulated in HAZUS, which utilizes the SLOSH model runs, to evaluate future inundation levels. A GIS-based geostatistical analysis allowed for the average depth of flooding at each parcel to be identified and calculated. Sea level rise projections at the Daytona Beach Shores tidal station indicate that local sea level could rise by up to 1.1 feet above the baseline condition (2020) by the year 2040 and 3.7 feet above the baseline by 2070, when referenced to the NOAA 2017 High projections. These assumptions indicate that the flood extents and depths illustrated in maps and data tables for storm surge flooding are likely an overestimation of actual expected conditions. This is because the SLOSH data outputs provide estimates of the worst-case scenario for each category of hurricane

[29] Norfolk, VA Zoning Ordinance, https://www.norfolk.gov/DocumentCenter/View/35581/Adopted-Zoning-Ordinance?bidId=

and is dependent on variables such as forward speed, radius of maximum winds, and angle of approach.

The inundation maps are provided in this section following the order in **Table 6-2** and utilize the NOAA sea level rise projections. On each map, the sea level change is provided as an increase in feet as of the year 2020, which can be compared to 2000 or the USACE sea level rise curves by using **Table 6-1**. The maps show inundation levels, as well as the maximum flooding extent (green dotted lined on the map). For the maps that do not have a storm event identified, the Adaptation Action Elevation (AAE) is the threshold regularly used. The AAE is defined in **Section 6.1** and is the estimated 98th percentile of the higher high water level for a given year. It defines a threshold at which an elevation will begin experiencing frequent tidal flooding – more than seasonal King Tides. The inundation levels that are observed off the east coast are an artifact of the digital elevation map and should be disregarded.

For each of the identified City-owned assets, the inundation levels are provided in the charts in **Appendix C**. The order and details of the charts are provided in **Table 6-3**. Only parcels that experience flooding under the sea level rise projection are provided. The overall list of evaluated assets is also provided. Numbers in red within the tables indicate where inundation of the parcel associated with the asset is expected. The overall list of evaluated assets is also provided.

Top Five Most At-Risk Assets:

The five most at-risk assets from this screening-level exercise are listed below. These assets are ranked in order of most vulnerable to least vulnerable based on the spread and depth of flooding expected at the property location under storm surge and king tide conditions.

1. Bait & Tackle Shop (ALTKEY 5613241)
2. Central Park & Lake (ALTKEY 3159560)
3. Office of the City Attorney (3078896)
4. Fire Station #93 (3161955)
5. Storage Shed near Power Plant (ALTKEY 3165292)

While the vulnerability of these assets differ, each of these are expected to experience some level of flooding, either across the entirety of the property, or with the greatest average depth of flooding throughout the property, during king tides or storm surge conditions.

Recommendations for Further Study: A more detailed vulnerability assessment and adaptation plan should be considered, which can build off of this screening level analysis and the 2017 Resilient Volusia County Report[30].

This analysis applies the elevation data from the LiDAR digital elevation model to evaluate the flood risk of City-owned assets. Building-specific elevations typically found on an elevation certificate, including Finished Floor Elevation, Lowest Adjacent Grade, and Elevation of Equipment Servicing the Building, were not available and therefore omitted from this analysis.

[30] https://www.r2ctpo.org/wp-content/uploads/Resilient-Volusia-County_final-reduced.pdf

Any future analyses of City assets should consider building-specific elevation characteristics comparative to flood stage.

This analysis relied on the NOAA SLOSH Model Maximum of Maximums (MOMs) for each category of hurricane analyzed. The NOAA SLOSH Model is a "numerical model developed by the National Weather Service to estimate storm surge heights resulting from historical, hypothetical, or predicted hurricanes by taking into account the atmospheric pressure, size, forward speed, and track data." The Maximum of Maximums (MOM) "provides a worst case snapshot for a particular storm category under 'perfect' storm conditions." Additionally, "no single hurricane will produce the regional flooding depicted in the MOMs. Instead, the product is intended to capture the worst-case high-water value at a particular location."[31]

The Maximum of Maximums is the worst-case scenario storm surge associated with each category storm and is not representative of the storm surge that would be associated with the "average" storm. Additionally, evaluation of the return frequencies associated with various storm categories cannot be used to determine the return frequency of the MOM-level storm surge. It is recommended that a study of compound flooding, or the combination of storm surge, tides, heavy rainfall, and sea level rise be performed and utilized to develop return frequencies for flood elevations. This information can be utilized to guide essential policy relative to building and zoning codes, and resource allocation and scheduling relative to infrastructure improvements, retrofits, or replacements.

Table 6-2 - Table of inundation maps that includes the map number, flooding scenario, sea level rise curve, and year of the map

Map No.	Scenario	Sea Level Rise Curve	Year
1	Tidal Flooding	N/A	2020 (Current)
2	Category 1 Hurricane	N/A	2020 (Current)
3	Category 3 Hurricane	N/A	2020 (Current)
4	Tidal Flooding	NOAA Low	2040
5	Category 1 Hurricane	NOAA Low	2040
6	Category 3 Hurricane	NOAA Low	2040
7	Tidal Flooding	NOAA Low	2070
8	Category 1 Hurricane	NOAA Low	2070
9	Category 3 Hurricane	NOAA Low	2070
10	Tidal Flooding	NOAA Low	2100
11	Category 1 Hurricane	NOAA Low	2100
12	Category 3 Hurricane	NOAA Low	2100
13	Tidal Flooding	NOAA Intermediate	2040
14	Category 1 Hurricane	NOAA Intermediate	2040
15	Category 3 Hurricane	NOAA Intermediate	2040
16	Tidal Flooding	NOAA Intermediate	2070
17	Category 1 Hurricane	NOAA Intermediate	2070
18	Category 3 Hurricane	NOAA Intermediate	2070
19	Tidal Flooding	NOAA Intermediate	2100

[31] NOAA SLOSH, https://www.nhc.noaa.gov/surge/slosh.php

Map No.	Scenario	Sea Level Rise Curve	Year
20	Category 1 Hurricane	NOAA Intermediate	2100
21	Category 3 Hurricane	NOAA Intermediate	2100
22	Tidal Flooding	NOAA High	2040
23	Category 1 Hurricane	NOAA High	2040
24	Category 3 Hurricane	NOAA High	2040
25	Tidal Flooding	NOAA High	2070
26	Category 1 Hurricane	NOAA High	2070
27	Category 3 Hurricane	NOAA High	2070
28	Tidal Flooding	NOAA High	2100
29	Category 1 Hurricane	NOAA High	2100
30	Category 3 Hurricane	NOAA High	2100

Table 6-3 - Table of inundation charts for at-risk City-owned and/or operated assets

Chart No.	Table Contents
1	Assets evaluated as part of this project
2	Assets currently at-risk
3	Assets at-risk under NOAA low projection
4	Assets at-risk under NOAA intermediate projection
5	Assets at-risk under NOAA high projection

Note: Charts included in Appendix C.
Only assets that experience inundation are shown in Charts 3-5.

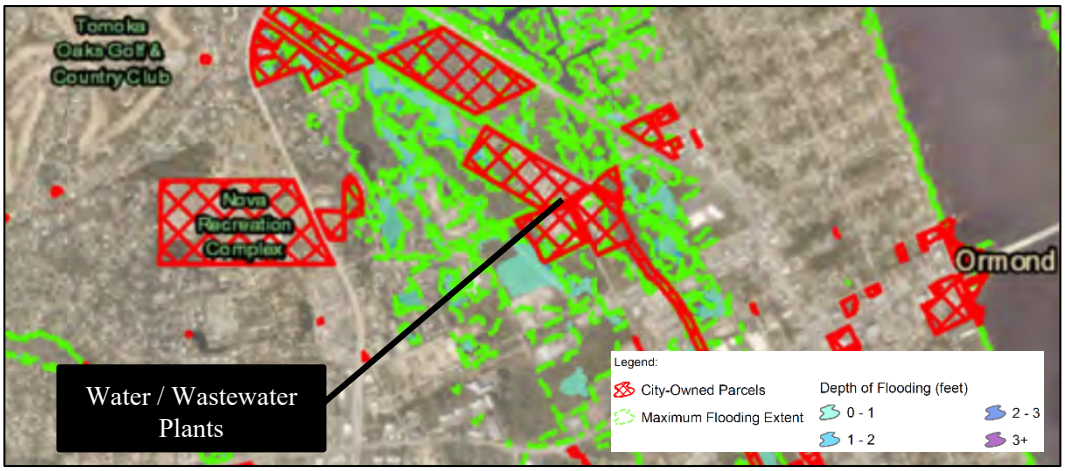
It is noted that this future climate impact analysis was focused specifically on the impacts to facilitates from sea level rise. Areas previously or currently prone to flooding from rain induced flooding were not directly assessed. For example, the Central Park area which was the subject of significant stormwater retrofits in past years to address rain induced flooding impacts would not necessarily show as a significant vulnerability from a sea level rise standpoint.

Water / Wastewater Plant At-Risk Asset:

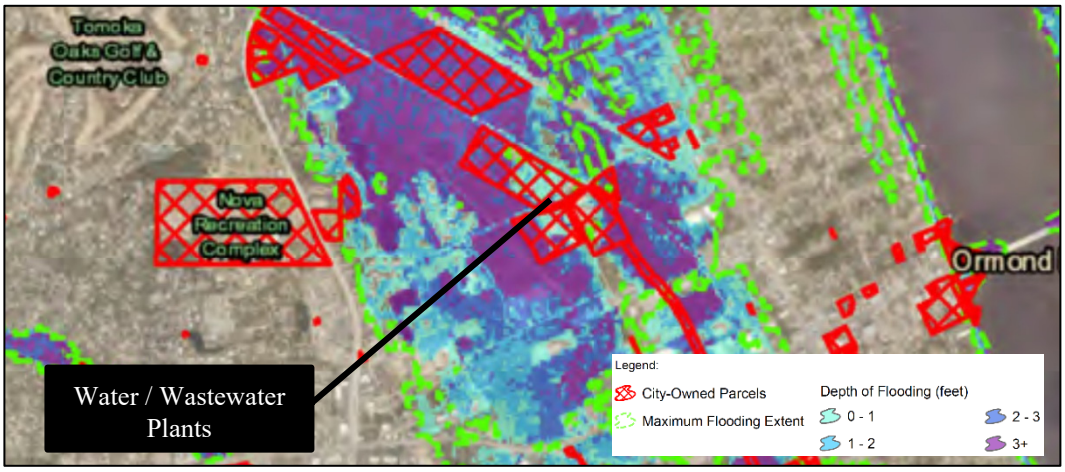
Although not showing up in the top 5 at risk assets, the City's water and wastewater plant facilities at Orchard Street and Wilmette Avenue are particularly critical assets that need to be safe from flooding impacts under future conditions. Based on the inundation analysis, the facilities are at significant risk from tide and stormwater related increases in flood waters. The facilities are in close proximity to Thompson Creek upstream to the Tomoka River which provides a direct backflow path for tide and storm induced flood stages. Excerpts from the asset inundation analysis maps are provided below as Figure 6-5 for the NOAA Intermediate, 2040 time horizon as a representative example.

The preliminary analysis indicates the water and wastewater plant facilities are at particular risk. The City should consider engaging in a study to evaluate appropriate actions to maintain operations given potential future changes in tide and storm derived flood conditions.

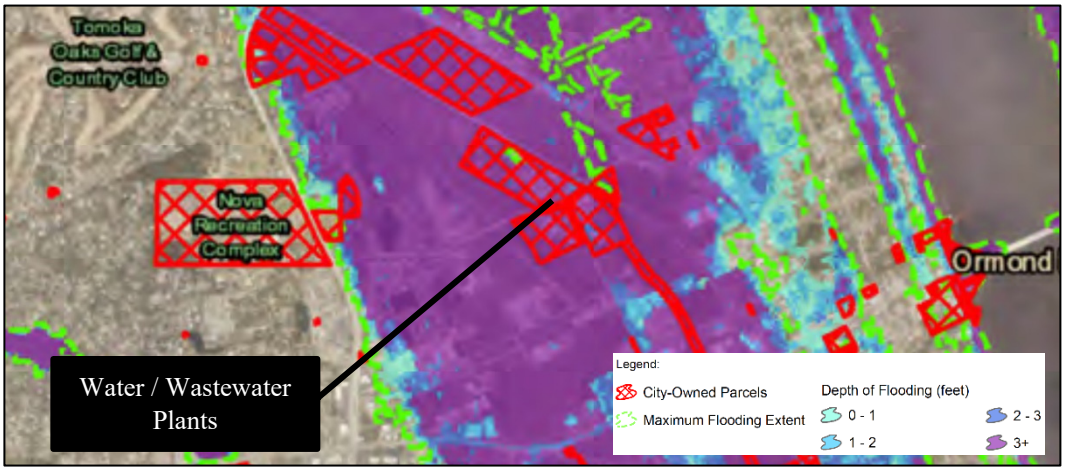
Figure 6-5 - Water / Wastewater Plant At-Risk Asset Example



Year 2040 – NOAA Intermediate Horizon Tidal Flooding

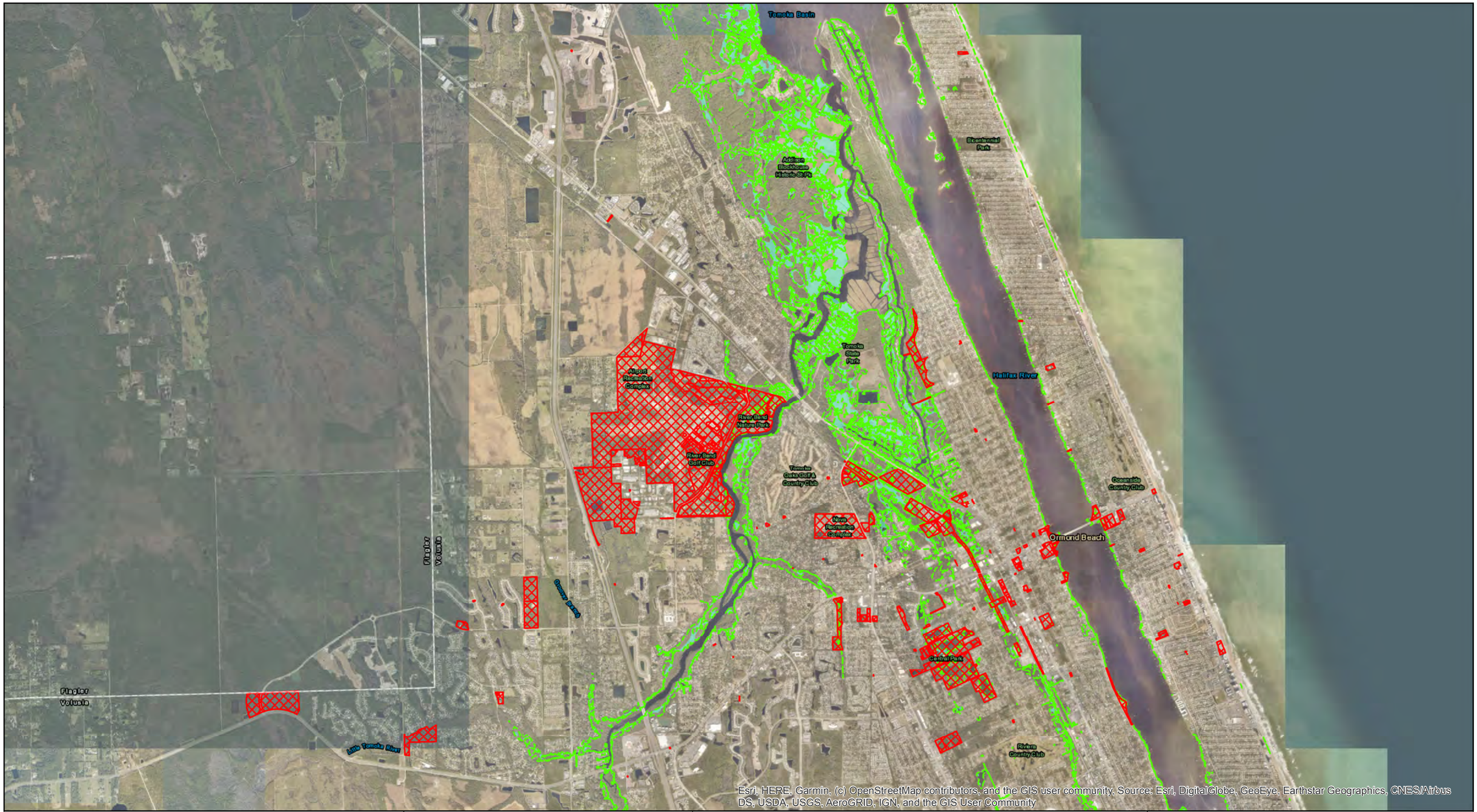


Year 2040 – NOAA Intermediate - Category 1 Hurricane



Year 2040 – NOAA Intermediate - Category 3 Hurricane

Map No. 1



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

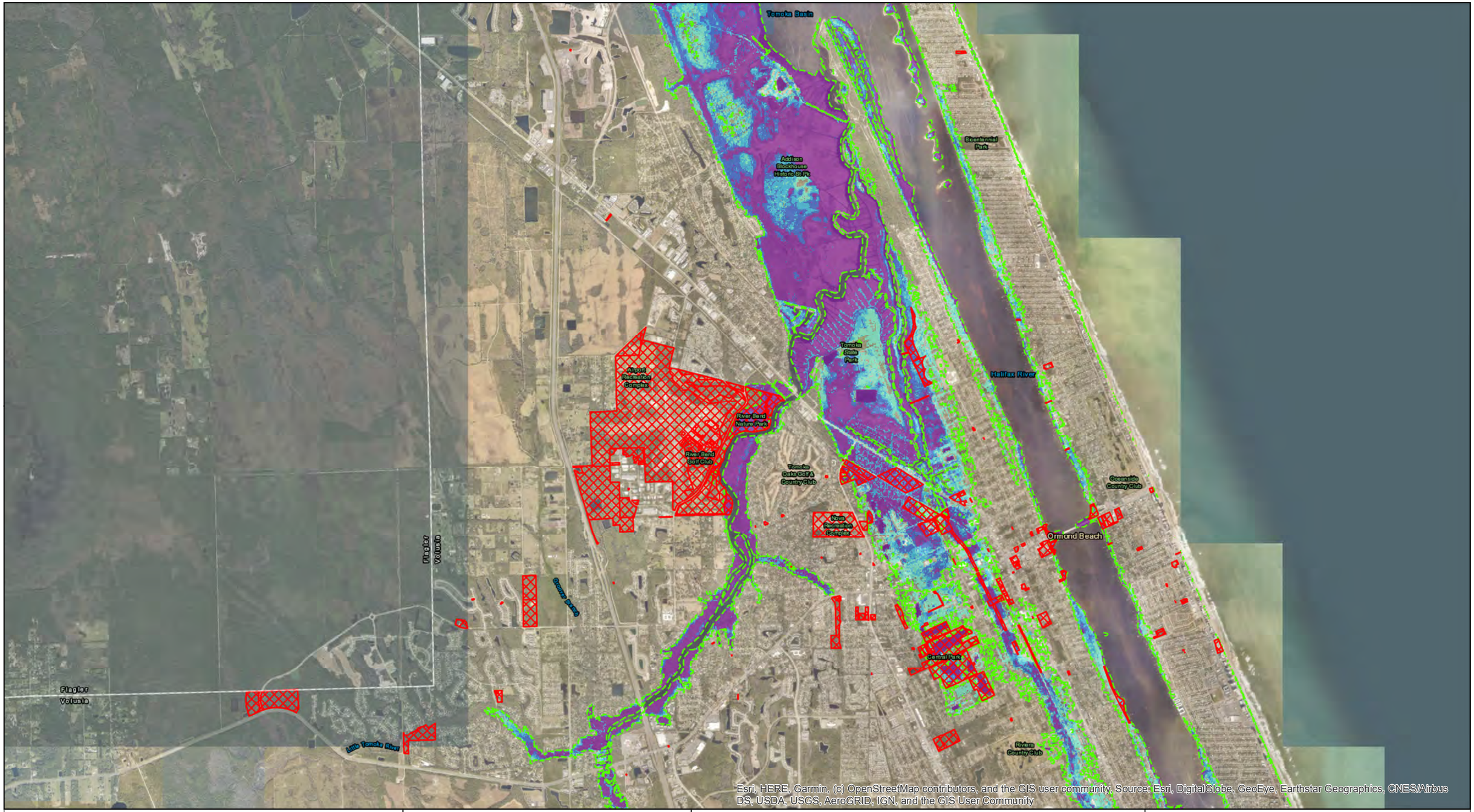
Year: 2020
Storm Category: N/A
Precipitation Event: N/A

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 2



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

Year:	2020
Storm Category:	CAT 1
Precipitation Event:	N/A

Legend:

- City-Owned Parcels
- Maximum Flooding Extent

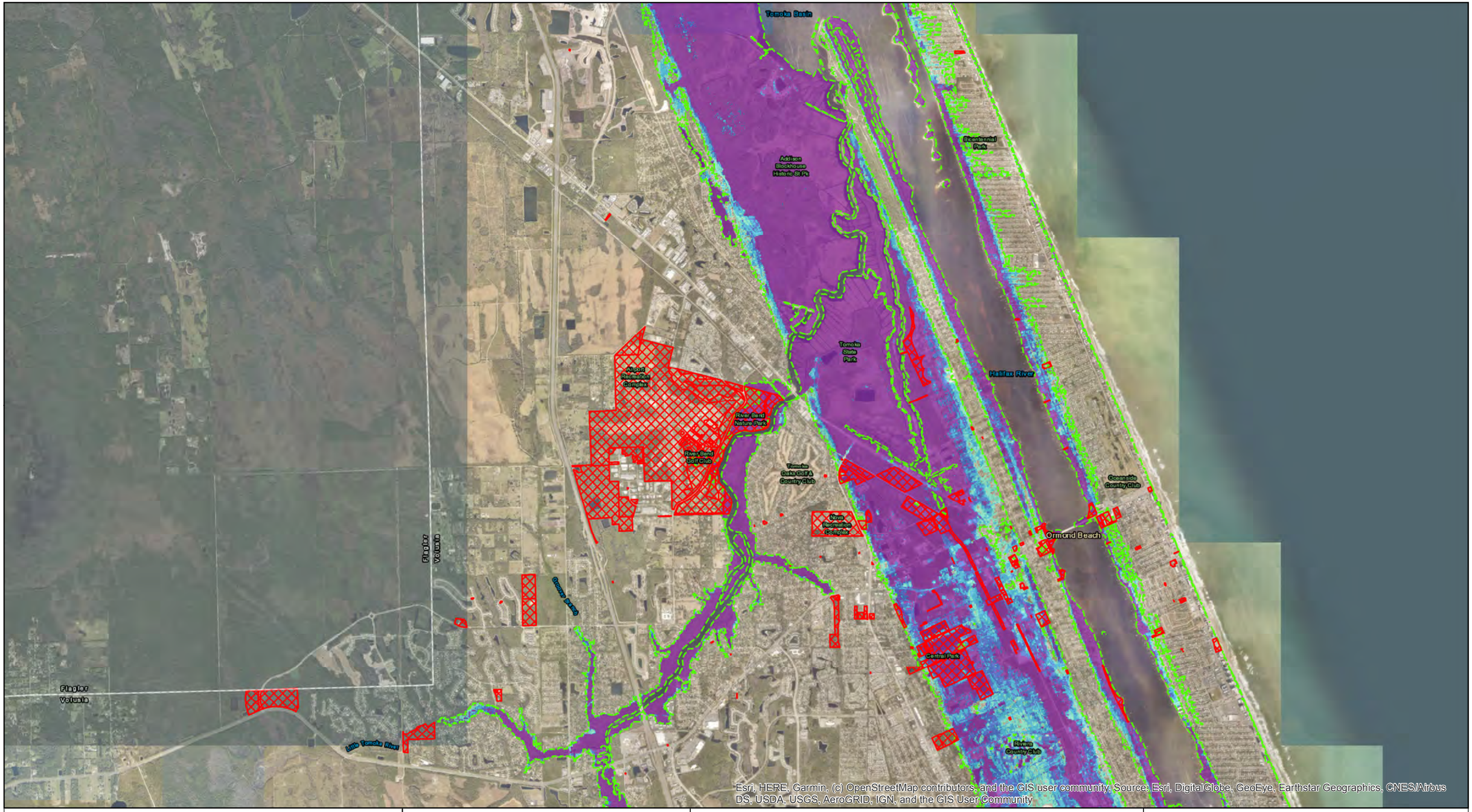
Depth of Flooding (feet)

- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants

BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 3



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

Year:	2020
Storm Category:	CAT 3
Precipitation Event:	N/A

Legend:

- City-Owned Parcels
- Maximum Flooding Extent

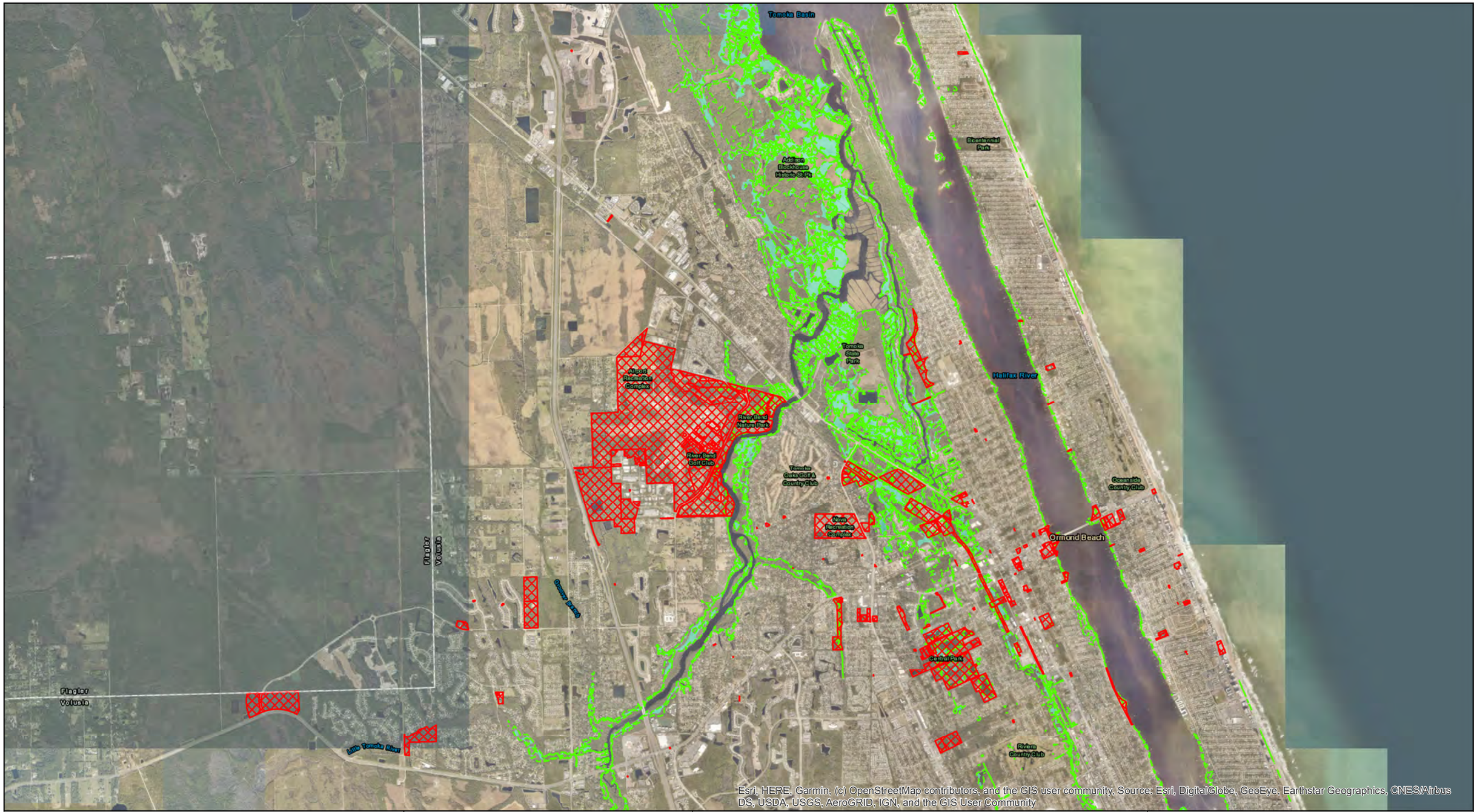
Depth of Flooding (feet)

- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants

BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 4



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

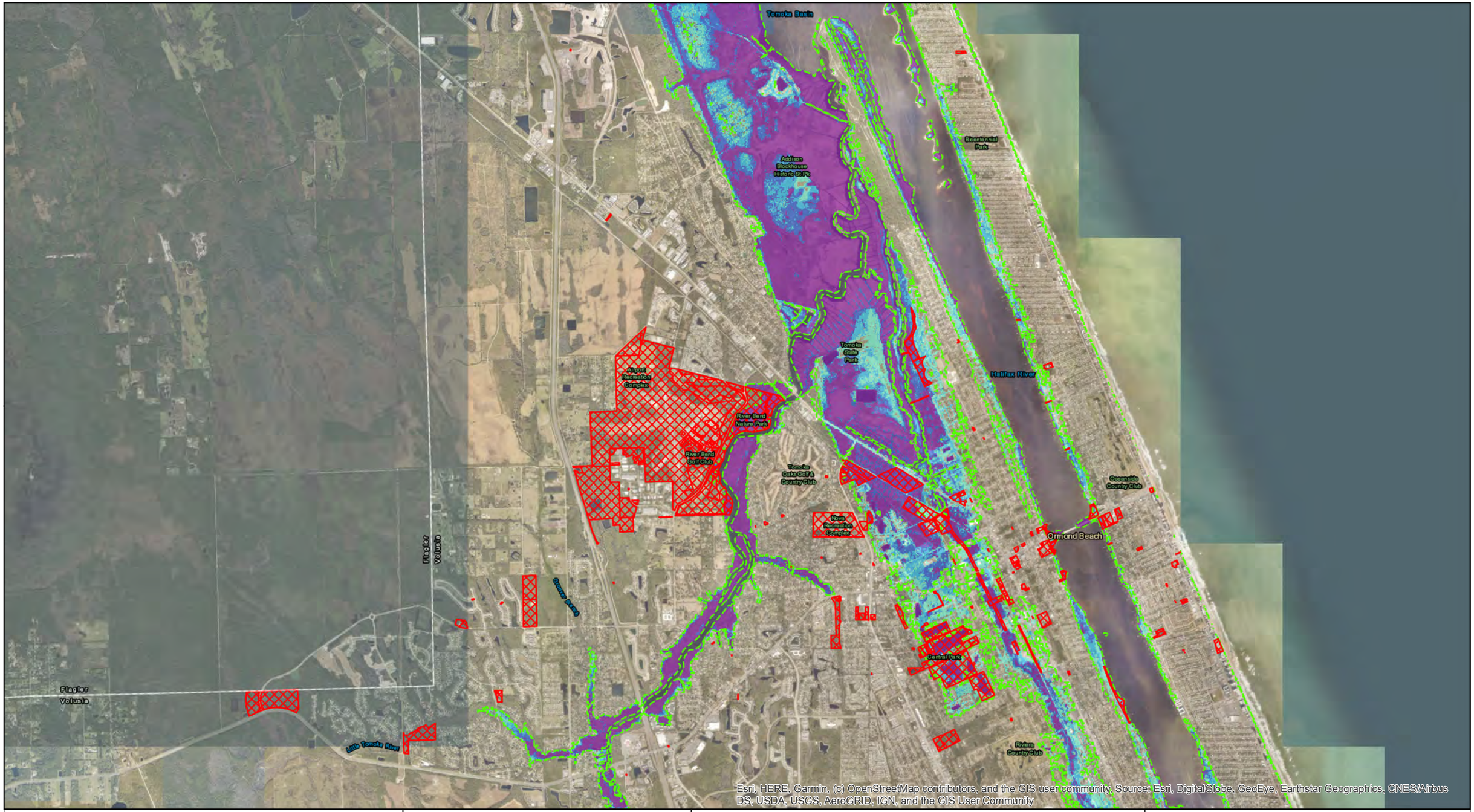
Year: 2040
Storm Category: N/A
Precipitation Event: N/A
NOAA Low

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 5



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

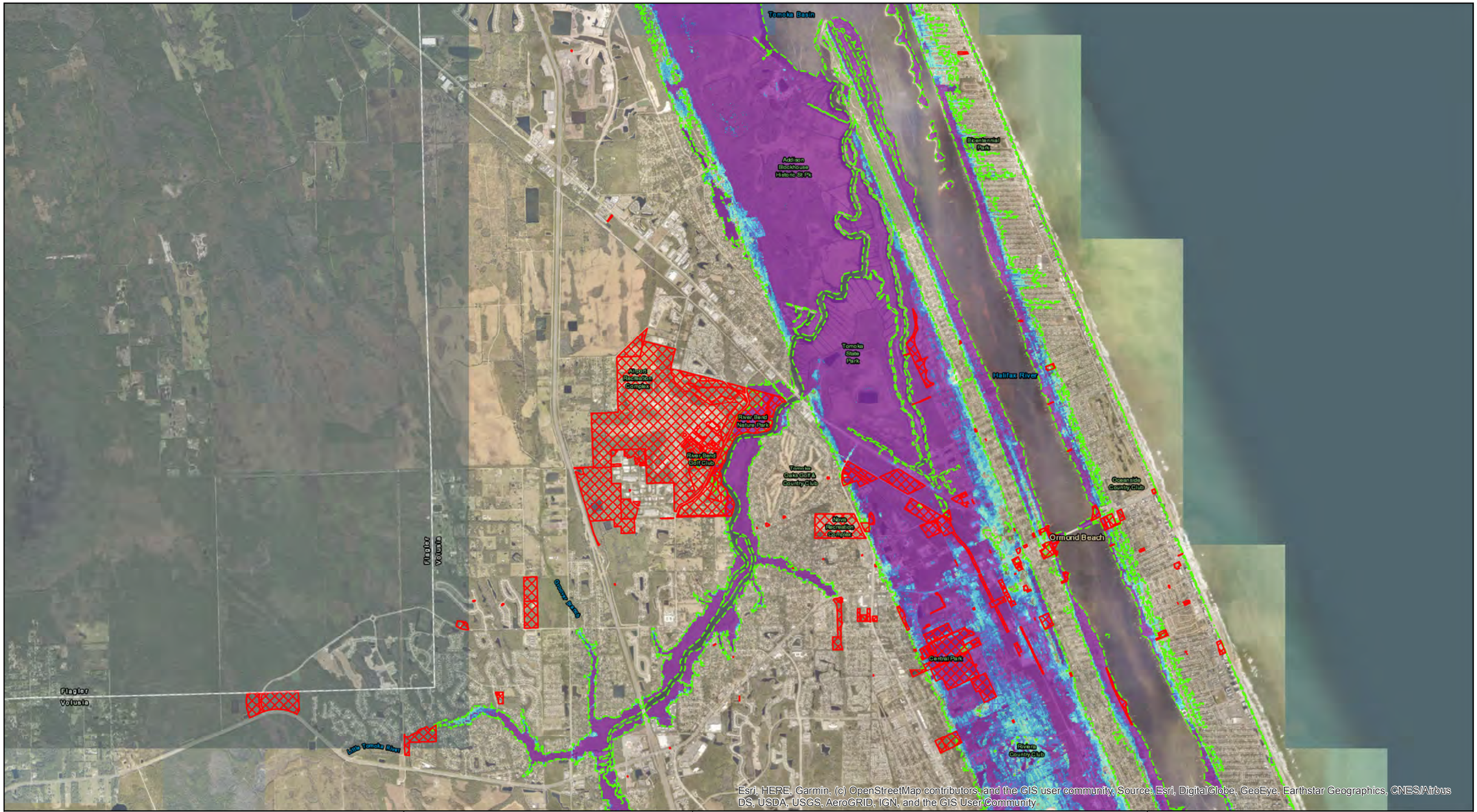
Year: 2040
Storm Category: CAT 1
Precipitation Event: N/A
NOAA Low

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 6



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

Year:	2040
Storm Category:	CAT 3
Precipitation Event:	N/A
	NOAA Low

Legend:

- City-Owned Parcels
- Maximum Flooding Extent

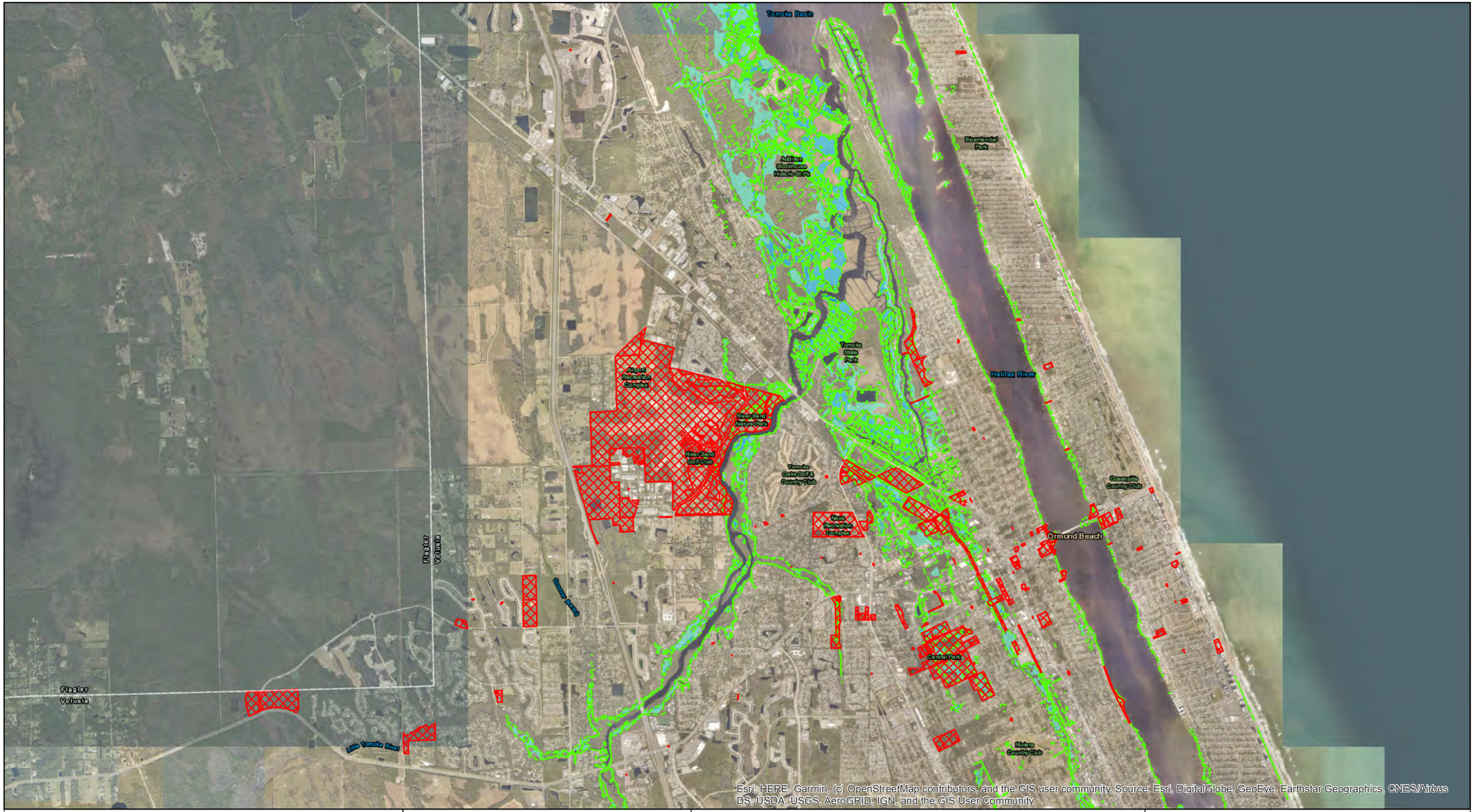
Depth of Flooding (feet)

- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants

BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 7



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

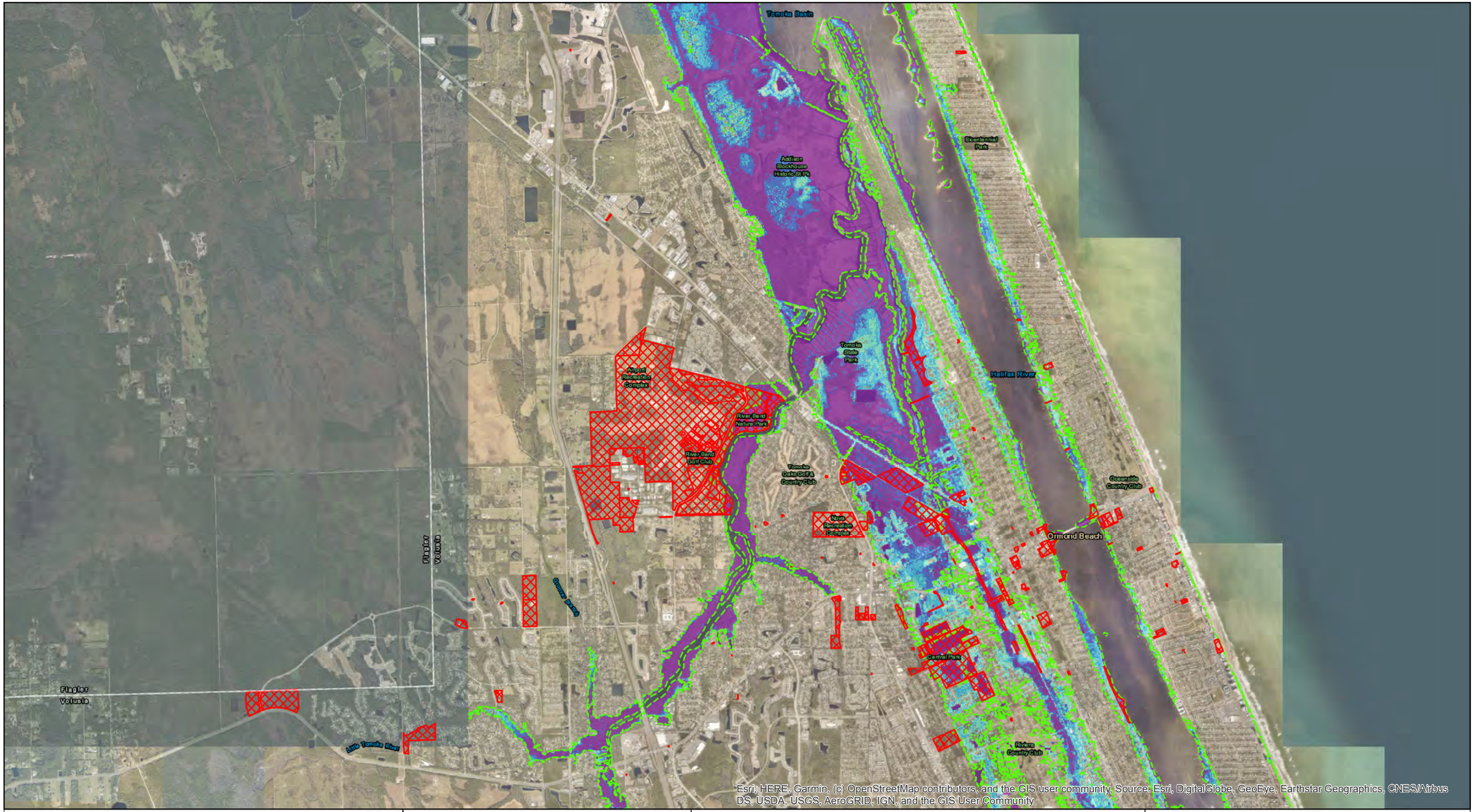
Year: 2070
Storm Category: N/A
Precipitation Event: N/A
NOAA Low

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 8



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

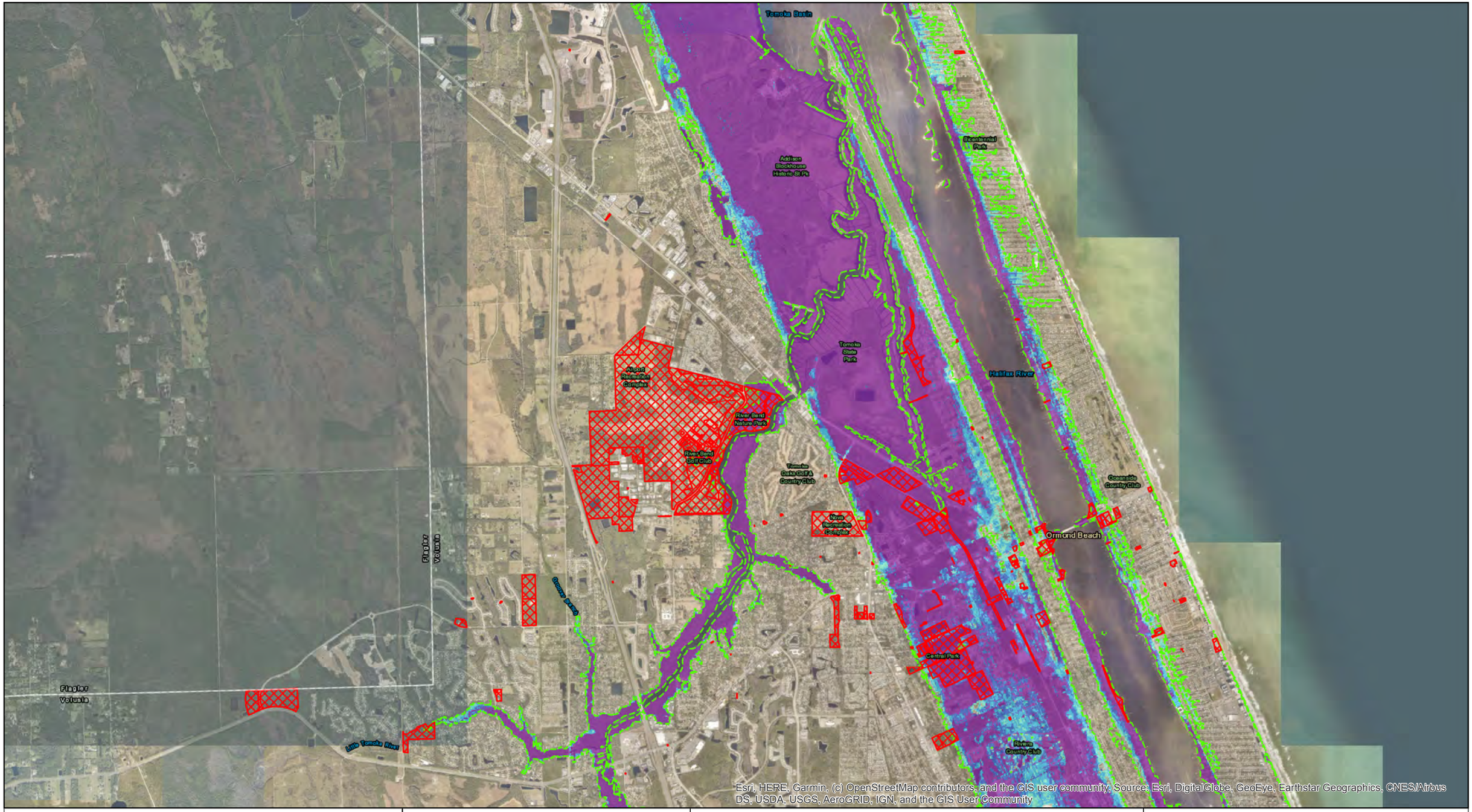
Year: 2070
Storm Category: CAT 1
Precipitation Event: N/A
NOAA Low

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 9



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

Year:	2070
Storm Category:	CAT 3
Precipitation Event:	N/A
	NOAA Low

Legend:

- City-Owned Parcels
- Maximum Flooding Extent

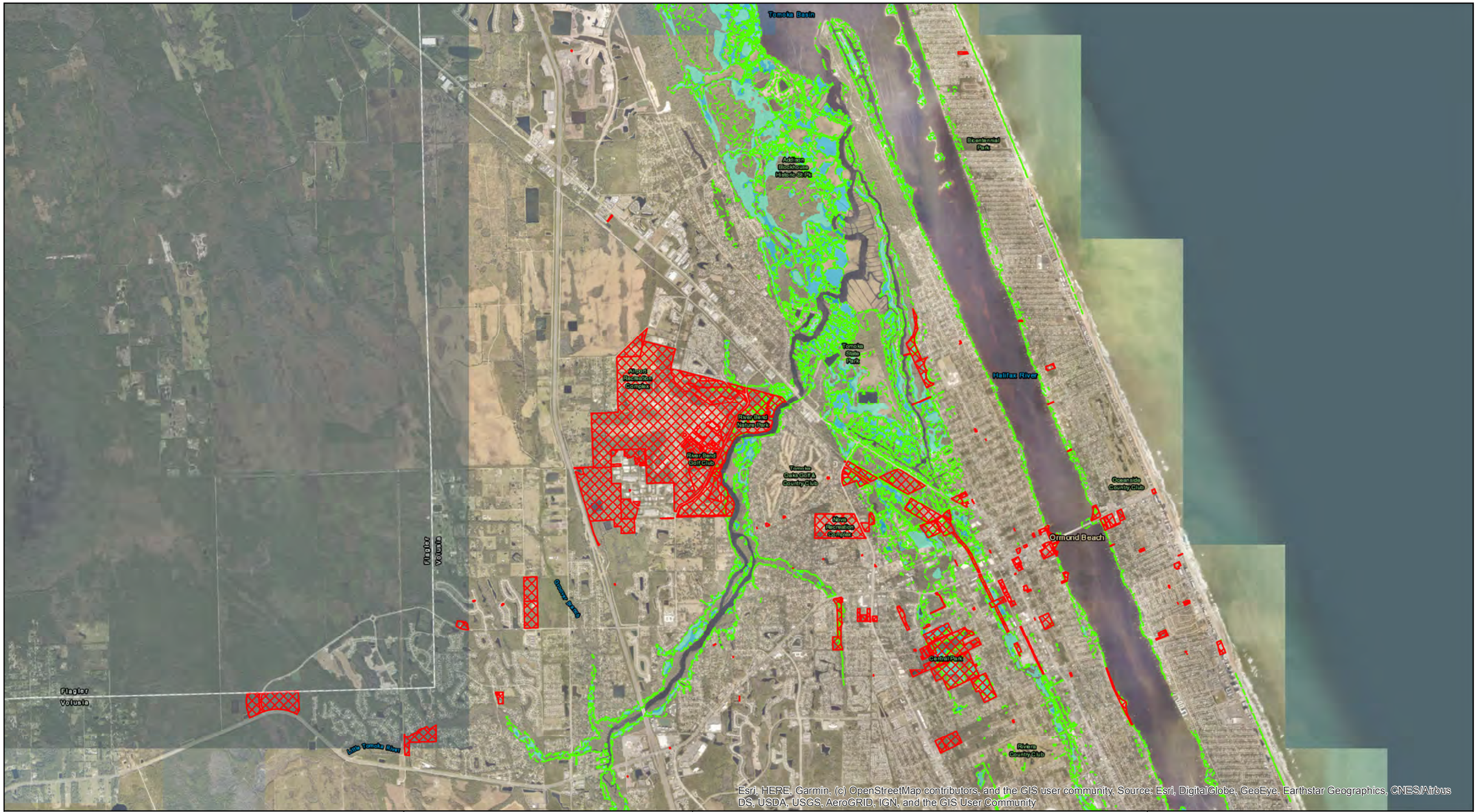
Depth of Flooding (feet)

- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants

BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 10



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

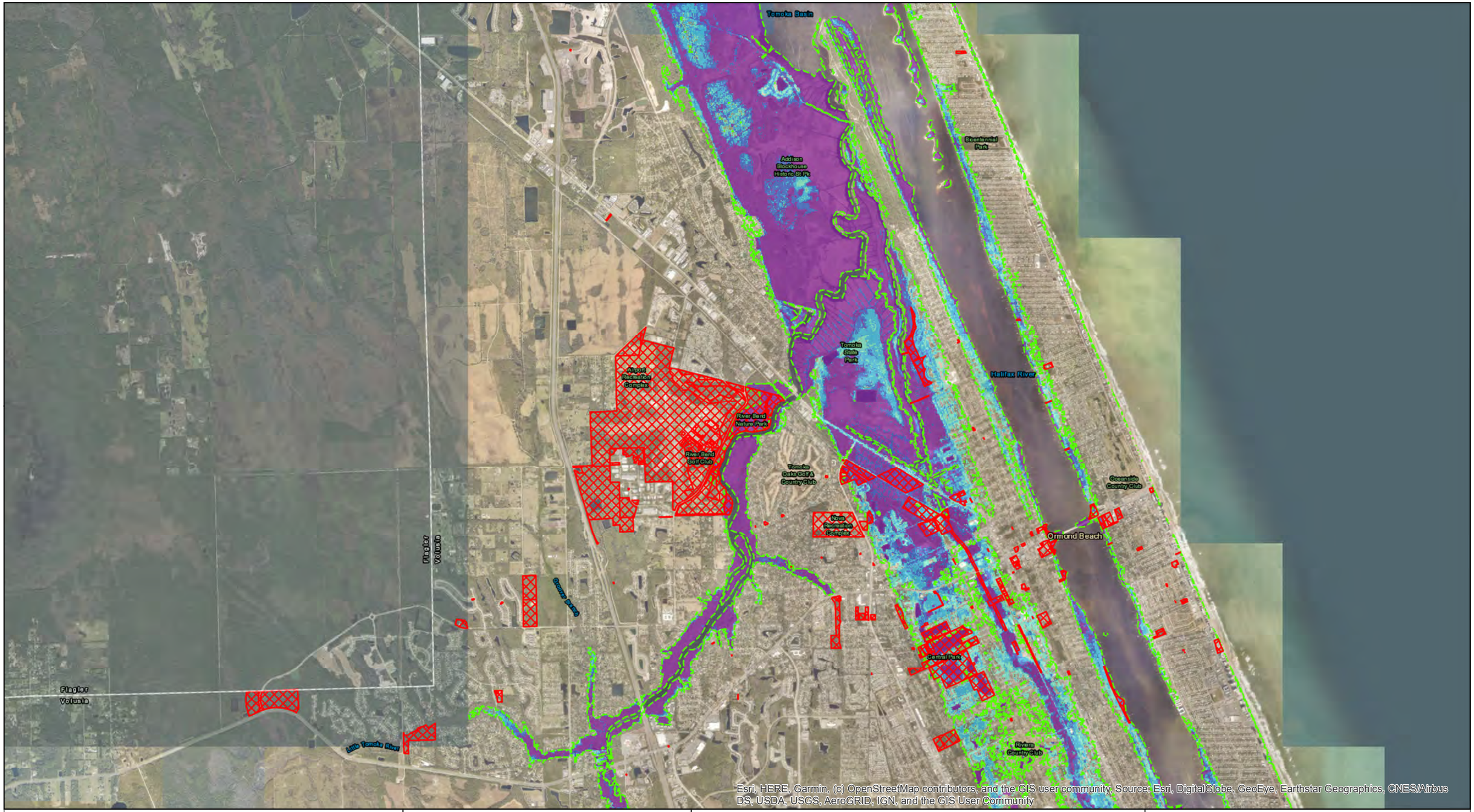
Year: 2100
Storm Category: N/A
Precipitation Event: N/A
NOAA Low

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 11



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

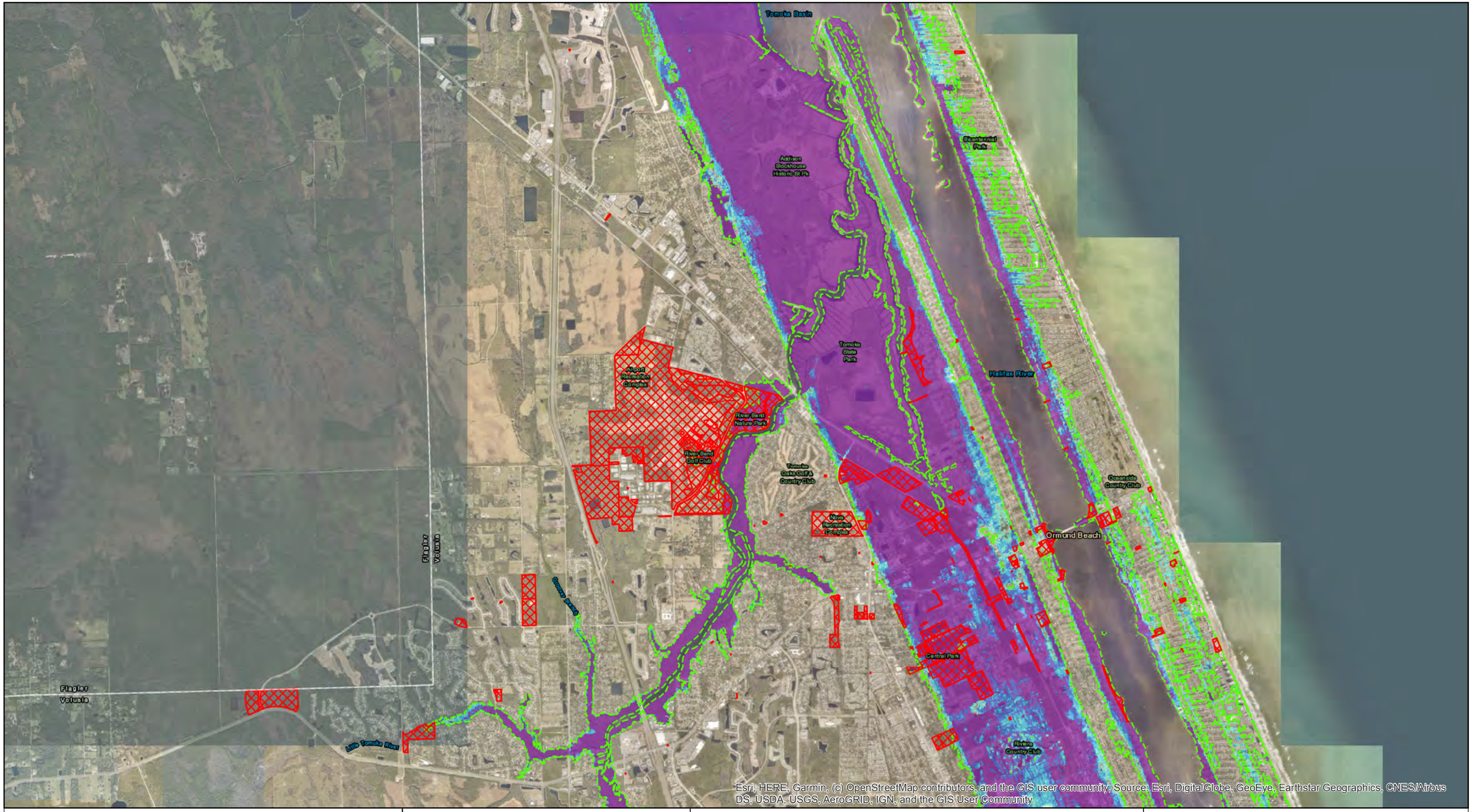
Year: 2100
Storm Category: CAT 1
Precipitation Event: N/A
NOAA Low

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 12



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

Year:	2100
Storm Category:	CAT 3
Precipitation Event:	N/A
	NOAA Low

Legend:

- City-Owned Parcels
- Maximum Flooding Extent

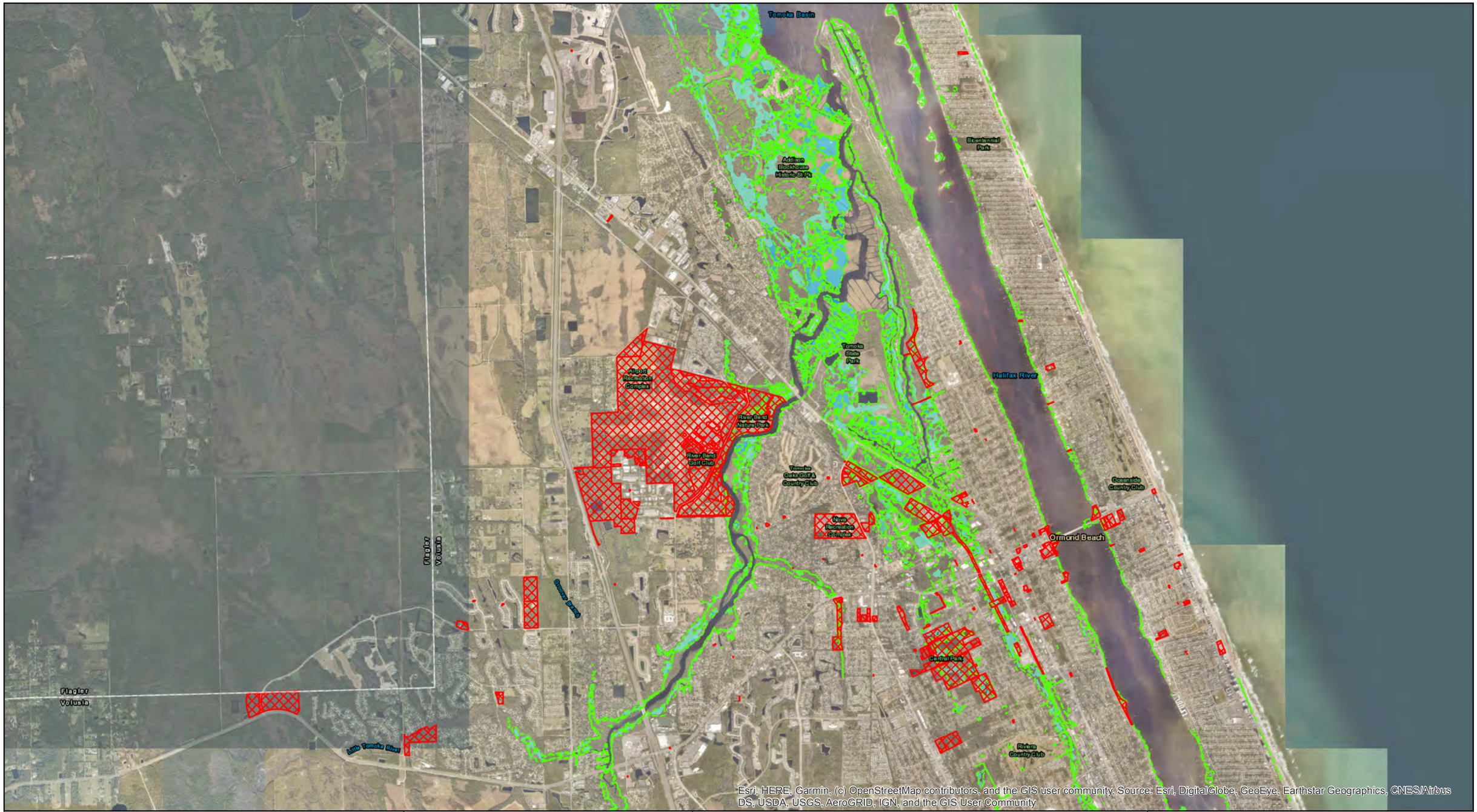
Depth of Flooding (feet)

- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants

BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 13



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

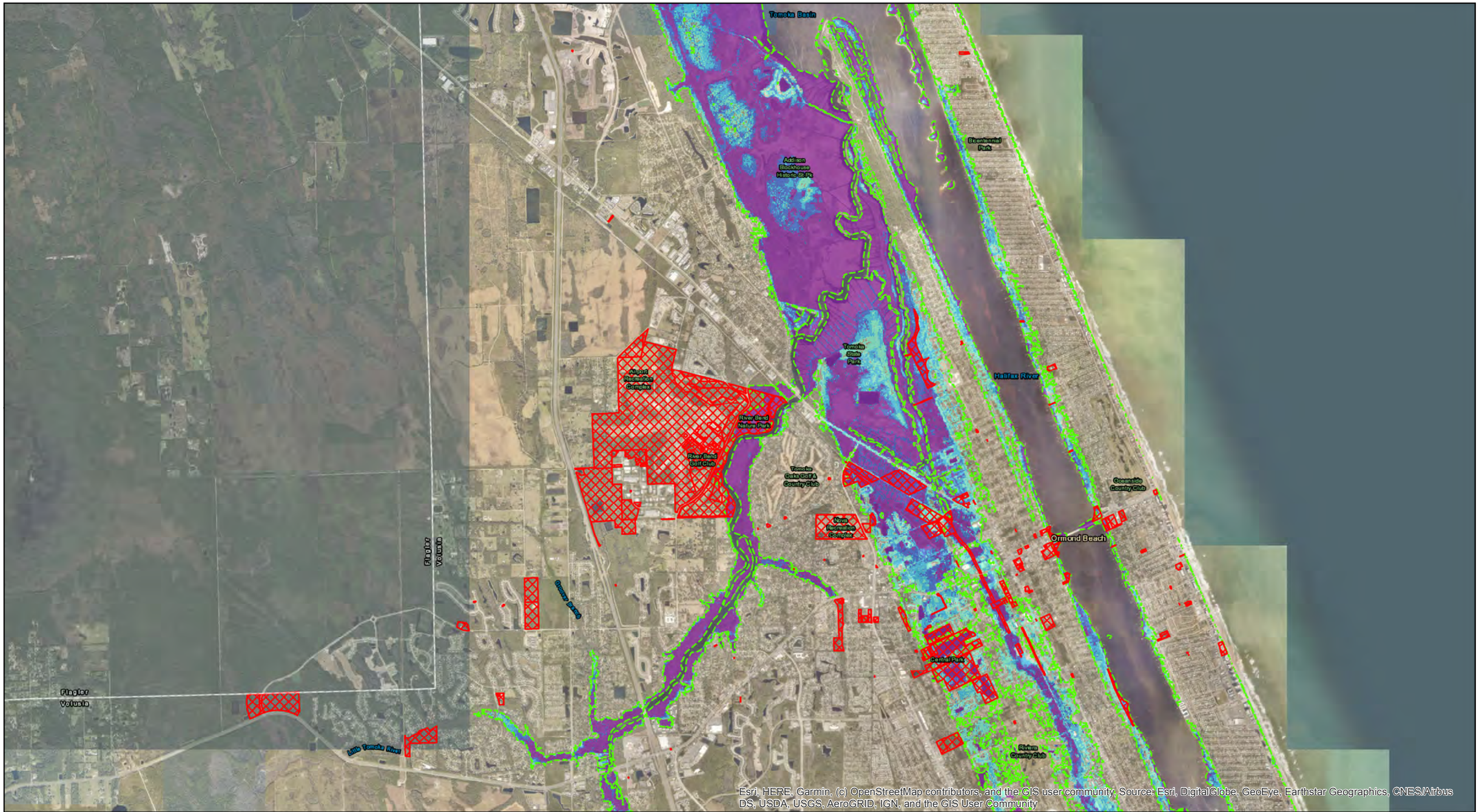
Year: 2040
Storm Category: N/A
Precipitation Event: N/A
NOAA Intermediate

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 14



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

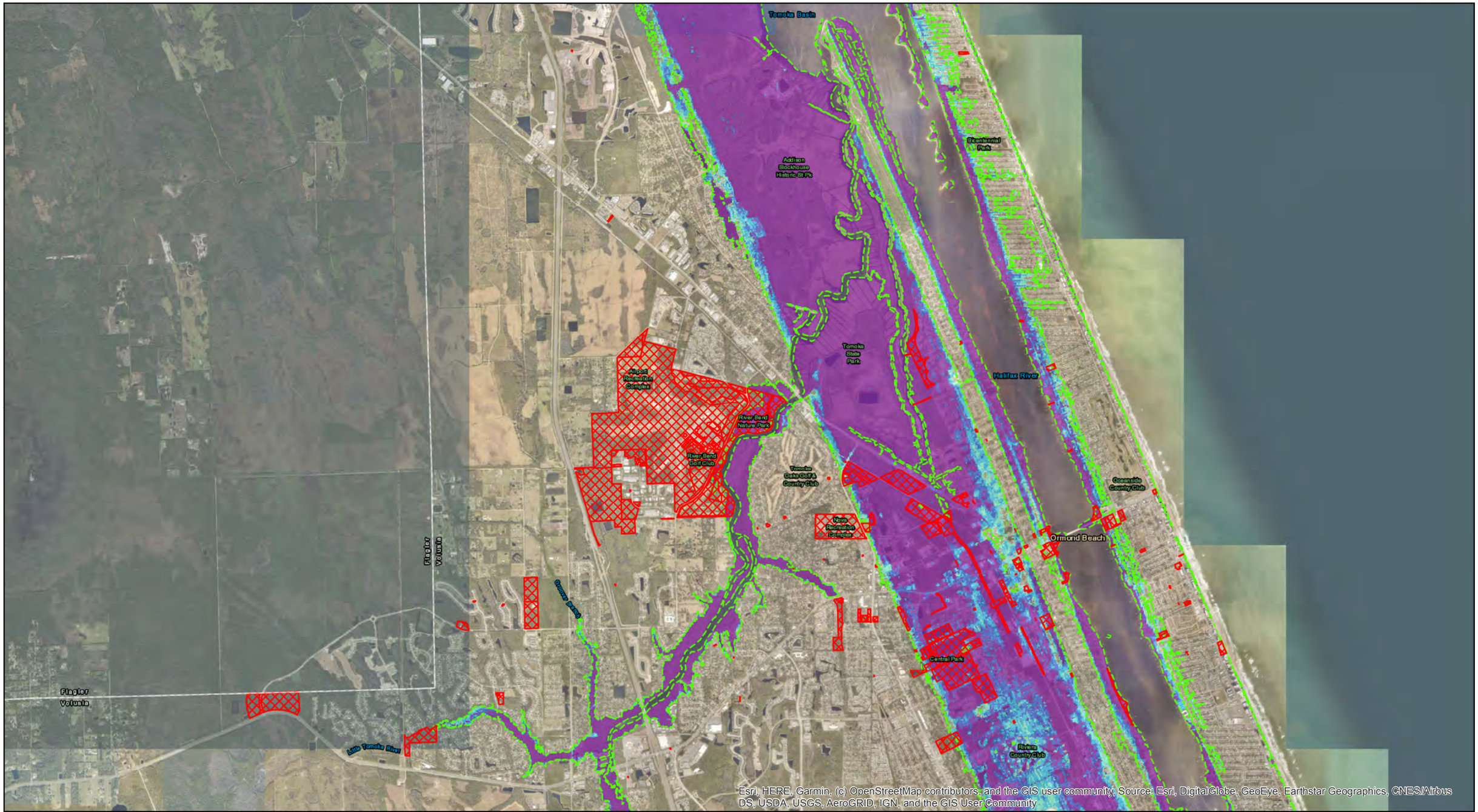
Year: 2040
Storm Category: CAT 1
Precipitation Event: N/A
NOAA Intermediate

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 15



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

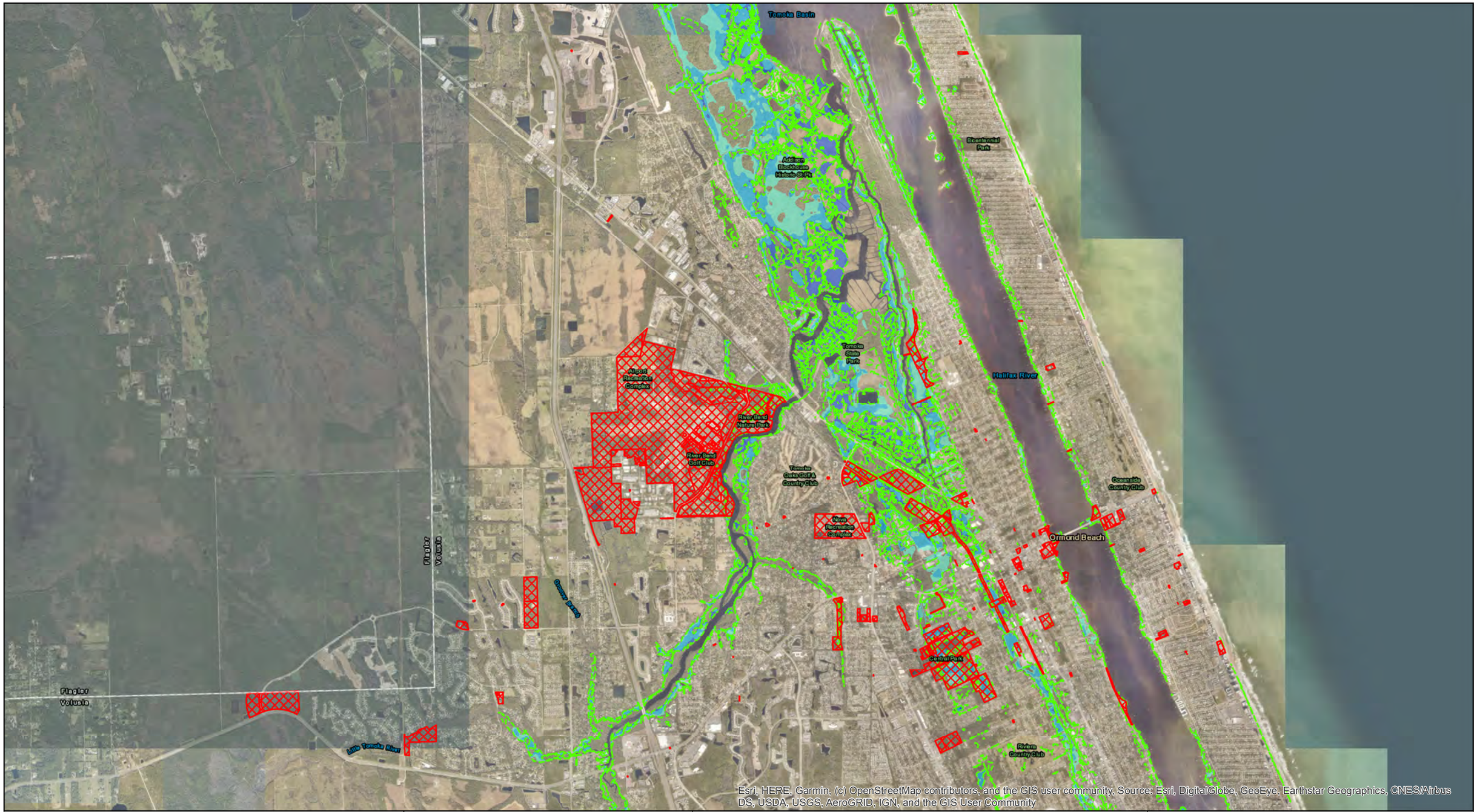
Year: 2040
Storm Category: CAT 3
Precipitation Event: N/A
NOAA Intermediate

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 16



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

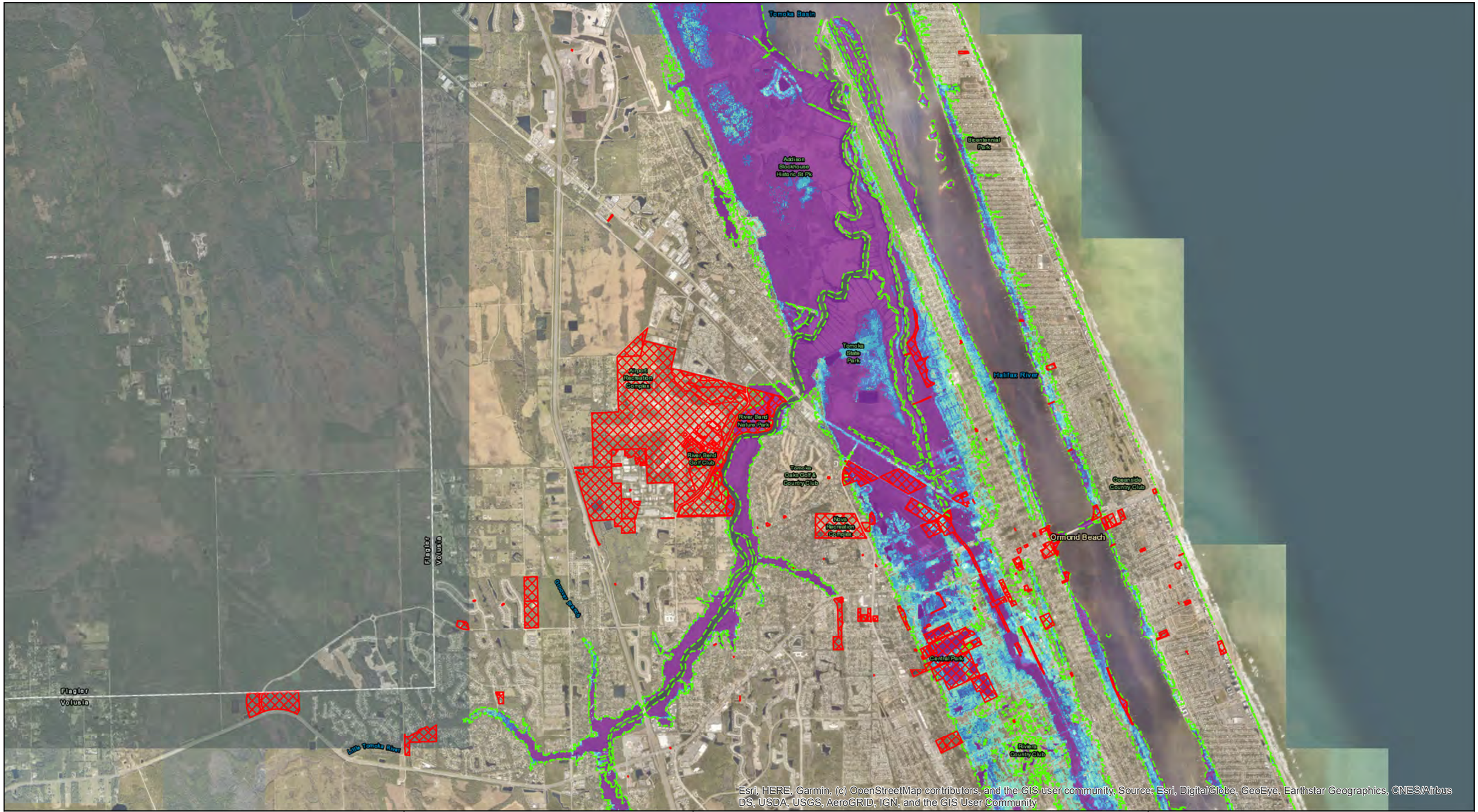
Year: 2070
Storm Category: N/A
Precipitation Event: N/A
NOAA Intermediate

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 17



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

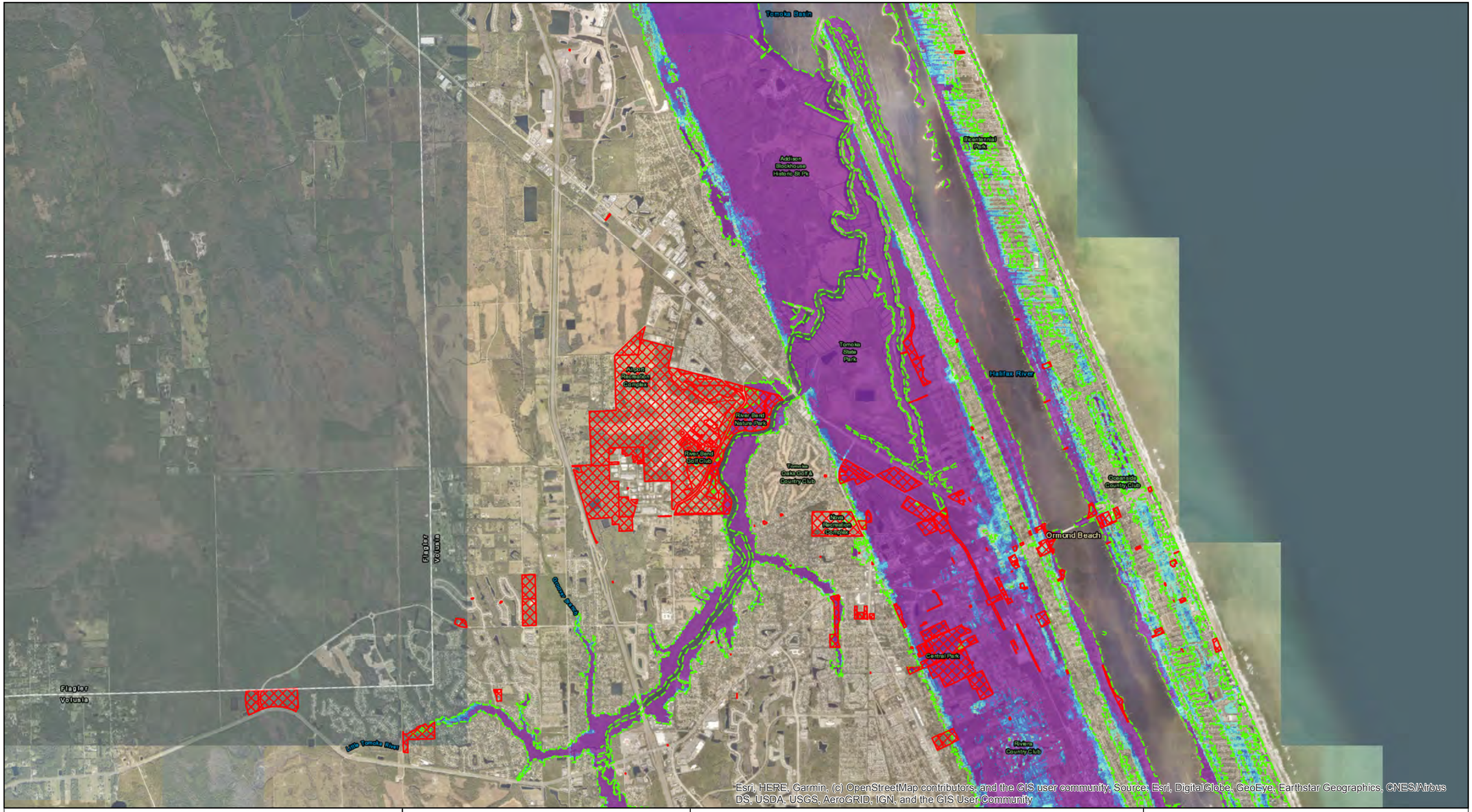
Year: 2070
Storm Category: CAT 1
Precipitation Event: N/A
NOAA Intermediate

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 18



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

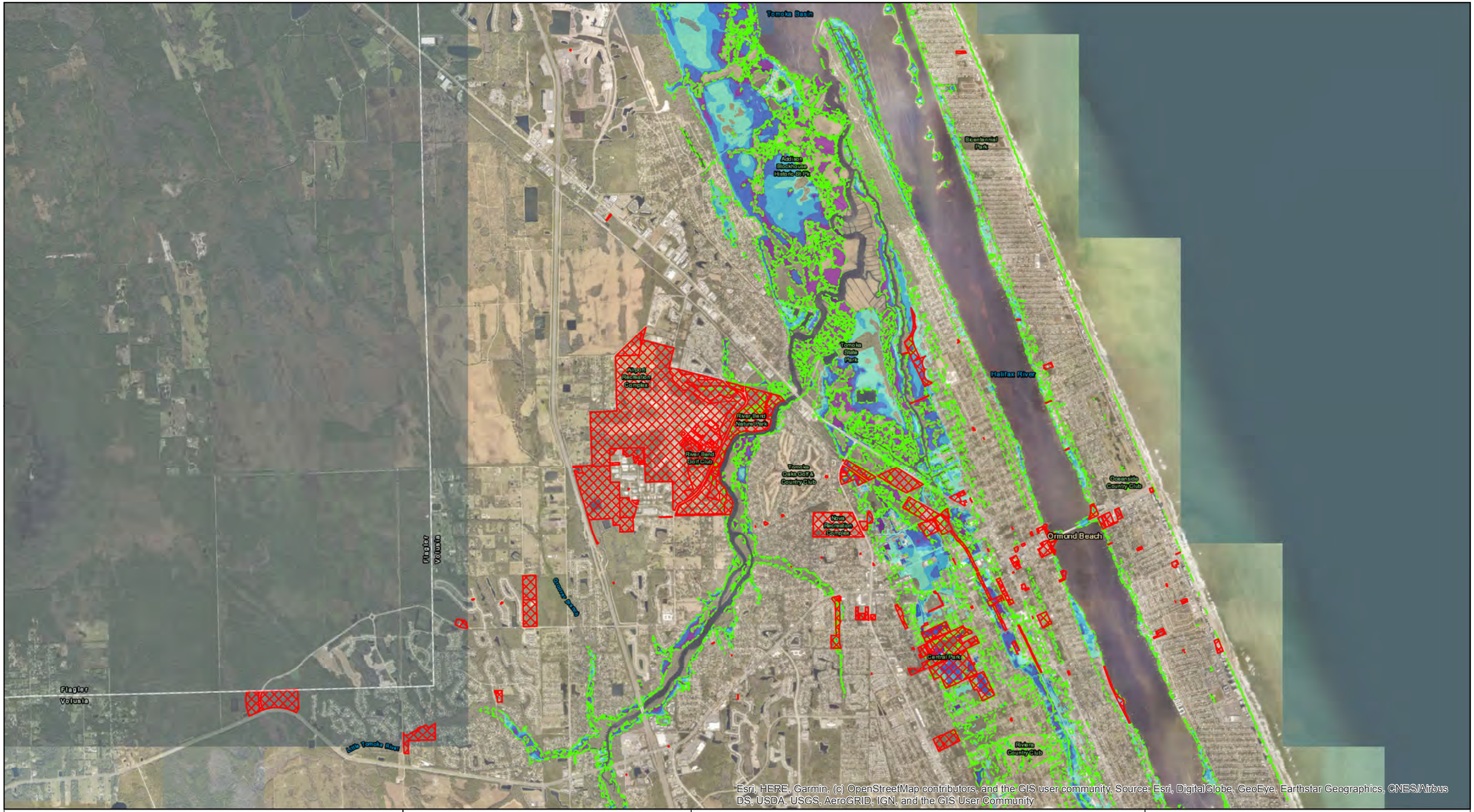
Year: 2070
Storm Category: CAT 3
Precipitation Event: N/A
NOAA Intermediate

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 19



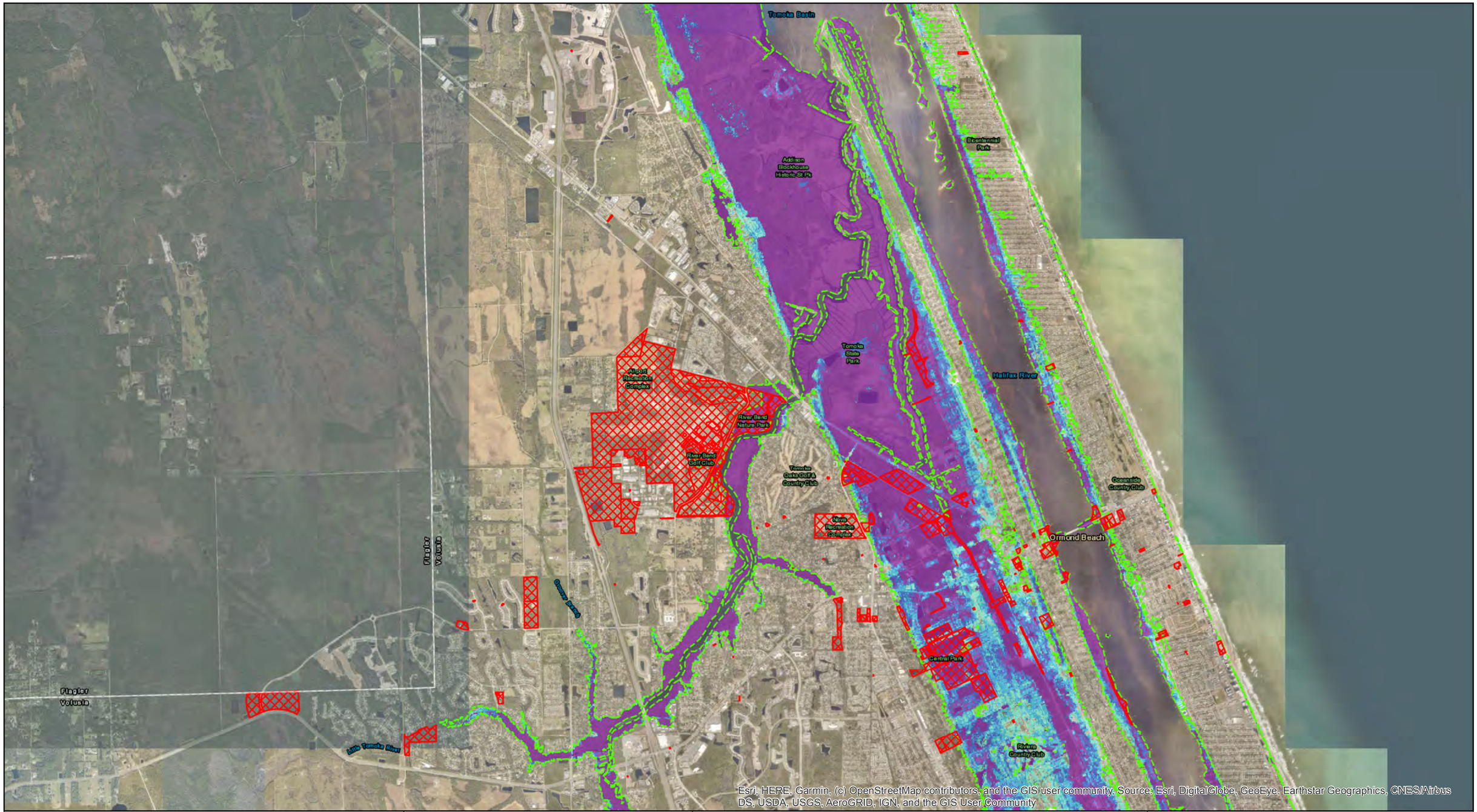
CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

Year: 2100
Storm Category: N/A
Precipitation Event: N/A
NOAA Intermediate

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

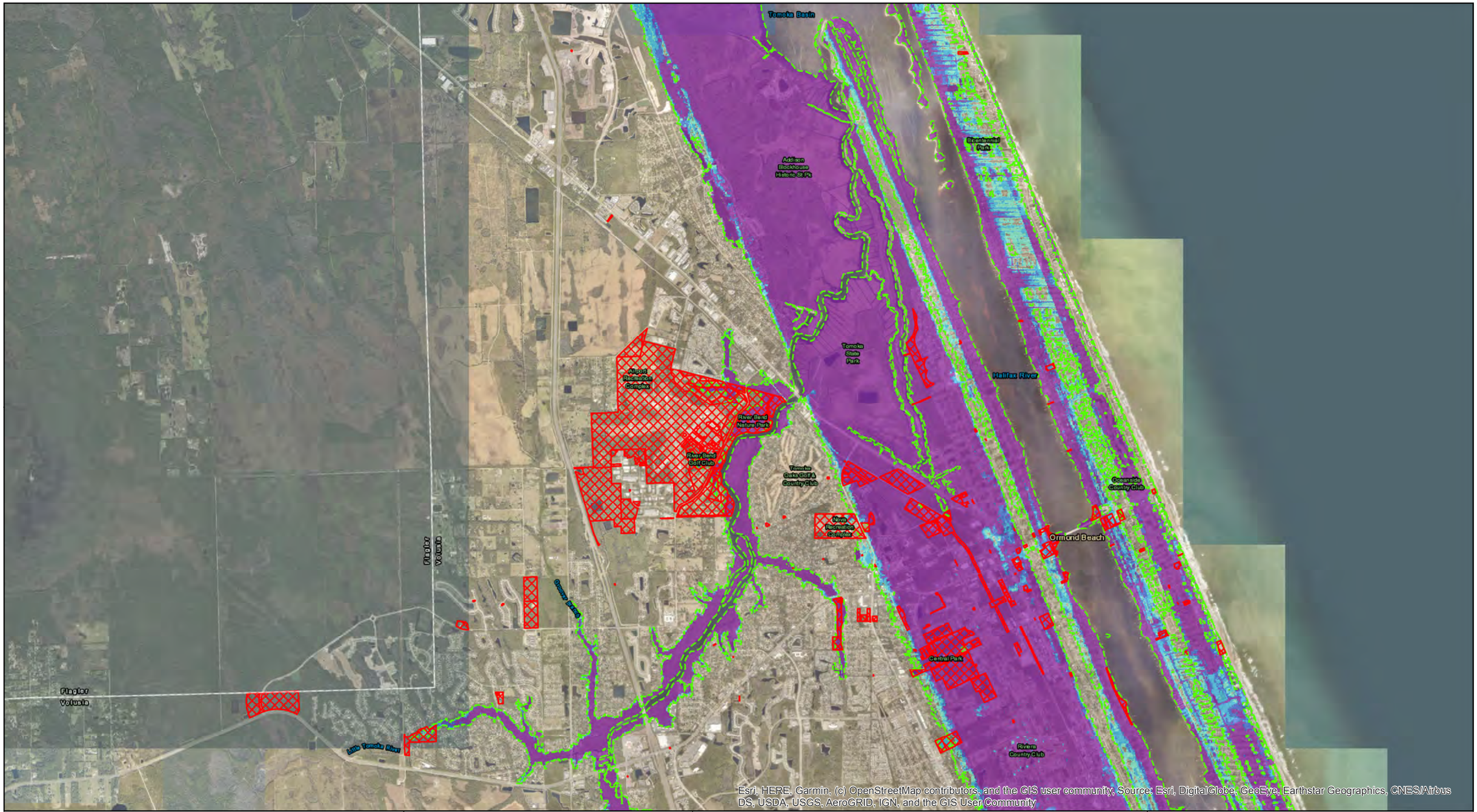
Year: 2100
Storm Category: CAT 1
Precipitation Event: N/A
NOAA Intermediate

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 21



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

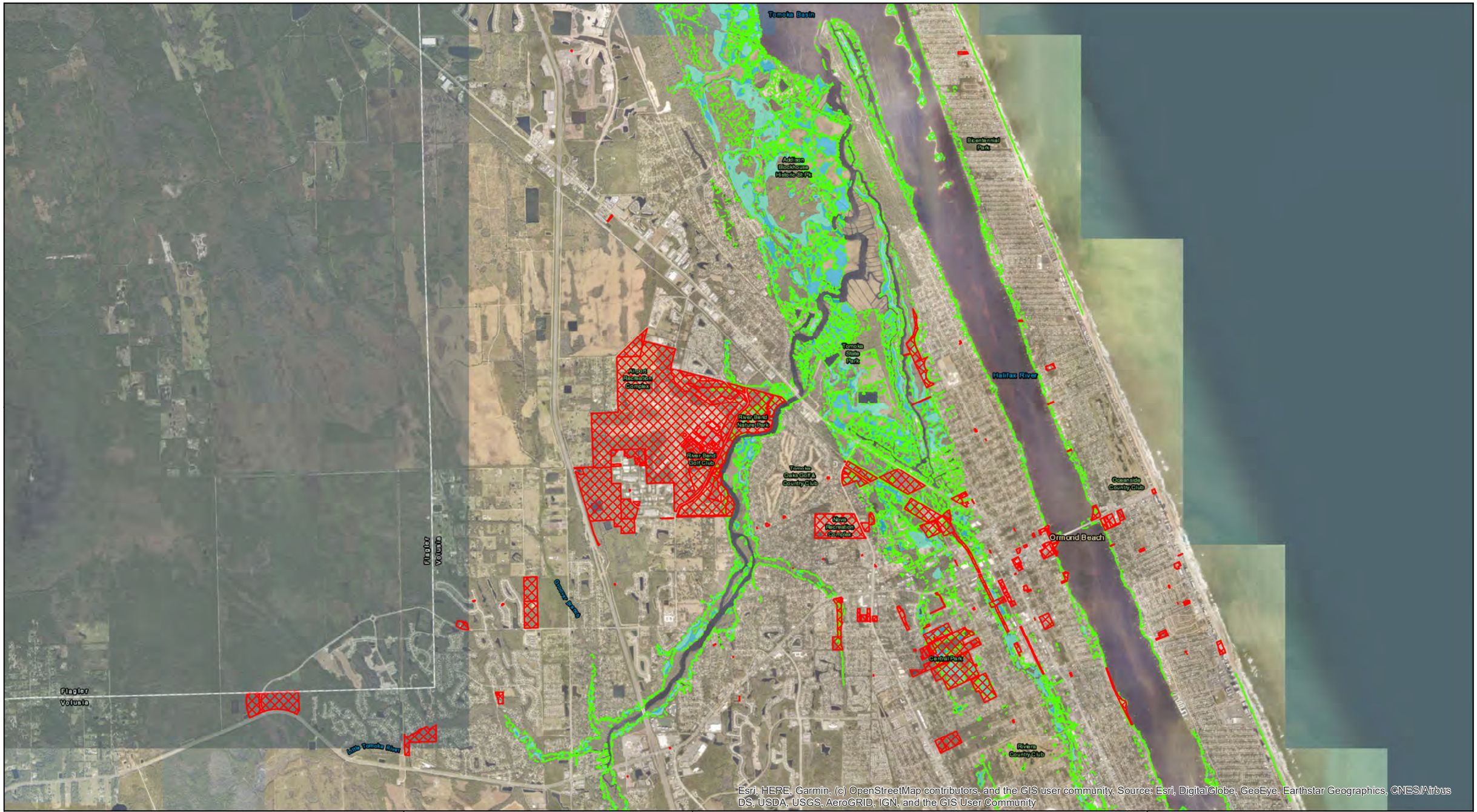
Year: 2100
Storm Category: CAT 3
Precipitation Event: N/A
NOAA Intermediate

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 22



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

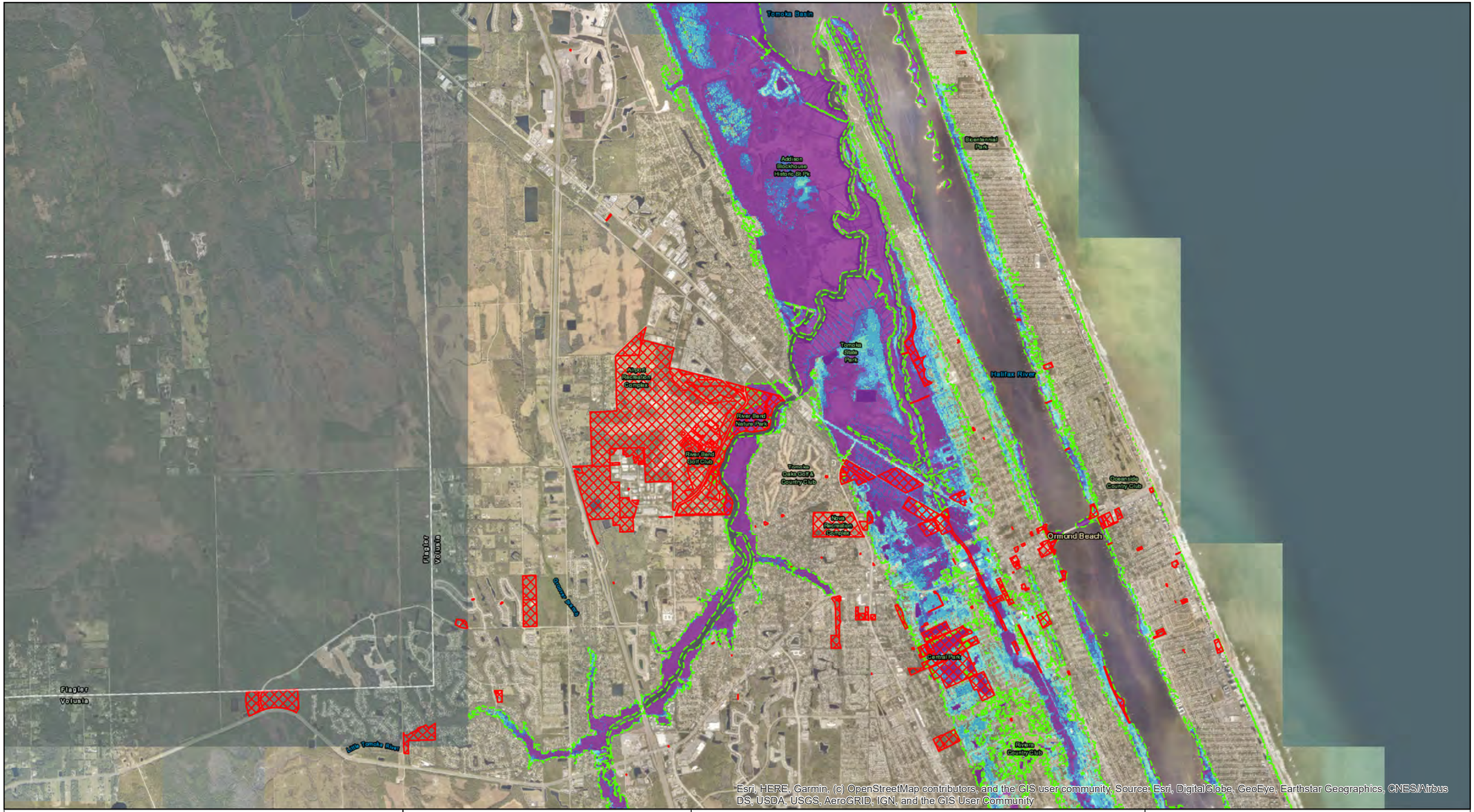
Year: 2040
Storm Category: N/A
Precipitation Event: N/A
NOAA High

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 23



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

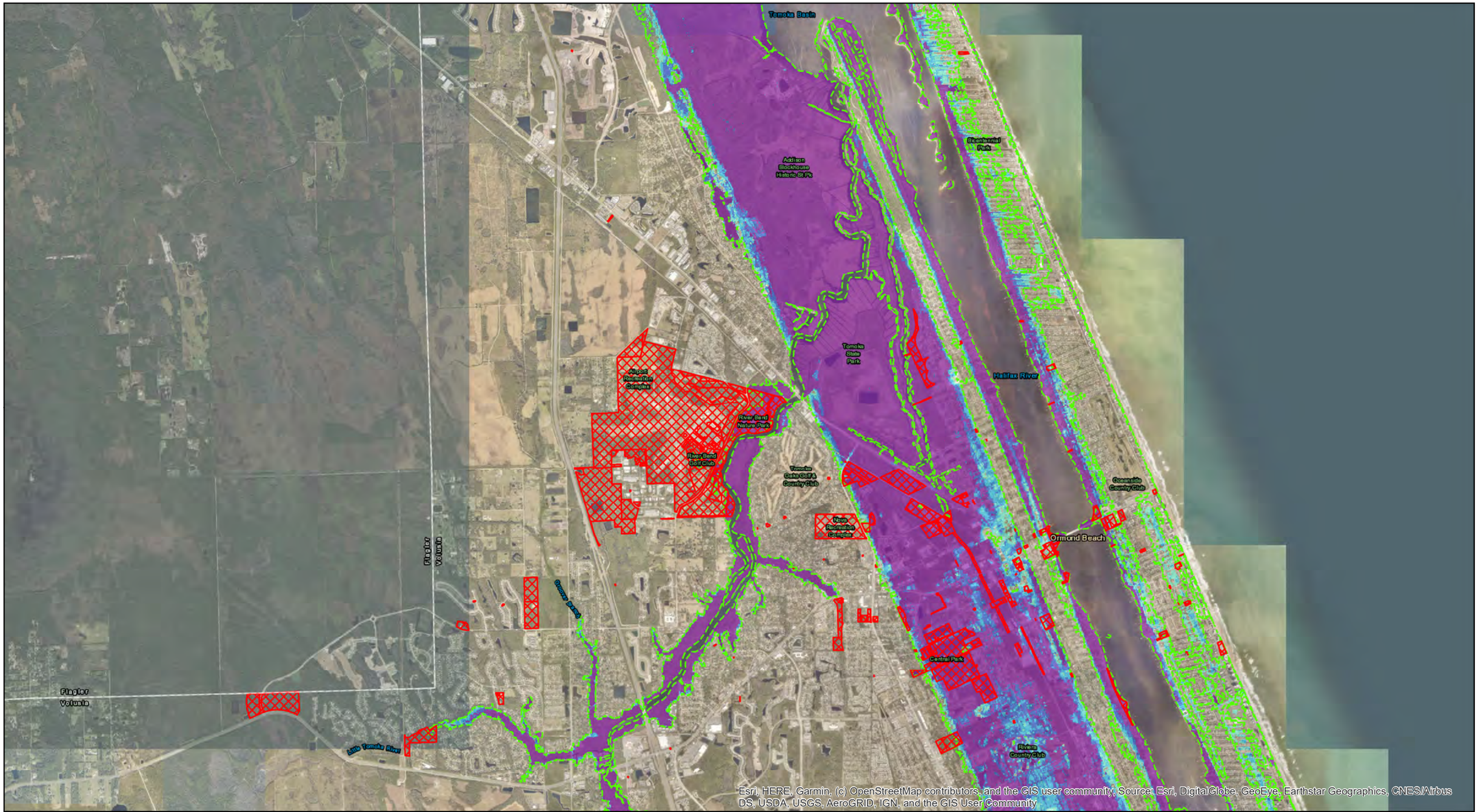
Year: 2040
Storm Category: CAT 1
Precipitation Event: N/A
NOAA High

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 24



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

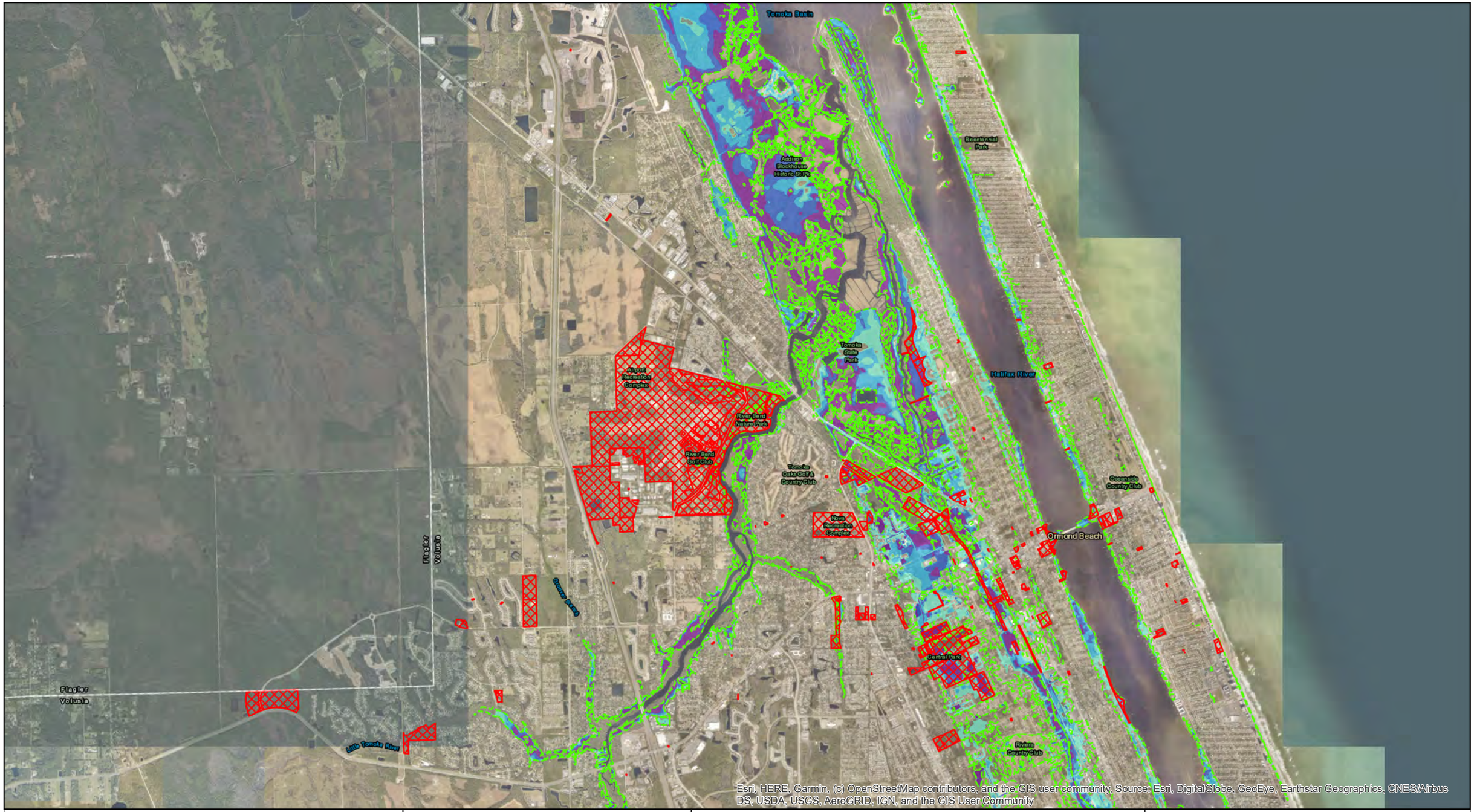
Year: 2040
Storm Category: CAT 3
Precipitation Event: N/A
NOAA High

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 25



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

Year: 2070
Storm Category: N/A
Precipitation Event: N/A
NOAA High

Legend:

- City-Owned Parcels
- Maximum Flooding Extent

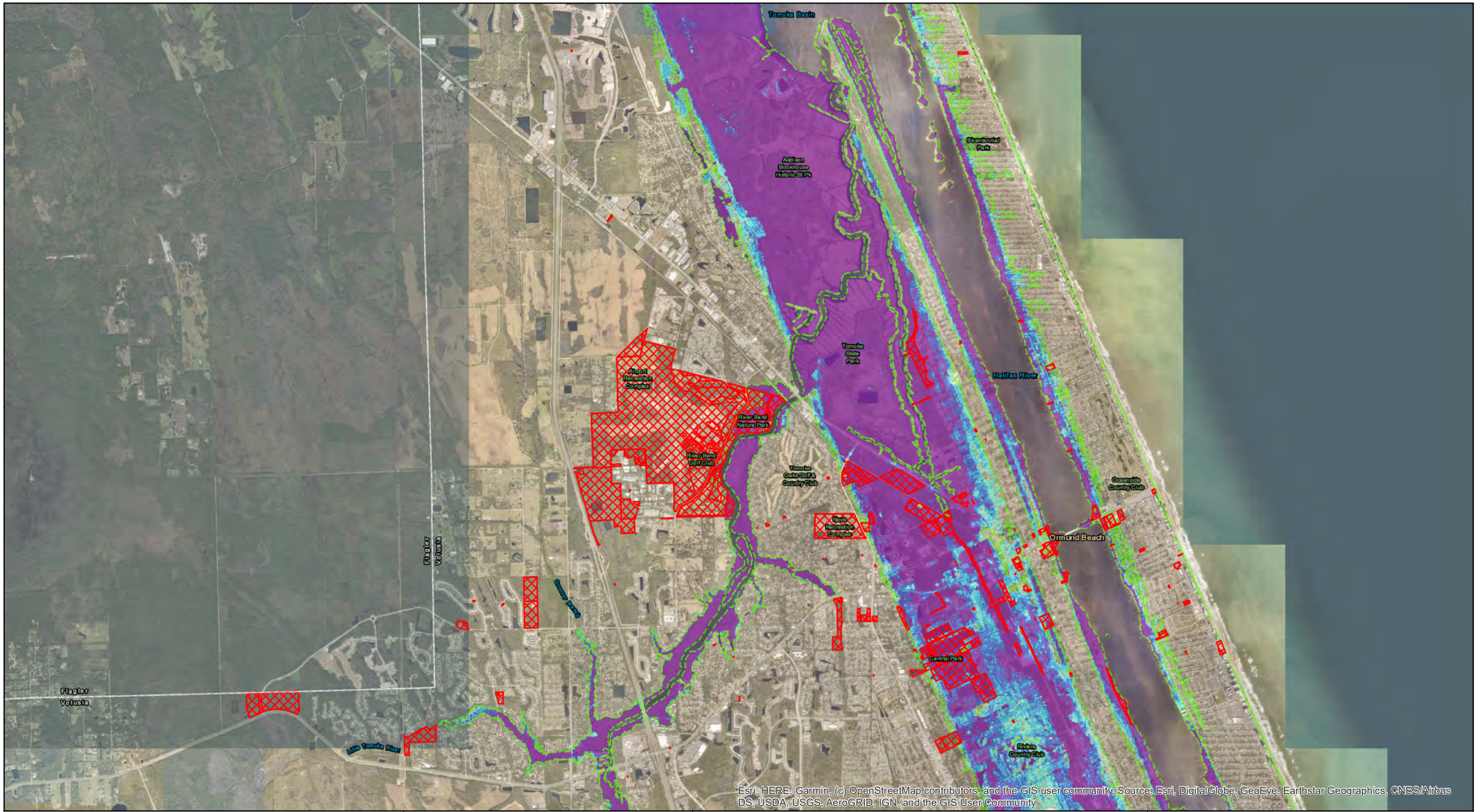
Depth of Flooding (feet)

- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants

BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 26



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

Year:	2070
Storm Category:	CAT 1
Precipitation Event:	N/A
	NOAA High

Legend:

- City-Owned Parcels
- Maximum Flooding Extent

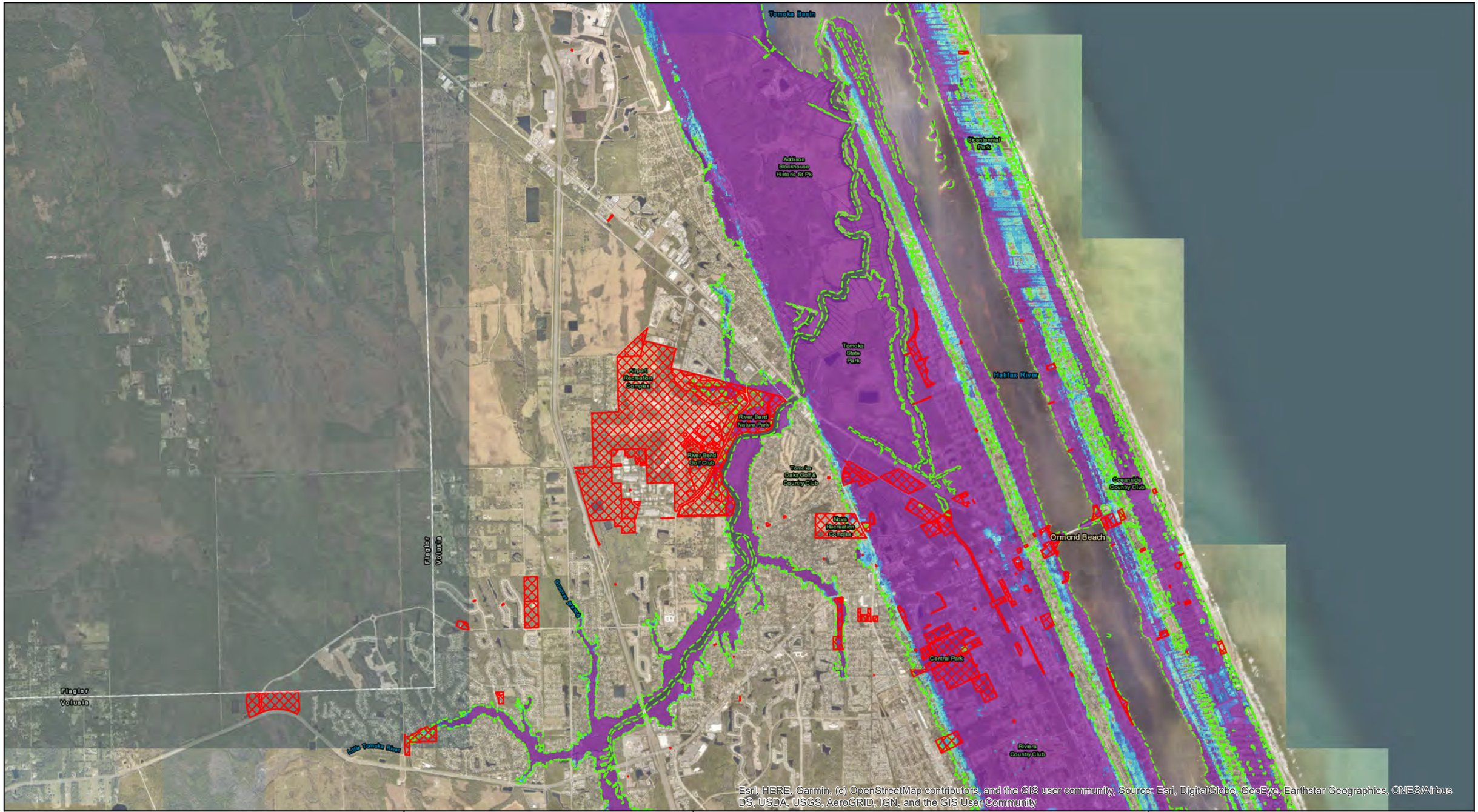
Depth of Flooding (feet)

- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants

BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 27



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

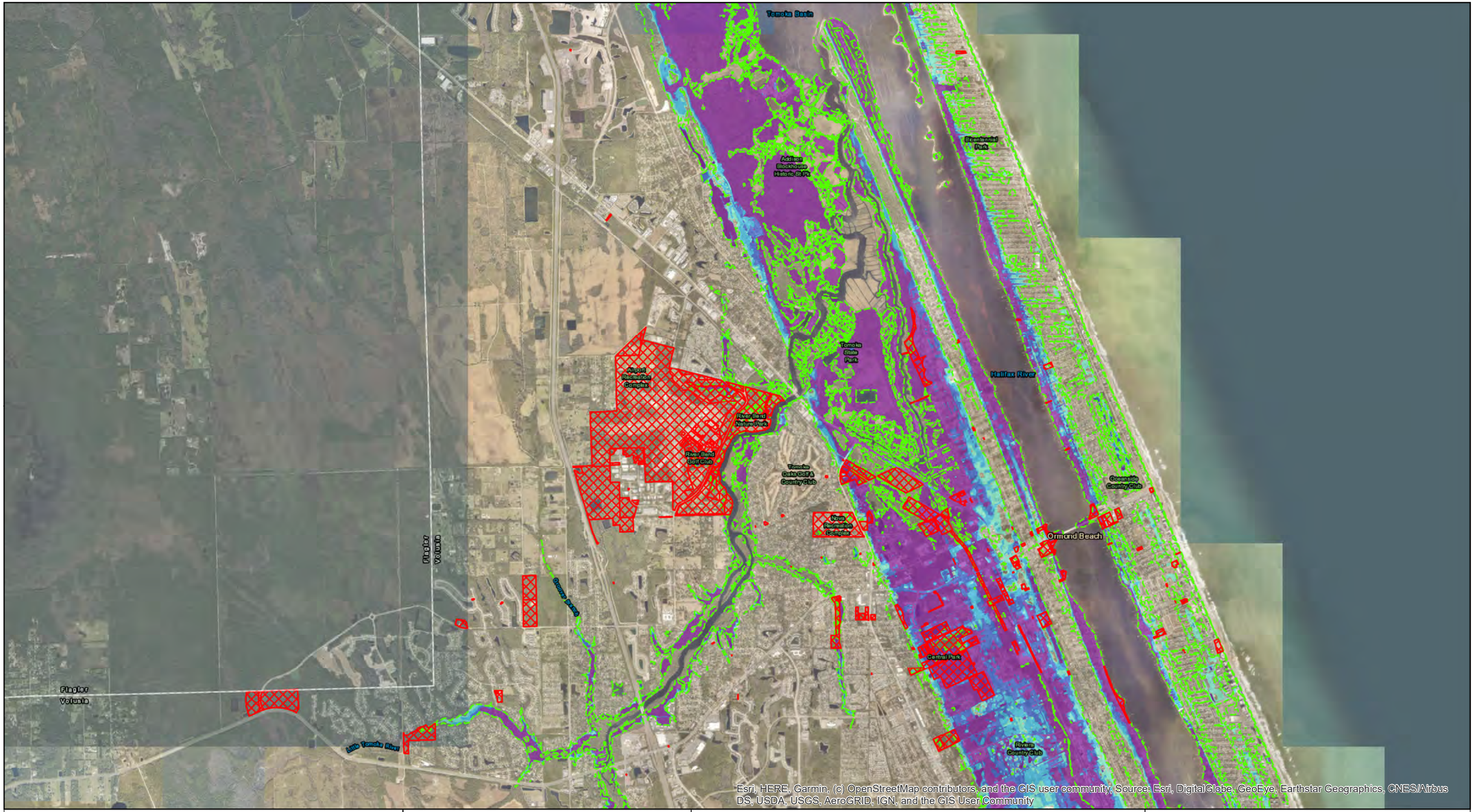
Year: 2070
Storm Category: CAT 3
Precipitation Event: N/A
NOAA High

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 28



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

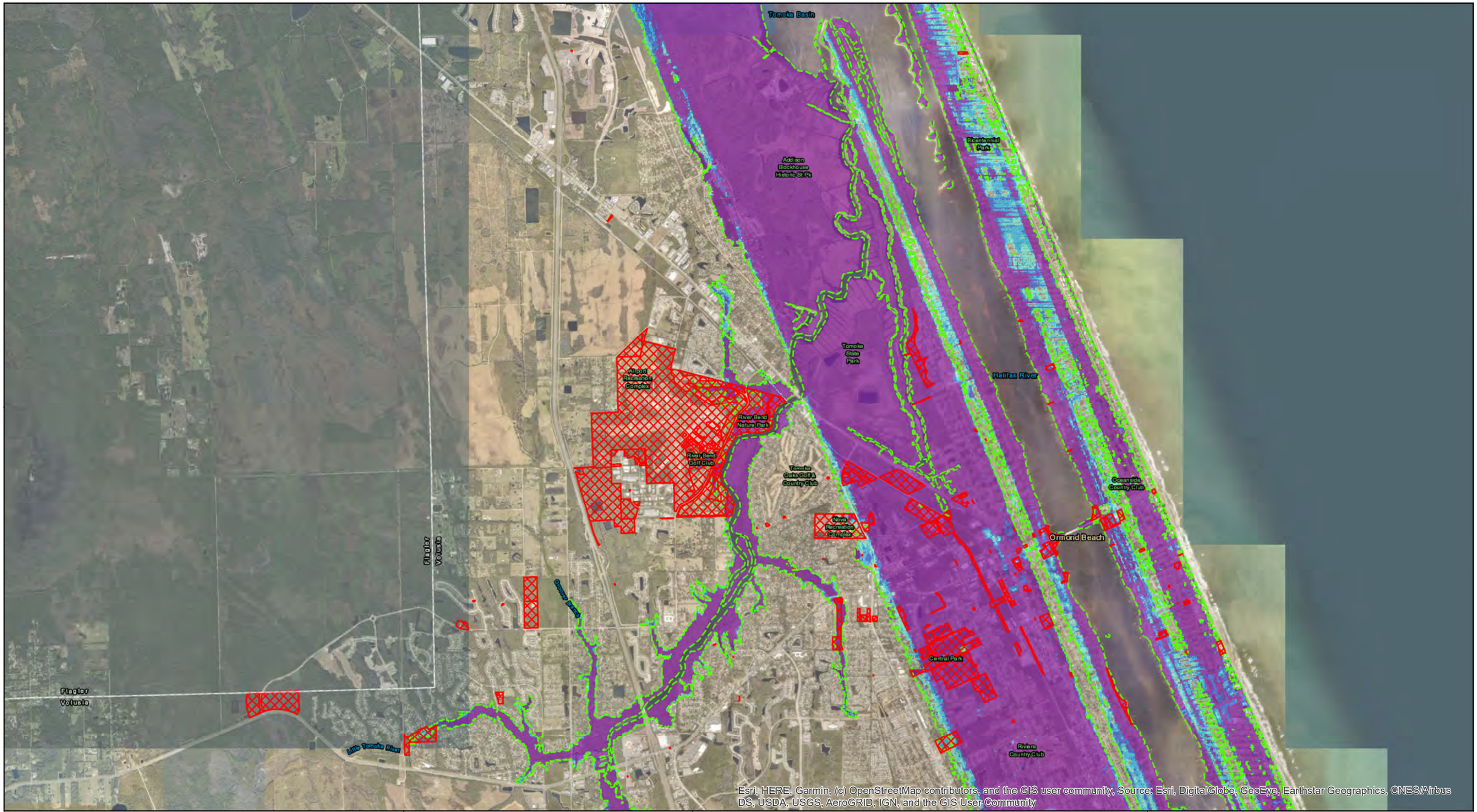
Year: 2100
Storm Category: N/A
Precipitation Event: N/A
NOAA High

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 29



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

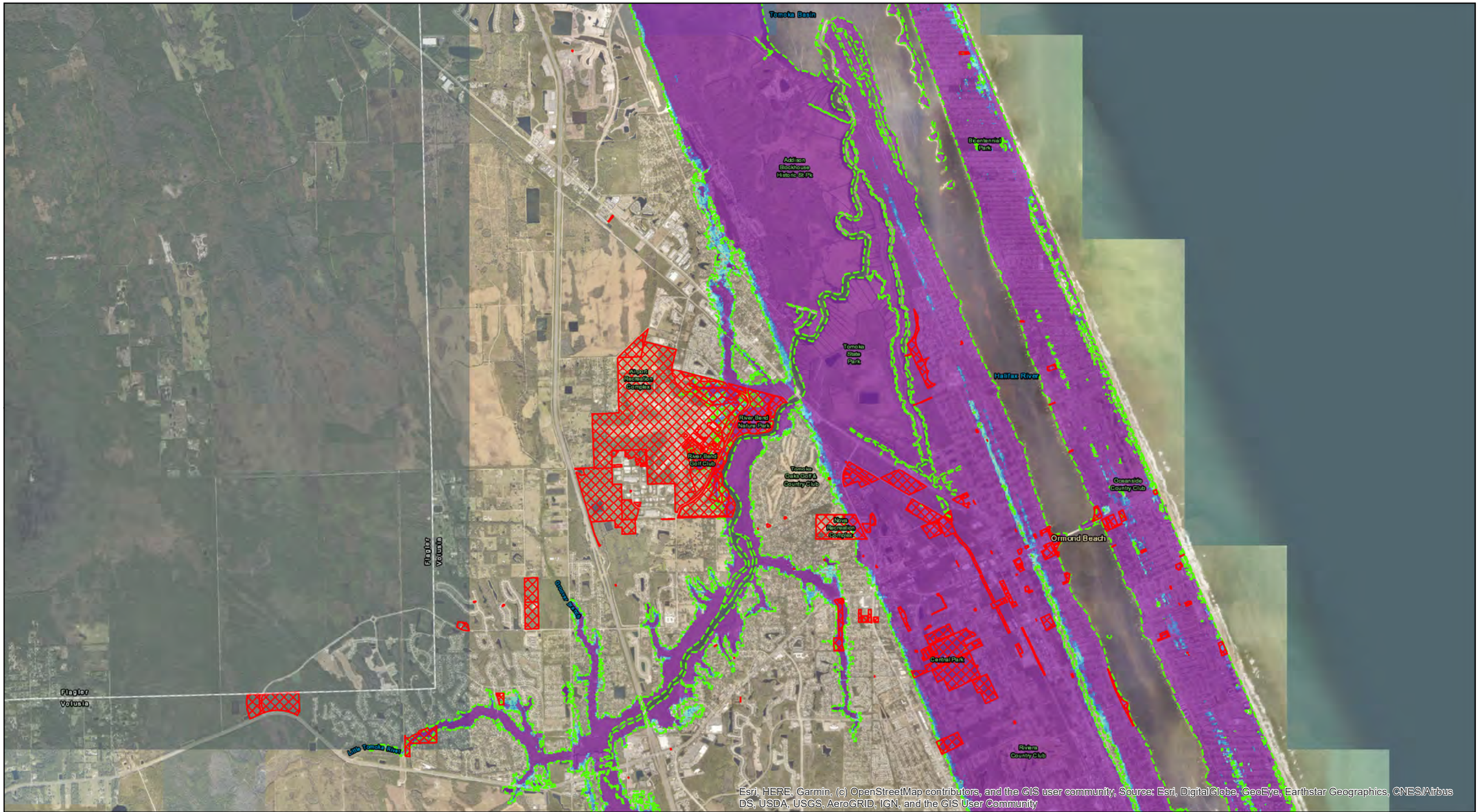
Year: 2100
Storm Category: CAT 1
Precipitation Event: N/A
NOAA High

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

Map No. 30



CITY OF ORMOND BEACH
STORMWATER MASTER PLAN UPDATE

Year: 2100
Storm Category: CAT 3
Precipitation Event: N/A
NOAA High

Legend:
- City-Owned Parcels
- Maximum Flooding Extent

Depth of Flooding (feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3+

Geosyntec consultants
BRIZAGA ASSESS. COMMUNICATE. ADAPT.

6.3.2 Adaptation & Mitigation Strategies

This Section outlines a variety of long-term adaptation strategies available to the City of Ormond Beach along with an included discussion of their applicability to the City. The viability and implications of the implementation of these strategies are discussed herein, as well as recommendations for their implementation. Recommendations provided should be further evaluated to ensure alignment with the City's Comprehensive Plan, and to ensure alignment and continuity between existing and proposed programming. These adaptation options are by no means exhaustive, but rather adaptation options that fit within the context of the Stormwater Master Plan Update.

Regional and Inter-Government Collaboration

Ormond Beach is already a participant in the East Central Florida Regional Resilience Collaborative. It should continue to leverage the regional work through the Collaborative and the Volusia League of Cities to work cooperatively on these issues. Water does not respect political boundaries, and the challenges of a neighboring municipality are often similar and related. Formalized on May 15, 2019, the East Central Florida Regional Resilience Collaborative (ECFR2C) is one of several regional collaborates that exist across the State of Florida. The ECFR2C is committed to a regional approach and is in the process of developing a structure and framework to address the resilience challenges of the region.



The flooding challenges of Ormond Beach are not unique, albeit every City has different experiences, approaches, and cultures. Regional collaboration allows for local governments to share capacity building and best practices across political boundaries. These regional collaborations can also set shared planning horizons and sea level rise curves, as the resilience of a municipality is also determined by the resilience of their neighbors and county. Additionally, when it comes to advocating for funding or changes in state or federal policy, the ability to advocate as a region enhances the effectiveness. This also exemplifies similar thought processes behind the League of Cities at both the county and state level, as well as the Transportation Planning Organization. The opportunity for regional collaboration solely on the topic of resilience is a new concept to regional government planning.

For example, the Southeast Florida Regional Climate Change Compact (SFRCCC) has been in existence for over 11 years and has allowed municipalities within the Southeast Florida region, encompassing Monroe, Miami-Dade, Broward, and Palm Beach Counties, to share ordinances, best practices, and master planning ideas, and staff have built relationships across the region. The SFRCCC has also set regional sea level rise projections and used guidelines that were just updated and released in December of 2019.

Special Considerations for Repetitive Loss Properties & Stormwater Parks

Under FEMA's National Flood Insurance Program (NFIP), Repetitive Loss Properties (RLPs) are defined as "an NFIP-insured structure that has had at least two paid flood losses of more than $1,000 each in any 10-year period since 1978." These are properties that are generally in areas

vulnerable to flooding and covered under NFIP. They are normally grandfathered into NFIP policies and the insurance premium for them is subsidized.

In addition to RLPs, there are also Severe Repetitive Loss Buildings, which are, "any building that:

1. Is covered under a Standard Flood Insurance Policy [under the NFIP];
2. Has incurred flood damage for which:
    a. Four or more separate claim payments have been made under [NFIP] with the amount of each such claim exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or
    b. At least two separate claims payments have been made under [NFIP] Policy, with the cumulative amount of such claim payments exceed the fair market value of the insured building on the day before each loss."

In these cases, the government has increasingly created more incentives to buy-out the vulnerable property and eliminate the possibility of a flood claim on that property in the future. The flood risk in Ormond Beach and age of many of the properties will continue to increase, and so too will the likelihood of seeing RLPs within the City. For many communities, these properties become empty lots, but can be creatively utilized to benefit the City and its residents. As of 11/30/2017 there were 10 RLPs within Ormond Beach that accounted for 25 separate claims.[32] The City should track RLPs, and work with the residents in these homes.

Proactively, the City has an opportunity to consider how it will handle RLPs now and in the future to create beneficial uses for the City. It is likely that buy-outs, like those seen in recent years in other communities, will become available as more coastal properties are affected by flooding. The future of NFIP is uncertain and insurance premiums and availability will likely change. This means that the burden may be shifted to Cities to determine how to handle RLPs. It is also important to note that beyond buying out a home and property, the property must be restored or changed to an appropriate use. This can be costly. For example, the environmental remediation of RLPs can be expensive, especially if the home has a septic tank system. This is an important consideration when deciding how to handle RLPs as a City.

Within the context of the Stormwater Master Plan Update, the City can potentially utilize RLP sites as stormwater retention areas. This approach has been adopted in several other communities, including North Miami, Florida. These retention areas can beautify neighborhoods, create a public asset, and reduce the flood risk of neighboring properties by creating additional retention areas. A Post Disaster Redevelopment Plan can serve as a mechanism to handle RLPs, or they can be handled as part of a separate planning exercise.

Last year, the State of Florida created the Rebuild Florida Voluntary Home Buyout Program[33], which "was created to encourage risk reduction through the purchase of residential property in high flood-risk areas to help reduce the impact of future disasters." Opportunities exist to buy-out

[32] NFIP Policy Statistics for Florida, https://www.floridadisaster.org/contentassets/c6a7ead876b1439caad3b38f7122d334/appendix-f_nfip-policy-statistics.pdf

[33] Hurricane Irma Voluntary Buyout Program, http://www.floridajobs.org/community-planning-and-development/assistance-for-governments-and-organizations/disaster-recovery-initiative/hurricane-irma/irma-voluntary-home-buyout-program

flood-affected homes and will likely continue to exist in the near future. There is generally substantial funding in these resilient endeavors.

Case Study: City of North Miami Repetitive Loss Pilot Project – The City of North Miami, in conjunction with Van Alen's Keeping Current challenge, held a competition to rethink a vacant Repetitive Loss Property (RLP). The City has a low-lying area with multiple RLPs and increasing flood risk due to rising groundwater levels.

In this case of the North Miami project, there were two adjacent RLP sites that had been vacated and demolished some years ago without any environmental remediation needed. The City is continuing to explore the creation of additional stormwater parks that provide a public benefit and increase the capacity of the stormwater system. As part of this broader effort, the City has developed what is likely to be the first-ever Repetitive Loss Property Master Plan.



Image from Brizaga.

Long-Term Post-Disaster Redevelopment Planning

As noted in the previous strategy, a Post-Disaster Redevelopment Plan (PDRP) can include how to handle Repetitive Loss Properties. After a disaster strikes and the essential immediate recovery is done, a longer-term post disaster recovery, especially in the face of rising sea levels and more frequent flooding, is a critical consideration. Sea level rise should have specific consideration within the context of a PDRP, as it changes the landscape of the community over time. While PDRP has traditionally been led at the regional and county level, the topic is becoming increasingly crucial to consider at the local level as environmental conditions change.

Many resources exist to assist in the creation of a PDRP. For reference, the State of Florida has developed a *Post-Disaster Redevelopment Planning: Addressing Adaptation During Long-term Recovery*[34] guide (PDRP guide), which details ways in which adaptation can be included in PDRP.

Resource: Addressing Adaptation During Long-term Recovery –

The PDRP guide, which was co-created by the Department of Economic Opportunity and Florida Division of Emergency Management, has four chapters that detail getting started, the planning

[34] Post-Disaster Redevelopment Planning Toolkit: http://www.floridajobs.org/community-planning-and-development/programs/community-planning-table-of-contents/post-disaster-redevelopment-planning/toolkit

process, plan topics, and implementation considerations. It was specifically published as an addendum to the *Post-Disaster Redevelopment Planning: A Guide for Florida Communities*[35] for communities to address the impacts of sea level rise on long-term planning. The screening level exercise performed as part of the Stormwater Master Plan Update is an important step in considering adaptation and a PDRP. Second, the PDRP guide describes the standard planning process, shown in the flowchart below. Ultimately, sea level rise can be integrated into almost every municipal planning document, including, but not limited to local comprehensive plans, capital improvement projects, economic development strategies, and local mitigation strategies.



The PDRP guide provides details and guidelines on performing a vulnerability assessment, which generally guide the methodology used throughout the Stormwater Master Plan Update. The planning strategies within the PDRP guide are detailed in Chapter 3 of the guide.

The State provides recommendations on how to apply Adaptation Action Areas and consider land use and housing redevelopment strategies, which are statutorily available tools for local governments. Additionally, there are detailed plan topics including: Land use and housing redevelopment strategies; Economic redevelopment strategies; Infrastructure redevelopment strategies; Public facilities redevelopment strategies; Health and social services redevelopment strategies; and Environmental restoration strategies.

The ability to build back stronger after a disaster is an essential part of creating a resilient community. Once a disaster strikes, and without a predetermined plan, the recovery can occur without considering future conditions, such as sea level rise. This is why a proactive PDRP approach, that outlines a plan before a disaster strikes, creates that needed roadmap. While not all strategies will be applicable to Ormond Beach, the state's guide provides a long list of approaches to consider.

In the context of the Stormwater Master Plan Update, long-term PDRP allows for the creation of additional storage opportunities in the future. The PDRP also provides an additional opportunity to look at broader LID or green infrastructure approaches within future redevelopment. One of the main challenges associated with PDRP is that since the mechanism for triggering these changes would be a disaster event, any changes associated with the stormwater system would not be tied to a specific date. The uncertainty in implementation would make it harder to consider as part of the stormwater system capacity but would alternatively become an opportunity for additional storage in the future.

Changes to Ordinances and Zoning Code

In the face of changing environmental conditions, many communities are changing their local zoning codes. This catalyzes a method of immediately improving the development standards required within their communities as they shift toward longer-term strategies. Changes to the zoning code do not need to change the overall character or function of the various community

[35] ibid.

sectors. Instead, this method can be a way to send a clear message depicting a shift in priorities as well as any new construction or substantial improvements within the community will be held to a higher standard. The City of Ormond Beach is already a forward-thinking community with a significant Low Impact Development guide.

There are targeted changes to the ordinances and zoning code that can improved in the long-term resilience of the City, such as a freeboard, or seawall or coastal barrier ordinance, as detailed in Section 6.2.3 and 6.2.4, respectively. Overall, the City has a significant portion of upland areas that are away from vulnerable low-lying and coastal land. There is an opportunity to incentivize development in less vulnerable areas.

Long-Term Capital Improvements and Adaptation Planning

Large infrastructure improvements take significant time to plan, finance, and construct. As sea level rise impacts coastal infrastructure, there is a need to create a long-term plan to mitigate and adapt to reduce the impact of more frequent flooding. To continue to maintain critical public infrastructure as environmental conditions change, a long-range capital improvements plan aligning with an inventory of the City's critical infrastructure should be adopted and used to guide the short-range capital improvement plans implemented by the City every five years.

> *Case Study: Austin, Texas* – In April 2018, the City of Austin, Texas released the *Climate Resilience Action Plan for City Assets and Operations*.[36] Among other facets, the Action Plan provides "an assessment of potential extreme weather impacts to City-owned assets and operations." Part II of the Action Plan is a Vulnerability Assessment analyzing the sectors of utility infrastructure, transportation assets, and community facilities.
>
> The utility infrastructure assets reviewed included power generating facilities, primary control and operation centers, primary service centers, water and wastewater treatment plans, and telecommunications network nodes. The vulnerability of these assets were evaluated based upon exposure, sensitivity, and adaptive capacity.
>
> Following the Vulnerability Assessment portion of the Action Plan is a section on Resilience Strategies, with one area focused on evaluating and upgrading existing infrastructure and facilities. These upgrade recommendations primarily consist of infrastructure hardening, floodproofing, improving building efficiency, and creating redundant systems.
>
> The Action Plan, however, does not include a detailed, itemized list of City assets and vulnerability rankings, though this does not mean that it does not exist. Many of the recommendations presenting in the Plan are for further study and development of new initiatives identified to address the City's needs.
>
> Current efforts outlined in the Plan include a Facilities Assessment and Capital Renewal Fund, a Long-Range Capital Improvement Program Strategic Plan, and a Long-Range Plan for Land, Facilities, and Programs. Collectively, these efforts aim to address deferred facilities maintenance, provide a 10+ year planning horizon for identifying capital needs, and providing a guide for future development of the City's parks and recreation system.

[36] Austin, Tx Climate Resilience Action Plan, https://austintexas.gov/sites/default/files/files/Sustainability/Climate_Resilience_Action_Plan.compressed.pdf

Through this Stormwater Master Plan Update, the City of Ormond Beach has already taken the very first steps toward conducting a critical infrastructure inventory and vulnerability assessment. A more detailed assessment is necessary, but this screen analysis can assist in identifying vulnerable critical assets. However, beyond identifying the vulnerabilities, preliminary cost estimates should be developed for the improvement or replacement of each asset based upon the remaining service life as influenced by increasing flood hazard risk, to be taken into consideration for the creation of a long-range Capital Improvements Plan.

Coastal Barrier Inventory and Improvement Pathways

For coastal and waterfront communities dealing with storm surge and sea level rise risk, such as Ormond Beach, the development of programs and mechanisms to mitigate risk along the waterfront is of paramount importance to protect upland properties and other critical infrastructure systems during extreme events. In many cases, the waterfront infrastructure along a property is owned and maintained by the owner of that property. Inventorying and classifying all waterfront property based upon the type (e.g. seawall, sandy shoreline, mangrove), condition, and ownership better equips local governments in developing regulations, programs, and projects for coastal, waterfront, and ecological resilience.

> *Case Study: Commonwealth of Massachusetts* – In 2009, as part of the Massachusetts Coastal Infrastructure Inventory and Assessment Project, a public inventory report providing a 20-year infrastructure assessment and inventory to identify and prioritize the most critical repair of coastal structures was released.[37]
>
> The goals of the project were: "
>
> - To identify all the coastal structures the public either owns or has responsibility to maintain for the coastal region;
> - Identify the structures and determine the structure location and characteristics, the structure condition relative to providing coastal protection and the structure importance in relation to what it is protecting;
> - To the degree possible, identify the structure elevation and the FIRM mapping flood elevation and category;
> - To the degree possible, identify structure owner and available documents from local, state and federal agencies;
> - To establish an estimated cost to rehabilitate the coastal structures to provide the level of project established in the structures original design;
> - Provide the information in a format compatible for incorporation into the MassGIS system;
> - To develop an interactive program for access and use of MassGIS that will allow the owners to update information from annual monitoring programs;

[37] Massachusetts Coastal Inventory, https://www.mass.gov/files/documents/2016/08/wb/public-inventory-report-2009.pdf

- To develop a 20 Year Maintenance and Repair program to be implemented by the Commonwealth and the Municipalities;
- To recommend a maintenance and monitoring program for the structure owners to use for annual monitoring reports to be incorporated into MassGIS;
- And to recommend potential statute revisions for these structures and other similar structures throughout the Commonwealth."

The study was limited as it focused on structures that "typically received state or federal funding at some level for construction and/or maintenance," and omitted privately-owned structures. However, an overall systematic evaluation system was developed for the project by rating each structure based on its: Condition (excellent, good, fair, poor, critical); Priority (none, low, moderate, high, immediate/highest); and Type (bulkhead/seawall, coastal beach, coastal dune, revetment, groin). This allowed for the prioritization for repair and replacement.

Cost estimates were developed for each combination of ratings and utilized as part of the annual maintenance and repair schedules, provided as an appendix to the report. The total cost of the repair and replacement projects identified through the analysis was valued at approximately $627 million (2006 value).

The significant waterfront infrastructure in Ormond Beach, coupled with the sensitive ecological nature of the surrounding area, creates an understanding of the coastal infrastructure that will not only assist with adaptation strategies, but also ecological resilience by reducing runoff and coastal barrier failures. An inventory, along with a legislative mechanism for maintaining the waterfront systems can be a tremendous benefit to the City and its residents.

6.3.3 Ecosystem Resiliency

Ormond Beach has a unique, vital, and sensitive ecosystem that spans across a significant portion of the community. Ecosystem resilience is the ability for an ecosystem to thrive through an ecological disturbance, which may include sea level rise. Sea level rise and climate change will exacerbate water quality concerns through increase peak precipitation associated with heavier rain events, the ebb and flow of tidal waters across properties, and more frequent coastal storms reducing the regenerative time of natural infrastructure before another event. Several of the adaptation and mitigation strategies in **Section 6.3.2**, as well as the best practices provided in **Section 6.2**, can significantly impact water quality and ecosystem resilience.

Many of the recommendations throughout this Chapter are considered a pivotal part of ecosystem resilience that further protects the natural systems of Ormond Beach. The analysis of ecosystem resilience throughout this Plan, Chapter, and Section focus on items within the context of a Stormwater Master Plan Update. This is not an extensive analysis, but rather a summary of details that highlight other areas for further study.

One of the biggest challenges associated with sea level rise and protecting the natural ecosystems of the region will be the necessity to move significant amounts of water during rain events through the stormwater system which ensuring that water quality is preserves, and natural areas are not adversely impacted by runoff. Given that substantial portions of Ormond Beach are low-lying and inland, there are opportunities to further explore green infrastructure and stormwater detention

which can provide additional stormwater capacity while reducing the environmental impact of development, increasing pretreatment, and improving water quality of nearby waterbodies.

Lessons from Miami Beach: The City of Miami Beach held a three-and-a-half-day Advisory Services Panel provided by the Urban Land Institute[38], which specifically evaluated the resilience of their stormwater program, and provided recommendations from their review. Many of these recommendations specifically touched on the sensitive ecosystems surrounding the barrier island community. While the typologies of Miami Beach are somewhat different from those in Ormond Beach, as Miami Beach is an entirely barrier island community, the recommendations can be modified for coastal portions of the City of Ormond Beach. The panel recommended increased implicit consideration of green infrastructure as part of the stormwater system to reduce the burden on the existing system. Additionally, as Ormond Beach considers pumps as part of their stormwater efforts, the extensive pumping program in Miami Beach has provided several lessons to improve the resilience of the system. Three key lessons are (1) ensuring the pumps can handle brackish or saltwater without substantial corrosion, (2) certifying that there is redundant power system to make sure the pumps can continue to operate during a power outage, and (3) consider discharge and water quality throughout the planning and operation of the pumps. Ensuring the system operates as intended and water quality is considered will reduce the likelihood of significant flooding events that can wash effluent into sensitive ecological areas.

Ultimately, there are steps the City can take to improve ecosystem resilience, including:

- Preserve existing natural ecosystems, and study how sea level rise affects those systems. Investigate adaptation methods that could assist the ecosystem resilience to rising sea levels.
- Explore and reduce anthropogenic sources of runoff. Septic-to-sewer conversion has been controversial in and around Ormond Beach[39],
- Enhance waterfront infrastructure stop ebb and flow of tidal waters onto land and help with water quality by reducing runoff. A healthy watershed will improve the resilience of natural ecosystems in the Ormond Beach area.

6.4 Key Resilience Recommendations

Although recommendations are provided throughout this Chapter, a few key recommendations are provided here to highlight several items that the City can undertake to improve the resilience of the community.

1. Adopt sea level rise curves for planning purposes and establish a timeline for updating the curve and planning horizon. These measures would enable the evaluation of proposed infrastructure improvements relative to projected water levels and serviceability under future storm conditions.
2. Examine opportunities to improve public engagement through technology, citizen science, and flooding and maintenance reports. These measures would provide for a more informed

[38] Urban Land Institute, 2018 Technical Assistance Panel, Miami Beach, FL, https://seflorida.uli.org/wp-content/uploads/sites/13/2018/09/Miami-Beach_PanelReport.pdf
[39] Ormond Beach suspends septic-to-sewer conversion in unanimous vote, Dayton Beach News-Journal, 11/6/2019, https://www.news-journalonline.com/news/20191106/ormond-beach-suspends-septic-to-sewer-conversion-in-unanimous-vote

and involved constituency around resilience issues and needs, fostering more widespread support for capital improvements projects that address such issues.

3. Review ordinances and land use code to find specific areas where resilience can be implemented in City regulations. These measures would embed resilience in the City's regulatory framework to ensure that private projects meet the resilience standard that the City is setting for itself.
4. Perform a full Vulnerability Assessment - builds off the screening level analysis preformed as part of this Stormwater Mater Plan Update and the 2017 Resilient Volusia County Report. This measure would identify, at a detailed level, the specific levels of physical, social, environmental, and economic risk and vulnerability of the City's assets, guiding the development of long-term capital improvements and adaptation plans.
5. Continue the Low Impact Develop (LID) program with specific considerations for future flooding, sea level rise, and changes in precipitation patterns. These measures would enable the City to develop strategies for addressing the effects of environmental changes on the efficiency and effectiveness of LID as stormwater storage capacity is reduced and storage demand is increased.

7. BEST MANAGEMENT PRACTICES

This chapter provides an overview of stormwater Best Management Practices or BMPs, both generally and as discussed or recommended in this Stormwater Master Plan. BMPs are control techniques used for a given set of site conditions to provide stormwater quantity (flooding) and stormwater quality (reduce pollutant loads) in the most cost-effective manner. Why are BMPs necessary? To address the following changes that occur during urbanization:

During the development process, humans cause:

- the removal of natural or planted vegetation
- the compaction of soils
- the alteration or elimination of natural stormwater management features
- the filling of wetlands or floodplains
- the addition of impervious surfaces such as roofs, roads, and parking
- the addition of a wide variety of "pointless personal pollutants" associated with the human activities that occur every day

These changes in watershed characteristics lead to the following the water resource effects:

- Reduced ground water recharge
- Reduced rainfall interception, evaporation, and transpiration from trees
- Increased stormwater peak discharge rate
- Increased stormwater volume
- Increased stormwater pollutant loading
- Increased frequency, duration, and magnitude of flooding
- Reduced water levels in wetlands, rivers, lakes
- Altered salinity regimes in estuaries

7.1 Changes in Stormwater Characteristics from Urban Development

7.1.1 Changes in Urban Hydrology

Urban development changes the physical characteristics of the natural landscape and creates changes in land use and human activities. These can cause a litany of adverse impacts to general land conditions, watershed hydrology and pollutant loading, surface and ground water quality, and natural systems, such as freshwater wetlands, lakes, rivers and estuaries.

Development and redevelopment activities remove natural vegetation, compact soils, and add impervious surfaces such as roads, parking areas, sidewalks, and rooftops. These changes reduce, disrupt, or eliminate native vegetation, upper soil layers, shallow depressions, and natural drainage patterns that intercept, evaporate, store, slowly convey, and infiltrate stormwater. **As urbanization**

occurs, the areas that contribute stormwater to receiving waters increase while the areas that naturally manage stormwater diminish.

The hydrologic and hydraulic effects of these activities include reduced infiltration and groundwater recharge, increased rate and volume of stormwater runoff, increased erosion and sedimentation, and increased pollutant loads. These common consequences of urban development lead to lowering of ground water tables; more variable and altered stream flows; altered wetland and lake water levels; increased magnitude and frequency of flooding; an increased magnitude and frequency of flooding; and greatly increased discharges of pollutant loadings into receiving water bodies and wetlands. This results in eutrophication of our water bodies, altered hydroperiods in wetlands, changes in the salinity regimes of estuaries, and increased scour and downstream sediment deposition in streams.

The following figures summarize the changes in the urban hydrology that are associated with the urbanization process. An important goal of stormwater management is to ensure that the hydrology after development is approximately the same as before development.

Figure 7-1 below illustrates how impervious cover and urban drainage systems increase the peak discharge rate, volume, and pollutant loading of stormwater that is discharged into water bodies.

Figure 7-1 - More Water Faster

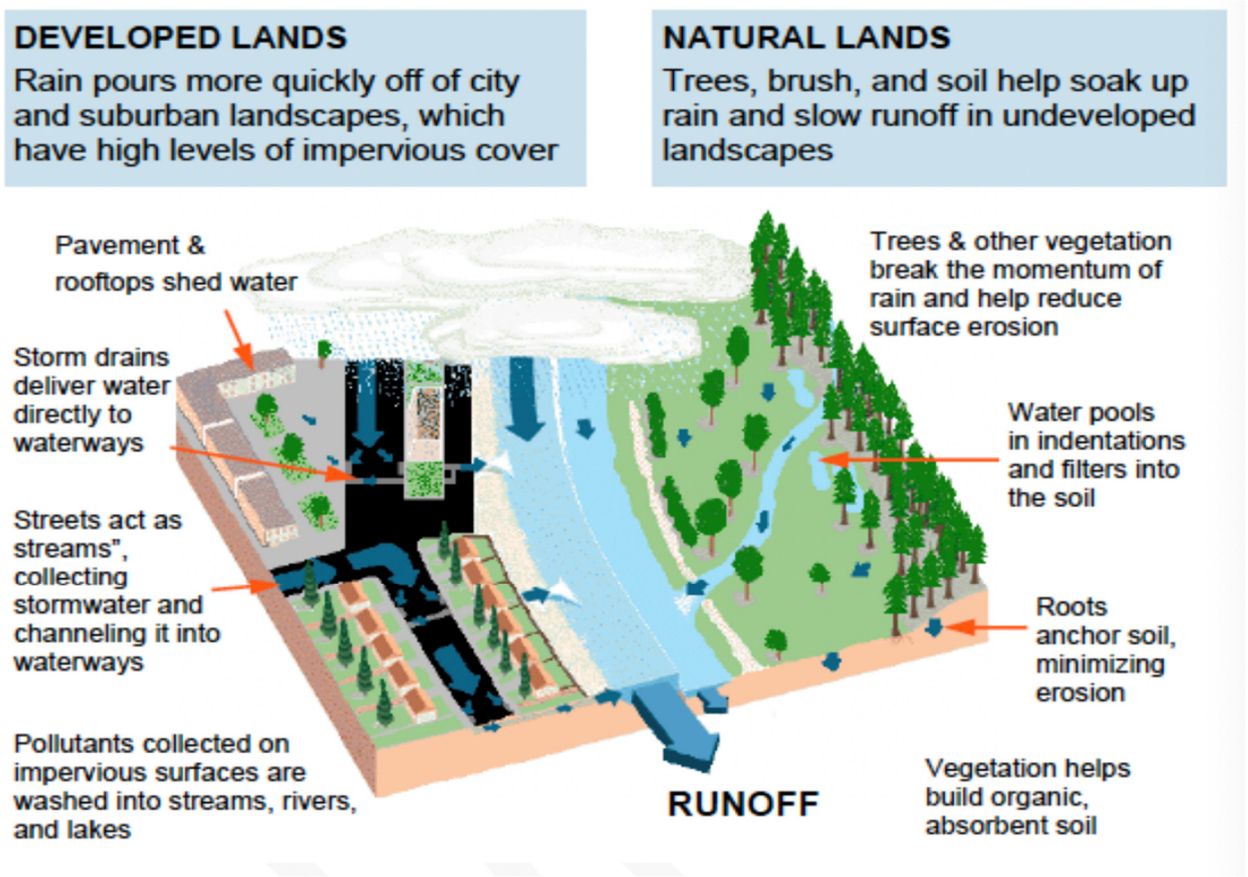


Figure 7-2 below shows how the stormwater flow changes with urbanization. The blue line represents the predevelopment hydrograph and the brown line is the post-development hydrograph (EPA). **Figure 7-3** below lustrates how changes in impervious surface area affects the water cycle.

Figure 7-2 - Stormwater Flow Changes Associated with Urbanization

(Source: U.S. Environmental Protection Agency)

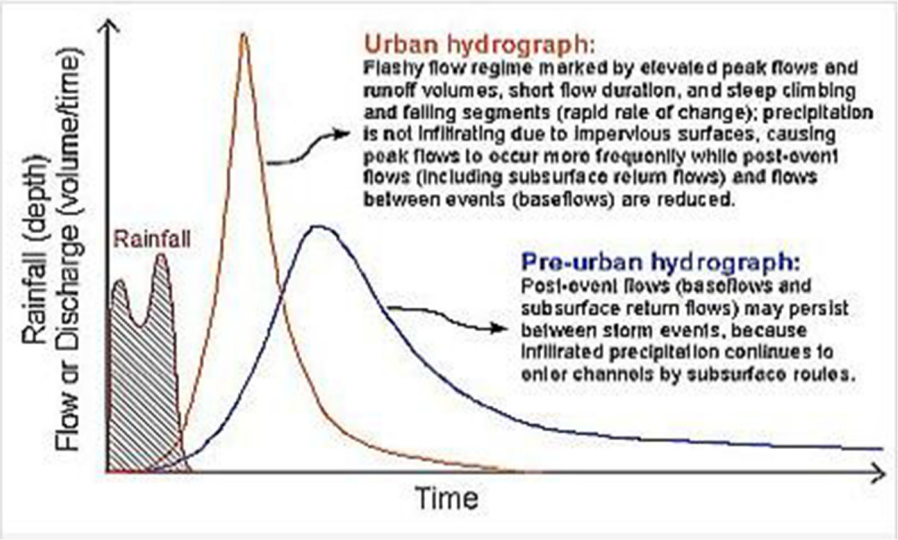
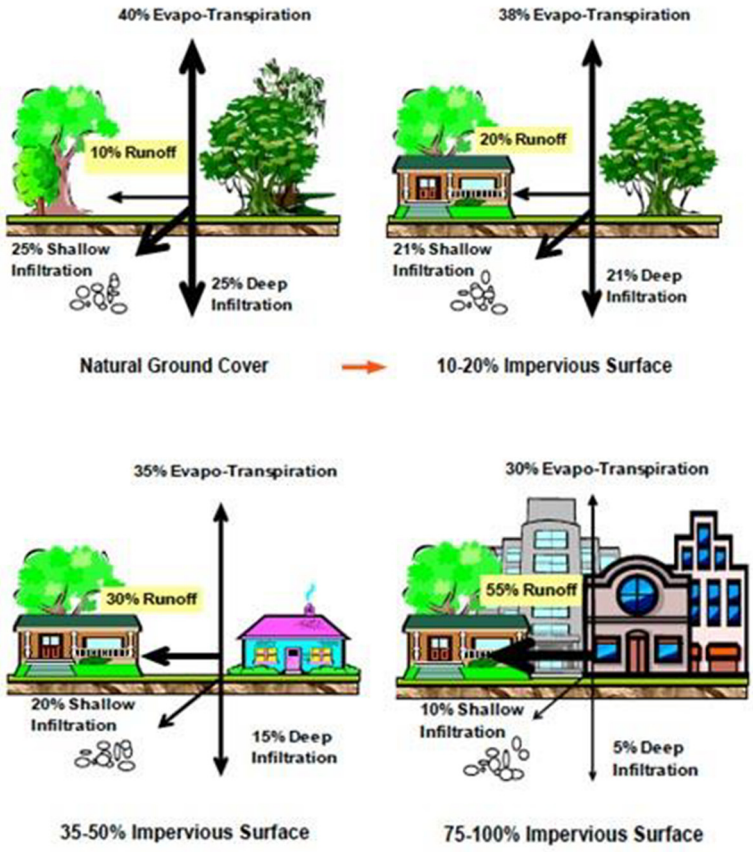


Figure 7-3 - How Impervious Cover Affects the Water Cycle



7.1.2 Changes in and Calculating Stormwater Pollutant Loadings

The reduction in pervious surface and vegetation in the developed landscape removes natural filtration mechanisms and allows stormwater pollutant loads to be discharged directly into receiving waters. Water quality is degraded further from the fertilizers, pesticides, oils/greases, and other pollutants associated with urban land uses and human activities that are picked up and transported by stormwater.

Urban development degrades water quality by accelerating eutrophication in surface waters receiving runoff and can increase nutrients in ground waters. The reduction in pervious surface and vegetation in the developed landscape removes natural infiltration and filtration mechanisms and increases pollutant loads discharged into receiving waters. Water quality is degraded further from the fertilizers, pesticides, oils/greases, and other pollutants associated with urban land uses and human activities that are picked up and flushed from the watershed during storms becoming trapped in stormwater.

Stormwater pollutant loading is a function of the stormwater volume and the concentration of pollutants within stormwater. The stormwater pollutant concentrations are highly variable, both between storm events and during storm events. This variability is caused by variations in rainfall intensity and frequency, soil types, land use, and the intensity of land use. Additionally, most water quality impacts from stormwater pollutants are cumulative rather than acute.

Accordingly, we use average annual stormwater pollutant loadings to evaluate their environmental impacts. These are calculated by multiplying the average annual stormwater volume times an Event Mean Concentration (EMC). EMCs are determined from single land use storm event monitoring over a range of rainfall depths and seasons. Fortunately, over the last 40 years, an extensive data base of Florida stormwater EMCs has been developed from the many monitoring projects that have been done.

Table 7-1 below summarizes the calculated mean annual runoff coefficients ("C value") as a function of Curve Number and Directly Connected Impervious Area (DCIA) in Precipitation Zone 2. These values reflect the average long-term runoff coefficients (C Values) over a wide range of DCIA and Curve Number combinations.

The information in **Table 7-1** is used to estimate the annual runoff volume for a given site under either pre-development or post-development conditions. The mean annual rainfall depth (~50" in Ormond Beach) is multiplied by the appropriate mean annual runoff coefficient (C value) based upon the DCIA and Curve Number characteristics of the site as follows:

Equation 7-1 **Annual Runoff Volume (ac-ft) =**

Area (acres) x Mean Annual Runoff (inches) x 1ft/12 in.

Linear interpolation can be used to estimate annual runoff coefficients for combinations of DCIA and Curve Numbers that fall between the values in **Table 7-1**. For "naturally occurring" undeveloped conditions, it should be assumed that the percent DCIA is equal to 0.0. Fortunately, the BMPTRAINS model (see **Section 7.5.1**) automates all of these calculations including the linear interpolations that may be needed.

Table 7-1 - Mean Annual Runoff Coefficients (C Values) as a Function of DCIA Percentage and Non-DCIA Curve Number (CN) for Cocoa Beach

Source: Harper and Baker, ERD, June 2007

NDCIA CN	Percent DCIA																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
30	0.002	0.043	0.083	0.123	0.164	0.204	0.244	0.285	0.325	0.366	0.406	0.446	0.487	0.527	0.567	0.608	0.648	0.688	0.729	0.769	0.809
35	0.004	0.044	0.085	0.125	0.165	0.205	0.246	0.286	0.326	0.366	0.407	0.447	0.487	0.528	0.568	0.608	0.648	0.689	0.729	0.769	0.809
40	0.007	0.047	0.087	0.127	0.167	0.207	0.248	0.288	0.328	0.368	0.408	0.448	0.488	0.528	0.569	0.609	0.649	0.689	0.729	0.769	0.809
45	0.010	0.050	0.090	0.130	0.170	0.210	0.250	0.290	0.330	0.370	0.410	0450	0.490	0.530	0.570	0.610	0.650	0.690	0.729	0.769	0.809
50	0.015	0.055	0.095	0.134	0.174	0.214	0.254	0.293	0.333	0.373	0.412	0.452	0.492	0.531	0.571	0.611	0.651	0.690	0.730	0.770	0.809
55	0.022	0.061	0.101	0.140	0.179	0.219	0.258	0.298	0.337	0.376	0.416	0.455	0.494	0.534	0.573	0.613	0.652	0.691	0.731	0.770	0.809
60	0.030	0.069	0.108	0.147	0.186	0.225	0.264	0.303	0.342	0.381	0.420	0.459	0.498	0.527	0.576	0.615	0.654	0.693	0.731	0.770	0.809
65	0.042	0.080	0.119	0.157	0.195	0.234	0.272	0.311	0.349	0.387	0.426	0.464	0.502	0.541	0.579	0.618	0.656	0.694	0.733	0.771	0.809
70	0.057	0.095	0.133	0.170	0.208	0.245	0.283	0.321	0.358	0.396	0.433	0.471	0.509	0.546	0.584	0.621	0.659	0.697	0.734	0.772	0.809
75	0.079	0.116	0.152	0.189	0.225	0.262	0.298	0.335	0.371	0.408	0.444	0.481	0.517	0.554	0.590	0.627	0.663	0.700	0.736	0.773	0.809
80	0.111	0.146	0.181	0.216	0.251	0.285	0.320	0.355	0.390	0.425	0.460	0.495	0.530	0.565	0.600	0.635	0.670	0.705	0.740	0.774	0.809
85	0.160	0.192	0.225	0.257	0.290	0.322	0.355	0.387	0.420	0.452	0.485	0.517	0.550	0.582	0.614	0.647	0.679	0.712	0.744	0.777	0.809
90	0.242	0.270	0.299	0.327	0.355	0.384	0.412	0.440	0.469	0.497	0.526	0.554	0.582	0.611	0.639	0.667	0.696	0.724	0.753	0.781	0.809
95	0.404	0.424	0.444	0.464	0.485	0.505	0.525	0.546	0.566	0.586	0.606	0.627	0.647	0.667	0.688	0.708	0.728	0.749	0.769	0.789	0.809
98	0.595	0.605	0.616	0.627	0.638	0.648	0.659	0.670	0.680	0.691	0.702	0.713	0.723	0.734	0.745	0.756	0.766	0.777	0.788	0.799	0.809

To calculate the **pre-development annual mass loadings** of total phosphorus and total nitrogen, multiply the pre-development annual runoff volume by the land use specific runoff characterization data (EMCs) for total phosphorus and total nitrogen. Florida specific EMCs are listed in **Table 7-2** for several different types of pre-development and post-development land use categories. These are from the State of Florida EMC data base.

As seen in **Table 7-2**, Florida has EMCs for Total Nitrogen, Total Phosphorus, Biochemical Oxygen Demand, Total Suspended Solids, and for some metals. Typically, TN and TP annual average loadings are calculated and used for BMP effectiveness evaluations since they are the most difficult to reduce.

From **Table 7-2** the following observations can be made:

- Concentrations of stormwater pollutants are low, generally less than wastewater with advanced wastewater treatment
- With urbanization, Nitrogen concentrations increase by a factor of 2
- With urbanization, Phosphorus concentrations increase by a factor of 10
- Very large variability even within the different natural vegetation communities

The mass loading calculation is provided in **Equation 7-2** below.

Equation 7-2. Annual Mass Loading = Annual Runoff Volume x EMC

The various components of **Equation 8-2** are expressed in different units and require some conversion factors, as provided below.

Annual Mass Loading (lb./year) =

Annual Runoff Volume (ac-ft./year) * 43,560 ft2/ac * 7.48 gal/ft3 x 3.785 liter/gal * EMC (mg/l) * 1 lb./453,592 mg

To calculate the **post-development annual mass loadings** of total phosphorus and total nitrogen in a manner similar to the pre-development loadings above. Simply multiply the post-development annual runoff volume (**Equation 7-1**) by the land use specific runoff pollutant o EMCs for total phosphorus and total nitrogen listed in **Table 7-2** for post-development land use conditions. The mass loading calculation is done using **Equation 7-2**.

Table 7-2 - Florida Stormwater Event Mean Concentrations in mg/l (from BMPTRAINS model)

Land Use Category	Total N	Total P	BOD	TSS	Copper	Zinc
Low Density Residential[1]	1.60	0.1370	5.25	25.75	0.010	0.036
Single Family	2.07	0.327	7.90	37.50	0.016	0.062
Multi-Family	2.32	0.520	11.30	77.90	0.009	0.086
Low Intensity Commercial	1.13	0.188	7.60	59.90	0.017	0.083
High Intensity Commercial	2.40	0.345	11.30	69.70	0.015	0.160
Light Industrial	1.20	0.260	7.60	60.00	0.003	0.057
Highway	1.52	0.200	5.20	46.00	0.025	0.116
Natural – Dry Prairie	2.025	0.184	- -	- -	- -	- -
Natural – Marl Prairie	0.684	0.012	- -	- -	- -	- -
Natural - Wet Prairie	1.095	0.015	- -	- -	- -	- -
Natural – Mesic Flatwoods	1.09	0.043	- -	- -	- -	- -
Natural – Scrubby Flatwoods	1.155	0.027	- -	- -	- -	- -
Natural – Wet Flatwoods	1.095	0.015	- -	- -	- -	- -
Natural – Upland Mixed Forest	0.606	1.166	- -	- -	- -	- -
Natural – Upland Hardwood Forest	1.042	0.346	- -	- -	- -	- -
Natural – Ruderal Upland Pine	1.694	0.162	- -	- -	- -	- -
Range land/park land	1.15	0.055	1.40	8.40	- -	- -
General Agricultural	2.80	0.487	3.80	34.20	0.012	0.021
Pasture	3.51	0.686	5.10	67.10		
Citrus	2.24	0.183	2.60	15.50	0.003	0.012
Row Crops	2.65	0.593	- -	19.80	0.022	0.030
Conventional rooftops	Con	0.12	- -	- -	- -	- -
1. Average of single-family and undeveloped values						

7.2 Introduction to Stormwater Management

7.2.1 Stormwater Management Goals

The ultimate stormwater management goal is to maintain the pre-development stormwater characteristics of a site or watershed after development (Section 62-40.431(2), F.A.C.). More generally, the goals of stormwater management are to minimize flooding and stormwater pollutant loadings associated with development. Other general goals include minimizing the adverse effects of urban development on communities, watersheds, water bodies, wetlands, floodplains and other natural systems. These goals also are applied to redevelopment situations so that existing stormwater conditions are appropriately improved with reconstruction. This is especially relevant in Cocoa Beach.

More specifically, these goals include:

- Reducing pollutant concentrations and loadings as needed to ensure that discharges do not cause or contribute to violations of State water quality standards.
- Preventing or reducing on-site and off-site flooding.
- Maintaining or restoring the hydrologic integrity of wetlands and aquatic habitats
- Maintaining and promoting ground water recharge.
- Minimizing erosion and sedimentation.
- Promoting the reuse of rainfall and stormwater

Stormwater management goals are set within the City's Comprehensive Plan. Generally, these are related to restoring impaired waters such as the Halifax River and Tomoka River by reducing stormwater pollutant loadings from both existing development and future redevelopment. DEP has adopted TMDLs for both water bodies. These establish pollutant load reduction goals of 9% for TN in the Halifax River and 30% TN and TP reduction in the Tomoka River. Other goals seek to ensure that future development and redevelopment do not increase stormwater pollutant loadings. For example, Goal 7 of the Future Land Use Element promotes the use of regional stormwater systems to support intensive redevelopment of existing sites. Policy 2.2.12 of the Utilities Element states **"Stormwater management systems shall be designed to ensure that post-development runoff does not exceed pre-development levels, in terms of the volume, rate, timing and pollutant load of runoff."** Unfortunately, the City's Land Development Code does not require meeting this level of stormwater treatment.

7.2.2 Stormwater Best Management Practices (BMPs)

Stormwater management systems are required to mitigate the stormwater quantity and quality changes that accompany urban development. Traditionally, stormwater systems were called "drainage systems". Their primary purpose was to ensure that the increased stormwater volume and peak discharge rates associated with urban development or redevelopment do not cause flooding. Today, "drainage" has evolved into "stormwater management" to address both flood control and stormwater pollutant loadings. EPA and Florida stormwater regulatory programs require the use of stormwater treatment systems to control pollutant loads. Stormwater treatment systems are composed of **Best Management Practices (BMPs) which are defined as "control**

techniques used for a given set of site conditions to achieve flood control and stormwater treatment in the most cost effective manner."

BMPs can be categorized into two basic categories:

1. Nonstructural BMPs (AKA source controls). These BMPs are used for pollution prevention to minimize pollutants getting into stormwater or to minimize stormwater volume. They include **Site Planning BMPs** such as preserving vegetation, clustering development, minimizing total imperviousness or directly connected impervious areas. They also include **Source Control BMPs** such as minimizing clearing, minimizing soil compaction, and using Florida-friendly landscapes and fertilizers. All of these nonstructural BMPs fall under the umbrella term known as "Low Impact Design" (LID) that is discussed in **Section 7.2.3**.

2. Structural BMPs. Structural BMPs are used to mitigate the changes in stormwater characteristics associated with land development and urbanization. There are three major types of structural BMPs: retention BMPs, detention BMPs, and filtration BMPs.

- **Retention BMPs** are infiltration-based practices – the stormwater treatment volume is not discharged directly to surface waters but is "retained on-site" through percolation into the soil, evaporation, and evapotranspiration. Infiltration BMPs include retention basins, exfiltration trenches, swales, vegetated natural buffers, and pervious pavements,
- **Detention BMPs** are those that detain stormwater and discharge it off-site at a specified rate, usually the pre-development peak discharge rate. The most common type of detention BMP in Florida is a wet detention system that has a permanent pool of water.
- **Filtration BMPs** typically are used on the bottom of retention areas and with detention systems in which the discharge structures incorporate pollutant removal media, often a **Biosorption Activated Media (BAM),** within a filtration system. Filtration systems are more maintenance intensive and are generally used in special circumstances where more traditional retention and detention BMPs do not achieve the stormwater treatment goals for a site or project.

Table 7-3 lists the BMPs most commonly used within Florida. Most of these have design, construction, and operational criteria approved by FDEP and the WMDs. In more recent years, BMPs have been combined into a **BMP Treatment Train** to achieve the desired stormwater management benefits. All of these BMPs also are included in the BMPTRAINS model allowing easy evaluation of the pollutant load reduction benefits of various combinations of BMPs.

Table 7-3 - BMPs Used within Florida for Stormwater Management

Site Planning BMP Code	Site Planning BMPs	Quantified Pollutant Load Reduction Credit
SP1	Inventory Site Assets: Hydrology	
SP2	Inventory Site Assets: Topography	
SP3	Inventory Site Assets: Soils	
SP4	Inventory Site Assets: Vegetation	
SP5	Protect Surface Waters and Wetlands	
SP6	Protect Surface Waters and Wetlands	
SP7	Natural Area Conservation - Retain Tree Canopy and Native Landscapes	✓
SP8	Cluster Design /Maximize Gross Density	
SP9	Minimize Building Footprint	
SP10	Minimize Total Impervious Area	✓
SP11	Minimize Directly-Connected Impervious Area	✓
SP12	Curb Elimination and Curb Cuts	
Source Control BMP Code	**Source Control BMPs**	
SC1	Retain Natural Landscape Depressions	
SC2	Minimize Clearing and Grading	
SC3	Minimize Soil Disturbance and Compaction	
SC4	Build with Landscape Slope	
SC5	Retain Native Landscapes at the Lot Level	
SC6	Florida-friendly Landscapes and Fertilizers	✓
SC7	Rainfall Interceptor Trees	✓
SC8	Install Efficient Irrigation Systems	
SC9	Use Non-potable Water for Irrigation	
SC10	Community and Home Owner Education	
Structural BMP Code	**Structural Stormwater BMPs**	
SW1	Retention Basin	✓
SW2	Exfiltration Trench	✓
SW3	Underground Storage and Retention	✓
SW4	Rain Gardens	✓
SW5	Treatment Swales	✓
SW6	Vegetated Natural Buffers	✓
SW7	Pervious Pavements	✓
SW8	Green Roofs with Cisterns	✓
SW9	Rainwater Harvesting/Cisterns	✓
SW10	Wet Detention Systems	✓
SW11	Stormwater Harvesting/ Horizontal Wells	✓
SW12	Managed Aquatic Plant Systems	✓
SW13	Filter Systems including Biofiltration BMPs	✓

7.3 Introduction to Low Impact Design BMPs

7.3.1 What is "Low Impact Design" (LID)?

LID is a stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation, and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project's design, especially it's landscaping and open space. LID also is called "low impact development", "green infrastructure", and "water sensitive urban design".

LID originated in the Puget Sound area and in the Chesapeake Bay region. These areas are characterized by soils that do not have high infiltration rates and high water tables. Consequently, traditional retention or infiltration systems do not work well. Additionally, these areas are characterized by long duration, low volume.

These conditions are not typical of Florida rainfalls (short duration, high intense storms) or soil and water table conditions. To modify LID BMP concepts for use in Florida, the FDEP, in cooperation with universities, local governments, and the water management districts, developed and implemented a 10 year LID BMP research and monitoring program. The information and data from this program allowed for the development of Florida-based design, construction, and operational criteria for LID BMPs. The data also allowed for the development of the BMPTRAINS model that calculates pre-development stormwater pollutant loadings, post-development stormwater pollutant loadings, and the effectiveness of stormwater treatment systems. This includes systems with several BMPs integrated into a BMP Treatment Train.

We commend the City of Ormond Beach for developing a Low Impact Design Manual in 2013. However, the Manual is based on the 1999 Prince George's County (MD) LID Manual and its terminology and design criteria are inconsistent with the BMP terminology and design, construction, and operational criteria approved by the Florida DEP and the WMDs. Consequently, it is difficult to obtain state permits using the City's LID Manual.

The principles of LID stormwater management include:

- **Achieve multiple objectives** – Comprehensive stormwater management helps achieve multiple objectives such as: managing peak discharge rates and total discharge volume; providing effective stormwater treatment to minimize pollutant loadings; maintaining or improving the hydrologic regime at a site; and retaining or harvesting stormwater on-site for non-potable purposes. LID also promotes integrating stormwater systems into the landscaping and open space of a site creating more attractive and diverse systems.
- **Preserve or restore natural features and resources** – The conservation or restoration of natural features such as floodplains, soils, and vegetation help to retain or restore hydrologic functions thereby achieving the multiple objectives above.
- **Minimize soil compaction** – Soil compaction disturbs native soil structure, reduces infiltration rates, and limits root growth and plant survival.
- **Reduce and disconnect impervious surfaces** – By minimizing impervious surfaces, especially directly connected impervious surfaces, more rainfall can infiltrate into the ground and less stormwater volume and pollutant loading are generated.

- **Manage stormwater close to the source** - Using source controls to minimize the generation of stormwater or pollutants that can get into stormwater needs to be first step in managing stormwater.
- **Use a BMP Treatment Train approach** – Effective stormwater management requires a comprehensive approach that incorporates source controls with multiple structural stormwater BMPs (retention, detention, and filtration) often integrated into the landscaping and site plan to create an efficient stormwater management system.

Successful adoption of LID stormwater management requires a fundamental shift in thinking from the traditional "collect, concentrate, convey, centralize and control" approach to a new stormwater management mantra of "retain, detain, recharge, filter and use". Unlike conventional stormwater systems, which typically control and treat runoff using a single engineered stormwater BMP located at the "bottom of the hill," LID systems are designed to promote volume attenuation and treatment at or near the source. LID systems use a suite of stormwater BMPs – Site Planning BMPs, Source Control BMPs, and Structural BMPs such as retention, detention, infiltration, treatment and harvesting mechanisms – that are integrated into a project site to function as a BMP Treatment Train.

LID practices facilitate on-site infiltration by preserving pervious surfaces, limiting the total area of impervious surfaces, and disconnecting impervious surfaces. The following site design objectives are key to achieving the City's stormwater hydrology and pollutant load reduction goals:

Conservation Measures - Preserve or conserve existing site features and assets that facilitate natural hydrologic function.

- Maximize retention and protection of native forest cover, vegetation and wetlands and replant trees and other vegetation to intercept, evaporate, and transpire precipitation.
- Preserve permeable, native soil, and enhance disturbed soils to store and infiltrate stormwater.
- Retain and incorporate topographic site features that slow, store, and infiltrate stormwater.
- Retain and incorporate natural stormwater management features and patterns.
- Minimize site disturbance and compaction of soils through low-impact clearing, grading, and construction measures.

Distributed and Integrated Management Practices

- Manage stormwater as close to its origin as possible by using small scale, distributed hydrologic controls. Given Florida's short duration, high intensity storms this concept is not generally applicable. Using this approach will depend on the development intensity and the site conditions.
- Create a hydrologically rough landscape that slows storm flows.
- Increase reliability of the stormwater management system by providing multiple or redundant LID flow control practices.
- Integrate stormwater controls into the development design and use the controls as amenities to create a multifunctional landscape.
- Reduce the reliance on traditional conveyance and pond technologies

Low Impact Construction Techniques - Clearing, grading, and construction measures that minimize site disturbance and promote LID function:

- Minimize the amount of area cleared.
- Clear selectively to protect trees and other vegetation.
- Use smaller and lighter construction equipment where possible.
- Minimize grading and importing of fill (e.g., through use of stem wall construction).
- Keep heavy equipment off soils where infiltration-dependent stormwater practices will be used.
- Designate storage areas for construction equipment and materials

Maintenance and Education

- Develop reliable and long-term maintenance programs to provide clear and enforceable standards.
- Educate owners of LID projects, landscape management professionals, and other interested parties on the operation and maintenance of LID systems.
- Protect LID systems by promoting community participation.

A fundamental premise of LID is that the more closely an engineered stormwater system mimics a site's pre-development hydrologic characteristics, the better it will perform in terms of meeting both volume control and treatment goals for the project. This means LID projects should strive to have the same conditions (or better, if a site has already been degraded) for total and peak stormwater runoff volumes, runoff conveyance patterns, and infiltration and treatment capacity as were present before development. LID project designs typically employ a combination of innovative, conventional, non-structural and structural engineered designs to accomplish these goals. Note that although LID techniques are often decentralized within a site or parcel, they are not disconnected but are integrated into a BMP Treatment Train.

Typically, LID practices will not completely replace more conventional "bottom-of-the-hill" stormwater management practices. However, they can be used to complement these practices and to ensure that the entire stormwater management system meets the City's water resources objectives. Combining conventional and LID stormwater management practices can reduce the area devoted solely to stormwater management and allow more efficient use of the development site.

7.3.2 Advantages of LID BMPs

Why might LID – from a single BMP to a LID master plan – be considered a superior alternative to conventional design? Quite simply, it depends on the interests of the party or person posing the question, but the evidence from a growing field of LID practice suggests that with the essential ingredients of early planning, commitment, and creativity, LID strategies can lead to net benefits for all parties involved.

For the developer, the LID reward might be a direct monetary benefit from avoided investments in stormwater infrastructure – or a lot gained via clustering and stormwater management with native hydrologic conditions in mind. For local governments and the general public, the LID reward might be the benefit of protected or enhanced water quality and reduced stress on natural

resources that sustain local economies. For the homeowner, the LID reward might be improved property values. Integrating LID strategies as standards of practice in development projects will take time, energy and commitment on the part of developers, builders, city staff, and homeowners. However, the diversity of economic, environmental and social benefits that LID strategies have to offer make them a critical piece of the overall stormwater management strategy in Cocoa Beach.

Despite concern that the assumed or perceived financial costs associated with using LID in redevelopment projects will drive developers to greenfield development, encouraging sprawl and exacerbating water quality problems, experience is proving that developers are pursuing (and having success with) LID projects in both redevelopment and greenfield projects. Not only are developers with experience in LID continuing to invest in projects in their standard markets despite increasingly strict stormwater standards, but they also are finding that LID can reduce their costs relative to conventional stormwater controls (EcoNorthwest, 2011) The most commonly cited area of cost savings/revenue gains for developers choosing LID over conventional design is in stormwater piping and road infrastructure (conveyance pipes, etc.), landscape investments (e.g., sod area, in-ground irrigation systems), and developable lots (e.g., via clustering and distributed stormwater conveyance and treatment controls, reducing the size of the stormwater pond necessary for treatment.)

In a 2009 article in *Land Development* magazine, local landscape architect and University of Florida faculty member Glenn Acomb describes the LID experience in *Madera*, a 44-acre, 80-lot residential subdivision in the City of Gainesville, Florida. Preservation of existing hydrology, topography and tree canopy were critical elements of the site design. By taking advantage of existing contours of the site to capture and infiltrate stormwater, the site plan resulted in on-site control of the majority (70%) of the site's stormwater runoff. Furthermore, this design saved the developer $40,000 in stormwater infrastructure costs (U.S. HUD, 2005). At the lot level, resource-efficient, LID strategies were integrated to the maximum extent possible, from Energy Star certification to Florida-friendly landscaping, to shared driveways. Comparing *Madera* "LID" lots to conventional lots, Acomb reports a 7.6% savings in capital costs (about $1,500 per lot to the developer) and estimates approximately $1,900 in annual savings per lot for landscape maintenance (to the homeowner) for the *Madera* lots (Acomb, 2004). Pre-development conditions made the site particularly favorable for implementing a broad suite of LID strategies, and *Madera* serves as a model example of LID in new residential development in Alachua County.

Not all monetary costs/benefits of LID stormwater management fall to the developer, however. Occupants of buildings with green roofs, for example, can realize significant energy savings (i.e., reduced operational costs) over the life of the project. Homeowners with rain gardens or lots adjacent to ecologically enhanced stormwater ponds may benefit from increased market value of their homes (particularly as the consumer market for native, low-maintenance landscapes continues to grow.)

Environmental and ecological rewards from LID include water quality protection/pollution prevention, protection of drinking water supplies via enhanced infiltration and treatment of stormwater runoff, and wildlife and habitat protection and provision.

Finally, many LID applications are valued as social or community amenities. Roadway and median swale/tree box/green street applications often calm traffic (improving public safety) and reduce heat-island effects in urban environments. Mixed-use, clustered communities reduce the need for

lengthy commutes from home to work or play (which also translates to a monetary benefit for residents). While difficult to value directly, the aesthetics of LID stormwater features also provide a public amenity.

The most recent version of BMPTRAINS allows calculation of the construction and long term costs associated with stormwater systems comprised of both traditional and LID BMPs.

7.3.3 Need for Stormwater Manual with LID BMPs

Unfortunately, the state's Environmental Resource Permit Applicant Handbooks do not include design, construction, and operational criteria for LID BMPs. As part of the 2010 Statewide Stormwater Rule, FDEP and the WMDs included LID BMPs using the data from the LID BMP research and monitoring program. However, the Statewide Stormwater Rule and the associated Applicant Handbooks were never competed and adopted.

Subsequently, stormwater manuals that include LID BMPs have been developed and adopted by Pinellas County and Alachua County. The LID BMP requirements in these manuals have been approved by FDEP and the WMDs. Additionally, the stormwater BMP load reduction calculations in BMPTRAINS are based on the LID BMP designs in these manuals.

If the City wants to promote the use of LID BMPs, it needs to modify its LID Manual to be consistent with state approved LID BMP design criteria. However, this may not be necessary since FDEP was directed by the Legislature in 2020 to develop a new statewide stormwater treatment rule that includes LID BMPs. Hopefully, this will bring certainty to the permitting of LID BMPs and lead to much greater use of these BMPs.

7.4 Catalog of BMPs

As seen in **Table 8-3**, there are a large number of LID BMPs that have been approved by FDEP and the WMDs. This section provides a brief description of both traditional and LID BMPs.

7.4.1 Site Planning BMPs

Site Planning BMPs are applied as part of the development design process to ensure efficient land usage and preservation of the site's natural hydrology. The following 12 Site Planning BMPs should be considered for each project. These site planning principles are associated with Smart Growth practices. Additional information pertaining to sustainable site planning may be found at www.epa.gov/smartgrowth (https://www.epa.gov/smartgrowth).

SP1. Inventory Site Assets: Hydrology

Identify and retain the pre-development hydrology to the maximum extent possible, including natural flow/conveyance paths and patterns and drainage features. Maintain or replicate original site hydrology by preserving pre-development stormwater volume, infiltration, and evapotranspiration rates and the hydrologic assets of the site. When assessing a site for LID opportunities, it is important to identify and understand the stormwater sources and sinks in each catchment and sub-catchment, and plan accordingly.

SP2. Inventory Site Assets: Topography

The pre-development topography should drive the stormwater design of a project as much as possible, rather than alter the topography of the site during development to fit a traditional

stormwater management plan. Use the topographic characteristics of the site to guide the road layout and stormwater conveyance features. Consider the natural drainage patterns when delineating lots and placing public infrastructure. Topographic features should also guide lot-level landscape layout and plantings. Natural depressions should be maintained where possible to promote storage, infiltration, and treatment during typical stormwater events and to capture part of the treatment volume during extreme events.

SP3. Inventory Site Assets: Soils

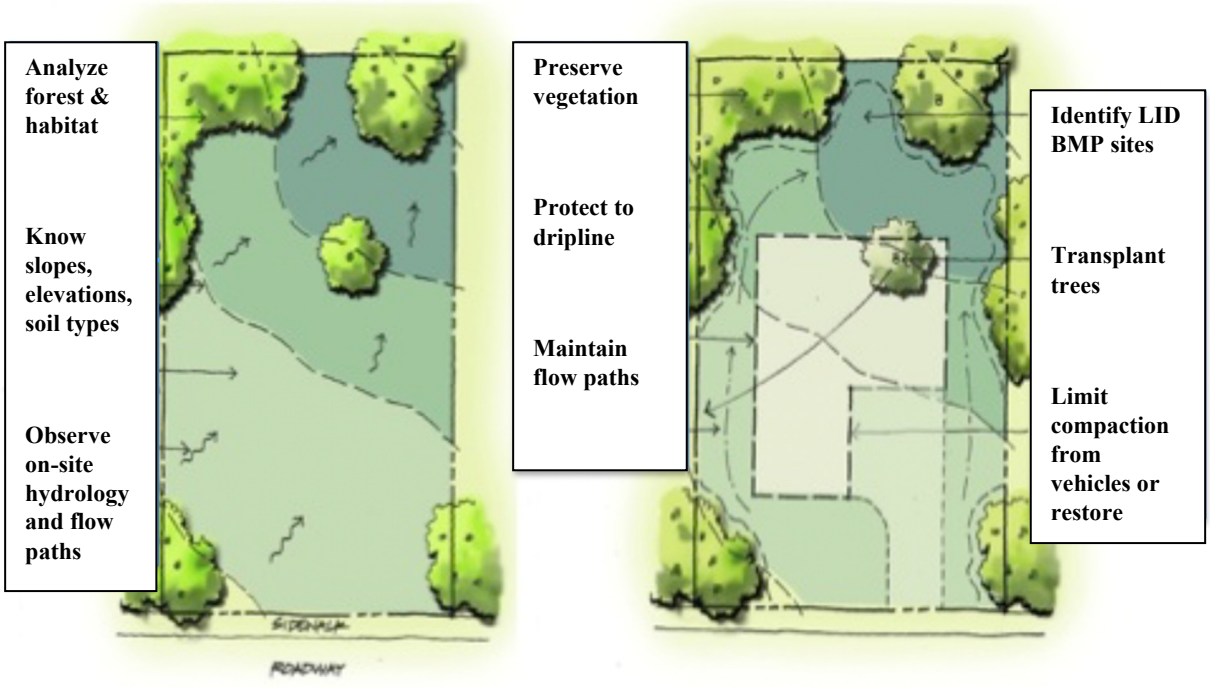
Inventory and map the extent of all soil types present on site. Determine their hydrologic group classifications and capacity for stormwater infiltration. Clearly mark on drawings and designate on site all areas that will be vegetated or used in stormwater management to prevent their compaction and maintain the soil infiltration capacity. Employ careful site clearing, grading, equipment and materials staging when planning construction to limit compaction and protect native soil characteristics.

SP4. Inventory Site Assets: Vegetation

Protection of trees and native vegetation promotes carbon dioxide absorption, oxygen production, dust filtration, reduction of wind, noise, and glare, soil stabilization and enrichment, erosion prevention, surface drainage improvement and aquifer recharge, water pollution reduction, wildlife habitat, energy conservation, temperature moderation, the economic enhancement of improved and vacant lands, scenic beauty, quality of life, and the health, safety, welfare and well-being of the community.

As seen below in **Figure 7-4**, use the information form the inventory of site assets to maintain the natural hydrology and to protect natural site characteristics that provide stormwater services. In particular, minimize vegetation clearing and soil compaction.

Figure 7-4 - Goals of the Site Assets Inventory



SP5. Protect Surface Waters and Wetlands

Surface waters is a comprehensive term that includes all rivers, streams, creeks, springs, lakes, ponds, intermittent water courses and associated wetlands that hold or transport water on the ground surface. Protect surface waters and wetland edges by using buffers and native plantings. Determine which local bodies are "impaired waters" that may have an adopted TMDL such as the Halifax River and Tomoka River.

SP6. Preserve Open Space

Once a thorough inventory of the site assets that facilitate LID BMPs has been completed, the first planning strategy is to preserve these assets to the maximum extent possible. Consider all areas where open space and pervious areas can be protected. Ensure the Land Development Code allows siting LID BMPs in open space and landscaped areas of a site.

SP7. Natural Area Conservation - Retain Tree Canopy and Natural Landscaping

Tree canopy can be viewed as the first line of defense in stormwater source control. Retaining native and large tree canopies to the maximum extent possible and planning new tree plantings to maximize tree canopy over the life of the project will help retain and enhance pre-development interception and evapotranspiration capacity, reducing generation of stormwater runoff. There is evidence that tree canopies have the potential to intercept approximately 15-20% of the water in a rainstorm that falls on their leaves. This LID BMP includes a quantitative stormwater pollutant load reduction.

SP8. Cluster Design and Maximize Gross Density

Clustering at the development or subdivision scale is a preferred technique that can significantly reduce the overall environmental impacts of a project. This strategy is useful primarily for residential and mixed-use developments. Cluster design typically reduces the length of roads, total impervious area, the area needed for stormwater management infrastructure, and reduces overall site disturbance. It also allows the opportunity in project design to maintain natural areas and wildlife habitat. Clustering often is used with maximizing gross density by designing for smaller lots.

SP9. Minimize Building Footprint

To reduce the impervious footprint of the project and disturbance of the site, consider multi-story building design options for the project (i.e., build vertically). Buildings with more than one story maximize the square footage to area ratio and lessen the stormwater runoff from the site.

SP10. Minimize Total Impervious Surface Area

Minimizing total impervious surface area reduces the post-development stormwater volume and peak discharge rate. There are many design options to minimize total impervious surface area, particularly with street and parking design. Street design should look for a layout that reduces the total street length with curvilinear roads and short cul-de-sacs typically save 20-25% over a strict grid pattern. Another way to reduce impervious pavement is to narrow street widths as much as possible. Finally, pervious pavements offer many advantages, especially in parking lots.

SP11. Minimize Directly-Connected Impervious Area (DCIA)

Directly connected impervious areas allow runoff to be conveyed without interception by permeable areas that allow for infiltration and treatment. Disconnecting impervious areas from roofs, small parking lots, courtyards, driveways, sidewalks and other impervious surfaces allows runoff to flow onto adjacent pervious areas where it is filtered or infiltrated. Reduce DCIAs by designing the site to divert sheet flow into a swale, infiltration basin, rain garden, vegetated natural buffer or pervious area for treatment. Disconnect rooftops to harvest this rainwater and either reuse it or distribute it over lawns and other pervious areas where it can be filtered and infiltrated. Downspout disconnection can infiltrate runoff, reduce runoff velocity, and remove pollutants. Alternately, downspouts can be directed to a cistern, rain barrel, dry well, rain garden or landscaped infiltration area. This LID BMP includes a quantitative stormwater pollutant load reduction.

SP12. Curb Elimination and Curb Cuts

Intent: Curbs and gutters have been standard features of stormwater management for roadways and parking lots, intercepting and directing runoff into drainage pipes in an efficient manner. However, they are often inconsistent with the goal of maintaining natural hydrology. Curbs concentrate runoff into faster flowing, more erosive streams of water. Simply eliminating curbs and allowing stormwater to sheet flow from roadways onto vegetated areas slows runoff and reduces peak discharge rates. If used in conjunction with downstream infiltration BMPs, total stormwater volume is reduced, and stormwater pollutant loads are reduced.



7.4.2 Source Control BMPs

Often the most cost effective and simple stormwater volume and water quality goals are accomplished by managing rainfall and stormwater runoff at the source. **Source control techniques** can be defined as nonstructural BMPs that reduce the amount of stormwater that runs off a site (**volume source controls**), or act to lessen the nutrients and other pollutants that are picked up and carried by stormwater (**load source controls**). These can include many strategies ranging from disconnecting impervious areas to minimizing paved areas to education programs to teach homeowners to use less Florida-friendly fertilizer on their Florida-friendly landscapes. Source controls are usually low cost, simple techniques that could be described as the "ounce of prevention" that is worth more than a "pound of cure.

SC1. Retain Natural Landscape Depressions

Natural depressions in the landscape are Mother Nature's retention systems. They should be preserved where possible to promote storage, infiltration, and treatment of stormwater. Lot lines can be determined in part by location of natural depressions, and one or more per lot can be used to install rain gardens on individual lots. Again, remember to view these natural landscape depressions as LID assets and potential environmental and marketing (homeowner) amenities.

SC2. Use Selective Site Clearing and Grading

To preserve the natural topography and avoid disturbing native soils, carefully plan clearing, grading, and construction. Then clearly delineate the areas on the ground and instruct all construction personnel on their purpose and importance. This will minimize soil compaction over the entire site - the ultimate goal being completely undisturbed soil in all areas except the building and impervious surface footprint.

SC3. Minimize Soil Disturbance and Compaction

Successful infiltration of stormwater ultimately depends on soil characteristics, especially their permeability. Florida research shows that compaction by construction equipment can reduces infiltration rates by between 80 and 99 percent. Compaction of the top 6 inches is primarily related to tire pressure, and compaction of greater depths is related to the total weight of the equipment, affecting primarily the top foot of soil, but some compaction continues up to 3 feet Avoiding compaction is far preferable and less expensive. Locations of planned infiltration BMPs need to be clearly designated and not traversed by heavy construction equipment.

SC4. Build with the Landscape Slope

Retain the natural slope of the landscape by designing buildings and infrastructure around existing topography, rather than re-contouring the land to fit the building design. Build with the slope of the landscape by considering stem wall construction or pier and beam/raised floor foundations (rather than the traditional slab-on-grade) for homes and buildings. Raised floor construction without exterior fill on sloped sites reduces fill needs and lot-level soil disturbance.

SC5. Retain Native Landscapes at the Lot Level

Minimize clearing of existing vegetation. Plant and maintain Florida-friendly or native vegetation wherever possible. Minimize use of turf grass and use it only where outside active recreation is planned and frequent. Plant native vegetation in beds that will require little or no irrigation after establishment.

SC6. Florida-friendly Landscaping and Fertilizers

Minimize new landscaped areas requiring supplemental Inputs of fertilizer and irrigation by creating a Florida-friendly landscape (http://www.floridayards.org/) (http://www.floridayards.org. Plan your site for low-impact and resource-efficient landscapes that have the capacity to thrive without supplemental inputs of irrigation, fertilizers, pesticides, herbicides, etc. Be sure to use Florida-friendly fertilizers (https://www.swfwmd.state.fl.us/residents/florida-friendly-landscaping/florida-friendly-fertilizing) and download the Do-It-Yourself Guide to Florida-friendly Fertilizing. Local governments and projects with LDCs requiring Florida-friendly landscaping and fertilizers can qualify for a 3% TN load reduction credits on adopted TMDLs.

SC7. Rainfall Interceptor Trees

Interceptor trees are used in urban land uses adjacent to impervious surfaces as part of the stormwater treatment system to reduce runoff volume and pollution from the area. Trees intercept rain water and retain a significant volume of the captured water on their leaves and

branches allowing for evaporation and providing runoff reduction benefits. This reduces stormwater volume and pollutant loading by 8% to 18% depending on tree species and size.

SC8. Install Efficient Irrigation Systems

In 2004, the Florida legislature created section 373.228, Florida Statutes, directing the Department of Environmental Protection, the Water Management Districts, and several stakeholder groups to devise standards for Landscape Irrigation and Florida-friendly landscape design. These standards were adopted in December 2006 and they are available online at: https://web.archive.org/web/20130523081611/http://www.dep.state.fl.us/water/waterpolicy/docs/LandscapeIrrigationFloridaFriendlyDesign.pdf.

SC9. Use Non-Potable Water Supply for Irrigation

Use non-potable water as the primary source for irrigation: reclaimed water, roof runoff stored in rain barrels or cisterns, or harvested stormwater. While the relatively small volume stored in rain barrels will not measurably reduce stormwater from the site, they may be sufficient for irrigating small garden areas and may increases awareness of water use and promote conservation.

SC10. Community and Homeowner Education

Developments should include a community or homeowner education program. This is especially true for developments that incorporate LID BMPs into their stormwater treatment train. The town of Harmony (http://harmonyfl.com/) provides one example education program. A website for residents gives wide ranging information, including water and energy efficiency, native landscaping, conservation of resources, waste reduction and local wildlife identification.

7.4.3 Structural Stormwater BMPs

Structural stormwater BMPs include traditional BMPs such as retention basins, exfiltration trenches, and wet detention systems. They also include LID BMPs such as rain gardens, vegetated natural buffers, pervious pavements, and green roofs with cisterns.

SW1. Retention Basins

A "retention basin" is a recessed area within a development or the landscape designed to store and retain a defined quantity of runoff (Required Treatment Volume or RTV) on-site allowing it to evaporate or percolate through permeable soils into the shallow ground water aquifer. Retention basins provide numerous benefits, including reducing stormwater volume, which reduces the average annual pollutant loading that may be discharged from the system. Additionally, many stormwater pollutants such as suspended solids, oxygen demanding materials, heavy metals, bacteria, some varieties of pesticides, and nutrients are removed as runoff percolates through the soil profile.

SW2. Exfiltration Trench

An exfiltration trench is a subsurface retention system consisting of a conduit such as perforated pipe surrounded by natural or artificial aggregate which temporarily stores and infiltrates stormwater runoff. Stormwater passes through the perforated pipe and infiltrates

through the trench sides and bottom into the shallow ground water aquifer. The perforated pipe increases the storage available in the trench and helps promote infiltration by making delivery of the runoff more effective and evenly distributed over the length of the system.

SW3. Underground Storage and Retention Systems

Underground storage and retention systems are retention systems that capture the RTV in an underground storage system and "drain field." Examples include underground tanks or chambers with several commercially-available models. Generally, these systems consist of lightweight, high strength modular units with "open" bottoms to allow for soil infiltration. These systems are useful where land values are high, and the owner/applicant desires to minimize the potential loss of usable land with other types of retention BMPs.

SW4. Rain Gardens.

Rain gardens are small retention basins that are integrated into a site's open space, landscaping, and parking lot islands. They are a shallow, constructed depression that is planted with deep-rooted Florida-friendly or native plants. They are used to intercept runoff from hard surfaces such as a roof, a sidewalk, a driveway, or parking area.

SW5. Treatment Swales

Swales are the grassed, shallow conveyances along roads that capture and move stormwater. They also are used for stormwater treatment, especially as part of a BMP Treatment Train. Swales designed for stormwater treatment can be classified into three categories:

- Swales with swale blocks or raised driveway culverts (Linear retention swale)
- Swales without swale blocks or raised driveway culverts (Conveyance swale)
- Swales incorporated into landscaping (an elongated rain garden)

SW6. Vegetated Natural Buffers

Vegetated natural buffers (VNBs) are areas with vegetation suitable for sediment removal, nutrient uptake, and soil stabilization that are set aside between developed areas and a receiving water or wetland for stormwater treatment purposes. Typically, they are a retention BMP. They also can be used as the prefilter for other BMPs. They are most commonly used to treat the rear-lot portions of a development that cannot be feasibly routed to the stormwater system serving the roads and fronts of lots.

SW7. Pervious Pavement Systems

Pervious pavement systems include the subsoil, the sub-base, and the pervious pavement. They can include several types of materials or designed systems such as pervious concrete, pervious aggregate/binder products, pervious paver systems, and modular paver systems. Pervious pavement systems are retention systems. They should be used as part of a treatment train to reduce stormwater volume and pollutant load from parking lots, or similar types of areas.

SW8. Green Roof with Cistern Systems

A green roof with cistern is a vegetated roof followed by storage in a cistern (or other similar device) for the excess stormwater (filtrate) that is reused for irrigation of the roof and adjacent

landscaping. The two classes of green roofs are intensive and extensive. Extensive green roofs tend to have passive use, while intensive green roofs support larger plants and tend to have active use. Extensive green roofs have a root zone less than 6 inches deep while intensive green roofs have a root zone equal to or greater than 6 inches deep. A green roof and cistern system is a retention and reuse BMP.

SW9. Rainwater Harvesting

Rainwater harvesting collects roof runoff that is stored and reused. Harvesting rainwater from roof runoff is an easy, inexpensive way to disconnect impervious surfaces and capture water before it has contacted many potential contaminants. There are four types of rainwater harvesting systems:

- Small residential systems that store rainwater in rain barrels for supplemental irrigation.
- Large residential or commercial systems that store rainwater in a cistern for irrigation, vehicle washing, dust control, or other outdoor, non-potable uses.
- Large residential or commercial systems that store rainwater in a cistern as a source of indoor graywater uses such as toilet flushing, urinal flushing, HVAC make-up water, laundry wash water, and outdoor non-potable uses.
- Residential or commercial systems that store rainwater in a cistern for potable water

SW10. Wet Detention System

Wet detention systems are permanently wet ponds that are designed to slowly release a portion of the collected stormwater runoff through an outlet structure to prevent flooding. They are the preferred BMP for sites with moderate to high water table conditions. Wet detention treatment systems provide removal of both dissolved and suspended pollutants by taking advantage of physical, chemical, and biological processes within the pond.

SW11. Stormwater Harvesting System

Stormwater harvesting systems are used with both retention and wet detention systems to capture the treated stormwater for beneficial purposes thus reducing the stormwater volume and pollutant loading discharged. It is most often used with wet detention as part of a BMP treatment train. The harvested stormwater can be used for numerous uses including irrigating lawns and landscape beds, irrigating green roofs, washing vehicles, industrial cooling and processing, and toilet flushing.

SW12. Managed Aquatic Plant Systems

Managed Aquatic Plant Systems (MAPS) are aquatic plant-based BMPs that remove nutrients through a variety of processes related to nutrient uptake, transformation, and microbial activities. Examples of MAPS include planted littoral zones and floating wetland mats. Harvesting of the plant biomass is an essential process of the floating wetland mat BMP.

SW13. Filter Systems

There are two general types of filters that effectively remove stormwater pollutants: Up-Flow Filters and Biofilters (Biofiltration Systems). Up-Flow Filters are used to “polish off” or reduce concentrations of pollutants discharging to stormwater conveyance systems or surface

waters. These are commonly used after wet detention ponds and after pre-treatment BMPs in ultra-urban watersheds. Biofilters incorporate "engineered media" such as Biosorption Activated Media (BAM) or other soil augmentations to reduce the concentration of pollutants discharged to an underdrain or to the ground water. Biofiltration systems include rain gardens, landscape planter boxes, and tree wells. BAM also is used beneath retention BMPs in springsheds to reduce nitrate as stormwater infiltrates into the ground water.

7.5 BMP Pollutant Load Reduction Effectiveness

Because of the inherent variability in stormwater characteristics, including pollutants, their concentrations, rainfall volume and intensity, Florida's stormwater regulatory program is based on achieving specified levels of average annual stormwater pollutant load reduction. The minimum level of stormwater treatment is set forth in Chapter 62-40.432, F.A.C. is:

1. Achieve at least 80 percent reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards.
2. Achieve at least 95 percent reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards in Outstanding Florida Waters.
3. If a District or the Department adopts basin-specific design and performance criteria in order to achieve an adopted TMDL or the pollutant load reduction goals established in a watershed management plan, such design and performance criteria shall replace those specified in subparagraphs 1. and 2. Above.

Annual pollutant loadings are the product of the average annual stormwater volume and the stormwater pollutant concentrations (**Equation 7-2**). There are two methods to reduce the average annual stormwater pollutant load:

1. reduce stormwater pollutant concentrations, and
2. reduce stormwater volume.

As seen in **Table 7-2**, the concentrations of stormwater pollutants generally are low. Total Nitrogen in urban land uses ranges from 1.1 mg/l to 2.4 mg/l while Total Phosphorus ranges from 0.13 mg/l to 0.52 mg/l. These values are similar to values in wastewater that has received Advanced Wastewater Treatment. Reducing these concentrations is vary difficult. Especially since most pollutants have a limiting concentration below which there is no reduction.

The easiest way to reduce stormwater pollutant loading is to reduce the volume of stormwater discharged off-site. There is a direct relationship between the reduction in the annual stormwater volume and the reduction in stormwater pollutant loadings. It is for this reason that retention BMPs provide the greatest level of stormwater pollutant load reduction. **The treatment effectiveness of retention BMPs is directly proportional to the percentage of the annual stormwater volume that is captured and retained on-site. For example, in Ormond Beach a stormwater retention system will get 80% average annual load reduction if the RTV is between 0.22" and 1.43" (depending on the %DCIA and CN).**

However, the treatment effectiveness of wet detention systems is limited by their inherent pollutant concentration reduction processes. Generally, a wet detention system effectiveness is related to its average annual residence time. Wet detention systems designed to the criteria of the SJRWMD

will achieve about 35% TN reduction 65% TP reduction. To increase pollutant load reduction of a wet detention system, it is necessary to use additional pre-treatment or post-treatment BMPs as part of a BMP Treatment Train.

7.5.1 Using BMPTRAINS to Calculate BMP Treatment Effectiveness

As discussed in **Section 7.1.2**, Florida has developed tools and equations to calculate pre-development pollutant loadings and post-development pollutant loadings. The most difficult calculations are for determining the pollutant load reduction of individual BMPs or of BMPs used together in a BMP Treatment Train. Recognizing this need during the 2010 Statewide Stormwater Rule development, staff from DEP and the WMDs began developing BMP design aids to calculate their effectiveness in reducing stormwater pollutant loadings.

During the past decade, with assistance from FDOT and the UCF Stormwater Management Academy, these design aids have evolved into a unique model called BMPTRAINS. The model us used to evaluate **B**est **M**anagement **P**ractice **T**reatment options for **R**emoval on an **A**nnual basis by those **I**nterested in **N**utrients in **S**tormwater. BMPTRAINS and its User Manual can be downloaded for free from https://stars.library.ucf.edu/bmptrains/. Research publications that were used in the development of the model also can be downloaded at this web site.

BMPTRAINS incorporates the latest research and monitoring information relevant to designing effective stormwater treatment systems in Florida. This includes:

- Using the Harper Methodology for runoff and pollutant loading calculations
- Florida annual rainfall by zones
- Statewide Event Mean Concentrations
- Statewide stormwater BMP effectiveness data
- Latest LID BMP effectiveness data
- Latest stormwater LID BMP design criteria

As new data and information becomes available, the BMPTRAINS team creates improvements and enhancements to the model. Like the original model, each version of the model is reviewed and approved by staff from FDEP and each of the WMDs.

BMPTRAINS can be used for a variety of objectives including:

- Quantify pollutant load reduction of traditional & LID BMPs
- Evaluate site planning/BMP treatment train options
- Evaluate load reduction of BMP treatment train options
- Evaluate costs of BMP treatment train options
- Used to evaluate whether a project is meeting “Net Improvement” for impaired waters
- Used to challenge BMP designs in administrative hearings

7.6 Active / Real Time Control System Evaluation

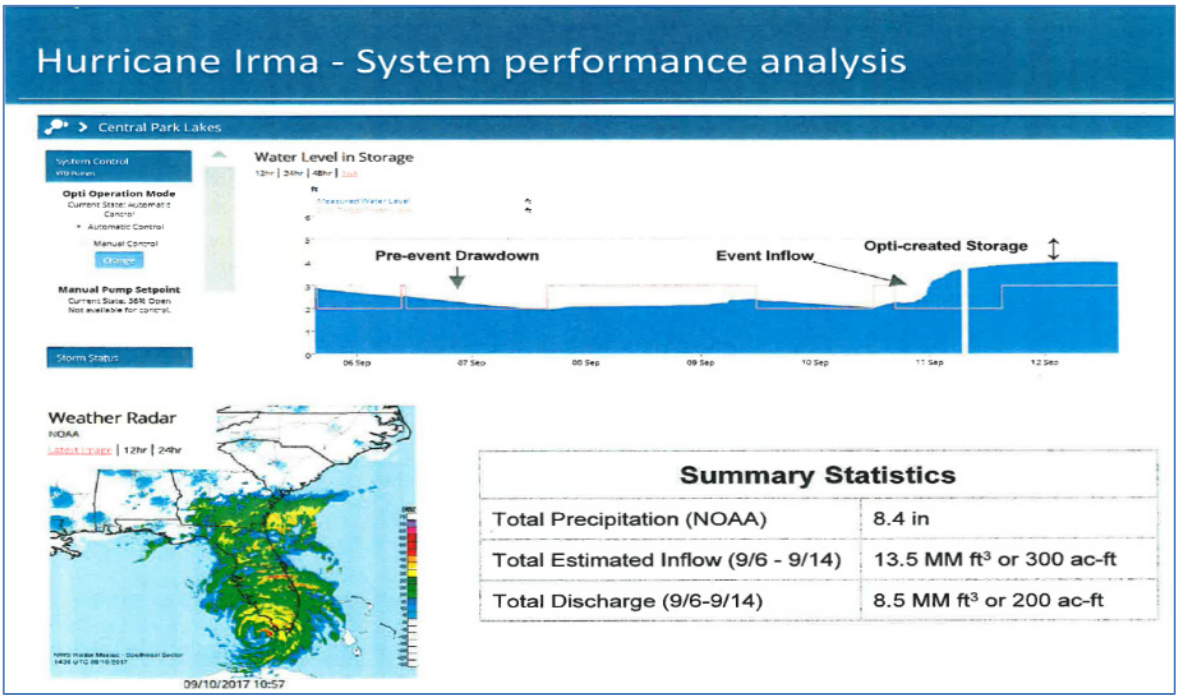
Traditional stormwater management systems and BMPs typically rely on passive gravity controls to manage storage and drawdown for flood attenuation and water quality treatment. These systems respond to rainfall events reactively without the benefit of factoring in weather forecasts or current storage volumes. Likewise, many municipalities operate stormwater pumps systems to recover flood stages in land locked or flood prone areas. These systems are also reactive in that the pumps are used to address rainfall induced flooding conditions once they have begun.

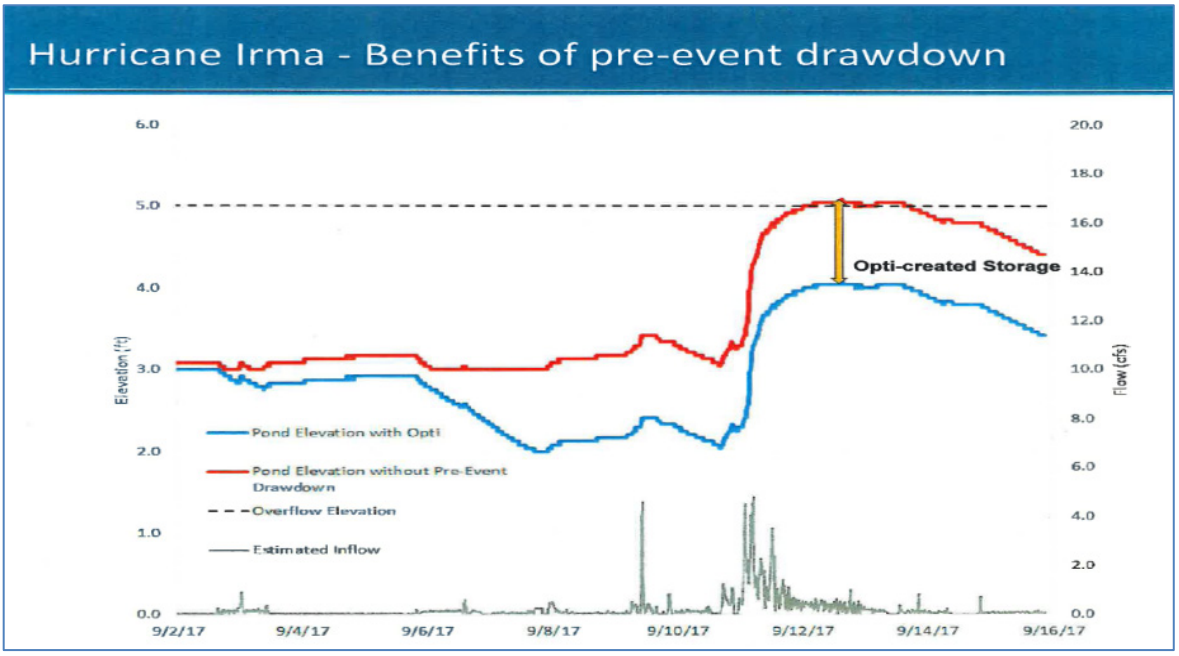
Increasingly, improved management of passive stormwater systems and BMPs have been achieved by using automated, performance-based systems. These help with the functionality of specific BMPs allowing them to react based on external conditions. These active / real time control systems help to assign operational controls or values to system based on various conditions such as weather forecasts, upstream / downstream flows or levels, or storage / treatment curves to help make decisions to improve stormwater management. Often these systems can be applied with minimal field instrumentation or plumbing, easily plugged into a dashboard or other web-based interface hardwired or using cellular telemetry to provide the "active" control element. The active control aspect provides the opportunity to leverage any number of operating conditions and respond to emergency needs on a more proactive and responsible basis. Through the use of web-based dashboards and targeted field equipment with sensors selected by the user to gather specific data, the user can review real-time and historical data at the installed sites.

These types of system can be applied to a range of BMP applications. For wet detention ponds, much of the water quality treatment occurs in the permanent pool volume. Wet detention systems with passive discharge systems have long interevent periods of no rainfall which may not be taking account of the opportunity to use the additional pond volume during dry periods for additional treatment. This is balanced by the need for flood attenuation storage in the pond, so a system which can hold onto water between rainfall events but uses weather forecast to know when to draw the pond down for flood attenuation could more effectively manage stormwater. Likewise, stormwater harvesting systems often rely on stormwater storage system to provide sources water to offset potable needs for irrigation, etc. An active control system could help to maximize the use of stormwater when available to reduce the reliance on potable water.

The City of Ormond Beach has successfully implemented one such project leveraging this type of system in its Laurel Creek Basin retrofit project. The City partnered with the Opti® Platform to provide active management to the pump station system to reduce the instance of flooding. Opti's platform incorporates real-time data and weather forecasts to automatically control the timing and rate of stormwater flow through upstream storage facilities, helping transform passive stormwater assets into smart, efficient and resilient systems. For this project, the City currently utilizes the Opti technology to regulate installed pumps near five interconnected Central Park Lakes to maximize flood storage. During a severe storm event in 2009 (i.e. tropical storm), the stormwater system within the Laurel Creek Watershed became overwhelmed with 27 inches of rain. Nearby buildings and critical roads became inundated resulting in approximately $50 million in damages. In an effort to reduce future devastating events, the Opti forecast based control system was installed to predict stormwater runoff prior to a severe rainfall event. The information obtained from the system is used to command the installed pump stations to release excess water as a preventative action of the Lakes overflowing into the surrounding neighborhoods. This system was put to the test during Hurricanes Irma (2017) and Dorian (2019), which resulted in the lakes either being

lowered to receive excess stormwater and provide operational feedback (such as instances of pump malfunction. The implementation of this system and upgrade to the existing pump system within the area has saved the City an estimated $7.8 million.





Various areas within the city experience flooding during severe rainfall events and/or would benefit from enhanced water quality treatment. Implementing active / real time control system may help optimize these systems.

7.7 Maintenance BMPs

Proactively maintaining the City's stormwater MS4 system properly can have significant positive effect on flood mitigation and water quality improvement. The Program Operations and Maintenance assessment in Section 8 provide details on a wide range of maintenance activities. Two specific one's worthy of discussion are street sweeping and baffle box clean out. The State FDEP provides credit for all the mass of sediment, debris and vegetative materials removed from these activities, so the more material collected and disposed of properly, the higher the pollutant load reduction credit obtained under the City's NPDES permit. Based on the foregoing, it is recommended the City investigate opportunities to enhance the effectiveness of these maintenance programs through a frequency and route optimization process.

7.8 Future Considerations

Future climate related impacts to the performance of BMP's may be experienced in several ways. Implementation of flooding and water quality BMPs should take into account these potential future changes in conditions in order to maximize the BMPs long-term viability.

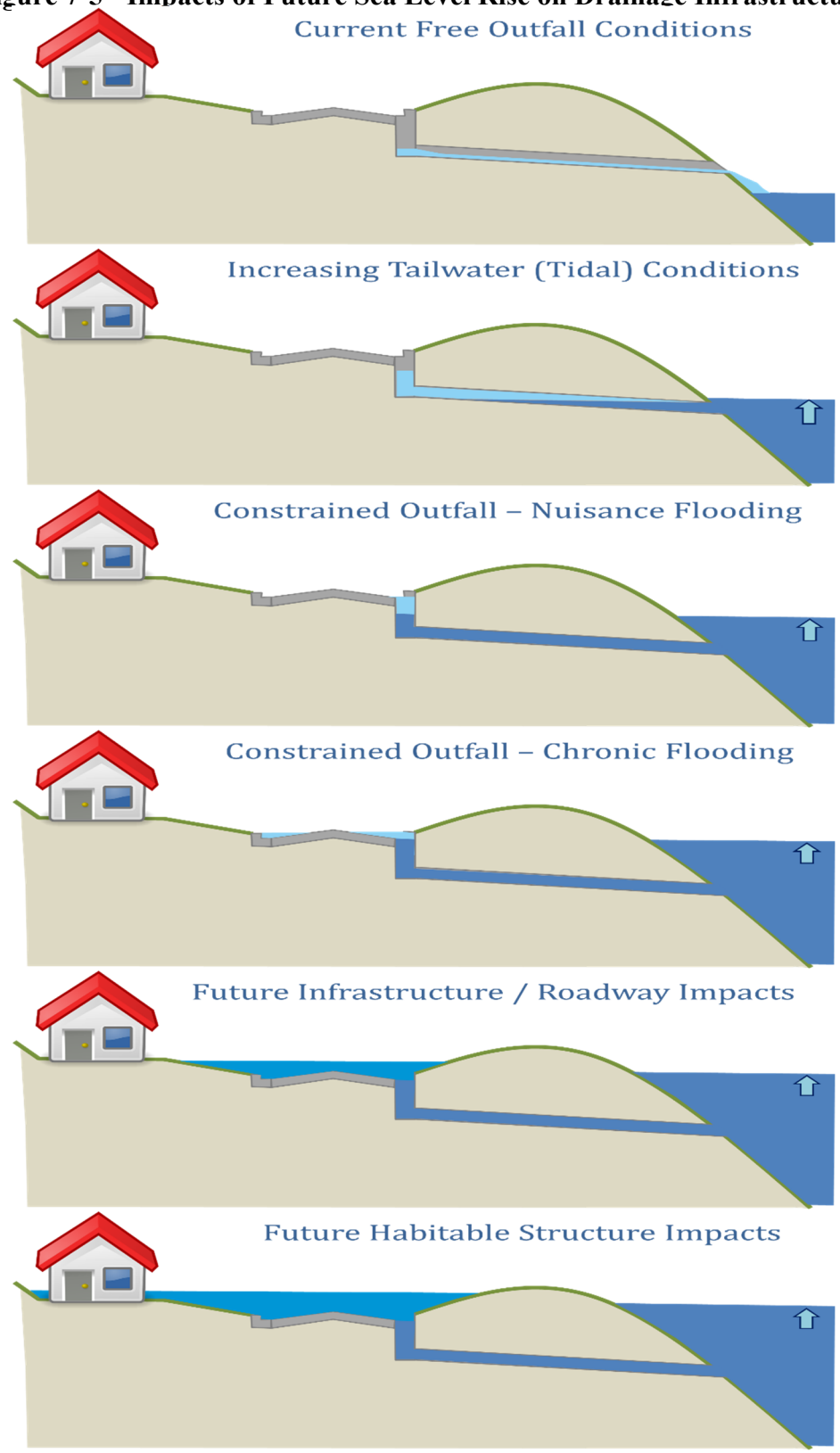
The most obvious future change impact is that of sea level rise. In a coastal city such as Ormond Beach, tailwater in the Halifax River and the Atlantic Ocean is a significant factor determining the effectiveness of stormwater drainage through the various outfalls in the city. Higher tailwaters induced by coastal ocean level rise can inhibit that drainage. Current and future projections of sea level rise should be monitored for consideration of the magnitude of potential tailwater impacts imparted on the BRL from ocean rise.

Increases in sea level rise can also impart a corresponding increase in ambient groundwater table. Where BMPs rely on infiltration to the groundwater table to recover treatment volume, increases in groundwater table level can inhibit their proper function. For example, dry detention ponds and exfiltration systems rely upon a separation between the bottom of these facilities and the groundwater table to allow for dissipation of surface runoff into the shallow aquifer in between storm events. Where the groundwater table may rise, or in extreme cases intersect the bottom of these facilities, their effectiveness for water quality treatment and flood attenuation can be severely limited (or in some extreme cases completely eliminated).

Another significant impact of future climate change may be changes in rainfall intensity and patterns. If typical wet season storms increase in depth and/or intensity, that may impact the performance of drainage infrastructure that was designed to a particular level of service. For example, if a storm drainage facility was designed to convey a 10 year 24 hour storm with a rainfall depth of 7.5 inches, these systems may not function properly if future climate changes result in a 10 year storm having either more rainfall depth over the same 24 hour period (for example 9 inches) or the same amount of rainfall depth falling in a lesser amount of time (for example 12 hours - i.e., higher rainfall intensity). Issues with inlet capacity and spacing of storm inlets with drainage systems then become very important and retrofits necessary.

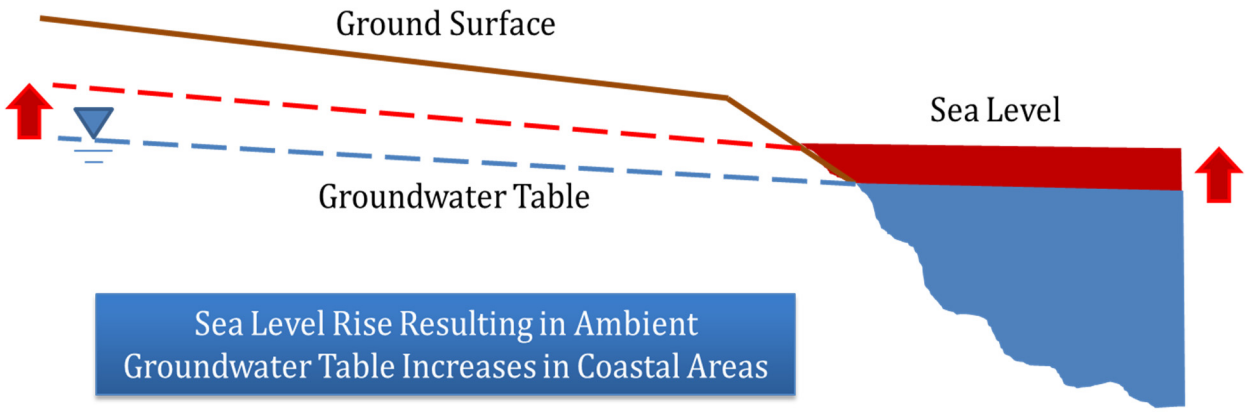
Individually each of these factors can have a significant effect, but a potential scenario where all three are impacting drainage infrastructure could cause severe problems. The future conditions flood level of service modeling performed under the flooding assessment task of the SMPU demonstrated the potential significance of these impacts. Illustrations of the impact of these issues are shown on **Figures 7-5, 7-6, and 7-7** on the following pages.

Figure 7-5 - Impacts of Future Sea Level Rise on Drainage Infrastructure



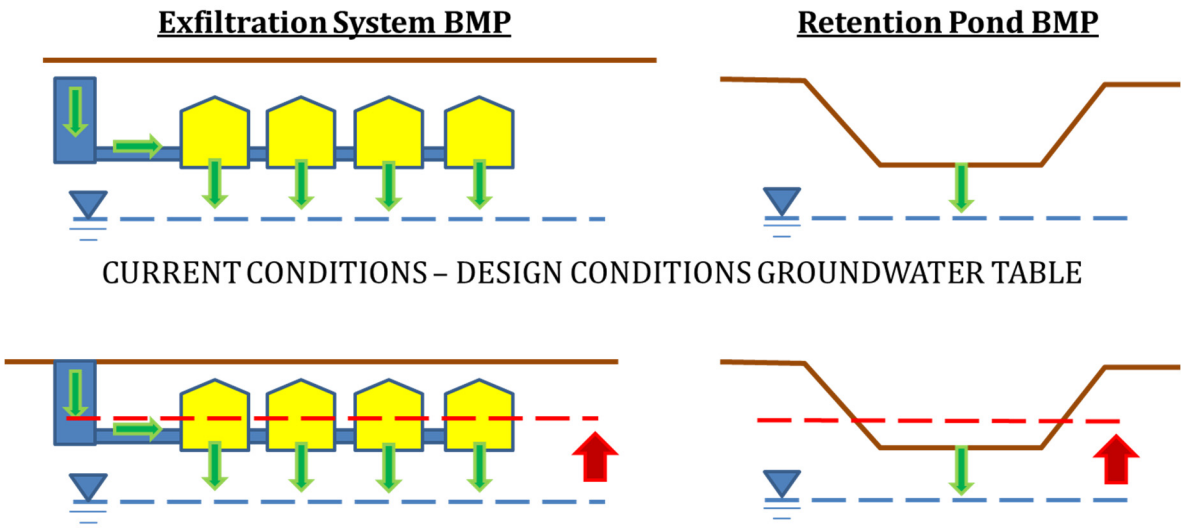
Geosyntec, 2021

Figure 7-6 - Impacts of Sea Level Rise on Groundwater Tables in Coastal Areas



Geosyntec, 2021

Figure 7-7 - Impacts to Infiltration-based BMP from Groundwater Table Rise



Geosyntec, 2021

It is recommended that the City consider a study into the impacts of these future conditions in order to confirm BMP vulnerability and identify improvement measures that may increase the function of existing infrastructure under these potential future conditions. This would identify areas and specific locations that may need to have infrastructure upgrades or enhancements to allow for continued effective storm attenuation and treatment in future decades. This should first

focus on City maintained rights of way and facilities. The efforts should then be expanded to also look at impacts from loss of function associated with the FDOT and private drainage systems that may interact with the City systems either by design or under overflow conditions.

These efforts can also lead to identification of opportunities to update City land development code to ensure that stormwater systems associated with new construction accommodate these future changes. This may be through measures such as increased level of service criteria, enhanced BMP requirements, and changes to building standards. The potential economic impact of these changing future conditions to City infrastructure and future development may be significant.

8. PROGRAM OPERATIONS AND MAINTENANCE

The purpose of this chapter is to review the City's current stormwater infrastructure inventory, its current inspection and maintenance program, and to provide recommendations for improving the operation and maintenance of the City's stormwater system to ensure it functions optimally. Additionally, good operational strategies help prolong the infrastructure's life span thereby reducing capital costs. They also help the City be proactive in its recovery and replacement program by identifying issues before they become major problems. In Ormond Beach, as in most Florida communities, a myriad of stormwater tasks must be executed in an effective and cost-efficient manner using a very limited number of employees. The stormwater management program needs to have staffing levels sufficient to support operations and maintenance activities that will protect the integrity of the infrastructure and allow continuous progress in meeting program goals. To increase efficiency, the City is using a GIS-based electronic asset management system and will need to integrate it with the new "Tyler" administrative tracking system.

8.1 Stormwater Infrastructure Inventory

The elements of the City's stormwater management system include the following components (using the City's preferred nomenclature) that must be operated and maintained by the stormwater staff:

- Inlets (AKA catch basins or storm drains) - Are structures that allow for entry of stormwater to a closed stormwater conveyance system. There are 4 type of inlets: Curb Inlet, Grated Inlet, Flume, Other. The City owns and maintains 3810 inlets.
- Storm sewers (AKA storm drains or pipes) – Are underground pipes that convey stormwater downstream to a discharge point, typically to a water body. The City has nearly 100 miles of storm sewers to maintain.
- Manholes - Are structures that allow access to storm sewers or underground BMPs for inspection and maintenance. The City has identified approximately 906 manholes they currently inspect and maintain.
- Outfalls – Are the locations where the City's storm sewers discharge to water bodies, mainly the Halifax River, Tomoka River, and Strickland Creek. The City has a total of 109 outfalls.(it is noted that 125 outfalls were reported in the NPDES MS4 annual report)
- Carp Gates
- Swales – Are shallow, grassed conveyances that are used primarily for moving stormwater in less urban areas. They can provide stormwater treatment via infiltration when swale blocks or raised driveway culverts are used to create mini-retention areas. Swales also can be used as part of a LID BMP treatment train to convey stormwater between BMPs. The City has 16 miles of swales they maintain.
- Inlet baskets (AKA catch basin inserts) – Are devices installed in storm drain inlets that provide water quality treatment through gross solids separation, filtration, settling, or adsorption. The City has 6 inlet baskets.

- Wet Wells – Are small French drains used to reduce nuisance flooding in areas with high water tables. These are located in the Trials subdivision.
- Baffle boxes – Are underground rectangular chambers connected to a storm sewer with partitions dividing the box into sections. Most baffle boxes are buried in-line with the storm sewer leaving only access hatches visible from the ground surface. The hatches provide access for regular maintenance, which is done with a vac-truck. The **second generation (nutrient separating) baffle box** includes a wire mesh box that captures vegetative debris, litter, and other materials from settling in the water in the bottom of the box, thereby preventing leaching of the nutrients. The City owns and maintains 19 baffle boxes.
- Retention areas – Are shallow, vegetated, excavated areas that capture a specified stormwater treatment volume and allow it to either infiltrate or evaporate. Most are on-line systems that also provide flood protection where discharges from the retention area are at the pre-development peak discharge rate. The City maintains seven retention areas.
- Underground storage and retention areas – Are underground storage areas that are being used more frequently, especially when land values are high. Some systems are concrete vaults with sand bottoms beneath buildings or parking lots. Other types of systems use lightweight, high strength modular units with "open" bottoms.
- Exfiltration systems - Are shallow, excavated trenches in which stormwater is stored in perforated or slotted pipes and then percolates out through the surrounding gravel envelope and filter fabric into the soil. Currently, there is one exfiltration system operated by the City.
- Rain gardens - Can be either retention or detention systems that are integrated into a site's landscaping. They are a shallow constructed depression planted with Florida-friendly plants. They are located in the landscape, along roads, or within parking lot islands to receive stormwater from impervious surfaces such as a roof, a sidewalk, a driveway, or a parking area. The planting media may include Biosorption Activated Media (BAM) to increase pollutant removal, especially if they are designed as a detention BMP.
- Pervious Pavements - Replace typically impervious areas with materials that allow for infiltration into the subsurface soils or storage media. They include the subsoil, the sub-base, and the pervious pavement. They can include several types of materials or designed systems such as pervious concrete, pervious aggregate/binder products, pervious paver systems, and modular paver systems.
- Wet detention systems – Are permanently wet ponds that are designed to slowly release a portion of the collected stormwater runoff through an outlet structure. Wet detention systems are the recommended BMP for sites with moderate to high water table conditions. Wet detention systems provide removal of both dissolved and suspended pollutants by taking advantage of physical, chemical, and biological processes within the pond. The City maintains 94 wet detention systems.

Table 8-1 summarizes the City's stormwater infrastructure.

Table 8-1: Stormwater Infrastructure

Facility Types	Amount	Unit
Inlets	3810	Each
Inlet baskets	6	Each
Storm sewers	99.98	Miles
Manholes	906	Each
Pump stations	3	Each
Outfalls – Major and Minor	109 (Note: 125 outfalls listed in the MS4 report)	Each
Carp gates	(not provided)	Each
Swales	16.0	Miles
Baffle boxes	19	Each
Retention areas	7	Each
Rain gardens	(not provided)	Each
Underground retention	1	Each
Exfiltration systems	1	Each
Wet wells	(not provided)	Each
Wet detention systems	94	Each
Pump stations	(not provided)	Each

8.1.1 Common Maintenance Activities and Schedules

Each of the stormwater systems within the City have specific maintenance requirements. However, many of them also have maintenance activities in common. **Table 8.2** lists the recommended inspection and maintenance activities along with their associated schedule to allow for better planning and cost-effectiveness of operations.

The City schedules its maintenance activities based on the dry and wet seasons. During the July to December "wet season" the water table is at its seasonal high, especially from September to November, making it difficult to undertake any construction or maintenance activities that require excavation. During this time, the water table normally is two feet higher, so the City conducts inspections of its facilities and conducts light maintenance activities such as landscape mowing and trimming. It also focuses on keeping debris out of the system to ensure it is fully operational during the rainy season and hurricane season. During the dry season between January and June, the City schedules construction activities and major maintenance activities that require excavation or that were found during the wet season BMP inspections. Additionally, inspections and maintenance of stormwater outfalls and pipe cleaning are done during the dry season.

The information in **Table 8-2** should be reviewed annually to increase accuracy and appropriateness of activities and whether the frequency of inspections or maintenance activities need to be adjusted to optimize stormwater system operation.

Table 8-2 - Stormwater BMP Inspection and Maintenance Activities and Schedule

Category of Stormwater Components	BMP or Component	Inspection Activities	Level of Service and Maintenance Activities	Schedule[1]
Infiltration Practices	Retention area	• Maintain vegetated areas to keep healthy and prevent erosion • Accumulation of debris and litter at inflow and outlet structures, trash racks, and other components • Monitor sediment accumulations at inflows or on bottom	• Mowing, weed eating, weed removal, replanting • Remove to prevent clogging • Remove sediments from inflows and bottom when causing flow restrictions	Inspect once every two months and conduct O&M as needed Usually done during the dry season
		• Monitor long term sediment accumulation over time • Bottom holding water or growing cattails or other wetland plants • Ensure storage volume recovery within 36 - 72 hours;	• Remove when 20% of storage volume lost • Eliminate mosquito breeding; • Determine cause of loss of infiltration capacity and restore to design infiltration rate	5-year cycle or as needed Every 2 years after rainy season
	Rain garden	• Maintain mulch and plants to keep healthy and prevent erosion or scour	• First growing season, weed, mulch, water and replace plants as needed. • Do annual dry season and wet season maintenance activities. This includes removing dead plant material and maintaining healthy plants. During the dry season, accumulated sediments are removed, new plants and mulch are added, and erosion or scour are repaired.	Inspect once every other week to ensure proper function, plant health Conduct annual dry season and wet season maintenance
		• Accumulation of debris, litter, and sediments in pre-treatment BMPs, inflow, or upstream storm sewers • Erosion or sediment accumulation in rain garden • Ensure storage volume recovery within 36 -72 hours;	• Remove to prevent clogging of system • Remove sediment when causing flow restrictions or when 20% of storage volume is lost; repair erosion as needed. • Determine cause of loss of infiltration capacity and restore to permitted rate	Inspect before and after the wet season or as-needed based on historical O&M. Do O&M activities as needed, generally in dry season Annually after rainy season
	Underground retention	• Accumulation of debris, litter, and sediments in pre-treatment components, inflow, or upstream storm sewers • Check bottom soils for scour, erosion, signs of clogging or debris • Check bottom soils for sediment accumulation • Ensure storage volume recovery within 72 hours	• Remove when needed to prevent flow restrictions or clogging of system • Remove debris, rake bottom sands and level • Determine cause of loss of infiltration capacity and restore to permitted rate; replace bottom sand if clogged	Inspect quarterly and after the wet season. Also, after storms > 1". Conduct O&M as needed. Conduct during dry season Inspect for infiltration rate after significant storm events and after the rainy season (Jan-May)
	Exfiltration system	• Accumulation of debris, litter, and sediments at pre-treatment sump, inflow, or upstream storm sewers • Use observation well or inspection ports to ensure storage volume recovery within 72 hours	• Remove to prevent flow restrictions or clogging of system • Determine cause through CCTV or other means. Use high pressure washer to unclog pipe; • Replace failing system	Inspect quarterly and after the wet season. Also, after storms > 1". Conduct O&M as needed Inspect for infiltration after significant storm events and after the rainy season
	Swales	• Maintain vegetation of bottom and side slopes to keep healthy and prevent erosion • Inspect and monitor sediment accumulations on bottom and at inflows • Inspect to determine if there are any flow obstructions or damage • Inspect for standing water and ensure storage volume recovery within 72 hours	• Mowing, weed eating, weed removal, replanting • Stabilize eroding areas, replant if needed • Remove sediments from inflows and bottom if flow is restricted. Remove sediments when 20% of storage volume is lost • Remove obstructions and restore flow; repair damage • Eliminate standing water and restore infiltration capacity	Inspect during the rainy season and conduct O&M as needed during the dry season

Category of Stormwater Components	BMP or Component	Inspection Activities	Level of Service and Maintenance Activities	Schedule[1]
	Pervious pavement	• Ensure all edge constraints and overflow areas do not have erosion • Check for raveling or clogging of pervious pavement, sediments accumulation • Ensure storage volume recovery within 72 hours	• Repair erosion; Ensure contributing drainage area is stabilized, no sediments • Remove sediments, conduct vacuum sweeping • Repair raveling • Determine cause of loss of infiltration capacity and restore	Inspect during wet season to assess performance. Conduct O&M as needed during dry season (Jan-May).
		• Use Embedded Ring Infiltration Kit (ERIK) to ensure vertical hydraulic conductivity is > 2"/hour	• If < 2"/hour submit remediation plan to City for approval	Once every two years
Detention Practices	Wet detention	• Inspect inflow/outflow structures, trash racks, skimmers for accumulation of debris and trash • Maintain vegetated cover on side slopes to keep healthy and prevent erosion • Inspect and monitor sediment accumulations in pre-treatment BMPs, sediment sump, and at inflows • Inspect for mosquito breeding habitats; presence of mosquito larvae and/or mosquito fish • Inspect littoral zone vegetation to ensure healthy, no cattails or exotics becoming established • Inspect and ensure manifold pump is working • Inspect and measure sediment or alum floc accumulations in permanent pool	• Remove materials to prevent clogging or flow restrictions • Mowing, weed eating, weed removal, replanting • Remove sediments to prevent flow restrictions • Add mosquito fish or larvae-cide as needed • Remove cattails and exotics; replant to ensure 30% coverage • Pump out accumulated sediment or floc twice a year – before and after the wet season.	Inspect annually before and after the wet season. Conduct O&M as needed, generally in the dry season
Filtration Practices	Rain gardens with BAM filters	• Follow recommendations for rain gardens above • Determine if filter media needs replacement • Inspect underdrain discharge pipe to ensure proper flow or determine if it is clogged • Use observation wells or inspection ports to determine if treatment volume is being recovered in design time period	• Replace filter media as needed to maintain pollutant load reduction • Flush underdrains to maintain or restore their flow capacity • Determine cause of loss of discharge capacity and restore	Inspect during storm events to evaluate performance. Conduct O&M during the dry season or as needed
	Inlet baskets or filters	• Accumulation of debris, litter, or sediments creating flow blockage or restriction • If used, inspect filter media to see if effective	• Remove and ensure flow is restored • Replace filter media per manufacturer specs	Inspect during storm events to evaluate performance. Conduct O&M during the dry season or as needed
	Alum injection system	• Follow recommendations for wet detention system above • Check amount of stored alum • Check operation of pumps, controllers, flow meters, and other mechanical components • Monitor alum accumulation and disposal	• Ensure sufficient alum for 6 months of system operation; order alum as needed • Repair any components that are not operating correctly • Ensure proper disposal of alum	Contractual inspection - lift station performance and instrument calibration by qualified technician quarterly. Refer to O&M manual for specific system inspection/maintenance requirements.

1. For the purposes of this table, the "dry season" is from January to the end of May, and the wet season is from June to December.

8.2 Division Operations and Maintenance: System Maintenance

Maintenance activities can be classified as preventative, corrective, or reactive. Preventative activities occur on a scheduled basis. Sometimes this is called "management" instead of maintenance. Such activities aid in expanding the lifespan of infrastructure. Over time, infrastructure needs to be repaired to extend its operational time. These are considered corrective activities. Corrective activities can be caused by the age of the structure or by accidents that may occur from human or natural instances. These activities also can occur if facilities fail. Reactive activities occur when landowners call the City with a complaint. Lastly, maintenance activities can be associated with major storms such as hurricanes. City staff or contractors are used for these activities. Over the fiscal year 2017, the City's work orders consisted of mainly of repair or reactive activities.

The City currently uses a combination of reactive and preventive approaches in scheduling operation and maintenance activities. The majority of stormwater operations are reactive, responding to flooding complaints. These increase during the spring leaf fall season due to the clogging of inlets. Additionally, over the years, the City's stormwater staff has identified "problem areas" that merit regular inspections and maintenance. Areas that have been annexed into the City also have greatly increased operation and maintenance demands as these areas often have poorly functioning stormwater systems. Many of these areas do not have curb and gutters and swales often drain onto private property for which the City has no easements. The City also has issues maintaining some of their outfalls because they are on private property and there is no City easement. Because of the City's closed basins, a major focus for the stormwater staff is inspecting and maintaining pump stations to ensure they operate properly.

The City has a Memorandum of Agreement with FDOT to conduct mowing along state highways and ditch lines. Part of this work is contracted out by the City. Inspections of the stormwater systems are conducted prior to mowing helping to identify maintenance needs. Additionally, the City also contracts for monthly maintenance of wet detention systems at the Ormond Beach Sports Complex, Ames Par, Environmental Discover Center, Rockefeller Gardens, South Ormond Neighborhood Center, Central Park, Division Avenue, and Old Kings Road.

8.2.1 Preventive Maintenance

Preventive maintenance uses scheduled inspections based on known O&M needs and the desired Level of Service. They help ensure facilities are managed and maintained to protect people and property against flooding and to reduce stormwater pollutant loadings discharged to the Halifax and Tomoka Rivers. Preventive activities include many routine management activities that are needed to ensure proper operation and benefits. These include:

- Inspections – staff should conduct regular inspections of stormwater facilities and also conduct visual inspections of stormwater components as they travel and work around the City.
- Grass mowing – most retention areas and swales will require regular mowing
- Vegetation management – fertilizers should only be applied following soil and leaf tests with the type and amount of fertilizer to be used based on the test results. Herbicides should only be used as a last resort when eliminating weeds or invasive plants.

- Ditch cleaning - the City has an extensive network of stormwater ditches that need regular aquatic weed control and periodic sediment removal. The City has two certified aquatic weed control specialists along with a boat to conduct these operations.
- Sediment accumulation – monitor sediment accumulation in retention areas, rain gardens, and swales. Remove sediments when storage capacity is reduced by 20%.
- Removal and disposal of trash and debris – all areas need to be kept free of trash and debris to prevent flow impediments.
- Sump sediment removal and disposal - sumps in catch basins and in rain gardens need regular inspection and removal of sediments when the sumps are 50% full of sediment.
- Storm sewer inspection and cleaning – needs to be done on a regularly scheduled basis to minimize storm sewer clogging. The City has closed-circuit TV that can be used to video inspect small, partially submerged storm sewers. Another priority is lining leaky storm sewers made from Concrete Metal Pipe.
- Mechanical component operation – needs to be checked regularly to ensure that components function properly.

Preventive activities also seek to reduce the amount of debris, sediments, and pollutants that enter the city's stormwater system. These include public education programs, the City's illicit discharge ordinance, pollution prevention regulations such as the fertilizer code, and street sweeping.

Current non-structural preventative maintenance activities include the following:

- Public Education - The City implements a stormwater public education program as part of its NPDES MS4 permit. Currently, the program includes a variety of printed materials (e.g., A Citizens Guide to Stormwater Ponds; Florida-friendly Landscaping; Water Wise Florida Landscaping; Save the Swales; Pointless Personal Pollution); a City Pollution Prevention Educational Website; a storm drain marking program; City Employee Municipal Pollution Prevention Training; and stormwater presentations to public schools, homeowner associations, and clubs.
- Pet Waste Stations – The City has Pet Waste Stations that are serviced regularly. In 2017, the City collected a significant amount of pet waste.
- Illicit Discharge Detection and Elimination – Division 3, Stormwater Pollution Prevention, of Article V of Chapter 22, Code of Ordinances, contains the City's Pollution Prevention requirements. It includes the City's Illicit Discharge Ordinance which specifies what can and can't be discharged into the City's stormwater system. The stormwater staff conduct inspections to identify and eliminate potential illicit discharges to the City's MS4.
- Florida-friendly Landscaping and Fertilizers – The City has not adopted the Florida-friendly Fertilizer Model Ordinance, nor has it amended its Landscaping Requirements in Article I of Chapter 3, Performance Standards, to require landscaping to be designed in accordance with the principles of the Florida-friendly landscaping program. Volusia County has adopted a Florida-friendly Fertilizer Use Ordinance in Chapter 50, Article VIII. This is required by Section 403.9337, F.S., since the County and the City are within the watersheds of the Halifax and Tomoka Rivers, both of which are nutrient impaired water

bodies with an adopted TMDL. The City should adopt by reference the Volusia County ordinance to ensure that application of fertilizer within the City complies with county requirements.

- Wetlands Protection – Section 3-21, of Article II, Environmental Protection Standards, in Chapter 3, Performance Standards, of the City's LDC, establishes the City's wetland protection requirements and standards to develop in or adjacent to wetlands.
- Street sweeping - The City conducts street sweeping services. Monthly sweeping is done for all curbed streets and city parking lots. Twice monthly sweeping is done in highly urbanized areas and areas with heavy tree canopy. In 2019, the City reported 5,585 curb miles were swept with over 657 tons of material removed. The City's sweeper has a GPS thereby providing sweeping documentation.

Current structural BMP preventative maintenance activities include:

- Inlets - Stormwater utility staff conduct visual inspections of all inlets/catch basins at least once a year while key inlets and BMPs are inspected and maintained several times a year. In 2017, 166 inlets were cleaned.
- Inlet baskets – These BMPs are used in the downtown area and heavily treed areas to reduce the amount of debris and pollutants that enter the storm sewers. Inlet baskets are inspected at least quarterly, with increased inspections and cleaning after heavy rainfalls. Maintenance is done as needed. In 2017-18, the city's six inlet baskets were inspected and cleaned 166 times. It is essential that Inlet Baskets be inspected and maintained regularly to prevent them from clogging and reducing stormwater inflows thereby causing flooding.
- Storm sewers and Manholes - Currently, the City regularly inspects and/or maintains pipes and manholes with a vacuum truck. Additionally, The City hires a contractor to inspect storm sewers with closed-circuit televising equipment. In 2017, the City inspected and cleaned 72,310 linear feet of storm sewers. The City has recently purchaed an Aqua Tech storm Cleaner and new TV truck.
- Outfalls – The City has 125 outfalls that discharge to receiving waters including the Halifax River, Tomoka River, and Strickland Creek. Nearly all the outfalls are submerged. The City inspects all outfalls on an annual basis. In 2017, the Stormwater Utility staff inspected all of their outfalls.
- Swales - Several of the roads in the City have roadside swales that convey and retain stormwater. They are inspected monthly.
- Baffle boxes – The City has 19 baffle boxes it operates and maintains.
- Retention areas - The City has seven retention areas that are regularly inspected.
- Underground retention systems– The City's one underground retention system that is inspected regularly to ensure they continue to recover the treatment volume in a timely manner.
- Wet detention systems – The City's 94 wet detention systems are inspected regularly.

- Illicit discharge hotspot inspections – The City does not have any known hotspots. They tested 33 outfalls for illicit discharges and pollutants and also inspected 157 stormwater structures for illicit discharges during 2017. The City did not find any illicit discharges.

8.2.2 Corrective Maintenance

Corrective maintenance activities are done on non-routine or emergency basis to correct problems and restore the facility's proper operation. They typically occur after an inspection or in response to a complaint. Such corrective activities typically involve structural repair to a facility. Failure to conduct corrective maintenance may lead to the facility's failure and even threaten the structural integrity of a facility. Corrective activities (sometimes called renewal or replacement) eventually are required on all components of the City's stormwater infrastructure. The scheduling and cost of such corrective actions, especially renewal or replacement, must be planned for in the long-term budget. These costs can be reduced by following a preventative maintenance schedule to the greatest extent feasible given staff and budget limitations.

Unfortunately, very few local governments conduct inspections of their storm sewers proactively, even if they have the close-circuit video equipment to perform this task. However, inspections need to be done to ensure the following typical problems in storm sewers have not occurred:

- Joint Separation – The physical separation of different sections of pipe along the barrel typically caused by differential settlement, improper pipe compaction, or from wearing out of joint material – plastic/rubber gaskets, etc.
- Buoyancy Failure – Failure occurs because trapped air in the pipe creates uplift forces. This force can cause the ends of the pipe to bend upward or the entire culvert to be displaced.
- Static and Dynamic Loading – Overburdening (placing too much static weight on the pipe) or inappropriate dynamic loading (e.g. driving a heavy piece of equipment over a pipe with insufficient backfill) causes failure.
- Material Compatibility – Designs with several pipe materials may not bond well, especially if dissimilar pipe materials are placed in precast forms on holes, and then grouted to be watertight.
- Most non-cementitious materials do not bond well to concrete or masonry as these materials tend to shrink over time. It is common to see leaks in the control structures where plastic or steel pipes enter through concrete.
- Vandalism – Acts include filling with rubble and debris and crushing exposed ends of concrete, plastic and clay piping.
- Corrosion Fatigue – Fatigue type cracking of metal caused by repeated or fluctuating stresses in a corrosive environment is characterized by shorter life than would be encountered as a result of either the repeated or fluctuating stress alone or the corrosive environment alone.
- U/V Deterioration: Plastic piping is susceptible to deterioration from sunlight and even UV resistant material will become brittle and fracture given enough exposure.
- Internal Corrosion – Corrosion that occurs inside a pipe because of the physical, chemical, or biological interactions between the pipe and the water.

- Abrasion – Deterioration of a surface by the abrasive action of moving fluids - this is accelerated by the presence of solid particles or gas bubbles in suspension.
- Sediment – Buildup of sediment in the pipe as time passes. This commonly is the greatest reason for capacity loss in stormwater systems. Cleaning this sediment out of large submerged pipes is VERY difficult and the City currently doesn't have the equipment to accomplish it at this point. If you plug and pump out the water so you can clean, you risk compromising the system because water is infrastructure. When the water is pumped out, it can weaken joints/pipes and cause cracking/joint failure. Evacuating large pipes of water can cause surface failure along with pipe failure because the water is keeping the system supported. In many cases, need to have a storage area downstream that can be capture the sediments and water for treatment. In the past, the City had a specific nozzle for large lines but currently only has nozzles are for small lines <16-24").

Corrective maintenance activities at other facilities may include:

- Inlets/Catch basins - Repair or replace concrete, as needed. Repair or replace grates.
- Storm sewers and Manholes - Correcting problems listed above including replacement or lining cracked pipes.
- Outfalls – Repair or replace concrete, as needed.
- Swales - Remove accumulated sediments when 20% of the design storage volume has been lost to restore retention volume and conveyance capacity. When possible, use sod cutter to save grass for reuse. This prevents disposing of sod in the landfill and adding nutrients from fresh grown sod.
- Baffle boxes – Remove trash and debris, especially vegetation, from inlets and the box. Also be sure screen in second generation systems are free from trash and debris.
- Retention areas - Remove invasive plants, such as cattails, and accumulated sediments once 20% of the design storage volume has been lost. When possible, use sod cutter to save grass for reuse.
- Rain gardens - Remove invasive plants, such as cattails, and accumulated sediments once 20% of the design storage volume has been lost. Prune or replant vegetation as needed.
- Underground retention or exfiltration systems – Repair or replace pipes, as needed. If clogged, try vacuuming or high-pressure washing before replacing the pipes or storage structures.
- Wet detention systems – Repair or replace concrete, as needed; remove invasive plants, such as cattails; prune or replant littoral zone vegetation, as needed to maintain 30% coverage of surface area.

8.2.3 Reactive Maintenance Activities

Reactive maintenance activities occur when residents or businesses call the City with a stormwater complaint. Typically, these arise when a property owner experiences flooding, erosion, or sedimentation. Sometimes the cause of the problem is associated with the City's stormwater infrastructure. In such cases, the Stormwater Utility staff identify what is causing the problem and

then fix it. However, many of the stormwater problem complaints the City has received are not associated with problems in the City's stormwater management system. Instead, many of these flooding problems have been caused by property owners who:

- added fill or other material to their property that changed the flow of stormwater
- repaired, replaced, or modified a seawall without ensuring the City's outfall pipe/headwall is not harmed and is functional.
- Conduct land-altering development activities including building larger dwellings, pools, decks, additions, sheds, additional fill or other permitted or unpermitted construction/structures that allows for less rainfall infiltration and diverts runoff to adjacent properties on the street or directly to lagoon.
- installed stormwater controls that did not work as designed and inadvertently caused problems on other property.

Additionally, the City's Stormwater Utility staff are spending a good deal of time and effort addressing stormwater problems in recently annexed areas. In general, these areas have unpaved or uncurbed roads and "rural" stormwater systems such as swales/ditches that are in disrepair. Additionally these areas have high water tables that make swales inoperable.

8.2.4 Pre-storm and Post-storm Maintenance Activities

The City has a written SOP for pre-storm preparation activities and for post-storm restoration activities. This will help to ensure that the City's stormwater system is fully functional during and after a major storm, such as a hurricane.

8.2.5 Routine Maintenance Tasks and Crews

Currently, the Stormwater Utility has eight operations staff that are responsible for inspecting and maintaining the City's stormwater management system. For safety, the crews generally they work in teams of two. Maintenance activities consist of a number of one and two person jobs as listed below:

1-Person task

- Mowing: Reach out mower; Brush hog mower; Slope mower; Hand mower
- Inlet surface cleaning manually (basin cleaning)
- Ditch and pond inspections
- Carp gates and lift station pump inspections
- Outfall inspections and cleaning
- Outfall discharge water monitoring
- Locating stormwater infrastructure
- Daily small equipment maintenance
- Daily heavy equipment maintenance

2-Person Crew tasks

- Vac truck: Basin cleaning; baffle box cleaning; storm sewer cleaning; manhole cleaning; dry well cleaning; pump station cleaning; excavations
- Storm sewer or culvert replacements
- Ditch and pond litter removal
- Inlet surface cleaning manually (basin cleaning)
- Repairs to inlets, basins, manholes, outfalls, headwalls, pipes,
- Catch basin cleaning/inlet basket cleaning
- Chemical ditch and pond spraying for weed control
- Ditch and swale excavation and reshaping

Based on the NPDES MS4 Annual Report covering June 1, 2016 through May 31, 2017, the following tasks dominated the time and effort dedicated to inspecting and maintaining the City's stormwater infrastructure:

- Basin inspection, cleaning, and repairs
- Catch basin inspection, cleaning and repairs
- Inlet inspection, cleaning, and repairs
- Baffle box inspection and cleaning
- Dry well inspection, cleaning, and repairs
- Manhole inspection and cleaning; repairs or replacement
- Outfall inspection, cleaning, and repairs
- Carp gate inspection, cleaning, and repairs
- Pump station inspection and cleaning; repairs or replacement parts
- Storm sewer inspection and cleaning; pipe repair, lining, or replacement
- Retention system inspection, litter removal, mowing; repairs
- Detention system inspection, litter removal, aquatic weed maintenance; repairs
- Swale inspection, litter removal, mowing; sodding and repairs
- Ditch inspection, litter removal, sediment removal, mowing, aquatic week removal, reshaping
- Stormwater system locating of components/mapping
- Construction operations to repair, replace, or correct other problems
- Equipment maintenance
- Responding to complaints

Table 8-3 lists typical labor hours associated with common maintenance activities.

Table 8-3 - Labor hours associated with common O&M activities (Values are person hours)

TASK	SMALL FACILITY (Total area < 0.25 acre)	LARGE FACILITY (Total area > 1 acre)
Preventative Maintenance Tasks		
Mobilization	1	1
Inspection & reporting	1	2
Sediment removal	4	6 -10
Grass cutting	1	1 - 4
Landscape maintenance	1 - 2	2 - 8
Trash & debris removal	0.5	1 -2
Corrective Maintenance Tasks		
Mobilization	2	2 - 4
Trash & debris removal	4	6 -10
Sediment removal	8 – 12	8 - 40
Erosion repair	1 - 4	3 - 8
Fence repair	2 – 4	4 - 10
Structural repairs	24	36 - 72
Dewatering	4	8 - 16
Aquatic vegetation mgmt.	4	6 -16
Mosquito elimination	1	2 - 4
Graffiti removal	2 – 4	4 - 8

Source: FDOT Maintenance Office; Fernandina Beach SWMP

Table 8-4 lists common maintenance activities for the primary components of the City's current stormwater system.

TABLE 8-4 - Common Maintenance Activities for The City's Existing Stormwater System Components

BMP	Mowing or weed eating	Vegetation health, erosion, invasive plants	Sediment accumulate or remove	Debris trash removal	Recover storage volume in time?	Standing water, mosquito issues?	Replace mulch or plants	Clogging reduces infiltration	Discharge structure integrity damage	Structure damage	Repair or replace mechanical parts
Retention area	√	√	√	√	√	√	√	√	√	√	
Underground retention			√	√	√			√	√	√	
Exfiltration			√	√	√			√	√	√	
Swale	√	√	√	√	√	√		√		√	
Rain garden	√	√	√	√	√	√	√	√	√	√	
Pervious pavement			√	√	√			√		√	
Wet detention		√	√	√					√	√	
Pump Stations			√	√		√		√			√
Baffle boxes			√	√						√	
Inlets Curb cuts		√	√ √	√ √						√ √	
Inlet baskets			√	√							
Wet wells	√		√	√						√	
Storm sewers			√	√						√	
Outfalls			√	√					√	√	

8.2.6 Written Standard Operating Procedures

From training and hiring to work policies and procedures, Standard Operating Procedures (SOPs) help private businesses and governments to stay organized, operate smoothly, and ensure that employees understand how to do their jobs effectively. However, having written and up-to-date SOPs is time consuming and seldom a priority given the myriad of tasks that must be accomplished. However, having written SOPs provide many benefits:

1. Protect an organization from knowledge loss.
2. Empower staff to do their jobs effectively with minimal direction.
3. Maintain quality control and consistency.
4. Reduce errors and enhance productivity and cost-effectiveness.
5. Reduce employee training time.
6. Allow work to be transferred to another employee more easily.

Currently, written SOPs are not required for Phase II MS4 permittees. However, the new draft Phase II MS4 Generic Permit will require written SOPs for MCM 3c, Illicit Discharge detection, reporting, and elimination; MCM 4F, Construction Site inspection and enforcement; and MCM 6b, Municipal Operations Pollution Prevention Education. Additionally, it is strongly recommended that the City have written SOPs for the inspection, operation, and maintenance of each component of its stormwater management system, including all BMPs. This is especially true given that key stormwater operations staff are approaching retirement age. Written SOPs can help transfer their knowledge and expertise to their replacements. We also recommend the City have a written SOP for the tracking of data and the resulting preparation of the MS4 permit Annual Report. This will help each of the other City entities that provide data for the Annual Report to understand their commitments and the schedule for providing their data.

Currently, the City has written SOPs for the following stormwater management system components:

- Bennett Lane Emergency Stormwater Pumping System operations
- Wilmette Avenue Emergency Stormwater Pumping System operations

8.2.7 Equipment

To conduct its stormwater operation, management, and maintenance activities, the Stormwater Utility staff must have access to essential equipment. The City's stormwater staff have access (owned or shared) to the following equipment and material required to operate and maintain a stormwater management system includes:

Grass maintenance equipment

1. Tractor mounted mowers
2. Riding lawn mowers
3. Push mowers
4. Gas powered trimmer
5. Gas powered edgers
6. Seed spreader
7. Fertilizer spreaders
8. Leaf blowers
9. Pesticide and herbicide application equipment

Vegetative cover maintenance equipment

1. Hand saws
2. Chain saws Pruning shears
3. Hedge trimmers
4. Pruning saws

Transportation equipment

1. Dump trucks
2. Pickup trucks
3. Boats
4. Small equipment trailers
5. Flatbed trucks (Heavy equipment trailers)
6 TV truck

Heavy Equipment (Debris, trash, and sediment removal equipment

1. Loaders
2. Backhoe
3. Gradall
4. Aqua Tech Storm Cleaner
5. Track hoe
6. Vac truck
7. Bobcat

Miscellaneous equipment

1. Shovels
2. Rakes
3. Picks
4. Wheel barrows
5. Confined space equipment
6. Standard mechanic tools
7. Demolition saws
8. Traffic signage/safety equipment
9. 3" pumps
10. 6" pumps
11. Mudhog pumps
12. Personal safety equipment
13. Generators
14. Cell phone
15. Hand held power tools
16. Crow bars

Inspector equipment during a routine maintenance inspection

1. Flashlight
2. Survey equipment
3. Approved facility plans
4. Inspection report form/IPAD
5. Crowbar (manhole/grate removal)
6. Mirrors
7. Pen or pencil
8. Camera

Materials

1. Topsoil
2. Fill material, sand, gravel
3. Stone
4. Mulch
5. Chemicals (pesticides, herbicides, etc.)
6. Marking paints
7. Sod
8. Bricks
9. Concrete blocks
10. Concrete/cement
11. Spare parts for equipment
12. Oils/greases for equipment

8.2.8 Disposal of Stormwater Sediments

Stormwater contains a highly variable mixture of potential pollutants, many of which end up in the sediments in storm sewers or BMPs. When accumulated sediments reduce the design storage of a BMP by 10%, the sediments need to be removed and disposed of properly. To develop policy on the safe disposal of stormwater sediments, the FDEP conducted or collaborated on several research projects. These included:

- Chemical and Physical Characteristics of Street Sweeping Sediments in Tampa, Florida. 1999. Brinkmann, Robert, et al., Report # 98-12, Florida Center for Solid and Hazardous Waste Management, Gainesville, Florida.
- Characterization of Stormwater Contaminated Sediment and Debris for Determining Proper Disposal Methods, Final Report. 1998. Cox, J. H., et al., Florida Department of Environmental Protection, Division of Water Facilities, Tallahassee, Florida.
- Characterization of Street Sweepings, Stormwater Sediments, And Catch Basin Sediments, In Florida For Disposal and Reuse. 2002. Dr. Tim Townsend, P.I., Florida Center for Solid and Hazardous Waste Management Gainesville, Florida.
- Evaluation of Analytical Data Characterizing Street Sweepings, Stormwater

  Sediments and Catch Basin Sediments. 2004. Dr. Tim Townsend, P.I., Florida Center for Solid and Hazardous Waste Management Gainesville, Florida.

The results from the above projects provide reasonable assurance that street sweepings and stormwater sediments seldom are hazardous or toxic. However, they often contain appreciable amounts of Class I wastes, limiting disposal to a landfill as discussed below. However, if the Class I wastes are removed, many street sweepings, catch basin sediments, and stormwater sediments can be used beneficially - for landfill cover and even fill in non-residential areas, as discussed below.

In May 2004, the DEP Division of Waste Management issued *Guidance for the Management of Street Sweepings, Catch Basin Sediments, and Stormwater System Sediments*. In summary, these sediments can be disposed of by:

- Street sweepings may be disposed of in a permitted Class I or II landfill or a permitted waste-to-energy (WTE) facility. If there is no reason to believe that the street sweepings are contaminated, such as being impacted through a chemical spill, and if they are not mixed with excessive amounts of Class I wastes, then they may also be disposed of at a permitted Class III landfill. Street sweepings are not considered to be construction and demolition debris and as such may not be disposed of at a construction and demolition debris disposal facility.
- If the street sweepings are mixed with significant amounts of Class I wastes, then they must be disposed of at a Class I or II landfill or at a WTE facility. However, if the Class I wastes are separated from the street sweepings, then the street sweepings can be disposed of at a Class III landfill.
- Since this waste is usually collected with vacuum trucks, it will initially be mixed with the liquids that also accumulate in the catch basins. Catch basin sediments may be disposed of in Class I or II landfills. They may also be disposed of in Class III landfills provided there

is no reason to believe they are contaminated, such as being impacted through a chemical spill. If they are mixed with excessive amounts of Class I wastes, then they will need to be screened before disposal at a Class III landfill. Prior to disposal, the catch basin sediments must be sufficiently dewatered so that they do not meet the definition of liquid wastes contained in Rule 62-701.200(72), F.A.C.

- The liquids from dewatering must be collected and disposed of at a wastewater treatment plant, a permitted stormwater treatment system (preferably the ones currently receiving liquids from the catch basins) or another disposal location approved by the Department.
- Sediments from non-industrial stormwater systems may be disposed of in Class I or II landfills. They may also be disposed of in a Class III landfills, in a manner similar to street sweepings in Section 5.1, provided there is no reason to believe they are contaminated, such as being impacted through a chemical spill. If they are mixed with excessive amounts of Class I wastes, then they will need to be screened before disposal at a Class III landfill. Prior to disposal, the stormwater system sediments must be sufficiently dewatered so that they are not considered a liquid pursuant to Rule 62-701.200(72), F.A.C.
- Sediments from industrial stormwater systems may be disposed of in Class I or II landfills provided they are first dewatered pursuant to Rule 62-701.200(72), F.A.C. They may not be disposed of in Class III landfills unless approved by the Department. This may require additional testing of the sediments and the generator should seek further guidance before proceeding with disposal of the wastes by contacting the Department's District office in the District where the wastes are located.

Some of these stormwater sediments may also be used for beneficial purposes, such as land fill cover. Street sweepings may also be beneficially used in nonresidential areas as construction or industrial fill or as a soil amendment provided any benzo(a)pyrene in the street sweepings will not create a significant threat to public health or the environment as managed. In no case may it be used within 200 feet of a potable well or as fill below the water table or in bodies of water.

Catch basin and stormwater BMP sediments may be beneficially used in a manner similar to street sweepings provided they are dewatered first and there is no reason to believe they are contaminated, such as being impacted by a chemical spill. Prior to beneficial use, the catch basin sediments must be sufficiently dewatered so that they do not meet the definition of liquid wastes contained in Rule 62-701.200(72), F.A.C. The liquids from dewatering may be disposed of at a wastewater treatment plant, a stormwater system (preferably the ones currently receiving liquids from the catch basins) or another disposal location approved by the Department.

During FY2019, the City's street sweepers collected 657.36 tons or 2191 cubic yards of materials. The City's street sweeping and BMP sediments are disposed of at the transfer station.

8.3 Recommendations

Review of the City's current operation and maintenance practices indicate that the City employs a reactive approach instead of preventive one. The City's critical infrastructure is on a regular inspection and maintenance schedule, as are many of its other components. With the implementation of the City's Stormwater Utility, citizen and management expectations will increase. Therefore, the Stormwater staff need to be able to optimize their efficiency and cost-effectiveness. We offer the following recommendations to accomplish this goal:

1. **The City needs to develop and implement a comprehensive Operation and Maintenance Plan**. This can be done in association with the implementation of the City's "Tyler Management System" and its integration with the City's GIS-based Asset Management System. Since each component of the stormwater management system is unique, the plan helps assure that the City knows what needs to be done to assure long term performance, and that the work will be done in a timely manner. The Operation and Maintenance Plan should include but not be limited to:

   - Establish a coordinated and effective implementation plan
   - Establish performance goals and O&M Levels of Service that are understood by key staff and managers (see Table 8.1.1)
   - Implementation of the GIS-based asset management system including staff training.
   - A completed up-to-date GIS-based inventory of the City's stormwater management system with their location, type, and other pertinent details.
   - For each of the system's components and for the overall system, the City needs to develop and use a SOP that includes a list and description of each of the identified inspection and maintenance tasks along the appropriate inspection and maintenance checklists.
   - A schedule for the inspection and maintenance of all components of the stormwater system. (See recommended schedule in Table 8.1.1).
   - For each of the system's BMPs and other components, the City needs to develop and use written SOPs that include a list and description of each of the identified inspection and maintenance tasks along with the appropriate inspection and maintenance checklists.
   - Electronic or paper copies of maintenance and inspection logs and work orders.
   - List of all required and available equipment and material.
   - The staff responsible for maintenance with a description of the duties for the maintenance personnel along with their titles.
   - Record keeping procedures and reporting requirements (MS4, LOS achievement, etc.)
   - Record drawings and associated design calculations.
   - List of off-hour telephone numbers of key maintenance personnel in case of emergencies.
   - Plan for future expenditures needed to assure that the stormwater system continues to function as designed and permitted, if applicable.

   The City currently has parts of the above information. However, a comprehensive O&M plan will increase efficiency, better protect the City's stormwater assets, and reduce flooding and pollutant loads discharged to the Halifax and Tomoka Rivers. In developing the plan, the City should evaluate its current methods of scheduling inspections and maintenance to optimize efficiency.

2. **The City should adopt the inspection schedule in Table 8.1.1,** to ensure that all components of the City's stormwater management system are being inspected on a regular schedule. Note that inspections should be done more frequently if a facility has had O&M issues in the past. Common sense and historical maintenance requirements should be used to modify the inspection frequency in the future. The inspection schedule should be reviewed annually and modified as necessary to assure effective and efficient work flow and add activities as new facilities/BMPs come online. This inspection schedule can be automated and fine-tuned through the use of the GIS inspection tools and asset management system.
3. **The City needs to expand and improve the stormwater and stormwater pollution prevention educational materials on the City's web site.** We recommend changing the current Streets & Stormwater Maintenance website to a more comprehensive Stormwater Management or Stormwater Utility website. This should include information about on-going or planned stormwater infrastructure improvements and maintenance activities. This will help demonstrate to citizens how their stormwater utility funds are being used. It also needs to include downloadable publications on stormwater education. There are a wide variety of materials available to local governments through the Florida Stormwater Education Tool Kit available online at: http://www.stormwater.ucf.edu/toolkit/vol1/index.html.
4. **The City's inspection and maintenance of its storm sewers needs to be done preventively instead of reactively**. Storm sewers are the major conveyor of the City's stormwater. Yet, since they are buried and often even submerged, they can be very difficult to inspect and to maintain or repair. In 2019, the City purchased an AquaTech Storm Cleaner and a CCTV truck. This will allow the Stormwater Utility staff to inspect, maintain, and repair storm sewers much more proactively. Additionally, the staff are aggressively lining Concrete Metal Pipes (CMP) to ensure longer life and better operation. We recommend the City establish a 5-year program to inspect and remove materials from its storm sewers. This means inspecting and maintaining about twenty percent (20%) of the storm sewers each year. Priorities should be established based on known problems and sites of frequent flooding.
5. **Develop and implement a policy on public drainage easements to ensure the integrity of the City's stormwater outfalls within privately-owned seawalls.** Often the City's outfall pipe/easement is left unprotected or the seawall replacement return is placed within the easement where no structures should be placed making it difficult or impossible to maintain the City's outfall pipe when needed. Section 3-28 of the LDC sets forth the requirements for seawall construction or replacement. Namely, a building permit is required, and construction of the seawall shall incorporate and accommodate the outfall pipe in accordance with city construction standards and Florida Building Code. We recommend that Section 3-28 A.1.a. be revised to highlight whether a City-owned outfall is part of a seawall projects by adding the following sentence: The survey must show any City stormwater outfalls that are part of the existing property or seawall. In addition, the City needs to revise its review process to include the Stormwater Utility staff in any seawall projects that include a City outfall.

6. **The Pollution Prevention/Good Housekeeping Management Measure in the City's new NPDES MS4 permit need to be implemented cooperatively by each of the City's departments involved in the management of the City's stormwater system.**

   In particular, the City Management team needs to stress the importance of the stormwater pollution prevention at the Municipal Facilities such as the Public Works/Utility complex, Fire Stations, Golf Course Storage/Maintenance facility and the City swimming pool. Similar importance also is needed for the annual Municipal Operations Pollution Prevention Training program for employees within the Stormwater Utility, Water Reclamation, Fleet Operations/Maintenance, Grounds Operations/Maintenance, Facilities/Building Operations/Maintenance, Fire Operations/Maintenance, Golf Operations/Maintenance, and Pool Operations/Maintenance.

7. **An analysis needs to be done to determine adequate levels of staffing to ensure the City's stormwater assets are operated and maintained properly.** Currently, the City's Stormwater Utility has eight people that are responsible for inspections and maintenance of the City's stormwater infrastructure. A comparison with other local governments shows this is a very low number of employees given the size of the City's stormwater management system infrastructure. Given the continuing aging and growth of the City's stormwater management system, additional Operation and Maintenance staff are needed. Additional work load is coming from substandard stormwater systems in areas that are annexed by the City. To keep up with the increased work load, a new construction crew is warranted to allow the City to more rapidly respond to and correct structural issues. With the potential retirement of several key staff in the future, and the growing number of stormwater systems owned and operated by the City, it is a good time to do a staffing analysis.

9. IMPROVEMENT PROJECT AND BMP RECOMMENDATIONS

This chapter presents the recommendations for stormwater related improvement measures to be implemented by the City over the next stormwater program planning period. This summarizes individual recommendations from the flooding assessment, water quality assessment, and future climate impact assessment sections of the report. The recommendations will be addressed in the capital improvement project section of the SMPU whereas these projects will be prioritized for implementation.

9.1 Flooding Project Recommendations

Based on the flooding assessment, 13 specific areas were identified for improvement as CIPs:

1. Sanchez to SR 40 from Ridgewood to River
2. Woodridge Drive Outfall
3. South Arbor Drive and Grove Street (including Capri Circle)
4. Durrance Acres
5. Cumberland
6. North Highway US1 Drainage
7. Ormond Lakes
8. Alanwood Drive and Beach Street
9. Trails - Dry Well / French Drains
10. Orchard Business Park
11. Railroad Crossing - East Fork of Thompson Creek
12. Railroad Crossing - St. Andrews Discharge
13. Orchard Lane and Jeanette Drive

The locations of these 13 areas are shown on **Figure 9-1**.

These residential and commercial areas were noted for specific improvements but also include overall stormwater infrastructure improvements. These flooding assessment projects include possible upgrades to the stormwater infrastructure through the following:

- Installation of additional drainage pipes and structures
- Upsizing pipes and conveyances
- Upgrading older pipes and structures (i.e. those installed in the 1970s or earlier)
- Upgrade CMPs to RCPs for service life longevity
- Adding additional outfall locations
- Replacing non-functioning infiltration systems
- Consideration of the implementation of LID and green infrastructure practices

Figure 9-1 – Flood Improvement Project Locations



In some cases, the recommendations are direct to design while in other cases some initial flood study and/or assessment will be necessary as part of the overall CIP implementation process.

Detailed flood improvement project solution conceptualizations for these 13 project areas are included in Section 10 of this report. This includes details on the problems reported and observed, as well as improvement concepts. Initial design, permitting, and right of way needs are also quantified. Preliminary implementation costs area also included.

9.2 Water Quality Project Recommendations

As mentioned previously in Chapter 5, water quality data was reviewed to assess the current state of impaired water associated with eth City. The assessment indicates concerns within the Tomoka and Halifax rivers waterbodies specifically associated with nutrient - total nitrogen (TN) and total phosphorus (TP). According to the FDEP, segments of the Halifax River and Tomoka River have been verified as impaired for TN and TP. Nonpoint and point sources contribute to excess nutrients within the rivers.

Data gathered from 16 WBID stations throughout the Halifax and Tomoka Rivers were utilized to conduct a pollutant loading analysis (LSPC model). Nonpoint data was inputted into a watershed model to estimate nonpoint source loads. EPA Methods were used to analyze point source data for point source loading estimates, specially Discharge Monitoring Reports and Onsite Sewage Treatment and Disposal System (OSTD). A portion of the results from the pollutant load modeling for TP are presented below as **Figure 9-2**.

Bains were ranked based on the need for stormwater quality improvement as displayed in **Table 9-1** below. Most of the basins, either completely within or partially with Ormond Beach City limits, warrant direct consideration for improvement measures. Some of the basins were completely outside Ormond Beach City limits and do not warrant further direct consideration.

Figure 9-2 - Basin specific mean annual TP loads (left) and mean annual unit area TP loads (right) predicted by the LSPC model in the Halifax and Tomoka River watersheds

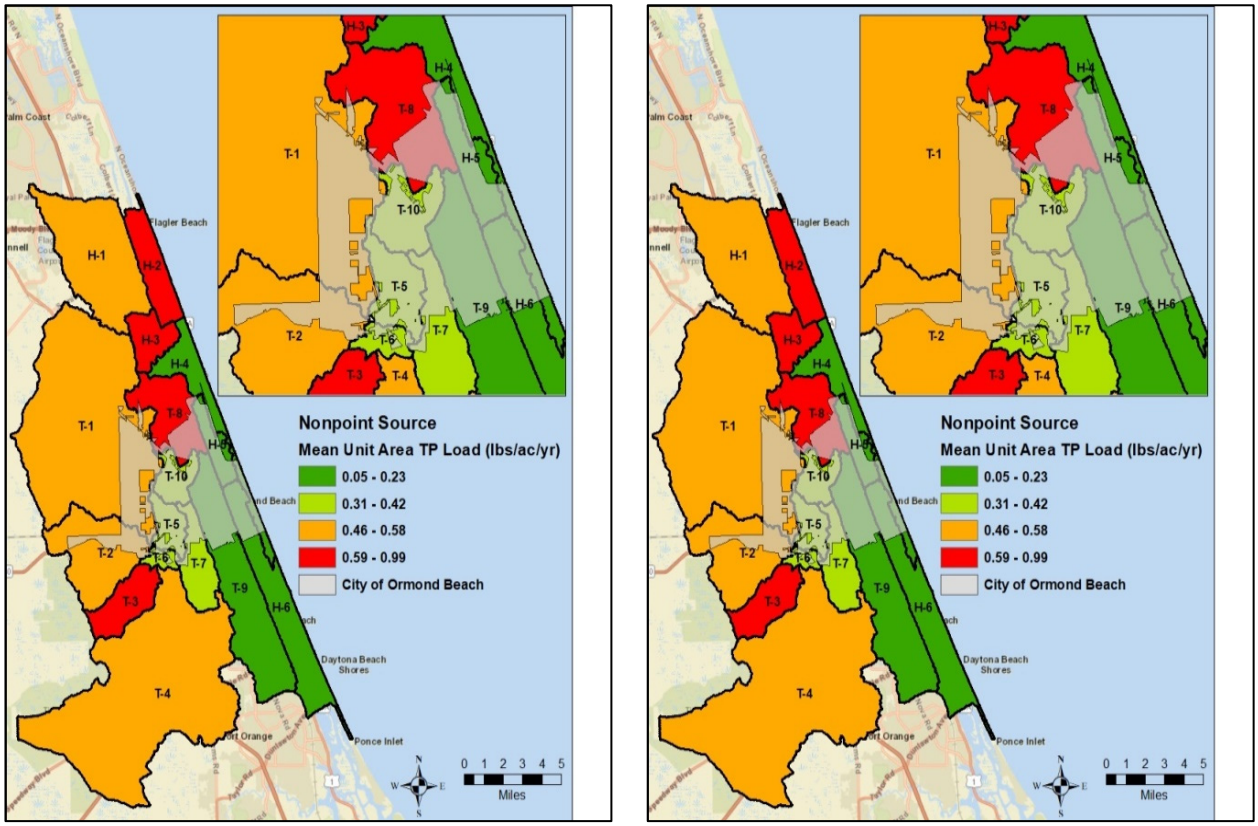


Table 9-1: Basins ranked for water quality improvement

Watershed	Basin	Rank*	Approximate Acres Within City Limits
Tomoka River	T-8	1	**2011**
Halifax River	H-3	2	0
Halifax River	H-2	3	0
Tomoka River	T-3	4	0
Tomoka River	T-1	5	**4999**
Tomoka River	T-2	6	**1824**
Tomoka River	T-4	7	0
Halifax River	H-1	8	0
Tomoka River	T-6	9	**272**
Tomoka River	T-7	10	**1114**
Tomoka River	T-5	11	**2313**
Tomoka River	T-10	12	**2389**
Halifax River	H-4	13	**890**
Tomoka River	T-9	14	**3990**
Halifax River	H-5	15	**1941**
Halifax River	H-6	16	**1736**

* Based on mean annual unit area loadings of total phosphorus in each basin

Of the 16 basins that were noted for improvement, 11 of the basins are within or significantly overlap the City's limits. For water quality improvement to occur in the Tomoka and Halifax Rivers, efforts to reduce loads in the specified basins above should be completed. Water quality studies and assessments should be completed within the areas mentioned above to pinpoint sources and establish trends, specifically within the following basins (listed in TP loading priority order):

- T-8 (Tomoka River)
- T-1 (Tomoka River)
- T-2 (Tomoka River)
- T-6 (Tomoka River)
- T-7 (Tomoka River)
- T-5 (Tomoka River)
- T-10 (Tomoka River)
- H-4 (Halifax River)
- T-9 (Tomoka River)
- H-5 (Halifax River)
- H-6 (Halifax River)

For each of the 11 basins, detailed water quality BMP evaluations are recommended to identify improvement measures that can be cost-effectively implemented to reduce pollutants from stormwater and related sources. These projects would be intended to help meet load reduction allocations assigned to the City through the TMDL program or other further regulatory needs. Generally, this would include the following effort reach basin:

- Detailed confirmation mapping of drainage infrastructure and features (assumed to be mostly complete with existing City inventories, but additional investigation and delineation of infrastructure assumed to be needed for completeness purposes and to account for private or FDOT systems).
- Inventory of pollutant sources including any point sources, presence of septic tanks, current water quality impacts to lakes, streams, etc.
- Collection of supplemental water quality (surface water, stormwater grab samples, etc.) and hydrological (stream flow, stage, etc.) data to support project.
- Inventory of existing BMPs and practices currently addressing water quality improvements.
- Refined subbasins and drainage network delineations within each basin to isolate contributing areas to specific drainage features and BMPs. The 2007 SMPU data can be used as a starting point, however significant refinement would be expected.
- Pollutant load modeling to further identify hot spots that warrant improvement measures. Also, quantify load proportion originating from outside the city limits to establish a case for project partnering with Volusia County.
- Evaluation of structural BMP concepts for application in basin. This would include potential traditional stormwater management practices and also the apparition of LID/green infrastructure, and active/real time control systems. This would include hydrologic and hydraulic model analysis to confirm flood management sufficiency of BMPs in addition to pollutant load reduction potential.
- Evaluation of retrofits to enhance performance of existing BMPs and evaluation of nonstructural BMP application such as enhanced street sweeping or other source controls.
- Prioritize BMPs based on benefit – cost analysis. This would include and implementability analysis looking at such factors as water quality benefit, flood benefit, permitability, right-of-way needs, constructability, aesthetics/public acceptance and cost.
- Identify water quality benefit in terms of annual load reduction and develop concept packages attractive to receiving grant funding.
- Identity top projects for implementation and engage in design and permitting efforts.

As many of these basins have areas outside the city limits, the focus should be on city areas. However, recognizing that water quality issues do not follow jurisdictional lines, consideration of assessing areas outside of the City limits may be necessary on a basin by basin basis.

Since these studies will results in additional CIP projects in future stormwater program years, it is recommended to begin to engage in these early on in the next program planning cycle. As these

are completed, projects can be programmed for final design and permitting and placed in sequencing for construction.

For implementation purposes and to make faster progress in identifying water quality improvement measures, bundling many of these basins geographically in combined area studies is recommended considering priority, water body, and overall area within the City. For future budgeting purposes, the projects would include the initial basin area study to identify valid BMP measures with conceptual design and prioritization, then an allowance for the cost for implementing up to 5 BMP projects with design, permitting, and construction costs. This approach is proposed as follows:

- **Tomoka River North Basins Water Quality BMP Study**
  - Basins T-1, T-8, and T-10 – Total Area = 9399 acres (14.7 square miles)
  - Cost projections:
    - Study and BMP project concepts: $250,000
    - BMP project design and permitting (each of 4 projects): Average of $75,000 each
    - BMP project construction allowance (each of 4 projects): Average of $200,000 each
- **Tomoka River South Basins Water Quality BMP Study**
  - Basins T-2, T-5, T-6, T-7, and T-9 – Total Area = 9513 acres (14.7 square miles)
  - Cost projections:
    - Study and BMP project concepts: $250,000
    - BMP project design and permitting (each of 4 projects): Average of $75,000 each
    - BMP project construction allowance (each of 4 projects): Average of $200,000 each
- **Halifax River Water Quality BMP Study**
  - Basins H-4, H-5, and H-6 – Total Area = 4567 acres (7.1 square miles)
  - Cost projections:
    - Study and BMP project concepts: $200,000
    - BMP project design and permitting (each of 4 projects): Average of $75,000 each
    - BMP project construction allowance (each of 4 projects): Average of $200,000 each

In addition, it is recommended that the City engage in a City-wide study to identify the potential for optimizing maintenance BMP activities such as street sweeping and baffle box clean out to maximize materials removed to increase credit received from the FDEP under the NPDES permit. This would focus on identifying whether analyzing nutrient content of debris in the City may indicate that City specific values are higher than the state standard values which then could be used for mass removal credit. Also, current street sweeping activities could be more specifically evaluated for opportunities to increase materials recovery through increased frequency of routes, spatial coverage of routes, seasonality of routes, and route optimization to maximizing program credit. A reasonable cost projection for this study would be on the order of $150,000.

9.3 Future Climate Impact Project Recommendations

As mentioned in Chapter 7, "sea level rise and climate change pose a significant threat to the City of Ormond Beach". It has been observed that the City becomes inundated during severe rainfall events and associated tidal flooding. Tidal flooding will increase with sea level rise leading to the current stormwater outfalls to be less effective. The City was evaluated for sea level resilience and possible strategies to be implemented in preparation for sea level rise and climate change in regard to stormwater management.

To evaluate the impact of sea level rise on City-owned assets, a screening-level analysis of basic flood exposure was performed to identify at-risk City-owned assets. The five most at-risk assets from this screening-level exercise are listed below. These assets are ranked in order of most vulnerable to least vulnerable based on the spread and depth of flooding expected at the property location under storm surge and king tide conditions.

1. Bait & Tackle Shop (ALTKEY 5613241)
2. Central Park & Lake (ALTKEY 3159560)
3. Office of the City Attorney (3078896)
4. Fire Station #93 (3161955)
5. Storage Shed near Power Plant (ALTKEY 3165292)

Other assets were also identified to have potential impact. While the vulnerability of these assets differs, each of these are expected to experience some level of flooding, either across the entirety of the property, or with the greatest average depth of flooding throughout the property, during king tides or storm surge conditions. It is noted that this future climate impact analysis was focused specifically on the impacts to facilitates from sea level rise. Areas previously or currently prone to flooding from rain induced flooding were not directly assessed. For example, the Central Park area which was the subject of significant stormwater retrofits in past years to address rain induced flooding impacts would not necessarily show as a significant vulnerability from a sea level rise standpoint.

Although not showing up in the top 5 at risk assets, the City's water and wastewater plant facilities at Orchard Street and Wilmette Avenue are particularly critical assets that need to be safe from flooding impacts under future conditions. Based on the inundation analysis, the facilities are at significant risk from tide and stormwater related increases in flood waters. The preliminary screening analysis indicates the water and wastewater plant facilities are at particular risk. The City should consider engaging in a study to evaluate appropriate actions to maintain operations given potential future changes in tide and storm derived flood conditions.

Specific project recommendations related to future climate impacts are as follows:

- Based on the screening level Future Climate Impact Assessment, it was recommended that the City perform a full **Vulnerability Assessment of Critical Assets**. This effort would build off the screening level analysis preformed as part of this Stormwater Master Plan Update and the 2017 Resilient Volusia County Report. This measure would identify, at a detailed level, the specific levels of physical, social, environmental, and economic risk and vulnerability of the City's assets, guiding the development of long-term capital

improvements and adaptation plans. This study would include a detailed analysis of the City's water and wastewater plant facilities. A reasonable cost projection for this study would be on the order of $200,000.

- Additional it is recommended that a **Stormwater Infrastructure and BMP Future Impact Study** be conducted to address potential impacts to stormwater management infrastructure based on future climate change. This would include evaluating potential impacts of changing hydrology. Potential impacts to drainage infrastructure would be assessed including increased rainfall intensity and higher tailwater impacts on flooding level of service. The need to consider larger design storm event rainfall depths and/or design storm frequencies appropriate for design would be assessed (e.g., today's 25 year 24 design storm event may not be applicable in the future to adequately protect City interests). Design storm recommendations may be determined appropriate to apply on a specific area basis as opposed or in addition to a citywide basis. Also, the impacts from increases in ambient groundwater table should be evaluated which may lessen available soils storage and increase stormwater runoff volumes. In particular, the ability of water quality and infiltrating flood attenuation BMPs to continue to function per design should be evaluated. This analysis should also look into the degree to which LID and green infrastructure practices could aid in managing stormwater management stresses from future climate change impacts. The results of this effort could be supplemented into the City's LID manual as additional reference. A reasonable cost projection for this study would be on the order of $100,000.

10. FLOOD IMPROVEMENT PROJECT SOLUTION CONCEPTUALIZATION

The City of Ormond Beach identified the following 13 problem areas to be evaluated during the master planning process. Geosyntec Consultants completed site visits and meetings with residents and City personnel to collect data on the history of flooding at these specific sites, along with evaluating available public information. Each site with their associated issues is summarized below with preliminary recommendations and planning level cost projections for the City's consideration for the Stormwater Master Plan Update (SMPU) Capital Improvement Program (CIP).

10.1 Sanchez to SR 40 from Ridgewood to River

Problem Area Description

This problem area, with a contributing area of approximately 200 acres, is approximately located between Sanchez Avenue and West Granada Boulevard (State Road (SR) 40), west of the Halifax River and east of Ridgewood Avenue.

Topography: The elevations in the area range from approximately 18 feet to 0 feet NAVD 1988. From the ridgeline along Ridgewood Avenue, the lands slopes to the east to the Halifax River.

Soils: Soils are predominantly hydrologic group A (freely draining) along the central portion of the area east of Ridgewood Avenue.

Landuse: The area is predominantly medium density residential (with moderate degree of impervious area) with some commercial areas present near SR 40 (with high degree of imperviousness).

Floodplains: The area is predominantly areas with no based flood identified (Zone X), with fringes of Zones AE along the Halifax River to the east.

Infrastructure: The area consists of residential development that consists of stormwater systems that ultimately discharge directly to the Halifax River. The infrastructure within the area is dated from the early 1960s to the early 2000s and consists of various sizes of reinforced concrete pipe (RCPs) and corrugated metal pipes (CMPs).

Problem Summary

Based on observations from the City, there are locations throughout this problem area that experience flooding, possibly due to undersized infrastructure (both pipe sizes and inlet capacity) which should be investigated further. Some of the older installed CMPs have collapsed over time and were replaced. Other CMP pipes still exist which should be evaluated for replacement as appropriate.

Refer to **Figure 10-1** for a map of the specific area.

Photos of the Problem Area



Sanchez Avenue and North Beach Street (Google, 2019)



Sanchez Avenue (Google, 2019)



Cumberland Avenue and North Beach Street (Google, 2019)



Cumberland Avenue (Google, 2019)



Putnam Avenue and North Beach Street (Google, 2019)



Putnam Avenue (Google, 2019)



Warwick Avenue and North Beach Street (Google, 2019)



Warwick Avenue (Google, 2019)



Greenwood Avenue and North Beach Street (Google, 2019)



Greenwood Avenue (Google, 2019)



Melrose Avenue and North Beach Street (Google, 2019)



Melrose Avenue (Google, 2019)



Wilmette Avenue and North Beach Street (Google, 2019)



Wilmette Avenue (Google, 2019)



Kenilworth Avenue and North Beach Street (Google, 2019)



Kenilworth Avenue (Google, 2019)



Rosewood Avenue and North Beach Street (Google, 2019)



Rosewood Avenue (Google, 2019)



Hernandez Avenue and North Beach Street (Google, 2019)



Hernandez Avenue at Ridgewood Avenue (Google, 2019)



Dix Avenue and North Beach Street (Google, 2019)



Dix Avenue and Ridgewood Avenue (Google, 2019)



Highland Avenue and North Beach Street (Google, 2019)



Highland Avenue and Ridgewood Avenue (Google, 2019)



Lincoln Avenue and North Beach Street (Google, 2019)



Lincoln Avenue and Ridgewood Avenue (Google, 2019)



View east along New Britain Avenue. (Google, 2019)



Mitered end section for discharge into the Halifax River on North Beach Street and New Britain Avenue. (Google, 2019)

Improvement Recommendations

Geosyntec recommends performing a flood study with hydraulic analysis to confirm level of service of existing infrastructures. This would identify undersized infrastructure associated with the Sanchez to SR 40 from Ridgewood to River drainage systems. Based on the City's GIS infrastructure data, this area has approximately 2700 feet of CMP and VCP pipes (10" to 24") which may be reaching their service life. A conditions assessment is recommended to determine pipe warranting replacement. This would include visual inspection and in pipe CCTV observations where warranted. Other RCP pipes in the area may likewise warrant inspection. It is noted that some pipes in this area have been replaced already. The drainage pipes along many of the streets and areas between homes appear undersized (12" to 18" in diameter) as well as many of the outfalls (15" to 24") and may inhibit effective drainage to the river. Upsizing of these systems would include replacement of CMPs to RCPs and increasing pipe size (minimum 18 inches) to aide in drainage. Other roadside improvements may be considered to effectively convey runoff such as additional curbing and/or forming more distinct front yard swales.

Because of the long stretches of right-of-way involved in replacement of the pipes along the streets, a more effective approach may be to address flood attenuation in the subdivision areas upstream, nearer to Ridgewood Avenue. The soils in the are hydrogroup type A which may facilitate exfiltration or similar underground detention to reduce the peak of runoff flows. Although exfiltration systems have been problematic for the City in the past, newer technologies and system installation and maintenance practices have rendered them more sustainable and are considered a viable option. Looking at upstream areas may provide an opportunity to implement green infrastructure and/or LID practices to improve drainage and provide some water quality treatment.

It is uncertain whether easements exist for the City to maintain the pipe runs extending north and south through residential properties between Sanchez and Wilmette Avenues. These should be confirmed, but if do not exist in whole or part, efforts should be undertaken to obtain them.

Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective drainage and conveyance and reducing flooding.

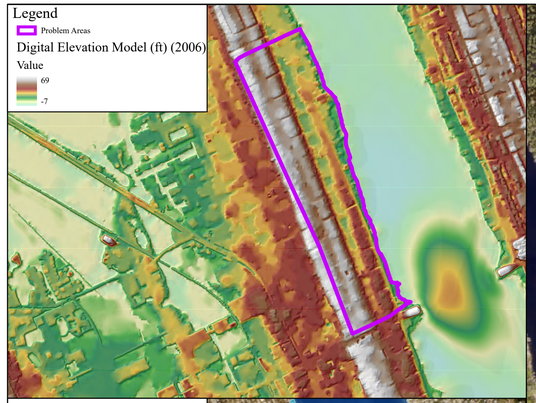
Water Quality Benefit: The recommended improvements may not have a direct impact on water quality. Consideration of green infrastructure and/or LID practice as part of the improvements may provide for some enhancement of water quality treatment.

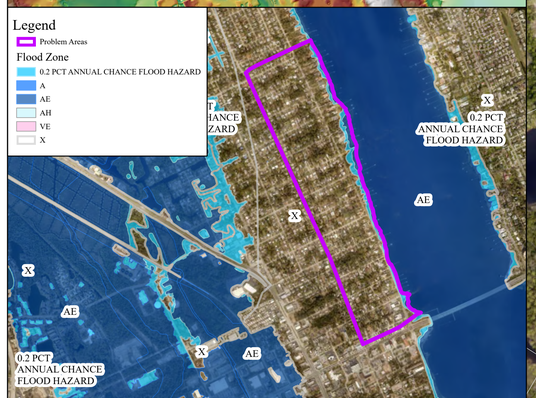
Permitting Considerations: The upgrades may be considered as improvements / maintenance to an existing system and if no additional impervious area is being added or wetland impacts are present then may be exempt from SJRWMD environmental resource permitting. A permit determination meeting should be conducted with SJRWMD during the project feasibility stage.

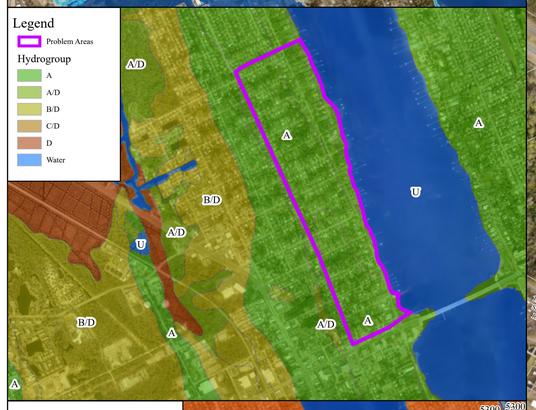
***Implementation Considerations*:** The project will require investigation of current easements and right-of-way necessary to perform the improvements. Utility conflicts will likely exist and should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland impacts are not anticipated.

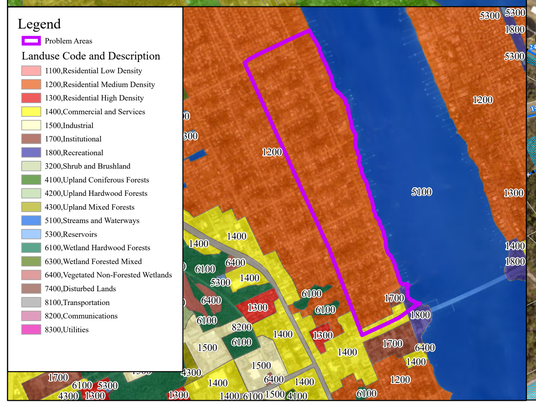
***Future SLR / Resiliency Considerations*:** The project area outfalls into a tidally influenced waterway. Consideration should be made during design to account for potential future seal level rise and hydrological stresses that may impact long term system performance.

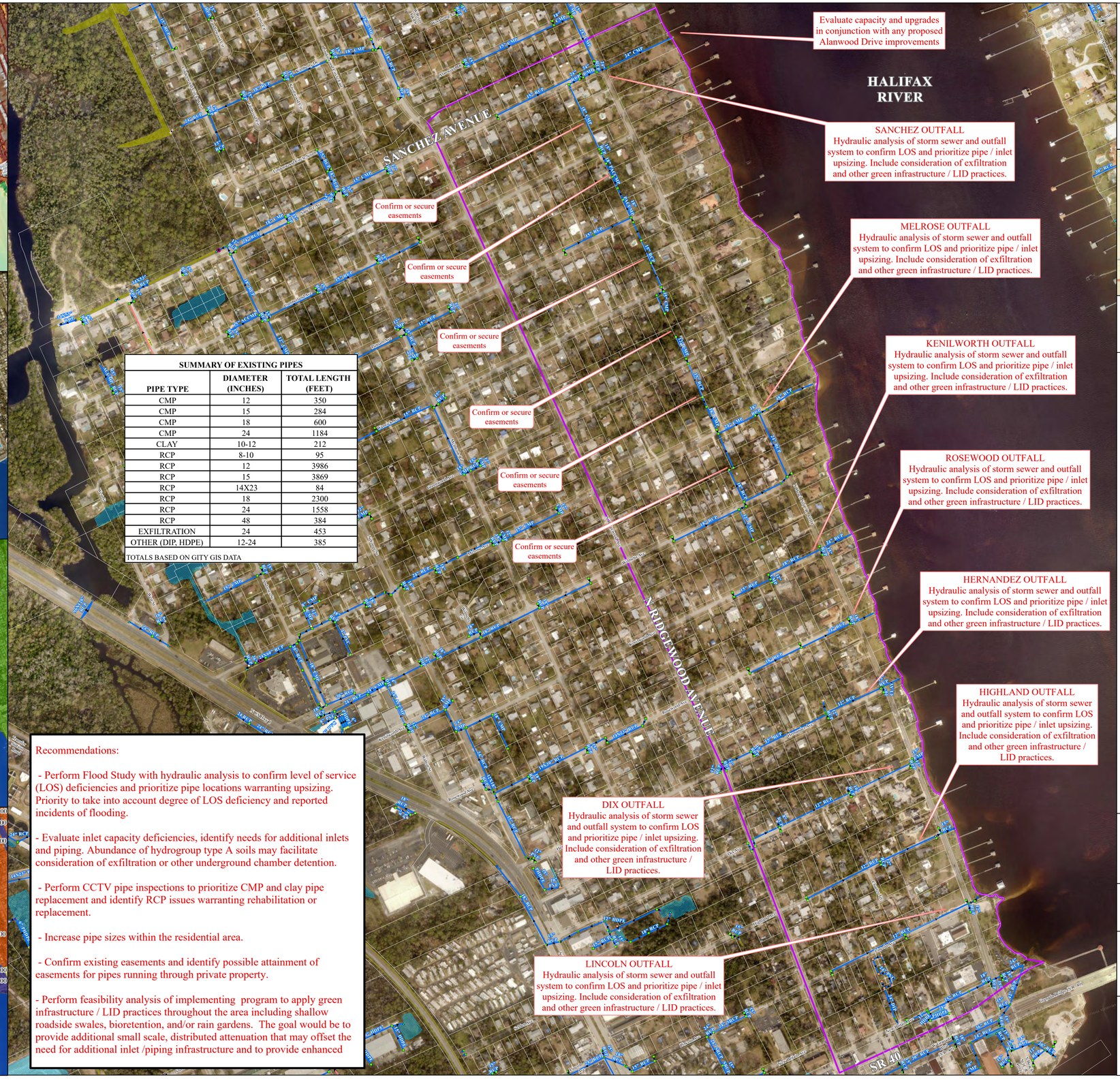
Refer to **Figure 10-1** for details of the proposed improvements.











SUMMARY OF EXISTING PIPES

PIPE TYPE	DIAMETER (INCHES)	TOTAL LENGTH (FEET)
CMP	12	350
CMP	15	284
CMP	18	600
CMP	24	1184
CLAY	10-12	212
RCP	8-10	95
RCP	12	3986
RCP	15	3869
RCP	14X23	84
RCP	18	2300
RCP	24	1558
RCP	48	384
EXFILTRATION	24	453
OTHER (DIP, HDPE)	12-24	385

TOTALS BASED ON GITY GIS DATA

Recommendations:

- Perform Flood Study with hydraulic analysis to confirm level of service (LOS) deficiencies and prioritize pipe locations warranting upsizing. Priority to take into account degree of LOS deficiency and reported incidents of flooding.

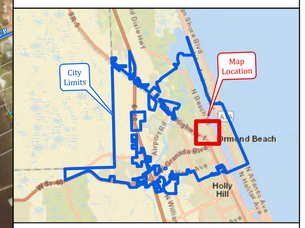
- Evaluate inlet capacity deficiencies, identify needs for additional inlets and piping. Abundance of hydrogroup type A soils may facilitate consideration of exfiltration or other underground chamber detention.

- Perform CCTV pipe inspections to prioritize CMP and clay pipe replacement and identify RCP issues warranting rehabilitation or replacement.

- Increase pipe sizes within the residential area.

- Confirm existing easements and identify possible attainment of easements for pipes running through private property.

- Perform feasibility analysis of implementing program to apply green infrastructure / LID practices throughout the area including shallow roadside swales, bioretention, and/or rain gardens. The goal would be to provide additional small scale, distributed attenuation that may offset the need for additional inlet /piping infrastructure and to provide enhanced



N W E S

0 250 500 Feet

Legend

- Parcels
- Problem Areas
- Ponds
- Stormwater Pipe
- Proposed Pipe Additions

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-1

Flood Improvement Project Concept Map: Sanchez to SR40 from Ridgewood to River

Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Replacement of the drainage piping system along select streets in the area. It is expected that many of the system may be sufficient in whole or in part, so an allowance for replacement pipe is provided (allowance for approximately 5000' of 24" to 36" RCP pipe).
- Replacement of CMP piping in the upstream area lateral streets (allowance for approximately 2000' of 24").
- The above replacement piping could be with exfiltration piping, in whole or in part. An allowance is made for half of the piping to be exfiltrating.
- Up to 5000' of road upgrades (curbing, gutters, swale grading, sodding, etc.).
- Easement acquisition and right-of-way administration.

Refer to **Table 10-1** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

Note that these improvements can easily be phased to accommodate fiscal year budget constraints.

TABLE 10-1
FLOOD IMPROVEMENT CONCEPT: SANCHEZ TO SR 40 FROM RIDGEWOOD TO RIVER
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$252,958
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$84,319
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$84,319
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$168,639
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	1852	$27,778
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	2778	$69,444
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	2778	$41,667
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	85	$382,500
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	20	$90,000
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	3500	$350,000
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	2500	$375,000
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	8	$56,000
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	1000	$130,000
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	1000	$35,000
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	556	$41,667
26	570-1-2	Performance Turf, Sod	SY	$3.00	2778	$8,333
27	9999-1	CCTV Pipe Inspection	LF	$5.00	15800	$79,000
28	9999-2	Miscellaneous	LS	$0.00	0	$0
					CONSTRUCTION COST:	$2,276,625
					CONTINGENCY @ 20%:	$455,325
					ESTIMATED CONSTRUCTION COST:	**$2,731,950**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$100,000.00
2	-	Design & Permitting	LS	varies	1	$150,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$200,000.00
					SUBTOTAL:	**$450,000.00**
					ESTIMATED GRAND TOTAL:	**$3,181,950.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.2 Woodridge Drive Outfall

Problem Area Description

The intersection of Woodridge Drive and North Beach Street (CR 4011) is located east of the Halifax River and within the Halifax watershed.

Topography: The elevations in the area range from approximately 17 feet to 6 feet NAVD 1988. The area generally slopes form west to east.

Soils: Soils are hydrologic group A (freely draining).

Landuse: The area is medium density residential (with moderate degree of impervious area).

Floodplains: The area has no based flood identified (Zone X).

Infrastructure: The infrastructure within the area is dated from the 1970s and consists of various sizes of RCPs and CMPs throughout the area; sizes range from 6" to 36". Valley gutters are throughout the streets, which aid in directing stormwater into grated inlets. Based on the grading of the area, the intersection handles stormwater from an approximate area of 33.5 acres.

Problem Summary

Stormwater has been noted by the City to overwhelm the area, especially at the Woodridge Drive and North Beach Street intersection. Geosyntec reviewed the available public information, observations documented on during a site visit completed on February 19, 2020, and discussions with City personnel. The area has a history of flooding under severe rainfall events. Stormwater levels have been reported to reach residential garages, patios, and yards, particularly 762 North Beach Street at the corner of Woodridge Drive.

The problem area is low lying topographically and is some distance from the outfall to the river located to the north at Domicilio Avenue (nominal slope fall). The large upstream storm sewer network for the large contributing area has to work its way through problem area, which likely contributes to the flood loading problem. Based on observations from the City, the system within the subdivision is outdated and may require rehabilitation. This would involve the replacement of CMPs to RCPs and increase pipe sizes to aide in drainage.

The City noted a recently completed engineering study which suggested creation of a new outfall to help relieve flood stages within a new easement to be acquired. However, the City has unable to obtain an easement from nearby property owners, so that option does not appear feasible at this time.

Refer to **Figure 10-2** for a map of the specific area.

Photos of the Problem Area



Looking east down Woodridge Drive towards North Beach Street. (2/19/2020)



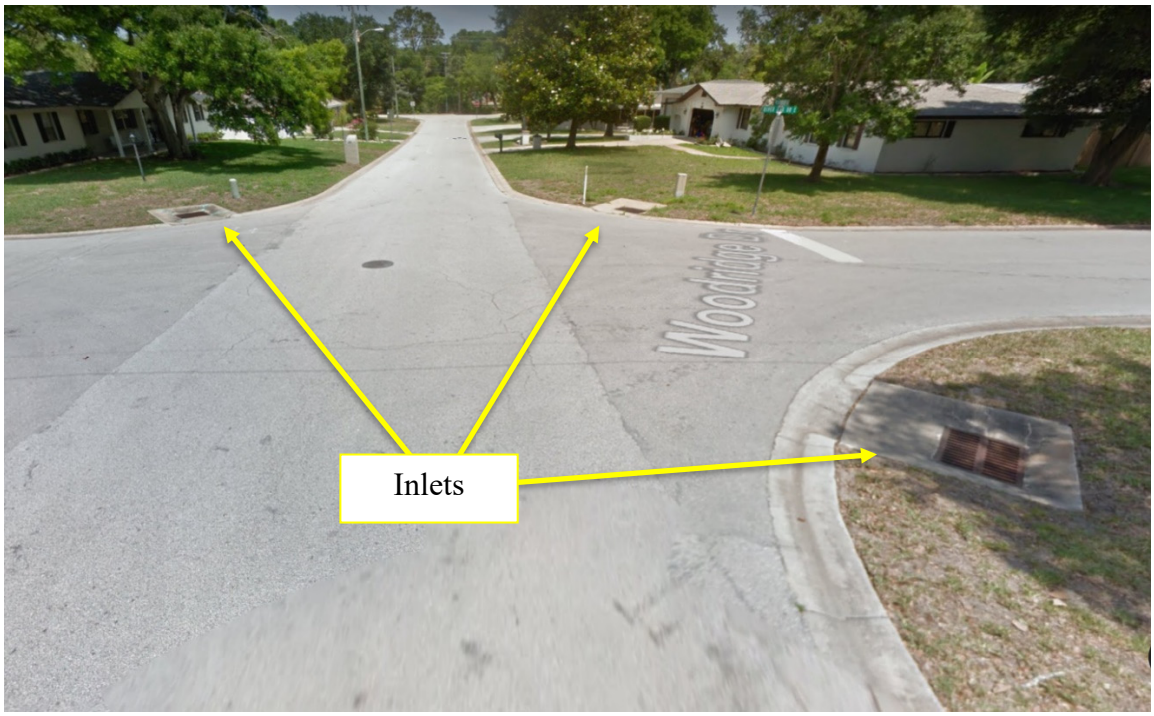
Looking west down Woodridge Drive. (2/19/2020)



Looking north down towards North Beach Street from Woodridge Drive. (2/19/2020)



Grated inlet and valley gutter on Woodridge Drive near North Beach Street. (2/19/2020)



Looking east down Woodridge Drive from East River Oaks Drive (Google, 2011)



Looking east Domicilio Avenue at North Beach Street outfall location (Google, 2011)



Photo presented to the City from resident of the aftermath of heavy rainfall event in 2009 on Woodridge Drive and North Beach Street intersection. (2/19/2020)



Photo presented to the City from resident of the aftermath of heavy rainfall event in 2009 on Woodridge Drive and North Beach Street intersection. (2/19/2020)

Improvement Recommendations

Geosyntec recommends performing a flood study with hydraulic analysis to confirm level of service of existing infrastructures. This would identify undersized infrastructure associated with the Woodridge Drive and lateral road drainage systems. A new outfall could be reinvestigated. Based on the City's GIS infrastructure data, this area has approximately 5000 feet of CMP and VCP pipes (6" to 30") which may be reaching their service life. A conditions assessment is recommended to determine pipe warranting replacement, including visual inspection and in pipe CCTV observations where warranted. Other RCP pipes in the area may likewise warrant inspection. The drainage pipes along Woodridge Drive appear undersized (24" in diameter) as well as the outfall to the north along Beach Street (30" to 36") which may inhibit effective drainage. Upsizing of these systems would include replacement of CMPs to RCPs and increasing pipe size to aide in drainage (minimum 18 inches). Other roadside improvements may be considered to effectively convey runoff such as additional curbing and/or forming more distinct front yard swales. Also, it is recommended to investigate the addition of a cross-connection pipe between two inlets located at 692 and 722 North Beach Street which would allow runoff to also be directed to the outfall located south of the problem area at Sanchez Avenue (would require coordination with the Alanwood problem area).

Because of the long stretches of right-of-way involved in replacement of the outfall pipes along Beach Street, a more effective approach may be to address flood attenuation in the subdivision areas upstream, of the Woodridge Beach Street intersection. The soils in the are hydrogroup type A which may facilitate exfiltration or similar underground detention to reduce the peak of runoff flows. Although exfiltration systems have been problematic for the City in the past, newer technologies and system installation and maintenance practices have rendered them more sustainable and are considered a viable option. Looking at upstream areas may provide an opportunity to implement green infrastructure and/or LID proactive to improvement drainage and provide some water quality treatment.

Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective drainage and conveyance and reducing flooding.

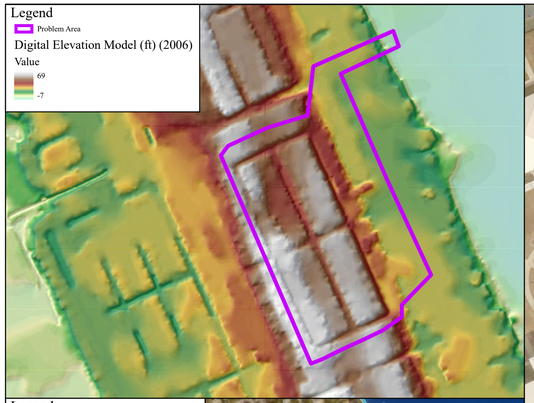
Water Quality Benefit: The recommended improvements may not have a direct impact on water quality. Consideration of green infrastructure and/or LID practice as part of the improvements may provide for some enhancement of water quality treatment.

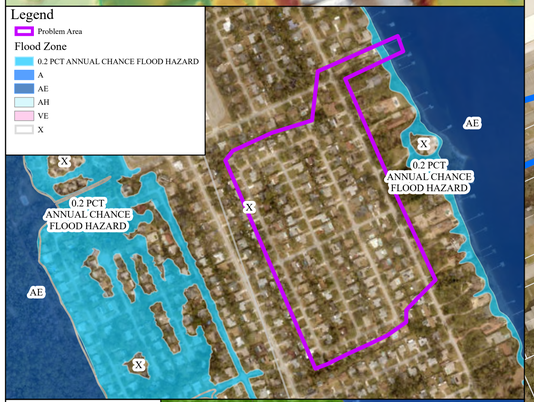
Permitting Considerations: The upgrades may be considered as improvements / maintenance to an existing system and if no additional impervious area is being added or wetland impacts necessary then may be exempt from SJRWMD environmental resource permitting. A permit determination meeting should be conducted with SJRWMD during the project feasibility stage.

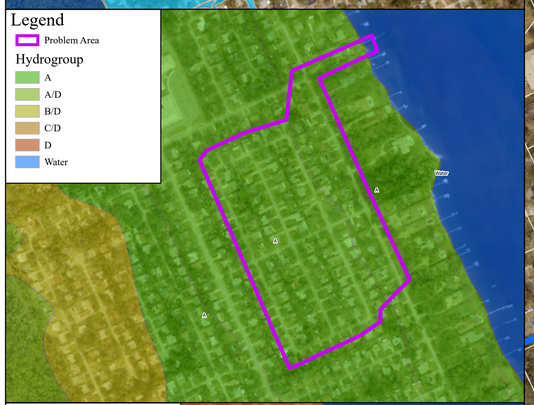
***Implementation Considerations*:** The project will require investigation of current right-of-way necessary to perform the improvements. Utility conflicts will likely exist and should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland impacts are not anticipated.

***Future SLR / Resiliency Considerations*:** The project area outfalls into a tidally influenced waterway. Consideration should be made during design to account for potential future seal level rise and hydrological stresses that may impact long term system performance.

Refer to **Figure 10-2** for a sketch of the pipe improvements.









SUMMARY OF EXISTING PIPES		
PIPE TYPE	DIAMETER (INCHES)	TOTAL LENGTH (FEET)
CMP	12	42
CMP	15	2307
CMP	18	1169
CMP	24	249
CMP	30	1229
RCP	12	39
RCP	15	526
RCP	18	39
RCP	24	158
RCP	30	147
RCP	36	411
OTHER (VCP)	6	25
TOTALS BASED ON CITY GIS DATA		

Include analysis of outfall along Beach Street for capacity improvements.

Investigate potential for securing easement for additional outfall to river to relieve stages.

Perform a wholesale upgrade to storm sewer system associated with Woodridge Drive and lateral street systems as appropriate.

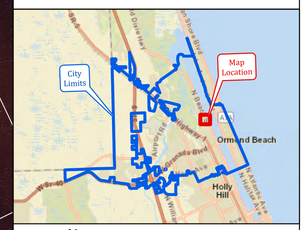
Replace all CMP pipes with RCP, upsize as necessary to improve conveyance. Perform flood study with hydraulic analysis to appropriately upsize pipes.

Hydraulic analysis may consider the potential benefit of exfiltration and/or underground detention in the upstream portions of the problem area based on abundance of Type A soils.

Reported chronic flooding area

Evaluate potential for lateral pipe connection to relieve flood stages at Woodridge Drive. This would need to be considered in conjunction with improvements in the Alanwood Drive problem area.

Recommendations
- Replacing CMPs with RCPs
- Increase pipe sizes within the residential area
- Possible pipe addition at between inlets located in between 722 North Beach Street and 693 North Beach Street
- Hydraulic analysis of the area



N W E S

0 125 250 Feet

Legend

- Parcels
- Problem Area
- Ponds
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-2

Flood Improvement Project Concept Map: Woodridge Drive Outfall

Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Replacement of the drainage piping system along Woodridge Drive with 36" minimum RCP (allowance for approximately 200').
- Replacement of CMP piping in the upstream area lateral streets (allowance for approximately 3000' of 24").
- The above replacement piping could be with exfiltration piping, in whole or in part. An allowance is made for half of the piping to be exfiltrating.
- Allowance for approximately 150' of 24" RCP cross connection pipe to outfall system to south along Beach Street. In this case, the allowance also includes replacement of approximately 350' of existing CMP pipe south of Woodridge Avenue along Beach Street.
- Up to 1000' of road upgrades (curbing, gutters, swale grading, sodding, etc.).
- Right-of-way administration.

Refer to **Table 5-2** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

Note that these improvements can easily be phased to accommodate fiscal year budget constraints.

TABLE 10-2
FLOOD IMPROVEMENT CONCEPT: WOODRIDGE DRIVE OUTFALL
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$104,671
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$34,890
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$34,890
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$69,781
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	0	$0
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	556	$13,889
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	556	$8,333
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	33	$148,500
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	1	$4,500
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	2000	$200,000
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	200	$30,000
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	1500	$195,000
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	1000	$35,000
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	389	$29,167
26	570-1-2	Performance Turf, Sod	SY	$3.00	556	$1,667
27	9999-1	CCTV Pipe Inspection	LF	$5.00	6350	$31,750
28	9999-2	Miscellaneous	LS	$0.00	0	$0
					CONSTRUCTION COST:	$942,038
					CONTINGENCY @ 20%:	$188,408
					ESTIMATED CONSTRUCTION COST:	**$1,130,445**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$7,500.00
2	-	Design & Permitting	LS	varies	1	$100,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$10,000.00
					SUBTOTAL:	**$117,500.00**
					ESTIMATED GRAND TOTAL:	**$1,247,945.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.3 South Arbor Drive and Grove Street (including Capri Circle)

Problem Area Description

The problem area is an area of older development. This includes South Arbor Drive, North Arbor Drive, and Grove Street that intersect one another to create a circular roadway between South Ridgewood Avenue and South Beach Street. This also includes North and South Capri Drive to the south of the above streets which loops to the east from Ridgewood Avenue.

Topography: The elevations in the area range from approximately 18 feet to 3 feet NAVD 1988. From the ridgeline along Ridgewood Avenue, the lands slopes to the east to the Halifax River.

Soils: Soils are hydrologic group A (freely draining).

Landuse: The area is medium density residential (with moderate degree of impervious area).

Floodplains: The area is predominantly areas with no based flood identified (Zone X), with fringes of Zone AE with Base Flood Elevations east along the Halifax River.

Infrastructure: The infrastructure within the area is dated from the early 1990s to the 2000s, and consists of various sizes of RCPs, HDPEs, and CMPs; sizes range from 12" to 24". A valley gutter system exists throughout the residential area, and stormwater is able to flow into the small grated inlets located alongside the road, but easily overtops into front yards. The roadway drainage system accommodates stormwater from an approximate area of 40 acres of residential properties.

Problem Summary

The City has reported that residents within the area have reported flooding. For instance, the resident of 403 Grove Street on August 19, 2020 reported standing water within the backyard of their property. During intense rainfall events and hurricanes, stormwater would reportedly reach the patio area of the resident's property. Based on the observations from the City, the 15" CMP storm pipe along South Arbor Drive (19 South Arbor Drive and 420 South Beach Street) has begun to fail.

The outfall form Capri Circle to the Halifax River runs through private property and appears undersized. The residential areas between Capri Circle and Beach Street have low lying swale / retention area drainage with an apparent undersized yard drain system. These conditions promoted flooding of back yards.

Geosyntec reviewed the available public information, observations documented on during a site visit completed on August 20, 2020, and discussions with City personnel and residents. The area has a history of flooding under severe rainfall events. Overall, the stormwater system within the area is outdated and requires rehabilitation. This would involve the replacement of CMPs to RCPs, increase pipe size to aide in drainage, enhance the gutter system, and regrade the area to promote stormwater flow.

Refer to **Figure 10-3** for a map of the specific area.

Photos of the Problem Area



Saturated backyard and uprooted tree at 403 Grove Street. (8/20/2020)



Saturated backyard and uprooted tree at 403 Grove Street. (8/20/2020)



Looking south towards the South Arbor Drive and Grove Street intersection. (8/20/2020)



Looking north down on Grove Street towards North Arbor Drive. (8/20/2020)



Looking northeast towards a grated inlet within valley gutter next to 19 South Arbor Drive. (8/20/2020)



Grated inlet and valley gutter on Grove Street east of 408 Grove Street; leaf litter was removed to make inlet visible. (8/20/2020)



View to west along South Arbor Drive (Google, 2014)



View to west along South Arbor Drive close to Grove Street (Google, 2014)



View to east along South Capri Circle (Google, 2014)



View to south along Capri Circle (Google, 2014)

Improvement Recommendations

Geosyntec recommends performing a flood study with hydraulic analysis to confirm level of service of existing infrastructures. This would identify undersized infrastructure associated with the Arbor Drive and Capri Circle systems. Based on the City's GIS infrastructure data, this area has approximately 790 feet of CMP pipes which may be reaching their service life. A conditions assessment is recommended to determine pipe warranting replacement. This would include visual inspection and in pipe CCTV observations where warranted. Other RCP or HDPE pipes in the area may likewise warrant inspection.

The drainage pipes along Arbor Drive South appear undersized (12" to 15" in diameter) and may inhibit effective drainage. The outfall drainage pipes from Capri Circle are possibly undersized (24" in diameter) and may inhibit effective drainage. Upsizing of these systems would include replacement of CMPs to RCPs and increasing pipe size to aide in drainage (minimum 18 inches). The pipe inverts should be evaluated with backyard swale grades to ensure effective drainage and prevent accumulation of stormwater within the swale system. The backyard grades should be surveyed to confirm positive drainage or provide support for maintenance grading. Other roadside improvements may be considered to effectively convey runoff such as additional curbing and/or forming more distinct front yard swales. This may provide an opportunity to implement green infrastructure and/or LID proactive to improvement drainage and provide some water quality treatment.

It is uncertain whether easements exist for the City to maintain and improve the drainage features in the backyard areas that convey runoff in and around the houses. These should be confirmed, but if do not exist in whole or part, efforts should be undertaken to obtain them. If the issues related to the flooding are symptomatic of larger regional management problems, then the City may consider the appropriateness of evaluating options for partnering with residents for improvements. Any City improvements would necessitate easements and right-of-way acquisition.

Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective drainage and conveyance and reducing flooding.

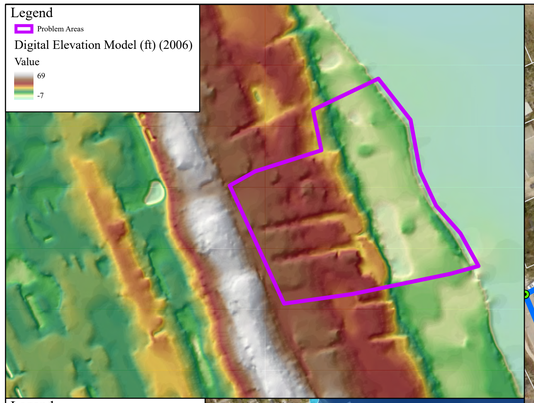
Water Quality Benefit: The recommended improvements may not have a direct impact on water quality. Consideration of green infrastructure and/or LID practice as part of the improvements may provide for some enhancement of water quality treatment.

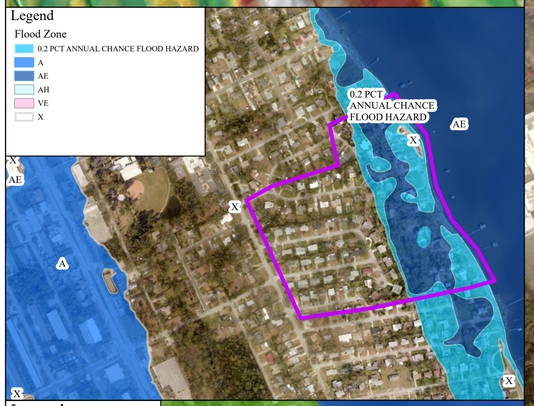
Permitting Considerations: The upgrades may be considered as improvements / maintenance to an existing system and if no additional impervious area is being added or wetland impacts necessary then may be exempt from SJRWMD environmental resource permitting. A permit determination meeting should be conducted with SJRWMD during the project feasibility stage.

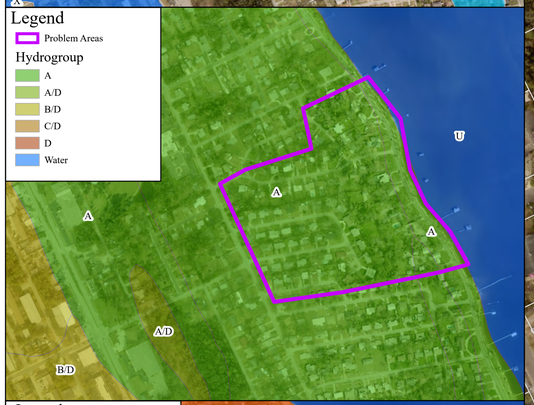
***Implementation Considerations*:** The project will require investigation of current easements and right-of-way necessary to perform the improvements. Utility conflicts will likely exist and should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland impacts are not anticipated.

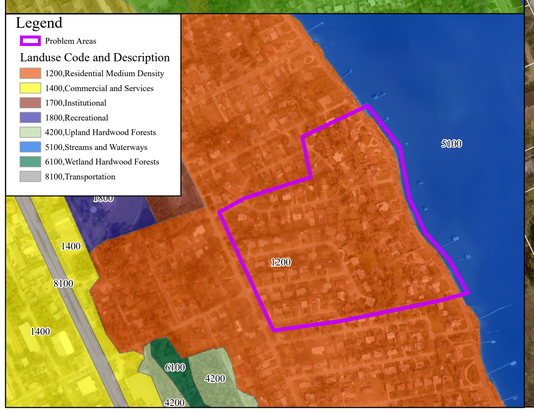
***Future SLR / Resiliency Considerations*:** The project area outfalls into a tidally influenced waterway. Consideration should be made during design to account for potential future seal level rise and hydrological stresses that may impact long term system performance.

Refer to **Figure 10-3** for details of the proposed improvement.





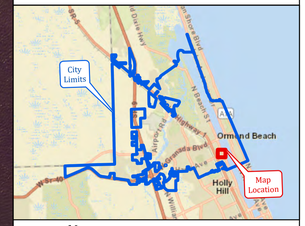






SUMMARY OF EXISTING PIPES		
PIPE TYPE	DIAMETER (INCHES)	TOTAL LENGTH (FEET)
CMP	12	425
CMP	15	358
CMP	24	6
RCP	12	508
RCP	15	88
RCP	24	83
OTHER (PE)	15-24	728
TOTALS BASED ON CITY GIS DATA		

CITY OF ORMOND BEACH FLORIDA



N W E S 0 100 200 Feet

Legend

- Parcels
- Problem Areas
- Ponds
- Swales
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-3

Flood Improvement Project Concept Map: South Arbor & Grove
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Replacement of the drainage piping system along South Arbor Drive and Grove Street with 24" minimum RCP. Additional inlets and piping will likely be required, so an allowance for up to 5 additional inlets with approximately 300' of associated piping is made.
- Upsize outfall from Capri Drive and back yard drains with minimum 36" RCP (approximately 400'). Upgrade drainage from swale / retention area adjacent to the south of the outfall with a new outfall minimum 24" RCP (approximately 300') with an allowance for up to 6 additional inlets. Outfall pipe replacement will require trenching through or directional drilling under Beach Street.
- Up to 500' of road upgrades (curbing, gutters, swale grading, sodding, etc.).
- Easement acquisition administration.

Refer to **Table 10-3** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

Note that these improvements can easily be phased to accommodate fiscal year budget constraints.

TABLE 10-3
FLOOD IMPROVEMENT CONCEPT: SOUTH ARBOR DRIVE AND GROVE STREET
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$37,400
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$12,467
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$12,467
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$24,933
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	74	$1,111
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	556	$13,889
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	556	$8,333
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	11	$49,500
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	0	$0
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	600	$60,000
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	400	$60,000
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	2	$11,000
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	1	$7,000
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	500	$17,500
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	111	$8,333
26	570-1-2	Performance Turf, Sod	SY	$3.00	556	$1,667
27	9999-1	CCTV Pipe Inspection	LF	$5.00	2200	$11,000
28	9999-2	Miscellaneous	LS	$0.00	0	$0
					CONSTRUCTION COST:	$336,600
					CONTINGENCY @ 20%:	$67,320
					ESTIMATED CONSTRUCTION COST:	**$403,920**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$50,000.00
2	-	Design & Permitting	LS	varies	1	$75,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$25,000.00
					SUBTOTAL:	**$150,000.00**
					ESTIMATED GRAND TOTAL:	**$553,920.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.4 Durrance Acres

Problem Area Description

This approximate 1000-acre area is located west of Tymber Creek Road and I-95, north of Airport Road, south of Durrance Lane, and east of the Flagler -Volusia County line. Groover Branch runs north to south through the eastern portion of the area for approximately 8000 feet, draining into the Tomoka River farther south. An unnamed tributary to Groover Branch channel/creek runs approximately 7,300 feet in length flowing northwest to southeast through the area, connecting with Groover Creek just east of Leeway Trail. The areas surrounding the unnamed creek/channel are heavily vegetated. Larger contributing areas to the unnamed creek and Groover Branch are present upstream of the problem area north of Durrance Lane.

Topography: The elevations in the area range from approximately 25 feet to 10 feet NAVD 1988. From the north along Durrance Lane, the lands slopes to the east-southeast towards the Groover Branch.

Soils: Soils are predominantly hydrologic group A/D (freely draining to poorly draining - seasonal) throughout most of the area. Spots of dual hydrological class B/D, C/D, and D (less freely draining, higher water table) are located in areas along Groover Branch and upstream tributaries.

Landuse: The area has low density residential (with low degree of impervious area) interspersed with areas of uplands, wetlands, and crop/pastureland present (with no degree of imperviousness).

Floodplains: The area is fairly well split between areas with no based flood identified (Zone X) in the higher elevations with fringe areas of Zones A (no Base Flood Elevation) along Groover Creek and the various small tributaries.

Infrastructure: There is a headwall with 2 approximately 60" RCP pipes under Leeway Trail to continue the connection of the unnamed creek/channel towards Groover Branch. This is located approximately 350 feet north of Arabian Trail on Leeway Trail near 491 Leeway Trail.

Problem Summary

Based on observations from the City and reports from residents, flooding occurs on the properties near the tributary to Groover Branch – Leeway Trail crossing. Infrastructure information of this area is not available due to the lack of jurisdiction of the City within the area (i.e. private classification), but the pipes are estimated to be dual 60" RCPs. Geosyntec reviewed the available public information, observations documented on during a site visit completed on February 19, 2020, and discussions with City personnel. The area is question is under private jurisdiction, therefore maintenance of the area is under the responsibility of the property owners. Residents also reported their concerns that new development south of the area (Deer Run, Cypress Place) may have changed drainage patterns contributing to the flooding of the culvert crossing.

Refer to Figure **10-4** for a map of the specific area.

Photos of the Problem Area



Headwall of pipe near 491 Leeway Trail. (2/19/2020)



Erosion above headwall and pipe near 491 Leeway Trail. (2/19/2020)



The pipes near 491 Leeway Trail under the road within the unnamed channel/creek. (2/19/2020)



Vegetation with the unnamed channel/creek east of Leeway Trail and west of Groover Branch. (2/19/2020)



View to north along Leeway Trail from the location of the cross-drain culvert (2/19/2020)



View to south along Leeway Trail from the location of the cross-drain culvert (2/19/2020)



View of Groover Branch just upstream of confluence with the unnamed tributary (2/19/2020)



View of Groover Branch north of Durrance Lane (2/19/2020)



View of Groover Branch east of Tymber Creek Road (2/19/2020)



View of Groover Branch north of Airport Road (2/19/2020)

Improvement Recommendations

Based on the foregoing, it recommended that a flood study be performed for the areas contributing to the unnamed tributary and Groover Brach to determine hydraulic capacity issues and how they may relate to the surrounding areas. This would focus on conveyance capacity and needs of the overall system to provide holistic recommendations for needed improvements. This would also allow a determination of the potential impact that the newer developments in the surrounding areas may have on the surrounding channels and creeks.

If the issues related to the flooding are symptomatic of larger regional management problems, then the City may consider the appropriateness of evaluating options for partnering with residents for improvements. Any City improvements would necessitate easements and right-of-way acquisition.

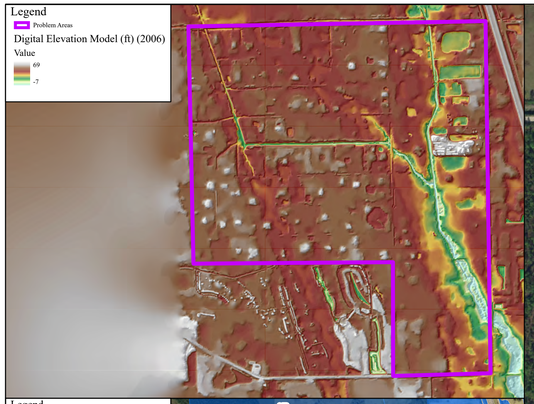
Flood Benefit: The implementation of the study would provide a flood benefit to the area by providing guidance for more effective drainage and conveyance to potentially reduce flooding.

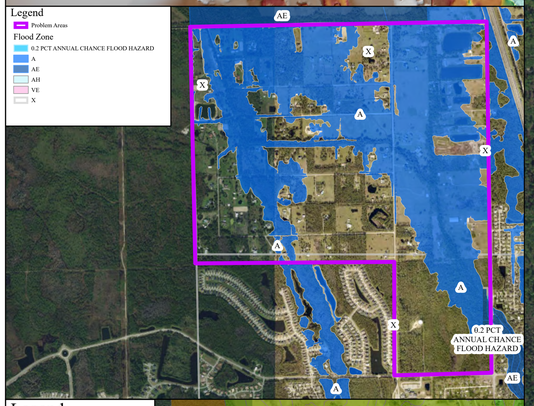
Water Quality Benefit: The recommended study would provide an opportunity to evaluate the need for water quality improvements in the area that may reduce pollutant loading to the Tomoka River. Consideration of green infrastructure and/or LID practice as part of the study may provide for some enhancement of water quality treatment.

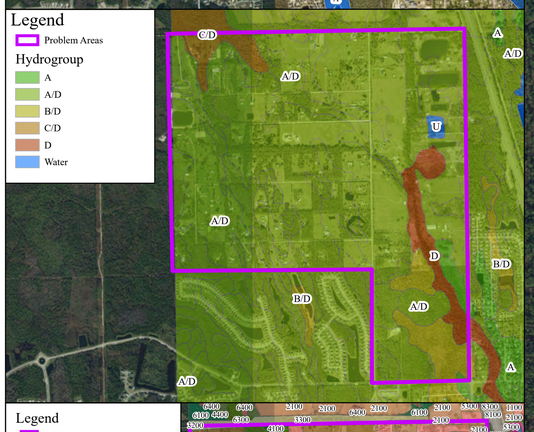
Permitting Considerations: The study would identify potential improvement and would quantify any permitting requirements.

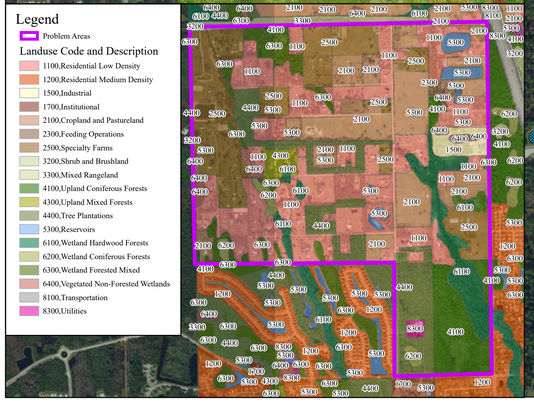
***Implementation Considerations*:** The study would also quantity and easement requirements, potential utility conflicts, or wetland impact issues associated with any recommendations for improvements.

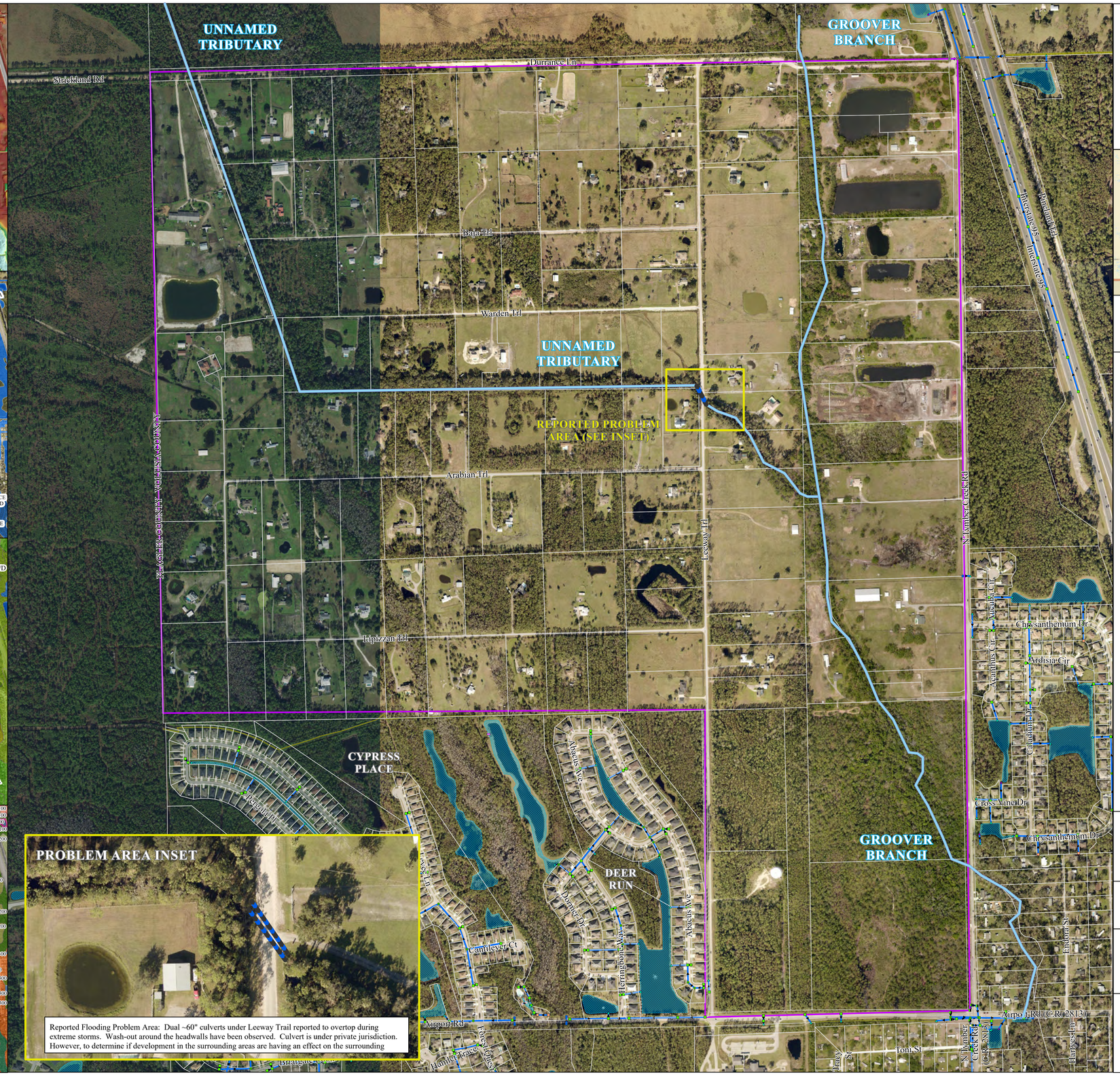
Refer to **Figure 10-4** for map of the study area.



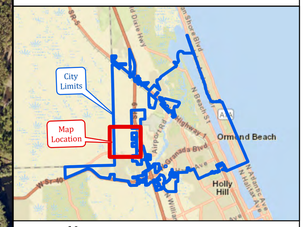








CITY OF ORMOND BEACH FLORIDA



N W E S

0 400 800 Feet

Legend

- Parcels
- Problem Areas
- Ponds
- Swales
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-4

Flood Improvement Project Concept Map: Durrance Acres
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate focuses on an allowance for upfront flood study with project feasibility analysis. This may include improvement conceptualization. This would be supported by survey data collection.

Since solutions to address flooding are uncertain at this time, no specific construction recommendations are provided. Note the flood study may result in the identification of future flood improvement projects to be considered for future CIP implementation.

Refer to **Table 10-4** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

TABLE 10-4
FLOOD IMPROVEMENT CONCEPT: DURRANCE ACRES
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	0	$0
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	0	$0
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	0	$0
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	0	$0
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	0	$0
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	0	$0
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	0	$0
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	0	$0
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	0	$0
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	0	$0
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	0	$0
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	0	$0
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	0	$0
26	570-1-2	Performance Turf, Sod	SY	$3.00	0	$0
27	9999-1	CCTV Pipe Inspection	LF	$5.00	0	$0
28	9999-2	Miscellaneous	LS	$0.00	0	$0
					CONSTRUCTION COST:	$0
					CONTINGENCY @ 20%:	$0
					ESTIMATED CONSTRUCTION COST:	**$0**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$100,000.00
2	-	Design & Permitting	LS	varies	1	$0.00
3	-	Easement Acquisition and Administration	LS	varies	1	$0.00
					SUBTOTAL:	**$100,000.00**
					ESTIMATED GRAND TOTAL:	**$100,000.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.5 Cumberland

Problem Area Description

This approximately 150-acre area is generally bounded by Ridgewood Drive (on the east), Thompson Creek (on the west), Sanchez Avenue (to the north) and Melrose Avenue (to the south).

Topography: The elevations in the area range from approximately 18 feet to 9 feet NAVD 1988. From the ridgeline along Ridgewood Avenue, the land slopes to the west towards Thompson Creek.

Soils: Soils are dual hydro class A/D and B/D (less freely draining, higher water table) to the west towards the river. Small fringes of D soils are also present.

Landuse: The area is predominantly medium density residential (with moderate degree of impervious area) with some surface waters and wetlands present.

Floodplains: The area is predominantly areas with no based flood identified (Zone X), with areas of Zone AE nearer to Thompson Creek.

Infrastructure: The infrastructure within the area is dated from the mid-1970s to the 2000s and consists of various sizes of RCP, CMP, and VCP with sizes range from 12" to 36". A storm sewer system along Putnam, Cumberland, and Sanchez Avenues routes runoff to the outfall ditch/pipe path along the north side of Sanchez Avenue. The Putnam Avenue system also connects with storm sewers from Greenwood and Warwick Avenues discharging into a pond system connected to Thompson Creek. A valley gutter system exists through the area helping to route flow to the various inlets. Two other ponding areas are present between the downstream ends of Putnam – Cumberland and Cumberland – Sanchez that also connect directly to Thompson Creek.

Problem Summary

The City has reported that several residents within the area have reported extensive flooding in the area. During the initial public meeting on January 27, 2020, several residents reported that Cumberland Avenue and Sanchez Avenue have street flooding problems frequently during heavy rain events. These flooding issues have impeded access to residential properties and have resulted in flooding into homes. The ponded area between Cumberland Avenue and Putnam Avenue appears to require maintenance, although the City does not have an easement.

A follow-up meeting with these residents was completed on June 24, 2020, to discuss the extent of flooding during heavy rainfall events (i.e. Hurricane Irma). During the follow-up meeting, it was confirmed that the ponded area between Cumberland and Putnam Avenues behind the residential properties was overgrown, and the backyard portions of the properties were saturated. Overall, the stormwater system within the area appears outdated and lacking in capacity. Tailwater in Thompson Creek has been observed to severely limit positive drainage of the areas.

Refer to **Figure 10-1** for a map of the specific area.

Photos of the Problem Area



View to west along Sanchez Avenue near outfall (Google, 2011)



The ditch system along Sanchez Avenue near Thompson Creek. (6/24/2020)



Concrete flume at the end of Sanchez Avenue to discharge stormwater runoff into the Thompson Creek. (6/24/2020)



Thompson Creek at Sanchez Avenue near the Tomoka State Park. (6/24/2020)



View to the west along Cumberland Avenue from Andrews Street (Google, 2011)



View to the west along Cumberland Avenue near the cul-de-sac (Google, 2011)



View to the south along Thompson Creek from end of Cumberland Avenue (6/24/2020)



Overgrowth within ponded area behind of 340 Cumberland Avenue. (6/24/2020)



The saturated vegetated area within the backyard portion of 572 Andrews Street, on the north side of the overgrown ponded area. (6/24/2020)



View to west along Putnam Avenue from Andrews Street (Google, 2011)



View towards Thompson Creek from west end of Putnam Avenue (Google, 2011)



View of to south lateral canal outfall from Putnam Avenue (6/24/2020)



Historical photo from resident displaying flooding after Hurricane Irma. Looking southwest towards 350 Cumberland Avenue. (9/11/2017)



Looking east down Cumberland Avenue towards Andrews Street after Hurricane Irma. (9/11/2017)



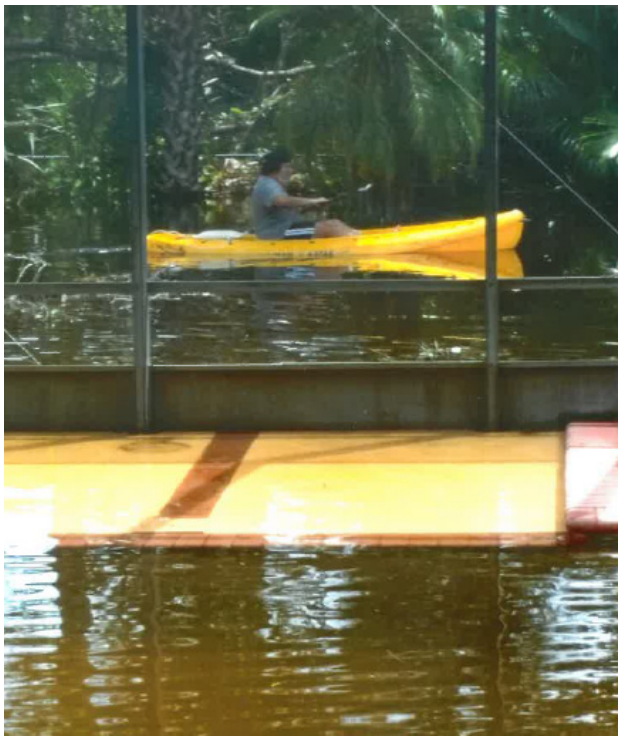
Looking towards 350 Cumberland Avenue after Hurricane Irma; stormwater overwhelms the street and stormwater infrastructure. (9/11/2017)



Historical photo from resident displaying flooding after Hurricane Irma. (9/11/2017)



Historical photo from resident looking towards 340 Cumberland Avenue after Hurricane Irene; stormwater overwhelms the street and stormwater infrastructure. (August 2011)



Historical photo from resident displaying flooding behind 340 Cumberland Avenue after Hurricane Irene. (August 2011)

Improvement Recommendations

Geosyntec recommends performing a flood study with hydraulic analysis to confirm level of service of existing infrastructures. This would identify undersized infrastructure associated with the problem area drainage systems. This would include a detailed assessment of tailwater constraints in Thompson Creek that impacts positive drainage.

Geosyntec recommends that CMP and VCP pipe (12" to 24") be replaced with RCPs, increase pipe sizes (minimum 18 inches), and install additional drainage network to help equalize and relieve stage throughout the area. Based on the City's GIS data, there is approximately 3500' of these pipes throughout the problem area. A conditions assessment is recommended to determine pipe warranting replacement. This would include visual inspection and in pipe CCTV observations where warranted. Other RCP pipes in the area may likewise warrant inspection.

In particular, it is recommended to install new inlets and piping along Andrews Street to cross-connect the systems along Putnam Avenue to Sanchez Avenue which would include rerouting some of the flow running down Cumberland Avenue. This would help to distribute stormwater runoff and may allow for more effective flood recovery in the central portions of the area.

The outfall along Sanchez Avenue should be investigated to ensure proper capacity. This may include upsizing pipes, widening ditch cross-sections, or enclosing the system with piping to improve conveyance.

A detailed data collection effort should focus on the ponded area next to Thompson Creek between Cumberland and Putnam Avenues. This should evaluate maintenance issues associated with the area that may be inhibiting positive drainage after storm events.

The soils in the upgradient portions near Ridgewood Avenue are hydrogroup type A which may facilitate exfiltration or similar underground detention to reduce peak runoff flows traveling west towards Thompson Creek. Although exfiltration systems have been problematic for the City in the past, newer technologies and system installation and maintenance practices have rendered them more sustainable and are considered a viable option. Looking at upstream areas may provide an opportunity to implement green infrastructure and/or LID proactive to improvement drainage and provide some water quality treatment.

It is understood that drainage from the areas adjacent to Thompson Creek are influenced and often controlled by the stage in the creek. As such, upstream improvements can only be successful in improving drainage to the creek when the creek tailwater allows positive drainage or to more effectively drain the areas once tailwater recedes. Improvements to keep high creek stages from impacting the project area would necessitate seawalls or other waterside structures to provide a barrier for higher stage control/protection. Such measures would need to be consistently applied across the entire creek interface, however (i.e., every private property would need to have a seawall for that to be effective), with cost bourn by property owners. Also, construction of a seawall would prevent positive gravity drainage from the contributing neighborhood areas so pumping systems would need to be installed to provide positive discharges of storm runoff and baseflows. Pumping systems to be able to provide sufficient flood level of service for extreme storm events would require large footprints for large high flow pumps and require expensive long-term maintenance. Although technically feasible from an engineering standpoint, these very expensive and obtrusive engineering solutions are not considered practical given the limited number of

properties impacts. In the absence of such improvements, individual property owners may consider options to flood proof their properties, if possible, through structure raising or other protective measures. Note that adding fill within the regulated floodplain areas would not be a possible solution without consideration of providing compensating (cup for cup) storage elsewhere in the same floodplain.

Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective drainage and conveyance and reducing flooding. Tailwater constraints in Thompson Creek would prevent a full solution to flooding.

Water Quality Benefit: The recommended improvements may not have a direct impact on water quality. Consideration of green infrastructure and/or LID practice as part of the improvements may provide for some enhancement of water quality treatment.

Permitting Considerations: The upgrades may be considered as improvements / maintenance to an existing system and if no additional impervious area is being added or wetland impacts necessary then may be exempt from SJRWMD environmental resource permitting. It is likely that peak discharges to Thompson Creek may be increased and possibly wetland and surface water areas impacted so permitting is likely. A permit determination meeting should be conducted with SJRWMD during the project feasibility stage. Wetland permitting thought the FDEPs 404 program (now delegated from USACE) may also be necessary and should also be investigated.

***Implementation Considerations*:** The project will require investigation of current easements and right-of-way necessary to perform the improvements. Utility conflicts will likely exist and should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland and surface water impacts are anticipated.

***Future SLR / Resiliency Considerations*:** The project area outfalls into a tidally influenced waterway. Consideration should be made during design to account for potential future seal level rise and hydrological stresses that may impact long term system performance. This would also be applicable with regard to any consideration for installing new or modifying existing seawalls.

Refer to **Figure 10-5** for details of the proposed improvements.

SUMMARY OF EXISTING PIPES		
PIPE TYPE	DIAMETER (INCHES)	TOTAL LENGTH (FEET)
CMP	12	695
CMP	12X18	401
CMP	15	1257
CMP	18	768
CMP	24	213
CLAY	12	173
RCP	12	289
RCP	12X18	22
RCP	15	4639
RCP	18	1094
RCP	24	615
RCP	34X53	168
OTHER (PVC, HDPE)	15 - 36	91
TOTALS BASED ON CITY GIS DATA		

Recommendations:

- Perform Flood Study with hydraulic analysis to confirm level of service (LOS) deficiencies and prioritize pipe locations warranting upsizing. Priority to take into account degree of LOS deficiency and reported incidents of flooding. Evaluate inlet capacity deficiencies, identify needs for additional inlets and piping. Increase pipe sizes as warranted within the residential area.

- Perform CCTV pipe inspections to prioritize CMP and clay pipe replacement and identify RCP issues warranting rehabilitation or replacement.

Evaluate outfall conveyance capacity and LOS through hydraulic analysis

Confirm or secure easement for maintenance

Add relief piping along Andrews Street to cut off some flow coming down Cumberland Avenue to distribute to other outfall locations

Flooding Area

Flooding Area

Flooding Area

Confirm topography in wetland / ponded area, evaluate drainage outfall characteristics. Evaluate benefit of securing easement.

Recommendations:

- Confirm existing easements and identify possible attainment of easements for pipes running through private property.

- Perform feasibility analysis of implementing program to apply green infrastructure / LID practices throughout the area including shallow roadside swales, bioretention, and/or rain gardens. The goal would be to provide additional small scale, distributed attenuation that may offset the need for additional inlet /piping infrastructure and to provide enhanced water quality.

SANCHEZ AVENUE
CUMBERLAND AVENUE
MELROSE AVENUE
N RIDGEWOOD AVENUE
THOMPSON CREEK
THOMPSON CREEK
Lindenwood Circle South
Lindenwood Circle West
Sanchez Ave
Cumberland Ave
Andrews St
Pomona Ave
Midwood Rd
Wenona Ave
Greenwood Ave
Melrose Ave
Lindenwood Ave
N US Hwy 1
W US Hwy 1

Legend
Problem Areas
Digital Elevation Model (ft) (2006)
Value
69
-7

Legend
Problem Areas
Flood Zone
0.2 PCT ANNUAL CHANCE FLOOD HAZARD
A
AE
AH
VE
X
0.2 PCT ANNUAL CHANCE FLOOD HAZARD
X
AE

Legend
Problem Areas
Hydrogroup
A
A/D
B/D
C/D
D
Water

Legend
Problem Areas
Landuse Code and Description
1200,Residential Medium Density
1400,Commercial and Services
4200,Upland Hardwood Forests
4300,Upland Mixed Forests
5100,Streams and Waterways
5300,Reservoirs
6100,Wetland Hardwood Forests
6300,Wetland Forested Mixed
6400,Vegetated Non-Forested Wetlands
7400,Disturbed Lands
8100,Transportation
8300,Utilities

CITY OF ORMOND BEACH FLORIDA

City Limits
Map Location
Ormond Beach
Holly Hill

N
W
E
S
0
150
300
Feet

Legend
Problem Areas
Ponds
Swales
Stormwater Pipe

Stormwater Structure Type
BAFFLE BOX
BOX CULVERT
CLEAN OUT
CURB INLET
ELBOW
ENDWALL
HEADWALL
INLET
JUNCTION
JUNCTION BOX
MANHOLE
MES
NO STRUCTURE
OVERFLOW
PLUG
PUMPSTATION
TEE
UNKNOWN
WEIR
WYE
YARD DRAIN

Proposed Stormwater Structure Type
INLET
Proposed Pipe Additions
Parcels

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-5

Flood Improvement Project Concept Map: Cumberland
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Replacement / upgrading of the drainage piping system along Sanchez Avenue, Cumberland Avenue, Putnam Avenue, Warwick Avenue, Greenwood Avenue, Andrews Street, Yonge Street, and McIntosh Street with 24" minimum RCP. For costing purposes, it is assumed that up to 3000' of piping will be replaced/upsized.
- Install approximately 6 inlets and ~700' feet of piping along Andrews Avenue to connect the Putnam Avenue and Cumberland Avenue systems to the Sanchez Avenue outfall.
- Up to 5000' of roadside upgrades (curbing, gutters, swale grading, sodding, etc.).
- Easement acquisition administration.

Refer to **Table 10-5** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

Note that these improvements can easily be phased to accommodate fiscal year budget constraints.

TABLE 10-5
FLOOD IMPROVEMENT CONCEPT: CUMBERLAND
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$114,689
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$38,230
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$38,230
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$76,459
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	370	$3,704
6	0120-3	Lateral Ditch Excavation	CY	$15.00	741	$11,111
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	2778	$69,444
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	2778	$41,667
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	6	$27,000
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	0	$0
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	2200	$220,000
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	1500	$225,000
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	1000	$35,000
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	833	$62,500
26	570-1-2	Performance Turf, Sod	SY	$3.00	5556	$16,667
27	9999-1	CCTV Pipe Inspection	LF	$5.00	10500	$52,500
28	9999-2	Miscellaneous	LS	$0.00	0	$0
					CONSTRUCTION COST:	$1,032,200
					CONTINGENCY @ 20%:	$206,440
					ESTIMATED CONSTRUCTION COST:	**$1,238,640**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$75,000.00
2	-	Design & Permitting	LS	varies	1	$100,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$20,000.00
					SUBTOTAL:	**$195,000.00**
					ESTIMATED GRAND TOTAL:	**$1,433,640.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.6 North Highway US1 Drainage

Problem Area Description

North Highway US1 Drainage consists of largely undeveloped parcels approximately 14 acres in size surrounded by commercial and industrial development. The problem area is surrounded by North US 1 to the northeast, Broadway Avenue to the northwest, and the FEC Railroad system to the southwest. The area is bisected by Flagler Road and Gowers Street (much of the streets vacated).

Topography: The elevations in the area range from approximately 30 feet to 27 feet NAVD 1988 in the areas abutting US 1.

Soils: Soils are dual hydrological class A/D (less freely draining, higher water table).

Landuse: The area is predominantly undeveloped uplands (with no degree of impervious area).

Floodplains: The area has no based flood identified (Zone X).

Infrastructure: A roadside ditch runs parallel to the problem area and North US 1. The ditch is connected through a FDOT owned pipe, located under North US 1, that directs collected stormwater southeast to an inlet located approximately 500 feet southeast of Plantation Oaks Boulevard. This drains through a culvert north to a County ditch on the south side of Addison Drive. This County ditch connects under Addison Road through a 36-inch CMP, which then directs stormwater into a County ditch that runs parallel along Addison Drive drainage east then north towards the Ormond Lakes stormwater system.

Problem Summary

Geosyntec reviewed the available public information, and observations documented during a site visit completed on February 19, 2020 with City of Ormond Beach personnel. The City reported that the low-lying undeveloped areas in and adjacent to the problem area south of US 1 become overwhelmed by stormwater during rainfall events, which causes nuisance flooding along US 1 and near the surrounding commercial property area located directly southeast of problem area.

The outfall for the area travels through pipes north under US 1 to the County ditch along Addison Drive. According to the City's GIS data, there was a historical County ditch approximately 1300 feet long that connects the North Highway US1 Drainage ditch system to the ditch system on Addison Drive. It was mentioned during the site visit that most of the ditch was converted to a series of underground pipes. The remaining ditch system was observed to be overgrown and were either saturated or filled with stormwater.

Refer to **Figure 10-6** for a map of the specific area.

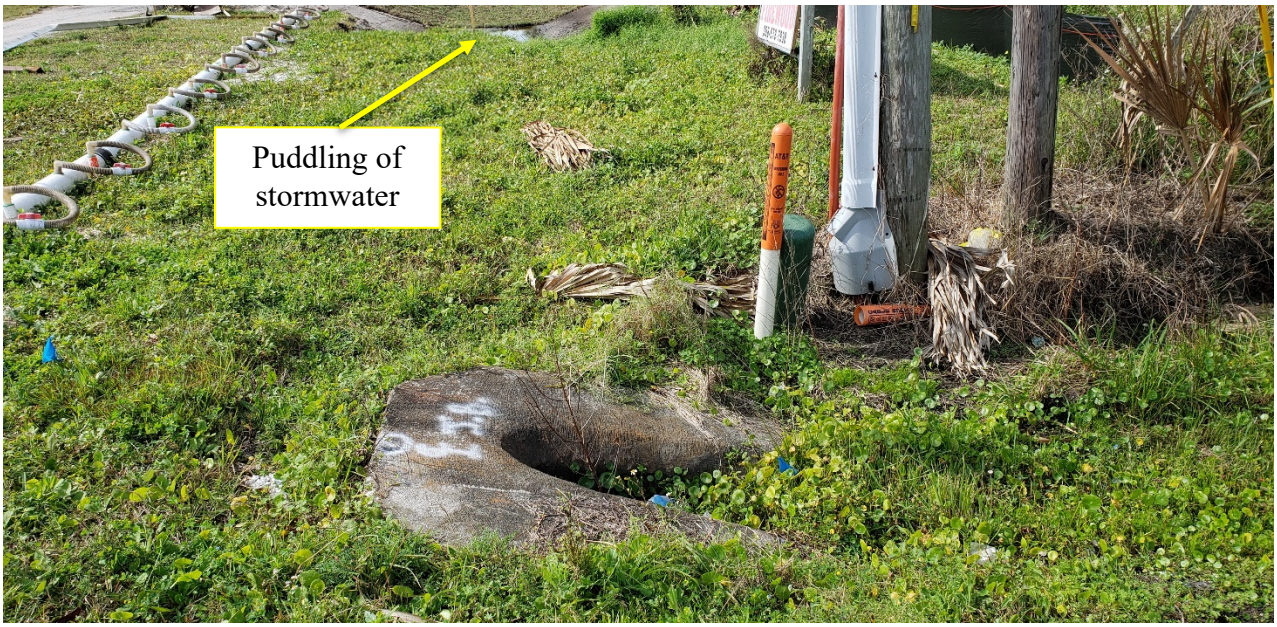
Photos of the Problem Area



Looking south on North US Highway 1 of FDOT pipe connection to North Highway US1 Drainage swale. (Google Maps Imagery, 2019)



Headwall of FDOT pipe that connects the North Highway US1 Drainage swale to the FDOT pipe system. (2/19/2020)



Mitered end section of pipe located in problem area near the FDOT pipe connection. Area was observed to be saturated with stormwater. (2/19/2020)



The County stormwater ditch located approximately 505 feet from Plantation Oaks Boulevard and Atlantic Road that flows south along Addison Drive towards Ormond Lakes. (2/19/2020)



Mitered end section of County pipe, filled with water, within stormwater ditch downstream of North Highway US1 Drainage on Atlantic Road. (2/19/2020)



Upstream end of County culvert under Addison Drive. (2/19/2020)



Downstream end of County culvert under Addison Drive. (2/19/2020)



Roadside County ditch, filled with water, on Addison Drive that directs stormwater to Ormond Lakes. (2/19/2020)

Improvement Recommendations

The outfall from the problem area consisting of a series of underground pipes leading to the Addison Drive ditch may be undersized. Therefore, Geosyntec recommends the completion of a flood study to confirm storage and conveyance characteristics in the problem area and the capacity of the downstream outfall system. This will identify opportunities to improve conditions. Since this work would be outside of City limits, any eventual improvements would require coordination with the FDOT and Volusia County.

The efforts would include a study of the grading of the areas on the south side of US 1 to identify to opportunities for storage and attenuation to reduce flooding. Opportunity evaluation may leverage use of the vacated right of way along Flagler Road and/or Gowers Street. It is noted that the City's GIS data should be updated to display the existing structures data.

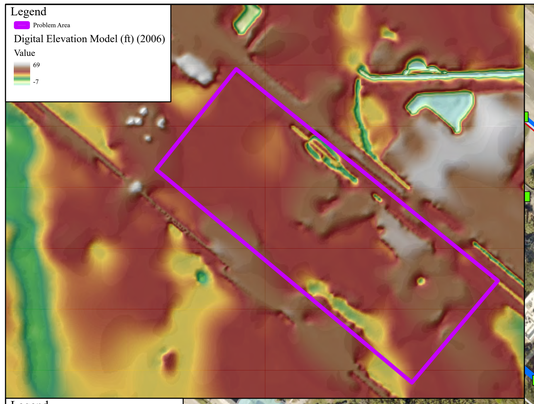
Flood Benefit: The implementation of the study would provide a flood benefit to the area by providing guidance for more effective drainage and conveyance to potentially reduce flooding.

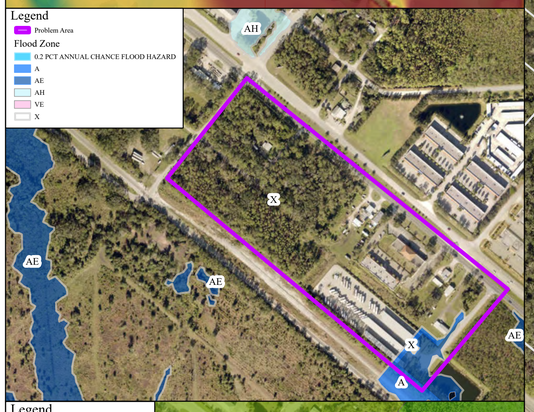
Water Quality Benefit: The recommended study would provide an opportunity to evaluate the need for water quality improvements in the area that may reduce pollutant loadings. Consideration of green infrastructure and/or LID practice as part of the study may provide for some enhancement of water quality treatment.

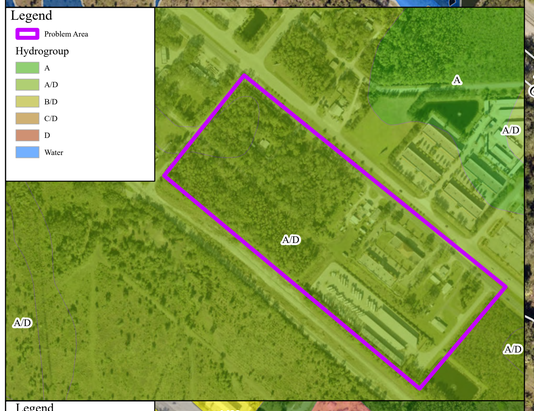
Permitting Considerations: The study would identify potential improvement and would quantify any permitting requirements.

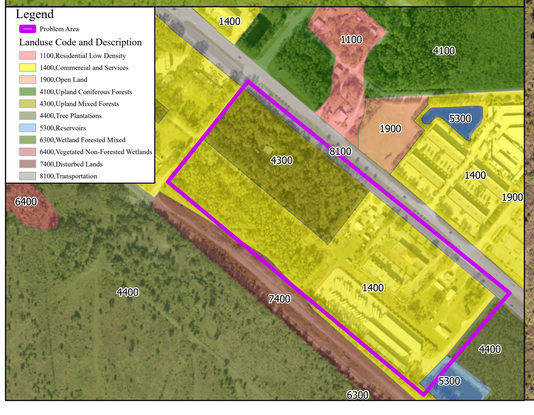
***Implementation Considerations*:** The study would also quantity and easement requirements, potential utility conflicts, or wetland impact issues associated with any recommendations for improvements.

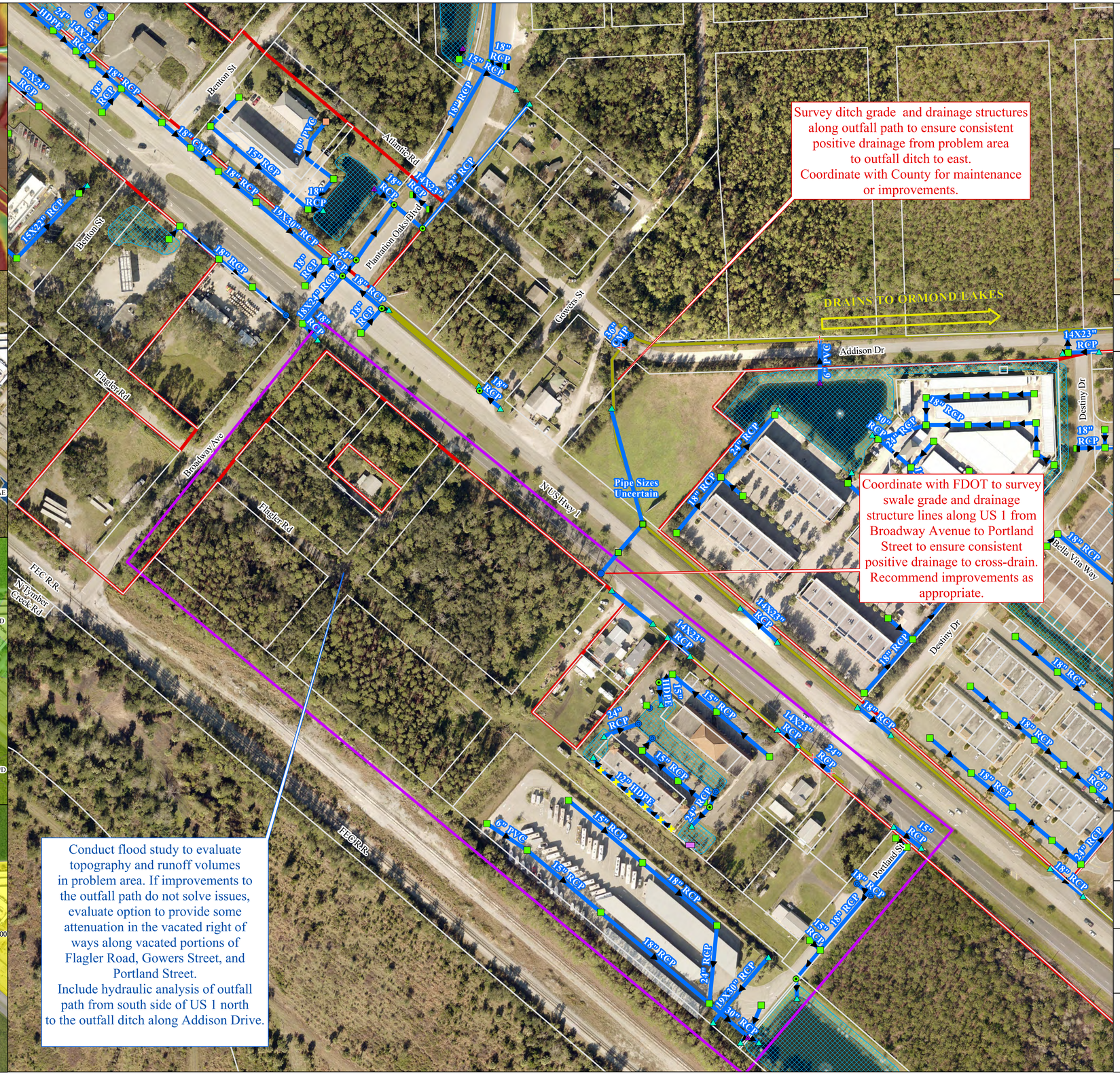
Refer to **Figure 10-6** for details of the proposed improvement.

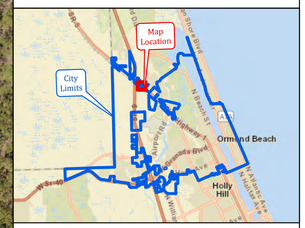












N W E S

0 100 200 Feet

Legend

- Parcels
- City Limits
- Problem Area
- Ponds
- Swales
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-6

Flood Improvement Project Concept Map: North Highway US1 Drainage
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

Since solutions to address flooding are uncertain at this time, no specific construction recommendations are provided. Note the flood study may result in the identification of future flood improvement projects to be considered for future CIP implementation.

Refer to **Table 10-6** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

TABLE 10-6
FLOOD IMPROVEMENT CONCEPT: NORTH HIGHWAY US1 DRAINAGE
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	0	$0
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	0	$0
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	0	$0
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	0	$0
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	0	$0
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	0	$0
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	0	$0
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	0	$0
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	0	$0
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	0	$0
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	0	$0
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	0	$0
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	0	$0
26	570-1-2	Performance Turf, Sod	SY	$3.00	0	$0
27	9999-1	CCTV Pipe Inspection	LF	$5.00	0	$0
28	9999-2	Miscellaneous (grading and conveyance improvments)	LS	$25,000.00	0	$0
					CONSTRUCTION COST:	$0
					CONTINGENCY @ 20%:	$0
					ESTIMATED CONSTRUCTION COST:	**$0**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$75,000.00
2	-	Design & Permitting	LS	varies	1	$0.00
3	-	Easement Acquisition and Administration	LS	varies	1	$0.00
					SUBTOTAL:	**$75,000.00**
					ESTIMATED GRAND TOTAL:	**$75,000.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.7 Ormond Lakes

Problem Area Description

The Ormond Lakes subdivision is located south of Pine Tree Drive at the north City limits. The subdivision is served by numerous wet detention ponds and wetlands. A significant upstream County drainage area contributes across from the north and northwest of Pine Tree Drive.

Topography: The elevations in the area range from approximately 20 feet to 5 feet NAVD 1988. From the west, the land slopes to the east to the various stormwater ponds in the subdivision, which all drain towards the wetlands adjacent to the east.

Soils: Soils are predominantly hydrologic group A (freely draining) in the subdivision area. Soils transition more to dual hydro class B/D (less freely draining, higher water table) to the west towards the wetlands.

Landuse: The area is predominantly medium density residential (with moderate degree of impervious area) with low density residential (with high degree of imperviousness) in the areas north of Pine Tree Drive.

Floodplains: The area is predominantly areas with no based flood identified (Zone X), with fringes of Zone AE along the wetlands to the east.

Infrastructure: A County lake on the northern side of Pine Tree Drive discharges through three 30-inch pipes (appearing RCP on the north end but reported to be CMP in the City's GIS inventory) which flow into an approximate 20-feet wide channel on the south side of the road. That channel then discharges to the east into two wet retention ponds in series that then discharge into nearby wetland area to the east. A southern lake collects stormwater discharge from the subdivision's storm sewer system in addition to the outfall from the wetland area directly north of Lakebluff Drive. The wetland can also overflow to the aforementioned ditch that discharges to the east.

Geosyntec reviewed the available public information, and observations documented on during a site visit completed on August 20, 2020. According to the City's GIS data, there are no stormwater structures that directly connect the North and South Lakes together. The common connection between the two is a wetland area south of Pine Tree Drive and north of Lakebluff Drive. The channel that receives discharge from the North Pond appeared to be overgrown in vegetation. It should be noted that the wetland area was saturated as well during the August 20, 2020 site visit.

Problem Summary

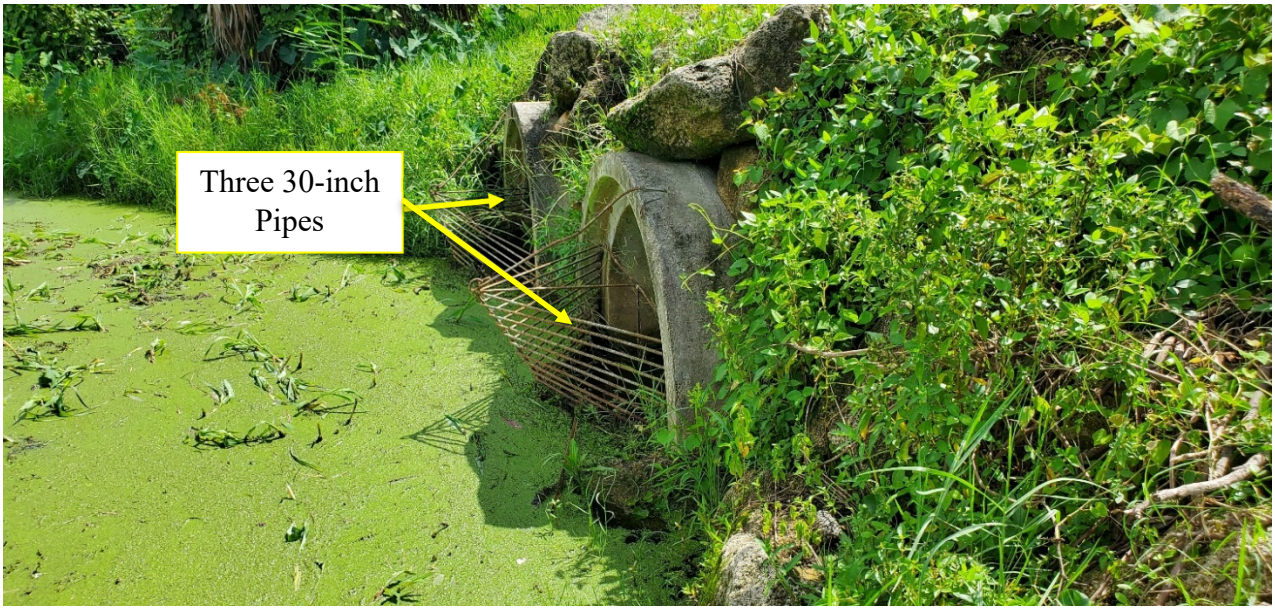
The City reported that the residents within the north portions of the subdivision (i.e., south of Pine Tree Drive) have reported high wetland stages and that the bubble up structure associated with the wetland had overflow being directed to Lakebluff Drive and towards the south pond.

Refer to **Figure 10-7** for a map of the specific area.

Photos of the Problem Area



The southern tip of the North Pond located north of Pine Tree Drive. (8/20/2020)



The 30-inch County pipes within the North Pond located north of Pine Tree Drive. (8/20/2020)



The discharge point of the County 30-in CMPs for the North pond into the 20-ft wide channel. (8/20/2020)



The downstream portion of the 20-ft wide channel located along Pine Tree Drive. (8/20/2020)



Wet retention pond collecting discharge from the 20-ft wide channel along Pine Tree Drive. (8/20/2020)



Overflow structure within wet detention pond associated with the North Pond system. (8/20/2020)



Overflow of the small retention pond associated with North Pond system, along Pine Tree Drive, discharge into wetland area. (8/20/2020)



Mitered End sections (MES), located in the wetland area downstream of North Pond, associated with the small wet detention pond. (8/20/2020)



Northern portion of the South Pond with MES of 48-inch RCP for discharge into wetland area north of Lakebluff Drive. (8/20/2020)



Inlets connecting the South Pond to the wetland area north of Lakebluff Drive. (8/20/2020)

Improvement Recommendations

Geosyntec recommends maintenance of the stormwater structures within and/or near wetland areas, and of the overgrown areas within the discharge channel. The condition of the 3 CMP pipes under Pine Tree Road should be investigated through coordination with the County and recommendations for rehabilitation or replacement made Lastly, a flood study is recommended to confirm the hydraulic performance of the drainage system and confirm it meets level of service standards.

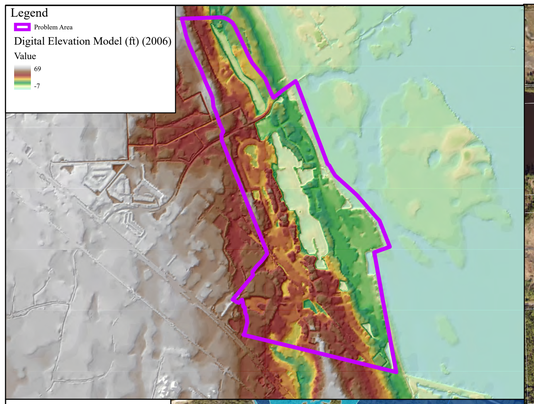
Flood Benefit: The implementation of the study would provide a flood benefit to the area by providing guidance for more effective drainage and conveyance to potentially reduce flooding.

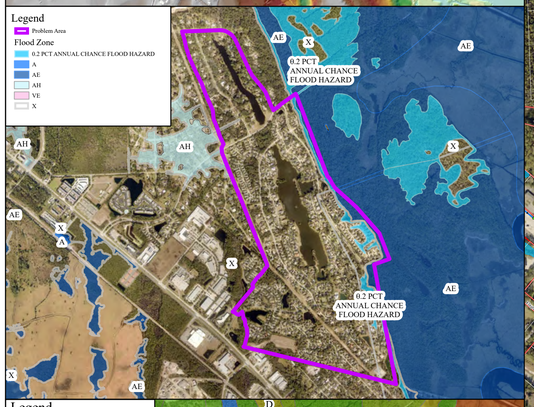
Water Quality Benefit: The recommended study would provide an opportunity to evaluate the need for water quality improvements in the area that may reduce pollutant loadings. Consideration of green infrastructure and/or LID practice as part of the study may provide for some enhancement of water quality treatment.

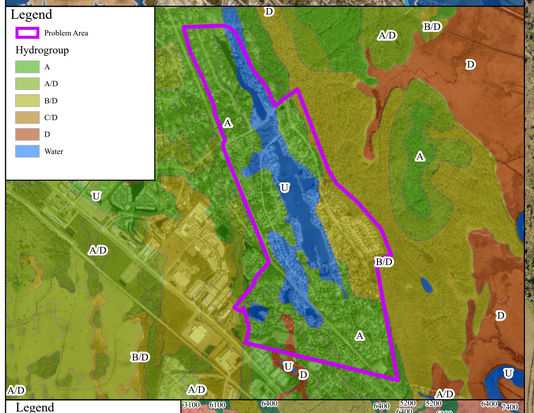
Permitting Considerations: The study would identify potential improvement and would quantify any permitting requirements.

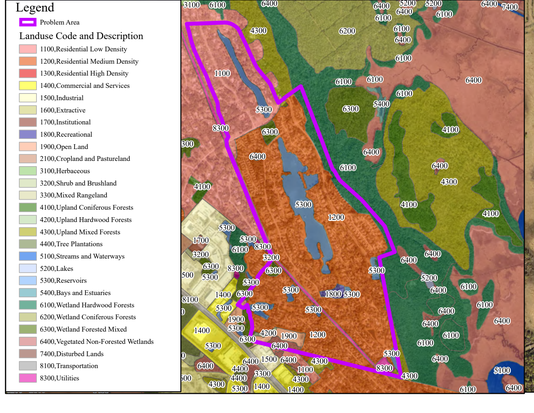
***Implementation Considerations*:** The study would also quantity and easement requirements, potential utility conflicts, or wetland impact issues associated with any recommendations for improvements.

Refer to **Figure 10-7** for details of the proposed improvement.

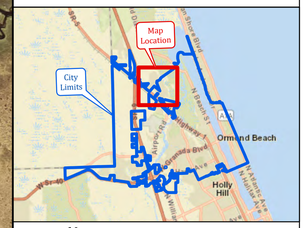












N
W E
S
0 500 1,000
Feet

Legend

- Parcels
- City Limits
- Problem Area
- Ponds
- Swales
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-7

Flood Improvement Project Concept Map: Ormond Lakes
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

Since solutions to address flooding are uncertain at this time, no specific construction recommendations are provided. Note the flood study may result in the identification of future flood improvement projects to be considered for future CIP implementation.

Refer to **Table 10-7** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

TABLE 10-7
FLOOD IMPROVEMENT CONCEPT: ORMOND LAKES
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	0	$0
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	0	$0
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	0	$0
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	0	$0
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	0	$0
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	0	$0
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	0	$0
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	0	$0
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	0	$0
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	0	$0
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	0	$0
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	0	$0
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	0	$0
26	570-1-2	Performance Turf, Sod	SY	$3.00	0	$0
27	9999-1	CCTV Pipe Inspection	LF	$5.00	0	$0
28	9999-2	Miscellaneous	LS	$0.00	0	$0
					CONSTRUCTION COST:	$0
					CONTINGENCY @ 20%:	$0
					ESTIMATED CONSTRUCTION COST:	**$0**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$75,000.00
2	-	Design & Permitting	LS	varies	1	$0.00
3	-	Easement Acquisition and Administration	LS	varies	1	$0.00
					SUBTOTAL:	**$75,000.00**
					ESTIMATED GRAND TOTAL:	**$75,000.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.8 Alanwood Drive and Beach Street

Problem Area Description

The problem area is focused on the intersection of Alanwood Drive and North Beach Street (CR 4011) and is located east of the Halifax River and within the Halifax watershed.

Topography: The elevations in the area range from approximately 19 feet to 6 feet NAVD 1988. From the ridgeline along Ridgewood, the lands slopes to the east to the Halifax.

Soils: Soils are hydrologic group A (freely draining).

Landuse: The area is medium density residential (with moderate degree of impervious area).

Floodplains: The area has no based flood elevations identified (Zone X).

Infrastructure: The infrastructure within the area is dated from the 1970s and consists of various sizes of RCPs, CMPs, and VCP pipes throughout the area. Sizes range from 6" to 24". Valley gutters are present along Alanwood Drive from North Beach Street and North Ridgewood Avenue, which aid in directing stormwater into grated inlets (many appearing undersized). Reviewing the topographic data of the area (City of Ormond Beach GIS data, 2006), approximately 10.3 acres drains to the stormwater infrastructure on Alanwood Drive between North Ridgewood Drive and North Beach Street. The residential area contains stormwater pipes of various sizes and types throughout (i.e. 6-inch to 24-inch, CMPs, RCPs, and clay), which direct stormwater to the 24-inch CMP outfall pipe located at the intersection of Sanchez Avenue and North Beach Street.

Problem Summary

Geosyntec reviewed the available public information, observations documented during site visit completed on February 19, 2020, and discussions with City personnel. The area has a history of flooding under severe rainfall events. Based on observations from the City, stormwater has been noted to overwhelm the area, especially at the intersection during rainfall events. Also, the drainage system within the subdivision is outdated and may require rehabilitation. This would involve some regrading the low areas within residential (especially at the intersection) and the installation of a more defined gutter system. Also, the replacement of aged CMPs to RCPs, along with increasing the pipe size may aide in drainage.

Refer to **Figure 10-8** for a map of the specific area.

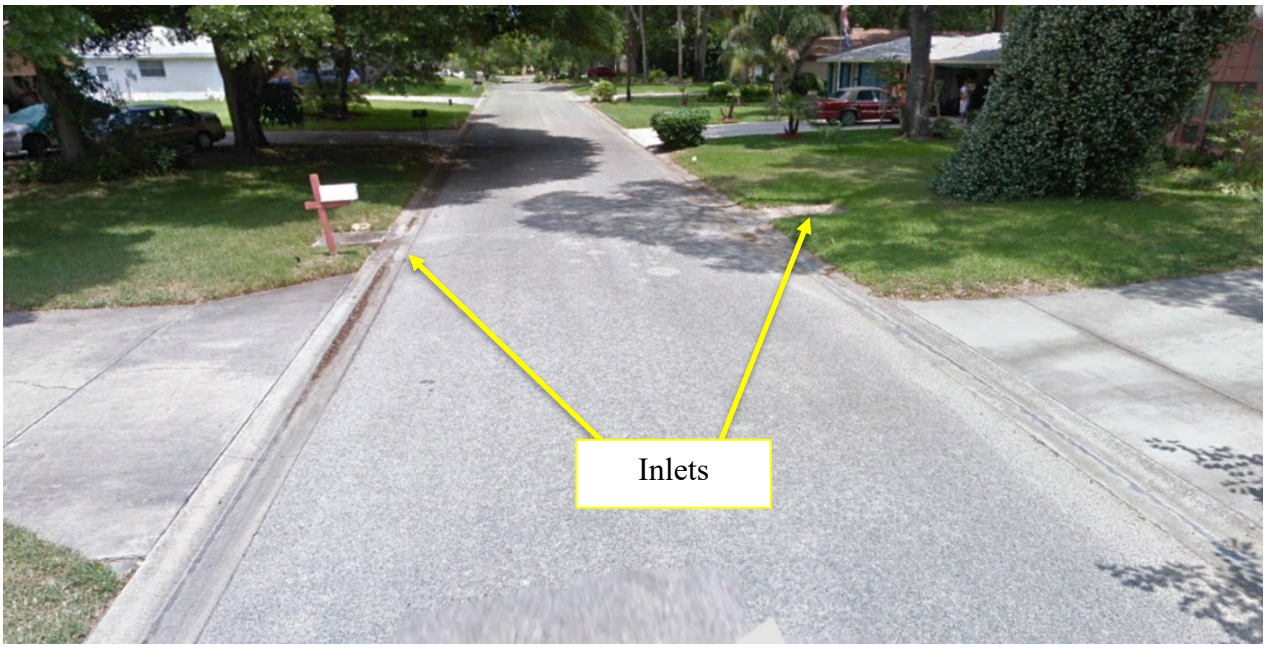
Photos of the Problem Area



Looking west down Alanwood Drive towards North Ridgewood Avenue. (Google, 2011)



Looking east down Alanwood Drive towards North Beach Street (CR 4011). (Google Maps Imagery, 2011)



View to east along Alanwood Drive west of problem area (Google, 2011)



View to south along Beach Street towards Alanwood Drive (Google, 2011)

Improvement Recommendations

Geosyntec recommends performing a flood study with hydraulic analysis to confirm level of service of existing infrastructures. This would identify undersized infrastructure associated with the Alanwood and associated outfall system.

Based on the City's GIS infrastructure data, this area has approximately 1420 feet of CMP and VCP pipes (6" to 24") which may be reaching their service life. A conditions assessment is recommended to determine pipe warranting rehabilitation or replacement. This would include visual inspection and in pipe CCTV observations where warranted. Other approximately 105 feet RCP pipe in the area may likewise warrant inspection.

The drainage pipes along Alanwood Drive appear undersized (15" to 18" in diameter) and may inhibit effective drainage. Likewise, the 24" outfall appears undersized. Upsizing of this system would include replacement of CMPs to RCPs and increasing pipe size to aide in drainage (minimum 18 inches). Many of the inlet grates appear undersized as well. Other roadside improvements may be considered to effectively convey runoff such as additional curbing and/or forming more distinct front yard swales. This may provide an opportunity to implement green infrastructure and/or LID proactive to improvement drainage and provide some water quality treatment.

Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective drainage and conveyance and reducing flooding.

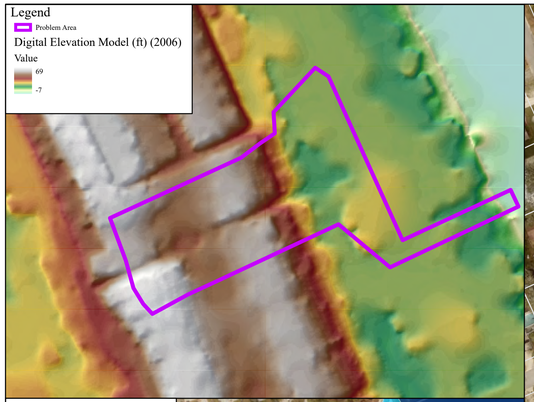
Water Quality Benefit: The recommended improvements may not have a direct impact on water quality. Consideration of green infrastructure and/or LID practice as part of the improvements may provide for some enhancement of water quality treatment.

Permitting Considerations: The upgrades may be considered as improvements / maintenance to an existing system and if no additional impervious area is being added or wetland impacts necessary then may be exempt from SJRWMD environmental resource permitting. A permit determination meeting should be conducted with SJRWMD during the project feasibility stage.

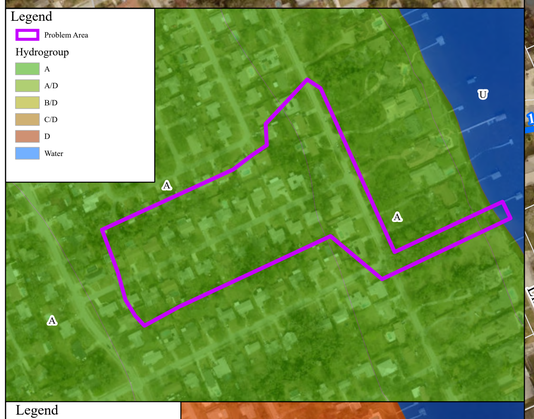
***Implementation Considerations*:** The project will require investigation of right-of-way necessary to perform the improvements. Utility conflicts will likely exist and should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland or surface water impacts are not anticipated.

***Future SLR / Resiliency Considerations*:** The project area outfalls into a tidally influenced waterway. Consideration should be made during design to account for potential future seal level rise and hydrological stresses that may impact long term system performance.

Refer to **Figure 10-8** for details of the proposed improvement.







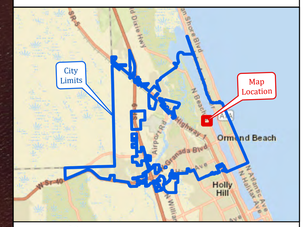




SUMMARY OF EXISTING PIPES

PIPE TYPE	DIAMETER (INCHES)	TOTAL LENGTH (FEET)
CMP	15	907
CMP	18	120
CMP	24	304
RCP	15	75
RCP	18	30
OTHER (VCP)	6	88
TOTALS BASED ON CITY GIS DATA		

CITY OF ORMOND BEACH ★ FLORIDA ★



N
W E
S
0 100 200 Feet

Legend

- Parcels
- Problem Area
- Ponds
- Swales
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-8

Flood Improvement Project Concept Map: Alanwood & Beach Street
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Replacement or rehabilitation of approximately 1500 feet of drainage piping system along Alanwood Drive and the associated outfall with 24" to 36" RCP minimum.
- Up to 1000' of roadside upgrades (curbing, gutters, swale grading, sodding, etc.).

Refer to **Table 10-8** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

TABLE 10-8
FLOOD IMPROVEMENT CONCEPT: ALANWOOD DRIVE AND BEACH STREET
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$50,833
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$16,944
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$16,944
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$33,889
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	0	$0
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	556	$13,889
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	556	$8,333
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	10	$45,000
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	4	$18,000
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	1000	$100,000
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	500	$75,000
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	1	$7,000
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	1000	$35,000
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	367	$27,500
26	570-1-2	Performance Turf, Sod	SY	$3.00	556	$1,667
27	9999-1	CCTV Pipe Inspection	LF	$5.00	1500	$7,500
28	9999-2	Miscellaneous	LS	$0.00	0	$0
					CONSTRUCTION COST:	$457,500
					CONTINGENCY @ 20%:	$91,500
					ESTIMATED CONSTRUCTION COST:	**$549,000**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$50,000.00
2	-	Design & Permitting	LS	varies	1	$75,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$5,000.00
					SUBTOTAL:	**$130,000.00**
					ESTIMATED GRAND TOTAL:	**$679,000.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.9 Trails – Dry Well /French Drains

Problem Area Description

The Trails is a subdivision established in the late 1970s that contains numerous "dry wells" throughout which are essentially inlets with lateral French drains (exfiltration pipes). The Trails are surrounded by the Tomoka River to the west and the Misners Branch tributary stream to the north.

Topography: The elevations in the area range from approximately 25 feet to 1 feet NAVD 1988. From the ridgeline along Ridgewood, the lands slopes to the north to Misners Branch and to the west towards Thompson Creek.

Soils: Soils are predominantly hydrologic group A (freely draining) along the central portion of the area. Soils transition more to dual hydro class A/D (less freely draining, higher water table) to the north towards the Tomoka River tributary.

Landuse: The area is predominantly medium density residential (with moderate degree of impervious area) with high density residential areas present along nearer to Granada Boulevard (with high degree of imperviousness).

Floodplains: The area is predominantly areas with no based flood identified (Zone X), with fringes of Zone AE along the Tomoka River to the west and Misners Branch to the north.

Infrastructure: A total of 22 dry wells were identified within the subdivision based on City GIS data. Each dry well generally consists of a grated concrete inlet, with an approximate depth of 8 feet, located in a valley gutter that runs parallel to the street. Each dry well contains two 15 to 20 feet long 12-inch perforated aluminum pipes extending form the inlets lateral.

Problem Summary

Based on observations from the City, the system within the subdivision is outdated and may require rehabilitation due to clogging of the drain pies over time. Flooding does occur on Main Trail; however, the stormwater recedes very quickly. Geosyntec reviewed the available public information, observations documented on during a site visit completed on August 20, 2020, and discussions with City personnel. The inlets did contain some debris and water during the field visit. The City requested during the field visit discussion that the system of dry wells be retrofitted to a traditional stormwater drainage system with a positive outlet.

Refer to **Figure 10-9** for a map of the specific area.

Photos of the Problem Area



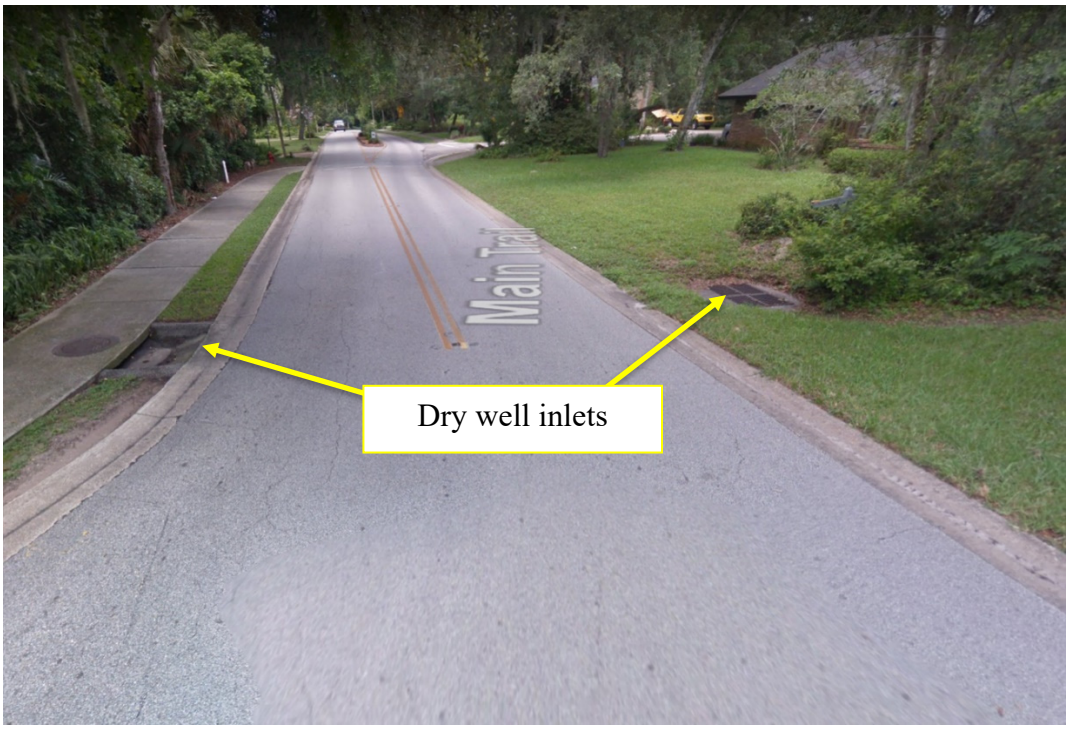
A dry well inlet located on Shady Branch Trail. (8/20/2020)



The inside of the dry well shown above on Shady Branch Trail. (8/20/2020)



A dry well inlet located on Shady Branch Trail. (Google 2019)



A dry well inlet located on Main Trail. (Google 2019)

Improvement Recommendations

It is recommended to design a traditional storm sewer network (minimum 18 inches) to tie in sections of the subdivision with the dry wells to the nearest existing outfalls or a new outfall. The stormwater system would consist of approximately 13 stormwater ditch bottom/gutter inlets and 1 additional manholes connected by 24" to 36" RCPs throughout with an outlet to the Misners Branch stream to the north (tying into two existing outfall locations) and one new outfall directly to the Tomoka River to the west. Each of the 22 dry well locations would be retrofitted to accommodate the storm sewer connections and remain as inlets.

A detailed flood study with hydraulic analysis would be necessary to establish an existing conditions baseline and then serve to evaluate the performance of the proposed system.

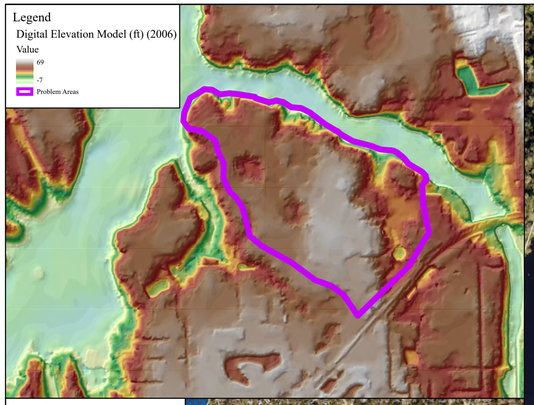
Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective drainage and conveyance and reducing flooding.

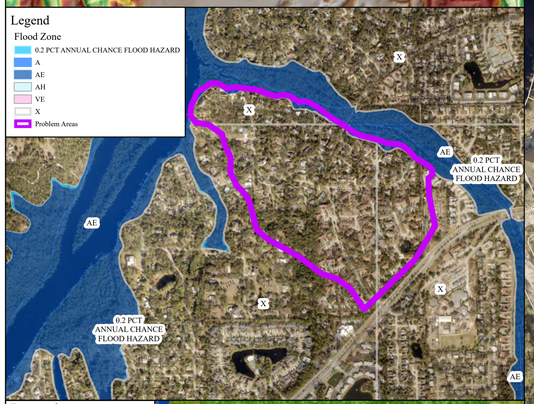
Water Quality Benefit: The recommended improvements may not have a direct impact on water quality. Consideration of green infrastructure and/or LID practices as part of the improvements may provide for some enhancement of water quality treatment.

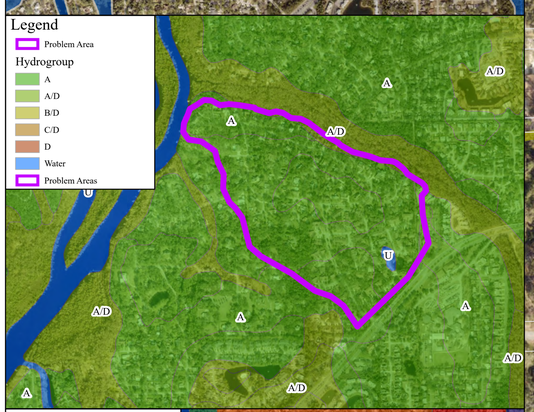
Permitting Considerations: The upgrades may be considered as improvements / maintenance to an existing system. The creation of a new outfall and/or increasing discharges to existing outfalls would require SJRWMD environmental resource permitting A permit determination meeting should be conducted with SJRWMD during the project feasibility stage. Wetland permitting thought the FDEPs 404 program (now delegated from USACE) may also be necessary and should also be investigated.

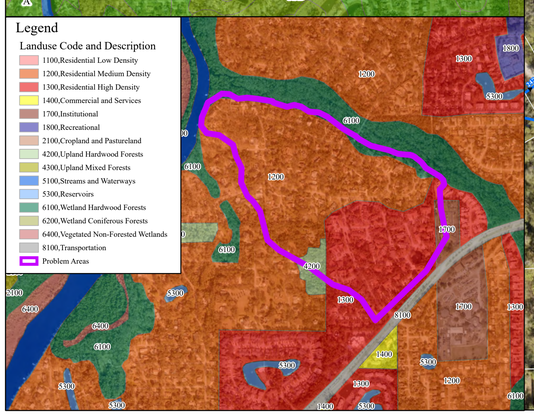
***Implementation Considerations*:** The project will require investigation of current available right of way necessary to perform the improvements and a new easement for the new outfall to the Tomoka River. Utility conflicts will likely exist and should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland impacts are not anticipated; however, surface water impacts may occur at the outfalls.

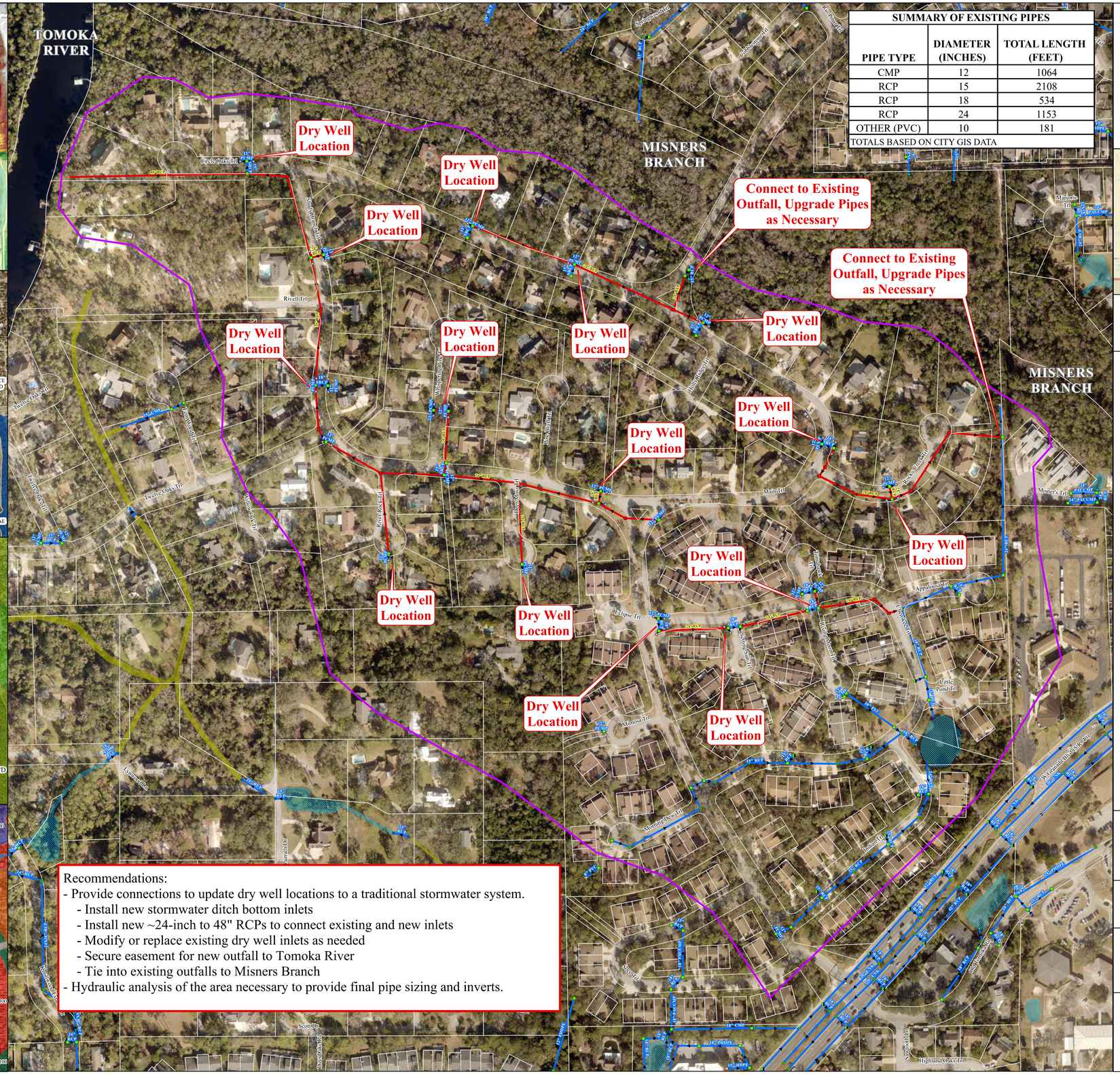
Refer to **Figure 10-9** for details of the proposed improvements.





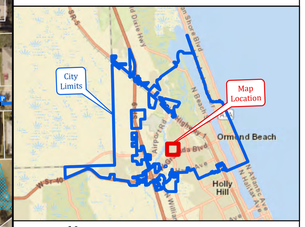






SUMMARY OF EXISTING PIPES		
PIPE TYPE	DIAMETER (INCHES)	TOTAL LENGTH (FEET)
CMP	12	1064
RCP	15	2108
RCP	18	534
RCP	24	1153
OTHER (PVC)	10	181
TOTALS BASED ON CITY GIS DATA		

CITY OF ORMOND BEACH FLORIDA



N W E S

0 150 300 Feet

Legend

- Parcels
- Problem Areas
- Ponds
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

Proposed Stormwater Structure Type

- HEADWALL
- INLET
- MANHOLE
- Proposed Pipe Additions

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-9

Flood Improvement Project Concept Map: Trails – Dry Well / French Drains

Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Retrofit the 22 dry wells to accept new storm sewer connections.
- Addition of ~1000' of 36" RCP and ~4400' of 24" RCP. This includes associated roadside upgrades (curbing, gutters, swale grading, sodding, etc.).
- Additional of ~13 additional inlets and 1 manhole connection to facilitate the new piping connections.
- Easement acquisition administration.

Refer to **Table 10-9** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

Note that these improvements can easily be phased to accommodate fiscal year budget constraints.

TABLE 10-9
FLOOD IMPROVEMENT CONCEPT: THE TRAILS - DRY WELL / FRENCH DRAINS
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$134,158
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$44,719
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$44,719
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$89,439
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	0	$0
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	556	$13,889
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	556	$8,333
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	13	$58,500
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	1	$4,500
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	4400	$440,000
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	1000	$150,000
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	1	$4,500
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	2000	$70,000
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	222	$16,667
26	570-1-2	Performance Turf, Sod	SY	$3.00	6000	$18,000
27	9999-1	CCTV Pipe Inspection	LF	$5.00	0	$0
28	9999-2	Miscellaneous (Retrofitting dry wells)	LS	$5,000.00	22	$110,000
					CONSTRUCTION COST:	$1,207,425
					CONTINGENCY @ 20%:	$241,485
					ESTIMATED CONSTRUCTION COST:	**$1,448,910**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$50,000.00
2	-	Design & Permitting	LS	varies	1	$75,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$10,000.00
					SUBTOTAL:	**$135,000.00**
					ESTIMATED GRAND TOTAL:	**$1,583,910.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.10 Orchard Business Park

Problem Area Description

A 48-inch RCP is located along Thompson Creek in the Orchard Business Park. This culvert has adverse inverts which inhibits proper continuous flow within the creek. The creek discharges into the Tomoka River, which is located northwest of the site.

Topography: The elevations in the area range from approximately 6 feet to 7 feet NAVD 1988. The area drains from the southeast to the northwest.

Soils: Soils are predominantly hydrologic group A/D (freely to poorly draining, seasonal) in the immediate project area. Surrounding areas are B/D soils.

Landuse: The area is predominantly industrial (with moderate degree of impervious area) with wetlands in the surrounding area (no imperviousness).

Floodplains: The area is predominantly Zone AE along Thompson Creek.

Infrastructure: The 48-inch RCP is a part of the stormwater system for Orchard Business Park. It is a ~17-acre parcel that surficial stormwater flows into five inlets within the parking lot. The inlets are connected by 18-inch CMP, which then flows into the creek just downstream of the culvert. The southern portion of the creek connects to the northern portion through the 48-inch RCP. Captured stormwater from nearby swale systems alongside roadways and within commercial areas are directed to the creek at this location. The creek empties into a wetland area south of Division Avenue and east of South Orchard Street.

Problem Summary

The client mentioned that the pipe is inverted upstream to downstream; hence the inverts of the pipe are incorrect which hinders flow. Geosyntec reviewed the available public information and observations documented on during a site visit completed on August 20, 2020. It appeared that flow is indeed being hindered by the pipe flowing in the wrong direction. At the time of the field visit, the southern portion of the creek upstream of the culvert appeared stagnant and to have contents of algae, organic and inorganic debris. Downstream of the culvert the flow appeared non-existent.

The 48-inch RCP is surrounded by dense vegetation and commercial buildings. Lateral pipes drain the business park development from the east and west enter into the creek just downstream of the culvert.

Refer to **Figure 10-10** for a map of the specific problem area.

Photos of the Problem Area



Stagnant water, algae, organic, and inorganic debris of within the southern portion of the creek upstream of the culvert. (8/20/2020)



The northern portion of the creek downstream of the culvert. (8/20/2020)



Additional view of the downstream side of the culvert. (8/20/2020)

Improvement Recommendations

To advance this project, a detailed hydrologic and hydraulic analysis of the creek and existing culverts should be performed to establish baseline conditions. This will allow for a proper analysis of proposed culvert both from a sizing and invert placement standpoint. The analysis would confirm the appropriateness of the proposed replacement 48" RCP culvert or dictate another size and/or configuration. This should take into account the upstream contributing watershed and the downstream tailwater conditions under a series of design storms. The project will require the design of a headwall and up/downstream erosion control measure to prevent scour.

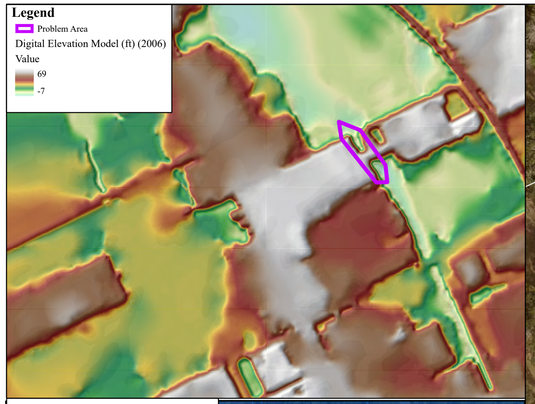
Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective drainage and conveyance and reducing flooding.

Water Quality Benefit: The recommended improvements would not be expected to have a direct impact on water quality.

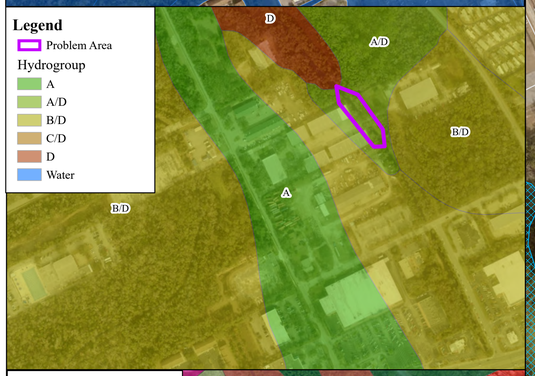
Permitting Considerations: The upgrade may be considered as improvements to a major waterway and would require SJRWMD environmental resource permitting. The project would include accounting for wetland and surface water impacts. A permit determination meeting should be conducted with SJRWMD during the project feasibility stage. Wetland permitting thought the FDEPs 404 program (now delegated from USACE) may also be necessary and should also be investigated.

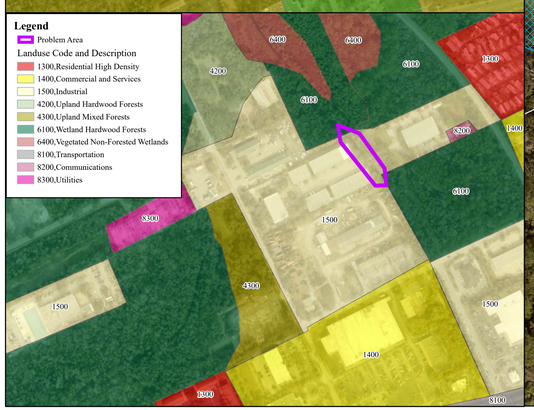
***Implementation Considerations*:** The project will require investigation of current easements and right-of-way necessary to perform the improvements. Utility conflicts will not likely exist but should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland and surface water impacts are anticipated so an ecological evaluation should be performed.

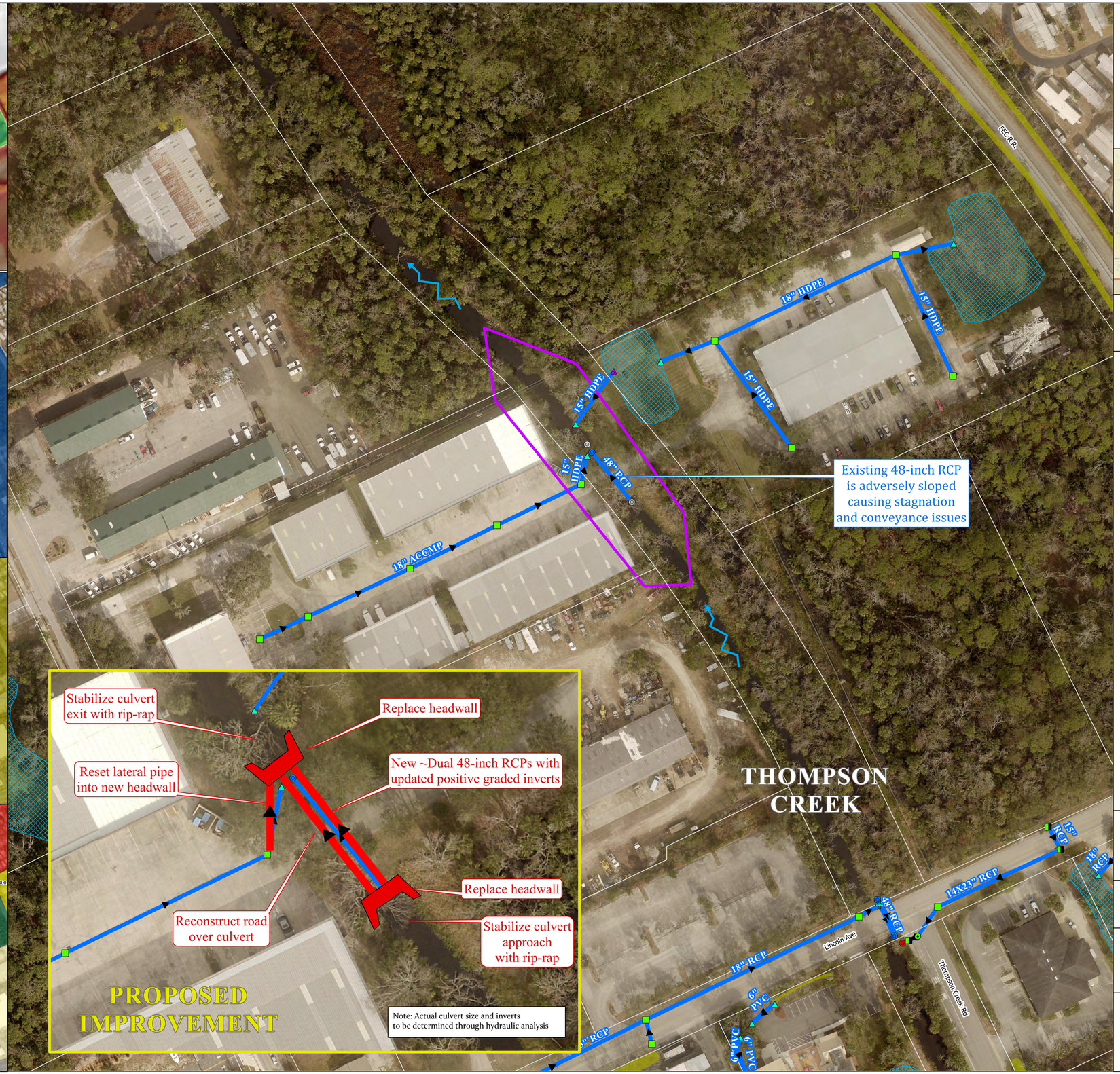
Refer to **Figure 10-10** for a sketch of the pipe improvement.



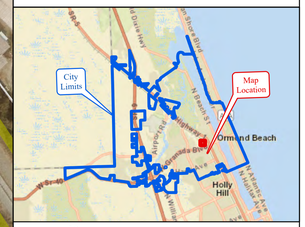








CITY OF ORMOND BEACH FLORIDA



N W E S

0 60 120 Feet

Legend

- Parcels
- Problem Area
- Ponds
- Swales
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-10

Flood Improvement Project Concept Map: Orchard Business Park

Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Replacement of the drainage pipe with 48" RCP, including headwall and upstream/downstream creek stabilization.
- Reconstruct lateral pipes downstream of culvert.
- Reconstruction of the access road on top of the culvert
- Easement acquisition administration.

Refer to **Table 10-10** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

TABLE 10-10
FLOOD IMPROVEMENT CONCEPT: ORCHARD BUSINESS PARK
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$12,008
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$4,003
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$4,003
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$8,006
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	100	$1,000
6	0120-3	Lateral Ditch Excavation	CY	$15.00	0	$0
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	139	$3,472
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	139	$2,083
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	0	$0
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	0	$0
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	50	$5,000
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	0	$0
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	70	$17,500
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	2	$11,000
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	2	$20,000
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	0	$0
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	0	$0
26	570-1-2	Performance Turf, Sod	SY	$3.00	0	$0
27	9999-1	CCTV Pipe Inspection	LF	$5.00	0	$0
28	9999-2	Miscellaneous (creek stabilization / erosion control)	LS	$20,000.00	1	$20,000
					CONSTRUCTION COST:	$108,075
					CONTINGENCY @ 20%:	$21,615
					ESTIMATED CONSTRUCTION COST:	**$129,690**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$40,000.00
2	-	Design & Permitting	LS	varies	1	$30,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$5,000.00
					SUBTOTAL:	**$75,000.00**
					ESTIMATED GRAND TOTAL:	**$204,690.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.11 Railroad Crossing – East Fork of Thompson Creek

Problem Area Description

The problem area is the stretch of Wilmette Avenue crossing over Thompson Creek.

Topography: The elevations in the area range from approximately 5 feet to 6 feet NAVD 1988 along Wilmette Avenue.

Soils: Soils are predominantly hydrologic group A/D (freely to poorly draining, seasonal) and D (poorly draining) up and downstream of Thompson Creek.

Landuse: The area is predominantly wetlands in the surrounding area (no imperviousness).

Floodplains: The area is predominantly areas with Zones AE along the Thompson Creek

Infrastructure: Two 48-inch reinforced concrete pipes (RCPs) are located under Wilmette Avenue east of the Florida East Coast Railway railroad. These culverts continue the flow of Thompson Creek under Wilmette Avenue from southeast to northwest, eventually meeting the Tomoka River.

Problem Summary

Based on observations from the City, there has not been an issue with flooding in the area. However, there is a suspicion of the flow in Thompson Creek being restricted due to being routed in an offset manner to the existing culverts rather than via the historical flow path. This may promote inefficient flow during severe rainfall events and promote scouring of the road abutment.

Geosyntec reviewed the available public information and observations documented during a site visit completed on August 20, 2020. Approximately 200 feet east of the railroad and Wilmette Ave intersection, there is a portion of creek that lies directly to against the north side of Wilmette Avenue. Near this location, erosion was noted undermining the sidewalk.

Refer to **Figure 10-11** for a map of the specific area.

Photos of the Problem Area



Problem area facing east towards the intersection of Wilmette Ave and North US Highway 1. (8/20/2020)



Looking upstream of the existing 48-inch RCPs towards the northern portion of Thompson Creek. (8/20/2020)



Looking downstream of the existing 48-inch RCPs towards the southern portion of Thompson Creek. (8/20/2020)



Erosion occurring under sidewalk approximately 200 east of the two 48-inch RCPs. (8/20/2020)

Improvement Recommendations

Even though that flooding has not been observed by the City to be an issue in the area, it was requested that additional stormwater infrastructure be installed in the area in the form of two 48-inch RCPs. The intent would be to provide a more direct passage to creek flow to the northwest.

To advance this project, a detailed hydrologic and hydraulic analysis of the creek and existing culverts should be performed to establish baseline conditions. This will allow for a proper analysis of proposed culverts both from a sizing and invert placement standpoint. The analysis would confirm the appropriateness of the proposed dual 48" culvert addition or dictate another size and/or configuration. This should take into account the upstream contributing watershed and the downstream tailwater conditions under a series of design storms. The project will require the design of a headwall and up/downstream erosion control measure to prevent scour.

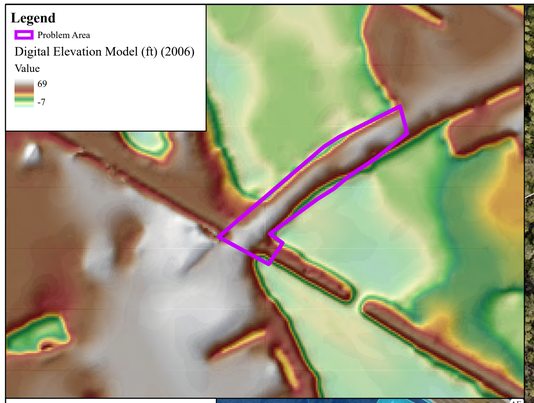
Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective creek conveyance.

Water Quality Benefit: The recommended improvements would not have a direct impact on water quality.

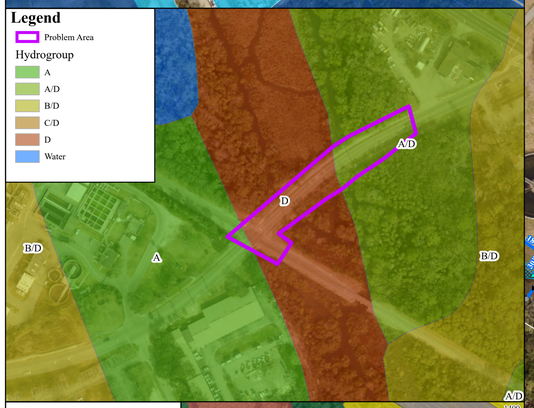
Permitting Considerations: The upgrades may be considered as improvements to a major waterway and would require SJRWMD environmental resource permitting. The project would include accounting for wetland and surface water impacts. A permit determination meeting should be conducted with SJRWMD during the project feasibility stage. Wetland permitting thought the FDEPs 404 program (now delegated from USACE) may also be necessary and should also be investigated.

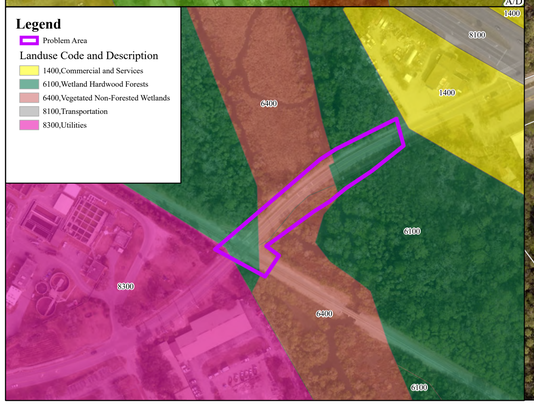
***Implementation Considerations*:** The project will require investigation of current easements and right-of-way necessary to perform the improvements. Utility conflicts may exist and should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland and surface water impacts are anticipated so an ecological evaluation should be performed.

Refer to **Figure 10-11** for details of the proposed improvement.



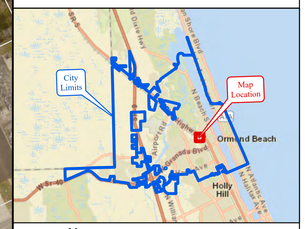








Recommendations
- Install two 48" RCPs in the area to reconnect Thompson Creek
- Hydraulic analysis of the area to confirm pipe sizes and design specifics



N
W E
S

0 100 200 Feet

Legend

- Parcels
- Problem Area
- Ponds
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

Proposed Stormwater Structure Type

- HEADWALL
- Proposed Pipe Additions

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-11

Flood Improvement Project Concept Map: Railroad Crossing - 2nd Culvert

Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Installation of two 48" RCP culverts with associated headwalls and inlet/outlet stabilization and scour protection measures.
- The improvements would require restoration of the overtopping roadway and sidewalk.
- Easement acquisition administration.

Refer to **Table 10-11** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

TABLE 10-11
FLOOD IMPROVEMENT CONCEPT: RAILROAD CROSSING - EAST FORK OF THOMPSON CREEK
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$22,708
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$7,569
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$7,569
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$15,139
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	100	$1,000
6	0120-3	Lateral Ditch Excavation	CY	$15.00	0	$0
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	139	$3,472
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	139	$2,083
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	0	$0
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	0	$0
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	0	$0
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	0	$0
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	200	$50,000
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	4	$40,000
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	0	$0
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	56	$4,167
26	570-1-2	Performance Turf, Sod	SY	$3.00	222	$667
27	9999-1	CCTV Pipe Inspection	LF	$5.00	0	$0
28	9999-2	Miscellaneous (scour protection / erosion control)	LS	$50,000.00	1	$50,000
					CONSTRUCTION COST:	$204,375
					CONTINGENCY @ 20%:	$40,875
					ESTIMATED CONSTRUCTION COST:	**$245,250**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$50,000.00
2	-	Design & Permitting	LS	varies	1	$50,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$10,000.00
					SUBTOTAL:	**$110,000.00**
					ESTIMATED GRAND TOTAL:	**$355,250.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.12 Railroad Crossing – St. Andrews Discharge

Problem Area Description

The problem area discharges along the Florida East Coast Railway railroad right of way from subdivision areas to the northeast of St. Andrews Drive. The area discharges to the northwest to the Tomoka River.

Topography: The elevations in the area range from approximately 14 feet to 15 feet NAVD 1988.

Soils: Soils are hydrologic group A (freely draining).

Landuse: The area is predominantly medium density residential (with moderate degree of impervious area) with upland areas present along the railroad corridor (with moderate degree of imperviousness).

Floodplains: The area project has no base flood identified (Zone X).

Infrastructure: One 18-inch RCP and one 24-inch RCP are located southwest of the Florida East Coast Railway railroad tracks that run parallel to US 1. These discharge into a swale that parallels the tracks and eventually discharges in the Tomoka River to the northwest. These stormwater pipes discharge runoff from the nearby subdivision located on St. Andrews Drive. The area northeast of the subdivision (i.e. between residential properties and train tracks) are heavily vegetated. The outlets of the stormwater pipes are obscured within the heavy vegetation and sediments.

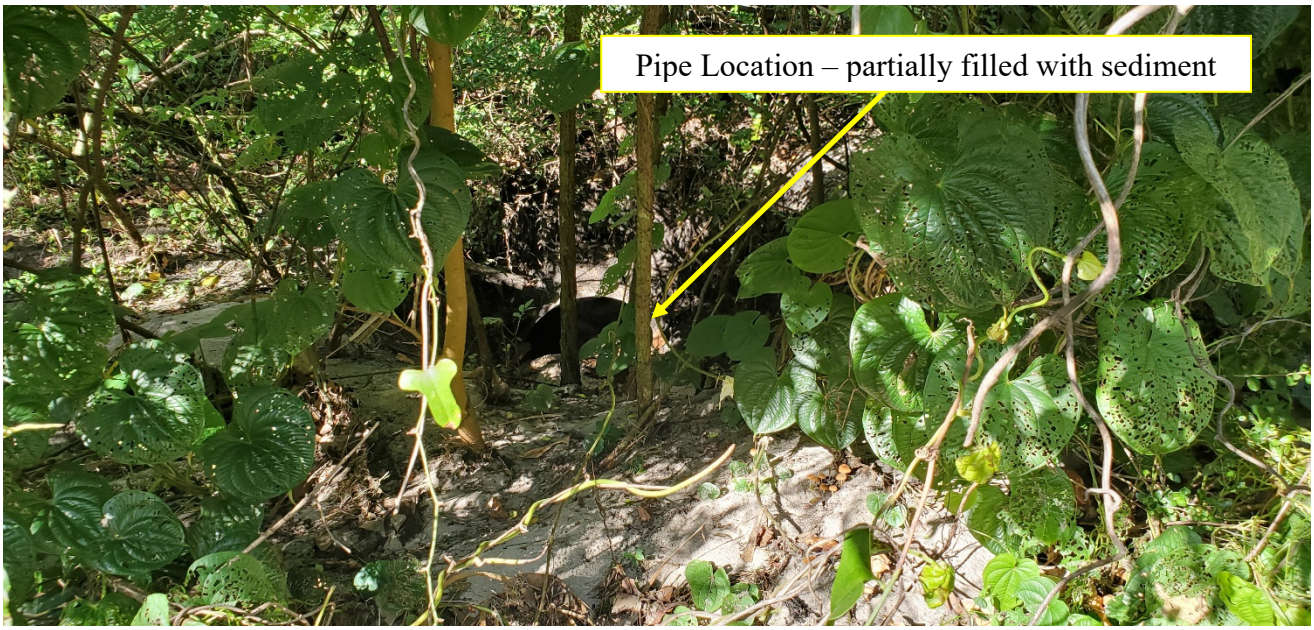
Problem Summary

The owner of the railroad tracks contacted the City with concerns of erosion around the tracks near the stormwater outlets, especially during heavy rainfall events.

Geosyntec reviewed the available public information and observations documented on during a site visit completed on August 20, 2020. The 18-inch RCP and 24-inch RCP outfalls are surrounded by dense vegetation and the discharges to the rail-side swale system is not well defined and lacks erosion control practices. Accumulation of sediment within the 24-inch RCP outfall was observed, along with the soil displaying high saturation. A swale system along the length of the railroad was not clearly defined.

Refer to **Figure 10-12** for a map of the specific problem area.

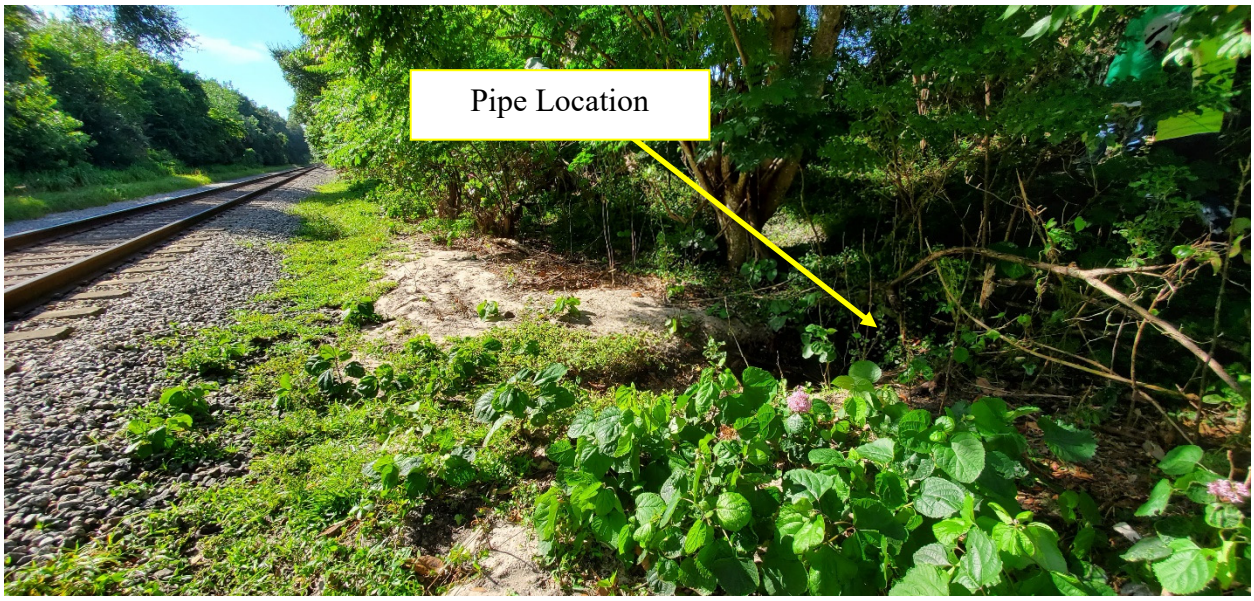
Photos of the Problem Area



The 24-in RCP within dense vegetation near the railroad tracks. (8/20/2020)



The 18-inch RCP surrounded by dense vegetation near the railroad tracks. (8/20/2020)



The 18-inch RCP surrounded by dense vegetation near the railroad tracks. Swale along railroad tracks not defined. (8/20/2020)



View to northwest along the swale adjacent to the railroad tracks (8/20/2020)

Improvement Recommendations

The City requested that a tee connector / diverter be placed at the end of each pipe to direct stormwater outflow along the swale and away the tracks. Some control stabilization measures are also warranted at these locations to prevent future erosion. The swale system along the railroad tracks between the pipes needs to be redefined to provide a consistent discharge grade to the northwest and prevent excess stormwater going towards the railroad tracks. It should be noted that a part of the replacement process, a geotechnical analysis/investigation and hydraulic analysis of the culvert system should be performed to quantify velocities of the stormwater discharge for the purposes of defining appropriate erosion control solutions.

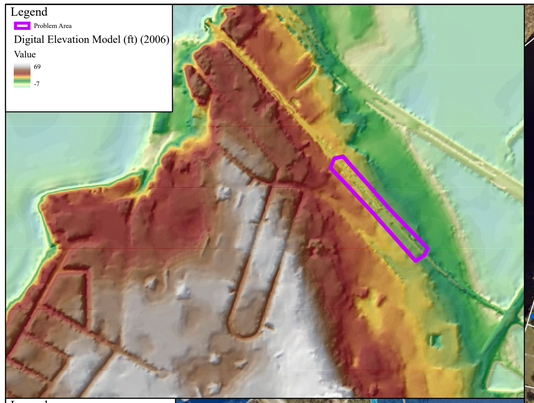
Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective positive drainage and conveyance and reducing standing water and erosion.

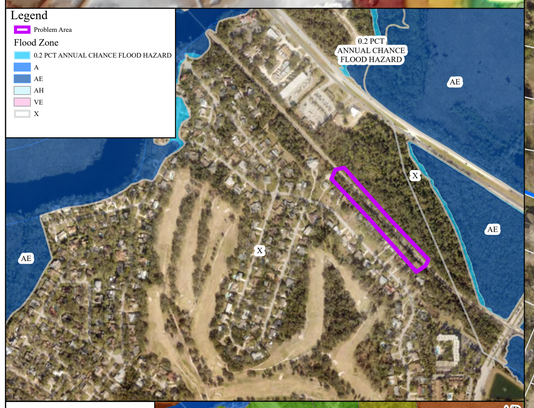
Water Quality Benefit: The recommended improvements do not have a direct impact on water quality. Erosion control practices would be expected to reduce sedimentation discharging to the river which could represent a water quality benefit.

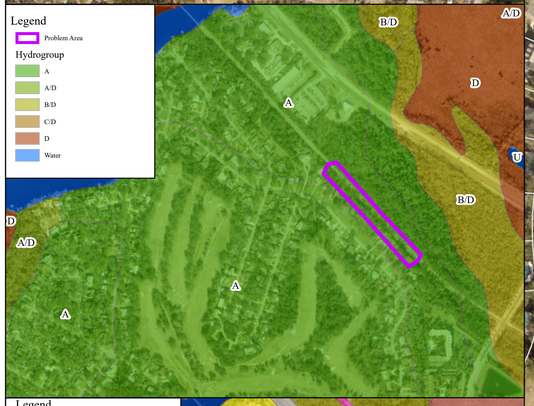
Permitting Considerations: The upgrades may be considered as improvements / maintenance to an existing system and if no additional impervious area is being added or wetland impacts necessary then may be exempt from SJRWMD environmental resource permitting. A permit determination meeting should be conducted with SJRWMD during the project feasibility stage.

***Implementation Considerations*:** The project will require investigation of current easements and right-of-way necessary to perform the improvements. In particular, permissions from the railroad. Utility conflicts are not likely to exist but should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland impacts are not anticipated; however, work in the swale may be considered surface water impacts.

Refer to **Figure 10-12** for details of the proposed improvement.



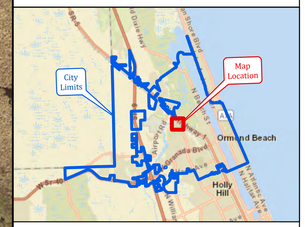








CITY OF ORMOND BEACH FLORIDA



N
W E
S
0 150 300
Feet

Legend

- Parcels
- Problem Area
- Ponds
- Swales
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

Proposed Stormwater Structure Type

- TEE / DIVERTER

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-12

Flood Improvement Project Concept Map: Railroad Crossing - St. Andrews Discharge
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Upgrades to the pipe oufalls, including tees / diverters and erosion control measures.
- Regrading of ~1000' of the swales to provide consistent discharge grade.
- Easement acquisition / right-of way access administration.

Refer to **Table 10-12** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

TABLE 10-12
FLOOD IMPROVEMENT CONCEPT: RAILROAD CROSSING - ST. ANDREWS DISCHARGE
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$5,229
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$1,743
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$1,743
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$3,486
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	741	$11,111
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	0	$0
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	0	$0
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	0	$0
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	0	$0
12	430-94-4	Desilting Pipe	LF	$35.00	250	$8,750
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	0	$0
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	0	$0
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	0	$0
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	0	$0
26	570-1-2	Performance Turf, Sod	SY	$3.00	0	$0
27	9999-1	CCTV Pipe Inspection	LF	$5.00	0	$0
28	9999-2	Miscellaneous (Pipe end tees/diverters, erosion control)	LS	$20,000.00	1	$15,000
					CONSTRUCTION COST:	$47,063
					CONTINGENCY @ 20%:	$9,413
					ESTIMATED CONSTRUCTION COST:	**$56,475**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$15,000.00
2	-	Design & Permitting	LS	varies	1	$20,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$5,000.00
					SUBTOTAL:	**$40,000.00**
					ESTIMATED GRAND TOTAL:	**$96,475.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.13 Orchard Street and Jeanette Drive

Problem Area Description

The intersection of Orchard Street and Jeanette Drive is located east of the Halifax River and within the Halifax watershed. The drainage system connects with the areas along Sandy Oaks Boulevard.

Topography: The elevations in the area range from approximately 8 feet to 5 feet NAVD 1988. From the South Orchard Street, the lands generally slopes to the west.

Soils: Soils are predominantly hydrologic group A (freely draining) along the eastern portions of the area. Soils transition more to dual hydro class B/D (less freely draining, higher water table) to the west.

Landuse: The area is medium density residential (with moderate degree of impervious area).

Floodplains: The area approximately half in areas with no based flood identified (Zone X), with the other portions Zones AE.

Infrastructure: The infrastructure within the area is dated from the late 1980s to early 2000s and consists of various sizes of RCPs and CMPs throughout the area; sizes range from 12" to 18". A swale or ditch system is located within the residential area which appears to drain generally to the north.

Problem Summary

Based on recent observations from the City and the evaluation summarized in the 2007 CDM Stormwater Management Master Plan Update, the system within the subdivision is outdated and may require rehabilitation. Residents have reported to the City that the Orchard Street and Jeanette Drive intersection continues to become overwhelmed during rainfall events.

The City also mentioned that the 18-inch by 30-inch pipe located on Sandy Oaks Boulevard that connects the northern portion of the swale system to the southern portion is inverted upstream to downstream possibly inhibiting effective drainage.

The City's GIS drainage infrastructure data indicated a possible connection of the swale from Jeanette Drive to the collection system along Hammock Lane to the south which drains into Central Park Lake. This was unable to be confirmed in the field.

Refer to **Figure 10-13** for a map of the specific area.

Photos of the Problem Area



Looking west down Jeanette Drive near Orchard Street. (Google, 2014)



Looking west down Jeanette Drive near Orchard Street. (Google, 2014)



View to the east along Jeanette Avenue from Orchard Street (Google, 2014)



Looking north towards to the north at the southern swale system near 475 jeanette drive. (Google Street View Image, 2014)



Looking north towards to the north at the southern swale system near 475 Jeanette Drive. (Google, 2014)



Looking east towards the northern swale system and pipe connection near 511 Sandy Oaks Boulevard. (Google, 2014)



View to south along swale from Sandy Oaks Boulevard (Google, 2014)



View to north along swale from Sandy Oaks Boulevard (Google, 2014)

Improvement Recommendations

Geosyntec recommends performing a flood study with hydraulic analysis to confirm level of service of existing infrastructures. This would identify undersized infrastructure associated with the Jeannette Drive and Sandy Oaks Boulevard systems.

Based on the City's GIS infrastructure data, this area has approximately 640 feet of CMP pipes which may be reaching their service life. A conditions assessment is recommended to determine pipe warranting replacement. This would include visual inspection and in pipe CCTV observations where warranted. Other RCP pipe in the area may likewise warrant inspection.

The drainage pipes along Jeanette Drive appear undersized (12" to 15" in diameter) and may inhibit effective drainage. Likewise, the swale cross-drain under Jeanette Drive (15") and Sandy Oaks Boulevard (18"x30") may be undersized to convey runoff effectively. Upsizing of this system would include replacement of CMPs to RCPs and increasing pipe size to aide in drainage (minimum 18 inches). The pipe inverts should be evaluated with swale grades to ensure effective drainage and prevent accumulation of stormwater within the swale system. The swale grades should be surveyed to confirm positive drainage or provide support for maintenance grading. Other roadside improvements may be considered to effectively convey runoff such as additional curbing and/or forming more distinct front yard swales. This may provide an opportunity to implement green infrastructure and/or LID proactive to improvement drainage and provide some water quality treatment.

It is uncertain whether easements exist for the City to maintain and improve the swales that convey runoff in and around the houses in the problem area. These should be confirmed, but if do not exist in whole or part, efforts should be undertaken to obtain them.

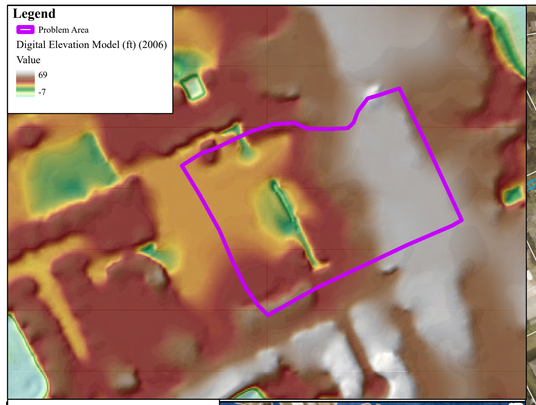
Flood Benefit: The implementation of the improvement would provide a flood benefit to the area by providing more effective drainage and conveyance and reducing flooding.

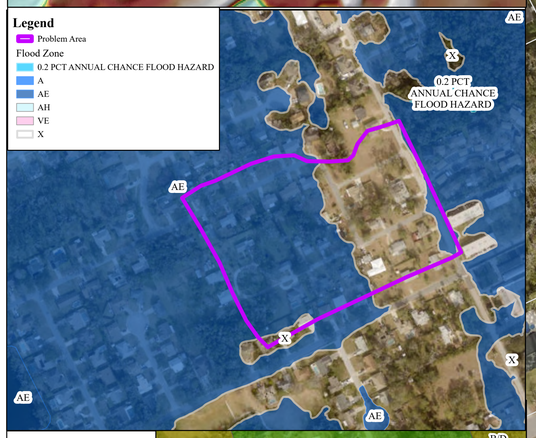
Water Quality Benefit: The recommended improvements may not have a direct impact on water quality. Consideration of green infrastructure and/or LID practice as part of the improvements may provide for some enhancement of water quality treatment.

Permitting Considerations: The upgrades may be considered as improvements / maintenance to an existing system and if no additional impervious area is being added or wetland impacts necessary then may be exempt from SJRWMD environmental resource permitting. A permit determination meeting should be conducted with SJRWMD during the project feasibility stage.

***Implementation Considerations*:** The project will require investigation of current easements and right-of-way necessary to perform the improvements. Utility conflicts will likely exist and should be confirmed. The project conceptualization would require topographical survey and geotechnical investigations. Wetland impacts are not anticipated; however, work in the swales may be considered surface water impacts.

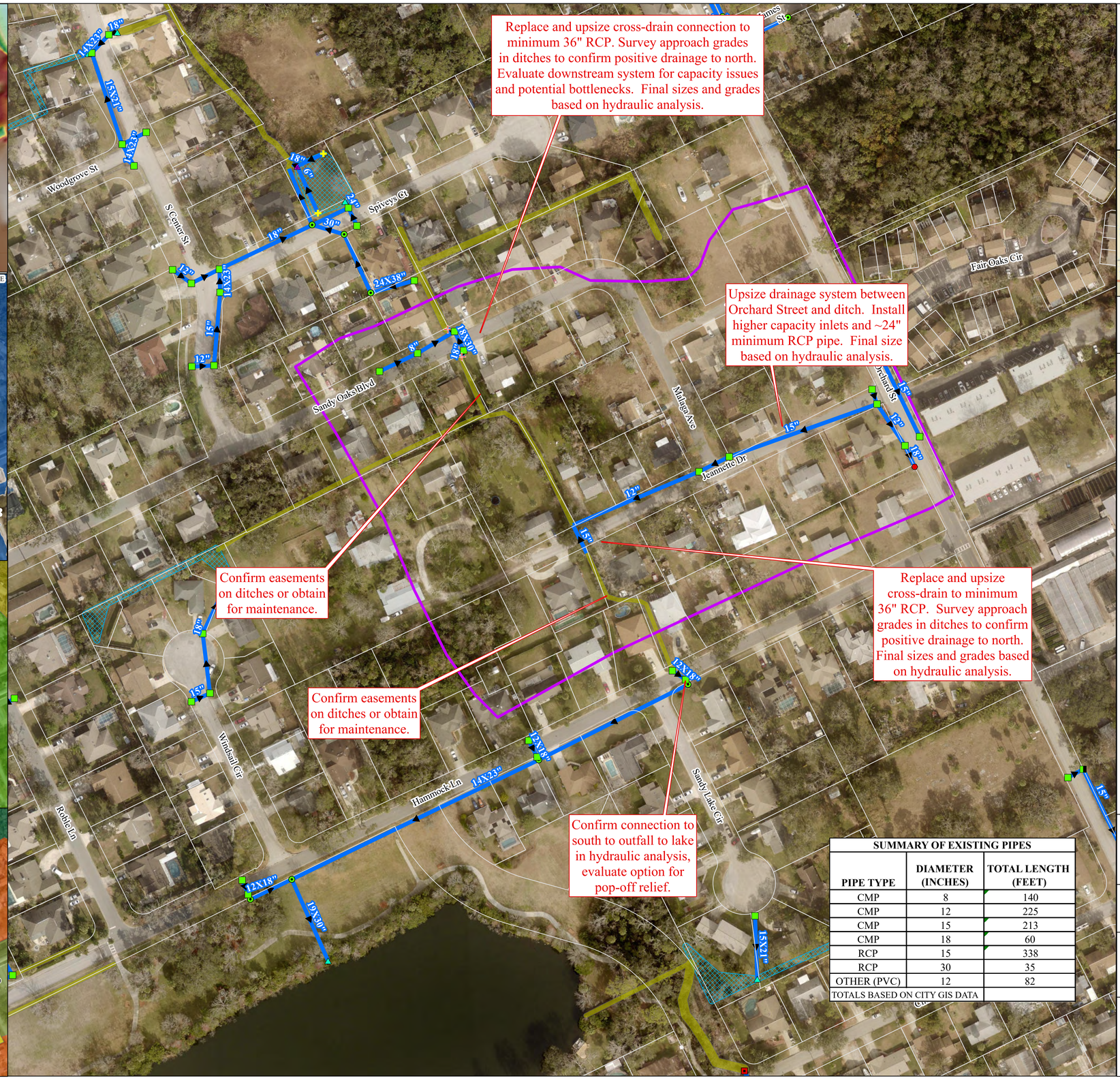
Refer to **Figure 10-13** for a sketch of the pipe improvement.



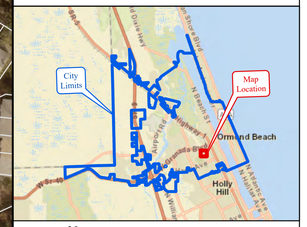








CITY OF ORMOND BEACH FLORIDA



N W E S

0 80 160 Feet

Legend

- Parcels
- Problem Area
- Ponds
- Swales
- Stormwater Pipe

Stormwater Structure Type

- BAFFLE BOX
- BOX CULVERT
- CLEAN OUT
- CURB INLET
- ELBOW
- ENDWALL
- HEADWALL
- INLET
- JUNCTION
- JUNCTION BOX
- MANHOLE
- MES
- NO STRUCTURE
- OVERFLOW
- PLUG
- PUMPSTATION
- TEE
- UNKNOWN
- WEIR
- WYE
- YARD DRAIN

SUMMARY OF EXISTING PIPES

PIPE TYPE	DIAMETER (INCHES)	TOTAL LENGTH (FEET)
CMP	8	140
CMP	12	225
CMP	15	213
CMP	18	60
RCP	15	338
RCP	30	35
OTHER (PVC)	12	82
TOTALS BASED ON CITY GIS DATA		

SOURCES:
DEM: Geosyntec, 2006
Floodplains: FEMA, 2018
Soils: City of Ormond Beach, 2019
Landuse: City of Ormond Beach, 2016
Drainage Structures: City of Ormond Beach, 2019
City Limits: City of Ormond Beach, 2019

Figure 10-13

Flood Improvement Project Concept Map: Orchard Street and Jeanette Drive

Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec consultants

Cost Estimate

Preliminary opinion of probable implementation cost was developed for the recommendations listed above. The estimate includes an allowance for upfront project feasibility analysis and improvement conceptualization which would entail a flood study and engineering analysis. This would be supported by survey and geotechnical data collection.

As the actual improvements to be constructed are uncertain at this time based on available information, assumptions were made as to the ultimate improvement necessary in order to develop a budgetary estimate for the purposes of the SMPU. These assumptions include:

- Replacement of the drainage piping system along Jeanette Drive and Sandy Oaks Boulevard with 24" minimum RCP (approximately 600').
- Upsize cross-drains with minimum 36" RCP (approximately 70').
- Regrading of 500' of the swales.
- Up to 1000' of roadside upgrades (curbing, gutters, swale grading, sodding, etc.).
- Easement acquisition administration (approximately 16 parcels abutting swales).

Refer to **Table 10-13** for the preliminary opinion of probable implementation cost based on the above. This references Florida Department of Transportation (FDOT) Pay Item unit costs adapted from the 2020 FDOT master pay item list (MPIL) statewide item average unit cost report where appropriate and includes appropriate contingency assumptions.

TABLE 10-13
FLOOD IMPROVEMENT CONCEPT: ORCHARD STREET AND JEANETTE DRIVE
PRELIMINARY ENGINEER'S OPINION OF PROBABLE IMPLEMENTATION COSTS

Conceptual Improvement						
Item	FDOT Pay Item No.[1]	Description	Units	Unit Cost	Quantity	Total
1	101-1	Mobilization (15% of Total)	LS	varies	1	$32,717
2	102-1	Maintenance of Traffic (5% of Total)	LS	varies	1	$10,906
3	104-1	Prevention, Control and Abatement of Erosion and Water Pollution (5% of Total)	LS	varies	1	$10,906
4	110-1	Clearing and Grubbing (10% of total)	LS	varies	1	$21,811
5	120-1	Excavation, Embankment, and Grading	CY	$10.00	0	$0
6	0120-3	Lateral Ditch Excavation	CY	$15.00	463	$6,944
7	285-706	Asphalt Base Course (8.0" Type B-12.5)	SY	$25.00	1333	$33,333
8	334-1-13	Superpave Asphaltic Conc., Traffic C, (2.0", SP-12.5)	SY	$15.00	1333	$20,000
9	0425-1321	Inlet, Curb Type P-2, < 10'	EA	$7,500.00	0	$0
10	0425-1541	Inlet, Ditch Bottom, Type D, <10'	EA	$4,500.00	8	$36,000
11	0425-2-61	Manhole, P-8, <10'	EA	$4,500.00	0	$0
12	430-94-4	Desilting Pipe	LF	$35.00	0	$0
13	430-174-124	Pipe, Culvert, Optional Material, Round, 24-inch SD	LF	$100.00	600	$60,000
14	430-174-136	Pipe, Culvert, Optional Material, Round, 36-inch SD	LF	$150.00	70	$10,500
15	430-174-148	Pipe, Culvert, Optional Material, Round, 48-inch SD	LF	$250.00	0	$0
16	430-524-100	Straight Concrete Endwalls, 24"	EA	$5,500.00	0	$0
17	430-536-100	Straight Concrete Endwalls, 36"	EA	$7,000.00	0	$0
18	430-548-100	Straight Concrete Endwalls, 48"	EA	$10,000.00	0	$0
19	430-984-129	Mitered End Section, Optional Round, 24" SD	EA	$2,000.00	0	$0
20	430-984-138	Mitered End Section, Optional Round, 36" SD	EA	$4,500.00	0	$0
21	430-984-141	Mitered End Section, Optional Round, 48" SD	EA	$7,000.00	0	$0
22	443-70-4	French Drain (Exfiltration) 24"	LF	$130.00	0	$0
23	520-1-10	Concrete Curb & Gutter, Type F	LF	$25.00	0	$0
24	520-3	Valley Gutter, Concrete	LF	$35.00	1000	$35,000
25	522-2	Concrete Sidewalk and Driveways, 6 inch thick	SY	$75.00	100	$7,500
26	570-1-2	Performance Turf, Sod	SY	$3.00	1111	$3,333
27	9999-1	CCTV Pipe Inspection	LF	$5.00	1100	$5,500
28	9999-2	Miscellaneous	LS	$0.00	0	$0
					CONSTRUCTION COST:	$294,450
					CONTINGENCY @ 20%:	$58,890
					ESTIMATED CONSTRUCTION COST:	**$353,340**
Non-Construction Items						
1	-	Flood Study and Hydraulic Analysis	LS	varies	1	$50,000.00
2	-	Design & Permitting	LS	varies	1	$75,000.00
3	-	Easement Acquisition and Administration	LS	varies	1	$80,000.00
					SUBTOTAL:	**$205,000.00**
					ESTIMATED GRAND TOTAL:	**$558,340.00**

NOTE:
1. FDOT Pay Item unit costs are adapted from the 09/30/2020 FDOT MPIL
2. Cost items obtained from similar Geosyntec 2019 project estimates
3. This estimate does not include potential utility conflicts and resolution

10.14 Flood Improvement Project Summary

Based on the foregoing, specific recommendations are made for the 13 identified flooding improvement project areas. Each of these is recommended to be captured in the SMPU CIP program to be considered for future implementation funding. A summary of the projects is provided below in **Table 10-14** along with the preliminary opinions of probable implementation cost taken from the cost projections.

Table 10-14 - Flood Improvement Project Summary

PROBLEM AREA	STUDY / DESIGN COST PROJECTION*	CONSTRUCTION COST PROJECTION*	TOTAL IMPLEMENTATION COST PROJECTION
Sanchez to SR 40 from Ridgewood to River	$450,000	$2,731,950	$3,181,950
Woodridge Drive Outfall	$117,500	$1,130,445	$1,247,945
South Arbor Drive and Grove Street (including Capri Circle)	$150,000	$403,920	$553,920
Durrance Acres**	$100,000	$0	$100,000
Cumberland	$195,000	$1,238,640	$1,433,640
North Highway US1 Drainage**	$75,000	$0	$75,000
Ormond Lakes**	$75,000	$0	$75,000
Alanwood Drive and Beach Street	$130,000	$549,000	$679,000
Trails - Dry Well / French Drains	$135,000	$1,448,910	$1,583,910
Orchard Business Park	$75,000	$129,690	$204,690
Railroad Crossing - East Fork of Thompson Creek	$110,000	$245,250	$355,250
Railroad Crossing - St. Andrews Discharge	$40,000	$56,475	$96,475
Orchard Street and Jeanette Drive	$205,000	$353,340	$558,340
TOTALS:	**$1,857,500**	**$8,287,620**	**$10,145,120**

* Cost based on current conceptual project and may change during design and permitting efforts.
** Current project recommendations are limited to an initial study to identify problems and deficiencies which may warrant corrective action. Project CIP recommendations may result from the study which could be addressed by the CIP program based on fund availability.

11. CAPITAL IMPROVEMENT PROJECT RECOMMENDATIONS

11.1 Background

The goal of the capital improvement program under this Stormwater Master Plan Update (SMPU) is to establish a strategic program or plan that that outlines the existing and projected needs of the City to assist in the Stormwater Utility Program planning and budgeting process. The CIP will prioritize the identified projects based on ranking criteria that reflects the City's needs and interests over the next 10-year planning horizon.

Capital improvement planning is an ongoing process. Plans are expected to change as new information becomes available, as studies are completed, and as economic conditions change. Additionally, because the City's goals and resources are constantly changing, this plan is designed to be re-evaluated each year to reaffirm or reprioritize the capital improvement projects. A successful capital improvement program includes a dynamic process that helps manage and implement growth in a changing environment with the community's needs at the forefront.

Some projects may remain relatively fixed in their prioritization if substantial outside funding commitments have been made to the projects and accepted by the City. Project prioritization efforts undertaken as part of this SMPU are based on a thorough desktop assessment of each proposed project and application of a ranking system which assesses the benefits and implementation constraints to the City.

This section provides an overview of CIP project recommendations, prioritization criteria, and project prioritization ranking of the proposed projects. This reflect recommendations from the flooding assessment, water quality assessment, and future climate impact assessment, generally summarized in Section 9. Also included in this section are high-level planning cost projections for each project to estimate the fiscal commitment by the City for each of the recommendations.

A recommended implementation schedule is provided for addressing the CIP projects. This is applied over a 10-year stormwater utility planning period.

11.2 Recommended CIP Projects

Based on the assessment performed under this SMPU, various opportunities for the implementation of stormwater improvement projects throughout the City exists. These projects can be applied to address flooding, water quality, future resiliency, or any combination thereof during the target 10-year CIP. Many of these opportunities will require further feasibility study or analysis to confirm their viability for implementation, and therefore follow on CIP projects that can be appended to the CIP for future years. For that reason, it will be prudent to revisit the CIP at the midpoint of the 10 year CIP implementation to determine any reprioritization of additional project pregaming that is warranted.

Based on the narratives provided in the Flood Assessment, Water Quality Assessment, Future Climate Impact Assessment, and BMP Assessment chapters of the SMPU, the following recommendations for CIP projects and efforts are provided.

Flooding Assessment Projects:

- Sanchez to SR 40 from Ridgewood to River (FL-01)
- Woodridge Drive Outfall (FL-02)
- South Arbor Drive and Grove Street (including Capri Circle) (FL-03)
- Durrance Acres (FL-04)
- Cumberland (FL-05)
- North Highway US1 Drainage (FL-06)
- Ormond Lakes (FL-07)
- Alanwood Drive and Beach Street (FL-08)
- Trails - Dry Well / French Drains (FL-09)
- Orchard Business Park (FL-10)
- Railroad Crossing - East Fork of Thompson Creek (FL-11)
- Railroad Crossing - St. Andrews Discharge (FL-12)
- Orchard Street and Jeanette Drive (FL-13)

Infrastructure Assessment Projects:

- Continued CMP rehabilitation projects (CMP-01)

Water Quality Projects:

- Tomoka River North Basins BMP Study - Basins T-1, T-8, and T-10 (WQ-1)
  - Initial study and BMP project concepts (top ~5 to be implemented per below)
  - BMP Project TRN-1 – design, permitting, construction
  - BMP Project TRN-2 – design, permitting, construction
  - BMP Project TRN-3 – design, permitting, construction
  - BMP Project TRN-4 – design, permitting, construction
- Tomoka River South Basins BMP Study - Basins T-2, T-5, T-6, T-7, T-9 (WQ-2)
  - Initial study and BMP project concepts (top ~5 to be implemented per below)
  - BMP Project TRS-1 – design, permitting, construction
  - BMP Project TRS-2 – design, permitting, construction
  - BMP Project TRS-3 – design, permitting, construction
  - BMP Project TRS-4 – design, permitting, construction
- Halifax River BMP Study - Basins H -4, H-5, and H-6 (WQ-3)
  - Initial study and BMP project concepts (top ~5 to be implemented per below)

- BMP Project HR-1 – design, permitting, construction
- BMP Project HR-2 – design, permitting, construction
- BMP Project HR-3 – design, permitting, construction
- BMP Project HR-4 – design, permitting, construction

- Maintenance BMP Optimization Study (WQ-4)
  - Street sweeping and baffle box debris clean out

Future Climate Impact Projects:

- Future Climate Vulnerability Critical Asset Assessment (FCI-1)
- Stormwater Infrastructure and BMP Future Impact Study (FCI-2)

11.3 CIP Project Prioritization

The characteristics of the flooding CIP projects were qualitatively evaluated in order to recommend a priority order for implementation over the 10 year planning period. This evaluation considered several key factors including overall potential benefit area served, degree of existing flooding observed, public right of way impact, and whether projects were focused more on maintenance. Based on this evaluation, the following priority order is recommended:

1. Cumberland (FL-05)
2. Woodridge Drive Outfall (FL-02)
3. Sanchez to SR 40 from Ridgewood to River (FL-01)
4. South Arbor Drive and Grove Street (including Capri Circle) (FL-03)
5. Alanwood Drive and Beach Street (FL-08)
6. Orchard Street and Jeanette Drive (FL-13)
7. Ormond Lakes (FL-07)
8. Durrance Acres (FL-04)
9. North Highway US1 Drainage (FL-06)
10. Trails - Dry Well / French Drains (FL-09)
11. Orchard Business Park (FL-10)
12. Railroad Crossing - East Fork of Thompson Creek (FL-11)
13. Railroad Crossing - St. Andrews Discharge (FL-12)

These projects will be programmed in the above order into the 10 year CIP. Note that flooding projects would be assumed to be implemented over 2 to 4 years. First year is design and permitting, followed by 1 to 3 years of construction depending on the size and complexity of the effort. It is noted that where significant easement or land acquisition is required, this time may expand.

It is noted that the Ormond Lakes, Durrance Acers, and North Highway US1 Drainage projects are recommended as studies with possible improvement project recommendations coming out of them. As such, these are recommended to be programmed early in the CP planning period to allow for the potential to implement any recommended improvements later in the CIP planning period should funds become available.

The proposed CMP rehabilitation efforts (CMP-01) are recommended to be ongoing, with the City chipping away at the remaining number as the CIP planning period moves forward. It is noted that some of the rehabilitation efforts will be addressed by the aforementioned CIP projects. As such, an annual allowance appears appropriate for addressing these efforts over the planning period. The total replacement/rehabilitation cost projection based on the GIS CMP pipe inventory was approximately $14,000,000. Addressing over a rolling service life term of 30 years would equate to an annual allocation of ~$466,000 per year. Assuming CIP projects would address some of the total, an even yearly allocation of $400,000 is proposed to address upgrades.

With respect to the water quality projects, the priority of the Basin BMP studies is proposed as noted previously:

- Tomoka River North BMP Study (WQ-1)
- Tomoka River South BMP Study (WQ-2)
- Halifax River BMP Study (WQ-3)

It is assumed for each of these that the overall Basin BMP study would occur the first programmed year, with a priority BMP project implemented in programmed year 2, Additional BMP projects for that basin would occur in years 4, 5, 6. The start of each study is staggered over the first 3 years of the CIP. For CIP budgeting an average BMP implementation cost of $275,000 (design, permitting, construction) is proposed to account for the to be determined projects. Actual cost would be determined, and project specific overages/underages could be re-allocated amongst the other water quality BMP projects. Establishing BMP concepts early in the CIP planning period will help to identify external funding possibilities.

The Maintenance BMP Optimization Study (WQ-4) is proposed to be programmed at the beginning of the CIP planning period. There may be specific recommendations that will come out of the study that will benefit the City's stormwater program water quality goals. Specifically increasing nutrient load reduction credit though the NPDES permit. As such, conducting this study early on is preferred.

The Future Climate Impact Projects are also recommended for the beginning of the CIP planning period. The Future Climate Vulnerability Critical Asset Assessment (FCI-1) may provide specific project recommendations for City asset floodproofing or other adaptive measures which then can be programmed into later years of the CIP. Establishing the project needs early in the CIP planning period will help to identify external funding possibilities.

The Stormwater Infrastructure and BMP Future Impact Study (FCI-2) may have specific design criteria and/or LOS enhancements that may warrant considering during the design of the other flooding and water quality projects in the CIP. As such, it is also recommended for the beginning of the CIP.

11.4 CIP Program Recommendations

The City's Stormwater Utility is required to predict CIP project needs over a reasonable planning period in order to forecast CIP expenditures and identify funding mechanisms. The primary source of funding for CIP projects is stormwater utility fees, however it is recognized that there are a number of external funding sources that can also be used to supplement paying for CIP project costs. The target planning horizons for this SMPU is 10 years. **Based on the previous section, there is nearly $20 million in projected CIP project needs which can be spread out through the planning period.** Note that this total includes just capital expenditures to implement the CIP project and does not include future O&M costs associated with the operation of the project BMPs.

Based on the identified project prioritization, the proposed 10 Year CIP is summarized on **Table 11-1**.

It is recognized that many of the projects are multi-year efforts and would require an initial feasibility study, followed by design and permitting then followed by construction. It is noted that attempts were made to spread out the funding nearly evenly throughout the program years with recognition that an initial ramp up in year one may be necessary. As such, the year 1 and 2 costs were projected to be less than subsequent years which average about $2,000,000. A contingency allocation was is provided at the end of the CIP in years 7 through 10 to accommodate addressing project implementation identified from studies performed earlier in the CIP period.

Costs developed for the purposes of this SMPU should be considered reasonable projections for budgetary planning purposes. Complete project feasibility and design efforts will define construction / implementation costs more accurately during implementation. As such, costs are considered reasonable for the Stormwater Utility fiscal year CIP budget projection planning provided in this report only.

It is further noted that all costs are in 2021 dollars and do not take into account inflation over the planning period. Stormwater Utility budget planning should account for inflation when establishing specific funding needs. It is reiterated also that the costs are specific to capital expenditure and do not include allocations for future O&M associated with the proposed projects.

It is recognized that this budget covers not only CIP projects but other capital expenditures as well, so actual project expenditures are less. Based on the proposed CIP implementation schedule, the allocations represent a significant increase over current expenditures. Increases in Stormwater utility funding may come through increases in utility user fees, supplements from City general funding, and/or grant awards or cost sharing.

It is recommended that the CIP project prioritization be revisited at least every 5 program years as projects are completed and since perception of the relative importance of projects and program needs may evolve.

Table 11-1 – Proposed 10 Year CIP Recommendations

Project Name	CIP ID	CIP Cost Projection	CIP YEAR*									
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
FLOODING PROJECTS**												
Cumberland	FL-05	$1,433,640	$195,000	$600,000	$638,640							
Woodridge Drive Outfall	FL-02	$1,247,945		$117,500	$500,000	$630,445						
Sanchez to SR 40 from Ridgewood to River	FL-01	$3,181,950				$450,000	$1,200,000	$800,000	$731,950			
South Arbor Drive and Grove Street (including Capri Circle)	FL-03	$553,920					$150,000	$403,920				
Alanwood Drive and Beach Street	FL-08	$679,000							$130,000	$250,000	$299,000	
Orchard Street and Jeanette Drive	FL-13	$558,340							$205,000	$353,340		
Ormond Lakes	FL-07	$75,000		$75,000								
Durrance Acres	FL-04	$100,000		$100,000								
North Highway US1 Drainage	FL-06	$75,000		$75,000								
Trails - Dry Well / French Drains	FL-09	$1,583,910							$135,000	$400,000	$700,000	348910
Orchard Business Park	FL-10	$204,690									$75,000	$129,690
Railroad Crossing - East Fork of Thompson Creek	FL-11	$355,250									$110,000	$245,250
Railroad Crossing - St. Andrews Discharge	FL-12	$96,475									$40,000	$56,475
WATER QUALITY PROJECTS												
Tomoka River North BMP Study***	WQ-1	$250,000	$250,000									
BMP Project	TRN-1	$275,000		$275,000								
BMP Project	TRN-2	$275,000				$275,000						
BMP Project	TRN-3	$275,000						$275,000				
BMP Project	TRN-4	$275,000								$275,000		
Tomoka River South BMP Study***	WQ-2	$250,000		$250,000								
BMP Project	TRS-1	$275,000			$275,000							
BMP Project	TRS-2	$275,000					$275,000					
BMP Project	TRS-3	$275,000							$275,000			
BMP Project	TRS-4	$275,000									$275,000	
Halifax River BMP Study***	WQ-3	$200,000			$200,000							
BMP Project	HR-1	$275,000				$275,000						
BMP Project	HR-2	$275,000						$275,000				
BMP Project	HR-3	$275,000								$275,000		
BMP Project	HR-4	$275,000										$275,000
The Maintenance BMP Optimization Study	WQ-4	$150,000	$150,000									
FUTURE CLIMATE IMPACT PROJECTS												
Future Climate Vulnerability Critical Asset Assessment (FCI-1)	FCI-1	$200,000	$200,000									
Stormwater Infrastructure and BMP Future Impact Study (FCI-2)	FCI-2	$100,000	$100,000									
INFRASTRUCTURE ASSESSMENT PROJECTS												
CMP Rehabilitation****	CMP-01	$4,000,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000
SUPPLEMENTAL PROJECT IMPLEMENTATION												
Design and Construction Contingency Based on Study Recommendations									$200,000	$100,000	$200,000	$500,000
TOTALS:		**$19,595,120**	**$1,295,000**	**$1,892,500**	**$2,013,640**	**$2,030,445**	**$2,025,000**	**$2,153,920**	**$2,076,950**	**$2,053,340**	**$2,099,000**	**$1,955,325**

11.5 CIP FUNDING

The City has been successful in the past in securing grant funding for CIP project efforts. This includes FDEP 319 grant funding and FDEP or SJRWMD cost share opportunities. The City is wise to focus some initial project efforts of the CIP program on developing project concepts that can be attractive to these types of external funding sources. As a coastal community, there are also more opportunities to receive grants related to coastal resiliency which may help fund projects which are focused, at least in part, on addressing various vulnerabilities the City may face from future climate change factors.

Examples of funding programs that may be funding sources for City stormwater CIP projects include the following (*adapted from the Florida Department of Environmental Protections Water Project Funding Sources website https://floridadep.gov/wra/wra/highlights/water-project-funding-sources as well as the Save Our Indian River Lagoon Project Plan 2021 Update*):

- **Federal Clean Water Act Section 319 Grant Program** – The Florida Department of Environmental Protection administers funds received from United States Environmental Protection Agency to implement projects or programs that reduce nonpoint sources of pollution. Projects or programs must benefit Florida's impaired waters, and local sponsors must provide at least a 40% match or in-kind contribution. Eligible activities include demonstration and evaluation of urban and agricultural stormwater best management practices, stormwater retrofits, and public education. Example projects include bioswales, green roofs, pervious pavement, plantings for bank stabilization, low-impact development projects, erosion control best management practices (BMPs), education related to nonpoint source pollution, agriculture demonstration projects, septic to sewer projects (laying laterals from residences and/or businesses to main sewer line, connection to line, and grinding station), and monitoring activities for project to evaluate BMP effectiveness. (https://floridadep.gov/wra/319-tmdl-fund).
- **State Water Quality Assistance Grants** – Funding may be available through periodic legislative appropriations to the Florida Department of Environmental Protection. When funds are available, the program prioritizes stormwater construction projects to benefit impaired waters, similar to the Section 319 grant program. Example projects include construction of urban stormwater BMPs. (https://floridadep.gov/wra/319-tmdl-fund).
- **Clean Water State Revolving Fund Loan Program** – This program provides low-interest loans to local governments to plan, design, and build or upgrade wastewater, stormwater, and nonpoint source pollution prevention projects. Discounted assistance for small communities is available. Interest rates on loans are below market rates and vary based on the economic wherewithal of the community. The Clean Water State Revolving Fund is Florida's largest financial assistance program for water infrastructure. Example projects include construction of wastewater collection system, replacing or expanding reclaimed water lines, upgrading a wastewater or reuse treatment facility, construction of stormwater treatment system, rehabilitating lift stations, installation of solar panels at wastewater treatment facility, drafting a wastewater facilities plan, designing a wastewater system, etc. (https://floridadep.gov/wra/srf).

- **Florida Resilient Coastlines Program** – The Florida Department of Environmental Protection offers technical assistance and funding to coastal communities dealing with increasingly complex flooding, erosion, and habitat shifts. (https://floridadep.gov/rcp/florida-resilient-coastlines-program).
- **Water Management District Funding** – Florida's five regional water management districts including the SJRWMD) offer financial assistance for a variety of water-related projects, for water supply development, water resource development, and surface water restoration. Assistance may be provided from ad valorem tax revenues or from periodic legislative appropriations for alternative water supply development, springs restoration, and Surface Water Improvement and Management projects. The amount of funding available, matching requirements, and types of assistance may vary from year to year. (https://www.sjrwmd.com/localgovernments/funding/).
- **Tourism + Lagoon Grant Program** – The Brevard County Tourism Development Council has approved funding for the development of projects that demonstrate a benefit to the health of the IRL and a positive impact to Brevard County for litter control along shorelines and causeways/entryways, restoration and protection of living shorelines, habitat restoration to support fish and wildlife viewing, and waterway destinations and access for improved and sustainable recreational waterway access. Due to revenue shortfalls in 2020, this program has been placed on an indefinite hold. (https://www.brevardfl.gov/TouristDevelopmentOffice/Home).
- **Small Cities Community Development Block Grant Program** – The Florida Department of Economic Opportunity makes funds available annually for water and sewer projects that benefit low- and moderate-income persons. (https://floridajobs.org/community-planning-and-development/assistance-for-governments-and-organizations/community-development-block-grant-program/community-development-block-grant---coronavirus-relief-funding).
- **Budget Appropriation** – The Florida Legislature may solicit applications directly for projects, including water projects, in anticipation of upcoming legislative sessions. This process is an opportunity to secure legislative sponsorship of project funding through the state budget.

11.6 CIP PROJECT RECOMMENDATIONS

Based on the foregoing, it is recommended to procced with the proposed CIP projects in accordance with the provided implementation schedule on Table 11-1. The City should engage in actively identifying funding for the CIP projects through internal and external means.

12. CONCLUSIONS AND RECOMMENDATIONS

This Stormwater Master Plan Update (SMPU) report provides the results the assessment of the current state of stormwater management in the City of Ormond Beach. Various aspects of stormwater management were reviewed including the regulation of stormwater, flooding impacts, water quality conditions, future climate impacts, and operations and maintenance. Recommendations were provided for improvements that the City can implement as part of a 10 year capital improvement program (CIP).

The regulatory review performed for this project indicated numerous areas where enhancements and revisions to land development code may be beneficial to the city's stormwater program. It is recommended the City consider implementation of these enhancements.

With regard to flooding, numerous complaints and problem areas were identified by citizens and the City. Specific flood improvement projects were conceptualized for many of these areas and included in the proposed CIP. It is recommended that the City engage in these flood improvement projects.

The City has a number of corrugated metal pipes that have or will be reaching their service life during the next storm water program planning cycle. The City has been engaging in efforts to replace and/or rehabilitate these pipes and it is recommended for the city to continue this practice.

The City has water quality improvement goals that need to be met in accordance with state TMDL and NPDES regulations. The Tomoka River and Halifax River have improvement needs, and it is recommended then the City engage in the water quality study and design efforts recommended in this report.

Future climate projections are also a concern for the City in that projections of sea level rise and its impact to groundwater and drainage system function is of concern. Also, there are critical City assets which may become increasingly at risk based on these future conditions. It is recommended that the city proactively engage in a detailed asset vulnerability study, as well as evaluate the potential impacts to the level of service of the City’s drainage systems.

Water quality and future climate impact projects may all be addressed by varying forms of best management practices (BMPs). This report provided detailed background information on the role of BMP's in a successful stormwater management program. It is recommended that the City consider leveraging various BMP applications, in particular low impact development principals and green stormwater infrastructure practices. Also, consideration of the additional application of active / real time control systems may be to the City’s benefits.

The City is responsible for operations and maintenance of the stormwater system. Based on the assessment performed for this project, it is recommended that the City look for opportunities to enhance its operations and maintenance program through the provision of additional staff and equipment resources and proactive planning.

The flooding, water quality and future impact recommendations were conceptualized into recommended projects that were program into the 10 year CIP. It is recommended the City proceed with implementing the CIP and actively look for opportunities to secure external funding to help with project implementation costs.

APPENDIX A

Summary Report of the Review of the City's Comprehensive Plan, Code of Ordinances, and Land Development Code

City of Ormond Beach

Technical Memo

Summary Report of the Review of the City's Comprehensive Plan, Code of Ordinances, and Land Development Code

Prepared by: Watershed Management Services, LLC
For Geosyntec Consultants, Inc.

A. Introduction

The City of Ormond Beach has a Phase II MS4 permit that requires the City to implement a Stormwater Management Program (SWMP) that will reduce stormwater pollutant loadings discharged from the city's stormwater system. Part VB of the Phase II MS4 Generic Permit, entitled Total Maximum Daily Load (TMDL) Allocations, states: "If a TMDL is approved for any water body into which the Phase II MS4 discharges, and the TMDL includes requirements for control of stormwater discharges, the operator must review its stormwater management program for consistency with the TMDL allocation. If the Phase II MS4 is not meeting its TMDL allocation, the operator must modify its stormwater management program to comply with the provisions of the TMDL Implementation Plan applicable to the operator in accordance with the schedule in the Implementation Plan." Essentially, this requires the permittee to meet Total Maximum Daily Load (TMDL) and Basin Management Action Plan (BMAP) load reduction requirements. This is done by reviewing the permittee's current SWMP and revising it to address TMDL and BMAP requirements.

As seen in the table below, the City of Ormond Beach has several water bodies and associated water body IDs (WBIDS) within and adjacent to it. Many of these are Verified Impaired Water Bodies that are not meeting their applicable water quality standards. Additionally, TMDLs have been adopted for the Halifax and Tomoka River to reduce nutrient loadings, especially Total Nitrogen (TN).

WBID Number	Water Body Name	Assessment/TMDL Status
2363C	Tomoka basin	Impaired - Nutrients Chlorophyll a
2631	Unnamed ditch	
2634	Tomoka River	Impaired - Nutrients, adopted TMDL -TN
2635	Groover Branch	Fecal Coliform
2640	Unnamed branch	Impaired - Nutrients Chlorophyll a
2641	Unnamed branch	Impaired – E. coli
2642	Unnamed branch	
2645	Mizners Branch	Impaired - Nutrients Macrophytes
2646	Little Tomoka River	
2647	Holly Hill ditch	
2663B	Halifax River	Impaired - Nutrients, adopted TMDL -TN

When a water body is on the Verified List of Impaired Waters or has an adopted TMDL or BMAP, Section 373.414(1)(b)3., F.S., states:

> 3. If the applicant is unable to meet water quality standards because existing ambient water quality does not meet standards, the governing board or the department shall consider *mitigation measures proposed by or acceptable to the applicant that cause net improvement of the water quality* in the receiving body of water for those parameters which do not meet standards.

The state's Environmental Resource Permit (ERP) program is supposed to ensure that new stormwater discharges within the basin cannot increase existing pollutant loads. This is called "Net improvement" and means that the post-development pollutant loading for TN and TP can't exceed the pre-development pollutant loading. All ERP applications must include documentation demonstrating compliance with state water quality standards, as well as showing that the project does not adversely affect the quality of receiving waters, Unfortunately, the "Net Improvement" requirements currently are not clearly stated in Florida's ERP program requirements which need

extensive revisions to bring them up-to-date. **Local jurisdictions may consider adopting enhanced regulatory requirements which go above and beyond state requirements.**

Reducing stormwater pollutant loadings from new development and redevelopment requires local governments to be more proactive in controlling these future loads by reviewing development applications and ensuring they do not increase pollutant loading. Options to address future loading include low impact development (LID) standards and Florida-friendly landscaping to further minimize the impacts of new development and redevelopment through local development regulations. LID is an approach to development that employs land planning, design practices, and technologies to conserve natural resources and reduce infrastructure costs. However, allowing and promoting LID techniques typically requires changes in local government Comprehensive Plans and Land Development Codes.

This Technical Memorandum summarizes our review of the City of Ormond Beach's Comprehensive Plan, Code of Ordinances, and Land Development Code **to identify potential changes that will further reduce the stormwater impacts of new development and redevelopment**. In particular, the focus is on changes to the code that **promote low impact design**, also termed green infrastructure. The incorporation of low impact development principles promotes reductions in impervious surfaces, the use of swales or other retention BMPs to reduce stormwater flow and volume, stormwater harvesting and reuse, and adherence to the principles of the UF/IFAS Florida-friendly landscaping program in new landscaping.

The summary report includes the following information:

- All applicable local code and regulation citations reviewed;
- A description of the current and proposed techniques aimed at reducing the stormwater impacts of new development and areas of significant redevelopment that are included within the applicable codes and regulations;
- A description of innovative stormwater planning techniques, including those described above, recommended for possible future incorporation into the codes and regulations (beyond what may be currently in draft).

B. Applicable Legal Authorities Reviewed

The following City of Ormond Beach legal authorities were reviewed to identify opportunities to further reduce the stormwater impacts of new development and areas of significant redevelopment, and to promote the use of Low Impact Design BMPs:

- Year 2025 Comprehensive Plan (adopted 2010)
- Code of Ordinances
- Land Development Regulations (2019)
- CRA Master Plan Update (August 2019)
- City of Ormond Beach Low Impact Design Manual (2013)

C. City of Ormond Beach Comprehensive Plan

Introduction:

This section of the Summary Report contains the results of the review of the City of Ormond Beach Comprehensive Plan. The purpose of the review is to identify Goals, Objectives, or Policies that can be revised to improve the effectiveness of the City's Stormwater Management Program. The review identifies potential revisions of the current language that will further

reduce the stormwater impacts of new development and areas of significant redevelopment. In particular, focus on changes to the Comprehensive Plan that will promote low impact development principles and BMPs: reductions in impervious surfaces, the use of swales or other retention BMPs, stormwater harvesting and reuse, reduction in flow and volume of stormwater, restoration of natural hydrology, and adherence to the principles of the UF/IFAS Florida-friendly Landscaping program in new landscaping.

The Comprehensive Plan consists of the following elements:

- Introduction
- Future Land Use Element
- Transportation Element
- Utilities Element
    - Sanitary Sewer Subelement
    - Portable Water Subelement
    - Drainage and Stormwater Management Subelement
    - Solid Waste Subelement
    - Hazardous Materials and Waste Subelement
    - Natural Ground Water Recharge Subelement
- Conservation Element
- Coastal Management Element
- Housing Element
- Recreation and Open Space Element
- Capital Improvements Element
- Cultural and Historic Resources Element
- Public Schools Facilities Element

Each of the elements above were included in the review although comments were not made on several of the elements.

Note: Where specific language is being recommended for revisions, word additions are shown in red font and suggested deletions are shown in strike through font (i.e., ~~drainage~~).

Comment: The City of Ormond Beach Comprehensive Plan is one of the best ones that I have reviewed. It has excellent Goals, Objectives, and Policies to protect natural resources, promote sustainable development and redevelopment, ensure infrastructure is capable of serving development, and ensure that the development community contributes to the costs of providing infrastructure. Unfortunately, the Land Development Code does not implement many of the more important environmentally related Goals, Objectives, and Policies stated in the Comprehensive Plan, especially related to stormwater management and treatment.

FUTURE LAND USE ELEMENT

Overview.
Comment: Second paragraph: Replace "principals" with "principles" in the sentence: "The major goal…sound social, economic, fiscal, and environmental ~~principals~~ principles."

Future Land Use Categories.

C. SLDR. Comment: : **To promote Low Impact Development, suggest the following revision:** "It is the intent…while encouraging smart growth principles such as low impact development, including compact and cluster development, to reduce…government services."

GOAL 1.
Comment: **Correct spelling in the second paragraph to rea**d: "The future … and SRA1A, and providing ~~or~~ for a continued high level of open space."

OBJECTIVE 1.1. RESIDENTIAL LAND USE
Policy 1.1.2. Comment: : **To promote Low Impact Development, suggest the following revision:** Continue to promote sound planning and Low Impact Development for the location and design of new residential developments including on-site common open space and recreation facilities.

Policy 1.1.5. Comment: : **To promote Low Impact Development, suggest the following revision:** Encourage innovative design measures, such as Low Impact Development, for new residential developments and ensure that adequate provision is made for neighborhood facilities suitable to the type of development proposed.

Policy 1.1.7. Comment: **To promote Low Impact Development, suggest the following revision:** Continuously review and modify development and building regulations to provide for Low Impact Development ~~sound~~ residential communities and quality housing.

It is noted that LID can be adapted to most any property type using different practices or application of the same practices in different design manners.

OBJECTIVE 1.2. COMMERCIAL LAND USE
Policy 1.2.3. Shopping centers shall be located in areas along arterials with secondary access to another collector or arterial street providing convenient access to surrounding residential areas as well as opportunity to facilitate return trips. Such uses shall provide adequate off-street parking and loading spaces; adequate on-site traffic circulation; and be encouraged to incorporate landscaping and other aesthetic amenities in their design.
Comment: Landscaping and open space is required for commercial developments.

OBJECTIVE 1.4. UTILITY/INDUSTRIAL LAND USES
Policy 1.4.11. **Comment: To update terminology, suggest the following revision:** Adequate sites shall be provided for utility facilities and services (solid waste, ~~drainage~~ stormwater management, potable water, sanitary sewer, electric, and telephone). Such facilities and services shall be improved and expanded to maintain adopted level of service standards consistent with the Capital Improvements Element. Adequate sites shall be provided for utility facilities and services (solid waste, ~~drainage~~ stormwater management, potable water, sanitary sewer, electric, and telephone).

OBJECTIVE 1.6. OPEN SPACE/CONSERVATION USE
Policy 1.6.4. Comment: To update terminology, suggest the following revision: Encourage retention of natural vegetation and use of Florida-friendly or native plant species in all projects in order to reduce fertilization and irrigation needs and minimize vegetation loss during deep freeze periods, protect wildlife habitat areas, and provide suitable natural open space areas in the urban environment.

OBJECTIVE 1.7 ACTIVITY CENTERS

Policy 1.7.3. Comment: To promote Low Impact Development and BMPs, suggest the following revision: The following guidelines and standards shall be established through the DRI and rezoning to Planned Development procedures and shall, at a minimum, address the following:
4. Innovative land use standards based on Low Impact Development principles and BMPs that are designed to protect and enhance environmental resources;
7. The following are specific design guidelines that are established to ensure that projects developed within the "Activity Center" land use provide for a balanced and sustainable mix of uses. All development shall, at a minimum, be required to:

C. Use shared parking, access and loading facilities, and pervious pavements as practical in an effort to reduce impervious surfaces and stormwater;

G. Use shared or joint facilities, such as regional stormwater systems, bus stops, and utility easements.

Policy 1.7.4.7. Comment: To promote Low Impact Development and BMPs, suggest the following revision: 7. Integrate urban design and architectural standards that provide for enhanced value and improved use of space. Typical standards would include, but not be limited to, use of Low Impact Development principles and BMPs**,** the regulation and design of signage, tree preservation and landscape buffering, building placement and architectural style, parking arrangement and orientation, and pedestrian/ transit opportunities.

Policy 1.7.5. Comment: It appears that this policy is duplicative of Policy 1.7.1 and should be deleted.

Policy 1.7.6. Comment: It appears that this policy is duplicative of Policy 1.7.3 and should be deleted.

GOAL 2. LAND USE COMPATIBILITY
OBJECTIVE 2.1. DEVELOPMENT REGULATIONS
Policy 2.1.2. Comment: To promote Low Impact Development and BMPs, suggest the following revision: Innovative land development regulations which may include Low Impact Development, planned developments, mixed use land use development techniques, form based regulations and redevelopment plans for the Downtown Community Redevelopment Area, shall be encouraged where appropriate.

OBJECTIVE 2.2. CONCURRENCY
The City shall approve development only where it demonstrates that the impacts of such development does not degrade the established level-of-service standards for public facilities and services below acceptable levels
Comment: We assume that the term "development" also includes redevelopment based on the definition of "development" in the Land Development Code.

OBJECTIVE 2.4. SMART GROWTH
Policy 2.4.7. Comment: To promote Low Impact Development and BMPs, suggest the following revision: Encourage Low Impact Development, including cluster development, which promotes the efficient use of open space and reduces development costs, in areas where services and facilities exist or are planned.

Policy 2.4.11. Comment: To promote Low Impact Development and BMPs, suggest the following revision: Promote shared driveway access, shared parking spaces, pervious pavement, and coordinated site plan designs to avoid new commercial strip development

Policy 2.4.12. **Comment: To promote Low Impact Development and BMPs, suggest the following revision** Promote Low Impact Development to enhance environmental protection, reduce~~d~~ natural resource consumption and increase energy management into the design and construction of buildings.

OBJECTIVE 2.5. COMPREHENSIVE PLAN AMENDMENTS
Policy 2.5.1. Comment: This is an excellent policy with quantifiable criteria that is unique among the many Comprehensive Plans I have reviewed.

OBJECTIVE 2.6. SUSTAINABILITY
Policy 2.6.1. Comment: To promote Low Impact Development and BMPs, suggest the following revision: The City shall seek opportunities to implement green and sustainable initiatives regarding, but not limited to, carbon footprint reduction, water and conservation and reuse, recycling, waste and energy reduction, reuse of resources, greater operational efficiency, land use and transportation practices, Low Impact Design stormwater BMPs, multi-pollutant prevention, and environmental improvements.

Policy 2.6.5.
Encourage integration of passive solar design, green roofs, active solar and other renewable energy sources into development projects through the Land Development Code.
Comment: This is an excellent policy. Research on green roofs at the UCF Stormwater Management Academy shows that solar cells are much more efficient on a green roof than a conventional roof.

Policy 2.6.12. **Comment: To promote Low Impact Development and BMPs, suggest the following revision:** Encourage design techniques, such as Low Impact Development, and materials that reduce heat absorption, thereby reducing the heat island effect.

GOAL 4. PROTECTION OF NATURAL AND HISTORIC RESOURCES
OBJECTIVE 4.1. DEVELOPMENT IN "ENVIRONMENTALLY SENSITIVE" AREAS
Policy 4.1.2. Comment: To promote Low Impact Development and BMPs, revise to read suggest the following revision: The City shall continue planning efforts to more specifically define "Environmentally Sensitive" areas and assist developers in minimizing environmental impacts through location and design measures, including using Low Impact Development principles and BMPs.

OBJECTIVE 4.2. FLOOD CONTROL AND STORMWATER ~~RUNOFF~~ MANAGEMENT
Comment: To update terminology, suggest the following revision: Through the provisions of the Land Development Code, the City shall manage development to minimize flood damage and stormwater discharge volume and pollutant loading from development to lessen the potential degradation of the City's surface water bodies, as per the intent of the Conservation, Coastal Management and Utilities Elements of the City's Comprehensive Plan.

Policy 4.2.2. Comment: To update terminology, suggest the following revision:
The City shall use detailed area-wide ~~drainage~~ stormwater management plans to reduce flooding potential, stormwater pollutant loading, and minimize direct discharge of stormwater ~~runoff~~ into surface water bodies. The City shall cooperate with Volusia County and adjoining communities in this effort.

OBJECTIVE 4.4. COORDINATION WITH NATURAL RESOURCES
Policy 4.4.2. Comment: To promote Low Impact Development and BMPs, suggest the following revision: Encourage the use of Low Impact Development principles and BMPs, including cluster development or innovative design measures, to ensure the protection of natural resources.

OBJECTIVE 4.6. ENVIRONMENTAL CORE OVERLAY
Policy 4.6.3. Comment: To promote Low Impact Development and BMPs suggest the following revision: Where land is partially or fully within ECO, proposed development activities shall be encouraged to utilize innovative and flexible land development and planning techniques such as Low Impact Development including the transfer of development rights.

GOAL 7. DOWNTOWN COMMUNITY REDEVELOPMENT AREA
Comment: The 2006 DRA Master Plan was revised in August 2009. Many changes in urban design and stormwater management such as Low Impact Development that could be very beneficial and cost effective in this redevelopment.

OBJECTIVE 7.1. DEVELOPMENT AND REDEVELOPMENT REGULATIONS
Policy 7.1.8.
To promote development and redevelopment within the Downtown, the City shall pursue a downtown stormwater conceptual permit from St. John's River Water Management District as an alternative to individualized stormwater retention and treatment.
Comment: There have not been projects that would fit in the boundaries of the master plan with one exception. See Objective 7.2

OBJECTIVE 7.2. PUBLIC INVESTMENT
Policy 7.2.2. Comment: To update terminology and provide for BMP alternatives, suggest the following revision: The City shall evaluate stormwater needs in the Downtown Community Redevelopment Area and implement a program of regional stormwater systems ~~public retention areas~~ to support intensive redevelopment of existing sites whenever practical.
Comment: City has implemented the Lincoln Street Park/stormwater management system.

GOAL 9. NORTH US 1 MUNICIPAL SERVICE AREA (MSA)
Recent amendments done

OBJECTIVE 1.8. TRANSIT DESIGN PRINCIPLES
Policy 1.8.1. Comment: To update terminology and promote Low Impact Development, suggest the following revision Reduce the amount of parking in new development and redevelopments by promoting and permitting the following strategies:
b) Encouraging ~~grass~~ pervious parking for low trip generating land uses and other land uses as appropriate;
.
Policy 1.8.2. Comment: To update terminology and promote Low Impact Development, suggest the following revision: Financial and regulatory incentives shall be tailored to favor single parcel, mixed use developments. The City shall provide the following incentives to encourage a horizontal or vertical mixed use component containing residential and non-residential uses:
c) Public, regional stormwater facilities in lieu of private individual site specific stormwater ~~retention~~ facilities.

GOAL 3. DECISION-MAKING AND DESIGN
OBJECTIVE 3.1. DESIGN
Policy 3.1.1. To promote Low Impact Development, suggest the following revision: Medians in subdivision roadways shall utilize ~~drought resistant~~ Florida-friendly landscaping ~~whenever possible~~ to minimize fertilization and irrigation needs.
Irrigation systems shall be installed in the landscaped medians and maintained in perpetuity by property owner associations.
Comment: The City can get a 3% TN pollutant load reduction credit on all nutrient TMDLs if it modifies its Landscape requirements to adopt the Florida-friendly Landscaping Model Ordinance (Statewide Best Management Practice (BMP) Efficiencies - https://floridadep.gov/dear/water-quality-restoration/content/statewide-best-management-practice-bmp-efficiencies).

UTILITIES ELEMENT

POTABLE WATER AND SANITARY SEWER SUBELEMENT
Comment: This sub-element contains excellent Goals, Objectives, and Policies to ensure adequate supply of potable water and wastewater management in a cost effective manner.

DRAINAGE AND STORMWATER MANAGEMENT SUBELEMENT
Comment: To update terminology, suggest the following revision: "~~Drainage and~~ Stormwater Management Sub-element" since stormwater management includes flood control (drainage) along with erosion and sediment control and stormwater treatment.

GOAL 2. ~~DRAINAGE AND~~ STORMWATER MANAGEMENT
Comment: To update terminology, suggest the following revision: ~~The city shall continue to implement a drainage and stormwater management program~~ policy that: incorporates the need for an effective ~~Drainage and~~ stormwater management system; inventories existing ~~Drainage and~~ stormwater management systems within the city; describes existing ~~drainage and~~ stormwater management systems and their functions; requires as much natural stormwater management as is feasible; and sets performance standards to maintain a desired level of water recharge and surface water quality and works with other entities, both public and private, to ensure the execution of this goal and its associated objectives and Policies.

OBJECTIVE 2.1. STORMWATER MANAGEMENT UTILITY
Comment: Is the adopted "Stormwater Management Plan" referring to the Stormwater Master Plan or does the City have another document named Stormwater Management Plan. If these are the same document, then suggest using the term Stormwater Master Plan.

Policy 2.1.2. Comment: Suggest the following revision since the Stormwater Master Plan addresses stormwater impacts from all existing development not just from public roads: The Stormwater Master Plan shall address the impact that stormwater ~~runoff~~ from existing roads and development has upon receiving waters and address corrective actions. Corrective actions should include both structural and non-structural measures. Structural measures include retrofitting existing roadways and development with effective stormwater management facilities… for stormwater implementation.

Policy 2.1.3. To be consistent with state and federal law, suggest the following revision:
The City's stormwater management system shall be designed and developed to provide stormwater treatment before discharge to ~~connect and integrate with~~ wetlands as a primary means to clean and recharge the aquifer.
Comment: Please note that not all wetlands provide aquifer recharge and that most aquifer recharge occurs in areas with sandy, porous soils.

OBJECTIVE 2.2. DEVELOPMENT REVIEW
Policy 2.2.3. To update terminology, suggest the following revision:
The utilization of ~~either~~ adopted Best Management Practices (BMPs') shall be required during road construction, urban development, agricultural, and silviculture activities to protect natural water bodies and wetlands from pollutants and siltation.

Policy 2.2.4. To be consistent with state and federal law and regulation, suggest the following revision: Stormwater management systems that ~~utilize~~ incorporate isolated wetlands~~,~~ shall provide adequate stormwater treatment before discharge to the wetlands. ~~diversion of the "first flush" of stormwater to separate facilities~~.
Comment: The concept of "first flush" is no longer recognized universally but is recognized to occur under very specific site conditions.

Policy 2.2.5. **Comment: Does the City's LDC require retention of a specified volume of stormwater?** Sufficient water shall be retained on-site to support natural groundwater and surface water levels throughout the year, to allow aquifer recharge and avoid overdraining natural watersheds. **Clarification: The LDC is very specific on the volume to be retained on site. There is no reference to the support of natural groundwater and surface water levels.**

Policy 2.2.6. To update terminology, suggest the following revision:
~~Drainage and~~ Stormwater management systems shall use natural systems to the greatest extent possible, and land development modifications shall resemble natural features to the greatest extent practicable.
Comment: What is meant by "shall use natural systems?" Is this referring to the natural mechanisms inherent in certain soil, geology, and water table conditions that help to remove or transform stormwater pollutants? Clarification: The term natural systems was taken to mean open systems such as swales, ponds that allow the infiltration of the surface water runoff. Again, there was no direction on the nutrient loading.

Policy 2.2.7. Comment. To update terminology and clarify intent, suggest the following revisions:
The following criteria shall apply when considering applications for development activities that utilize wetlands as part of the stormwater management system:
a. Stormwater outfalls from a development may be directed to the wetland only when free of debris and free of chemical pollutants and silt that will adversely impact wetlands, and only at peak discharge rates that do not disturb vegetation or increase erosion or turbidity. Sheet flow and other overland ~~drainage of~~ runoff shall be controlled. **Clarification: The use of wetlands for treatment and/or storage has not been recommended by the City.**
b. The proposed action shall not cause stormwater peak discharge rates from ~~runoff~~ ~~on~~ the wetland to ~~take place at a rate that would~~ exceed the natural rate.
c. The allowed total increased runoff (**Is this stormwater volume or peak discharge rate, or both?),** in combination with the total fill allowed, shall not cause total natural flood-storage capacity of the wetland to fall below, or fall below further, the projected volume of runoff on the

whole developed wetland watershed generated by a 100-year frequency, 24-hour duration rainfall event.

Policy 2.2.12.
Stormwater management systems shall be designed to ensure that post-development runoff does not exceed pre-development levels, in terms of the volume, rate, timing and pollutant load of runoff.
Comment: Is this actually the City's performance standard or LOS for stormwater as set forth in the LDC? If so, this is an excellent policy. Unfortunately, the LDC does not require this level of stormwater management.

Policy 2.2.17.
Discharge from drainage or mosquito control ditches directly to surface water bodies or open water streams shall be discouraged and minimized. Discharge into existing compatible wetlands or constructed retention basins that have been seeded and/or vegetated with wetland plant species shall be encouraged.
Comment: Constructed retention basins should not have wetland plants since they are dry systems in sandy soils that percolate the stormwater. If this is common issue, then suggest you revise this to read "wet detention basins" which can be seeded or vegetated with wetland species.

Policy 2.2.20. To be update terminology and be consistent with state and federal laws or rule, suggest the following revision: If an outfall from a dredged or excavated area is necessary to remove excess stormwater, then the polymers or other appropriate treatment methods shall be sued to ensure the ~~outfall~~ discharge does not cause or contribute to violations of water quality standards. ~~shall either be routed through a compatible wetland or a shallow retention basin constructed and seeded or vegetated with wetland plant species to act as a filter for runoff.~~

Policy 2.2.23. Comment: Are these stormwater design standards included in the LDC? Clarification: No there are no specific references to these items.

Policy 2.2.26. Comment: To update terminology, suggest the following revision:
Roadway designs in wetland areas will provide for the capture and diversion of stormwater runoff from these roadway surfaces ~~in wetland areas~~ to upland stormwater BMPs ~~retention/detention ponds~~ for treatment prior to discharge to receiving water bodies and wetlands.

Policy 2.2.28.
The discharge of stormwater~~s~~ from a stormwater management system ~~retention basin~~ into surface water bodies and open water streams shall be discouraged and minimized. Discharge into existing, compatible wetlands shall be encouraged whenever possible.

Policy 2.2.29. Comment: This is an excellent policy since long term operation and maintenance of stormwater systems is a major problem around the state. The City may want to consider an Operating Permit with regular submittals of inspection certifications, especially if the City provides credits on the stormwater utility bill for having on-site stormwater facilities. Clarification: No reference to the ownership and maintenance responsibility. This was left with SJRWMD.

OBJECTIVE 2.3. ADMINISTRATION

The City shall continue to administer, in a cost-effective and environmentally safe manner, ~~drainage and~~ stormwater management facilities and services consistent with the Land Development Code (LDC) as supported by the stormwater utility fee, user fees and impact fees. Existing deficiencies shall be corrected and the extension or increase in the capacity of the City ~~drainage and~~ stormwater management system shall be coordinated to meet existing and future needs as determined by the Stormwater Master Plan, to maximize the use of existing facilities, and to discourage urban sprawl.
Comment: This is an excellent policy in which we have updated terminology.

Policy 2.3.2. To update terminology, suggest the following revision:
The City shall coordinate the extension of, or increase in, the capacity of ~~drainage and~~ stormwater management facilities with the needs of the public by ensuring that no development is approved unless the facilities are in place or scheduled to be in place concurrent with development and consistent with the adopted level-of-service standards.

NATURAL GROUNDWATER RECHARGE SUBELEMENT

OBJECTIVE 5.1. DEVELOPMENT REVIEW
Policy 5.1.1.
Saltwater intrusion shall be prevented by limiting potentially harmful water extraction and ensuring adequate recharge.
Comment: Is the City experiencing issues with saltwater intrusion from sea level rise? This is occurring in several coastal communities.

Policy 5.1.2. Comment: To be consistent with Sections 166.048 and 373.185, F.S., suggest the following revision: The use of Florida-friendly landscaping, including native and drought-resistant vegetation, ~~in landscaping~~ shall be ~~encouraged~~ required by providing developers with a list of appropriate ~~native~~ Florida-friendly vegetation at site plan application.
Comment: The City should update its landscaping requirements to REQUIRE Florida-friendly landscaping and plants.

Policy 5.1.6. Comment: To be consistent with Sections 166.048 and 373.185, F.S., suggest the following revision: The use of Florida-friendly landscaping, including procreation of native vegetation and/or drought resistant vegetation, shall be required on development projects when irrigation water is drawn from sources which are critical to limiting saltwater intrusion.

Policy 5.1.11. Comment: The term "water management plan" is not defined nor is it used elsewhere in the document. We assume this refers to a "stormwater management plan" and suggest this be revised.

Policy 5.3.3.
Non-potable water use demands shall be met using water of the lowest quality supply which is both available and acceptable for the intended application. Water reuse or water reclamation programs should be used, wherever economically and environmentally feasible, to reduce groundwater or surface water withdrawals for water use applications which do not require potable water.
Comment: Please note that stormwater harvesting is now a recognized and permittable means of providing alternative water supply.

CONSERVATION ELEMENT

GOAL 1. WATERSHEDS, LAKES AND RIVERS
The City Shall Maintain And, To The Maximum Extent Feasible, Promote Programs To Enhance The Functional, Aesthetic And Qualitative Value Of The Halifax River, The Tomoka River, Their Major Tributaries, And Artificially Constructed Lakes.
Comment: What is meant by "artificially constructed lakes?" Is this referring to wet detention systems or borrow pits? Suggest eliminating this term.

OBJECTIVE 1.2. SURFACE WATER QUALITY
Policy 1.2.2.
The City shall, in cooperation with local, regional and State agencies, adopt standards to identify, monitor, and manage point and non-point pollution source discharges. This shall include, at a minimum, a review and update of all non-point source discharge permits, checking for accuracy and completeness.
Comment: This is an interesting and unique policy. Has the City adopted the standards referenced in this Policy?

Policy 1.2.8. Comment: To update terminology, suggest the following revision:
The operation of the stormwater ~~control~~ management utility and the retrofitting of stormwater outfalls shall comply with the recommendations of the adopted Stormwater Master Plan.
Comment: Is it the City's intent that the Stormwater Master Plan be specific enough to address all aspects of the operation of the City's stormwater program?

Policy 1.2.10.
In order to protect surface waters from the activities of adjacent property owners, the City shall educate residents regarding deliberate deposition of lawn debris, washing paint brushes, the use of fertilizers and chemicals or the storage of hazardous chemicals and fuel supplies in close proximity to water bodies. "Close proximity" shall be defined with regard to the proposed activity and the degree to which the adjacent water body is to be protected.
Comment: This is an excellent policy to address "pointless personal pollution" and to implement provisions of your NPDES stormwater MS4 permit.

OBJECTIVE 1.5. ARTIFICIAL LAKES
Comment: From the wording of Policies 1.5.1 and 1.5.2 it appears the City is using the term "Artificial Lakes" or "Artificially constructed lakes" to describe stormwater wet detention systems. Is this correct? If yes, then we strongly recommend not using the terms "Artificial Lakes" or "Artificially constructed lakes" since these are not lakes with adopted water quality standards but components of a stormwater management system. Using the term "lakes" gives citizens a false expectation of what these stormwater systems should look like and how they should be used.

Policy 1.5.1.
Artificially constructed lakes shall not be included in stormwater management systems which have outfalls into the upper Halifax River, the Tomoka River, or their tributaries without review and recommendations by the Site Plan Review Committee that all pertinent ordinances and standards have been met and that the discharge to the receiving waters will not degrade ambient surface water quality**.**
Comment: In areas with slowly percolating soils and high water tables, wet detention systems are the primary means of stormwater treatment and management. If using them in these watersheds is a concern to the City, then it should include in its LDC or stormwater manual very specific standards for the design, construction, and

maintenance of wet detention systems and a requirement that other BMPs be used as part of a BMP treatment train to pretreat stormwater before entering the wet detention system. Clarification: Policy 1.5.1 The use of wet detention/ wet ponds tend to require more involved pre-treatment. We and SJRWMD have worked with the EOR's of projects to ensure there is pre-treatment for projects in these low areas.

GOAL 2. FLOODPLAINS
Comment: The goals, objectives, and policies of this Goal are excellent and need to be fully integrated into Chapter 3, Article II of the Land Development Code.

GOAL 5. VEGETATION
OBJECTIVE 5.1. ECOLOGICAL COMMUNITIES AND OBJECTIVE 5.2 HABITAT AND DEVELOPMENT
Comment: The objectives and policies for these goals are excellent. Several of them are based on the principles of Low Impact Development which needs to be better promoted within the Comprehensive Plan and the Land Development Code.

Policy 5.1.5.
The City shall maintain and periodically review standards that preserve the present forested tree cover to the maximum extent practical.
Comment: Has the City quantified the existing percent canopy cover within the City? Does it need to be preserved or increased? Clarification: We have not quantified the percentage of canopy coverage.

OBJECTIVE 5.3. NATIVE LANDSCAPING
Comment: As discussed earlier, to be consistent with Sections 166.048 and 373.185, F.S., suggest that the term "native landscaping" be replaced with "Florida-friendly landscaping.
Comment: Suggest the following revision of the Objective: Florida-friend Landscaping: To minimize fertilizer and irrigation needs, the City shall promote the use of Florida-friendly plants, especially native drought-resistant vegetation, in landscaping. The maximum amount of protection possible shall be provided for existing trees and other vegetation in order to assist in the control of flooding, soil erosion, dust, heat, air, and noise pollution and to improve the appearance, environmental character, and value of the total urban area and to protect nearby properties

Policy 5.3.1.
The City shall continue to promote and encourage Florida-friendly landscape ~~xeriscape~~ design concepts for landscaping single-family homes by providing builders, landscape designers, homeowners, and the general public with informational brochures describing ~~xeriscape~~ Florida-friendly landscaping. Technical assistance is available from IFAS.

Policy 5.3.2.
The City shall require that at least 50% of the landscape vegetation used on a project reviewed the Site Plan Review Committee be comprised of Florida-friendly drought resistant ~~native~~ vegetation in harmony with site specific conditions.
Policy 5.3.3.
Vegetation on new City landscaping projects shall be comprised of at least 50% Florida-friendly ~~native~~ drought resistant vegetation.
Policy 5.3.4.

All new development and expansions of existing development, except for single-family homes in an existing subdivision, shall provide for the protection of native vegetation on the site. Existing developments should utilize Florida-friendly ~~native~~ plants in common areas (entranceways, pavilions) in instances where replanting or re-landscaping becomes necessary.

Policy 5.3.5.

Florida-friendly plants, including native vegetation, shall be used to the maximum extent possible to meet landscaping and open space requirements.

OBJECTIVE 5.4. WETLAND PRESERVATION

Policy 5.4.2. Comment: To promote Low Impact Development and enhance wetland protection, suggest the following revision:

Land use planning and site design shall promote Low Impact Development principles and BMPs to ~~support development patterns which~~ minimize the impact of development on wetland communities. As a result of development, there shall be no net loss of wetlands functions or values, nor shall wetlands functions and values be degraded.

Policy 5.4.6.d. 3. Comment: To promote Low Impact Development and enhance wetland protection, suggest the following revision: The proposed development shall use Low Impact Development principles and BMPs when apprpraite to prevent ~~not~~ adverse impacts on the hydroperiod and other functioning values of the adjacent wetland as determined by review of a Wetlands Management Plan, which is required to be submitted under the Wetlands Protection Ordinance.

Policy 5.4.9. Comment: To update legal references, suggest the following revision: No development shall be approved unless it satisfies the provisions of the City's Land Development Code and the SJRWMD Environmental Resource Permit rules ~~for Management and Storage of Surface Waters (MSSW),~~ in Chapter 62-330 ~~40C-~~4, F.A.C., the ERP Applicant's Handbook Volume I, and the Permit Information Manual.

Policy 5.4.11. Comment: To update legal references and provide specific design requirements for stormwater systems that incorporate isolated wetlands, suggest the following revision: The City shall encourage the incorporation of isolated wetlands into stormwater management systems to help restore impacted wetlands and ~~as detention facilities~~ to avoid the filling and excavating of unimpacted wetlands. These stormwater systems shall be designed in accordance with the requirements in Chapter 10 of the SJRWMD Permit Information Manual. ~~Whenever isolated wetlands are used for stormwater detention, hydroperiods and stage elevations shall be designed to maintain the existing natural wetlands community, except where permitting agencies agree that the imposition of conditions which favor a different plant community is more desirable for the purpose of providing habitat, improving water quality or enhancing other wetland values. In order to maintain the long-term viability of isolated wetlands used for retention, stormwater shall be treated to meet the general water quality criteria of c.62, F.A.C., prior to its discharge in isolated wetlands.~~

Policy 5.4.16. Comment: To update terminology, suggest the following revision:

Roadway designs in or near wetland areas will provide for the capture and diversion of stormwater ~~runoff~~ from roadway surfaces in wetland areas to upland stormwater management systems ~~retention/detention ponds~~ for treatment prior to discharge into receiving water bodies.

Policy 5.4.19. Comment: As discussed previously, to update terminology, suggest the following revision: Where stormwater wet detention systems ~~artificially constructed lakes~~ adjoin or are within 100 feet of a wetland, design elevations of such systems ~~lakes~~ will be controlled to

maintain or recreate historic water levels and hydroperiods of the adjacent or nearby wetland system. Under no circumstances shall the systems ~~lakes~~ be allowed to draw down the water table within 300 feet of a wetland.

POLICY 5.4.24. Comment: Please note that this policy effectively prohibits the incorporation of isolated wetlands into stormwater management systems. This may not beconsistent with state rules on the incorporation of isolated wetlands into stormwater management systems.
The minimum distance between the edge of each stormwater retention/detention system ~~pond~~ and adjacent wetlands shall be 300 feet, unless the St. Johns River Water Management District and/or the City accepts tests, calculations or other information furnished by the applicant through the permitting process which clearly demonstrates that deviation from the 300 feet distance would not degrade the wetlands in any way.

Policy 5.4.25. Comment: To update terminology and expand applicability, the following revisions are suggested: Although the use of wetlands for storing and purifying water is encouraged, care must be taken not to overload their capacity, thereby harming the wetlands and transitional vegetation. Wetlands should not be damaged by the construction of stormwater management systems ~~detention ponds~~.

Policy 5.4.26. **Comment: To update terminology and expand applicability, the following revisions are suggested:** Stormwater management systems ~~Retention and detention ponds~~ shall be used to retain and detain the increased and accelerated runoff which the development generates. Water shall be released from stormwater management systems ~~detention ponds~~ into wetlands at a rate and in a manner approximating the natural flow which would have occurred before development.

GOAL 6. FISH AND WILDLIFE.
OBJECTIVE 6.1. CONSERVATION
Policy 6.1.14. Comment: To be consistent with Sections 166.048 and 373.185, F.S., suggest the following revision: To minimize dependency on groundwater for irrigation and to prompt retention of wildlife habitat, Florida-friendly plants, especially native vegetation, shall be utilized in landscaping to maximum extent practicable.

Policy 6.1.18. Comment: To minimize the impacts of new or expanded marinas, suggest the following revision: Marinas shall not be permitted in areas which are determined to be critical to the survival of the manatee. This includes the Tomoka River, Thompson Creek, Strickland Creek, and Dodson Creek. In addition, construction of new or the expansion of existing boat facilities in these areas shall be consistent with the Manatee Protection Plan for Volusia County dated August 23, 2005 (adopted by Volusia County on September 8, 2005), ~~and~~ the requirements of the City of Ormond Beach Land Development Code, and the requirements for Clean Marina Program, whichever is more restrictive.

Policy 6.1.27. Comment to better protect environmentally sensitive areas and promote Low Impact Development, suggest the following revision: Land use activities adjacent to the following areas…or neighborhood commercial. All
proposed land use activities must ensure that such activities will not degrade the natural physical, biological, aesthetic, or recreational functions of such lands and shall provide for the preservation and protection of such areas in accordance with the appropriate standards including, but not limited to, using Low Impact Development principles and BMPs, setback requirements, buffers, wetland and floodplain policies.

GOAL 7. USES OF NATURAL RESOURCES
OBJECTIVE 7.3. SUSTAINABILITY
Policy 7.3.3
The built environment and urban design should maximize natural areas and assets and incorporate Florida Friendly landscaping to reduce energy and water consumption.
Comment: Thank you for including Florida-friendly landscaping.

Policy 7.3.4
Create, protect and manage natural systems ~~of green infrastructure~~ (i.e., urban forests, wetlands, etc.) and promote the use of Low Impact Development principles and BMPs with integration into parks and open spaces.~~, green roofs, natural drainage systems).~~

Policy 7.3.6
Encourage Low Impact Development site design techniques that protect or restore natural systems ~~"green infrastructure"~~ (i.e., urban forests, wetlands, parks and open spaces) instead of relying solely on engineered systems that require higher energy and carbon inputs**.**

GOAL 11. SOIL AND EROSION
OBJECTIVE 11.1. DEVELOPMENT
Comment: To update terminology and recognize the inherent limitations of a Detailed Soil Survey, suggest the following revisions:
Policy 11.1.1. Prior to any land disturbance associated with land development activities, except in previously approved subdivisions, the applicant shall indicate on a site plan those areas of highly erodible soils, as defined by the U.S. Department of Agriculture Natural Resource ~~Soil~~ Conservation Service (USDA NRCS), and avoid and minimize disturbance to those areas to the maximum extent feasible. On-site soil investigations will be required to verify the information in the Detailed Soil Survey.

Policy 11.1.2.
Building and other construction in soils which are determined to be hydric in character, as defined by the USDA NRCS ~~USDASCS~~ and the Florida Department of Environmental Protection ~~Agriculture~~, shall be prohibited except to accommodate an overriding public interest and except as allowed within the wetland regulations.

Policy 11.1.4.
Residential site design shall be based on data contained in the USDA NRCS ~~U.S. Soil Conservation Service's~~ Detailed Soil Survey ~~soils report~~, and ~~unless~~ a detailed soils analysis ~~is~~ undertaken and accepted by the City and the USDA NRCS ~~USDASCS~~ regional field or State soil scientist.

Policy 11.1.5.
The applicant of proposed development activities shall be responsible for implementing erosion and sediment control measures prior to and during construction activities on the project site to ensure that erosion is minimized, sediment is retained on-site, and that discharges do not cause or contribute to violations of water quality standards ~~sedimentation and/or erosion problems are not created~~ in receiving wetlands or other waterbodies.

Policy 11.1.6. Comment: To update terminology and recognize the inherent limitations of a Detailed Soil Survey, suggest the following revisions:

Septic tanks shall not be located in areas designated by the USDA NRCS ~~U.S. Soil Conservation Service~~ as having severe or moderate limitations for septic tank development. On-site soil investigations will be required to verify the information in the Detailed Soil Survey.

GOAL 12. LOW IMPACT DEVELOPMENT
Comment: To be consistent with Florida Low Impact Development principles and BMPs, suggest the following revisions:
For New Development And Redevelopment, Apply Better Site Design And Low Impact Development (LID) Principles And BMPs ~~Techniques~~, ~~And Pursue Commitments~~ To Reduce Stormwater ~~Runoff~~ Volumes, Pollutant Loadings, And Peak Discharge Rates ~~Flows~~, To Increase Groundwater Recharge, And To Increase Preservation Of Undisturbed Area

Policy 12.1.1.
Integrate into the Land Development Code (LDC) the BMP treatment train ~~source control~~ concept which includes both non-structural source controls and structural BMPs integrated into a site's open space and ~~places a greater importance on managing smaller, cost-effective~~ landscape features located on each lot to minimize the need for ~~rather than through~~ costly pipe and traditional ~~pond~~ stormwater management design.
Comment: The rainfall in Florida (25 yr. 24 hr. storm of 10-11 inches) is much different than the rainfall patterns in Chesapeake Bay and Puget Sound areas where the concept of dispersed smaller BMPs originated. Larger BMPs are generally required in Florida's sub-tropical climate for higher runoff attenuation requirements.

Policy 12.1.2.
Maintain or improve infiltration, frequency and volume of discharges, and groundwater recharge by placing greater emphasis on reducing impervious surfaces, especially Directly Connect Impervious Areas, functional grading, open channel sections, and the increased use of retention within ~~bioretention/filtration~~ landscaped areas.

Policy 12.1.3.
Integrate Low Impact Development BMPs ~~alternative stormwater management practices~~ such as on-lot retention ~~microstorage~~, functional landscaping, ~~open drainage~~ swales, reduced imperviousness, pervious pavements, flatter grades, increased runoff travel time, and depression storage into a BMP treatment train that is integrated into the ~~a~~ multifunctional site design.

Policy 12.1.4.
Reduce the size ~~use of centralized~~ of traditional best management practices (BMPs) such as wet detention ~~storm water~~ ponds through the use of Low Impact Development BMPs ~~Integrated Management Practices (IMPs)~~ which are distributed throughout a project ~~in small portion of a lot or parcel~~ and near the source of impacts.
Comment: Again, the rainfall in Florida (25 yr. 24 hr. storm of 10-11 inches) is much different than the rainfall patterns in Chesapeake Bay and Puget Sound areas where the concept of dispersed smaller BMPs originated. Additionally, the term Integrated Management Practices is not used in Florida and only confuses the design and engineering community, making them less likely to use LID BMPs.

Policy 12.1.5.
Amend the LDC and Construction Details to permit LID designs that can significantly reduce development costs through smart site design by:

- Reducing impervious surfaces (roadways), curb, and gutters;

- Integrating BMPs into a site's open space and landscaping;
- Decreasing the need for ~~use of~~ storm drain piping, inlet structures, and
- ~~Eliminating or~~ Decreasing the size of large stormwater retention areas or wet detention ponds.

COASTAL ZONE MANAGEMENT ELEMENT

GOAL 1. LAND USE
OBJECTIVE 1.1. COMPATIBLE LAND USE
Policy 1.1.3. Comment: Need to add stormwater management to the infrastructure elements that do not have lower LOS. The City shall closely monitor development on the barrier island in the unincorporated area north of the City Limits to ensure that development does not lower level-of-service standards for traffic, potable water and sanitary sewer, stormwater management, public access, and hurricane evacuation below acceptable levels.

OBJECTIVE 1.3. REDEVELOPMENT
Policy 1.3.2. Comment: To update terminology, suggest the following revision: When redevelopment is proposed, a number of concerns shall be addressed by the applicant regarding phasing, parking, stormwater management ~~drainage~~, landscaping, and landscape maintenance, improvement and maintenance of common recreational areas, effects on the traffic circulation network, including hurricane evacuation times and impacts on natural resources. Phased improvements including stormwater management ~~drainage~~, parking, landscaping, and Homeowners' Association facilities (if appropriate) shall be correlated with the issuance of building permits, lot sales, and Certificates of Occupancy.

OBJECTIVE 1.5.
LAND DEVELOPMENT REGULATIONS. Comment: To update terminology, suggest the following revision: The City shall continue to administer and review land use regulations that provide for the location, extent and distribution of land uses consistent with the protection of coastal resources and the preservation of fiscal stability. The land development regulations shall ensure that the provision of roads, potable water, sanitary sewer, stormwater management ~~drainage~~, parks and recreation, and solid waste facilities and services, or any other facilities required to maintain the adopted Level-of-Service standards shall be consistent and planned with the level of development proposed in the Future Land Use Element.

Policy 1.5.3. **Comment: To promote Low Impact Development, suggest the following revision:** A variety of tools and techniques will be maintained in the Land Development Code in order to effectively manage growth. The City shall maintain within the Land Development Code procedures and standards for public protection and acquisition of land, public improvements, environmental controls, zoning techniques, subdivision techniques, Low Impact Development, tax and fee systems, and controls on the land.

Policy 1.5.7. **Comment: To better achieve the Goals and Objectives of this Element, suggest the following revision:** The specific and cumulative impacts of development or redevelopment upon water quantity, water quality, wildlife habitat, and living marine resources shall be limited in accordance with the policies set forth by the Future Land Use Element, Conservation Element, Utilities Element, and the Coastal Management Element.

OBJECTIVE 1.6. PERFORMANCE STANDARDS FOR DEVELOPMENT.
Policy 1.6.2. To better achieve the Goals and Objectives of this Element and to promote Low Impact Development, suggest the following revision:

The City shall continue to utilize innovative and alternative zoning districts or techniques to protect coastal resources. Such techniques could include overlay districts, floating zones, bonus ordinances, performance standards, Low Impact Development, quality development programs, Transferable Development Rights, or other incentive-based methods.

Policy 1.6.7. Comment: No following criteria are included in this policy.
The City shall maintain as part of the Land Development Code and apply standards for marina siting or expansion to include the following criteria with priority given to expansion of existing marinas.

Policy 1.6.10. Comment: Suggest adding the following policy: All new marinas and expansions of existing marinas shall meet the requirements of the Florida Clean Marina Program.

GOAL 3. BEACH AND DUNES
OBJECTIVE 3.2. DUNE SYSTEM PRESERVATION AND PROTECTION STANDARDS
Policy 3.2.8. Comment: To promote Low Impact Development, suggest the following revision: Exotic trees and plants not indigenous to the beach and dune environment shall be prohibited. Exotic plant species removed shall be in conjunction with Policy 2.3.4. Removed plants shall be replanted with Florida-friendly plants, including native species, as deemed appropriate by the City's Landscape Architect.

GOAL 4. WATER QUALITY OF ESTUARIES AND OCEAN
OBJECTIVE 4.1. OCEAN WATER QUALITY
Policy 4.1.2. To promote Low Impact Development, suggest the following revision: Low Impact Development principles and BMPs, including pervious pavement, berms and swales, shall be required where appropriate for new development abutting the coastal beaches and dune systems.

OBJECTIVE 4.2. ESTUARINE WATER QUALITY.
Comment: The following policies establish an "anti-degradation" approach for maintaining existing water quality, which is an excellent concept. However, the City's LDC DOES NOT require new development and redevelopment to not increase pollutant loading since it defaults to the SJRWMD ERP requirements.

Policy 4.2.3.
The City shall protect and ensure there is no further degradation of the water quality of the estuarine system.

Policy 4.2.10.
No development shall be permitted to degrade the Class III waters of the Tomoka River, a designated Outstanding Florida Waters water body.

Comment: The following policies require the implementation of water quality monitoring programs for certain projects. Typically, it is impossible to determine the impacts of any one development's stormwater discharges on water quality since it is the cumulative effects within a watershed that determine water quality. Is this monitoring being required? Does it include stormwater discharge monitoring? Does it include biological community monitoring? Has it actually been useful to the City?
Policy 4.2.11.

The City shall require all PRD's and multi-family greater than fifty (50) units, commercial and industrial development greater than ten (10) acres, adjacent to the Halifax River, the Tomoka River, and tributaries to properly assess the potential impacts of the project on the surface waters by preparing an individual surface water monitoring program to assess the predevelopment condition. After the initial baseline data is completed, the monitoring shall continue through the construction phase. The monitoring program shall be designed to detect any decline in water quality as defined by ambient standards as approved by the City Engineer. Should any decline in water quality be attributable to the development project, suitable actions shall be undertaken to test further the source and to make recommendations for immediate corrective actions. The monitoring program shall continue for the life of the project with reports submitted to the City yearly for the first 5 years after construction and then every 5 years thereafter.

Policy 4.2.12.
All development shall review and report on their stormwater management system and provide an assessment of the impacts of the development with regards to the established ambient chemical and biological conditions of the wetlands and waters within and adjacent to the subject site.

OBJECTIVE 6.6. DOCKS AND MARINAS
Policy 6.6.3. Comment: To decrease impacts from marinas, suggest the following revision: Dock facility standards and marina siting standards shall be maintained in the Land Development Code. Docks, boathouses, and other similar structures proposed for the Halifax River, Tomoka River and its canals and tributaries shall be constructed in accordance with the Land Development Code regulations. All marinas shall meet the requirements of the Florida Clean Marina Program.

HOUSING ELEMENT

GOAL 1. HOUSING SUPPLY.
OBJECTIVE 1.3 GREEN BUILDING AND SUSTAINABLE DEVELOPMENT
Comment: To promote Low Impact Development, suggest the following revisions:
Policy 1.3.2.
Encourage the incorporation of Low Impact Development principles and BMPs, including green building practices into development projects.
Policy 1.3.3.
Provide educational materials regarding energy efficiency, sustainable design, Low Impact Development, and climate change, that encourage residents and business owners to invest in energy-efficiency improvements through community outreach efforts through the City's website.
Policy 1.3.7.
The City shall encourage the construction of energy efficient housing by exploring innovative regulations through nationally recognized green building standards, that promote energy conserving and environmentally sensitive technologies such as Low Impact Development.

RECREATION AND OPEN SPACE ELEMENT

OBJECTIVE 1.8. CONSERVATION
Policy 1.8.2. Comment: To better achieve the Elements Goals and Objectives and to promote Low Impact Development, suggest the following revision: New proposed land development adjacent to parks, recreation, and conservation areas shall use Low Impact

Development principles and BMPs where appropriate to be compatible with both natural systems and the intended function of the park, recreation, or conservation area.

OBJECTIVE 1.11. DEVELOPMENT ACTIVITIES.
Policy 1.11.1. Comment: To update terminology, suggest the following revision since stormwater management includes flood protection or drainage:
c. Regulate areas subject to seasonal and periodic flooding and provide for ~~drainage and~~ stormwater management.

Policy 1.11.2. Comment: To promote Low Impact Development, suggest the following revision: Innovative techniques shall be utilized to protect identified open space areas. Such techniques could include overlay districts, flood zones, performance standards, Low Impact Development requirements, or other incentive-based methods.

CAPITAL IMPROVEMENTS ELEMENT

GOAL 1. LEVEL OF SERVICE STANDARDS
Comment: To ensure adequate stormwater management, suggest the following revision:
Public Facilities Shall Be Provided In A Timely And Efficient Manner As Necessary To Correct Existing Deficiencies In The Level-Of-Service For Potable Water, Sanitary Sewer, Stormwater Management, Solid Waste, Traffic Circulation, And Parks And Recreation And To Meet Future Demands Generated From New Development Through The Use Of Sound Fiscal Practices.

OBJECTIVE 1.3. CONCURRENCY MANAGEMENT SYSTEM
~~Drainage~~ Stormwater Management: The difference in the volume of run-off for 25 years frequency, 24-hour duration storm event between pre-development and post-development conditions shall be retained on-site. The difference between the pre-development and post-development conditions for peak run-off rates for the 100-year frequency, 24-hour duration rainfall event shall be retained on-site. Individual development facility capacity shall be maintained so that there is no potential flooding increase above the base year elevation. There shall be no degradation of water quality of Class III waters. An equal or greater volume of storage capacity must be created for any volume of the regulatory flood that would be displaced by fill or structures. The velocity of the regulatory flood must not be adversely altered on any watercourse. Areas not filled are to generally be left in their natural state. However, such areas may be used to meet landscaping and/or retention requirements, provided that the design is consistent with the then-existing City standards and ordinance requirements. Fill limitations consistent with the Land Development Code and the performance standards for each wetland classification established by the Conservation Element shall be enforced for all developments lying within areas of special flood hazard, as defined by the 100-year floodplain boundaries of the FEMA FIRM maps.
Comment: The stormwater management LOS does not include a water quality or stormwater treatment component. The goal is to ensure no degradation of water quality of Class III waters but doesn't provide a stormwater treatment performance standard. More importantly, the stormwater LOS is in conflict with Policy 2.2.12 which states: "Stormwater management systems shall be designed to ensure that post-development runoff does not exceed pre-development levels, in terms of the volume, rate, timing and pollutant load of runoff." Additionally, given the number of impaired waters in and adjacent to Ormond Beach, the goal should also include "and shall improve water quality of impaired water bodies that are not meeting their applicable water quality standards.

OBJECTIVE 1.2. COASTAL MANAGEMENT

Policy 1.2.10. Comment: Given that Florida's impaired waters/TMDL/BMAP programs did not exist when this Comprehensive Plan was adopted, suggest the following revision: On a continuous basis the City shall review and implement stormwater quality programs and regulations as proposed by the Federal Environmental Protection Agency, the DEP, and the SJRWMD. Additionally, the City shall review and participate in all phases of FDEP's Impaired Surface Waters program including the listing of impaired waters and the development and adoption of Total Maximum Daily Loads (TMDLs) and Basin Management Action Plans (BMAPs).

D. City of Ormond Beach Code of Ordinances

Introduction
All components of the City of Ormond Beach Code of Ordinances, as listed below, were reviewed with respect to promoting better stormwater management and LID BMPs.

Chapter 1. General Provisions
Chapter 2. Administration
Chapter 3. Advertising
Chapter 3.3. Aircraft and Airport
Chapter 3.5 Alarms and Alarm Systems
Chapter 4. Alcoholic Beverages
Chapter 5. Animals and Fowl
Chapter 6. Bicycles
Chapter 7. Boats, Docks, and Waterways
Chapter 8. Buildings and Construction Regulations
Chapter 8.1. Telecommunications
Chapter 9. Fire Prevention and Protection
Chapter 10. Solid Waste, Yard Waste and Recyclables
Chapter 11. Health and Sanitation
Chapter 12. Business Regulations
Chapter 13. Elections
Chapter 14. Offenses
Chapter 15. Parks and Recreation
Chapter 16. Pensions and Retirement
Chapter 17. Streets, Sidewalks, and Other Public Places
Chapter 19. Taxation
Chapter 20. Traffic
Chapter 22. Water and Sewers
Chapter 23. Sexual Offenders and Sexual Predators

Note: Where specific language is being recommended for revisions, word additions are shown in red font and suggested deletions are shown in strike through font (i.e.,~~drainage~~)

Chapter 2. Administration
Article VII, Division 3.
Section 2-262. Schedule of Civil Fines
Comment: It does not appear that stormwater violations are included in this schedule.

Chapter 5. Animals and Fowl

Article I, Section 5-9. - Sanitary conditions Comment: To minimize nutrient and bacterial pollution from animals, suggest the following revision: (b) The owner of every animal shall be responsible for the removal and proper disposal of any excreta deposited by his animal(s) on public walks, recreational areas or private property.

Chapter 8. Buildings and Construction Regulations
Article I. Section 8-10. Application Processing Fees. (16)
Comment: To update terminology, suggest that the term "Surface water management plan" be changed to "Stormwater management plan".

Chapter 22. Water and Sewers
Comment: To update terminology, suggest the following revisions:
ARTICLE V. – STORMWATER MANAGEMENT ~~DRAINAGE~~ UTILITY
DIVISION 1. – GENERALLY
Section 22-151.02. - Creation of stormwater management ~~drainage~~ utility.
The city commission does hereby establish a management ~~drainage~~ utility and declares its intention to acquire, own, construct, equip, operate and maintain open drainageways, underground storm drains, equipment and appurtenances necessary, useful, or convenient for a complete stormwater management ~~drainage~~ system; and including maintenance, extension and reconstruction of the present stormwater management ~~drainage~~ system of the city. The primary intent of this stormwater management ~~drainage~~ utility shall be to improve surface water quality; to reduce, by suitable means, the volume of insufficiently treated stormwater discharged into the city's various surface waters, in particular the Tomoka River and the Halifax River and their respective tributaries; to minimize the potential for flooding; and to reduce the long-term costs to the public to achieve these objectives.

Section 22-151.03. - Definitions.
Comment: To update terminology, suggest the following revisions:

Beneficiaries of stormwater management ~~drainage~~ service means all developed real properties within the city which benefit by the provision of maintenance, operation and improvement of the stormwater *management* ~~control~~ systems.

Benefits of stormwater management ~~drainage~~ service include, but are not limited to, the provision of adequate systems of collection, conveyance, detention, retention, treatment and release of stormwater, the reduction of hazard to property and life resulting from stormwater ~~runoff,~~ improvement in general health and welfare through reduction of undesirable stormwater conditions and improvements to the water quality in the stormwater management ~~and surface water~~ system and its receiving waters.

Best management practices (BMPs) means control techniques used for a given set of conditions to provide stormwater flood control and treatment in the most cost effective manner. With respect to the MS4 permit, it also means schedules of activities, prohibitions or practices, maintenance procedures, treatment methods and other management practices to prevent or reduce pollutants from entering the MS4 or being discharged from the MS4.

Contributors~~ions~~ of stormwater ~~drainage waters~~ includes all developed real properties within the city.

Detention means the collection and storage of stormwater ~~surface water~~ for the subsequent discharge at a slower rate than the rate of flow into the detention pond or structure.

Stormwater ~~Drainage~~ system, natural, means surface streams or swamps which convey water to natural points of discharge. If the word "natural" is not used, then the stormwater ~~drainage~~ system can include constructed ~~manmade~~ facilities.

Stormwater management ~~Drainage~~ systems, ~~surface water or stormwater~~ means all constructed ~~artificial~~ stormwater control systems, facilities and structures, including, but not limited to, basins, canals, conduits, channels, culverts, dams, impoundments, pipes, reservoirs, swales, retention systems, detention systems, and other such *works* or natural features such as wetlands, creeks, rivers, and lakes that provide collection, drainage, conveyance, or other stormwater ~~surface water~~ management capabilities.

National pollutant discharge elimination system (NPDES) means a permitting program mandated by the United States Environmental Protection Agency and implemented by ~~to~~ the Florida ~~state~~ D~~d~~epartment of E~~e~~nvironmental P~~p~~rotection which requires local municipalities to apply for coverage by permit in *order* to discharge stormwater from a MS4 to surface waters of the United States and is designed to implement local government programs and methods for the reduction and elimination of stormwater pollution to the MS4 to the maximum extent practicable.

~~*Runoff* means the surface flow of water that results from, and occurs following, a rainfall event~~
Comment: Delete since duplicative of stormwater.

Stormwater ~~Runoff~~ control means any means approved by the city engineer by which the peak rate of stormwater runoff from land surfaces is reduced, stormwater pollutant loading is reduced, and/or the erosion created by stormwater ~~runoff~~ is reduced.

Stormwater means the ~~surface runoff and the discharge of runoff~~ water resulting from, and occurring after, a rainfall.

Stormwater conveyance system means a constructed ~~manmade~~ structure or formation or series of structures and formations used to collect and transmit stormwater runoff from one location to another and includes, but is not limited to, catch basins, curb inlets, pipes, manholes, gutters, swales, channels and ditches.

Section 22-151.04. - Duties of the director.
Comment: To update terminology, suggest the following revisions:
The director of the stormwater utility shall have the responsibility to:
(6) Prepare and revise a comprehensive stormwater management master ~~drainage~~ plan for adoption by the city commission at least every five years;

Section 22-151.06. - Private facilities.
Comment: To update terminology, suggest the following revisions:
(a) The property owner shall be responsible for stormwater management ~~drainage~~ systems and watercourses located on private property, both natural and constructed ~~manmade~~. The owner shall clean and maintain their private stormwater management ~~drainage~~ systems and watercourses, as required to ensure efficient and proper operation and preservation of natural or historical water flow or pursuant to engineered plans approved by the city and as required for approval by the St. Johns River Water Management District. Changes or alterations to any

private stormwater management ~~drainage~~ system or watercourse by the property owner shall be prohibited, except as permitted by the city. The property owner shall make application to the city and to other required state agencies for review and approval of any proposed alterations to private stormwater management ~~drainage~~ systems and watercourses.

Section 22-151.09. - Enforcement; liens; fines and emergency abatement.
Comment: To update terminology, suggest the following revisions:

(a) When the director and city engineer determine that a property owner is not maintaining its stormwater management ~~drainage~~ system or watercourses as required by section 22-151.06, the violator will receive written notice of the violation and may be required to take remedial measures to restore the effectiveness of the stormwater system or facilities. The notice of violation shall contain:

Comment: **What enforcement procedures are used during the site development process to ensure that all stormwater and erosion/sediment control BMPs are installed and maintained correctly? Does the City have Stop Work Order authority which has been proved to be the most effective means of resolving these types of issues? Clarification: The City uses an Engineering inspector during the construction of private development project. The initial requirement is the installation of sediment control devices prior to beginning the clearing process. The Engineering Inspection does have the authority to issue "Stop Work Order".**

Section 22-151.10. - Flooding; liability.
Comment: To update terminology, suggest the following revisions: Floods from stormwater ~~runoff~~ may occasionally occur which exceed the capacity of stormwater ~~drainage~~ facilities constructed, operated, or maintained by funds made available under this article. This article shall not be construed or interpreted to mean that property subject to the fees and charges established herein will always (or at any time) be free from stormwater flooding or flood damage, or that stormwater systems capable of handling all storm events can be cost-effectively constructed, operated, or maintained; nor shall this article create any liability on the part of, or cause of action against, the city, or any official or employee thereof, for any flood damage that may result from such storms or the runoff thereof; nor does this article purport to reduce the need or the necessity for obtaining flood insurance by individual property owners.

Section 22-158. - Utility fee established.
Comment: To update terminology, suggest the following revisions: (a) Subject to the provisions of this article, there is hereby imposed on each and every developed lot or parcel of land within the city and the owners thereof a stormwater management ~~drainage~~ utility fee. This fee is deemed reasonable and is necessary to pay for the operation, maintenance, administration and capital improvements of the existing city stormwater drainage facilities and of such future stormwater drainage facilities as may be established within the city.

(b) These costs presently include and will include payments for stormwater management ~~drainage~~ design and right-of-way acquisitions as well as construction and reconstruction of stormwater management ~~drainage~~ facilities to the extent that such costs have been determined to be the responsibility of developed properties. All of the proceeds of this fee are deemed to be in payment for use of the city stormwater management ~~drainage~~ system.

Section 22-158.01. - Exceptions from stormwater utility ~~drainage~~ fees.
Comment: To update terminology, suggest the following revisions: The following land uses are exempt from stormwater utility ~~drainage~~ fees:

Section 22-158.02. - Stormwater management fund.
Comment: To update terminology, suggest the following revisions:

(a) All stormwater management ~~drainage~~ utility fees collected by the city shall be paid into a fund, which is hereby created, to be known as the "stormwater management fund." Such fund shall be used for the purpose of paying the cost of stormwater management ~~drainage~~ facilities to be constructed in the various stormwater basins and the cost of maintenance and management of same as delineated above. Engineering decisions on sizing and locations of facilities will be based on such factors as flood hazards, existing conditions of facilities and data on hydrographs and runoff curve numbers.

(b) To the extent that the stormwater management fees collected are insufficient to construct stormwater management ~~drainage~~ facilities, the cost of the same may be paid from such city fund as may be determined by the city commission. The city commission may *order* the reimbursement of such fund if additional fees are thereafter collected. When the stormwater management fund has surplus dollars on hand in excess of current needs, the surplus dollars will be invested to return the highest yield consistent with proper safeguards.

(c) The fees and charges paid shall not be used for general or other governmental or proprietary purposes of the city, except to pay for the equitable share of the cost of administration of the fund. Other than as described above, the fees and charges shall be used solely to pay for the cost of operation, repair, maintenance, improvements, renewal, replacement, design, right-of-way acquisition, and construction of public stormwater management ~~drainage~~ facilities and costs incidental thereto.

Section 22-158.03. - Stormwater management ~~drainage~~ utility fee collection. **Comment: To update terminology, suggest the following revisions:**

(a) The stormwater management ~~drainage~~ utility fee shall be billed and collected with the monthly utility bill for those properties utilizing city utilities and billed and collected separately as stormwater management ~~drainage~~ utility fees for those properties and owners thereof not utilizing other city utilities. All such bills for stormwater management ~~drainage~~ utility fees shall be rendered monthly by the finance department and shall be paid within 15 days following the original date of billing. A ten percent late charge shall be assessed on all bills paid later than 20 days after being rendered.

(b) The stormwater management ~~drainage~~ utility fee is part of a consolidated statement for utility customers which is generally paid by a single monthly payment. Any charge due hereunder which shall not be paid when due may be recovered in an action at law by the city. In addition to any other remedies or penalties provided by this or any other ordinance of the city, failure of any user of city utilities within the city to pay said charges within 30 days from original date of billing shall subject such user to discontinuance of utility services, and the city manager is hereby empowered and directed to enforce this provision as to any and all delinquent users. The employees of the city shall, at all reasonable times, have access to any premises served by the city for inspection, repair or the enforcement of the provisions of this article. Any discontinuance or re-establishment of service shall be in accordance with section 22-27.

(c) All stormwater management ~~drainage~~ utility fees assessed pursuant to this article shall be a lien upon the property to which such fee is associated from the date said fee becomes due until

such fee is paid. The owner of every building, premises, lot or house shall be obligated to pay the fee for all service provided for his premises which obligation may be enforced by the city by action at law or suit to enforce the lien in the same manner as the foreclosure of mortgages. In the event of such action, the city shall be entitled to recover all court costs and reasonable attorney fees for such collection.

DIVISION 3. - STORMWATER POLLUTION PREVENTION
Comment: This serves as the City's stormwater illicit discharge ordinance as required by its NPDES MS4 permit.

Section 22-159.02. - Finding and determinations. To update terminology, suggest the following revisions: (3) The state, pursuant to F.S. § 403.0885, requires municipalities to obtain coverage under the national pollutant discharge elimination system (NPDES) permit as issued by the Florida ~~state~~ D~~d~~epartment of E~~e~~nvironmental P~~p~~rotection, to authorize the city's municipal separate storm sewer system (MS4) to discharge into surface waters of the United States.

Section 22-159.04. - Stormwater discharge from industrial and construction activities.

To update terminology and meet the requirements of your NPDES MS4 permit, suggest the following revisions: (b) Stormwater discharge from construction activities shall be in accordance with a best management practice (BMP) plan and permits as approved by the city, Florida ~~state~~ D~~d~~epartment of E~~e~~nvironmental P~~p~~rotection, St. Johns River Water Management District and other applicable agencies, as required. The BMP plan shall include, but is not limited to, an erosion control plan and stormwater mitigation plan. Soil erosion and sedimentation shall be controlled on-site and shall not be allowed to impact offsite properties, the MS4, waters of the United States or city or any shared waterbody such as a lake, pond or stream owned by more than one entity. All construction sites that disturb one or more acres shall obtain coverage from FDEP under the NPDES Construction Generic Permit and provide documentation that the project has received coverage.

Section 22-159.09. - Enforcement, penalties and legal proceedings.
Comment: Does the last part of this section provide the authority to issue a Stop Work Order?
(b) The city manager or designee may *order* the correction of any unsafe, nonconforming or unauthorized condition which violates any provision of this article, or rule adopted hereunder, and may also *order* discontinuance of any activity causing such conditions.

E. City of Ormond Beach Land Development Code

Introduction
All components of the City of Ormond Beach Land Development Code (2019), as listed below, were reviewed with respect to promoting better stormwater management and LID BMPS.

CHAPTER 1 – GENERAL ADMINISTRATION
ARTICLE I. - Preamble
ARTICLE II. – Administration and Enforcement
ARTICLE III. – Definitions and Acronyms
ARTICLE IV. – Schedule of Development Review and Impact Fees
ARTICLE V. – Concurrency Management

CHAPTER 2 – DISTRICT AND GENERAL REGULATIONS
ARTICLE I. – Establishment of Zoning Districts and Official Zoning Map
ARTICLE II. – District Regulations
ARTICLE III. – General Regulations
ARTICLE IV. – Conditional and Special Exception Regulations
ARTICLE V - Nonconformance
ARTICLE VI. – Overlay Districts
ARTICLE VII. – North U.S. Highway 1 Interlocal Planning and Municipal Service Area

CHAPTER 3 – PERFORMANCE STANDARDS
ARTICLE I. - Landscaping
ARTICLE II. – Environmental Protection Standards
ARTICLE III. – Off-Street Parking Circulation and Loading
ARTICLE IV. – Sign Regulations
ARTICLE V. – Utility and Infrastructure Design Standards
ARTICLE VI. – Architectural Design Standards

CHAPTER 4 – PLAN REVIEW AND SUBDIVISION
ARTICLE I. - Site Plan Review Procedures
ARTICLE II. - Subdivision

Review and Recommended Revisions to the LDC
Note: Where specific language is being recommended for revisions, word additions are shown in red font and suggested deletions are shown in strike through font (i.e.,~~drainage~~)

CHAPTER 1 – GENERAL ADMINISTRATION
ARTICLE I. - Preamble

Section 1-03. Legislative purpose and intent.
Comment: To update terminology, suggest the following revision:
The purpose of the city's Land Development Code is to provide land development regulations that implement the city's comprehensive plan. The comprehensive plan and this Land Development Code are tools that the leaders of the city shall use to protect and maintain a high quality of life for the citizenry of the city. Specifically, this Land
Development Code is required to be consistent with the comprehensive plan's goals, objectives and policies concerned with land use; transportation; housing; recreation and open space; conservation; coastal management; public facilities including sanitary sewers, solid waste, stormwater management ~~drainage,~~ potable water, as well as ground water recharge; intergovernmental coordination; and capital improvements. If any provision of this Land Development Code is found inconsistent with the comprehensive plan, the comprehensive plan shall prevail.

ARTICLE II. – Administration and Enforcement
Section 1-14. Development orders and building permits.
(2) General conditions. All development orders are issued contingent upon the following:
b. Copies of all permits from federal, state, regional and county agencies with jurisdiction over any portion of the proposed development shall be presented to the city prior to the issuance of building permits**.**

Comment: Unfortunately, the Legislature recently prohibited local governments from requiring that the developer obtain a permit from a state or federal agency as a condition of issuing a building or development permit. Therefore, this section may need to be deleted or revised. Please have City Attorney look at the issue. Clarification: The City has limited the issuance of building permit with regards to the utility clearance by the State. Do the new rules override this aspect of the project? Section (6) Building permits. Section b.10. We will need to review this section. Residential homes outside of approved subdivisions are required to provide a drainage plan. Those inside of approved subdivisions must match the grading plan.

(6) Building permits.
b. Submittal requirements
Comment: Section b.10 does not appear to require information on the stormwater management system as set forth in Section 3-18. Is this an accurate interpretation and does this need to be added?

Section 1-15. Planning board.
(e) Development order criteria. Comment: To update terminology, suggest the following revision:

(5) There are adequate public facilities to serve the development, including, but not limited to, roads, sidewalks, bike paths, potable water, wastewater treatment, stormwater management ~~drainage~~, fire and police safety, parks and recreation facilities, schools, and playgrounds.

Section 1-18. City commission/public hearings.
(e) Criteria for issuance of development order. **Comment: To update terminology, suggest the following revision:**
(2) The following findings shall be made by the city commission in conjunction with the issuance of any development order subject to the public hearing:
e. There are adequate public facilities to serve the development, including, but not limited to, roads, sidewalks, bike paths, potable water, wastewater treatment, , stormwater management ~~drainage~~, fire and police safety, parks and recreation facilities, schools and playgrounds.

ARTICLE III. DEFINITIONS AND ACRONYMS

Section 1-22. Definitions of terms and words
Comment: To update terminology, suggest the following revisions:
~~Artificial drainage~~ *Constructed stormwater system* means any canal, ditch, culvert, dike, storm sewer or other constructed ~~manmade~~ facility, which tends to control the flow of stormwater ~~surface water~~.

Accelerated *~~Artificial~~ erosion* means the loss or washing away of sand, sediment, or other material from riparian property caused by construction ~~manmade~~ projects and operations~~, which result in submerged lands formerly not covered by water~~.

Best management practices or BMPs means control techniques used for a given set of conditions to provide erosion and sediment control, flood control, and stormwater treatment in the most cost effective manner. ~~management practices accepted by the city and found in the most current edition:~~
~~(1) Of the Silviculture Best Management Practices Manual, state department of agriculture and consumer services, division of forestry;~~
~~(2) Of a Manual of Reference Management Practices for Agricultural Activities;~~

~~(3) Of the Florida Land Development Manual, state department of environmental protection; or~~
~~(4) As otherwise accepted and approved by the city engineer and chief building official~~
Comment: The above manuals are all out of date. If desired, the updated ones can be referenced in the Stormwater Section of the LDC per below.

- Silviculture Best Management Practices Manual, state department of agriculture and consumer services, division of forestry; (https://www.fdacs.gov/Forest-Wildfire/Silviculture-Best-Management-Practices)
- Manual of Reference Management Practices for Agricultural Activities; (http://lyra.ifas.ufl.edu/LIB?act=view&oid=1499478&lng=1)
- Florida Land Development Manual, state department of environmental protection (https://www.swfwmd.state.fl.us/media/1742)

Construction means the erection of an on-site improvement to a building, structure, or site located within a designated historic district, historic site, historic landmark or an archaeological site.
Comment: This is an interesting definition since it limits "construction" to unique sites and doesn't include development projects. However, the word "construction" is used in both the definition of "Development" and "Development activity". Does this cause issues in the development process or enforcement?

Density means the total number of dwelling units per gross acre of land. For purposes of computing density allowances, the total amount of unbuildable area, including wetlands, stormwater systems ~~retention ponds~~, and inaccessible areas shall not exceed ten percent (10%) of the gross acreage. Density, in turn relates to the total population load on the land in terms of families or persons per acre. In calculating maximum potential densities for any given parcel of property, such calculations shall be exclusive of that existing portion which is considered to be submerged lands.

Detention means the collection and temporary storage of stormwater ~~or surface water~~ for subsequent discharge at a rate that is less than the rate of inflow.

Development means the use of any structure, land or water; or change, expansion or addition to any use, land or water; the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any structure; or the carrying out of any building activity; or the making of any change in the appearance of any structure, land or water; or the subdividing of land into two (2) or more parcels; provided, however, that building activity that is carried out exclusively within a previously constructed structure which does not affect the intensity of use or affects only the exterior color of the structure shall not be considered development.
Check on how the term used in the rest of the LDC

Development activity or development means any of the following activities:
(1) Construction, clearing, filling, excavating, grading, paving dredging, mining, drilling or otherwise significantly disturbing the soil of a site.
(2) Building, installing, enlarging, replacing or substantially restoring a structure, impervious surface, or stormwater management system, and including the long-term storage of materials.
(3) Subdividing land into two (2) or more parcels.
(4) A tree or vegetation removal for which authorization is required under this Land Development Code.
(5) Erection of a sign for which authorization is required under this Land Development Code.

(6) Alteration of an historic property for which authorization is required under this Land Development Code.
(7) Changing the use of a site so that the need for parking is increased.
(8) Construction, elimination or alternation of a driveway on a public street

Stormwater conveyance ~~*Drainage*~~ *system, natural*, means watercourses or those wetlands which convey water to natural points of discharge or which store water.

Stormwater ~~Drainage~~ systems (~~surface water~~ or stormwater management systems) means all constructed ~~artificial~~ stormwater control systems, facilities and structures including, but not limited to, basins, canals, conduits, channels, culverts, dams, impoundments, pipes, reservoirs, swales, BMPs, and other such works ~~or natural features such as wetlands, creeks, rivers and lakes~~ that provide collection, drainage, conveyance, treatment, or other ~~surface~~ stormwater management capabilities ~~located inside publicly owned rights-of-way or easements~~.
Comment: wetlands, creeks, rivers and lakes are water bodies or surface waters, not stormwater systems.

"Florida-friendly landscaping" means quality landscapes that conserve water, protect the environment, are adaptable to local conditions, and are drought tolerant.
Comment: Recommend adding this definition. If the City's Landscape Code is consistent with the Florida-friendly Landscape Model Ordinance, the City can obtain a 3% Total Nitrogen stormwater load reduction for TMDL/BMAP purposes.

Grass, ornamental, means foliage plants of the grass variety used for decorative purposes in landscaping. The following grass species are examples of ornamental grass.
Comment: No examples are provided

~~Infrastructure~~ means constructed ~~manmade~~ structures which serve the common needs of the population, including, but not limited to, roadways, water and wastewater treatment systems, solid waste facilities, stormwater management systems, ~~drainage and retention facilities~~ and wellfields.

Integrated management practice (IMP) means a low impact development practice or combination of practices that are the most effective and practicable (including technological, economic, and institutional considerations) means of controlling the predevelopment site hydrology
Comment: To use terminology commonly used in Florida, recommend that this term and concept be deleted. Florida Registered Professionals have a hard enough time designing effective stormwater systems without using terminology that is unknown to them.

Landscape plan means a plan indicating all landscape areas, stormwater BMPs ~~retention/detention areas~~, existing vegetation to be retained, proposed plant material, landscape legend and site data chart, landscape features, planting details and specifications and all other relevant information in compliance with this Land Development Code.
Comment: Does this mean that stormwater BMPs are considered part of the landscaping and open space on a development site? To promote LID BMPs it is important to allow them to be integrated into the landscaping and open space of a project.

Low impact development means a stormwater management approach that uses a suite of BMPs ~~hydrologic controls~~ (structural and non-structural) distributed throughout the site and

integrated as a treatment train (i.e., in series) to replicate a site's predevelopment stormwater flow, volume, timing, and pollutant loading. ~~the natural hydrologic functioning of the landscape which ranges in effective area from the residential lot level to the entire watershed.~~
Comment: To be consistent with LID in Florida, suggest the above revision.

Major structure, nonhabitable, includes, but is not limited to:
(1) Swimming pools;
(2) Parking garages;
(3) Pipelines;
(4) Piers;
(5) Canals, lakes, ditches, stormwater management ~~drainage~~ structures and BMPs other water retention structures;

Natural community, uplands, means that combination of upland plant species, which, when taken together with their geographic location and normally associated wildlife, form a describable, distinct, and reoccurring biological assemblage as may be listed by the state natural areas inventory~~, pursuant to F.S. § 253.025(15)(b).~~ The natural communities are described online at https://www.fnai.org/index.cfm and are maintained by the Florida Natural Areas Inventory within the FSU Florida Resources and Environmental Analysis Center.~~in Guide to the Natural Communities of Florida, prepared by the state natural areas inventory and the state department of environmental protection (formerly natural resources), February 1990, as amended~~.

Open space means that portion of a development that is used for landscaping, landscape buffers, landscaped above the pop-off elevation of stormwater retention systems ~~ponds~~, conservation areas, tree preservation areas, beach outside of public lands and permeable surfaces of outdoor recreation areas. A minimum of twenty percent (20%) of any development's ground surface shall be open space, but may be more to comply with standards set forth in this Land Development Code or may be less if explicit standards reduce the minimum open space standard.

Paved area means an improved area consisting of asphaltic concrete, concrete, brick or similar material, acceptable to the city engineer, that is intended or designated for parking, maneuvering and/or vehicular movement, and including pedestrian accessways immediately adjacent to such areas**.**
Comment: Are pervious pavements allowed by the City. If so, should state in this definition to encourage use of pervious pavements.

Receiving bodies of water means any waterbodies, watercourses or wetlands into which stormwater is discharged ~~and surface waters flow~~.

Registered Professional means a professional registered or licensed by and in the State of Florida and practicing under Chapter 471, 472, 481, or 492, F.S.

Retention means the collection and storage of a given volume of stormwater ~~or surface water runoff~~ without subsequent discharge into surface waters.

SCS method means the Natural Resource Soil Conservation Service curve number method for calculating stormwater ~~runoff~~ based on type II (Florida modified) storm distribution.

Storm sewer means a pipe system ~~sewer~~ that carries stormwater ~~and surface waters and drainage~~ but excludes sewage and polluted industrial wastes.

Surface water management systems means all artificial stormwater control systems, facilities and structures including, but not limited to, basins, canals, conduits, channels, culverts, dams, impoundments, pipes, reservoirs, swales and other such works or natural features such as wetlands, creeks, rivers and lakes that provide drainage, water storage, conveyance, treatment or other surface water management capabilities located outside publicly owned rights-of-way or easements.
Comment: To update terminology, delete this definition and use the definition of Stormwater System or Stormwater Management System previously provided.

Surface water or stormwater drainage systems. See Drainage systems
Comment: To update terminology, delete this definition and use the definition of Stormwater System or Stormwater Management System previously provided. Remember that a "surface water" is a water body.

Stormw~~W~~ater management plan means the detailed analysis required by chapter 3, article II of this Land Development Code, environmental protection.
Comment: Update terminology

Waterbody means any natural or constructed ~~artificial~~ pond, lake, reservoir or other area which ordinarily or intermittently contains water, and which has a discernible shoreline

Wet retention means a retention/detention pond having a bottom elevation below the dry season surface water level. Storage area is measured from the wet season high-water line to the top elevation.
Comment: In Florida, we do not use the term "wet retention". Suggest deleting this definition since the term is not used in the LDC.

Xeriscape means a type of landscaping utilizing native or drought-tolerant plants and ground cover which needs minimal irrigation and maintenance. This is detailed in the South Florida Water Management District publication, Xeriscape Plan Guide II, incorporated herein by reference.
Comment: As discussed earlier, to be consistent with Sections 166.048 and 373.185, F.S., suggest that the term "xeriscape" be deleted and replaced with "Florida-friendly landscaping".

Section 1-24. Acronyms and abbreviations
Comment: Suggest the following additions:

- **BMP - Best Management Practice**
- **BMAP – Basin Management Action Plan**
- **TMDL - Total Maximum Daily Load**

ARTICLE IV. – Schedule of Development Review and Impact Fees

Section 1-27. Impact fees.
Comment: To update terminology, suggest the following revision:
The purpose of this section is to ensure that new development does not impose a financial burden on existing residents by establishing comprehensive impact fees to be paid prior to the issuance of a building permit (unless otherwise provided by the Code of Ordinances), change in

occupancy permit which may affect the fee schedule, or site development permit for nonstructural uses within the types of developments hereinafter specified. The said fees are levied in order to provide an adequate funding source for the capital improvements identified in the city's comprehensive plan, the need for which is generated by new development; to facilitate the orderly expansion of the city's roadway system, stormwater ~~drainage~~ system, water supply system, wastewater treatment system, the establishment and expansion of the reclaimed water system; and to provide for adequate park and recreation facilities, public safety and general city services.

ARTICLE V. CONCURRENCY MANAGEMENT

Sec. 1-29. Purpose and intent.

Comment: To update terminology, suggest the following revision:

(a) It is the intent of this section to establish a regulatory mechanism for evaluating development orders to ensure that adequate capacity of public facilities is available based on level-of-service (LOS) standards adopted as part of the comprehensive plan. The system will consist of three (3) primary components: an inventory of existing public facilities for which concurrency is to be determined; a concurrency assessment of each application for a final development order or permit; and a schedule of improvements needed to correct any existing or projected public facility deficiencies. Except for developments which qualify for retroactive certificates of concurrency, no development orders may be issued which will cause roadway, potable water, wastewater treatment, public school facilities, and solid waste, stormwater ~~drainage~~ or park and recreation facilities to operate below their adopted level-of-service standards. However, development orders may be conditioned such that needed public facility improvements will be in place concurrent with the impacts of the proposed development.

(4) Stormwater management. For stormwater management facilities, the following level-of-service standards, procedures and data base criteria shall apply in reviewing applications for concurrency:

a. The existing level-of-service measured by storm event as determined by the city engineer.

b. The adopted level-of-service standards for stormwater management, based on the utilities element, the capital improvements element and chapter 3, article II of this Land Development Code.

c. The city engineer will certify that all projects meet the requirements of chapter 3, article II of this Land Development Code, prior to the issuance of a final development order. The determination will be on a site-specific basis.

Check to see how used and implemented. Note that the stormwater LOS above is not consistent with the stormwater requirements in Policy 2.2.12 which states "Stormwater management systems shall be designed to ensure that post-development runoff does not exceed pre-development levels, in terms of the volume, rate, timing and pollutant load of runoff."

Sec. 1-36. Provision of infrastructure

Comment: To update terminology, suggest the following revision:

(a) It is the policy of the city to provide the necessary infrastructure for any permitted development to meet minimum LOS standards and to establish funding programs and exigency plans to meet public infrastructure needs in an expeditious manner. Scheduled capital improvements may be moved up where affected parties agree to provide resources as part of a development agreement. This agreement should address prepayment of impact fees; water and sewer main extensions or plant additions; road improvements and/or land dedications for roads and other facilities; and recreation and , stormwater ~~drainage~~ improvements; provided, however, that such activities will not

cause undue delay, e.g., a reallocation of other resources such as city personnel or consulting priorities or shift in funding, to other projects for which there is unfilled reserve or priority demands.

CHAPTER 2 – DISTRICT AND GENERAL REGULATIONS

Question: In each of the Zoning Districts, a section F, Other Standards, is included. Why does this not state that all development must comply with the LDC as a whole instead of highlighting only some requirements?

ARTICLE II. – District Regulations

Section 2.08. SE, Special Environment Zoning District
Comment: Given that this Zoning District applies to conservation and environmentally sensitive lands, we are very surprised by the very high levels of building coverage (35%) and especially maximum impervious lot coverage (75%) allowed. We suggest reviewing these levels and considering their reduction to more appropriate levels.

Sec. 2-09. - REA, Rural Estate/Agricultural Zoning District
Comment: As above, we believe the allowed levels of building coverage and maximum impervious lot coverage are very high and inconsistent with the desired land uses. Suggest reducing the maximum impervious lot coverage to 50%. Additionally, suggest the F. Other Standards include a requirement that all agricultural uses shall implement BMPs adopted by FDACS to minimize pollutant loadings.

Sec. 2-10. - RR, Rural Residential Zoning District.
Comment: As above, we believe the allowed levels of building coverage and maximum impervious lot coverage are very high and inconsistent with the desired land uses. Suggest reducing the maximum impervious lot coverage to 50%.

Sec. 2-11. - SR, Suburban Residential Zoning District
Comment: As above, we believe the allowed levels of maximum impervious lot coverage are very high and inconsistent with the desired land uses. Suggest reducing the maximum impervious lot coverage to 50-60%. Additionally, suggest the F. Other Standards include a requirement that all agricultural uses shall implement BMPs adopted by FDACS to minimize pollutant loadings.

Sec. 2-12. - R-1, Residential Estate Zoning District.
Comment: As above, we believe the allowed levels of maximum impervious lot coverage are very high and inconsistent with the desired land uses. Suggest reducing the maximum impervious lot coverage to 50-60%.

Sec. 2-13. - R-2, Single-Family Low Density Zoning District.
Comment: As above, we believe the allowed levels of maximum impervious lot coverage are very high and inconsistent with the desired land uses. Suggest reducing the maximum impervious lot coverage to 50-60%.

Sec. 2-17. - R-4, Single-Family Cluster and Townhouse Zoning District.
Comment: Given that a goal of this District is to encourage on-site open space through clustering, we believe the allowed levels of maximum impervious lot coverage are very high and inconsistent with the desired land uses. Suggest reducing the maximum impervious lot coverage to 50-60%.

Clarification: In discussion with the Planning Director, the proposed changes to the maximum impervious lot coverage could make existing parcels non-conforming. This could cause difficulty in the future.

Sec. 2-35. - PRD, Planned Residential Development District.
(c) Density.
Comment: Suggest the following revision to (2)b.: An excessive burden on sewerage, water supply, stormwater management, parks…the development.
Suggest adding the following to (2):
d. Stormwater management issues shall be minimized by using Low Impact Design BMPs.

(h). Recreational facilities:
Comment: Suggest the following revisions to update terminology:
(4). Sixty (60) …(exclusive of parking, landscaping, stormwater systems ~~retention/detention ponds~~, and other site features)
(5). Recreation sites…signing, and stormwater management ~~drainage~~.
(7). d. Water bodies…demonstrated. Stormwater systems ~~Water retention~~ and wetland areas may not be included in this calculation.
(8). Comment: Suggest the minimum amount of open space be increased from 20% to 25% to be consistent with revised maximum impervious area coverage**.**

Sec. 2-36. - PBD, Planned Business Development District
(h) (3). Public benefit minimums
Comment: Good to see the LID incentives in the Public Benefit Minimums

Sec. 2-38. - PMUD, Planned Mixed Use Development
(e) Application and review
(4) c. Does the plan include innovative or alternative standards that will address specific issues pertinent to the city, including, but not limited to, affordable housing, inches green inches development and building standards, low-impact development requirements, transit oriented design, waterwise landscaping, firewise landscaping and design standards, etc.?
Comment: I believe the clause on green development has some wording issues?

Sec. 2-40. - Exceptions and supplemental standards.
Comment: Suggest the City consider adopting the *Florida Waterfront Property Owners Guide* to provide additional guidelines for waterfront development.

ARTICLE IV. - CONDITIONAL AND SPECIAL EXCEPTION REGULATIONS

Sec. 2-57. - Criteria for review of specific conditional and special exception.
(4) Agricultural use, minor.
Comment: Suggest adding the following requirement to minimize pollutant loadings:
m. The landowner shall implement all applicable agricultural BMPs as set forth by FDACS and shall register with FDACS BMP program.
(30) Golf courses/country clubs.
Comment: Suggest adding the following requirement to minimize pollutant loadings:
A.6. Design and operation in compliance with the manual entitled *BMPs for the Enhancement of Environmental Quality on Florida Golf Courses*.

(45) Marinas and multislip docking facilities.

Comment: Suggest the following addition to a. In General: Marinas…vegetative communities. This includes meeting the requirements of the Florida Clean Marina Program. Such facilities… adjacent land uses.

ARTICLE VI. - OVERLAY DISTRICTS

Sec. 2-70. - Downtown Overlay District

(i) Incentives (2) Suggest the following revision: (2). Stormwater treatment …shall require treatment. Financial incentives may be permitted to offset LID BMPs ~~infiltration techniques, such as "filterra boxes"~~ used to treat the additional lot coverage.

CHAPTER 3 – PERFORMANCE STANDARDS

ARTICLE I. - Landscaping

Comment: If the City wishes to minimize nutrient pollution from fertilizers and irrigation needs, we recommend a revision of the City's landscape requirements since landscape design dictates fertilizer and irrigation needs. **We recommend the City adopt the *Florida-Friendly Landscape Guidelines For Model Ordinance Language For Protection Of Water Quality And Quantity*. *This model ordinance incorporates the Florida-friendly landscape design guidelines along recently adopted irrigation system requirements together with the fertilizer use requirements set forth in the Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes.***

Section 3-01. Purpose and intent.

Comment: As discussed earlier, to be consistent with Sections 166.048 and 373.185, F.S., suggest that the term with "Florida-friendly".

The city commission finds that the health, safety and welfare of its citizens, as regards continuing development within the city, can best be protected by land use regulations that support and enforce the following goals:

(3) Ensure that plantings on development projects are Florida-friendly native and drought-tolerant species.

Sec. 3-04. Tree protection and replacement.

(b) Design standards for promoting tree protection.

Comment: To update terminology and expand tree protection, suggest the following revision:

(2) Stormwater management~~/drainage~~ facilities. Every attempt shall be made to avoid placing ~~retention ponds or other~~ stormwater management~~/drainage~~ facilities in locations which will cause the removal of specimen trees. Where it is necessary to place such a facility in close proximity to a specimen tree, the landscape architect shall require improvements including retaining walls, to ensure that the tree is not endangered.

Comment: To expand tree protection options, suggest the following revision:

(4) Parking and driveways. No specimen tree in a parking or driving area shall be removed unless it is physically impossible to provide alternative locations for these facilities. Measures included in this section shall be utilized to save the greatest number of trees possible in parking areas. Use of tree wells, root pruning, pervious ~~concrete~~ paver or pavement, turf block, root drainage systems, subsurface soil stabilization systems, special fill procedures (excluding the use of limerock) and restrictions may be required, as appropriate, and subject to the approval of the landscape architect.

(2) Exceptions.
a. Waiver. When a site contains a cumulative number of protected and specimen trees that is fifty (50) or more per acre, then the applicant may request that the tree replacement requirement for building footprints, driveways, sidewalks, streets and parking areas be waived by the SPRC, upon consideration of the landscape architect and provided that all of the following conditions are met:
(i) The total amount of impervious surface on the site does not exceed seventy percent (70%).
Comment: 70% is a very high percentage of impervious surface area. Suggest a review of the maximum percentage of impervious surface area allowed. If this level is appropriate, then consider requiring pervious pavement for any impervious surfaces greater than 50%.

Section 3-05. Landscape and irrigation plan requirements.
Comment: Suggest revising the City's Landscape Code to be consistent with the Florida-friendly Landscape Model Ordinance. This will allow the City to obtain a 3% Total Nitrogen stormwater load reduction for TMDL/BMAP purposes. The following revisions are to promote Florida-friendly landscaping and plants.

(a) Purpose and intent. Florida-friendly landscaping and plants shall be provided and properly maintained for all property… plants and landscape material.
(b) Plan submittal
(2) All landscaping shall be based on the principles of Florida-friendly landscaping with at least fifty percent (50%) of the landscaped area shall be of ~~xeric~~ plantings (as defined in section ~~3-02~~ 1-22, xeric trees and plants), requiring a minimum of irrigation (as defined in section 3-021-22. ~~Xeric~~ Plants are to be grouped within the same irrigation zones, such that there are no high water requirement plantings in the area.

Comment: To promote Low Impact Development BMPs, suggest the following revisions:
(3) LID BMPs, including stormwater retention areas, more than three ~~two~~ feet (3 ~~2~~') in depth from finished grade shall not be credited toward meeting the minimum landscaping requirement unless they are heavily wooded, shown to remain at natural grade and are vegetated with plant types that have a high potential for survival.

(6) A minimum of one (1) landscaped island shall be provided for every ten (10) parking spaces, as follows:
c. Curbing shall be required around the perimeter of the island unless waived by the SPRC based on the overall landscape and stormwater management plan. Recessed islands and curb cuts to allow them to be used for stormwater management are encouraged.

(10) Where impervious surface is constructed over seventy-five percent (75%) or more of the distance around the ground area within fifteen feet (15') of the base of a tree, a root barrier shall be extended down to the full depth of the limerock base. Alternatively, pervious pavements may be used to allow infiltration and reduce compaction.

(13) New development or existing development which uses or proposes to withdraw water for landscape irrigation from a surface water or groundwater source which is critical in limiting saltwater intrusion shall employ and/or preserve native vegetation, or use other Florida-friendly species with drought resistant properties, for landscaping to the greatest extent practicable. Florida-friendly native or drought resistant plants include, but are not limited to, those in the Florida-friendly plant list, the Florida Native Plant Society's Native Plants for Landscaping in

Florida, or comparable guidelines prepared by the FDACS, FGFWFC, FDEP, ECFRPC or the WMDs.
Comment: What incentives does the City have to prevent the use of potable water for irrigation?

(15) All subdivision or other developments involving the creation of new streets shall include the planting of street trees in the rights-of-way after they are cleared and utilities are installed.
j. Where medians are present, and shade trees are planted or existing at a minimum spacing of fifty feet (50') on-center in the medians, then the requirement for planting street trees in the right-of-way on both sides of the road can be waived.
Comment: Suggest the City should require that medians be recessed with curb cuts to allow them to serve as retention areas. This will also allow the street trees to be irrigated with stormwater.

(17) Landscaped islands and medians within the public rights-of-way shall conform with article V of this chapter.
Check for recessed islands

Section 3-09. Land clearing.
(b) Permit application.
Comment: To reduce stormwater pollution and meet your MS4 permit requirements suggest the following revisions:
(2) The application shall also include the following:
e. An erosion and sediment control plan to minimize erosion and retain all sediment on-site. If the cleared area is greater than one acre, the owner shall obtain coverage under the NDPES Construction Generic Permit and submit a copy of the permit before any clearing begins.

(c) Clearing of subdivision lots due for purpose of fill storage
(8) Erosion and sediment controls as required by the NPDES Construction Generic Permit Stormwater Pollution Prevention Plan ~~Silt fences~~ shall be implemented ~~placed around the perimeter of the cleared area~~ and inspected by the city prior to fill being placed on the site.

Section 3-10. Grading and filling.
(a) Generally.
(3). All sites that will disturb one or more acres shall obtain coverage under the NDPES Construction Generic Permit and submit a copy of the permit before any grading or filling begins.

ARTICLE II. ENVIRONMENTAL PROTECTION STANDARDS
Section 3-13. Environmental assessment report.
(d) Submittal requirements.
(3) Mapping and support graphics.
Comment: To update terminology, suggest the following revisions:
f. Stormwater management ~~Drainage~~ plan including the erosion and sediment control plan.

(5) Environmental assessment categories.
Comment: To reduce stormwater pollution and meet your MS4 permit requirements suggest the following revisions:
g. Surface water.
1. Show current state classification for surface waterbodies within or adjacent to the site and

demonstrate compliance to all applicable rules and regulations. Specify all water bodies that are on the Verified List of Impaired Waters or for which a TMDL or BMAP have been adopted.
3. Document the changes anticipated to result from this project in level and types of water quality and quantity as defined by then current regulations. Include pre-development and post-development average annual TN and TP stormwater pollutant loadings. Demonstrate that there is no increase in TN and TP loadings for projects located within the watersheds of water bodies that are on the Verified List of Impaired Waters or for which a TMDL or BMAP have been adopted

k. Water management plan. Develop a written report meeting the criteria of this article.
Comment: Is this supposed to mean the Stormwater Management Plan since I can't find any specific requirements in this Article for a "water management plan." The only other use of the term is in the definitions which refer to this section of the LDC.

Section 3-15. Coastal management.
Comment: To update terminology, the following revisions are suggested:
(11) Surface and building stormwater ~~runoff~~ shall be directed away from the beach and dune system to the maximum extent practical.
(12) New development shall not discharge stormwater or effluent into the coastal beach area. Berm and swales directing ~~surface~~ stormwater ~~runoff~~ away from the beach and dune system shall be required for new development other than single-family homes.
(15) Existing nonresidential developments which presently discharge ~~surface~~ stormwater ~~runoff~~ onto the coastal beach area shall modify their stormwater management system at the time the system is modified by the owner or in conjunction with a change in the site plan unless the applicant's engineer can demonstrate that full conformance would not be possible on the site, in which case conformance to the maximum extent economically feasible would be allowed.

Section 3-16. Surface waters and marine life habitat.
(a) Purpose and intent
Comment: To update terminology or references, the following revisions are suggested:
(3) Natural vegetation occurring adjacent to surface water bodies acts as a vital buffer area by protecting surface water quality and wildlife habitat in that:
a. Sediments and nutrients carried through natural buffer areas by stormwater ~~surface runoff~~ will be reduced by the filtration action of the vegetation.
(c) Performance standards.
(5) Stormwater management
b. The construction of future municipal stormwater ~~drainage~~ systems and the redesign of existing systems shall consider the timing of discharge of fresh water to the Tomoka River and Halifax River estuaries, the hydroperiod of any regulated wetlands as well as the potential pollutant loadings and shall maximize the use and preservation of existing wetlands.
d. Stormwater shall be managed in accordance with section 3-18, ~~surface~~ stormwater ~~runoff~~ management ~~control~~.
e. Surface and stormwater flows shall not be impeded. All development applications shall provide culverts or bridges of sufficient size and quantity so as not to impede, interrupt, or impound normal surface water or stormwater ~~surface water~~flows.

(6) Erosion and sedimentation control.
a. Best management practices, such as those described in the State of Florida's Erosion and Sediment Control Manual for Designer and Reviewers, latest edition ~~department of environmental protection's state development manual~~ shall be incorporated into development designs to limit the amount of sediment reaching all surface waters. These practices shall be

used in agriculture, silviculture, construction, dredge and fill operations, and stormwater management systems.
Comment: To reduce stormwater pollution and meet your MS4 permit requirements suggest the following revision:
c. All projects that disturb one or more acres of land shall apply for and obtain coverage under the NPDES Construction Generic Permit and develop and implement the required Stormwater Pollution Prevention Plan.

g. Any proposed dewatering shall be consistent with the following criteria:
1. Applicant shall submit proof of permitting from SJRWMD or certification that no permit is required. Alternatively, the applicant shall submit proof of coverage under the NPDES Construction Generic Permit Section 3.4 which authorizes construction ground water dewatering operations.
3. Applicant shall discharge into an existing or proposed stormwater management ~~or drainage~~ system as is determined to be appropriate by the city engineer.

Section 3-18. ~~Surface~~ Stormwater Management ~~runoff control~~.
Comment: To update terminology and reduce confusion, suggest that the term "surface water runoff" be replaced by "stormwater" or "stormwater runoff." Surface waters are water bodies.
(a) Findings of fact. Uncontrolled stormwater ~~drainage~~ and development of land has a significant adverse impact upon the health, safety and welfare of the community, more specifically:
(1) Stormwater ~~Surface water runoff~~ carries pollutants into receiving water bodies, degrading water quality. Increases in nutrients such as phosphorus and nitrogen, accelerates eutrophication of receiving waters, adversely affecting flora and fauna;
(2) Improperly channeling water increases the velocity of runoff, thereby increasing erosion; and construction requiring the alteration of natural topography and removal of vegetation increases erosion. Siltation of water bodies resulting from increased erosion decreases their capacity to hold and transport water, interferes with navigation and harms flora and fauna. Impervious surfaces increase the volume and rate of stormwater ~~Surface water runoff~~, allowing less water to percolate into the soil and thereby decreasing groundwater recharge;
(3) Improperly managed stormwater ~~Surface water runoff~~ increases the incidence of flooding and the level of floods which occur:
(b) Objectives. In order to protect, maintain and enhance both the immediate and long-term health, safety and general welfare of the citizens of the city, this section has the following objectives:
(4) To encourage the construction of stormwater management ~~drainage~~ systems which aesthetically and functionally approximate natural systems;
(6) To encourage the use of stormwater management ~~drainage~~ systems which minimize the consumption of electrical energy or petroleum fuels to move water, remove pollutants or maintain the system;
(15) To ensure the attainment of these objectives by requiring the approval and implementation of ~~surface~~ stormwater management plans for all activities which may have a significant impact upon community waters.
(c) Applicability and surface water management plan required.
(1) Unless exempted pursuant to subsections (c)(2) and (3) of this section, or waived pursuant to subsection (c)(4) of this section, a ~~surface~~ stormwater management plan prepared by a state registered professional ~~civil engineer~~ must be submitted and approved before: a through c.
Comment: State law revisions allow stormwater management plans to be designed by Registered Professionals who are defined as a professional registered or licensed by and

in the State of Florida and practicing under Chapter 471, 472, 481, or 492, F.S. A definition of Registered Professional was added to the Definitions Section of the LDC.

b. An existing stormwater ~~drainage~~ system is altered, rerouted, deepened, widened, enlarged or obstructed; or
Clarification: The normal evaluation of this aspect was the limit of the addition of 1,000 SF of impervious surface. This protects against the construction of Mac-mansions on smaller lots.

(2) The following development activities are exempt from the ~~surface~~ stormwater management plan requirement:
a. The construction of single-family or duplex residential structures and their accessory structures (such as fences, storage sheds and septic tanks) in an existing subdivision, which has in place a ~~surface~~ stormwater management plan approved in accordance with the provisions of this section;
b. The development of one (1) single-family or duplex residential construction not in an existing subdivision, where such construction does not change or affect the quality, rate, volume or location of ~~surface~~ stormwater discharge;
d. Any maintenance, alteration, use or improvement of an existing structure which does not change or affect the quality, rate, volume or location of ~~surface~~ stormwater discharge

(4) A waiver of the ~~surface~~ stormwater management plan requirement for projects which involve, but are not limited to, maintenance work performed on existing mosquito control drainage canals for the purpose of protecting the public health, safety and welfare; maintenance work on public utility or transportation systems, provided such maintenance work does not alter the purpose and intent of the drainage system as constructed; or developments having impervious surfaces of less than one thousand (1,000) square feet in area, may be obtained by submitting an application therefor on forms supplied by the city engineer. The application shall contain:
(5) The city engineer may grant such a waiver if the application demonstrates the development is not likely to:
a. Significantly increase or decrease the rate or volume of ~~surface~~ stormwater ~~runoff~~;
b. Have any significant adverse impact on a wetland, watercourse or waterbody; or
c. Significantly contribute to the degradation of water quality including any increase in pollutant loading.

(d) Procedures and fees.
(1) Any person planning a development requiring a ~~surface~~ stormwater management plan shall submit such plan or an application for waiver to the city engineer. Within fifteen (15) working days after submission of the completed waiver application, the city engineer shall notify the applicant that the waiver has been approved or denied and whether a ~~surface~~ stormwater management plan must be submitted by the applicant.
(2) A permit fee will be collected at the time the ~~surface~~ stormwater management plan or the application for waiver is submitted and will reflect the cost of administering and managing the permitting process. Such fee shall be as stated in chapter 1, article IV.
(3) Within 15 working days after submission of the completed stormwater management plan, the city engineer shall approve, with or without specified conditions or modifications, or reject the plan and shall notify the applicant accordingly. If the city engineer has not rendered a decision within fifteen (15) days after plan submission, then the applicant shall be informed of the status of the review process and the anticipated completion date. If the plan is rejected or modified, the city engineer shall provide to the applicant the basis for such action.
(4) The ~~surface~~ stormwater management plan shall not be approved unless it clearly indicates that the proposed development will meet the performance standards described in subsection (f)

of this section, except where off-site management is granted pursuant to subsection (i) of this section.
(5) The applicant shall arrange with the city engineer for scheduling the following inspections
a. Initial inspection. Prior to approval of the ~~surface~~ stormwater management plan;
b. Bury inspection. Prior to burial of any underground stormwater ~~drainage~~ structure;
c. Erosion control inspection. As necessary to ensure effective control of erosion and sedimentation; and
d. Finish inspection. When all work, including installation of all stormwater ~~drainage~~ facilities, has been completed.
The city engineer shall inspect the work and shall either approve it or notify the applicant in writing in what respects there has been a failure to comply with the requirements of the approved ~~surface~~ stormwater management plan. Any portion of the work which does not comply shall be promptly corrected by the applicant or the applicant will be subject to the penalty provisions of subsection (k) of this section.

(e) Contents ~~surface~~ stormwater ***management plan***
(1) It is the responsibility of the applicant to include in the ~~surface~~ stormwater management plan sufficient information for the city engineer to evaluate the environmental characteristics of the affected areas, the potential and predicted impacts of the proposed activities on surface waters and on the areawide stormwater ~~drainage~~ system and the effectiveness and acceptability of those measures proposed by the applicant for reducing any adverse impacts. The ~~surface~~ stormwater management plan shall contain maps, charts, graphs, tables, photographs, narrative descriptions and explanations and citations to supporting references, as appropriate to communicate the information required by this article.
(2) The ~~surface~~ stormwater management plan shall contain the names, addresses and telephone numbers of the owner and the developer. In addition, the legal description of the property shall be provided, and its location with reference to such landmarks as major waterbodies, adjoining roads, railroads, subdivisions or towns shall be clearly identified by a map.
(3) The existing environmental and hydrologic conditions of the site and of receiving waters and wetlands shall be described in detail, including the following:
a. The direction, flow rate, ~~and~~ volume, and TN and TP loadings of ~~surface~~ stormwater ~~runoff~~ under existing conditions and, to the extent practicable, predevelopment conditions.
b. The location of areas on the site where ~~surface~~ stormwater collects or percolates into the ground and site specific percolation rates as established by a testing lab.
c. A description of all watercourses, waterbodies and wetlands on or adjacent to the site or into which ~~surface~~ stormwater flow and any other existing stormwater ~~drainage~~ features. Information regarding their water quality and the current water quality classification, if any, given them by the FDEP shall be included. This includes whether a water body is on the Verified List of Impaired Waters or has an adopted TMDL or BMAP. The wetlands description shall include whether it is herbaceous or forested, fresh water or saltwater, and the dominant plant species in each strata.
(5) All components of the stormwater management ~~drainage~~ system and any measure for the detention, filtration, retention or infiltration of water or for the protection of water quality shall be described in detail, including:
a. The channel, direction, flow rate, volume and quality of ~~surface~~ stormwater (TN and TP loadings) that will be conveyed from the site, with a comparison to existing conditions and, to the extent practicable, predevelopment conditions;
b. All BMPs, such as detention and retention areas, including plans for the discharge of contained stormwater, maintenance plans and predictions of water quality in those areas;

(f) Performance standards. ~~surface~~ Stormwater management plans must demonstrate that the proposed development or activity has been planned and designed and will be constructed and maintained to meet each of the following standards:
(2) Protect or restore the quantity and quality of groundwaters and surface waters;
a. For any water body on the Verified List of Impaired Waters or that has an adopted TMDL or BMAP, the post-development average annual stormwater TN and TP loadings shall be less than the pre-development loadings.

(g) General design standards. ~~surface~~ Stormwater management plans must demonstrate that the proposed development or activity has been planned and designed and will be constructed and maintained to meet the general design standards of this section.
(10) Constructed ~~Artificial~~ stormwater~~courses~~ conveyances shall be designed taking into consideration the soil type, so that the velocity of flow is low enough to prevent erosion.
(11) Any intermittent stormwater~~courses~~ conveyance that is not lined with asphalt, concrete or other impervious surface and set amid its natural condition shall be vegetated consistent with those standards established in this
subsection.
(12) BMPs, including retention and detention systems ~~ponds~~ shall be used to retain and detain the increased and accelerated runoff which the development generates. Stormwater shall be released from detention ponds into watercourses or wetlands at a rate and in a manner approximating the natural flow which would have occurred before development.
(14) Where possible, natural vegetation shall be used as a component of stormwater management ~~and drainage~~ design. The water table shall not be manipulated so as to endanger natural vegetation beneficial to water quality unless natural vegetation can be replanted and survive with a lowered water table condition.
(15) Stormwater ~~runoff~~ shall be controlled consistent with best management practices (such as Alachua County Stormwater Treatment Manual, ~~2018 the state development manual published by DEP~~) prior to discharge ~~into natural or artificial drainage systems~~. Best management practice or combination of practices shall be determined by the city engineer as the most effective, practical means of managing runoff and preventing or reducing the amount of pollution generated by the project to a level compatible with state water quality standards, as set forth in F.A.C. Ch. 62, or as otherwise established by the state or this Land Development Code.
Comment: It is highly recommended that the City adopt a Stormwater Manual with specific BMP design, construction, and operational criteria to give designers assurances related to their stormwater plans. Designers hate delays and the current wording that allows great discretion to the City Engineer is a disincentive to being creative with stormwater designs.
Clarification: Discussions with the City Engineer will determine the feasibility of this suggestion. In doing this manual, the rules and regulations within the LDC could be eliminated with a reference to a Stormwater Manual.
(19) All site alteration activities shall provide for BMPs to reduce pollutants and provide ~~for such water retention and settling structures and~~ flow attenuation ~~devices~~ as may be necessary to ensure that the standards and requirements of this article are met.
(20) The design of stormwater BMPs ~~retention or detention structures and flow attenuation devices~~ shall be subject to the approval of the city engineer; detention structures shall be designed to release runoff to the downstream stormwater ~~drainage~~ system over a period of time so as not to exceed the capacity of the existing downstream system.
(21) The banks of detention and retention areas shall slope at a gentle grade into the water as a safeguard against drowning, personal injury or other accidents, to encourage the growth of vegetation and to allow the alternate flooding and exposure of areas along the shore as water

levels periodically rise and fall. **Comment: Need to reference specific requirements in (h)(5).**
(22) The use of stormwater ~~drainage~~ facilities and vegetated buffer zones as open space, recreation and conservation areas shall be encouraged.
(23) The ~~surface~~ stormwater management plan may include:
(25) The design of stormwater management systems shall minimize or eliminate larval mosquito pro duction. Wet ~~retention/~~detention systems require a minimum pond depth, between the normal water depth and pond bottom, to be eight feet (8'). Dry retention~~/detention~~ systems require low-water table, permeable soils with the bottom elevation at least one foot (1') above seasonal high-water table. Intermittent wet/dry systems shall use minnow reservoirs where practical.

(h) Specific design standards. ~~surface~~ Stormwater management plans must demonstrate that the proposed development or activity has been planned and designed and will be constructed and maintained to meet the specific design standards of this section.
Comment: Is (1) below talking about construction site dewatering? If so, need to use the term instead of lowering the water table.
(1) Lowering of the water table. For the temporary lowering of the water table during the course of constructing BMPs ~~detention and retention facilities~~ and for the purpose of permanently protecting road construction it is presumed that such activities do not conflict with the objectives of this section if all of the following are met:
b. The proposed temporary and permanent lowering of the water table shall be over no more than fifteen percent (15%) of the surface area of the site to a depth of five feet (5'), said depth being measured at the overflow elevations of the retention areas.
c. If ditches, underdrains or similar devices are used to lower the water table, the lateral volumetric effect will be calculated and the volume required for retention shall be increased by that volume.
Comment: Why is the term "retention" used in b. and c. above given that retention areas typically are located on A or B soils? Should this be "detention"? Clarification: Yes this could be modified to reflect detention.

(2) Lesser developments. The following shall apply for a proposed development which consists of no more than five thousand (5,000) square feet of impervious area and which is proposed for a parcel of record which is less than one (1) acre in total size:
a. The volume of retention to be provided shall be equivalent to one inch (1") of runoff over the entire project area, including both pervious and impervious areas.
b. For those soil or groundwater table conditions which do not permit the percolation of this volume of water within seventy-two (72) hours following the storm event, the city engineer may approve detention with an acceptable filtration system in lieu of retention.
(3) Standard development. The following shall apply for a proposed development which consists of more than five thousand (5,000) square feet of impervious area and/or which is proposed for a parcel of record, under single ownership, which is one (1) acre or more in total size:
a. Total retention. All detention/retention facilities must have a positive discharge except as approved by the city engineer. If total retention is allowed, the basin must recover to its design low water stage within seventy-two (72) hours. To provide the city with assurances, a double ring infiltrometer test must be performed at the same elevation as the bottom of the basin and a safety factor of four (4) shall be applied to the design.
Comments: What is the required stormwater treatment volume for Standard Development? Clarification: Standard developments would fall under the 25yr/24hr evaluation.
b. Detention basin design criteria.

2. Detention basin design analysis
(v) For outfall calculations the following methods shall be utilized:
B. The outflow rate shall not exceed the capacity of the downstream stormwater ~~drainage~~ system based on the appropriate inflow-outflow design storm for that system.
C. For the subdivision downstream stormwater ~~drainage~~ system, the outflow rate shall not exceed the capacity of the downstream system based on a five-year (5-year) rational design storm inflow into the detention pond.
3. Storage required. (ii) When downstream stormwater ~~drainage~~ systems will not accept runoff generated by the proposed development from the appropriate storm due to existing conditions or other special instances, the development will be required to provide a stormwater ~~drainage~~ system which will not increase flooding downstream and which will maintain the adopted level-of-service standards.
4. Soil Information.
(ii) Soil types, water table elevations to be included and illustrated as a part of the detailed wet detention system ~~lake~~ construction plans.
(iii) No less than one (1) boring per acre or fraction thereof of wet detention system ~~lake~~ water surface at design low-water elevation shall be provided, or as specified by the city engineer.
(4) Stormwater system ~~drainage~~ materials
a. Pipe used in the construction of stormwater ~~drainage~~ systems shall be reinforced concrete, aluminum or bituminous coated corrugated metal pipe and pipe arch or corrugated polyethylene pipe conforming to standard specifications as currently adopted by the FDOT at the time of permitting for the system.

(i) Off-site stormwater management ~~drainage~~ facilities.
(1) A positive drainage system shall be provided which will not adversely impact downstream owners or adjacent lands. Outfall of the ~~surface~~ stormwater management ~~or storm drainage~~ system for the development shall be of an acceptable quality, shall not be discharged in volumes in excess of volumes otherwise allowed by this article, and shall be one of the following:
a. Appropriate connection between the stormwater management system for the new development and the existing city stormwater ~~drainage~~ system if, in the opinion of the city engineer, the city system is adequate;
b. Appropriate connection from the new development to existing natural waterways ~~drainage~~, such as a creek, river or low swampy areas adjacent to the subdivision consistent with this article and if, in the opinion of the city engineer, soil system is adequate;
c. Appropriate connection from the new development to an existing drainage ditch or canal of the city, county or drainage district, provided written permission has been secured from the political units having ownership of such drainage facility and if, in the opinion of the city engineer, soil system is adequate; or
d. In the event none of the methods of disposal of the stormwaters from the development outlined above are readily accessible to the development, it shall be the responsibility of the developer to provide a suitable outfall for the stormwaters of the new development by securing permanent easements or the purchase of right-of-way for the construction of a suitable ditch or underground storm drain through private property, so as to connect the stormwater ~~drainage~~ system for the development with a satisfactory disposal area. In addition, the cost of obtaining and installing such stormwater ~~drainage~~ rights-of-way and structures shall be the responsibility of the developer.
(2) For retrofitting stormwater management and drainage systems within existing developments approved prior to the adoption of this Land Development Code, the city engineer may allow ~~surface~~ stormwater ~~runoff~~ that is otherwise of an unacceptable quality or which would be discharged in volumes or at rates in excess of those otherwise allowed by this article to be

discharged into stormwater ~~drainage~~ facilities off the site of the development if each of the following conditions are met:
a. It is not practicable to completely manage runoff on the site in a manner that meets the performance standards and design standards of this article.
b. The off-site stormwater ~~drainage~~ facilities and channels leading to them are designed, constructed and maintained in accordance with the requirements of this article.
c. Direct discharge to class II or III waters, as defined in F.A.C. Ch. 17-3 62-302, water quality standards, part III, water quality criteria-surface water or outstanding state waters (OFW) is prohibited. A permitted stormwater treatment ~~workable filter~~ system must be provided prior to any discharge to said class II, class III waters or OFW.
d. Excess capacity is available as measured by the level-of-service standards under which the off-site stormwater ~~drainage~~ facility operates.

(j) Maintenance
(1) stormwater ~~drainage~~ facilities may be dedicated to the city where they are determined to be appropriately a part of the city-maintained regional system.
(3) On-site stormwater systems ~~retention and detention ponds~~ shall be maintained in single ownership by the owner of the property, by a homeowners' association or by such other appropriate entity as may be created for that purpose. To the maximum extent feasible, such ponds shall not be located in the rear of building lots and shall be shaped to have adequate width and depth to facilitate maintenance and be readily accessible from the right-of-way.

(k) Enforcement and violations
(1) Any development activity that is commenced without prior approval of a ~~surface~~ stormwater management plan or is conducted contrary to an approved ~~surface~~ stormwater management plan as required by this section shall be deemed a public nuisance and may be restrained by injunction or otherwise abated in a manner provided by law.
Comment: For projects that are being constructed, strongly recommend the authority for Stop Work Orders as they have been shown to be the most effective tool in addressing stormwater issues at construction sites.

(l) Low impact development
(1) Applicability. The inclusion of low impact development (LID) techniques, in whole or in part, in the planning, design, construction, and operation of a site within the City of Ormond Beach is fully elective on the behalf of the developer. Any developer may choose to include the integrated management practices (IMPs) closely associated with LID in a site with regards to stormwater management. The requirements for stormwater management outlined in this subsection shall supersede all other requirements for stormwater management otherwise stated in this Low Impact Development Manual for the City of Ormond Beach for those projects, that are determined to be in full compliance of the LID principles set forth by this subsection. Compliance with the standards set forth in this subsection or elsewhere in this Land Development Code does not necessarily imply compliance with the requirements of jurisdictions other than the City of Ormond Beach. It is the responsibility of the developer to meet the requirements of the St. Johns River Water Management District, Florida Department of Environmental Protection, Florida Department of Transportation and any other applicable jurisdiction.
Comment: Please see comments in the review of the LID Manual.

ARTICLE III. – Off-Street Parking Circulation and Loading
Sec. 3-24. - General regulations impacting automobile parking.
(c) Location
(4) Comment: Suggest the following revision to promote LID BMPs:

Paved surface. Vehicles shall be parked on a paved surface, including pervious pavements, except for locations where another surface material is allowed by this article.

Sec. 3-27. - Reduction in parking spaces.
(b) Reduction of hard surface requirements.
(1) Alternative surface parking
Comment: The City is to be commended for this section. However, we suggest the City eliminate or greatly increase the maximum percentage of the parking spaces that can be pervious pavements. The City's Stormwater BMP Manual should include appropriate design, construction, and maintenance standards to ensure that pervious pavements are reliable. Suggest that the references to turf block be deleted and replaced by "pervious pavement" allowing for more materials to be used.

(2) Grass parking
Comment: We offer the following comments to improve this section of the LDC:
e. Compliance with parking requirements. Suggest the following revision: All aisles …stalls. All grass parking stalls shall use GeoWeb or similar materials to provide weight bearing capacity for vehicles. Striping is not required.
f. Stormwater ~~drainage~~ requirements. Stormwater management ~~drainage~~ improvements …within the site. However, stormwater volume ~~retention areas~~ requirements will not…use for stormwater management ~~retention/detention~~ will…paved at a future time.

(3) Brick pavers or similar permeable materials
Comment: Suggest deletion of this section since City stormwater manual will include design, construction, and maintenance requirements for all pervious pavements.

ARTICLE V. – Utility and Infrastructure Design Standards
Comment: To update terminology, suggest replacing drainage with stormwater management throughout this article.
Sec. 3-58. – Stormwater management ~~Drainage~~ systems.
(a) Construction and design standards. Construction and material standards for all stormwater management ~~drainage~~ system components shall conform to the city's SCDCS manuals and the latest edition of the FDOT Roadway and Traffic Design Standards Manual. Design standards shall conform to the requirements established in this section and article II of this chapter.
(b) Discharge prohibited. Discharge into the on-site or off-site stormwater management ~~drainage~~ system of any of the materials listed hazardous materials or hazardous waste is hereby prohibited.
(c) Pipe materials.
(1) All stormwater drainage pipe used within city rights-of-way and in areas to be maintained by the city shall be reinforced concrete pipe (RCP), corrugated metal pipe (CMP), corrugated high-density polyethylene pipe (HDPE), or polyvinyl chloride (PVC) pipe. Minimum pipe size shall be fifteen inches (15") round or fifteen-inch (15") elliptical equivalent.
(3) Maximum…elevation. Calculations shall be made based on stormwater system ~~detention/retention ponds~~ at design high water elevations.

Chapter 4 – PLAN REVIEW AND SUBMISSION
ARTICLE I. - SITE PLAN REVIEW PROCEDURES
Sec. 4-04. - Preapplication meeting.
Comment: Suggest revision to update terminology

(a) Required preapplication meeting. The intent of this preliminary review is to give the applicant an opportunity to introduce a proposed development to SPRC for the purpose of familiarizing the applicant with the Code requirements prior to the preparation of the final site plan. Such requirements include, but are not limited to, the comprehensive plan; city development policies, standards and requirements; natural resources; floodplain; stormwater management ~~drainage~~; wetlands and wildlife habitat corridors.

Sec. 4-06. - Information to be included in site plan application.
(2) Forms and documents.
g. Stormwater management ~~drainage~~ **calculation form**

(4) Required information and supportive text.
e. Paving, stormwater management ~~drainage~~ and utility plan.

f. Paving and utility plan and profile sheets.
1. Stormwater management ~~drainage~~ calculations, pursuant to chapter 3, article II of this Land Development Code.

(5) Concurrency facilities and other utilities or services.
c. Water quality.
1. Discuss disposal areas, septic tank drainfield, urban runoff areas impervious surfaces and construction related runoff. Describe anticipated volume and characteristics. Include pre-development and post-development stormwater pollutant loadings calculated with BMPTRAINS or a similar software product approved by the City Engineer. Indicate measures taken to minimize the adverse impacts of potential pollution sources upon the quality of the receiving waters prior to, during and after construction.

ARTICLE II. – SUBDIVISION
Similar to Article I, the recommended revisions below primarily update terminology.
Sec. 4-12. - Purpose and intent.
(2) Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood, or other menace; and land shall not be subdivided until available public facilities and improvements exist and proper provision has been made for stormwater management ~~drainage~~, potable water, sanitary sewerage, solid waste and other capital improvements such as schools, parks, recreation facilities, and transportation facilities; and the development meets the concurrency requirements of the Code.

(10) Prevent the pollution of air, streams and ponds; to ensure the adequacy of stormwater management ~~drainage~~ facilities; to safeguard the water table; and to encourage the wise use and management of natural resources throughout the city in order to preserve the integrity, stability and beauty of the community and value of the land;

Sec. 4-17. - Preliminary plat approval procedures.
(b) Preliminary plat procedures
(3) Required information.
b. Development plan. The following shall be submitted on a single sheet unless otherwise specified:
3. Preliminary stormwater management ~~drainage and surface water management~~ plan.
Sec. 4-18. - Final plat approval procedures.
(8) Final plat recording requirements.

b. Completion of required improvements after recording of plat
1. Final grading and stormwater management ~~drainage~~ plan showing existing and proposed contours at one foot (1') intervals and cut and fill calculations by phase, if any**, and for the** entire subdivision. Indicate stormwater flow ~~drainage~~ direction by arrows and show elevations for all impervious surfaces.
10. Final stormwater management plan. Show *retention*/detention areas and stormwater calculations, ownership, access and maintenance provisions, drainage facilities on-site and connection to positive outfall system and material specifications.
d. Homeowners' association (HOA). The applicant shall provide legal instruments acceptable to the city commission demonstrating that a homeowners' association (HOA) shall be formed and shall have responsibility for maintenance of the following:
1. Stormwater management system ~~*Retention*/detention ponds. 2. On-site drainage system,~~ extending to the point of outfall to the city system.
Renumber remaining items.

F. CRA Master Plan Update (August 2019)

In 2006, the City adopted its Ormond Beach Community Redevelopment Plan. During 2019, the City and its consultant updated this Plan. The update "serves as a recalibration to expand and update ideas to meet current needs, building upon the success of the last 13 years and looking ahead to new opportunities over the next decade."

The Updated Master Plan Themes include:

- Economic Development
- Sense of Place & Appearance
- Transportation and Circulation
- Recreation and Open Space
- Arts & Culture
- Residential Neighborhoods
- Environmental Sustainability
- Standards & Regulations
- Ensuring the Vision

Overall, the Updated Plan provides the City with new opportunities to address issues in a sound manner. While the entire document was reviewed, the only comments are set forth below.

1. Environmental Sustainability

The priorities for this Theme represent opportunities to ensure future growth and redevelopment are done in a sustainable and resilient manner. Issues to address include storm impacts, sea level rise, and environmental quality. Priorities include a new sustainability plan, continuing implementation of the approved CRA Stormwater Master Plan, expanding the urban tree canopy, and incentives for green buildings.

Comment: The priorities represent an opportunity to improve stormwater management, reduce stormwater pollutant loadings, and promote Low Impact Development. Many of the recommended revisions to the Comprehensive Plan and Land Development Code are needed to achieve the vision in this Theme since they promote LID and sustainable development. Given the City's receiving waters are impaired, the City should review the

approved CRA Stormwater Master Plan to determine where additional BMPs, especially LID BMPs, can be used to reduce stormwater pollutant loadings.

F. City of Ormond Beach Low Impact Development Manual (2013)

We commend the City for developing a Low Impact Design Manual to provide an alternative approach to stormwater management. However, very few projects use this alternative. We suggest this is because of several reasons:

1. The Manual requires a treatment volume of 2.3" which is the City's 95th percentile storm. This establishes an exceedingly high level of stormwater treatment (from 95% to 98% load reduction) and a corresponding very high required treatment volume. For example, the required treatment volume to achieve 80% average annual load reduction varies from 0.22 inches to 1.43 inches depending on the site's %DCIA and non-DCIA CN.
2. The Manual is based on the 1999 Prince George's County (MD) LID Manual. This Manual uses unfamiliar stormwater terminology such as Integrated Management Practices instead of the customary use of BMP – Best Management Practice. Stormwater design engineers are very resistant to change, especially if it will create project and permitting delays.
3. The design criteria for the LID BMPs in the manual are from Maryland, an area with very different soil types and rainfall patterns than Florida. In 2010, FDEP published the Statewide Stormwater Treatment Rule Applicant's Handbook that included LID BMPs. The LID BMP design, construction, and operational criteria were based on a 10 year LID research and monitoring program in Florida. In 2018, Alachua County adopted its Stormwater Treatment Manual which incorporates the latest DEP/WMD approved LID BMP requirements.
4. The City's Land Development Code does not include incentives to use LID BMPs such as promoting their use within the landscaping or open space components of a project.

If the City wants to promote the use of LID BMPs, we suggest that they revise their LID Manual to be consistent with the requirements in the Alachua County Stormwater Treatment Manual and revise their LDC to provide incentives for using LID BMPs.

APPENDIX B

Water Quality Assessment Data

Appendix B -A
Data Removed from the IWR Database Following QA/QC

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010026	15-Oct-68	925	5	ACID	42					IWR58
2363B	Halifax River - 3M	21FLA 27010037	20-Jul-92	720	3.94	AG	7.5	U				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Dec-04	1045	0.55	AG	-1.5209	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-05	1020	0.5	AG	-1.40355	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Feb-06	1045	0.65	AG	-0.30875	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Aug-06	1045	0.55	AG	-0.0031	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Feb-07	1200	0.5	AG	-0.599	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Apr-07	1000	0.7	AG	-0.26795	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Aug-07	1045	0.5	AG	-0.02615	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	AG	-1.35	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-08	945	0.5	AG	-0.447665	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	3-Apr-08	1020	0.65	AG	-1.036195	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Jun-08	1010	0.65	AG	-0.88024	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Aug-08	1115	0.5	AG	-0.047355	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Apr-11	1020	0.5	AG	-0.10454	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-Jun-11	920	0.5	AG	-0.104595	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Aug-11	935	0.5	AG	-0.088995	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Nov-11	1400	0.5	AG	-0.156285	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Jan-12	1030	2.4	AG	-0.109905	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Mar-12	1130	2.5	AG	-0.020335	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Jul-12	1010	0.5	AG	-0.07289	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Nov-12	1035	0.5	AG	-0.05239	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Jan-13	1035	0.5	AG	-0.140595	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Mar-13	1100	0.5	AG	-0.071005	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-13	1120	0.5	AG	-0.094965	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-Jul-13	1015	0.5	AG	-0.14958	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Sep-13	1000	0.5	AG	-0.12344	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	27-Mar-14	1005	0.5	AG	-0.263495	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Sep-14	1005	0.5	AG	-0.044245	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			AG	0.015411			TQ	0.5	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			AG	-0.0009615			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	10-Apr-17	1026	0.5	AG	-0.01786	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			AG	-0.058094			T	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			AL	994.7974			Q	15	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Nov-11	1400	0.5	ALK	126.52769	Q	Q		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Nov-12	1035	0.5	ALK	135.90302	Q	Q		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Mar-13	1100	0.5	ALK	137.66882	Q	Q		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Sep-13	1000	0.5	ALK	131.15793	Q	Q		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037NW	9-May-17	958	0.4	ALK	140.03656	Q	Q		5	IWR58
2363B	Halifax River - 3M	21FLSJWM464514	9-May-17	958	0.4	ALK	140.03656	Q	Q		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-17			ALK	140.03656			Q	5	SJRWMD
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	AS	1700					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Dec-00	1230	0.5	AS	-1.6	T	T		3.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Feb-01	1010	0.5	AS	-1.25	T	T		3.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Apr-01	1200	0.5	AS	-0.95	T	T		3.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-03	1220	0.5	AS	-0.1135	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Oct-04	1030	0.5	AS	-1.3578	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Dec-04	1045	0.55	AS	-15.1355	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-05	1020	0.5	AS	-0.373665	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Jun-05	1010	0.6	AS	-16.56	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Feb-06	1045	0.65	AS	-1.582	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Feb-07	1200	0.5	AS	-1.268	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Apr-07	1000	0.7	AS	-7.86	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Jun-07	1030	0.5	AS	-2.7535	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Oct-07	1025	0.5	AS	-12.85	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-08	945	0.5	AS	-2.543805	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Jun-08	1010	0.65	AS	-6.467385	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-08	1015	0.7	AS	-3.591125	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Dec-10	920	0.5	AS	-1.24348	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Apr-11	1020	0.5	AS	-0.159745	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Nov-11	1400	0.5	AS	-2.84745	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			AS	-0.3761166			T	3	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			AS	9.664476			IQ	5	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			BA	19.09812			Q	0.5	SJRWMD
2363B	Halifax River - 3M	21FLA 27010037	20-Jul-92	720	3.94	BE	1.5	U				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			BE	-0.0108365			T	0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	12-May-16			BE	-0.013672			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			BE	-0.0154595			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	8-Mar-17	1041	0.4	BE	-0.01195	T	T		0.2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Mar-17			BE	-0.0119515			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			BE	-0.085385			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLA 27010567	6-Jan-09	1323	0.6	BOD	1.5	I	IQ		0.2	IWR58
2363B	Halifax River - 3M	21FLA 27010942	6-Jan-09	1240	0.5	BOD	1	I	IQ		0.2	IWR58
2363B	Halifax River - 3M	21FLA 27010034	9-Jun-09	1205	2	BOD	1.7	I	IJ		0.2	IWR58
2363B	Halifax River - 3M	21FLA 27010567	9-Jun-09	1115	0.75	BOD	2.2	J	J		0.2	IWR58
2363B	Halifax River - 3M	21FLA 27010942	9-Jun-09	1245	1.6	BOD	1.9	I	IJ		0.2	IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	CA	30500					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			CA	302.633959			Q	10	SJRWMD
2363B	Halifax River - 3M	21FLA 27010037	6-Nov-73	1330	9	CD	0	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	12-Dec-73	1315	9	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	16-Jan-74	1400	8	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Feb-74	1255	9	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Mar-74	1320	8	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	3-Apr-74	1225	9	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	1-May-74	1005	7	CD	10	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	5-Jun-74	1050	9	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	10-Jul-74	850	8	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	7-Aug-74	1005	9	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Sep-74	1020	8	CD	5	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	2-Oct-74	2040	7	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Nov-74	1535	7	CD	0	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	9-Dec-74	1030	7	CD	2	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	14-Jan-75	1030	6	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	5-Feb-75	1035	7	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	2-Apr-75	1030	4	CD	0	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	CD	900	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	3	CD	0	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Jun-75	1130	3	CD	0	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Aug-75	1055	6	CD	1	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010037	3-Sep-75	1200	5	CD	0	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	3-Mar-76	1430	3	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-Apr-76	1430	3	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	1-Jun-76	1035	5	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Jul-76	1015	4	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Aug-76	1045	4	CD	1	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	7-Apr-80	1650	7	CD	10	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	8-Jan-91	1300	4.92	CD	3	K				IWR58
2363B	Halifax River - 3M	21FLSJWMHR40OB	14-Mar-91	1330		CD	0.5	K				IWR58
2363B	Halifax River - 3M	21FLSJWMHR92DB	14-Mar-91	1240		CD	0.5	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Jun-99	1110	0.5	CD	-0.07	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Dec-00	1230	0.5	CD	-0.029	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Feb-01	1010	0.5	CD	-0.0555	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Apr-01	1200	0.5	CD	-0.012	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Jun-01	1225	0.5	CD	-0.0015	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Aug-01	1200	0.5	CD	-0.0245	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-01	1300	0.5	CD	-0.07	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-01	1301		CD	-0.017	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	18-Feb-02	1315	0.5	CD	-0.0055	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Jun-02	1215		CD	-0.115	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Aug-02	1200	0.5	CD	-0.0715	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Oct-02	1230	0.5	CD	-0.0305	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	30-Dec-02	1115	0.5	CD	-0.0425	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-03	1220	0.5	CD	-0.114	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Apr-03	1120	0.6	CD	-0.016	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Feb-04	1145	0.5	CD	-0.04	T	T		10	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-04	1050	0.7	CD	-0.32065	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-05	1020	0.5	CD	-1.25525	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Apr-05	1050	0.65	CD	-0.00867	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Aug-05	1005	0.5	CD	-0.1435	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Jun-07	1030	0.5	CD	-0.36665	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Aug-07	1045	0.5	CD	-0.0289	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Oct-07	1025	0.5	CD	-0.7	T	T		5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	CD	-1.5	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	3-Apr-08	1020	0.65	CD	-0.13859	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Jun-09	1015	0.65	CD	-0.01377	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Aug-09	1015	0.7	CD	-0.0159	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Apr-11	1020	0.5	CD	-0.03779	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-Jun-11	920	0.5	CD	-0.070145	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Aug-11	935	0.5	CD	-0.052735	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Nov-12	1035	0.5	CD	-0.01852	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Mar-13	1100	0.5	CD	-0.05012	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Sep-13	1000	0.5	CD	-0.019735	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Nov-13	955	0.5	CD	-0.024655	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-May-14	1040	0.5	CD	-0.0464	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jul-14	1010	0.5	CD	-0.033025	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			CD	-0.0931879			T	0.5	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			CD	-0.0027178			T	0.5	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			CD	-0.0199555			TQ	0.5	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	27-Aug-15			CD	-0.014816			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			CD	-0.0452825			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			CD	-0.054721			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	8-Mar-17	1041	0.4	CD	-0.069095	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Mar-17			CD	-0.069097			T	1	SJRWMD
2363B	Halifax River - 3M	21FLA 27010037	8-Jun-77	1015	1	CHLA	0.55	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Oct-96	1200		CHLA	8.9	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-96	1330		CHLA	7.7	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-97	850		CHLA	5.3	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-97	1130		CHLA	11.7	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Jun-97	1130		CHLA	14.7	Q				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-May-10	1005	0.3	CHLA	11.36	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-May-10	1025	0.3	CHLA	8.22	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-May-10	1045	0.2	CHLA	12.21	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-May-10	1055	0.2	CHLA	9.95	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	4-May-10	1110	0.3	CHLA	11.07	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-May-10	1125	0.3	CHLA	10.36	Q	Q			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL08	2-Aug-10	945	0.3	CHLA	15.11	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	2-Aug-10	955	0.3	CHLA	11.7	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	2-Aug-10	1015	0.35	CHLA	6.81	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	2-Aug-10	1025	0.3	CHLA	5.98	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	2-Aug-10	1040	0.3	CHLA	11.33	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	2-Aug-10	1100	0.3	CHLA	8.07	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jan-11	930	0.5	CHLA	17.17	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jan-11	1250	0.45	CHLA	15.15	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	7-Mar-11	1005	0.4	CHLA	11.53	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	7-Mar-11	1020	0.4	CHLA	13.17	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	7-Mar-11	1050	0.3	CHLA	12.48	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	7-Mar-11	1105	0.3	CHLA	14.73	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	7-Mar-11	1115	0.3	CHLA	13.87	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	7-Mar-11	1130	0.4	CHLA	15.31	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	10-Jun-13	1103	0.5	CHLA	3.84	Q	Q		0.8	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			CHLA				O	1	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL11	15-May-19	936	0.5	CHLA	4.82609	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	15-May-19	1124	0.5	CHLA	6.48689	J	J		1	IWR58
2363B	Halifax River - 3M	21FLA 27010037	1-Mar-93	915	1.8	CHLAC	0.5	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Oct-96	1200		CHLAC	3.1	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-96	1330		CHLAC	6.9	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-97	850		CHLAC	1.2	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-97	1130		CHLAC	10.4	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Jun-97	1130		CHLAC	8.1	Q				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Jan-07	930	0.2	CHLAC	-1.46				1	IWR58
2363B	Halifax River - 3M	21FLA 27010567	6-Jan-09	1323	0.6	CHLAC	6.4	Q	Q		0.55	IWR58
2363B	Halifax River - 3M	21FLA 27010942	6-Jan-09	1240	0.5	CHLAC	6.2	Q	Q		0.55	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-May-10	1005	0.3	CHLAC	9.81	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-May-10	1025	0.3	CHLAC	6.97	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-May-10	1045	0.2	CHLAC	10.4	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-May-10	1055	0.2	CHLAC	8.13	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	4-May-10	1110	0.3	CHLAC	9.35	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-May-10	1125	0.3	CHLAC	8.83	Q	Q			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL08	2-Aug-10	945	0.3	CHLAC	11.86	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	2-Aug-10	955	0.3	CHLAC	9.58	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	2-Aug-10	1015	0.35	CHLAC	4.58	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	2-Aug-10	1025	0.3	CHLAC	3.78	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	2-Aug-10	1040	0.3	CHLAC	9.42	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	2-Aug-10	1100	0.3	CHLAC	6.86	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jan-11	930	0.5	CHLAC	15.64	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jan-11	1250	0.45	CHLAC	14.29	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	7-Mar-11	1005	0.4	CHLAC	11.25	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	7-Mar-11	1020	0.4	CHLAC	9.98	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	7-Mar-11	1050	0.3	CHLAC	10.01	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	7-Mar-11	1105	0.3	CHLAC	11.98	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	7-Mar-11	1115	0.3	CHLAC	9.68	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	7-Mar-11	1130	0.4	CHLAC	12.37	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	12-Jul-11	1036	0.4	CHLAC	20.82	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	12-Jul-11	1117	0.4	CHLAC	15.28	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	12-Jul-11	1128	0.3	CHLAC	7.97	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	12-Jul-11	1142	0.4	CHLAC	13.72	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Jul-11	1200	0.5	CHLAC	10.27	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Jul-11	1215	0.4	CHLAC	14.76	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Jul-11	1235	0.5	CHLAC	13.87	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Jul-11	1410	0.5	CHLAC	25	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Jul-11	1430	0.5	CHLAC	27.62	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Sep-11	950	0.5	CHLAC	6.59	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Sep-11	1010	0.4	CHLAC	9.02	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Sep-11	1033	0.4	CHLAC	10.35	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Sep-11	1050	0.3	CHLAC	11.58	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Sep-11	1106	0.4	CHLAC	14.97	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Sep-11	1121	0.4	CHLAC	13.91	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Jan-12	1008	1.3	CHLAC	2.34	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Jan-12	1028	0.6	CHLAC	3.27	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-Jan-12	1055	0.9	CHLAC	7.22	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	9-Jan-12	1121	0.6	CHLAC	5.9	Q	Q		0.5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL11A	9-Jan-12	1133	0.4	CHLAC	5.98	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	10-Jun-13	1103	0.5	CHLAC	3.25	Q	Q		0.68	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	6-Aug-13	1123	0.4	CHLAC	11.77	Q	Q		0.68	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	6-Aug-13	1140	0.4	CHLAC	11.26	Q	Q		0.68	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	6-Aug-13	1204	0.4	CHLAC	13.93	Q	Q		0.68	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Aug-13	1226	0.5	CHLAC	14.2	Q	Q		0.68	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	6-Aug-13	1245	0.5	CHLAC	19.86	Q	Q		0.68	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	6-Aug-13	1305	0.6	CHLAC	8.76	Q	Q		0.68	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	6-Aug-13	1330	0.5	CHLAC	6.44	Q	Q		0.68	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			CHLAC				O	1	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL11	15-May-19	936	0.5	CHLAC	3.2574	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	15-May-19	1124	0.5	CHLAC	4.3254	J	J		1	IWR58
2363B	Halifax River - 3M	21FLA 27010037	8-Jun-77	1015	1	CHLB	0.08	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Oct-96	1200		CHLB	0.7	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-97	850		CHLB	1.6	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-97	1130		CHLB	0.1	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Jun-97	1130		CHLB	0.6	Q				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Jul-99	1035	0.35	CHLB	-0.2					IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Jul-99	1157	0.8	CHLB	-0.1					IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Jul-99	1322	0.8	CHLB	-0.3					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Jul-99	1340	1	CHLB	-0.6					IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Jul-99	1423	0.6	CHLB	-0.6					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Aug-99	930	0.5	CHLB	-0.040095	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Oct-99	1200	0.5	CHLB	-0.313925	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Dec-99	1200	0.5	CHLB	-0.15424	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	3-Feb-00	1130	0.5	CHLB	-0.137285	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Apr-00	1330	2	CHLB	-0.08					IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Apr-00	1400	1.1	CHLB	-0.05					IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-Apr-00	1415	0.9	CHLB	-0.47					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	20-Apr-00	1200	0.5	CHLB	-0.07735	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	28-Aug-00	1300	0.5	CHLB	-0.126055	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Feb-01	1010	0.5	CHLB	-0.1004	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Apr-01	1200	0.5	CHLB	-0.070905	T	T		0.5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL07	7-Aug-01	1115	1.7	CHLB	-0.32					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Oct-01	1530	0.5	CHLB	-0.174815	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-01	1300	0.5	CHLB	-0.29219	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-01	1301		CHLB	-0.285255	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	18-Feb-02	1315	0.5	CHLB	-0.162005	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Apr-02	1155	0.5	CHLB	-0.039175	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Jun-02	1215		CHLB	-0.250755	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Oct-02	1230	0.5	CHLB	-0.03227	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	30-Dec-02	1115	0.5	CHLB	-0.174105	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Apr-03	1120	0.6	CHLB	-0.03113	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-03	1230	0.49	CHLB	-0.078645	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Aug-03	1350	0.5	CHLB	-0.29201	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	27-Oct-03	1200	0.5	CHLB	-0.119425	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	3-Dec-03	1115	0.5	CHLB	-0.06316	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-Feb-04	1015	0.7	CHLB	-0.03				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-Feb-04	1035	0.6	CHLB	-0.1				1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Feb-04	1145	0.5	CHLB	-0.213765	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	2-Mar-04	1115	0.85	CHLB	-0.07				1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-04	1100	0.7	CHLB	-0.05249	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	13-Apr-04	1010	0.4	CHLB	-0.01				1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Jun-04	1100	0.45	CHLB	-0.18423	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-04	1050	0.7	CHLB	-0.061415	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Oct-04	1030	0.5	CHLB	-0.58449	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Dec-04	1045	0.55	CHLB	-0.021415	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-05	1020	0.5	CHLB	-0.33721	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Jun-05	1010	0.6	CHLB	-0.03233	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Aug-05	1005	0.5	CHLB	-0.060785	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Oct-05	1010	0.5	CHLB	-0.13839	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Dec-05	1115	0.5	CHLB	-0.14517	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Feb-06	1045	0.65	CHLB	-0.112045	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Apr-06	1045	0.6	CHLB	-0.189135	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jun-06	1020	0.5	CHLB	-0.327585	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Jul-06	1330	2.1	CHLB	-0.55				1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL12	12-Jul-06	1350	0.4	CHLB	-0.07				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	1-Aug-06	900	0.3	CHLB	-0.21				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	5-Sep-06	1000	0.4	CHLB	-0.02				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Sep-06	1025	0.35	CHLB	-0.19				1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Oct-06	1015	0.5	CHLB	-0.15851	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Dec-06	945	0.5	CHLB	-0.173215	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Jan-07	930	0.2	CHLB	-3.95				1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Feb-07	1200	0.5	CHLB	-0.134025	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Apr-07	1000	0.7	CHLB	-0.34459	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Jun-07	1030	0.5	CHLB	-0.2543	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Aug-07	1045	0.5	CHLB	-0.30205	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Oct-07	1025	0.5	CHLB	-0.17614	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	CHLB	-0.210235	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	5-Feb-08	1030	0.45	CHLB	-0.13				1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-08	945	0.5	CHLB	-0.103565	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Jun-08	1010	0.65	CHLB	-0.29115	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	10-Jun-08	955	0.35	CHLB	-0.61				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	10-Jun-08	1007	0.35	CHLB	-0.57				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	10-Jun-08	1027	0.4	CHLB	-0.94				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	10-Jun-08	1035	0.35	CHLB	-1.19				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	10-Jun-08	1059	0.4	CHLB	-0.18				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	22-Jul-08	920	0.25	CHLB	-0.68				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	22-Jul-08	933	0.25	CHLB	-0.48				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	22-Jul-08	1000	0.25	CHLB	-0.11				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	22-Jul-08	1012	0.25	CHLB	-0.37				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Aug-08	1055	1.7	CHLB	-0.06				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Aug-08	1110	1.7	CHLB	-1.01				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-Aug-08	1133	2.1	CHLB	-0.33				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-Aug-08	1152	2.7	CHLB	-0.86				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-Aug-08	1210	1.1	CHLB	-0.7				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	5-Aug-08	1235	2	CHLB	-0.45				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	5-Aug-08	1315	0.3	CHLB	-0.44				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Aug-08	1330	0.3	CHLB	-0.03				1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	6-Aug-08	1115	0.5	CHLB	-0.306585	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	3-Feb-09	1025	0.5	CHLB	-0.54					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Feb-09	1005	0.65	CHLB	-0.205435	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	26-Mar-09	947	0.4	CHLB	-0.12					IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	5-May-09	1030	0.5	CHLB	-0.43					IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-May-09	1135	0.5	CHLB	-0.07					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Jun-09	1015	0.65	CHLB	-0.96675	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	22-Jun-09	1005	0.5	CHLB	-1.83					IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	22-Jun-09	1025	0.5	CHLB	-0.76					IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	22-Jun-09	1045	0.5	CHLB	-0.67					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	22-Jun-09	1100	0.5	CHLB	-0.52					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	22-Jun-09	1110	0.2	CHLB	-0.07					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Aug-09	1240	0.5	CHLB	-0.28					IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Aug-09	1255	0.4	CHLB	-0.93					IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-Aug-09	1320	0.5	CHLB	-0.22					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	15-Sep-09	939	0.5	CHLB	-0.03					IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	15-Sep-09	1004	0.5	CHLB	-0.05					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	15-Sep-09	1038	0.5	CHLB	-0.13					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	15-Sep-09	1050	0.4	CHLB	-0.05					IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	15-Sep-09	1110	0.5	CHLB	-0.09					IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Oct-09	1015	0.5	CHLB	-0.02					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Oct-09	1025	0.5	CHLB	-0.04					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Oct-09	1035	0.5	CHLB	-0.01					IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Oct-09	1055	0.5	CHLB	-0.28					IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	3-Mar-10	1120	0.3	CHLB	-0.2				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	3-Mar-10	1145	0.3	CHLB	-0.22				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	3-Mar-10	1205	0.2	CHLB	-0.65				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	3-Mar-10	1225	0.2	CHLB	-0.92				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	3-Mar-10	1240	0.2	CHLB	-0.5				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	3-Mar-10	1300	0.2	CHLB	-0.23				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	3-Mar-10	1250	0.5	CHLB	-0.21				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	6-Apr-10	1125	0.3	CHLB	-0.23					IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	6-Apr-10	1145	0.2	CHLB	-0.29					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL06	6-Apr-10	1200	0.2	CHLB	-0.41					IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Apr-10	1225	0.2	CHLB	-0.18					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	6-Apr-10	1250	0.3	CHLB	-0.3					IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	6-Apr-10	1305	0.2	CHLB	-0.2					IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	6-Apr-10	1325	0.2	CHLB	-0.17					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	6-Apr-10	1410	0.5	CHLB	-0.02					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-May-10	1005	0.3	CHLB	0.41	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-May-10	1025	0.3	CHLB	0.42	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-May-10	1045	0.2	CHLB	0.62	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-May-10	1055	0.2	CHLB	0.42	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	4-May-10	1110	0.3	CHLB	0.66	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-May-10	1125	0.3	CHLB	0.49	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	13-Jul-10	1220	0.5	CHLB	-0.14				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	2-Aug-10	945	0.3	CHLB	0.02	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	2-Aug-10	955	0.3	CHLB	0.09	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	2-Aug-10	1015	0.35	CHLB	0.13	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	2-Aug-10	1025	0.3	CHLB	0.16	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	2-Aug-10	1040	0.3	CHLB	0.07	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	2-Aug-10	1100	0.3	CHLB	0.08	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jan-11	930	0.5	CHLB	1.64	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jan-11	1250	0.45	CHLB	2.54	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Feb-11	1010	0.5	CHLB	-0.14				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-Feb-11	1055	0.5	CHLB	-0.02				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	12-Apr-11	1124	0.2	CHLB	-0.15				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	6-Jun-11	1059	0.2	CHLB	-0.15					IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	6-Jun-11	1114	0.3	CHLB	-0.18					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-Jun-11	920	0.5	CHLB	-0.08895	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	12-Jul-11	1142	0.4	CHLB	-0.16					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Jul-11	1200	0.5	CHLB	-0.11					IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Jul-11	1215	0.4	CHLB	-0.2					IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Jul-11	1235	0.5	CHLB	-0.11					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Jul-11	1410	0.5	CHLB	-0.28					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	1-Aug-11	1020	0.4	CHLB	-0.15					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	12-Jul-12	1010	0.5	CHLB	-0.159635	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	11-Sep-12	959	0.3	CHLB	-0.33				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	11-Sep-12	1019	0.3	CHLB	-0.35				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-Dec-12	1010	0.5	CHLB	-0.03				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	1-Apr-13	1134	0.7	CHLB	-0.09					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	10-Jun-13	1103	0.5	CHLB	0.35	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Jul-13	1007	0.4	CHLB	-0.06					IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Jul-13	1114	0.5	CHLB	-0.01					IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	6-Aug-13	1123	0.4	CHLB	-0.08					IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	6-Aug-13	1140	0.4	CHLB	-0.15					IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	6-Aug-13	1204	0.4	CHLB	-0.06					IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Aug-13	1226	0.5	CHLB	-0.44					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	6-Aug-13	1245	0.5	CHLB	-0.43					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Sep-13	1000	0.5	CHLB	-0.078715	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	27-Mar-14	1005	0.5	CHLB	-0.067105	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-May-14	1040	0.5	CHLB	-0.057135	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jul-14	1010	0.5	CHLB	-0.4028	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-15			CHLB	-0.09942			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	18-Mar-15			CHLB	-0.0278149			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Apr-15			CHLB	-0.0919499			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	28-May-15			CHLB	-0.01647			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			CHLB	-0.1387071			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jul-15			CHLB	-0.065475			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			CHLB				O	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	19-Oct-15			CHLB	-0.0051949			T	1	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL08	11-Jul-16	953	0.25	CHLB	-0.45131	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	11-Jul-16	1007	0.25	CHLB	-0.33561	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	11-Jul-16	1025	0.3	CHLB	-0.183165	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jul-16	1039	0.2	CHLB	-0.05431	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	11-Jul-16	1053	0.15	CHLB	-0.14476	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jul-16	1106	0.8	CHLB	-0.1292	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			CHLB	-0.290375			T	1	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL04	9-Aug-16	1043	0.2	CHLB	-0.46386	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL05	9-Aug-16	1137	0.1	CHLB	-0.24578	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	9-Aug-16	1156	0.2	CHLB	-0.31054	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	9-Aug-16	1225	0.3	CHLB	-0.21857	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Aug-16	1253	0.3	CHLB	-0.35729	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Aug-16	1308	0.3	CHLB	-0.12027	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-Aug-16	1330	0.4	CHLB	-0.06416	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Sep-16	1020	0.35	CHLB	-0.0819	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Sep-16	1041	0.3	CHLB	-0.04156	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Sep-16	1059	0.55	CHLB	-0.10207	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Sep-16	1108	0.3	CHLB	-0.016665	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Nov-16	1120	0.5	CHLB	-0.04265	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Nov-16	1143	0.5	CHLB	-0.06417	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Nov-16	1157	0.5	CHLB	-0.06922	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Nov-16	1212	0.5	CHLB	-0.12778	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Nov-16	1233	0.5	CHLB	-0.1551	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	20-Mar-17	1200	0.4	CHLB	-0.028415	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	20-Mar-17	1240	0.4	CHLB	-0.09602	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	9-May-17	1113	0.6	CHLB	-0.01014	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037NW	6-Jun-17	1044	0.5	CHLB	-0.149225	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Jun-17			CHLB	-0.1492249			T	1	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL08	10-Jul-17	1010	0.6	CHLB	-0.03747	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	14-Nov-17	1224	0.5	CHLB	-0.00977	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	14-Nov-17	1432	0.49	CHLB	-0.050215	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Dec-17	1025	0.4	CHLB	-0.00975	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-Dec-17	1149	0.45	CHLB	-0.087365	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-Dec-17	1218	0.5	CHLB	-0.08767	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	10-Jan-18	916	0.5	CHLB	-0.14931	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	10-Jan-18	1016	0.5	CHLB	-0.148035	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	23-May-18	1018	0.51	CHLB	-0.20174	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	23-May-18	1114	0.51	CHLB	-0.12316	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	23-May-18	1101	0.51	CHLB	-0.125015	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	23-May-18	1134	0.5	CHLB	-0.334285	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	23-May-18	1144	0.5	CHLB	-0.18691	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL09	23-May-18	1155	0.51	CHLB	-0.1999	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	15-May-19	936	0.5	CHLB	0.119725	T	TJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	15-May-19	1124	0.5	CHLB	-0.018045	T	TJ		1	IWR58
2363B	Halifax River - 3M	21FLA 27010037	8-Jun-77	1015	1	CHLC	0.06	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Oct-96	1200		CHLC	1.6	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-96	1330		CHLC	0.7	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-97	850		CHLC	1.8	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-97	1130		CHLC	3.2	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Jun-97	1130		CHLC	1.9	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Dec-99	1200	0.5	CHLC	-0.223225	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	4-Jan-00	1100	1.8	CHLC	-4.63					IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	6-Feb-01	950	1	CHLC	-0.23					IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	6-Feb-01	1120	1.8	CHLC	-0.19					IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	6-Feb-01	1140	1.7	CHLC	-0.11					IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Feb-01	1240	1.5	CHLC	-0.25					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	6-Feb-01	1255	2.4	CHLC	-0.23					IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	6-Feb-01	1310	1	CHLC	-0.19					IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	6-Feb-01	1325	1.8	CHLC	-0.08					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	6-Feb-01	1130	4	CHLC	-0.2					IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	6-Feb-01	1100	1.4	CHLC	-0.2					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Jun-01	1225	0.5	CHLC	-1.021455	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Oct-01	1530	0.5	CHLC	-0.16089	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-01	1301		CHLC	-0.03125	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Oct-04	1030	0.5	CHLC	-0.503885	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Oct-05	1010	0.5	CHLC	-0.07909	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Feb-06	1045	0.65	CHLC	-0.02167	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Jan-07	930	0.2	CHLC	-5.27				1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Aug-07	1045	0.5	CHLC	-0.07141	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Oct-07	1025	0.5	CHLC	-0.107925	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	CHLC	-0.1302	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	15-Sep-09	1038	0.5	CHLC	-0.08					IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	15-Sep-09	1110	0.5	CHLC	-0.1					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-May-10	1005	0.3	CHLC	1.46	Q	Q			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL09	4-May-10	1025	0.3	CHLC	1.1	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-May-10	1045	0.2	CHLC	1.74	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-May-10	1055	0.2	CHLC	1.58	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	4-May-10	1110	0.3	CHLC	1.84	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-May-10	1125	0.3	CHLC	1.31	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	2-Aug-10	945	0.3	CHLC	1.63	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	2-Aug-10	955	0.3	CHLC	1.33	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	2-Aug-10	1015	0.35	CHLC	0.87	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	2-Aug-10	1025	0.3	CHLC	0.85	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	2-Aug-10	1040	0.3	CHLC	1.68	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	2-Aug-10	1100	0.3	CHLC	1.19	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jan-11	930	0.5	CHLC	2.55	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jan-11	1250	0.45	CHLC	2.13	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	7-Mar-11	1005	0.4	CHLC	1.9	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	7-Mar-11	1020	0.4	CHLC	2.12	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	7-Mar-11	1050	0.3	CHLC	2.45	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	7-Mar-11	1105	0.3	CHLC	2.28	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	7-Mar-11	1115	0.3	CHLC	2.11	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	7-Mar-11	1130	0.4	CHLC	2.29	J	J		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Jul-12	1010	0.5	CHLC	-0.098705	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	10-Jun-13	1103	0.5	CHLC	0.45	Q	Q			IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Sep-13	1000	0.5	CHLC	-0.014615	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			CHLC				O	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			CHLC	-0.296825			T	1	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL10	20-Mar-17	1340	0.7	CHLC	-0.02033	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	14-Nov-17	1224	0.5	CHLC	-0.05344	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	14-Nov-17	1311	0.5	CHLC	-0.00969	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	14-Nov-17	1432	0.49	CHLC	-0.113825	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-Dec-17	1218	0.5	CHLC	-0.024045	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	23-May-18	1134	0.5	CHLC	-0.359845	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	23-May-18	1144	0.5	CHLC	-0.172185	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	23-May-18	1155	0.51	CHLC	-0.190235	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	15-May-19	936	0.5	CHLC	0.197885	T	TJ		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL12	15-May-19	1124	0.5	CHLC	0.351305	T	TJ		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Mar-12	1130	2.5	CHLOR	16660.37	Q	Q		183	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Sep-13	1000	0.5	CHLOR	9058.11	Q	Q		123	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			CHLOR	11325.06			Q	183	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	11-Jan-12	1030	2.4	COLOR	16.21051	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-May-12	1000	0.5	COLOR	12.45475	Q	QJ		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Mar-13	1100	0.5	COLOR	7.77289	I	IQ		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			COLOR	49.1108208			Q	2	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL12	10-Mar-15	1320	0.5	COLOR	36	J	J		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	13-Jul-15	1015	1.3	COLOR	35	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	13-Jul-15	1030	0.7	COLOR	30	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	13-Jul-15	1047	0.8	COLOR	25	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	13-Jul-15	1100	0.6	COLOR	35	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	13-Jul-15	1110	0.3	COLOR	30	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	13-Jul-15	1125	1	COLOR	25	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	22-Sep-15	1320	0.5	COLOR	53	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	14-Nov-16	1220	0.5	COLOR	35.82346	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037NW	7-Feb-17	937	0.5	COLOR	15.37738	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLSJWM464514	7-Feb-17	937	0.5	COLOR	15.37738	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-17			COLOR	15.3773823			Q	2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM464514	5-Jul-17	1038	0.3	COLOR	16.99673	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			COLOR	16.9967346			Q	2	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL04	23-May-18	1018	0.51	COLOR	82.87887	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	23-May-18	1114	0.51	COLOR	70.70486	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	23-May-18	1101	0.51	COLOR	50.10272	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	23-May-18	1134	0.5	COLOR	43.11528	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	23-May-18	1144	0.5	COLOR	39.72961	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	23-May-18	1155	0.51	COLOR	38.97026	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	24-May-18	1052	0.5	COLOR	32.8142	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	24-May-18	1115	0.49	COLOR	31.44553	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	18-Jul-18	1121	0.41	COLOR	216.50925	Q	QJ		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	12-Mar-19	1002	0.5	COLOR	52.94352	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	12-Mar-19	1039	0.5	COLOR	56.35991	Q	Q		2	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL06	12-Mar-19	1052	0.5	COLOR	56.58271	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	12-Mar-19	1107	0.5	COLOR	58.95933	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Mar-19	1118	0.5	COLOR	60.07337	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Mar-19	1130	0.5	COLOR	60.22191	Q	Q		2	IWR58
2363B	Halifax River - 3M	21FLA 27010945	10-Apr-84	900	2	COND	14600	J				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	1635	2	COND	25300	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	11-Jul-00	1330	1.6	COND	503180					IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	12-Oct-04	1000	0.5	COND	84600					IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	12-Oct-04	1020	0.55	COND	93800	!	!			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	12-Oct-04	1035	0.85	COND	91100	!	!			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	12-Oct-04	1050	1.1	COND	79200					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Oct-04	1100	1.35	COND	81000					IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Oct-04	1110	0.7	COND	99200	!	!			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	7-May-13	1136	1.2	COND	359101				1.1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	11-Jul-16	953	1.2	COND	37560	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	11-Jul-16	1007	0.45	COND	37980	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	11-Jul-16	1025	0.7	COND	38510	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jul-16	1039	0.45	COND	38990	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	11-Jul-16	1053	0.15	COND	39260	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jul-16	1106	0.8	COND	39600	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	9-Aug-16	1043	0.65	COND	42230	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	9-Aug-16	1137	0.6	COND	42560	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	9-Aug-16	1156	0.6	COND	42380	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	9-Aug-16	1225	0.65	COND	42040	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Aug-16	1253	1.15	COND	41770	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Aug-16	1308	0.4	COND	41860	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-Aug-16	1330	0.6	COND	43380	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Sep-16	1020	1.3	COND	45630	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Sep-16	1041	0.55	COND	45210	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Sep-16	1059	0.9	COND	44990	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Sep-16	1108	0.5	COND	44950	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Sep-16	1120	0.25	COND	44810	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Sep-16	1133	0.7	COND	45040	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL04	8-Nov-16	1044	0.5	COND	45110	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Nov-16	1103	0.5	COND	41180	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Nov-16	1120	0.5	COND	39730	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Nov-16	1143	0.5	COND	38510	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Nov-16	1157	0.5	COND	37590	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Nov-16	1212	0.5	COND	36870	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Nov-16	1233	0.5	COND	36590	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Dec-16	1000	1.45	COND	43990	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Dec-16	1017	1	COND	43770	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Dec-16	1037	0.75	COND	43970	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Dec-16	1051	0.9	COND	44290	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Dec-16	1105	0.45	COND	44180	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Dec-16	1120	1.2	COND	44030	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	20-Mar-17	1030	0.4	COND	48110	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	20-Mar-17	1127	0.6	COND	47840	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	20-Mar-17	1200	1.1	COND	48230	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	20-Mar-17	1240	0.75	COND	48420	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	20-Mar-17	1257	1.2	COND	47660	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	20-Mar-17	1315	0.6	COND	47060	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	20-Mar-17	1340	0.9	COND	46450	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	17-Apr-17	1037	0.95	COND	47000	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	17-Apr-17	1104	0.5	COND	46880	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	17-Apr-17	1135	0.5	COND	46920	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	17-Apr-17	1149	0.45	COND	46960	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	17-Apr-17	1206	0.3	COND	47450	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	17-Apr-17	1217	0.65	COND	47250	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Jun-17	1045	1.4	COND	47910	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Jun-17	1104	0.6	COND	47810	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Jun-17	1120	1	COND	47160	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Jun-17	1245	0.9	COND	47320	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Jun-17	1140	0.6	COND	47360	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Jun-17	1157	1.2	COND	47060	J	J			IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	CR3	89000000					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010037	7-Apr-80	1650	7	CR3	50	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-04	1050	0.7	CR3	-0.3274	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	CR3	-0.2	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Oct-08	1050	0.5	CR3	-0.066045	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			CR3	2.086025			IQ	1	SJRWMD
2363B	Halifax River - 3M	21FLA 27010037	6-Nov-73	1330	9	CU	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	7-Aug-74	1005	9	CU	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Sep-74	1020	8	CU	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	2-Oct-74	2040	7	CU	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Nov-74	1535	7	CU	0.025	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	9-Dec-74	1030	7	CU	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	14-Jan-75	1030	6	CU	0.025	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	5-Feb-75	1035	7	CU	0.025	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	5-Mar-75	1155	7	CU	0.025	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	2-Apr-75	1030	4	CU	0.01	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Jan-82	1151	6	CU	25	K				IWR58
2363B	Halifax River - 3M	21FLSJWMHR40OB	14-Mar-91	1330		CU	2	K				IWR58
2363B	Halifax River - 3M	21FLSJWMHR92DB	14-Mar-91	1240		CU	2	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Jun-04	1100	0.45	CU	-4.9922	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-04	1050	0.7	CU	-2.5972	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Jun-05	1010	0.6	CU	-0.737	T	T		30	IWR58
2363B	Halifax River - 3M	21FLCEN 27010950	21-Jun-05	1001	0.5	CU	1.51	A	AJ		0.25	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	CU	-5.75	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-08	945	0.5	CU	-1.085475	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	3-Apr-08	1020	0.65	CU	-4.53518	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Oct-08	1050	0.5	CU	-0.157055	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-08	1015	0.7	CU	-2.419195	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			CU	3.048869			IQ	0.5	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-97	1130		DISS	29300	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Aug-01	1200	0.5	DISS	17900	Q	Q		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Aug-11	935	0.5	DISS	24000	Q	Q		92	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Mar-02	1030	0.4	DO	683					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Feb-03	1120	1	DO	757					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010034	9-Jun-09	1205	2	DO	9.15	J	J			IWR58
2363B	Halifax River - 3M	21FLA 27010567	9-Jun-09	1115	0.75	DO	7.98	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	5-Jun-12	1100	1.3	DO	6.79	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Jun-12	1127	1.1	DO	7.13	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Jun-12	1148	0.9	DO	6.75	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-Jun-12	1212	1.1	DO	7.28	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-Jun-12	1228	1.3	DO	7.76	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-Jun-12	1246	1	DO	7.17	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	5-Jun-12	1307	0.6	DO	8.34	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	11-Jul-16	953	1.2	DO	5.62	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	11-Jul-16	1007	0.45	DO	4.99	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	11-Jul-16	1025	0.7	DO	4.19	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jul-16	1039	0.45	DO	3.91	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	11-Jul-16	1053	0.15	DO	4.95	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jul-16	1106	0.8	DO	4.94	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	9-Aug-16	1043	0.65	DO	5.62	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	9-Aug-16	1137	0.6	DO	6.31	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	9-Aug-16	1156	0.6	DO	5.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	9-Aug-16	1225	0.65	DO	5.17	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Aug-16	1253	1.15	DO	6.32	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Aug-16	1308	0.4	DO	6.25	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-Aug-16	1330	0.6	DO	5.2	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Sep-16	1020	1.3	DO	5.41	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Sep-16	1041	0.55	DO	4.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Sep-16	1059	0.9	DO	4.36	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Sep-16	1108	0.5	DO	4.52	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Sep-16	1120	0.25	DO	5.31	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Sep-16	1133	0.7	DO	6.09	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Nov-16	1044	0.5	DO	5.14	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Nov-16	1103	0.5	DO	5.96	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Nov-16	1120	0.5	DO	5.45	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Nov-16	1143	0.5	DO	5.05	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Nov-16	1157	0.5	DO	5.45	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL09	8-Nov-16	1212	0.5	DO	5.51	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Nov-16	1233	0.5	DO	4.68	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Dec-16	1000	1.45	DO	7.09	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Dec-16	1017	1	DO	7.84	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Dec-16	1037	0.75	DO	6.85	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Dec-16	1051	0.9	DO	6.85	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Dec-16	1105	0.45	DO	6.96	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Dec-16	1120	1.2	DO	7.09	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	20-Mar-17	1030	0.4	DO	7.2	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	20-Mar-17	1127	0.6	DO	7.3	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	20-Mar-17	1200	1.1	DO	7.3	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	20-Mar-17	1240	0.75	DO	7.4	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	20-Mar-17	1257	1.2	DO	7.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	20-Mar-17	1315	0.6	DO	7.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	20-Mar-17	1340	0.9	DO	7.4	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	17-Apr-17	1037	0.95	DO	6.5	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	17-Apr-17	1104	0.5	DO	6.6	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	17-Apr-17	1135	0.5	DO	6.2	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	17-Apr-17	1149	0.45	DO	6.2	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	17-Apr-17	1206	0.3	DO	7.5	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	17-Apr-17	1217	0.65	DO	6.4	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	9-May-17	1055	0.5	DO	6.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	9-May-17	1113	0.6	DO	7.3	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	9-May-17	1130	1	DO	6.6	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	9-May-17	1218	1	DO	7.7	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-May-17	1235	1	DO	7.3	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-May-17	1250	1	DO	6.4	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-May-17	1313	1	DO	6.3	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Jun-17	1045	1.4	DO	4.2	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Jun-17	1104	0.6	DO	4.2	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Jun-17	1120	1	DO	4.1	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Jun-17	1245	0.9	DO	3.1	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Jun-17	1140	0.6	DO	4.6	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL12	12-Jun-17	1157	1.2	DO	3.9	J	J			IWR58
2363B	Halifax River - 3M	21FLSJWM44602	10-Jan-13	1035	0.5	DOC	6.47	I	IQ		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			DOC	5.38			IQ	1	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL08	4-Mar-02	1030	0.4	DOSAT	8537.5	+				IWR58
2363B	Halifax River - 3M	21FLA 27010034	9-Jun-09	1205	2	DOSAT	118	J	J			IWR58
2363B	Halifax River - 3M	21FLA 27010567	9-Jun-09	1115	0.75	DOSAT	113	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	2-Mar-93	1050	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	2-Mar-93	1105	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	2-Mar-93	1230	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	2-Mar-93	1310	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	2-Mar-93	1330	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	4-May-93	1124	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-May-93	1215	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Jun-93	1125	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Jun-93	1243	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Jun-93	1244	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Jun-93	1305	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Jun-93	1327	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Jun-93	1347	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Jun-93	907	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Jun-93	836	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	4-Jan-94	1130	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Feb-94	1010	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Feb-94	1235	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Feb-94	1255	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Feb-94	830	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	3-May-94	1225	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	3-May-94	1325	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Sep-94	1230	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	6-Sep-94	1315	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	7-Sep-94	945	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	4-Oct-94	1105	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	2-Nov-94	1120	0.98	ENCOC	5	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL07	7-Feb-95	1230	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	7-Mar-95	1055	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	7-Mar-95	1230	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	7-Mar-95	1255	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	7-Mar-95	1320	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	4-Apr-95	1005	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Apr-95	1240	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Apr-95	1255	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Apr-95	1315	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-Apr-95	1330	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-Apr-95	844	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	2-May-95	1105	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	2-May-95	1130	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	2-May-95	1300	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	2-May-95	1345	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	2-May-95	835	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	6-Jun-95	945	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	6-Jun-95	1050	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Jun-95	1240	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Aug-95	930	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Aug-95	1030	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Aug-95	1041	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Aug-95	1150	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Aug-95	1229	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Aug-95	1250	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Aug-95	1320	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Aug-95	845	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Aug-95	830	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	3-Oct-95	1230	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Mar-96	1050	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-Mar-96	1140	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-Mar-96	1215	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	4-Jun-96	1115	0.98	ENCOC	5	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL08	4-Jun-96	1230	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-Jun-96	935	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	9-Jul-96	1042	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	9-Jul-96	1210	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Jul-96	1300	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-Jul-96	1325	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	6-Aug-96	1115	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Aug-96	1235	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	6-Aug-96	1215	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	6-Aug-96	1308	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	6-Aug-96	955	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	4-Sep-96	1020	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-Sep-96	1245	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Nov-96	1040	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	3-Dec-96	1024	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	3-Dec-96	1045	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	7-Jan-97	1045	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	7-Jan-97	1120	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	7-Jan-97	1250	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	4-Feb-97	1100	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Feb-97	1220	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Feb-97	1245	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Feb-97	1310	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Mar-97	1241	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Mar-97	1259	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-Mar-97	1028	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Apr-97	915	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Apr-97	1025	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Apr-97	1100	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Apr-97	1215	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Apr-97	1240	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Apr-97	1300	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Apr-97	1330	0.98	ENCOC	5	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL11	8-Apr-97	905	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Apr-97	839	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	6-May-97	1110	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-May-97	1230	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	6-May-97	1255	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	9-Sep-97	1007	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Nov-97	1300	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-Nov-97	1034	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	6-Jan-98	945	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	7-Apr-98	1055	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	7-Apr-98	1115	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	5-May-98	940	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-May-98	1100	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-May-98	1130	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-May-98	1315	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	5-May-98	1350	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	2-Jun-98	1050	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	2-Jun-98	1230	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	7-Jul-98	1030	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	7-Jul-98	1200	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	4-Aug-98	1050	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Aug-98	1250	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Aug-98	1310	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Aug-98	1330	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Aug-98	1350	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-Aug-98	1410	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	9-Sep-98	1140	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Sep-98	1215	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	6-Oct-98	1040	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	6-Oct-98	1100	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	6-Oct-98	1245	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	6-Oct-98	1315	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	6-Oct-98	921	0.98	ENCOC	5	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL06	3-Nov-98	1150	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	3-Nov-98	1300	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	3-Nov-98	1330	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	3-Nov-98	1350	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	3-Nov-98	1415	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	3-Nov-98	1022	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	1-Dec-98	1245	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	1-Dec-98	1320	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	1-Dec-98	1022	0.98	ENCOC	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	5-Jan-99	945	0.4	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	3-Mar-99	925	0.35	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	3-Mar-99	1115	1.15	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	5-Apr-99	1010	0.45	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Apr-99	1105	0.8	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Apr-99	1115	0.7	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Apr-99	1125	0.65	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-Apr-99	1250	1.6	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-Apr-99	1240	1.2	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-Apr-99	1325	1.2	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-Apr-99	1340	0.55	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	5-Apr-99	1330	0.6	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Apr-99	942	1	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Jun-99	1130	0.9	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Jun-99	1150	0.7	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Jun-99	1330	1.1	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Jun-99	1355	0.5	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Jul-99	1035	0.35	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Jul-99	1157	0.8	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Jul-99	1322	0.8	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Jul-99	1356	0.45	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Jul-99	1423	0.6	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Jul-99	1030	1.05	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	3-Aug-99	1105	0.83	ENCOC	5	K	K			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL06	3-Aug-99	1135	0.7	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	3-Aug-99	1325	1.15	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	3-Aug-99	1405	0.6	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	3-Aug-99	1003	1.6	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	3-Aug-99	940	0.4	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Oct-99	1145	0.7	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-Oct-99	1350	0.6	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Oct-99	907	0.7	ENCOC	15	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	1-Apr-02	1240	0.2	ENCOC	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	2-Mar-04	1045	1.2	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	2-Mar-04	1100	0.45	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Jun-04	1010	0.45	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Jun-04	1025	0.65	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Jun-04	1045	0.7	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Jun-04	1105	0.9	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Jun-04	1130	0.45	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Jun-04	1150	1.1	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Jun-04	1430	0.75	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Jun-04	1445	0.5	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Oct-04	1110	0.7	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	7-Dec-04	1030	0.5	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	7-Dec-04	1040	0.85	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	7-Dec-04	1055	0.75	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	7-Dec-04	1115	0.85	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	7-Dec-04	1130	1.1	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	7-Dec-04	1145	0.5	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	7-Dec-04	1200	0.35	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Feb-05	1025	0.7	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Feb-05	1040	0.9	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Feb-05	1105	1.25	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Feb-05	1115	1.5	ENCOC	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	4-Apr-06	1035	0.9	ENCOC	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	4-Apr-06	1050	0.35	ENCOC	5	K	KB		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL06	4-Apr-06	1115	0.3	ENCOC	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Apr-06	1135	0.3	ENCOC	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Apr-06	1150	0.35	ENCOC	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-Apr-06	1230	2.1	ENCOC	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	3-Feb-09	1030	0.4	ENCOC	5	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	3-Feb-09	1110	0.6	ENCOC	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	3-Feb-09	1130	0.7	ENCOC	1	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	3-Feb-09	1150	0.5	ENCOC	8	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	3-Feb-09	1205	0.5	ENCOC	3	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	3-Feb-09	1220	0.5	ENCOC	11	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	3-Feb-09	1235	0.4	ENCOC	13	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	5-May-09	1030	0.5	ENCOC	1	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-May-09	1115	0.5	ENCOC	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-May-09	1135	0.5	ENCOC	8	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-May-09	1155	0.5	ENCOC	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-May-09	1215	0.5	ENCOC	3	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-May-09	1245	0.5	ENCOC	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	5-May-09	1305	0.5	ENCOC	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jun-95	1145		FCOLI	17	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Aug-95	1045		FCOLI	20	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Oct-95	1115		FCOLI	80	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	26-Feb-96	1130		FCOLI	20	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	24-Apr-96	1230		FCOLI	340	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Jun-96	1330		FCOLI	20	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-96	1130		FCOLI	230	Q				IWR58
2363B	Halifax River - 3M	21FLA 27010402	9-Sep-96	1039	2.3	FCOLI	2	Q				IWR58
2363B	Halifax River - 3M	21FLA 27010404	9-Sep-96	1100	4.76	FCOLI	4	Q				IWR58
2363B	Halifax River - 3M	21FLA 27010468	9-Sep-96	1009	5.08	FCOLI	2	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Oct-96	1200		FCOLI	40	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-96	1330		FCOLI	500	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-97	850		FCOLI	20	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-97	1130		FCOLI	20	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Jun-97	1130		FCOLI	300	Q				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	13-Aug-97	1015		FCOLI	160	Q				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	3-Mar-99	925	0.35	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	3-Mar-99	1055	0.85	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	5-Apr-99	935	0.5	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Apr-99	1100	0.9	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Apr-99	1105	0.8	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Apr-99	1115	0.7	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Apr-99	1125	0.65	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-Apr-99	1215	1	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-Apr-99	1250	1.6	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-Apr-99	1240	1.2	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-Apr-99	1255	0.7	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Apr-99	851	0.8	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Jun-99	1040	0.5	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Jun-99	1130	0.9	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Jun-99	1310	0.8	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Jun-99	1435	0.8	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Jul-99	1157	0.8	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Jul-99	1216	0.6	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Jul-99	1322	0.8	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Jul-99	1356	0.45	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Jul-99	955	0.35	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	3-Aug-99	1000	0.65	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	3-Aug-99	1105	0.83	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	3-Aug-99	1300	0.95	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	3-Aug-99	1325	1.15	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Sep-99	950	0.7	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Sep-99	1110	1	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Oct-99	1145	0.7	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	1-Apr-02	1439	0.2	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	1-Apr-02	1240	0.2	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	15-Jul-02	1016	0.2	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	21-Oct-02	959	0.2	FCOLI	5	K	K			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL04	22-Oct-02	1105	0.2	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	22-Oct-02	1200	0.2	FCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	2-Mar-04	1005	0.7	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	2-Mar-04	1045	1.2	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Jun-04	1010	0.45	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Jun-04	1025	0.65	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Jun-04	1045	0.7	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Jun-04	1115	1.05	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Jun-04	1150	1.1	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Jun-04	1430	0.75	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	12-Oct-04	1050	1.1	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Oct-04	1100	1.35	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	7-Dec-04	1055	0.75	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	7-Dec-04	1115	0.85	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Feb-05	1025	0.7	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Feb-05	1040	0.9	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Feb-05	1105	1.25	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Feb-05	1145	1.15	FCOLI	5	K	K		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	4-Apr-06	1035	0.9	FCOLI	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Apr-06	1135	0.3	FCOLI	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Apr-06	1150	0.35	FCOLI	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Apr-06	1205	0.35	FCOLI	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-Apr-06	1230	2.1	FCOLI	5	K	KB		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	3-Feb-09	1030	0.4	FCOLI	5	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	3-Feb-09	1110	0.6	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	3-Feb-09	1130	0.7	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	3-Feb-09	1150	0.5	FCOLI	4	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	3-Feb-09	1205	0.5	FCOLI	3	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	3-Feb-09	1220	0.5	FCOLI	4	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	3-Feb-09	1235	0.4	FCOLI	6	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	5-May-09	1030	0.5	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-May-09	1115	0.5	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-May-09	1135	0.5	FCOLI	0.5	U	UJ		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL07	5-May-09	1155	0.5	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-May-09	1215	0.5	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-May-09	1245	0.5	FCOLI	1	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	5-May-09	1305	0.5	FCOLI	10	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	5-Jun-12	1100	0.3	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Jun-12	1127	0.3	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Jun-12	1148	0.3	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-Jun-12	1212	0.3	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-Jun-12	1228	0.3	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-Jun-12	1246	0.3	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	5-Jun-12	1307	0.3	FCOLI	0.5	U	UJ		1	IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Nov-73	1330	9	FE	500	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	2-Oct-74	2040	7	FE	100	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	FE	389800000					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-Oct-11	1300	0.5	FE	624.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-Oct-11	1320	0.5	FE	773.4	J	J			IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			FE	939.396399			Q	5	SJRWMD
2363B	Halifax River - 3M	21FLSJWMHR40OB	14-Mar-91	1330		HARD	4463.76	$				IWR58
2363B	Halifax River - 3M	21FLSJWMHR92DB	14-Mar-91	1240		HARD	4834.51	$				IWR58
2363B	Halifax River - 3M	21FLSJWMHR29	16-Jun-93	1130		HARD	4708.77	$				IWR58
2363B	Halifax River - 3M	21FLSJWMHR29	16-Jun-93	1131		HARD	4677.45	$				IWR58
2363B	Halifax River - 3M	21FLSJWMHR92B	16-Jun-93	1100		HARD	4851.41	$				IWR58
2363B	Halifax River - 3M	21FLSJWMHR29	31-Aug-93	1120		HARD	4647.32	$				IWR58
2363B	Halifax River - 3M	21FLSJWMHR92B	31-Aug-93	1050		HARD	2664.03	$				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jun-95	1145		HARD	5597.2	$				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Aug-95	1045		HARD	4274.42	$				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	26-Feb-96	1130		HARD	3760.63	$				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Jun-96	1330		HARD	22397.2	$				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-96	1130		HARD	3280.19	$				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-96	1330		HARD	3795.72	$				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-97	850		HARD	4570					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-97	1130		HARD	4740					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Jun-97	1130		HARD	3310					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	13-Aug-97	1015		HARD	2250					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Sep-97	1315		HARD	2830					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Oct-97	1030		HARD	3680					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Dec-97	1230		HARD	2860					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	20-Apr-98	1115		HARD	2900					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Jun-98	1030		HARD	6480					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Oct-98	1200		HARD	2530					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Oct-98	1200	0.5	HARD	2530				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-98	1100		HARD	4070					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-98	1100	0.5	HARD	4070				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-99	1215	0.5	HARD	4190				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-Apr-99	1100	0.5	HARD	5500				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Jun-99	1110	0.5	HARD	5750				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Aug-99	930	0.5	HARD	5100				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Oct-99	1200	0.5	HARD	2760				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Dec-99	1200	0.5	HARD	4050				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	3-Feb-00	1130	0.5	HARD	4790				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	20-Apr-00	1200	0.5	HARD	5010				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	31-May-00	1115	0.5	HARD	5460				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	28-Aug-00	1300	0.5	HARD	6610				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Oct-00	1200	0.5	HARD	3570				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Dec-00	1230	0.5	HARD	4890				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Feb-01	1010	0.5	HARD	5360				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Apr-01	1200	0.5	HARD	3960				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Jun-01	1225	0.5	HARD	5000				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-01	1300	0.5	HARD	2310				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-01	1301		HARD	2330				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	18-Feb-02	1315	0.5	HARD	4580				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Apr-02	1155	0.5	HARD	4670				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Jun-02	1215		HARD	5470				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Aug-02	1200	0.5	HARD	2110				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Oct-02	1230	0.5	HARD	3430				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	30-Dec-02	1115	0.5	HARD	2100				3	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-03	1220	0.5	HARD	3960				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-03	1230	0.49	HARD	3750				3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	27-Oct-03	1200	0.5	HARD	3256.83209				12.8	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	3-Dec-03	1115	0.5	HARD	3622.6689				23.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Feb-04	1145	0.5	HARD	4292.15474				23.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-04	1100	0.7	HARD	3979.00431				12.8	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Jun-04	1100	0.45	HARD	5058.57769				45.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-04	1050	0.7	HARD	2212.84446				45.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Dec-04	1045	0.55	HARD	4267.2486				45.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-05	1020	0.5	HARD	5639.65455				45.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Apr-05	1050	0.65	HARD	2447.8902				4.56	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Jun-05	1010	0.6	HARD	4351.2374				45.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Aug-05	1005	0.5	HARD	2349.208				45.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Oct-05	1010	0.5	HARD	2149.6225				45.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Dec-05	1115	0.5	HARD	2469.0713				4.56	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Feb-06	1045	0.65	HARD	3476.7059				45.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Apr-06	1045	0.6	HARD	4921.0074				45.6	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Aug-06	1045	0.55	HARD	5463.3996				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Oct-06	1015	0.5	HARD	5112.6164				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Dec-06	945	0.5	HARD	5862.2972				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Feb-07	1200	0.5	HARD	4925.4234				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Apr-07	1000	0.7	HARD	4887.2054				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Jun-07	1030	0.5	HARD	6388.2919				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Aug-07	1045	0.5	HARD	4486.2898				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Oct-07	1025	0.5	HARD	3164.27				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	HARD	4095.02				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-08	945	0.5	HARD	4779.17981				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	3-Apr-08	1020	0.65	HARD	4176.53609				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Jun-08	1010	0.65	HARD	6274.27054				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Aug-08	1115	0.5	HARD	5035.58777				32.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-08	1015	0.7	HARD	5081.68156				33.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Feb-09	1005	0.65	HARD	4994.07681				21.8	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Apr-09	1050	0.5	HARD	5702.84107	+				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	20-Oct-10	900	0.5	HARD	5447.48187				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Dec-10	920	0.5	HARD	5769.6577				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Feb-11	935	0.7	HARD	5007.49887				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Apr-11	1020	0.5	HARD	4560.95894				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-Jun-11	920	0.5	HARD	4938.55824				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Aug-11	935	0.5	HARD	5315.8906				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Nov-11	1400	0.5	HARD	5892.57419				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Jan-12	1030	2.4	HARD	5181.8177				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Mar-12	1130	2.5	HARD	5182.0262				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-May-12	1000	0.5	HARD	6214.22384				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Jul-12	1010	0.5	HARD	4615.7004				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Sep-12	1130	0.5	HARD	3324.7148				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM44602	12-Sep-12	1130	0.5	HARD	3324.7148				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Nov-12	1035	0.5	HARD	4588.35379				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Jan-13	1035	0.5	HARD	5006.33576				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM44602	10-Jan-13	1035	0.5	HARD	5006.33576				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Mar-13	1100	0.5	HARD	6023.14033				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-13	1120	0.5	HARD	4479.05574				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-Jul-13	1015	0.5	HARD	3621.15874				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Sep-13	1000	0.5	HARD	2912.2864				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Nov-13	955	0.5	HARD	4106.32163				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	29-Jan-14	950	0.5	HARD	4997.79649				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	27-Mar-14	1005	0.5	HARD	4333.1503				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-May-14	1040	0.5	HARD	4543.51825				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jul-14	1010	0.5	HARD	4372.64534				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Sep-14	1005	0.5	HARD	3754.05964				21.8385	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			HARD	3971.04387				21.8385	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			HARD	3243.69168				21.8385	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			HARD	3495.80985				21.8385	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-15			HARD	3495.11337				29.088	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	18-Mar-15			HARD	4706.68833				66.15	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Apr-15			HARD	4448.39524				29.088	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	28-May-15			HARD	4846.54007				66.15	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			HARD	4632.08929			Q	66.15	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jul-15			HARD	5322.96613				66.15	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	27-Aug-15			HARD	4039.14252				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			HARD	4185.70305				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	19-Oct-15			HARD	4819.30494				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	23-Nov-15			HARD	4620.46563				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			HARD	5271.25908				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	20-Jan-16			HARD	5503.29845				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			HARD	3433.92952				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	14-Apr-16			HARD	5175.0028				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	12-May-16			HARD	6110.05132				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	7-Feb-17	937	0.5	HARD	4912.34115				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM464514	7-Feb-17	937	0.5	HARD	4912.34115				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-17			HARD	4912.34115				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	8-Mar-17	1041	0.4	HARD	5606.42757				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM464514	8-Mar-17	1041	0.4	HARD	5606.42757				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Mar-17			HARD	5606.42757				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	10-Apr-17	1025	0.5	HARD	5986.5214				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037NW	10-Apr-17	1026	0.5	HARD	5981.56903				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM464514	10-Apr-17	1025	0.5	HARD	5986.5214				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Apr-17			HARD	5986.5214				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	9-May-17	958	0.4	HARD	6603.85987				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM464514	9-May-17	958	0.4	HARD	6603.85987				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-17			HARD	6603.85987				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	6-Jun-17	1044	0.5	HARD	6358.47875				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM464514	6-Jun-17	1044	0.5	HARD	6358.47875				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Jun-17			HARD	6358.47875				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM464514	5-Jul-17	1038	0.3	HARD	4928.47573				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			HARD	4928.47573				13.23	SJRWMD
2363B	Halifax River - 3M	21FLSJWM464514	8-Aug-17	956	0.5	HARD	3830.39274				13.23	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Aug-17			HARD	3830.39275				13.23	SJRWMD
2363B	Halifax River - 3M	21FLA 27010037	4-Jun-79	1030	6	HG	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	7-Apr-80	1650	7	HG	0.2	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010037	4-Jan-82	1151	6	HG	0.2	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	8-Jan-91	1300	4.92	HG	0.2	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	K	4237					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			K	304.308808			Q	10	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	4-Jun-96	1330		MG	5300					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			MG	941.333729			Q	10	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			MN	26.254661			Q	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			MO	9.593036			IQ	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			MO	-0.1889585			T	2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			NA	7710.44604			Q	10	SJRWMD
2363B	Halifax River - 3M	21FLA 27010403	10-Apr-84	1217	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	10-Apr-84	1257	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	10-Apr-84	1651	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-84	602	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-84	905	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-84	1200	0	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-84	1518	0	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-84	1805	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	10-Apr-84	1209	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	10-Apr-84	1536	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	10-Apr-84	1229	0	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	10-Apr-84	1602	4	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	10-Apr-84	1828	5	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-84	1000	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-84	1239	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-84	1615	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-84	1837	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	10-Apr-84	1248	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	10-Apr-84	1637	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	10-Apr-84	1847	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	10-Apr-84	1510	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	11-Apr-84	630	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	11-Apr-84	605	2	NH4	0.05	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010941	11-Apr-84	620	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	11-Apr-84	400	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	21-May-84	2215	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	21-May-84	2100	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	21-May-84	2200	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	21-May-84	2240	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	21-May-84	2255	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	21-May-84	2310	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	21-May-84	2133	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	22-May-84	114	4	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	22-May-84	448	8	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	22-May-84	745	7	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	22-May-84	1240	7	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	22-May-84	1600	4	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	22-May-84	1845	4	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	22-May-84	50	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	22-May-84	705	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	22-May-84	915	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	22-May-84	1210	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	22-May-84	1920	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	22-May-84	2210	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	30	4	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	340	5	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	945	8	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	1200	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	1520	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	1810	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	2120	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	20	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	320	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	640	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	900	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	1150	1	NH4	0.05	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	1530	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	1850	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	2130	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	22-May-84	35	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	22-May-84	655	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	22-May-84	910	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	22-May-84	1200	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	22-May-84	2150	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	22-May-84	100	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	22-May-84	720	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	22-May-84	930	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	22-May-84	1220	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	22-May-84	1620	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	22-May-84	1930	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	22-May-84	2220	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	110	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	730	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	940	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	1230	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	1945	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	2240	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	22-May-84	120	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	22-May-84	440	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	22-May-84	740	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	22-May-84	1000	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	22-May-84	1240	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	22-May-84	1955	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	22-May-84	40	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	22-May-84	350	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	22-May-84	952	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	22-May-84	1215	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	22-May-84	1531	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	22-May-84	1816	2	NH4	0.05	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010945	22-May-84	2140	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010946	22-May-84	100	8	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010946	22-May-84	719	8	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010946	22-May-84	1230	8	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010946	22-May-84	1544	8	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	23-May-84	542	7	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	23-May-84	435	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	23-May-84	520	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	23-May-84	1040	1	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	23-May-84	416	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	23-May-84	451	2	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	23-May-84	1015	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	23-May-84	500	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	23-May-84	1000	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	23-May-84	512	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	23-May-84	950	3	NH4	0.05	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-98	1100	0.5	NH4	-0.002	T	T		0.005	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	20-Apr-00	1200	0.5	NH4	-0.0015	T	T		0.005	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-03	1230	0.49	NH4	-0.005	T	T		0.01	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Aug-08	1115	0.5	NH4	-0.00235	T	T		0.05	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-08	1015	0.7	NH4	-0.0188	T	T		0.05	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Feb-09	1005	0.65	NH4	-0.0111	T	T		0.05	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Dec-10	920	0.5	NH4	0.0731	I	IQ		0.05	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-Jun-11	920	0.5	NH4	-0.01905	T	T		0.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Aug-11	935	0.5	NH4	-0.0281	T	T		0.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Nov-11	1400	0.5	NH4	0.0286	T	TQ		0.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Jan-12	1030	2.4	NH4	0.02445	T	TQ		0.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Mar-13	1100	0.5	NH4	-0.0083	T	T		0.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	15-Jul-13	1015	0.5	NH4	0.1549	I	IQ		0.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	29-Jan-14	950	0.5	NH4	-0.01175	T	T		0.015	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			NH4	0.096053				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			NH4	0.132279				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			NH4	0.033129				0.005	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-15			NH4	0.000361			T	0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	18-Mar-15			NH4	0.019787			I	0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Apr-15			NH4	0.115249				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	28-May-15			NH4	0.05728				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			NH4	0.005113			I	0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jul-15			NH4	0.012041			I	0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	27-Aug-15			NH4	0.249387				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			NH4	0.339564				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	19-Oct-15			NH4	0.145686				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	23-Nov-15			NH4	0.106211				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			NH4	0.043078				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	20-Jan-16			NH4	0.008001			I	0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			NH4	0.0018295			T	0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	14-Apr-16			NH4	0.022324				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	12-May-16			NH4	0.030345				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			NH4	0.04887				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-17			NH4	0.020023				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Mar-17			NH4	0.028642				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	10-Apr-17			NH4	0.071261				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-17			NH4	0.084739				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	6-Jun-17			NH4	0.309945				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			NH4	0.289988				0.005	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Aug-17			NH4	0.322276				0.005	SJRWMD
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	NI	14800000					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-99	1215	0.5	NI	-1.05	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Jun-99	1110	0.5	NI	-6.65	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-04	1050	0.7	NI	-1.14315	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Oct-04	1030	0.5	NI	-1.19625	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Dec-04	1045	0.55	NI	-2.9319	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-05	1020	0.5	NI	-3.64195	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Apr-05	1050	0.65	NI	-0.2972	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Jun-05	1010	0.6	NI	-0.07295	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Aug-05	1005	0.5	NI	-1.8765	T	T		30	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	10-Oct-05	1010	0.5	NI	-6.415	T	T		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Feb-07	1200	0.5	NI	-8.34	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Apr-07	1000	0.7	NI	-6.21	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Jun-07	1030	0.5	NI	-8.945	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Aug-07	1045	0.5	NI	-9.11	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Oct-07	1025	0.5	NI	-9.8	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	NI	-9.95	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-08	945	0.5	NI	-9.06323	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	3-Apr-08	1020	0.65	NI	-5.347605	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Jun-08	1010	0.65	NI	-6.909025	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Aug-08	1115	0.5	NI	-0.31599	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Oct-08	1050	0.5	NI	-0.642175	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-08	1015	0.7	NI	-7.91128	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Jun-09	1015	0.65	NI	-0.081025	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Aug-09	1015	0.7	NI	-0.281425	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Apr-11	1020	0.5	NI	-0.02698	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			NI	0.3570025			TQ	1	SJRWMD
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	NO2	0.236	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	10-Apr-84	1217	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	10-Apr-84	1547	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	10-Apr-84	2200	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-84	1200	0	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-84	1518	0	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-84	1805	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-84	2110	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	10-Apr-84	1209	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	10-Apr-84	1536	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	10-Apr-84	1813	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	10-Apr-84	2145	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	10-Apr-84	410	7	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	10-Apr-84	1229	0	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	10-Apr-84	1602	4	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	10-Apr-84	1828	5	NO3O2	0.02	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010942	10-Apr-84	2220	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-84	112	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-84	1239	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-84	1615	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-84	1837	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-84	2240	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	10-Apr-84	123	4	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	10-Apr-84	1637	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	10-Apr-84	1847	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	11-Apr-84	55	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	11-Apr-84	340	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	11-Apr-84	630	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	11-Apr-84	1220	4	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	11-Apr-84	150	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	11-Apr-84	30	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	11-Apr-84	605	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	11-Apr-84	920	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	11-Apr-84	1200	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	11-Apr-84	45	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	11-Apr-84	325	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	11-Apr-84	620	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	11-Apr-84	1210	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	11-Apr-84	110	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	11-Apr-84	400	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	11-Apr-84	650	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	11-Apr-84	955	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	11-Apr-84	125	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	11-Apr-84	410	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	11-Apr-84	1240	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	11-Apr-84	135	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	11-Apr-84	420	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	11-Apr-84	100	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	11-Apr-84	330	3	NO3O2	0.02	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010940	21-May-84	2125	1	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	21-May-84	2133	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	22-May-84	1610	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	22-May-84	1920	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	22-May-84	2210	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	30	4	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	1810	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	22-May-84	2120	1	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	640	1	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	22-May-84	2130	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	22-May-84	655	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	22-May-84	1550	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	22-May-84	1910	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	110	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	730	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	22-May-84	1945	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	22-May-84	120	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	22-May-84	740	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	22-May-84	1645	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	22-May-84	40	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010945	22-May-84	350	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010946	22-May-84	100	8	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	23-May-84	55	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010403	23-May-84	435	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	23-May-84	130	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010406	23-May-84	520	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	23-May-84	20	1	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	23-May-84	400	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	23-May-84	1040	1	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	23-May-84	45	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	23-May-84	416	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010941	23-May-84	1030	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010942	23-May-84	105	2	NO3O2	0.02	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010942	23-May-84	451	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	23-May-84	110	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	23-May-84	120	2	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010944	23-May-84	512	3	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010567	11-Feb-86	1314	3	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010567	12-Feb-86	915	2	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010567	28-Apr-86	1312	3	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010567	23-Jun-86	1100	3	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010567	28-Jul-86	1230	2	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010567	29-Jul-86	850	3	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010567	25-Aug-86	1230	2	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010567	26-Aug-86	805	3	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	7-Oct-86	1045	2	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	7-Oct-86	1025	3	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	6-Jan-87	1015	5	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	6-Jan-87	1030	3.5	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	6-Jan-87	1030	4	NO3O2	0.04	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	21-Jul-87	1005	4	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	10-Apr-89	950	0	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	10-Apr-89	1005	1	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	11-Jul-89	940	1	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	17-Apr-90	1110	3.28	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010940	17-Apr-90	1025	3.28	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010943	17-Apr-90	1040	3.28	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLA 27010950	17-Apr-90	1055	3.28	NO3O2	0.02	K				IWR58
2363B	Halifax River - 3M	21FLSJWMHR40OB	14-Mar-91	1330		NO3O2	0.007	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	20-Jul-92	1255	3.28	NO3O2	0.05	K				IWR58
2363B	Halifax River - 3M	21FLSJWMHR29	31-Aug-93	1120		NO3O2	0.098	Q				IWR58
2363B	Halifax River - 3M	21FLSJWMHR92B	31-Aug-93	1050		NO3O2	0.202	Q				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Oct-96	845	3.61	NO3O2	0.099	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Oct-96	815	2.62	NO3O2	0.143	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Feb-05	1005	1.15	NO3O2	0.001	T	TQ		0.004	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Feb-05	1025	0.7	NO3O2	0.0005	T	TQ		0.004	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL06	8-Feb-05	1040	0.9	NO3O2	0.001	T	TQ		0.004	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Feb-05	1105	1.25	NO3O2	0.002	U	UQ		0.004	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Feb-05	1115	1.5	NO3O2	0.002	U	UQ		0.004	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Feb-05	1130	0.75	NO3O2	0.002	U	UQ		0.004	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Feb-05	1145	1.15	NO3O2	0.002	U	UQ		0.004	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Feb-05	1045	0.8	NO3O2	0.002	U	UQ		0.004	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Feb-05	1025	0.9	NO3O2	0.0005	T	TQ		0.004	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Jun-09	1015	0.65	NO3O2	0.1916	Q	Q		0.01	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Apr-11	1020	0.5	NO3O2	0.0309	I	IQ		0.01	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Mar-12	1130	2.5	NO3O2	0.017	I	IQ		0.01	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			NO3O2	0.0492				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			NO3O2	0.098				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			NO3O2	0.0603				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-15			NO3O2	0.00135			T	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	18-Mar-15			NO3O2	0.0155			I	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Apr-15			NO3O2	0.0467				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	28-May-15			NO3O2	0.0149			I	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			NO3O2	0.0195			I	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jul-15			NO3O2	0.00315			T	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	27-Aug-15			NO3O2	0.0299			IQ	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			NO3O2	0.1382				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	19-Oct-15			NO3O2	0.1645				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	23-Nov-15			NO3O2	0.203				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			NO3O2	0.0442				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	20-Jan-16			NO3O2	0.0143			I	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			NO3O2	0.00145			T	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	14-Apr-16			NO3O2	0.0042			T	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	12-May-16			NO3O2	0.0009			T	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			NO3O2	0.1892				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-17			NO3O2	0.00395			T	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Mar-17			NO3O2	0.0116			I	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	10-Apr-17	1025	0.5	NO3O2	0.0346	I	IQ		0.01	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037NW	10-Apr-17	1026	0.5	NO3O2	0.0418	Q	Q		0.01	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM464514	10-Apr-17	1025	0.5	NO3O2	0.0346	I	IQ		0.01	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Apr-17			NO3O2	0.0346			IQ	0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-17			NO3O2	0.0442				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	6-Jun-17			NO3O2	0.0648				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			NO3O2	0.089				0.01	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Aug-17			NO3O2	0.1271				0.01	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL07	12-Mar-19	1107	0.5	NO3O2	0.0204	I	IQ		0.01	IWR58
2363B	Halifax River - 3M	21FLA 27010037	12-Dec-73	1315	9	PB	20	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	16-Jan-74	1400	8	PB	20	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Mar-74	1320	8	PB	20	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	10-Jul-74	850	8	PB	10	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	2-Oct-74	2040	7	PB	50	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Nov-74	1535	7	PB	10	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	9-Dec-74	1030	7	PB	20	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	14-Jan-75	1030	6	PB	20	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	5-Feb-75	1035	7	PB	20	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	5-Mar-75	1155	7	PB	0	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	2-Apr-75	1030	4	PB	10	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	PB	81400000					IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	3	PB	10	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Jun-75	1130	3	PB	10	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	7-Jul-75	1230	4	PB	10	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	7-Apr-80	1650	7	PB	50	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Jan-82	1151	6	PB	20	K				IWR58
2363B	Halifax River - 3M	21FLSJWMHR40OB	14-Mar-91	1330		PB	2	K				IWR58
2363B	Halifax River - 3M	21FLSJWMHR92DB	14-Mar-91	1240		PB	2	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Aug-99	930	0.5	PB	-0.7	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Dec-00	1230	0.5	PB	-0.027	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Oct-01	1530	0.5	PB	-0.286	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	18-Feb-02	1315	0.5	PB	-0.4255	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Aug-02	1200	0.5	PB	-0.026	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Oct-02	1230	0.5	PB	-0.1165	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	27-Oct-03	1200	0.5	PB	-0.1855	T	T		3	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	3-Dec-03	1115	0.5	PB	-0.6181	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	PB	-3.5	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-08	945	0.5	PB	-0.990545	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Oct-08	1050	0.5	PB	-0.271725	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-08	1015	0.7	PB	-4.741855	T	T		20	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Feb-09	1005	0.65	PB	-0.70733	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			PB	1.242487			IQ	0.5	SJRWMD
2363B	Halifax River - 3M	21FLA 27010039	17-Sep-68	1200	0	PH	82					IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Mar-02	1038	1.2	PH	684					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			PH	7.87			J		SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			PH	7.87			J		SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL08	11-Jul-16	953	1.2	PH	7.89	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	11-Jul-16	1007	0.45	PH	7.77	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	11-Jul-16	1025	0.7	PH	7.67	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jul-16	1039	0.45	PH	7.65	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	11-Jul-16	1053	0.15	PH	7.75	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jul-16	1106	0.8	PH	7.74	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	9-Aug-16	1043	0.65	PH	7.94	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	9-Aug-16	1137	0.6	PH	7.99	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	9-Aug-16	1156	0.6	PH	7.88	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	9-Aug-16	1225	0.65	PH	7.82	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Aug-16	1253	1.15	PH	7.96	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Aug-16	1308	0.4	PH	7.95	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-Aug-16	1330	0.6	PH	7.81	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Sep-16	1020	1.3	PH	7.96	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Sep-16	1041	0.55	PH	7.87	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Sep-16	1059	0.9	PH	7.81	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Sep-16	1108	0.5	PH	7.84	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Sep-16	1120	0.25	PH	7.91	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Sep-16	1133	0.7	PH	7.99	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Nov-16	1044	0.5	PH	7.73	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Nov-16	1103	0.5	PH	7.84	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Nov-16	1120	0.5	PH	7.79	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL07	8-Nov-16	1143	0.5	PH	7.75	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Nov-16	1157	0.5	PH	7.77	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Nov-16	1212	0.5	PH	7.85	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Nov-16	1233	0.5	PH	7.81	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Dec-16	1000	1.45	PH	7.88	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Dec-16	1017	1	PH	7.84	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Dec-16	1037	0.75	PH	7.83	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Dec-16	1051	0.9	PH	7.84	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Dec-16	1105	0.45	PH	7.88	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Dec-16	1120	1.2	PH	7.84	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	20-Mar-17	1030	0.4	PH	7.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	20-Mar-17	1127	0.6	PH	7.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	20-Mar-17	1200	1.1	PH	7.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	20-Mar-17	1240	0.75	PH	7.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	20-Mar-17	1257	1.2	PH	7.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	20-Mar-17	1315	0.6	PH	7.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	20-Mar-17	1340	0.9	PH	7.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	17-Apr-17	1037	0.95	PH	7.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	17-Apr-17	1104	0.5	PH	7.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	17-Apr-17	1135	0.5	PH	7.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	17-Apr-17	1149	0.45	PH	7.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	17-Apr-17	1206	0.3	PH	7.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	17-Apr-17	1217	0.65	PH	7.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Jun-17	1045	1.4	PH	7.7	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Jun-17	1104	0.6	PH	7.7	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Jun-17	1120	1	PH	7.7	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Jun-17	1245	0.9	PH	7.7	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Jun-17	1140	0.6	PH	7.7	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Jun-17	1157	1.2	PH	7.6	J	J			IWR58
2363B	Halifax River - 3M	21FLA 27010037	19-Nov-91	1245	1.48	PHEOA	0.5	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Oct-96	1200		PHEOA	1.6	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-97	850		PHEOA	5.9	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Jun-97	1130		PHEOA	0.7	Q				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	1-Dec-99	1200	0.5	PHEOA	-0.07705	T	T		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Feb-01	1240	1.5	PHEOA	-0.07					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-04	1050	0.7	PHEOA	-1.388095	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	PHEOA	-0.0979	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	10-Jun-08	955	0.35	PHEOA	-0.84				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	10-Jun-08	1007	0.35	PHEOA	-0.27				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	10-Jun-08	1027	0.4	PHEOA	-0.78				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	10-Jun-08	1035	0.35	PHEOA	-0.27				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-Aug-08	1210	1.1	PHEOA	-0.35				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	3-Nov-08	1149	2.7	PHEOA	-2.06				1	IWR58
2363B	Halifax River - 3M	21FLA 27010567	6-Jan-09	1323	0.6	PHEOA	1.1	Q	Q		0.24	IWR58
2363B	Halifax River - 3M	21FLA 27010942	6-Jan-09	1240	0.5	PHEOA	0.62	I	IQ		0.24	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-May-10	1005	0.3	PHEOA	2.02	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-May-10	1025	0.3	PHEOA	1.69	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-May-10	1045	0.2	PHEOA	2.44	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-May-10	1055	0.2	PHEOA	2.55	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	4-May-10	1110	0.3	PHEOA	2.35	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-May-10	1125	0.3	PHEOA	2.04	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	2-Aug-10	945	0.3	PHEOA	4.63	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	2-Aug-10	955	0.3	PHEOA	2.92	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	2-Aug-10	1015	0.35	PHEOA	3.41	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	2-Aug-10	1025	0.3	PHEOA	3.4	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	2-Aug-10	1040	0.3	PHEOA	2.58	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	2-Aug-10	1100	0.3	PHEOA	1.6	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jan-11	930	0.5	PHEOA	1.79	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jan-11	1250	0.45	PHEOA	0.89	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	7-Mar-11	1005	0.4	PHEOA	-0.16	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	7-Mar-11	1020	0.4	PHEOA	4.77	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	7-Mar-11	1050	0.3	PHEOA	3.56	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	7-Mar-11	1105	0.3	PHEOA	3.87	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	7-Mar-11	1115	0.3	PHEOA	6.35	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	7-Mar-11	1130	0.4	PHEOA	4.19	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-Nov-12	1013	0.5	PHEOA	-0.01				1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL10	5-Nov-12	1029	0.9	PHEOA	-0.02				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Nov-12	1118	1.5	PHEOA	-0.12				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Dec-12	1226	1.1	PHEOA	-0.07				1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Jan-13	1000	1.3	PHEOA	-0.6					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	9-Jan-13	1105	0.7	PHEOA	-0.11					IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Mar-13	1208	0.9	PHEOA	-0.12					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	10-Jun-13	1103	0.5	PHEOA	0.82	Q	Q			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Aug-13	1226	0.5	PHEOA	-0.15					IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	6-Aug-13	1245	0.5	PHEOA	-0.19					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			PHEOA				O	1	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL11	12-Dec-16	1051	0.8	PHEOA	-1.487185	T	T		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	23-May-18	1144	0.5	PHEOA	0.264775	T	TJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	23-May-18	1155	0.51	PHEOA	1.11695	I	IJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	15-May-19	936	0.5	PHEOA	2.40567	I	IJ		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	15-May-19	1124	0.5	PHEOA	3.28143	J	J		1	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Oct-96	845	3.61	PORD	0.081	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Oct-96	815	2.62	PORD	0.111	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Feb-05	1005	1.15	PORD	0.002	T	TQ		0.008	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Feb-05	1025	0.7	PORD	0.002	T	TQ		0.008	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Feb-05	1040	0.9	PORD	0.002	T	TQ		0.008	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Feb-05	1105	1.25	PORD	0.002	T	TQ		0.008	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Feb-05	1115	1.5	PORD	0.009	I	IQ		0.008	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Feb-05	1130	0.75	PORD	0.009	I	IQ		0.008	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Feb-05	1145	1.15	PORD	0.0025	T	TQ		0.008	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	8-Feb-05	1045	0.8	PORD	0.002	T	TQ		0.008	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	8-Feb-05	1025	0.9	PORD	0.018	I	IQ		0.008	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Dec-05	1115	0.5	PORD	0.046	Q	Q		0.012	IWR58
2363B	Halifax River - 3M	21FLA 27010567	6-Jan-09	1323	0.6	PORD	0.032	Q	Q		0.008	IWR58
2363B	Halifax River - 3M	21FLA 27010942	6-Jan-09	1240	0.5	PORD	0.039	Q	Q		0.008	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Apr-11	1020	0.5	PORD	0.0521	Q	Q		0.012	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Mar-12	1130	2.5	PORD	0.0422	Q	Q		0.012	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Nov-12	1035	0.5	PORD	0.0827	Q	Q		0.012	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			PORD	0.0727				0.012	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			PORD	0.0581				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			PORD	0.0418				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-15			PORD	0.0197			I	0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	18-Mar-15			PORD	0.0459				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Apr-15			PORD	0.0521				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	28-May-15			PORD	0.0721				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			PORD	0.0053			T	0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jul-15			PORD	0.0339			I	0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	27-Aug-15			PORD	0.0963				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			PORD	0.1152				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	19-Oct-15			PORD	0.0927				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	23-Nov-15			PORD	0.092				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			PORD	0.0552				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	20-Jan-16			PORD	0.0423				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			PORD	0.0268			I	0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	14-Apr-16			PORD	0.0473				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	12-May-16			PORD	0.0615				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			PORD	0.036			I	0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-17			PORD	0.0502				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Mar-17			PORD	0.0523				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	10-Apr-17			PORD	0.0508				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-17			PORD	0.0509				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	6-Jun-17			PORD	0.1025				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			PORD	0.1211				0.012	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Aug-17			PORD	0.1513				0.012	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL11	10-Jan-18	916	0.5	PORD	0.0259	I	IQ		0.012	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	10-Jan-18	1016	0.5	PORD	0.0144	I	IQ		0.012	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	29-Jan-19	937	0.5	PORD	0.04	Q	Q		0.012	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	29-Jan-19	1124	0.5	PORD	0.0375	I	IQ		0.012	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-May-01	1105	1.8	SALIN	260					IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-Nov-03	1020	0.9	SALIN	2289					IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	11-Jul-16	1007	0.45	SALIN	23.92	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	11-Jul-16	1025	0.7	SALIN	24.3	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jul-16	1039	0.45	SALIN	24.62	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	11-Jul-16	1053	0.15	SALIN	24.81	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jul-16	1106	0.8	SALIN	25.05	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	9-Aug-16	1043	0.65	SALIN	27.05	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	9-Aug-16	1137	0.6	SALIN	27.28	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	9-Aug-16	1156	0.6	SALIN	27.13	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	9-Aug-16	1225	0.65	SALIN	26.89	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Aug-16	1253	1.15	SALIN	26.71	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Aug-16	1308	0.4	SALIN	26.77	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-Aug-16	1330	0.6	SALIN	27.84	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Nov-16	1044	0.5	SALIN	29.32	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Nov-16	1103	0.5	SALIN	26.39	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Nov-16	1120	0.5	SALIN	25.37	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Nov-16	1143	0.5	SALIN	24.5	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Nov-16	1157	0.5	SALIN	23.87	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Nov-16	1212	0.5	SALIN	23.37	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Nov-16	1233	0.5	SALIN	23.16	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Dec-16	1000	1.45	SALIN	28.45	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Dec-16	1017	1	SALIN	28.29	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Dec-16	1037	0.75	SALIN	28.43	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Dec-16	1051	0.9	SALIN	28.67	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Dec-16	1105	0.45	SALIN	28.58	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Dec-16	1120	1.2	SALIN	28.44	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	20-Mar-17	1030	0.4	SALIN	31.42	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	20-Mar-17	1127	0.6	SALIN	31.23	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	20-Mar-17	1200	1.1	SALIN	31.51	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	20-Mar-17	1240	0.75	SALIN	31.63	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	20-Mar-17	1257	1.2	SALIN	31.1	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	20-Mar-17	1315	0.6	SALIN	30.67	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	20-Mar-17	1340	0.9	SALIN	30.21	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	17-Apr-17	1037	0.95	SALIN	30.55	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	17-Apr-17	1104	0.5	SALIN	30.46	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	17-Apr-17	1135	0.5	SALIN	30.6	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL11	17-Apr-17	1149	0.45	SALIN	30.53	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	17-Apr-17	1206	0.3	SALIN	30.87	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	17-Apr-17	1217	0.65	SALIN	30.73	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Jun-17	1045	1.4	SALIN	31.11	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Jun-17	1104	0.6	SALIN	31.04	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Jun-17	1120	1	SALIN	30.56	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Jun-17	1245	0.9	SALIN	30.66	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Jun-17	1140	0.6	SALIN	30.69	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Jun-17	1157	1.2	SALIN	30.49	J	J			IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Nov-15			SB	-0.0198665			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			SB	-0.176292			T	1	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL05	6-Feb-01	1120	1.8	SD	18					IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Feb-01	1240	1.5	SD	15					IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Dec-00	1230	0.5	SE	-1.5	T	T		4.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Feb-01	1010	0.5	SE	-3.2	T	T		4.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Apr-01	1200	0.5	SE	-2.4	T	T		4.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	18-Feb-02	1315	0.5	SE	-0.1495	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Oct-02	1230	0.5	SE	-0.4965	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	30-Dec-02	1115	0.5	SE	-0.33	T	T		3	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-03	1220	0.5	SE	-0.7525	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Apr-03	1120	0.6	SE	-1.661	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-03	1230	0.49	SE	-1.0655	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	11-Aug-03	1350	0.5	SE	-1.3325	T	T		2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Jun-04	1100	0.45	SE	-0.95925	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-04	1050	0.7	SE	-0.3444	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Feb-05	1020	0.5	SE	-2.1947	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Apr-05	1050	0.65	SE	-4.841	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Jun-05	1010	0.6	SE	-13.87	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Aug-05	1005	0.5	SE	-17.315	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Oct-05	1010	0.5	SE	-11.67	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Feb-06	1045	0.65	SE	-3.014	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jun-06	1020	0.5	SE	-0.7345	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Dec-06	945	0.5	SE	-0.512	T	T		50	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	5-Feb-07	1200	0.5	SE	-48.68	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	5-Apr-07	1000	0.7	SE	-1.4255	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Jun-07	1030	0.5	SE	-8.125	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Aug-07	1045	0.5	SE	-12.65	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Oct-07	1025	0.5	SE	-13.5	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Dec-07	950	0.5	SE	-24	T	T		50	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	6-Aug-08	1115	0.5	SE	-2.69347	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Feb-09	1005	0.65	SE	-4.603115	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Jul-12	1010	0.5	SE	-0.717895	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Mar-13	1100	0.5	SE	-1.279175	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-13	1120	0.5	SE	-3.807905	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jul-14	1010	0.5	SE	-0.277835	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Sep-14	1005	0.5	SE	-0.827735	T	T		5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			SE	-1.823146			T	5	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			SE	-3.687526			T	5	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			SE	10.434384			IQ	7	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			SE	-2.8868695			T	14	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			SILAT	1.69012833			Q	0.1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			SILCA	3.5358				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			SILCA	3.6575			Q	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			SILCA	2.9729				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-15			SILCA	0.688			I	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	18-Mar-15			SILCA	2.118				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Apr-15			SILCA	3.5624				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	28-May-15			SILCA	5.2696				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			SILCA	3.8312				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jul-15			SILCA	2.5204				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	27-Aug-15			SILCA	3.4146				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			SILCA	8.3329			J	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	19-Oct-15			SILCA	7.0068				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	23-Nov-15			SILCA	5.4117				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			SILCA	2.7315				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	20-Jan-16			SILCA	2.1428				0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			SILCA	1.8239				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	14-Apr-16			SILCA	2.8333			J	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	12-May-16			SILCA	0.511			I	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			SILCA	7.5045				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-17			SILCA	1.4317				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Mar-17			SILCA	2.3068				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	10-Apr-17			SILCA	3.4111				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-17			SILCA	4.1816				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	6-Jun-17			SILCA	6.2346				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			SILCA	7.6966				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Aug-17			SILCA	9.7692				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Nov-12	1035	0.5	SILCO	2486.87	Q	Q		100	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Oct-15			SN	-0.18285			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	14-Apr-16			SN	-0.022612			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	12-May-16			SN	-0.128079			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			SN	-0.119865			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	9-May-17	958	0.4	SN	-0.014855	T	T		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-17			SN	-0.0148545			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			SN	-0.044605			T	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	19-Mar-12	1130	2.5	SO4	2431.7128	Q	Q		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Sep-13	1000	0.5	SO4	1211.3871	Q	Q		30	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			SO4	1594.4502			Q	30	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			STR	6062.29457			Q	5	SJRWMD
2363B	Halifax River - 3M	21FLA 27010026	12-Nov-68	940	0	TCOLI	220	K				IWR58
2363B	Halifax River - 3M	21FLA 27010401	11-May-71	1040	1	TCOLI	1.8	K				IWR58
2363B	Halifax River - 3M	21FLA 27010401	18-May-71	955	1	TCOLI	1.8	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	2-Mar-93	1050	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	2-Mar-93	1105	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	2-Mar-93	1230	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Jun-93	1025	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Jun-93	1146	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Jun-93	1244	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Feb-94	1135	0.98	TCOLI	5	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL06	2-Aug-94	1105	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	4-Apr-95	1105	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	4-Apr-95	1125	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	2-May-95	1015	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	2-May-95	1105	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	2-May-95	1130	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Aug-95	1030	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Aug-95	1045		TCOLI	300	Q				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	3-Oct-95	1105	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Oct-95	1115		TCOLI	500	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	26-Feb-96	1130		TCOLI	20	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	24-Apr-96	1230		TCOLI	3000	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Jun-96	1330		TCOLI	40	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	12-Aug-96	1130		TCOLI	500	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Oct-96	1200		TCOLI	1300	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-96	1330		TCOLI	2400	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	4-Feb-97	850		TCOLI	40	Q				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	4-Mar-97	1050	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	7-Apr-97	1130		TCOLI	20	Q				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Apr-97	1300	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Apr-97	1330	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	6-May-97	930	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	6-May-97	1045	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-May-97	1230	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	6-May-97	1255	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	6-May-97	1335	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	2-Jun-97	1130		TCOLI	2300	Q				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-May-98	1255	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	2-Jun-98	1050	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	2-Jun-98	1200	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	2-Jun-98	1230	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	7-Jul-98	1030	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	7-Jul-98	1200	0.98	TCOLI	5	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL10	7-Jul-98	1430	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	1-Dec-98	1300	0.98	TCOLI	5	K				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Apr-99	1100	0.9	TCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Apr-99	1105	0.8	TCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Apr-99	1125	0.65	TCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Apr-99	851	0.8	TCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Jul-99	1157	0.8	TCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	8-Jul-99	1216	0.6	TCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Jul-99	1322	0.8	TCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	15-Jul-02	1016	0.2	TCOLI	5	K	K			IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Mar-16			TEMP				O		SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	15-Jun-16			TEMP				O		SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL08	11-Jul-16	953	1.2	TEMP	31.79	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	11-Jul-16	1007	0.45	TEMP	32.06	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	11-Jul-16	1025	0.7	TEMP	31.91	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	11-Jul-16	1039	0.45	TEMP	32.09	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	11-Jul-16	1053	0.15	TEMP	32.51	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	11-Jul-16	1106	0.8	TEMP	32.67	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	9-Aug-16	1043	0.65	TEMP	27.66	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	9-Aug-16	1137	0.6	TEMP	27.68	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	9-Aug-16	1156	0.6	TEMP	28.3	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	9-Aug-16	1225	0.65	TEMP	28.43	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	9-Aug-16	1253	1.15	TEMP	28.2	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	9-Aug-16	1308	0.4	TEMP	28.54	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	9-Aug-16	1330	0.6	TEMP	28.67	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Sep-16	1020	1.3	TEMP	30.45	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Sep-16	1041	0.55	TEMP	30.49	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Sep-16	1059	0.9	TEMP	30.37	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Sep-16	1108	0.5	TEMP	30.49	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Sep-16	1120	0.25	TEMP	30.51	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Sep-16	1133	0.7	TEMP	30.69	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	8-Nov-16	1044	0.5	TEMP	22.55	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	8-Nov-16	1103	0.5	TEMP	22.34	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL06	8-Nov-16	1120	0.5	TEMP	22.5	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	8-Nov-16	1143	0.5	TEMP	22.69	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	8-Nov-16	1157	0.5	TEMP	22.55	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	8-Nov-16	1212	0.5	TEMP	22.6	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	8-Nov-16	1233	0.5	TEMP	22.56	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Dec-16	1000	1.45	TEMP	18.59	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Dec-16	1017	1	TEMP	18.51	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Dec-16	1037	0.75	TEMP	18.72	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Dec-16	1051	0.9	TEMP	18.7	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Dec-16	1105	0.45	TEMP	18.84	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Dec-16	1120	1.2	TEMP	19.11	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	20-Mar-17	1030	0.4	TEMP	18.2	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	20-Mar-17	1127	0.6	TEMP	18.4	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	20-Mar-17	1200	1.1	TEMP	18.4	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	20-Mar-17	1240	0.75	TEMP	18.3	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	20-Mar-17	1257	1.2	TEMP	18.7	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	20-Mar-17	1315	0.6	TEMP	19.1	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	20-Mar-17	1340	0.9	TEMP	18.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	17-Apr-17	1037	0.95	TEMP	24.6	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	17-Apr-17	1104	0.5	TEMP	24.7	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	17-Apr-17	1135	0.5	TEMP	24.4	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	17-Apr-17	1149	0.45	TEMP	24.5	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	17-Apr-17	1206	0.3	TEMP	25.3	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	17-Apr-17	1217	0.65	TEMP	24.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Jun-17	1045	1.4	TEMP	28.5	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Jun-17	1104	0.6	TEMP	28.8	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	12-Jun-17	1120	1	TEMP	28.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Jun-17	1245	0.9	TEMP	29.2	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL11A	12-Jun-17	1140	0.6	TEMP	29.3	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Jun-17	1157	1.2	TEMP	28.9	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	11-Jul-06	1010	0.5	TKN	0.33	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	11-Jul-06	1025	1	TKN	0.37	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	11-Jul-06	1045	0.8	TKN	0.4	J	J		0.06	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL07	11-Jul-06	1105	0.9	TKN	0.35	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	11-Jul-06	1120	1.3	TKN	0.54	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	11-Jul-06	1135	0.6	TKN	0.59	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	11-Jul-06	1155	1	TKN	0.42	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	12-Jul-06	1330	0.5	TKN	0.55	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	12-Jul-06	1350	0.5	TKN	0.55	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	2-Oct-06	1010	0.5	TKN	0.88	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	2-Oct-06	1350	0.5	TKN	0.84	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	3-Oct-06	1035	0.7	TKN	0.91	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	3-Oct-06	1050	1.1	TKN	0.95	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	3-Oct-06	1105	0.7	TKN	0.79	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	3-Oct-06	1125	0.7	TKN	0.77	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	3-Oct-06	1135	1.3	TKN	0.88	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	3-Oct-06	1150	0.6	TKN	0.85	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	3-Oct-06	1205	1.1	TKN	0.78	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	5-Feb-07	1050	0.5	TKN	0.25	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Feb-07	1025	0.5	TKN	0.29	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	6-Feb-07	1102	0.5	TKN	0.53	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	6-Feb-07	1115	0.8	TKN	0.38	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	6-Feb-07	1135	0.5	TKN	0.35	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	6-Feb-07	1147	0.8	TKN	0.31	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	6-Feb-07	1203	1.3	TKN	0.27	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	6-Feb-07	1219	0.5	TKN	0.23	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	6-Feb-07	1239	1.1	TKN	0.28	J	J		0.06	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	6-Aug-07	1410	0.5	TKN	0.71	Q	QJ		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	6-Aug-07	1430	0.5	TKN	0.62	Q	QJ		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	7-Aug-07	1038	0.5	TKN	1.04	Q	Q		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	7-Aug-07	1120	0.9	TKN	0.98	Q	Q		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	7-Aug-07	1140	1.6	TKN	0.64	Q	Q		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	7-Aug-07	1200	0.9	TKN	0.68	Q	Q		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	7-Aug-07	1215	1.1	TKN	0.75	Q	Q		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	7-Aug-07	1227	0.5	TKN	0.77	Q	QJ		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	7-Aug-07	1246	0.8	TKN	0.76	Q	QJ		0.08	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL11	5-Feb-08	1030	0.5	TKN	0.5	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Feb-08	1010	0.5	TKN	0.54	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	5-Aug-08	1315	0.5	TKN	0.72	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-May-09	1215	1.1	TKN	0.97	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-May-09	1245	0.5	TKN	0.99	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	5-May-09	1305	0.9	TKN	0.81	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	5-May-09	734	0.5	TKN	0.48	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-May-09	734	0.5	TKN	0.48	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Aug-09	1240	1.2	TKN	1.16	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	7-May-13	1254	0.6	TKN	1.04	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	17-Nov-14			TKN	0.4738				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Dec-14			TKN	0.34				0.05	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			TKN	0.5331			Q	0.05	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			TKN	0.5623			Q	0.05	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-15			TKN	0.3472			I	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	18-Mar-15			TKN	0.5133				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Apr-15			TKN	0.5792				0.2	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL09	13-May-15	1046	0.5	TKN	3.36	J	J		0.08	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	28-May-15			TKN	0.5458				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			TKN	0.6855				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jul-15			TKN	0.7646				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	27-Aug-15			TKN	0.7632				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Sep-15			TKN	0.8993				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	19-Oct-15			TKN	0.8055				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	23-Nov-15			TKN	0.448				0.05	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL12	8-Dec-15	1250	0.5	TKN	0.74	Q	Q		0.2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			TKN	0.3112			IQ	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			TKN	0.3242			IQ	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	20-Jan-16			TKN	0.315			I	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			TKN	0.5108				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	14-Apr-16			TKN	0.4226				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	12-May-16			TKN	0.4068				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			TKN	1.472				0.05	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLSJWM27010037	7-Feb-17			TKN	0.3497			I	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Mar-17			TKN	0.4569				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	10-Apr-17			TKN	0.5568				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-17			TKN	0.5139				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	6-Jun-17			TKN	0.8081				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			TKN	0.8501				0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	8-Aug-17			TKN	0.8852				0.2	SJRWMD
2363B	Halifax River - 3M	21FLA 27010037	20-Jul-92	720	3.94	TL	125	U				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	19-Oct-15			TL	-0.019628			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	17-Feb-16			TL	-0.0022245			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	12-May-16			TL	-0.016264			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	10-Apr-17	1025	0.5	TL	-0.005695	T	T		0.2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Apr-17			TL	-0.005697			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	9-May-17	958	0.4	TL	-0.027605	T	T		0.2	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-May-17			TL	-0.0276045			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	5-Jul-17			TL	-0.089024			T	0.2	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	12-Jan-98	1030		TOC	18.4	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Aug-05	1005	0.5	TOC	15.18	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Dec-08	1015	0.7	TOC	8.337	I	IQ		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	10-Jan-13	1035	0.5	TOC	6.29	I	IQ		1	IWR58
2363B	Halifax River - 3M	21FLSJWM44602	10-Jan-13	1035	0.5	TOC	6.29	I	IQ		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			TOC	5.53			IQ	1	SJRWMD
2363B	Halifax River - 3M	21FLSJWMHR29	31-Aug-93	1120		TORTH	0.099	Q				IWR58
2363B	Halifax River - 3M	21FLSJWMHR92B	31-Aug-93	1050		TORTH	0.105	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jun-95	1145		TORTH	0.107	Q				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	9-Oct-02	1230	0.5	TORTH	0.066	Q	Q		0.012	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-03	1230	0.49	TORTH	0.045	I	QI		0.012	IWR58
2363B	Halifax River - 3M	21FLA 27010037	8-Sep-92	1352	3.28	TP	0.2	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	4-Apr-06	1050	0.7	TP	0.16	J	J		0.02	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	4-Apr-06	1115	0.6	TP	0.13	J	J		0.02	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Apr-06	1135	0.7	TP	0.13	J	J		0.02	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Apr-06	1150	0.7	TP	0.16	J	J		0.02	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Apr-06	1205	0.4	TP	0.18	J	J		0.02	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL10	4-Apr-06	1230	1.1	TP	0.16	J	J		0.02	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Oct-07	1025	0.5	TP	0.18818	I	YI		0.05	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	13-Jul-10	1210	0.5	TP	0.14	J	J		0.02	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	13-Jan-15			TP	0.0671			Q	0.01	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL12	8-Dec-15	1250	0.5	TP	0.212	Q	Q		0.04	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			TP	0.0864			IQ	0.04	SJRWMD
2363B	Halifax River - 3M	21FLVEMDHL11	2-May-95	835	6.23	TSS	52	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	2-May-95	815	1.15	TSS	29.1	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	6-Jun-95	1050	1.31	TSS	36.5	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	7-Jan-97	930	1.48	TSS	22	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	7-Jan-97	1045	1.64	TSS	27	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	7-Jan-97	1120	2.3	TSS	14	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	7-Jan-97	1230	2.95	TSS	14	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	7-Jan-97	1250	3.44	TSS	14	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	7-Jan-97	1310	1.8	TSS	30	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	7-Jan-97	1330	1.48	TSS	28	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	7-Jan-97	1335	1.48	TSS	21	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	4-Mar-97	925	1.31	TSS	39	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	4-Mar-97	1050	2.46	TSS	56.5	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	4-Mar-97	1115	2.13	TSS	33	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	4-Mar-97	1225	2.79	TSS	33.3	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	4-Mar-97	1241	3.44	TSS	38	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	4-Mar-97	1259	1.31	TSS	34	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL10	4-Mar-97	1328	1.31	TSS	29	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	4-Mar-97	1055	5.74	TSS	42	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	4-Mar-97	1028	1.48	TSS	14	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	6-May-97	1403	3.61	TSS	44	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	5-Aug-97	1105	2.95	TSS	15	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	5-Aug-97	1135	2.13	TSS	22	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-Aug-97	1300	3.28	TSS	22	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	5-Aug-97	1315	3.28	TSS	18	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	5-Aug-97	1335	2.95	TSS	42	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	5-Aug-97	1355	1.8	TSS	27	J				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLVEMDHL10	5-Aug-97	1420	1.8	TSS	23	J				IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	5-Apr-99	930	1.8	TSS	37	J	J			IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	5-Apr-99	851	0.8	TSS	11	J	J			IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	23-Jun-99	1110	0.5	TSS	30	Q	Q		1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-Aug-01	1200	0.5	TSS	148	Q	Q		5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL11	6-Nov-07	1010	0.5	TSS	15	J	J		0.4	IWR58
2363B	Halifax River - 3M	21FLVEMDHL12	6-Nov-07	930	0.5	TSS	8	J	J		0.4	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Apr-02	1155	0.5	TURB	8.86	Q	Q		0.1	IWR58
2363B	Halifax River - 3M	21FLA 27010567	6-Jan-09	1323	0.6	TURB	7.4	Q	Q		0.1	IWR58
2363B	Halifax River - 3M	21FLA 27010942	6-Jan-09	1240	0.5	TURB	6	Q	Q		0.1	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	1-Apr-11	1020	0.5	TURB	15.94192	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	14-May-12	1000	0.5	TURB	17.12373	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	23-May-18	1134	0.5	TURB	7.85251	J	J		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL04	12-Mar-19	1002	0.5	TURB	8.09173	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL05	12-Mar-19	1039	0.5	TURB	6.1103	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL06	12-Mar-19	1052	0.5	TURB	15.97525	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL07	12-Mar-19	1107	0.5	TURB	8.4916	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL08	12-Mar-19	1118	0.5	TURB	8.38457	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLVEMDHL09	12-Mar-19	1130	0.5	TURB	5.10373	Q	Q		0.5	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	21-Dec-15			VAN	-0.006985			T	12	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	14-Apr-16			VAN	-0.6622465			T	12	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037	21-Jul-16			VAN	-0.9105585			T	12	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	8-Mar-17	1041	0.4	VAN	-0.58679	T	T		12	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	8-Mar-17			VAN	-0.5867905			T	12	SJRWMD
2363B	Halifax River - 3M	21FLSJWM27010037NW	10-Apr-17	1026	0.5	VAN	-0.341545	T	T		12	IWR58
2363B	Halifax River - 3M	21FLA 27010037	16-Jan-74	1400	8	ZN	250	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Sep-74	1020	8	ZN	100	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	2-Oct-74	2040	7	ZN	100	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	6-Nov-74	1535	7	ZN	100	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	13-May-75	1045	0	ZN	131400000					IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Jun-75	1130	3	ZN	50	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	7-Apr-80	1650	7	ZN	25	K				IWR58
2363B	Halifax River - 3M	21FLA 27010037	4-Jan-82	1151	6	ZN	25	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363B	Halifax River - 3M	21FLA 27010037	4-Jan-83	1531	5	ZN	10	K				IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	31-May-00	1115	0.5	ZN	-0.4765	T	T		10	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	30-Dec-02	1115	0.5	ZN	4.802	T	TJ		10	IWR58
2363B	Halifax River - 3M	21FLSJWM27010037	16-Jun-15			ZN	9.749688			IQ	5	SJRWMD
2363C	Tomoka Basin - 3M	21FLVEMDHL03	12-Jul-11	1050	0.3	CHLAC	20.81	Q	Q		0.5	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	6-Aug-13	1059	0.4	CHLAC	19.54	Q	Q		0.68	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	7-Aug-01	1010	1.4	CHLB	-2.29					IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	4-Apr-06	1020	0.45	CHLB	-0.02				1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-Aug-08	1034	1.1	CHLB	-0.08				1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-May-09	1050	0.5	CHLB	-0.45					IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	3-Mar-10	1055	0.3	CHLB	-0.32				1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	6-Apr-10	1100	0.3	CHLB	-0.36					IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	9-Aug-16	1107	0.2	CHLB	-0.33611	T	T		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	24-Jan-18	1244	0.31	CHLB	-0.0008	T	T		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	6-Feb-01	1015	1.2	CHLC	-0.12					IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	23-May-18	1035	0.5	COLOR	190.9321	Q	Q		2	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	12-Mar-19	1019	0.5	COLOR	70.99096	Q	Q		2	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	9-Aug-16	1107	0.4	COND	36700	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Nov-16	1025	0.5	COND	45810	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	20-Mar-17	1058	0.5	COND	47160	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-Jun-12	1036	0.7	DO	6.84	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	9-Aug-16	1107	0.4	DO	5.85	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Nov-16	1025	0.5	DO	4.75	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	20-Mar-17	1058	0.5	DO	7.1	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	9-May-17	1029	0.7	DO	7	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	4-May-93	1020	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Feb-94	1035	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	2-Aug-94	1000	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	2-May-95	1035	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-Mar-96	1005	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	7-May-96	1000	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	7-May-96	1005	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	4-Feb-97	950	0.98	ENCOC	5	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363C	Tomoka Basin - 3M	21FLVEMDHL03	4-Mar-97	955	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	6-May-97	955	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	2-Jun-98	1000	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	3-Nov-98	1016	0.98	ENCOC	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	3-Mar-99	955	0.5	ENCOC	5	K	K			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Jun-04	940	0.6	ENCOC	5	K	K		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	7-Dec-04	1015	0.55	ENCOC	5	K	K		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	4-Apr-06	1020	0.45	ENCOC	5	K	KB		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	3-Feb-09	1050	0.5	ENCOC	0.5	U	UJ		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-May-09	1050	0.5	ENCOC	1	J	J		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-Apr-99	1035	0.3	FCOLI	5	K	K			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Jun-99	1100	0.5	FCOLI	5	K	K			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Jul-99	1047	0.55	FCOLI	5	K	K			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Sep-99	1020	0.65	FCOLI	5	K	K			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	22-Oct-02	1325	0.2	FCOLI	5	K	K			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Jun-04	940	0.6	FCOLI	5	K	K		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	4-Apr-06	1020	0.45	FCOLI	5	K	KB		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	3-Feb-09	1050	0.5	FCOLI	2	J	J		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-May-09	1050	0.5	FCOLI	0.5	U	UJ		1	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-Jun-12	1036	0.3	FCOLI	0.5	U	UJ		1	IWR58
2363C	Tomoka Basin - 3M	21FLA 27010568	11-Feb-86	1340	2	NO3O2	0.04	K				IWR58
2363C	Tomoka Basin - 3M	21FLA 27010568	12-Feb-86	925	2	NO3O2	0.04	K				IWR58
2363C	Tomoka Basin - 3M	21FLA 27010568	28-Apr-86	1335	2	NO3O2	0.04	K				IWR58
2363C	Tomoka Basin - 3M	21FLA 27010568	23-Jun-86	1135	3	NO3O2	0.04	K				IWR58
2363C	Tomoka Basin - 3M	21FLA 27010568	28-Jul-86	1300	1	NO3O2	0.04	K				IWR58
2363C	Tomoka Basin - 3M	21FLA 27010568	29-Jul-86	940	2	NO3O2	0.04	K				IWR58
2363C	Tomoka Basin - 3M	21FLA 27010568	25-Aug-86	1300	2	NO3O2	0.04	K				IWR58
2363C	Tomoka Basin - 3M	21FLA 27010568	26-Aug-86	815	2	NO3O2	0.04	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Feb-05	955	0.75	NO3O2	0.0005	T	TQ		0.004	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	9-Aug-16	1107	0.4	PH	7.93	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Nov-16	1025	0.5	PH	7.69	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	20-Mar-17	1058	0.5	PH	7.9	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLA 27010568	17-Mar-92	915	1.48	PHEOA	0.5	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Feb-05	955	0.75	PORD	0.0025	T	TQ		0.008	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	24-Jan-18	1244	0.31	PORD	0.0182	I	IQ		0.012	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	9-Aug-16	1107	0.4	SALIN	23.11	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Nov-16	1025	0.5	SALIN	29.75	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	20-Mar-17	1058	0.5	SALIN	30.75	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Jun-93	1042	0.98	TCOLI	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	6-May-97	955	0.98	TCOLI	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	2-Jun-98	1000	0.98	TCOLI	5	K				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-Apr-99	1000	0.6	TCOLI	5	K	K			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Jun-99	1100	0.5	TCOLI	5	K	K			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	9-Aug-16	1107	0.4	TEMP	27.5	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Nov-16	1025	0.5	TEMP	22.24	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	20-Mar-17	1058	0.5	TEMP	18	J	J			IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Aug-95	955	1.8	TKN	2.2	J				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	11-Jul-06	955	0.5	TKN	0.48	J	J		0.06	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	3-Oct-06	1005	0.4	TKN	0.79	J	J		0.06	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	6-Feb-07	1030	0.4	TKN	0.37	J	J		0.06	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	7-Aug-07	1055	0.6	TKN	0.83	Q	Q		0.08	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-Feb-08	1054	0.6	TKN	0.55	J	J		0.08	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	13-Jul-10	1025	0.5	TKN	1.39	J	J		0.08	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	15-Feb-16	1026	0.5	TKN	4	J	J		0.08	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	13-Jul-10	1025	0.5	TP	0.19	J	J		0.02	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	8-Dec-15	1120	0.8	TP	0.13	J	J		0.02	IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	7-Jan-97	1000	1.8	TSS	34	J				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	4-Mar-97	955	1.64	TSS	26	J				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	5-Aug-97	1005	1.64	TSS	16	J				IWR58
2363C	Tomoka Basin - 3M	21FLVEMDHL03	12-Mar-19	1019	0.5	TURB	17.67029	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Aug-13	1345	0.5	AG	-0.22098	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Sep-13	1445	0.5	AG	-0.109105	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Oct-13	1315	0.5	AG	-0.203245	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jan-14	940	0.5	AG	-0.189095	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-14	1220	0.5	AG	-0.178605	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Mar-14	1320	0.5	AG	-0.16445	T	T		0.5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Apr-14	825	0.5	AG	-0.03617	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Jul-14	1225	0.5	AG	-0.02326	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	13-May-15	1315	0.5	AG	-0.04098	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	AG	0.021255	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	AG	0.00621	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Sep-15	1430	0.5	AG	-0.01533	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Nov-15	1430	0.5	AG	-0.00233	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Feb-16	1125	0.5	AG	-0.01029	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Feb-16	1126	0.5	AG	-0.019335	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Mar-16	1405	0.5	AG	-0.0084	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Apr-16	1415	0.5	AG	-0.009635	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Jul-16	1346	0.5	AG	-0.004255	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Sep-16	1256	0.49	AG	-0.01277	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Jan-17	1358	0.51	AG	-0.002015	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Jun-17	920	0.6	AG	-0.016465	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			AG	-0.0129305			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			AG	0.0155875			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			AG	0			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			AG	0.00465			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			AG	0.022491			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			AG	-0.0532325			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			AG	0.020269			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			AG	-0.005207			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			AG	0.016056			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			AG	-0.000768			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			AG	-0.0019065			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			AG	-0.0020665			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			AG	-0.057101			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			AG	-0.0594625			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			AG	-0.0163265			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			AG	-0.010628			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			AG	-0.0039655			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			AG	0.0145675			T	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			AG	0.0140865			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			AG	-0.0342155			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			AG	-0.012597			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			AG	-0.0668405			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			AG	0.0095855			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			AG	0.0086475			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			AG	-0.0413245			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			AG	0.0593795			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			AG	0.072877			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			AG	0.030039			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			AG	0.060375			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	AL	592.72862	Q	Q		15	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	AL	443.634	Q	Q		15	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			AL	0.1202885			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			AL	1.603517			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			AL	2.5			T	400	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			AL	33.793719			I	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			AL	8.535718			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			AL	6.3079015			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			AL	4.158206			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			AL	1.4579555			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			AL	2.1394245			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			AL	2.453473			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			AL	3.416287			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			AL	6.1754835			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			AL	3.5281765			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			AL	10.3658075			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			AL	1.5637135			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			AL	3.5148055			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			AL	5.388874			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			AL	3.358364			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			AL	7.884631			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			AL	5.220142			T	30	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			AL	5.5959955			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			AL	3.40217			T	30	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Jan-12	1020	0.5	ALK	125.80613	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Aug-12	1325	0.5	ALK	130.01462	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	1-Nov-12	835	0.5	ALK	129.34987	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Feb-13	1235	0.5	ALK	134.41429	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Nov-14	1340	0.5	ALK	126.0275	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	13-Apr-15	1140	0.5	ALK	128.46344	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWM78742	28-Mar-17	1430	0.5	ALK	131.91156	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Mar-17	1430	0.5	ALK	131.91156	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWM78742	20-Apr-17	819	0.5	ALK	145.38129	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Apr-17	819	0.5	ALK	145.38129	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Apr-17	820	0.5	ALK	145.07758	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jan-14	940	0.5	AS	-0.234795	T	T		3	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	13-Oct-14	950	0.5	AS	-0.289575	T	T		3	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Nov-14	1340	0.5	AS	-2.152065	T	T		3	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	AS	14.69971	I	IQ		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	AS	8.25	I	IQ		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			AS	3.168963			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			AS	2.879036			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			AS	1.5			T	40	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			AS	1.679485			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			AS	2.7128735			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			AS	2.0110435			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			AS	2.836657			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			AS	2.720698			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			AS	2.0780095			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			AS	2.0197615			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			AS	1.413751			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			AS	1.862622			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			AS	3.05514			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			AS	24.272606			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			AS	2.1410695			T	10	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			AS	1.7207			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			AS	2.927098			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			AS	2.3823305			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			AS	3.2120185			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			AS	15.087415			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			AS	2.3857925			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			AS	22.17375			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLA 27010020	7-Jul-92	915	6.23	BA	9	J				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	7-Jul-92	915	6.23	BA	9	J				IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	BA	16.78907	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	BA	17.50342	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			BA	15.656133				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			BA	13.385396				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			BA	0.5			T	6	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			BA	10.050095				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			BA	13.107097				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			BA	12.857662				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			BA	11.168775				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			BA	13.69934				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			BA	11.799089				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			BA	12.003002				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			BA	9.272118			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			BA	9.219627			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			BA	13.15521				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			BA	9.723858			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			BA	16.795916				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			BA	10.957236				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			BA	12.281039				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			BA	10.685989				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			BA	12.644558				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			BA	10.397206				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			BA	12.068684				1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			BA	10.931455				1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jan-14	940	0.5	BE	-0.001465	T	T		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-14	1220	0.5	BE	-0.007495	T	T		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Jun-14	1505	0.5	BE	-0.016445	T	T		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Jan-15	1145	0.5	BE	-0.003995	T	T		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	BE	0.034005	T	TQ		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	BE	0.020145	T	TQ		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Oct-15	1435	0.5	BE	-0.005865	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Dec-15	1245	0.5	BE	-0.0342	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Feb-16	1125	0.5	BE	-0.005605	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Feb-16	1126	0.5	BE	-0.007275	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Mar-16	1405	0.5	BE	-0.00268	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Apr-16	1415	0.5	BE	-0.00238	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Jul-16	1346	0.5	BE	-0.02676	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Dec-16	1328	0.5	BE	-0.000085	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Jan-17	1358	0.51	BE	-0.01968	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Feb-17	854	0.6	BE	-0.017375	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-May-17	759	0.5	BE	-0.012305	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			BE	-0.021535			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			BE	0.0086095			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			BE	0			T	6	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			BE	0.0051375			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			BE	0.025198			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			BE	-0.0215855			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			BE	0.00695			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			BE	0.008353			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			BE	0.0289975			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			BE	0.0089965			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			BE	-0.05352			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			BE	-0.024017			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			BE	0.0039415			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			BE	0.0255085			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			BE	0.011618			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			BE	0.0068355			T	0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			BE	-0.0491305			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			BE	-0.05397			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			BE	-0.0553355			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			BE	-0.022139			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			BE	-0.000245			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			BE	-0.0233645			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			BE	-0.045196			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			BE	0.0360645			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			BE	-0.0003295			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			BE	0.0034565			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			BE	0.0172285			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLA 27010106	13-Nov-96	1225	6	BOD	0.5	K				IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	CA	390.10222	Q	Q		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	CA	380.19977	Q	Q		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			CA	344.619928				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			CA	339.981759				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			CA	13.3				0.4	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			CA	129.852574				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			CA	244.326668				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			CA	273.731676				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			CA	357.264708				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			CA	282.070764				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			CA	439.445072				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			CA	295.684639				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			CA	101.026388				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			CA	82.509513				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			CA	181.146279				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			CA	138.168193				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			CA	297.292234				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			CA	373.039539				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			CA	380.800067				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			CA	298.017766				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			CA	348.603281				2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			CA	405.840677				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			CA	323.994739				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			CA	393.349477				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Sep-13	1445	0.5	CD	-0.02188	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Oct-13	1315	0.5	CD	-0.015255	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-14	1220	0.5	CD	-0.070365	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Mar-14	1320	0.5	CD	-0.000845	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	CD	0.06255	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	CD	0.00832	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Aug-15	1430	0.5	CD	-0.042235	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Dec-15	1245	0.5	CD	-0.048565	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Mar-16	1405	0.5	CD	-0.132015	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Dec-16	1326	0.5	CD	-0.06187	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Mar-17	1430	0.5	CD	-0.00692	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			CD	-0.140404			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			CD	-0.115999			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			CD	-0.0136165			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			CD	-0.002255			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			CD	0			T	4	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			CD	-0.009608			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			CD	-0.012242			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			CD	0.1124535			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			CD	0.055473			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			CD	0.028842			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			CD	0.077187			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			CD	-0.007852			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			CD	-0.0288875			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			CD	0.1588605			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			CD	-0.00749			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			CD	0.1812295			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			CD	-0.0126245			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			CD	0.0094385			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			CD	0.4219985			T	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			CD	-0.033578			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			CD	-0.005642			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			CD	0.0412215			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			CD	-0.029065			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			CD	0.0391845			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			CD	-0.0276105			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			CD	-0.039906			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			CD	0.0756855			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			CD	0.063794			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			CD	0.072141			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			CD	-0.002094			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			CD	0.211473			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			CD	-0.0504245			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Jun-14	1505	0.5	CHLA	14.02134	Q	QJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			CHLA	5.43570994			J	1	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL01	12-Jul-11	958	0.4	CHLAC	14.97	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	12-Jul-11	1015	0.4	CHLAC	18.24	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	6-Aug-13	1005	0.3	CHLAC	5.56	Q	Q		0.68	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	6-Aug-13	1039	0.3	CHLAC	10.47	Q	Q		0.68	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Jun-14	1505	0.5	CHLAC	11.98244	Q	QJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			CHLAC	4.43219937			J	1	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Jul-99	900	0.6	CHLB	-0.1					IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Dec-04	1420	0.5	CHLB	-0.10711	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	9-Feb-05	1230	0.5	CHLB	-0.27348	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Apr-05	1015	0.5	CHLB	-0.04508	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-May-05	945	0.5	CHLB	-0.025815	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-05	1020	0.5	CHLB	-0.118495	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	9-Aug-05	900	0.5	CHLB	0.16014	T	TJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Sep-05	1005	0.5	CHLB	-0.11179	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Oct-05	1030	0.5	CHLB	-0.09298	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-05	940	0.5	CHLB	-0.04587	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Dec-05	1000	0.5	CHLB	-0.17817	T	TJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-06	1345	0.5	CHLB	-0.062875	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Feb-06	1005	0.5	CHLB	-0.06337	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Mar-06	915	0.5	CHLB	-0.151285	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Apr-06	1140	0.5	CHLB	-0.31333	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-May-06	840	0.5	CHLB	-0.084795	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Aug-06	945	0.5	CHLB	-0.08845	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Sep-06	905	0.5	CHLB	-0.06178	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	1-Nov-06	915	0.5	CHLB	-0.09263	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-06	900	0.5	CHLB	-0.08646	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Dec-06	945	0.5	CHLB	-0.055175	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-07	945	0.5	CHLB	-0.14945	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-07	850	0.5	CHLB	-0.18734	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Mar-07	925	0.5	CHLB	-0.132285	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Apr-07	850	0.5	CHLB	-0.074855	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-May-07	930	0.5	CHLB	-0.137885	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jun-07	900	0.5	CHLB	-0.19089	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Aug-07	910	0.5	CHLB	-0.18319	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-07	925	0.5	CHLB	-0.067025	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	5-Nov-07	935	0.5	CHLB	-0.15176	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Nov-07	910	0.5	CHLB	-0.3423	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Dec-07	835	0.5	CHLB	-0.199535	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Jan-08	815	0.5	CHLB	-0.215535	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-08	900	0.5	CHLB	-0.3001	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Mar-08	910	0.5	CHLB	-0.35391	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Apr-08	900	0.5	CHLB	-0.236	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	14-May-08	845	0.5	CHLB	-0.130575	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Jun-08	845	0.5	CHLB	-0.273885	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jul-08	840	0.5	CHLB	-0.17519	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jul-08	841	0.5	CHLB	-0.24855	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Jan-09	850	0.5	CHLB	-0.088515	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Feb-09	855	0.5	CHLB	-0.237475	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	5-May-09	945	0.3	CHLB	-0.19					IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	5-May-09	1010	0.3	CHLB	-0.2					IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	9-Jun-09	820	0.5	CHLB	-0.249825	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Jan-10	845	0.5	CHLB	-0.18965	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Jan-10	846	0.5	CHLB	-0.20254	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Feb-10	830	0.5	CHLB	-0.254205	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	3-Mar-10	1005	0.3	CHLB	-0.07				1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	6-Apr-10	1005	0.4	CHLB	-0.16					IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	6-Apr-10	1035	0.3	CHLB	-0.37					IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Jul-10	900	0.5	CHLB	-0.82444	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Aug-10	1155	0.5	CHLB	-0.647445	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Oct-10	910	0.5	CHLB	-0.028905	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Feb-11	1021	0.5	CHLB	-0.01638	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	12-Apr-11	952	0.4	CHLB	-0.42				1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	12-Apr-11	1029	0.2	CHLB	-0.18				1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Oct-11	1315	0.5	CHLB	-0.14842	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Mar-12	940	0.5	CHLB	-0.029455	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-14	1220	0.5	CHLB	-0.02975	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Jun-14	1505	0.5	CHLB	1.50073	I	IQJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Feb-16	1125	0.5	CHLB	-0.0447	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Feb-16	1126	0.5	CHLB	-0.04962	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Jul-16	1346	0.5	CHLB	0.25511	T	TJ		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	9-Aug-16	958	0.1	CHLB	-0.320315	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	9-Aug-16	1020	0.2	CHLB	-0.28103	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Aug-16	1403	0.51	CHLB	-0.134415	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	1-Dec-16	1318	0.51	CHLB	-0.22466	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	14-Nov-17	955	0.5	CHLB	-0.023155	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			CHLB	-0.1572188			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			CHLB	-0.0102667			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			CHLB	0.11982495			TJ	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			CHLB	-0.0259611			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL01	6-Feb-01	900	0.7	CHLC	-0.3					IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	6-Feb-01	930	0.9	CHLC	-0.14					IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	9-Aug-05	900	0.5	CHLC	0.293925	T	TJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Dec-05	1000	0.5	CHLC	0.31193	T	TJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Nov-07	910	0.5	CHLC	-0.00636	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Dec-07	835	0.5	CHLC	-0.185525	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Jan-08	815	0.5	CHLC	-0.17646	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jul-08	841	0.5	CHLC	-0.01939	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Feb-09	855	0.5	CHLC	-0.016485	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Jun-14	1505	0.5	CHLC	2.36061	I	IQJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	1-Dec-16	1318	0.51	CHLC	-0.105855	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			CHLC	0.47671505			TJ	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Dec-10	845	0.5	COLOR	6.0872	I	IQJ		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-12	910	0.5	COLOR	65.89003	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Dec-12	1320	0.5	COLOR	12.21476	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Jan-13	1350	0.5	COLOR	13.97371	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Mar-13	1315	0.5	COLOR	8.50638	I	IQ		2	IWR58
2363J	Palm Coast - 3M	21FLSJWM78742	30-Sep-13	1445	0.5	COLOR	32.52976	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Sep-13	1445	0.5	COLOR	32.52976	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Aug-14	1215	0.5	COLOR	50.01198	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Sep-14	1235	0.5	COLOR	44.75698	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	13-Oct-14	950	0.5	COLOR	137.75879	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	13-Apr-15	1140	0.5	COLOR	21.69705	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Apr-16	1415	0.5	COLOR	8.62901	I	IQ		2	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	23-May-18	946	0.5	COLOR	108.3074	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	23-May-18	1004	0.51	COLOR	134.60034	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWM78742	28-Aug-18	750	0.5	COLOR	154.83501	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			COLOR	154.835007			Q	2	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL02	12-Mar-19	945	0.5	COLOR	45.44232	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	12-Oct-04	935	0.65	COND	96100	!	!			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	9-Aug-16	958	0.1	COND	45400	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	9-Aug-16	1020	0.2	COND	42190	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Nov-16	940	0.5	COND	47640	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Nov-16	958	0.5	COND	47190	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	20-Mar-17	946	0.3	COND	52200	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	20-Mar-17	1005	0.4	COND	51820	J	J			IWR58
2363J	Palm Coast - 3M	21FLA 27010020	7-Jul-92	915	6.23	CR3	7	U				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	7-Jul-92	915	6.23	CR3	7	U				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	CR3	1.38861	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	CR3	1.09788	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			CR3	0.222164			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			CR3	0.227913			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWM78742	26-Sep-17	852	0.5	CR3	4	U	UV		8	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			CR3	0			TV>	8	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			CR3	0			TV>	8	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			CR3	0.2354865			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			CR3	0.1992845			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			CR3	0.118972			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			CR3	0.2032675			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			CR3	0.2683365			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			CR3	0.105346			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			CR3	0.0800435			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			CR3	0.1598065			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			CR3	0.203424			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			CR3	0.3678005			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			CR3	3.022385			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			CR3	0.1340115			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			CR3	0.2159935			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			CR3	0.1708135			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			CR3	0.498495			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			CR3	0.316109			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			CR3	0.515382			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			CR3	0.183592			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			CR3	0.194429			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	CU	1.24102	I	IQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	CU	1.13351	I	IQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			CU	0.44517			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			CU	1.547463			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			CU	0.5			TV	16	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			CU	0.406166			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			CU	1.102191			I	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			CU	0.416166			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			CU	2.148814			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			CU	1.093848			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			CU	0.3638395			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			CU	1.00011			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			CU	1.82356			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			CU	1.141254			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			CU	1.503291			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			CU	2.572752			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			CU	1.028736			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			CU	1.186697			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			CU	0.390836			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			CU	0.46291			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			CU	1.620326			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			CU	0.492278			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			CU	1.887923			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			CU	1.100392			I	1	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL01	5-Jun-12	953	0.5	DO	5.95	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	5-Jun-12	1012	0.5	DO	6.62	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	9-Aug-16	958	0.1	DO	4.3	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	9-Aug-16	1020	0.2	DO	6.04	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Nov-16	940	0.5	DO	4.28	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Nov-16	958	0.5	DO	4.53	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	20-Mar-17	946	0.3	DO	7.3	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	20-Mar-17	1005	0.4	DO	6.9	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	9-May-17	943	0.5	DO	5.3	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	9-May-17	1008	0.5	DO	6.4	J	J			IWR58
2363J	Palm Coast - 3M	21FLSJWM78742	30-Sep-13	1445	0.5	DOC	6.83	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			DOC	11.3			V	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLA 27010106	14-Nov-90	1330	0.2	ENCOC	2	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	2-Mar-93	900	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Jun-93	1000	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	3-May-94	950	0.98	ENCOC	5	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLVEMDHL01	7-Feb-95	855	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	4-Apr-95	855	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	2-May-95	850	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	6-Jun-95	925	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	13-Feb-96	900	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	4-Feb-97	815	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Apr-97	850	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	2-Jun-98	835	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	7-Jul-98	930	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	7-Jul-98	1005	0.98	ENCOC	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	5-Apr-99	910	0.4	ENCOC	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	5-Feb-02	1155	0.2	ENCOC	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Apr-02	1200	0.2	ENCOC	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	7-Dec-04	945	0.6	ENCOC	5	K	K		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	7-Dec-04	955	0.4	ENCOC	5	K	K		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	4-Apr-06	925	0.6	ENCOC	5	K	KB		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	4-Apr-06	955	0.3	ENCOC	5	K	KB		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	3-Feb-09	945	0.3	ENCOC	3	J	J		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	3-Feb-09	1000	0.4	ENCOC	0.5	U	UJ		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	5-May-09	945	0.3	ENCOC	1	J	J		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	5-May-09	1010	0.3	ENCOC	3	J	J		1	IWR58
2363J	Palm Coast - 3M	21FLA 27010106	25-Oct-95	1330	0.2	FCOLI	37	Q				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	13-Mar-96	1135	0.2	FCOLI	76	Q				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	8-May-96	1150	0.2	FCOLI	30	Q				IWR58
2363J	Palm Coast - 3M	21FLA 27010020	9-Sep-96	932	3.44	FCOLI	18	Q				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	13-Nov-96	1225	0.2	FCOLI	74	Q				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	5-Feb-97	1130	0.2	FCOLI	20	Q				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	3-Jun-98	1145	0.2	FCOLI	3	Q				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	5-Apr-99	910	0.4	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Jun-99	950	0.4	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Jul-99	900	0.6	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	3-Aug-99	840	0.65	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	3-Aug-99	935	0.45	FCOLI	5	K	K			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Sep-99	932	0.55	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	5-Feb-02	1446	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Apr-02	1429	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Apr-02	1516	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Apr-02	1200	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Apr-02	1215	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	23-Oct-02	1235	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	23-Oct-02	1305	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	23-Oct-02	1325	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	23-Oct-02	1056	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	23-Oct-02	1205	0.2	FCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Jun-04	905	0.35	FCOLI	5	K	K		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	7-Dec-04	945	0.6	FCOLI	5	K	K		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	7-Dec-04	955	0.4	FCOLI	5	K	K		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	4-Apr-06	955	0.3	FCOLI	5	K	KB		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-May-06	840	0.5	FCOLI	2	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Jun-06	845	0.5	FCOLI	5	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	13-Jul-06	845	0.5	FCOLI	2	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Aug-06	945	0.5	FCOLI	11	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Sep-06	905	0.5	FCOLI	2	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	1-Nov-06	915	0.5	FCOLI	1	U	QU		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-06	900	0.5	FCOLI	79	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Dec-06	945	0.5	FCOLI	13	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-07	945	0.5	FCOLI	8	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-07	850	0.5	FCOLI	49	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Mar-07	925	0.5	FCOLI	2	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-May-07	930	0.5	FCOLI	46	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jun-07	900	0.5	FCOLI	1700	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Jul-07	905	0.5	FCOLI	11	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Aug-07	910	0.5	FCOLI	11	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-07	925	0.5	FCOLI	110	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	5-Nov-07	935	0.5	FCOLI	23	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Nov-07	910	0.5	FCOLI	240	Q	Q		2	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Dec-07	835	0.5	FCOLI	79	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Jan-08	815	0.5	FCOLI	79	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-08	900	0.5	FCOLI	49	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Mar-08	910	0.5	FCOLI	2	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Apr-08	900	0.5	FCOLI	2	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	14-May-08	845	0.5	FCOLI	2	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Jun-08	845	0.5	FCOLI	8	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jul-08	840	0.5	FCOLI	240	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Aug-08	845	0.5	FCOLI	210	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Aug-08	846	0.5	FCOLI	350	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Sep-08	910	0.5	FCOLI	27	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Sep-08	911	0.5	FCOLI	22	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Oct-08	925	0.5	FCOLI	23	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Nov-08	830	0.5	FCOLI	5	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Nov-08	831	0.5	FCOLI	11	Q	Q		2	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	3-Feb-09	945	0.3	FCOLI	2	J	J		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	3-Feb-09	1000	0.4	FCOLI	5	J	J		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	5-May-09	945	0.3	FCOLI	3	J	J		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	5-May-09	1010	0.3	FCOLI	0.5	U	UJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	FE	448.45296	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	FE	408.00309	Q	Q		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	13-May-15	1315	0.5	FED	12.01694	I	IQ		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	FED	16.89913	I	IQ		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	FED	12.70079	I	IQ		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			FED	10.199959			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			FED	16.63984			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			FED	-2			T	100	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			FED	363.373909				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			FED	102.905904				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			FED	99.847058			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			FED	41.314444			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			FED	25.444644			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			FED	11.152237			I	10	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			FED	16.645196			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			FED	98.871224			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			FED	105.190844				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			FED	64.158042			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			FED	90.089227			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			FED	20.475723			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			FED	13.410472			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			FED	18.509222			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			FED	33.853714			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			FED	49.59242			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			FED	19.728113			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			FED	17.232173			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			FED	14.714991			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	HARD	5251.22984	Q	Q		66.15	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	HARD	5847.51384	Q	Q		66.15	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			HARD	184.0779			Q	2.646	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	K	334.95149	Q	Q		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	K	367.85341	Q	Q		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			K	306.582216				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			K	275.879631				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWM78742	26-Sep-17	852	0.5	K	11.5	I	IV		1.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			K	238			V	1.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			K	11.5			IV	1.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			K	98.661976				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			K	208.913146				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			K	227.232572				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			K	384.451755				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			K	243.482545				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			K	381.090233				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			K	268.739596				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			K	70.82934				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			K	54.046962				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			K	183.869107				2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			K	99.309016				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			K	257.938862				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			K	310.084878				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			K	381.678751				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			K	262.203055				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			K	322.431543				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			K	371.60445				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			K	289.493278				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			K	353.664778				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	MG	1038.64609	Q	Q		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	MG	1189.44998	Q	Q		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	MN	30.16773	Q	Q		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	MN	31.91645	Q	Q		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			MN	12.861884			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			MN	17.109218			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			MN	1			T	6	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			MN	29.80105				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			MN	10.373989			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			MN	9.15554			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			MN	5.349697			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			MN	4.099887			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			MN	5.026833			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			MN	5.145508			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			MN	4.086565			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			MN	2.314746			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			MN	6.380917			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			MN	3.353731			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			MN	3.283031			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			MN	2.946773			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			MN	5.596706			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			MN	8.222809			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			MN	6.807107			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			MN	3.152889			I	2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			MN	5.659548			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			MN	6.078645			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	MO	10.41008	Q	Q		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	MO	10.17808	Q	Q		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			MO	9.366832			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			MO	9.028107			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWM78742	26-Sep-17	852	0.5	MO	6	U	UV		12	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			MO	1			TV	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			MO	1			TV	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			MO	2.693714			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			MO	6.257424			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			MO	6.869127			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			MO	9.354206			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			MO	7.639636			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			MO	8.9915			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			MO	6.295885			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			MO	2.589068			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			MO	0.9650065			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			MO	5.204262			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			MO	3.842364			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			MO	7.207443			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			MO	8.008552			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			MO	9.450058			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			MO	5.925896			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			MO	9.802758			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			MO	10.815758			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			MO	8.558757			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			MO	10.51373			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLA 27010020	7-Jul-92	915	6.23	NA	4480	J				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	7-Jul-92	915	6.23	NA	4480	J				IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	NA	8698.89173	Q	Q		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	NA	9749.53249	Q	Q		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			NA	8320.173				2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			NA	7509.67684				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			NA	320			V	0.8	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			NA	2540.79265				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			NA	5797.22093				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			NA	6282.36843				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			NA	8888.6121				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			NA	6276.20863				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			NA	10540.4283				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			NA	7282.41424				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			NA	1829.96377				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			NA	1467.64787				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			NA	4525.34085				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			NA	2578.03321				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			NA	7245.77681				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			NA	8938.16496				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			NA	9542.37126				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			NA	7151.07645				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			NA	8041.01142				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			NA	10193.5878				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			NA	8507.12033				2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			NA	9671.76544				2	SJRWMD
2363J	Palm Coast - 3M	21FLA 27010106	18-Jan-78	1215	1	NH4	0.01	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	4-Nov-85	1449	2	NH4	0.06	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	31-Mar-86	1300	3.2	NH4	0.06	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	30-Jul-86	1316	2	NH4	0.06	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	27-Jan-87	1332	3.5	NH4	0.06	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	14-Sep-98	1016	4.5	NH4	0.051	J				IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-06	1345	0.5	NH4	-0.0162	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Mar-06	915	0.5	NH4	-0.0058	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Sep-06	905	0.5	NH4	0.00755	T	TQ		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-06	900	0.5	NH4	-0.00685	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Apr-07	850	0.5	NH4	-0.0128	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	5-Nov-07	935	0.5	NH4	-0.00615	T	T		0.05	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Jan-08	815	0.5	NH4	-0.0001	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Mar-08	910	0.5	NH4	-0.01335	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Apr-08	900	0.5	NH4	-0.00255	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	14-May-08	845	0.5	NH4	-0.0038	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Dec-08	800	0.5	NH4	-0.0147	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Jan-09	850	0.5	NH4	-0.00435	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Feb-09	855	0.5	NH4	-0.02665	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Aug-09	805	0.5	NH4	0.1019	I	IQ		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Oct-09	820	0.5	NH4	-0.00165	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Jan-10	846	0.5	NH4	-0.01595	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Feb-10	830	0.5	NH4	0.01425	T	TQ		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jun-10	820	0.5	NH4	-0.0089	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Aug-10	1155	0.5	NH4	-0.00785	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Sep-10	1150	0.5	NH4	-0.01185	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Nov-10	845	0.5	NH4	-0.00115	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Dec-10	845	0.5	NH4	-0.00365	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Jan-11	815	0.5	NH4	-0.0052	T	T		0.05	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Sep-11	1145	0.5	NH4	-0.0021	T	T		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Nov-11	1200	0.5	NH4	0.0059	T	TQ		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Jan-12	1020	0.5	NH4	0.00905	T	TQ		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Mar-13	1315	0.5	NH4	-0.0042	T	T		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Apr-13	1305	0.5	NH4	0.0328	T	TQ		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-13	1235	0.5	NH4	0.02555	T	TQ		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Sep-13	1445	0.5	NH4	-0.0013	T			0.005	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jan-14	940	0.5	NH4	-0.01075	T	TQ		0.015	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-14	1220	0.5	NH4	-0.0133	T	TJ		0.015	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-15	850	0.5	NH4	-0.00006	T	T		0.005	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			NH4	0.150087				0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			NH4	0.203881				0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			NH4	0.145			V	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			NH4	0.124821				0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			NH4	0.104573				0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			NH4	0.043463				0.005	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			NH4	0.008929			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			NH4	0.05732				0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			NH4	0.006569			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			NH4	0.006825			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			NH4	0.017591			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			NH4	0.01115			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			NH4	0.050116				0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			NH4	0.009852			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			NH4	0.00968			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			NH4	0.019989			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			NH4	0.022462				0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			NH4	0.041831				0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			NH4	0.040931				0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			NH4	0.010389			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			NH4	0.008055			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			NH4	0.007627			I	0.005	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	13-Oct-14	950	0.5	NI	-0.0077	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Dec-14	1305	0.5	NI	-0.22195	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	NI	1.09574	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	NI	0.26991	T	TQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	13-Jan-16	1340	0.5	NI	-0.21778	T	T		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Aug-16	1403	0.51	NI	-0.34287	T	T		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Dec-16	1328	0.5	NI	-0.019975	T	T		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			NI	0.084192			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			NI	0.341635			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWM78742	26-Sep-17	852	0.5	NI	9	U	UV		18	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			NI	0			T	18	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			NI	0			TV	18	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			NI	0.086683			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			NI	0.682127			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			NI	0.281554			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			NI	0.342472			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			NI	0.2587995			T	2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			NI	0.1787165			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			NI	0.1933585			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			NI	0.3321965			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			NI	0.0654545			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			NI	0.2495655			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			NI	2.629774			I	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			NI	0.2077595			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			NI	0.1935085			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			NI	0.183624			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			NI	0.218364			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			NI	0.1991045			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			NI	0.3065895			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			NI	0.151975			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			NI	0.1826035			T	2	SJRWMD
2363J	Palm Coast - 3M	21FLA 27010106	18-Jan-78	1215	1	NO3	0.005	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	13-Nov-84	1347	4	NO3O2	0.05	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	11-Feb-86	1330	3	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	12-Feb-86	830	3	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	31-Mar-86	1300	3.2	NO3O2	0.05	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	28-Apr-86	1325	2	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	23-Jun-86	1115	4	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	28-Jul-86	1242	2	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	29-Jul-86	915	3	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	30-Jul-86	1316	2	NO3O2	0.05	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	25-Aug-86	1245	4	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	26-Aug-86	745	3	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	7-Oct-86	1105	2	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	6-Jan-87	950	3	NO3O2	0.04	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	27-Jan-87	1332	3.5	NO3O2	0.05	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	10-Apr-89	930	1	NO3O2	0.02	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	11-Jul-89	920	1	NO3O2	0.02	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	17-Apr-90	955	3.28	NO3O2	0.02	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Feb-05	915	0.5	NO3O2	0.0005	T	TQ		0.004	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Feb-05	935	0.6	NO3O2	0.0015	T	TQ		0.004	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Jul-07	905	0.5	NO3O2	0.1068	Q	Q		0.01	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Nov-07	910	0.5	NO3O2	0.0285	I	IQ		0.01	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-08	900	0.5	NO3O2	-0.0003	T	T		0.01	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Mar-10	845	0.5	NO3O2	0.0394	I	IQ		0.01	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Mar-10	846	0.5	NO3O2	0.0105	I	IQ		0.01	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jul-12	1015	0.5	NO3O2	-0.00045	T	T		0.01	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Oct-13	1315	0.5	NO3O2	0.0332	I	IQ		0.01	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			NO3O2	0.0333			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			NO3O2	0.0332			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			NO3O2	0.0569				0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			NO3O2	0.0731				0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			NO3O2	0.0749			>	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			NO3O2	0.0157			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			NO3O2	0.0331			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			NO3O2	0.0018			T	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			NO3O2	0.0034			T	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			NO3O2	0.0171			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			NO3O2	0.0128			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			NO3O2	0.0161			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			NO3O2	0.0119			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			NO3O2	0.0109			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			NO3O2	0.00495			T	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			NO3O2	0.0227			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			NO3O2	0.0831			>	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			NO3O2	0.0829			>	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			NO3O2	0.0136			I>	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			NO3O2	0.0142			I	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			NO3O2	0.00105			T	0.01	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Sep-13	1445	0.5	PB	-0.64384	T	T		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Dec-13	1205	0.5	PB	-0.261215	T	T		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-May-14	1255	0.5	PB	-0.242145	T	T		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Jun-14	1505	0.5	PB	-0.19356	T	T		2	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Jul-14	1225	0.5	PB	-0.380815	T	T		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Dec-14	1305	0.5	PB	-0.292645	T	T		2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	PB	0.166125	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	PB	0.1473	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			PB	-0.0623125			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			PB	0.005639			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			PB	-0.5			T	40	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			PB	-0.5			T	40	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			PB	0.0840705			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			PB	0.02511			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			PB	0.020203			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			PB	0.1058305			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			PB	0.0123105			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			PB	0.0171545			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			PB	-0.09688			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			PB	0.030351			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			PB	0.0260815			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			PB	-0.000188			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			PB	0.0310065			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			PB	-0.127651			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			PB	-0.1314655			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			PB	0.0083385			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			PB	0.012193			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			PB	0.074999			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			PB	0.0589445			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			PB	0.0643865			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			PB	-0.007924			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Oct-15	1435	0.5	PD	0.1125	I	IQ		0.04	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Dec-15	1245	0.5	PD	0.0403	I	IQ		0.04	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	9-Aug-16	958	0.1	PH	7.85	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	9-Aug-16	1020	0.2	PH	7.99	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Nov-16	940	0.5	PH	7.59	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Nov-16	958	0.5	PH	7.6	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLVEMDHL01	20-Mar-17	946	0.3	PH	7.8	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	20-Mar-17	1005	0.4	PH	7.8	J	J			IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	9-Feb-05	1230	0.5	PHEOA	-0.45774	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	9-Aug-05	900	0.5	PHEOA	2.49111	I	IJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Jan-08	815	0.5	PHEOA	-0.002225	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Apr-08	900	0.5	PHEOA	-0.077875	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Feb-09	855	0.5	PHEOA	-0.037825	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	3-Nov-09	850	0.5	PHEOA	-0.11					IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Jun-14	1505	0.5	PHEOA	2.83281	I	IQJ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			PHEOA	1.41777096			IJ	1	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Feb-05	915	0.5	PORD	0.0025	T	TQ		0.008	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Feb-05	935	0.6	PORD	0.0025	T	TQ		0.008	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Jul-07	905	0.5	PORD	0.0337	I	IQ		0.012	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Mar-09	815	0.5	PORD	-0.00185	T	T		0.012	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Dec-10	845	0.5	PORD	-0.0003	T	T		0.012	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Aug-13	1345	0.5	PORD	0.0796	Q	Q		0.012	IWR58
2363J	Palm Coast - 3M	21FLSJWM78742	27-Feb-17	854	0.6	PORD	0.0321	I	IQ		0.012	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Feb-17	854	0.6	PORD	0.0321	I	IQ		0.012	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			PORD	0.0629				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			PORD	0.0892				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			PORD	0.0752			V	0.002	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			PORD	0.1426				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			PORD	0.0503				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			PORD	0.0464				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			PORD	0.0224			I	0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			PORD	0.0512				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			PORD	0.0149			I	0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			PORD	0.0268			I	0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			PORD	0.0458				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			PORD	0.1097				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL01	17-Jul-18	1210	0.5	PORD	0.0544	Q	Q		0.012	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			PORD	0.0637				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			PORD	0.0616				0.012	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			PORD	0.045				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			PORD	0.0196			I	0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			PORD	0.0244			I	0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			PORD	0.0625				0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			PORD	0.0327			I	0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWM78742	29-Jan-19	940	0.5	PORD	0.0223	I	IQ		0.012	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			PORD	0.0223			IQ	0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			PORD	0.0185			I	0.012	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			PORD	0.0244			I	0.012	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL01	7-Aug-01	910	0.5	SALIN	1654					IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	9-Aug-16	958	0.1	SALIN	29.33	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	9-Aug-16	1020	0.2	SALIN	27.02	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Nov-16	940	0.5	SALIN	31.05	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Nov-16	958	0.5	SALIN	30.73	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	20-Mar-17	946	0.3	SALIN	34.42	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	20-Mar-17	1005	0.4	SALIN	34.16	J	J			IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	SB	0.08866	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	SB	0.095715	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Dec-15	1245	0.5	SB	-0.065755	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	13-Jan-16	1340	0.5	SB	-0.00169	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Jul-16	1346	0.5	SB	-0.13585	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			SB	0.178858			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			SB	0.0858855			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			SB	1			T	40	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			SB	0.061011			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			SB	0.093215			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			SB	0.098808			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			SB	0.20391			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			SB	0.0986895			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			SB	0.0976315			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			SB	-0.0006395			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			SB	-0.0066345			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			SB	0.1230445			T	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			SB	0.0516185			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			SB	0.0592095			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			SB	0.094383			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			SB	-0.005049			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			SB	0.009455			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			SB	0.103776			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			SB	0.0607295			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			SB	0.209187			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			SB	0.0031155			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			SB	-0.0242285			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			SB	0.1531635			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			SB	-0.14707			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			SB	0.238327			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-14	1220	0.5	SE	-1.40148	T	T		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Jun-14	1505	0.5	SE	-0.22526	T	T		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Jul-14	1225	0.5	SE	-1.59063	T	T		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Sep-14	1235	0.5	SE	-3.09222	T	T		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Jan-15	1145	0.5	SE	-4.866255	T	T		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	SE	18.86537	I	IQ		7	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	SE	14.28601	I	IQ		7	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Feb-17	854	0.6	SE	-0.92483	T	T		14	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			SE	0.758956			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			SE	-0.04804			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			SE	1.167233			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWM78742	26-Sep-17	852	0.5	SE	30	U	UV		60	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			SE	0			T	60	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			SE	-0.5			TV	60	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			SE	-2.6431435			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			SE	-1.6169225			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			SE	0.280885			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			SE	-0.572428			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			SE	-0.8794385			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			SE	-0.907142			T	14	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			SE	-0.639312			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			SE	-0.775849			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			SE	-0.0383575			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			SE	-0.6249205			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			SE	-2.7598815			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			SE	-3.067458			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			SE	-0.5977685			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			SE	-1.377696			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			SE	3.6291265			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			SE	3.55302			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			SE	54.260009			I	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			SE	4.035324			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			SE	-2.4928635			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			SE	5.630423			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			SE	3.702488			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			SE	15.341336			I	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			SE	22.617363			I	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			SE	4.1033965			T	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			SE	30.434609			I	14	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			SILAT	3.1890881			V	0.068	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			SILCA	4.5801				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			SILCA	6.0837			J	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			SILCA	5.9651			V>	0.068	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			SILCA	6.8528				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			SILCA	3.1742				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			SILCA	2.7684				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			SILCA	1.1649				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			SILCA	2.7722				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			SILCA	0.3127			IJ	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			SILCA	0.0743			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			SILCA	5.4216				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			SILCA	5.5965				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			SILCA	7.1516				0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			SILCA	6.0896				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			SILCA	4.8017			J	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			SILCA	1.5552				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			SILCA	1.066			J>	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			SILCA	2.2484				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			SILCA	2.2402				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			SILCA	0.5428			IJ>	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			SILCA	1.1352				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			SILCA	0.4576			I	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWM78742	26-Nov-12	945	0.5	SILCO	457.5142	I	IQ		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Nov-12	945	0.5	SILCO	457.51	I	IQ		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Dec-12	1320	0.5	SILCO	523.81	Q	Q		100	IWR58
2363J	Palm Coast - 3M	21FLSJWM78742	30-Sep-13	1445	0.5	SILCO	1164.77711	Q	Q		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Sep-13	1445	0.5	SILCO	1164.78	Q	Q		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Oct-13	1315	0.5	SILCO	892.21	Q	Q		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Nov-13	1235	0.5	SILCO	544.24	Q	Q		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Dec-13	1205	0.5	SILCO	540.45	Q	Q		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jan-14	940	0.5	SILCO	648.12	Q	Q		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Aug-14	1215	0.5	SILCO	2710.35	Q	Q		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Dec-14	1305	0.5	SILCO	499.12	I	IQ		100	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Aug-13	1345	0.5	SN	-0.232035	T	T		3	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Sep-14	1235	0.5	SN	-1.070575	T	T		3	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Mar-15	1105	0.5	SN	-0.03409	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	SN	0.02829	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	SN	-0.02779	T	TQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Aug-15	1430	0.5	SN	-0.04807	T	T		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Sep-15	1430	0.5	SN	-0.05262	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Oct-15	1435	0.5	SN	-0.17084	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Dec-15	1245	0.5	SN	-0.036185	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Apr-16	1415	0.5	SN	-0.05627	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Jul-16	1346	0.5	SN	-0.076955	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Sep-16	1256	0.49	SN	-0.065005	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Jan-17	1358	0.51	SN	-0.031175	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Feb-17	854	0.6	SN	-0.031805	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-May-17	759	0.5	SN	-0.136785	T	T		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			SN	0.0373125			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			SN	0.0188255			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			SN	0			T	40	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			SN	0.0004035			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			SN	0.0091925			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			SN	-0.001416			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			SN	0.030004			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			SN	0.000545			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			SN	0.0154745			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			SN	-0.0039225			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			SN	-0.146468			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			SN	-0.157714			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			SN	0.0255765			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			SN	0.020503			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			SN	0.0365725			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			SN	0.031867			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			SN	-0.1538365			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			SN	-0.0038935			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			SN	-0.2264885			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			SN	0.022222			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			SN	0.037333			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			SN	-0.057482			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			SN	0.1670465			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			SN	0.1027485			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			SN	0.0485555			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			SN	0.1541315			T	1	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			STR	6005.17156				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			STR	6340.96404				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			STR	4640				6	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			STR	2198.73604				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			STR	4388.98473				10	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			STR	4818.97117				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			STR	6083.30027				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			STR	5029.4306				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			STR	7584.34555				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			STR	6085.73469				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			STR	1467.66038				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			STR	956.747095				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			STR	3000.97465				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			STR	2055.62064				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			STR	5953.03268				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			STR	6570.11798				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			STR	6942.17857				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			STR	5224.83973				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			STR	6254.67641				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			STR	6877.99092				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			STR	5632.06672				10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			STR	6756.89634				10	SJRWMD
2363J	Palm Coast - 3M	21FLA 27010106	14-Nov-90	1330	4.5	STREV	0.5	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	14-May-91	1615	2	STREV	0.5	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	18-Aug-71	1345	1	TCOLI	1.8	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	13-Nov-84	1347	4	TCOLI	1.8	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	31-Mar-86	1300	3.2	TCOLI	1.8	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Jun-93	903	0.98	TCOLI	5	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	4-Apr-95	900	0.2	TCOLI	20	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	25-Oct-95	1330	0.2	TCOLI	195	Q				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	5-Mar-96	830	0.98	TCOLI	5	K				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	5-Mar-96	840	0.98	TCOLI	5	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	13-Mar-96	1135	0.2	TCOLI	150	Q				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	8-May-96	1150	0.2	TCOLI	2700	Q				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	13-Nov-96	1225	0.2	TCOLI	140	Q				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	5-Feb-97	1130	0.2	TCOLI	100	Q				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	2-Jun-98	905	0.98	TCOLI	5	K				IWR58
2363J	Palm Coast - 3M	21FLA 27010106	3-Jun-98	1145	0.2	TCOLI	3	Q				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Apr-02	1215	0.2	TCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	23-Oct-02	1205	0.2	TCOLI	5	K	K			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	9-Aug-16	958	0.1	TEMP	27.61	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	9-Aug-16	1020	0.2	TEMP	27.79	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Nov-16	940	0.5	TEMP	22.19	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	8-Nov-16	958	0.5	TEMP	22.26	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	20-Mar-17	946	0.3	TEMP	18.1	J	J			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	20-Mar-17	1005	0.4	TEMP	18	J	J			IWR58
2363J	Palm Coast - 3M	21FLA 27010106	11-Feb-98	1121	2	TKN	0.47	Q				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	17-Jul-02	1244	1.1	TKN	1.87	Q	Q			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	17-Jul-02	1317	1	TKN	1.87	Q	Q			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	17-Jul-02	1055	1.6	TKN	1.66	Q	Q			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	17-Jul-02	1105	1.2	TKN	1.7	Q	Q			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	11-Jul-06	915	0.2	TKN	0.45	J	J		0.06	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	11-Jul-06	935	0.4	TKN	0.36	J	J		0.06	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	3-Oct-06	925	0.4	TKN	0.61	J	J		0.06	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	3-Oct-06	945	0.5	TKN	0.71	J	J		0.06	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	6-Feb-07	1010	0.4	TKN	0.35	J	J		0.06	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	7-Aug-07	955	0.2	TKN	0.6	Q	Q		0.08	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	7-Aug-07	1012	0.6	TKN	0.95	Q	Q		0.08	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	5-Aug-08	954	0.6	TKN	0.8	J	J		0.08	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	16-Jun-15	1015	0.4	TKN	4.09	J	J		0.08	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Oct-15	1435	0.5	TKN	0.4373	Q	Q		0.2	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	8-Dec-15	1040	0.6	TKN	3.21	J	J		0.08	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Dec-15	1245	0.5	TKN	0.543	Q	Q		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			TKN	0.6483				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			TKN	0.594				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			TKN	0.76				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			TKN	0.9163				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			TKN	0.6003				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			TKN	0.4697			I	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			TKN	0.2727			I	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			TKN	0.6102				0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			TKN	0.3798			I	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			TKN	0.3949			I	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			TKN	0.7472				0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			TKN	0.7551				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			TKN	0.7532				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			TKN	0.7736				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			TKN	0.5689				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			TKN	0.3385				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			TKN	0.259				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			TKN	0.3793				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			TKN	0.3497				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			TKN	0.1997				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			TKN	0.2764				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			TKN	0.2568				0.05	SJRWMD
2363J	Palm Coast - 3M	21FLA 27010020	7-Jul-92	915	6.23	TL	30	U				IWR58
2363J	Palm Coast - 3M	21FLA 27010025	7-Jul-92	915	6.23	TL	30	U				IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Aug-14	1215	0.5	TL	-0.35295	T	T		3	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Mar-15	1105	0.5	TL	-0.004935	T	T		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	TL	0.022685	T	TQ		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	TL	-0.00122	T	TQ		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Aug-15	1430	0.5	TL	-0.00379	T	T		0.1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Sep-15	1430	0.5	TL	-0.01003	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Oct-15	1435	0.5	TL	-0.014565	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Dec-15	1245	0.5	TL	-0.00956	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Feb-16	1126	0.5	TL	-0.00139	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Apr-16	1415	0.5	TL	-0.01279	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Jul-16	1346	0.5	TL	-0.013585	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Sep-16	1256	0.49	TL	-0.027845	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Jan-17	1358	0.51	TL	-0.02285	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	20-Apr-17	820	0.5	TL	-0.003775	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-May-17	759	0.5	TL	-0.03547	T	T		0.2	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			TL	-0.0097795			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			TL	0.002271			T	0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			TL	-0.5			T	40	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			TL	-0.5			T	40	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			TL	0.0030535			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			TL	0.010282			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			TL	0.0055885			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			TL	-0.001054			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			TL	0.0043115			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			TL	-0.000268			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			TL	0.006936			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			TL	-0.0549445			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			TL	-0.0533675			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			TL	0.002597			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			TL	0.003525			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			TL	0.0047725			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			TL	0.008254			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			TL	-0.010303			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			TL	-0.036238			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			TL	-0.0666345			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			TL	-0.0009175			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			TL	-0.001076			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			TL	-0.0197485			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			TL	-0.0496945			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			TL	0.0428555			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			TL	0.0167425			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			TL	0.024279			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			TL	-0.0030285			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			TL	-0.004686			T	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Jun-12	1405	0.5	TOC	9.4	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Dec-12	1320	0.5	TOC	5.14	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWM78742	30-Sep-13	1445	0.5	TOC	6.55	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	30-Sep-13	1445	0.5	TOC	6.55	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Dec-13	1205	0.5	TOC	4.54	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Jan-14	940	0.5	TOC	6.51	I	IQ		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Dec-15	1245	0.5	TOC	4.85	I	IQ		1	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			TOC	12.1			V	0.2	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL01	17-Jul-02	1244	1.1	TP	0.136	Q	Q			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	17-Jul-02	1317	1	TP	0.122	Q	Q			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	17-Jul-02	1055	1.6	TP	0.138	Q	Q			IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	17-Jul-02	1105	1.2	TP	0.12	Q	Q			IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-07	925	0.5	TP	0.16641	I	YI		0.05	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	5-May-09	1010	0.4	TP	0.13	J	J		0.02	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Oct-15	1435	0.5	TP	0.1343	I	IQ		0.04	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Dec-15	1245	0.5	TP	0.0968	I	IQ		0.04	IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	7-Jan-97	840	1.48	TSS	14	J				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	7-Jan-97	900	2.95	TSS	10	J				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	4-Mar-97	830	1.8	TSS	11	J				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	4-Mar-97	845	2.62	TSS	13	J				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	4-Mar-97	850	2.62	TSS	9.8	J				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL01	5-Aug-97	830	4.59	TSS	24	J				IWR58
2363J	Palm Coast - 3M	21FLVEMDHL02	5-Aug-97	900	1.31	TSS	12	J				IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Oct-10	910	0.5	TSS	66	Q	Q		2.9	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Mar-16	1405	0.5	TSS	11.2108	I	IQ		4.484305	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	22-Sep-10	1150	0.5	TURB	6.2334	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Jul-13	1255	0.5	TURB	0.88195	I	IQ		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Dec-13	1205	0.5	TURB	5.20223	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	12-Feb-15	850	0.5	TURB	3.70554	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	TURB	6.536	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	TURB	9.95803	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			TURB	1.96055079			Q	0.5	SJRWMD
2363J	Palm Coast - 3M	21FLSJWM78742	28-Aug-18	750	0.5	TURB	18.67819	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			TURB	18.6781902			Q	0.5	SJRWMD
2363J	Palm Coast - 3M	21FLVEMDHL02	12-Mar-19	945	0.5	TURB	11.65512	Q	Q		0.5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	VAN	1.69284	T	TQ		6	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	VAN	1.21623	T	TQ		6	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	10-Mar-16	1405	0.5	VAN	-0.1652	T	T		12	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	21-Dec-16	1328	0.5	VAN	-0.22434	T	T		12	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			VAN	0.9268915			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			VAN	1.56225			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			VAN	-1.5			TJ	20	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			VAN	0.7200665			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			VAN	0.91253			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			VAN	-0.1782145			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			VAN	0.672422			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			VAN	0.6916705			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			VAN	1.643864			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			VAN	0.8397265			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			VAN	0.3530225			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			VAN	0.6208095			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			VAN	0.578955			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			VAN	0.2269135			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			VAN	-2.392225			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			VAN	0.643708			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			VAN	1.2858985			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			VAN	1.3175775			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			VAN	2.263798			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			VAN	3.35839			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			VAN	3.230088			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			VAN	3.641314			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			VAN	0.3328835			T	12	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Oct-10	910	0.5	VOLSS	16	Q	Q		2.4	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1345	0.5	ZN	0.674555	T	TQ		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	11-Jun-15	1346	0.5	ZN	1.44466	T	TQ		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	16-Jul-15	1310	0.5	ZN	-1.041435	T	T		5	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	17-Nov-15	1430	0.5	ZN	-0.190365	T	T		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	19-Jun-17	920	0.6	ZN	-0.03354	T	T		10	IWR58
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			ZN	-1.397236			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	25-Jul-17			ZN	-0.559269			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-17			ZN	0.923225			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			ZN	-0.5			T	40	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Sep-17			ZN	-0.5			T	40	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Oct-17			ZN	0.8686105			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-17			ZN	1.8371285			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	14-Dec-17			ZN	1.30091			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	31-Jan-18			ZN	23.144598			I	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-18			ZN	0.9062175			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Mar-18			ZN	0.8624075			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Apr-18			ZN	1.5153525			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-May-18			ZN	0.748913			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Jun-18			ZN	1.9059755			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	24-Jul-18			ZN	0.6051515			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Aug-18			ZN	1.6875395			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	27-Sep-18			ZN	0.6911165			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	23-Oct-18			ZN	0.77368			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	28-Nov-18			ZN	0.726871			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	18-Dec-18			ZN	1.662117			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	15-Jan-19			ZN	1.303979			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	29-Jan-19			ZN	0.6583095			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Feb-19			ZN	1.048559			T	10	SJRWMD
2363J	Palm Coast - 3M	21FLSJWMFLB	26-Mar-19			ZN	0.966977			T	10	SJRWMD
2631	Unnamed Ditch - 3F	21FLGW 54700	17-Jan-19	1001	0.25	ECOLI	221.2	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	6-Jan-15	1040	0.3	ACETA	0.00125	U	UJ		0.0025	IWR58
2634	Tomoka River - 3F	21FLSJWMTR11	10-Feb-94	1140		ALK	133	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-01			ALK	140			JA	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	12-Sep-05			ALK	23			J	0.65	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			ALK	132			Y	0.65	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	14-Oct-96	1345		CHLA	11	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	18-Dec-96	1105		CHLA	2.5	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-97	1030		CHLA	3.8	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-97	1330		CHLA	6.7	Q				IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	6-May-13	1105	0.8	CHLA	1.93	Q	Q		0.8	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	6-May-13	1130	0.7	CHLA	2.02	Q	Q		0.8	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Aug-15	1330	0.3	CHLA	1.8	A	AJ		0.4	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	3-Aug-15			CHLA	1.8			AJ	0.4	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.4	CHLA	0.40435	T	TY		1	IWR58
2634	Tomoka River - 3F	21FLA 27010579	16-Mar-93	1430	1.15	CHLAC	0.5	K				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	14-Oct-96	1345		CHLAC	1.2	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	18-Dec-96	1105		CHLAC	0	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-97	1330		CHLAC	2.2	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	19-Nov-98	1230	0.2	CHLAC	0.5	U	YU		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Aug-01			CHLAC	1			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-01			CHLAC	0.85			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-01			CHLAC	0.85			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Apr-04	1145	0.3	CHLAC	0.425	U	UQ		0.85	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Apr-04			CHLAC	0.425			UQ	0.85	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-04	1330	0.5	CHLAC	0.55	U	UQ		1.1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Sep-04			CHLAC	0.55			UQ	1.1	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	11-Jul-11	1100	0.6	CHLAC	16.92	Q	Q		0.5	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Jul-11	1130	0.5	CHLAC	3.67	Q	Q		0.5	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	3-Oct-11	1050	0.6	CHLAC	17.1	J	J		0.5	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	6-May-13	1105	0.8	CHLAC	1.54	I	IQ		0.68	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	6-May-13	1130	0.7	CHLAC	2.11	I	IQ		0.68	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.4	CHLAC	0.370835	T	TY		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	14-Oct-96	1345		CHLB	2.2	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	18-Dec-96	1105		CHLB	0	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-97	1030		CHLB	2.3	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-97	1330		CHLB	1.1	Q				IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	3-Jan-00	1000	1	CHLB	-0.07					IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	3-Jan-00	1020	0.8	CHLB	-0.16					IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	2-Oct-00	1050	0.8	CHLB	-0.09					IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	26-Oct-05	1520	0.5	CHLB	-0.14584	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	7-Nov-05	1410	0.5	CHLB	-0.17582	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	5-Dec-05	1100	0.3	CHLB	-0.331535	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	9-Jan-06	930	0.3	CHLB	-0.128155	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	1-Feb-06	1150	0.1	CHLB	-0.1066	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Feb-07	1030	0.6	CHLB	-0.03				1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWMNCBTR06	14-Jan-08	1040	0.5	CHLB	-0.22346	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Feb-08	1500	0.1	CHLB	-0.199675	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	10-Mar-08	1540	0.5	CHLB	-0.168765	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	14-Apr-08	920	0.4	CHLB	-0.238665	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	5-May-08	1420	0.3	CHLB	-0.372875	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Aug-08	1410	0.3	CHLB	-0.396425	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	9-Sep-08	1350	0.5	CHLB	-0.216325	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	15-Oct-08	1430	0.5	CHLB	-0.01655	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	3-Nov-08	1430	0.5	CHLB	-0.007085	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	7-Jan-09	1210	0.3	CHLB	-0.036175	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	2-Feb-09	1206	0.6	CHLB	-0.24					IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Mar-09	1310	0.2	CHLB	-0.027515	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	8-Sep-09	1500	0.5	CHLB	-0.44359	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	11-Jan-10	1330	0.5	CHLB	-0.04008	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	11-Jan-10	1331	0.5	CHLB	-0.04216	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	1-Feb-10	1400	0.5	CHLB	-0.110145	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	1-Mar-10	1118	0.4	CHLB	-0.05				1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	1-Mar-10	1202	0.5	CHLB	-0.03				1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	5-Apr-10	1250	0.5	CHLB	-0.148295	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	5-Apr-10	1128	0.2	CHLB	-0.01					IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Apr-10	1152	0.3	CHLB	-0.08					IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	12-Jul-10	1320	0.2	CHLB	-2.016405	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	13-Sep-10	1310	0.5	CHLB	-0.057105	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Oct-10	1210	0.3	CHLB	-0.008425	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Oct-10	1211	0.3	CHLB	-0.031135	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	15-Dec-10	1500	0.1	CHLB	-0.160385	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	10-Jan-11	1410	0.5	CHLB	-0.03378	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	9-Feb-11	1400	0.3	CHLB	-0.054455	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	6-Apr-11	1420	0.5	CHLB	-0.059465	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Apr-11	1201	0.3	CHLB	-0.11				1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	6-May-13	1105	0.8	CHLB	1.87	Q	Q			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	6-May-13	1130	0.7	CHLB	0.29	Q	Q			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	17-Feb-14	1128	0.5	CHLB	-0.03					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLVEMDTR03	7-Nov-16	1019	0.55	CHLB	0.436785	T	TY		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.4	CHLB	-0.054285	T	TY		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	13-Mar-17	1100	0.9	CHLB	-0.158525	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	13-Nov-17	1055	0.15	CHLB	-0.4678	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	3-Jan-18	930	0.52	CHLB	-0.05788	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	16-Jul-18	956	0.5	CHLB	-0.0179	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	14-Jan-19	903	0.5	CHLB	-0.017635	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	14-Jan-19	845	0.5	CHLB	-0.02951	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Mar-19	916	0.45	CHLB	-0.01466	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	14-Oct-96	1345		CHLC	3.5	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	18-Dec-96	1105		CHLC	0	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-97	1030		CHLC	3.1	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-97	1330		CHLC	1.7	Q				IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	3-May-99	1035	0.4	CHLC	-0.1					IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	2-Aug-99	1030	0.5	CHLC	-0.81					IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	3-Jan-00	1000	1	CHLC	-0.09					IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	3-Jan-00	1020	0.8	CHLC	-0.09					IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	3-Apr-00	1050	0.6	CHLC	-0.03					IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	10-Jul-00	1020	1.4	CHLC	-0.23					IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Feb-01	1040	0.9	CHLC	-0.15					IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	26-Oct-05	1520	0.5	CHLC	-0.181375	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	7-Nov-05	1410	0.5	CHLC	-0.12721	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	5-Dec-05	1100	0.3	CHLC	-0.435075	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	9-Jan-06	930	0.3	CHLC	-0.1942	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	1-Feb-06	1150	0.1	CHLC	-0.16499	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	5-Feb-07	1015	0.8	CHLC	-0.04				1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Feb-07	1030	0.6	CHLC	-0.01				1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	14-Jan-08	1040	0.5	CHLC	-0.24244	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Feb-08	1500	0.1	CHLC	-0.23746	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	10-Mar-08	1540	0.5	CHLC	-0.17148	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	14-Apr-08	920	0.4	CHLC	-0.24006	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	15-Jul-08	1530	0.3	CHLC	-0.15369	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Aug-08	1410	0.3	CHLC	-0.407175	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWMNCBTR06	9-Sep-08	1350	0.5	CHLC	-0.3341	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	3-Nov-08	1430	0.5	CHLC	-0.05841	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	10-Dec-08	1350	0.2	CHLC	-0.0233	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	7-Jan-09	1210	0.3	CHLC	-0.08846	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Mar-09	1310	0.2	CHLC	-0.01306	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	4-May-09	1118	0.5	CHLC	-1.74					IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	3-Aug-09	1150	0.5	CHLC	-0.07126	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	7-Oct-09	1330	0.2	CHLC	-0.100535	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	11-Jan-10	1330	0.5	CHLC	-0.05453	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	11-Jan-10	1331	0.5	CHLC	-0.06644	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	1-Mar-10	1118	0.4	CHLC	-0.01				1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	5-Apr-10	1250	0.5	CHLC	-0.303105	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Apr-10	1152	0.3	CHLC	-0.01					IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	3-May-10	1300	0.5	CHLC	-0.02217	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	2-Aug-10	1340	0.5	CHLC	-0.105075	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	13-Sep-10	1310	0.5	CHLC	-0.130105	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Oct-10	1210	0.3	CHLC	-0.01522	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	4-Oct-10	1125	0.5	CHLC	-2.3					IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	15-Dec-10	1500	0.1	CHLC	-0.16836	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	10-Jan-11	1410	0.5	CHLC	-0.00891	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	10-Jan-11	1140	0.5	CHLC	-0.03				1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	9-Feb-11	1400	0.3	CHLC	-0.0251	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	6-Apr-11	1420	0.5	CHLC	-0.15473	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Apr-11	1201	0.3	CHLC	-0.08				1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	11-Jul-11	1100	0.6	CHLC	-5					IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	3-Oct-11	1121	0.5	CHLC	-0.04					IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	3-Dec-12	1109	0.6	CHLC	-13.51				1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	6-May-13	1105	0.8	CHLC	-0.33	Q	Q			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	6-May-13	1130	0.7	CHLC	0.36	Q	Q			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	17-Feb-14	1128	0.5	CHLC	-0.06					IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	8-Aug-16	1125	0.65	CHLC	-4.75457	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	7-Nov-16	1019	0.55	CHLC	0.43745	T	TY		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.4	CHLC	-0.06825	T	TY		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLVEMDTR03	8-May-17	1012	0.6	CHLC	-0.299525	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	8-May-17	1100	0.5	CHLC	-0.07264	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	13-Nov-17	1055	0.15	CHLC	-0.3405	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	13-Nov-17	1127	0.1	CHLC	-0.070015	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	3-Jan-18	930	0.52	CHLC	-0.141535	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	9-May-18	904	0.42	CHLC	-0.057365	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	16-Jul-18	956	0.5	CHLC	-0.01955	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	15-Nov-18	958	0.5	CHLC	-0.03769	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	14-Jan-19	845	0.5	CHLC	-0.032975	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	11-Mar-19	936	0.5	CHLC	-0.04216	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Mar-19	916	0.45	CHLC	-0.066415	T	T		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	19-Nov-98	1230	0.2	COLOR	400	Q	Q		50	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	19-Nov-98	1230		COLOR	400	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-99	1100	0.4	COLOR	150	Q	Q		25	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-99			COLOR	150			Q	5	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Apr-04	1145	0.3	COLOR	100	Q	Q		10	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Apr-04			COLOR	100			Q	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-04	1330	0.5	COLOR	500	Q	Q		50	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Sep-04			COLOR	500			Q	50	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			COLOR	80			Y	10	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR06	11-Jan-10	1330	0.5	COLOR	100	Q	Q		10	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	11-Jan-10	1331	0.5	COLOR	100	Q	Q		10	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	4-Nov-13	1115	1.5	COLOR	100	Q	Q		3	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	4-Nov-13	1140	0.4	COLOR	70	Q	Q		3	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	16-Jul-18	956	0.5	COLOR	704.04895	Q	Q		4	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	16-Jul-18	936	0.51	COLOR	719.88245	Q	Q		4	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	11-Mar-19	936	0.5	COLOR	205.28011	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Mar-19	916	0.45	COLOR	213.62808	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	20-Apr-98	1032		COND	16900					IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	2-Aug-99	1030	0.5	COND	74400					IWR58
2634	Tomoka River - 3F	21FLWQSPVOL358LR	29-Jul-05	1101	0.4	COND	150	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			COND	368			Y	2	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	12-Jul-10	1108	2.5	COND	76100					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLVEMDTR03	8-Aug-16	1125	1.05	COND	16890	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	8-Aug-16	1207	0.6	COND	460	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	7-Nov-16	1019	1.6	COND	887	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.6	COND	363	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	13-Mar-17	1100	1.3	COND	13190	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	13-Mar-17	1144	0.5	COND	458	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	13-Nov-17	1127	0.7	COND	126	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 49971	2-Aug-16	1220	0.1	DEME	0.0005	U	UJ		0.001	IWR58
2634	Tomoka River - 3F	21FLSJWMTR11	14-Jul-93	1100		DISS	932	Q				IWR58
2634	Tomoka River - 3F	21FLSJWMTR11	24-Aug-94	1030		DISS	204	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-99	1330	0.5	DISS	325	J	J		15	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-99			DISS	325			J	15	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Mar-99	1200	0.5	DISS	301	J	JQ		15	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Mar-99			DISS	301			JQ	15	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-99	930	0.2	DISS	274	Q	Q		15	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-99			DISS	274			Q	15	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	20-Oct-99	930	0.5	DISS	132	Q	Q		15	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	20-Oct-99			DISS	132			Q	15	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	12-Jan-00			DISS	235			J	15	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-00			DISS	252			J	15	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-00			DISS	142			J	15	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jan-01	1200	0.05	DISS	262	J	J		15	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jan-01			DISS	262			J	15	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			DISS	234			Y	15	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Aug-12	1050	0.3	DISS	252	A	AQ		15	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Aug-12			DISS	252			AQ	15	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-07			DO	3			FJ		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-07			DO	2.99			FJ		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-08	1230	0.25	DO	6.77	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-08	1232	0.4	DO	6.76	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-08			DO	6.77			J		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-08			DO	6.76			J		SJRWMD
2634	Tomoka River - 3F	21FLA 27010429FLA	14-Apr-09	1130	0.17	DO	5	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLA 27010578	14-Apr-09	1145	0.1	DO	2.87	J	J			IWR58
2634	Tomoka River - 3F	21FLA 27010923	14-Apr-09	1420	0.18	DO	6.01	J	J			IWR58
2634	Tomoka River - 3F	21FLA 27010924	14-Apr-09	1055	0.15	DO	6.16	J	J			IWR58
2634	Tomoka River - 3F	21FLCEN 27010579	9-Aug-10	1040	0.2	DO	4.67	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-11	1150	0.3	DO	4.85	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-11	1152	0.5	DO	0.75	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-11			DO	4.85			J		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-11			DO	0.75			J		SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	9-Mar-15	1110	1.7	DO	6.83	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	9-Mar-15	1145	1.1	DO	7.22	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	8-Aug-16	1125	1.05	DO	0.49	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	8-Aug-16	1207	0.6	DO	4.73	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	7-Nov-16	1019	1.6	DO	0.72	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.6	DO	3.41	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 3516	31-Jan-17	1030	0.25	DO	7.8	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	31-Jan-17			DO	7.8			J		SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	13-Mar-17	1100	1.3	DO	4.2	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	13-Mar-17	1144	0.5	DO	6.1	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Aug-18			DOC	0.31035			TY	1	SJRWMD
2634	Tomoka River - 3F	21FLA 27010429FLA	14-Apr-09	1130	0.17	DOSAT	65.8	J	J			IWR58
2634	Tomoka River - 3F	21FLA 27010578	14-Apr-09	1145	0.1	DOSAT	37.3	J	J			IWR58
2634	Tomoka River - 3F	21FLA 27010923	14-Apr-09	1420	0.18	DOSAT	78.5	J	J			IWR58
2634	Tomoka River - 3F	21FLA 27010924	14-Apr-09	1055	0.15	DOSAT	66.9	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	31-Jan-17			DOSAT	72			J		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	12-Jan-00			ECOLI	144			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	8-Feb-00			ECOLI	120			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-00			ECOLI	200			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-00			ECOLI	560			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-00			ECOLI	190			AQ	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-00			ECOLI	150			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	19-Jul-00			ECOLI	200			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	17-Aug-00			ECOLI	112			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	18-Sep-00			ECOLI	1050			Q	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	11-Oct-00			ECOLI	170			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-00			ECOLI	180			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	14-Dec-00			ECOLI	110			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jan-01	1200	0.05	ECOLI	112	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jan-01			ECOLI	112			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Feb-01	1115	0.15	ECOLI	110	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Feb-01			ECOLI	110			AQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Mar-01	1305	0.1	ECOLI	20	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Mar-01			ECOLI	20			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-01	945	0.5	ECOLI	126	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-01			ECOLI	126			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-01	1025	0.2	ECOLI	700	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-01			ECOLI	700			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jun-01	1120	0.1	ECOLI	64	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-01			ECOLI	64			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Oct-13	1350	0.3	ECOLI	85	A	AQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-13			ECOLI	85			AQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Nov-13	930	0.3	ECOLI	72	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Nov-13			ECOLI	72			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Dec-13	1150	0.3	ECOLI	65	A	AQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Dec-13			ECOLI	65			AQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-14	1300	0.3	ECOLI	44	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-14			ECOLI	44			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-14	1035	0.3	ECOLI	2500	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-14			ECOLI	2500			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Nov-14	1020	0.3	ECOLI	110.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-14	1130	0.3	ECOLI	186	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	6-Jan-15	1040	0.3	ECOLI	133.3	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Mar-15	1225	0.3	ECOLI	198.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	30-Mar-15	1230	0.3	ECOLI	285.1	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	30-Apr-15	1020	0.3	ECOLI	235.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Jun-15	1130	0.2	ECOLI	218.7	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-15	1245	0.3	ECOLI	73.3	Q	Q		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	3-Aug-15	1330	0.3	ECOLI	110.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-15	1145	0.3	ECOLI	166.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-15	1300	0.3	ECOLI	206.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Nov-15	1005	0.3	ECOLI	140.1	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-15			ECOLI	140.1			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Dec-15	1200	0.3	ECOLI	727	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Dec-15			ECOLI	727			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jan-16	1240	0.3	ECOLI	204.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-16	1145	0.3	ECOLI	223.9	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	29-Feb-16	1145	0.3	ECOLI	387.3	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	31-Mar-16	1325	0.3	ECOLI	148.3	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	28-Apr-16	1000	0.3	ECOLI	278.2	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	31-May-16	1110	0.3	ECOLI	2419.6	J	JQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-16	1205	0.29	ECOLI	173.8	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Aug-16	850	0.3	ECOLI	648.8	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 49971	2-Aug-16	1220	0.1	ECOLI	488.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Oct-16	1140	0.3	ECOLI	2419.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-16	1050	0.3	ECOLI	53.8	J	JQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	30-Nov-16	1130	0.3	ECOLI	228.2	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-17	1130	0.25	ECOLI	1119.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	31-Jan-17	1030	0.25	ECOLI	517.2	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	28-Feb-17	940	0.3	ECOLI	410.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-17	1102	0.3	ECOLI	579.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-May-17	1308	0.3	ECOLI	1986.3	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Jun-17	1200	0.3	ECOLI	228.2	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	29-Jun-17	932	0.3	ECOLI	127.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Aug-17	954	0.3	ECOLI	178.5	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-17	953	0.3	ECOLI	365.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Oct-17	1020	0.3	ECOLI	42	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-17	1225	0.34	ECOLI	48	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Dec-17	1101	0.32	ECOLI	96	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-18	1402	0.29	ECOLI	290.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	31-Jan-18	1113	0.31	ECOLI	435.2	Q	Q		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	5-Mar-18	913	0.31	ECOLI	243.6	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-18	1000	0.33	ECOLI	300.5	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-May-18	1050	0.3	ECOLI	410.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Jun-18	1054	0.31	ECOLI	119.8	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-18	1052	0.31	ECOLI	85.7	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Aug-18	1256	0.3	ECOLI	43	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	29-Aug-18	1110	0.3	ECOLI	231	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Oct-18	850	0.3	ECOLI	469	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-18	914	0.3	ECOLI	275.5	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-18	1024	0.3	ECOLI	250.4	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-19	1233	0.3	ECOLI	117.8	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-19	1236	0.38	ECOLI	201.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	12-Jan-00			ENCOC	200			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	8-Feb-00			ENCOC	46			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-00			ENCOC	500			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-00			ENCOC	470			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-00			ENCOC	195			AQ	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-00			ENCOC	230			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	19-Jul-00			ENCOC	580			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	17-Aug-00			ENCOC	490			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	18-Sep-00			ENCOC	1280			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	11-Oct-00			ENCOC	820			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-00			ENCOC	250			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	14-Dec-00			ENCOC	400			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jan-01	1200	0.05	ENCOC	40	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jan-01			ENCOC	40			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Feb-01	1115	0.15	ENCOC	175	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Feb-01			ENCOC	175			AQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Mar-01	1305	0.1	ENCOC	60	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Mar-01			ENCOC	60			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-01	945	0.5	ENCOC	200	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-01			ENCOC	200			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-01	1025	0.2	ENCOC	1500	Q	Q		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-01			ENCOC	1500			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jun-01	1120	0.1	ENCOC	12	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-01			ENCOC	12			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	9-Jul-01	1000	0.2	ENCOC	0.5	U	KQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Jul-01			ENCOC	340			KQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	9-Aug-01	1050	0.3	ENCOC	270	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Aug-01			ENCOC	270			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-01	1300	0.5	ENCOC	2000	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-01			ENCOC	2000			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Oct-01	930	0.5	ENCOC	160	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-01			ENCOC	160			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Nov-01	1640	0.4	ENCOC	510	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Nov-01			ENCOC	510			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-02	950	0.5	ENCOC	600	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-02			ENCOC	600			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Feb-02	1130	0.2	ENCOC	112	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Feb-02			ENCOC	112			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Mar-02	900	0.5	ENCOC	450	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-02			ENCOC	450			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Apr-02	930	0.1	ENCOC	310	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Apr-02			ENCOC	310			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-02	915	0.2	ENCOC	450	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-02			ENCOC	450			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jun-02	950	0.3	ENCOC	720	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-02			ENCOC	720			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Jul-02	1110	0.5	ENCOC	60	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Jul-02			ENCOC	60			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Aug-02	1320	0.5	ENCOC	220	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Aug-02			ENCOC	220			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-02	940	0.6	ENCOC	180	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-02			ENCOC	180			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Oct-02	1000	0.4	ENCOC	62	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Oct-02			ENCOC	62			Q	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	14-Nov-02	1100	0.2	ENCOC	280	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	14-Nov-02			ENCOC	280			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-02	1220	0.3	ENCOC	84	Q	QV		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-02			ENCOC	84			QV	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-03	1020	0.5	ENCOC	510	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-03			ENCOC	510			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-03	1340	0.4	ENCOC	24	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-03			ENCOC	24			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	19-Mar-03	1200	0.5	ENCOC	60	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	19-Mar-03			ENCOC	60			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-03	1215	0.5	ENCOC	160	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-03			ENCOC	160			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-May-03	915	0.3	ENCOC	350	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-May-03			ENCOC	350			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jun-03	1215	0.3	ENCOC	150	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jun-03			ENCOC	150			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jul-03	900	0.5	ENCOC	560	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jul-03			ENCOC	560			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Aug-03	1000	0.5	ENCOC	110	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Aug-03			ENCOC	110			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Sep-03	1130	0.35	ENCOC	330	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Sep-03			ENCOC	330			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Oct-03	1345	0.5	ENCOC	560	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-03			ENCOC	560			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Nov-03	1345	0.5	ENCOC	100	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Nov-03			ENCOC	100			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Dec-03	1250	0.35	ENCOC	255	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Dec-03			ENCOC	255			AQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	13-Jan-04	1150	0.3	ENCOC	440	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	13-Jan-04			ENCOC	440			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Feb-04	1245	0.3	ENCOC	80	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Feb-04			ENCOC	80			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Mar-04	1200	0.4	ENCOC	79	A	AQ		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	8-Mar-04			ENCOC	79			AQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Apr-04	1145	0.3	ENCOC	200	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Apr-04			ENCOC	200			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-May-04	1245	0.25	ENCOC	390	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-May-04			ENCOC	390			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-04	1345	0.35	ENCOC	480	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-04			ENCOC	480			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jul-04	1150	0.5	ENCOC	260	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jul-04			ENCOC	260			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	9-Aug-04	1325	0.5	ENCOC	260	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Aug-04			ENCOC	260			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-04	1330	0.5	ENCOC	220	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Sep-04			ENCOC	220			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Oct-04	1000	0.3	ENCOC	230	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Oct-04			ENCOC	230			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	11-Oct-04	940	1.05	ENCOC	5	K	K		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Oct-04	955	0.8	ENCOC	5	K	K		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	11-Oct-04	1015	0.5	ENCOC	5	K	K		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	8-Nov-04	1300	0.3	ENCOC	330	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Nov-04			ENCOC	330			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Dec-04	950	0.3	ENCOC	280	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Dec-04			ENCOC	280			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	6-Dec-04	955	0.75	ENCOC	5	K	K		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	6-Dec-04	1015	0.3	ENCOC	5	K	K		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-05	950	0.3	ENCOC	82	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-05			ENCOC	82			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Feb-05	910	0.3	ENCOC	62	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-05			ENCOC	62			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Mar-05	1005	0.6	ENCOC	240	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Mar-05			ENCOC	240			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Apr-05	1015	0.3	ENCOC	200	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-05			ENCOC	200			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-05	935	0.3	ENCOC	250	Q	Q		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-05			ENCOC	250			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-05	950	0.3	ENCOC	220	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-05			ENCOC	220			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jul-05	1245	0.3	ENCOC	310	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jul-05			ENCOC	310			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Aug-05	1210	0.3	ENCOC	400	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Aug-05			ENCOC	400			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	12-Sep-05	840	0.3	ENCOC	270	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	12-Sep-05			ENCOC	270			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-05	1210	0.3	ENCOC	410	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Oct-05			ENCOC	410			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR05	26-Oct-05	1520		ENCOC	65	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	26-Oct-05	1520	0.5	ENCOC	65	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Nov-05	1100	0.3	ENCOC	470	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-05			ENCOC	470			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Dec-05	1245	0.3	ENCOC	360	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Dec-05			ENCOC	360			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-06	1230	0.3	ENCOC	320	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-06			ENCOC	320			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Feb-06	910	0.25	ENCOC	2	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-06			ENCOC	2			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Mar-06	820	0.3	ENCOC	350	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-06			ENCOC	350			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-06	1250	0.25	ENCOC	270	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-06			ENCOC	270			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-May-06	1240	0.25	ENCOC	300	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-May-06			ENCOC	300			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Jun-06	1105	0.2	ENCOC	80	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jun-06			ENCOC	80			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jul-06	1000	0.3	ENCOC	410	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jul-06			ENCOC	410			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Sep-06	1100	0.25	ENCOC	340	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Sep-06			ENCOC	340			Q	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	3-Oct-06	1100	0.25	ENCOC	390	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Oct-06			ENCOC	390			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Nov-06	1100	0.25	ENCOC	290	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-06			ENCOC	290			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Dec-06	925	0.23	ENCOC	460	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Dec-06			ENCOC	460			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Jan-07	840	0.25	ENCOC	250	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jan-07			ENCOC	250			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Feb-07	1240	0.25	ENCOC	94	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-07			ENCOC	94			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Mar-07	1200	0.3	ENCOC	390	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Mar-07			ENCOC	390			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-07	1205	0.2	ENCOC	350	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-07			ENCOC	350			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-May-07	1050	0.3	ENCOC	630	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-May-07			ENCOC	630			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jun-07	950	0.2	ENCOC	280	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-07			ENCOC	280			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-07	1150	0.3	ENCOC	390	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-07			ENCOC	390			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Jul-07	1145	0.3	ENCOC	290	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Jul-07			ENCOC	290			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-07	1010	0.3	ENCOC	700	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-07			ENCOC	700			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Oct-07	1230	0.3	ENCOC	560	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Oct-07			ENCOC	560			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-07	1100	0.3	ENCOC	1700	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Nov-07			ENCOC	1700			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-07	1030	0.3	ENCOC	910	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-07			ENCOC	910			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-08	1225	0.2	ENCOC	140	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-08			ENCOC	140			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-08	1230	0.25	ENCOC	160	B	BQ		2	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-08			ENCOC	160			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Mar-08	815	0.3	ENCOC	450	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Mar-08			ENCOC	450			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-08	1045	0.25	ENCOC	380	Q	Q		10	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-08			ENCOC	380			Q	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-May-08	815	0.2	ENCOC	2100	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-May-08			ENCOC	2100			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 34930	27-May-08	1200	0.3	ENCOC	10	A	ABQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34932	27-May-08	950	0.3	ENCOC	33	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34933	27-May-08	1040	0.3	ENCOC	5	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34934	27-May-08	1000	0.3	ENCOC	20	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34939	27-May-08	940	0.3	ENCOC	3	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34940	27-May-08	1145	0.3	ENCOC	2	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34941	27-May-08	1125	0.3	ENCOC	2	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34943	27-May-08	1220	0.3	ENCOC	1	U	UQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34945	27-May-08	1115	0.3	ENCOC	8	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34947	27-May-08	1020	0.3	ENCOC	8	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34949	27-May-08	1100	0.3	ENCOC	1	U	UQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34950	27-May-08	1225	0.3	ENCOC	2	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34929	28-May-08	1115	0.3	ENCOC	7	A	ABQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34931	28-May-08	1015	0.3	ENCOC	28	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34935	28-May-08	1100	0.3	ENCOC	82	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLGW 34936	28-May-08	1200	0.3	ENCOC	2	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34937	28-May-08	935	0.3	ENCOC	23	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34938	28-May-08	1135	0.3	ENCOC	2	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34942	28-May-08	1125	0.3	ENCOC	3	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34944	28-May-08	1030	0.3	ENCOC	10	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34946	28-May-08	1050	0.3	ENCOC	23	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Jun-08	1105		ENCOC	1000	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jun-08			ENCOC	1000			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 34948	16-Jun-08	920	0.15	ENCOC	310	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLGW 34951	17-Jun-08	940	0.3	ENCOC	200	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLGW 34955	17-Jun-08	1035	0.3	ENCOC	11	B	BQ		2	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 34957	17-Jun-08	955	0.3	ENCOC	7	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34952	19-Jun-08	905	0.3	ENCOC	47	A	AQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34953	19-Jun-08	1000	0.3	ENCOC	18	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34954	19-Jun-08	930	0.3	ENCOC	20	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34956	19-Jun-08	915	0.3	ENCOC	5	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34958	19-Jun-08	1015	0.3	ENCOC	2	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-08	1115		ENCOC	580	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			ENCOC	580			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Aug-08	1155		ENCOC	280	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Aug-08			ENCOC	280			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Sep-08	1050		ENCOC	210	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Sep-08			ENCOC	210			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 34921	15-Sep-08	910	0.3	ENCOC	3	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 3516	30-Sep-08	1100		ENCOC	210	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Sep-08			ENCOC	210			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Nov-08	1155		ENCOC	540	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Nov-08			ENCOC	540			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Dec-08	1045		ENCOC	410	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Dec-08			ENCOC	410			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Dec-08	1020	0.3	ENCOC	250	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Dec-08			ENCOC	250			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-09	1135	0.3	ENCOC	710	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-09			ENCOC	710			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Mar-09	1400	0.2	ENCOC	240	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Mar-09			ENCOC	240			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Apr-09	1045	0.3	ENCOC	2100	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-09			ENCOC	2100			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-May-09	1130	0.25	ENCOC	1200	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-May-09			ENCOC	1200			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-09	1015	0.3	ENCOC	140	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-09			ENCOC	140			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jul-09	1115	0.3	ENCOC	450	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jul-09			ENCOC	450			Q	9	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	4-Aug-09	1025	0.3	ENCOC	310	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Aug-09			ENCOC	310			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Sep-09	1045	0.3	ENCOC	3800	B	BQ		10	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Sep-09			ENCOC	3800			BQ	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-09	1100	0.3	ENCOC	2200	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Oct-09			ENCOC	2200			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Nov-09	1030	0.3	ENCOC	4200	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Nov-09			ENCOC	4200			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Dec-09	845	0.25	ENCOC	2900	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Dec-09			ENCOC	2900			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jan-10	1100	0.3	ENCOC	160	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jan-10			ENCOC	160			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Feb-10	1105	0.3	ENCOC	1100	B	BQ		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Feb-10			ENCOC	1100			BQ	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Mar-10	1115		ENCOC	82	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Mar-10			ENCOC	82			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Apr-10	1140	0.3	ENCOC	110	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Apr-10			ENCOC	110			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-May-10	905	0.25	ENCOC	1200	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-May-10			ENCOC	1200			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-10	905	0.3	ENCOC	1200	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-10			ENCOC	1200			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jul-10	915		ENCOC	570	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jul-10			ENCOC	570			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Aug-10	940		ENCOC	1700	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Aug-10			ENCOC	1700			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Sep-10	915	0.3	ENCOC	700	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Sep-10			ENCOC	700			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-10	910	0.2	ENCOC	2000	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Oct-10			ENCOC	2000			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-10			ENCOC	600			ZQ	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Dec-10	1135		ENCOC	1000	B	BQ		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Dec-10			ENCOC	1000			BQ	100	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-11	1130		ENCOC	360	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-11			ENCOC	360			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Feb-11	1110	0.25	ENCOC	990	B	BQ		10	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Feb-11			ENCOC	990			BQ	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Mar-11	850	0.3	ENCOC	540	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Mar-11			ENCOC	540			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Apr-11	1200	0.3	ENCOC	2000	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Apr-11			ENCOC	2000			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-May-11	1135	0.2	ENCOC	1200	B	BQ		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-May-11			ENCOC	1200			BQ	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jun-11	1120	0.2	ENCOC	350	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-11			ENCOC	350			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-11	1150	0.3	ENCOC	290	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-11			ENCOC	290			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	11-Jul-11	1100	0.3	ENCOC	396	J	J		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Jul-11	1130	0.3	ENCOC	302	J	J		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Aug-11	915	0.3	ENCOC	710	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Aug-11			ENCOC	710			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-11	1115	0.25	ENCOC	460	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Sep-11			ENCOC	460			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Oct-11	930	0.3	ENCOC	1100	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Oct-11			ENCOC	1100			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-11	1100	0.3	ENCOC	3000	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Nov-11			ENCOC	3000			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Dec-11	1133	0.3	ENCOC	220	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Dec-11			ENCOC	220			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-12	1302	0.3	ENCOC	580	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-12			ENCOC	580			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Feb-12	1311	0.25	ENCOC	94	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Feb-12			ENCOC	94			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	29-Feb-12	825	0.3	ENCOC	1900	B	BQ		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Feb-12			ENCOC	1900			BQ	100	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	5-Mar-12	1046	0.3	ENCOC	104	J	J		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	4-Apr-12	1339	0.2	ENCOC	1100	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-12			ENCOC	1100			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-12	1103	0.2	ENCOC	3200	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-12			ENCOC	3200			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	4-Jun-12	1119	0.3	ENCOC	156	J	J		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	7-Jun-12	1145	0.5	ENCOC	880	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jun-12			ENCOC	880			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	9-Jul-12	1142	0.3	ENCOC	460	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Jul-12			ENCOC	460			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Aug-12	1050	0.3	ENCOC	760	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Aug-12			ENCOC	760			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Sep-12	1140	0.3	ENCOC	290	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Sep-12			ENCOC	290			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	10-Sep-12	1059	0.3	ENCOC	21	J	J		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Oct-12	1117	0.3	ENCOC	6200	B	BQ		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-12			ENCOC	6200			BQ	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	29-Oct-12	1200	0.3	ENCOC	300	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Oct-12			ENCOC	300			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	28-Nov-12	1205	0.3	ENCOC	170	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	28-Nov-12			ENCOC	170			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Jan-13	820	0.3	ENCOC	120	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jan-13			ENCOC	120			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	4-Feb-13	1205	0.3	ENCOC	76	J	J		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Feb-13	1242	0.3	ENCOC	140	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Feb-13			ENCOC	140			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	11-Mar-13	1130	0.3	ENCOC	2000	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	11-Mar-13			ENCOC	2000			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-13	1248	0.3	ENCOC	1200	B	BQ		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-13			ENCOC	1200			BQ	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	29-Apr-13	1220	0.25	ENCOC	730	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Apr-13			ENCOC	730			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Jun-13	1140	0.3	ENCOC	630	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jun-13			ENCOC	630			BQ	9	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-13	1120	0.3	ENCOC	510	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-13			ENCOC	510			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Aug-13	1247	0.3	ENCOC	770	B	BQ		10	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Aug-13	1137	0.3	ENCOC	206	J	J		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Aug-13			ENCOC	770			BQ	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Sep-13	1120	0.3	ENCOC	320	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Sep-13			ENCOC	320			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Oct-13	1350	0.3	ENCOC	740	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-13			ENCOC	740			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Nov-13	930	0.3	ENCOC	530	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Nov-13			ENCOC	530			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Dec-13	1150	0.3	ENCOC	300	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Dec-13			ENCOC	300			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-14	1300	0.3	ENCOC	58	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-14			ENCOC	58			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-14	1035	0.3	ENCOC	350	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-14			ENCOC	350			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Mar-14	1130	0.3	ENCOC	82	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Mar-14			ENCOC	82			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-14	1100	0.3	ENCOC	195.7	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-14			ENCOC	195.7			AQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-May-14	1330	0.3	ENCOC	325.5	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-May-14			ENCOC	325.5			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jun-14	1030	0.3	ENCOC	410.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-14			ENCOC	410.6			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Jun-14	1050	0.3	ENCOC	727	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Jun-14			ENCOC	727			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Jul-14	1050	0.3	ENCOC	751.6	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Jul-14			ENCOC	751.6			AQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Sep-14	1350	0.3	ENCOC	235.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Sep-14			ENCOC	235.9			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Oct-14	1105	0.3	ENCOC	185	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-14			ENCOC	185			Q	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	3-Nov-14	1020	0.3	ENCOC	298.7	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Nov-14			ENCOC	298.7			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-14	1130	0.3	ENCOC	222.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-14			ENCOC	222.4			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jan-15	1040	0.3	ENCOC	99	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jan-15			ENCOC	99			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-15			ENCOC	95.8			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Mar-15	1225	0.3	ENCOC	135.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Mar-15			ENCOC	135.4			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Mar-15	1230	0.3	ENCOC	201.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Mar-15			ENCOC	201.4			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Apr-15	1020	0.3	ENCOC	1119.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Apr-15			ENCOC	1119.9			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Jun-15	1130	0.2	ENCOC	435.2	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jun-15			ENCOC	435.2			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-15	1245	0.3	ENCOC	272.3	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-15			ENCOC	272.3			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Aug-15	1330	0.3	ENCOC	344.8	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Aug-15			ENCOC	344.8			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-15	1145	0.3	ENCOC	1203.3	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Sep-15			ENCOC	1203.3			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-15	1300	0.3	ENCOC	461.1	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Oct-15			ENCOC	461.1			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Nov-15	1005	0.3	ENCOC	248.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-15			ENCOC	248.9			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Dec-15	1200	0.3	ENCOC	866.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Dec-15			ENCOC	866.4			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jan-16	1240	0.3	ENCOC	214.2	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-16	1145	0.3	ENCOC	261.3	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	29-Feb-16	1145	0.3	ENCOC	125.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	31-Mar-16	1325	0.3	ENCOC	114.5	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	28-Apr-16	1000	0.3	ENCOC	300.5	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	31-May-16	1110	0.3	ENCOC	2419.6	J	JQ		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-16	1205	0.29	ENCOC	312.4	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Aug-16	850	0.3	ENCOC	980.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 49971	2-Aug-16	1220	0.1	ENCOC	488.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Oct-16	1140	0.3	ENCOC	2419.6	J	JQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-16	1050	0.3	ENCOC	17.1	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	30-Nov-16	1130	0.3	ENCOC	77.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-17	1130	0.25	ENCOC	866.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	31-Jan-17	1030	0.25	ENCOC	261.3	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	28-Feb-17	940	0.3	ENCOC	128.1	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-17	1102	0.3	ENCOC	488.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-May-17	1308	0.3	ENCOC	2419.6	J	JQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Jun-17	1200	0.3	ENCOC	344.1	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	29-Jun-17	932	0.3	ENCOC	143.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Aug-17	954	0.3	ENCOC	298.7	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-17	953	0.3	ENCOC	235.9	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Oct-17	1020	0.3	ENCOC	49.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-17	1225	0.34	ENCOC	218.7	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Dec-17	1101	0.32	ENCOC	161.6	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-18	1402	0.29	ENCOC	547.5	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	31-Jan-18	1113	0.31	ENCOC	186	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Mar-18	913	0.31	ENCOC	377.7	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-18	1000	0.33	ENCOC	563.4	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-May-18	1050	0.3	ENCOC	980.4	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Jun-18	1054	0.31	ENCOC	43.5	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-18	1052	0.31	ENCOC	71.2	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-May-01	1025	0.2	F	0.13	J	J		0.02	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-01			F	0.13			J	0.1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Aug-03	1000	0.5	F	0.064	I	IV		0.05	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Aug-03			F	0.064			IV	0.05	SJRWMD
2634	Tomoka River - 3F	21FLA 27010579	23-Aug-94	815	0	FCOLI	110	Q				IWR58
2634	Tomoka River - 3F	21FLSJWMTR11	20-Feb-95	1200		FCOLI	640	Q				IWR58
2634	Tomoka River - 3F	21FLSJWMTR11	24-Apr-95	1150		FCOLI	380	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jun-95	1245		FCOLI	630	Q				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	8-Aug-95	1000		FCOLI	230	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Nov-95	1100		FCOLI	270	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Feb-96	1145		FCOLI	220	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Feb-96	1146		FCOLI	170	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Apr-96	1140		FCOLI	230	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	25-Jun-96	1215		FCOLI	800	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	25-Jun-96	1216		FCOLI	300	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Aug-96	1315		FCOLI	2400	Q				IWR58
2634	Tomoka River - 3F	21FLA 27010579	9-Sep-96	855	0.66	FCOLI	340	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	14-Oct-96	1345		FCOLI	80	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	18-Dec-96	1105		FCOLI	500	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-97	1030		FCOLI	2300	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	28-Apr-97	800		FCOLI	220	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-97	1330		FCOLI	800	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	13-Aug-97	1145		FCOLI	160	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	14-Oct-98	1245	0.5	FCOLI	146	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	14-Oct-98	1245		FCOLI	146	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	19-Nov-98	1230	0.2	FCOLI	84	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	19-Nov-98	1230		FCOLI	84	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	21-Dec-98	1300	0.3	FCOLI	110	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	21-Dec-98	1300		FCOLI	110	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Jan-99	1100	0.5	FCOLI	280	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jan-99			FCOLI	280			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-99	1330	0.5	FCOLI	900	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-99			FCOLI	900			AQ		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Mar-99	1200	0.5	FCOLI	850	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Mar-99			FCOLI	850			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Apr-99	1230	0.5	FCOLI	570	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Apr-99			FCOLI	570			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-May-99	1000	0.3	FCOLI	38	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-May-99			FCOLI	38			AQ		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-99	930	0.2	FCOLI	58	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-99			FCOLI	58			Q		SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-99	1100	0.4	FCOLI	80	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-99			FCOLI	80			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Aug-99	845	0.2	FCOLI	200	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Aug-99			FCOLI	200			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-99	915	0.3	FCOLI	220	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-99	916	0	FCOLI	290	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Sep-99			FCOLI	290			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	20-Oct-99	930	0.5	FCOLI	94	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	20-Oct-99			FCOLI	94			Q		SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR05	1-Nov-99	1145	0.3	FCOLI	10	K	K			IWR58
2634	Tomoka River - 3F	21FLGW 3516	15-Nov-99	1000	0.5	FCOLI	32	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-99			FCOLI	32			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	16-Dec-99	1215	0.4	FCOLI	104	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	16-Dec-99			FCOLI	104			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	12-Jan-00			FCOLI	150			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	8-Feb-00			FCOLI	88			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-00			FCOLI	220			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-00			FCOLI	420			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-00			FCOLI	190			AQ		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-00			FCOLI	74			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	19-Jul-00			FCOLI	200			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	17-Aug-00			FCOLI	210			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	18-Sep-00			FCOLI	1860			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	11-Oct-00			FCOLI	220			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-00			FCOLI	160			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	14-Dec-00			FCOLI	82			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jan-01	1200	0.05	FCOLI	210	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jan-01			FCOLI	210			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Feb-01	1115	0.15	FCOLI	126	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Feb-01			FCOLI	126			AQ		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Mar-01	1305	0.1	FCOLI	22	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Mar-01			FCOLI	22			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-01	945	0.5	FCOLI	88	Q	Q		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-01			FCOLI	88			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-01	1025	0.2	FCOLI	150	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-01			FCOLI	150			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jun-01	1120	0.1	FCOLI	108	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-01			FCOLI	108			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	9-Jul-01	1000	0.2	FCOLI	0.5	U	KQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	9-Aug-01	1050	0.3	FCOLI	150	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-01	1300	0.5	FCOLI	1600	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Oct-01	930	0.5	FCOLI	56	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-01			FCOLI	56			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Nov-01	1640	0.4	FCOLI	170	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Nov-01			FCOLI	170			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-02	950	0.5	FCOLI	180	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-02			FCOLI	180			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Feb-02	1130	0.2	FCOLI	320	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Feb-02			FCOLI	320			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Mar-02	900	0.5	FCOLI	470	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-02			FCOLI	470			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Apr-02	930	0.1	FCOLI	210	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Apr-02			FCOLI	210			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-02	915	0.2	FCOLI	370	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-02			FCOLI	370			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jun-02	950	0.3	FCOLI	370	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-02			FCOLI	370			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Jul-02	1110	0.5	FCOLI	240	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Jul-02			FCOLI	240			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Aug-02	1320	0.5	FCOLI	70	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Aug-02			FCOLI	70			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-02	940	0.6	FCOLI	54	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-02			FCOLI	54			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Oct-02	1000	0.4	FCOLI	104	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Oct-02			FCOLI	104			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	14-Nov-02	1100	0.2	FCOLI	210	Q	Q		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	14-Nov-02			FCOLI	210			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-02	1220	0.3	FCOLI	74	Q	QV		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-02			FCOLI	74			QV	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-03	1020	0.5	FCOLI	280	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-03			FCOLI	280			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-03	1340	0.4	FCOLI	42	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-03			FCOLI	42			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	19-Mar-03	1200	0.5	FCOLI	44	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	19-Mar-03			FCOLI	44			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-03	1215	0.5	FCOLI	62	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-03			FCOLI	62			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-May-03	915	0.3	FCOLI	82	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-May-03			FCOLI	82			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jun-03	1215	0.3	FCOLI	102	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jun-03			FCOLI	102			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jul-03	900	0.5	FCOLI	360	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jul-03			FCOLI	360			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Aug-03	1000	0.5	FCOLI	150	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Aug-03			FCOLI	150			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Sep-03	1130	0.35	FCOLI	200	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Sep-03			FCOLI	200			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Oct-03	1345	0.5	FCOLI	2000	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-03			FCOLI	2000			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Nov-03	1345	0.5	FCOLI	76	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Nov-03			FCOLI	76			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Dec-03	1250	0.35	FCOLI	94	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Dec-03			FCOLI	94			AQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	13-Jan-04	1150	0.3	FCOLI	120	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	13-Jan-04			FCOLI	120			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Feb-04	1245	0.3	FCOLI	174	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Feb-04			FCOLI	174			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Mar-04	1200	0.4	FCOLI	136	A	ABQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Mar-04			FCOLI	136			ABQ	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	5-Apr-04	1145	0.3	FCOLI	210	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Apr-04			FCOLI	210			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-May-04	1245	0.25	FCOLI	380	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-May-04			FCOLI	380			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-04	1345	0.35	FCOLI	40	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-04			FCOLI	40			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jul-04	1150	0.5	FCOLI	210	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jul-04			FCOLI	210			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	9-Aug-04	1325	0.5	FCOLI	430	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Aug-04			FCOLI	430			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-04	1330	0.5	FCOLI	40	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Sep-04			FCOLI	40			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Oct-04	1000	0.3	FCOLI	23	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Oct-04			FCOLI	23			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Nov-04	1300	0.3	FCOLI	20	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Nov-04			FCOLI	20			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Dec-04	950	0.3	FCOLI	88	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Dec-04			FCOLI	88			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-05	950	0.3	FCOLI	138	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-05			FCOLI	138			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Feb-05	910	0.3	FCOLI	64	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-05			FCOLI	64			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Mar-05	1005	0.6	FCOLI	120	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Mar-05			FCOLI	120			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Apr-05	1015	0.3	FCOLI	210	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-05			FCOLI	210			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-05	935	0.3	FCOLI	120	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-05			FCOLI	120			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-05	950	0.3	FCOLI	191	A	ABQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-05			FCOLI	191			ABQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jul-05	1245	0.3	FCOLI	18	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jul-05			FCOLI	18			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Aug-05	1210	0.3	FCOLI	250	Q	Q		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	2-Aug-05			FCOLI	250			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	12-Sep-05	840	0.3	FCOLI	80	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	12-Sep-05			FCOLI	80			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-05	1210	0.3	FCOLI	210	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Oct-05			FCOLI	210			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR05	26-Oct-05	1520		FCOLI	90	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	26-Oct-05	1520	0.5	FCOLI	90	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Nov-05	1100	0.3	FCOLI	220	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-05			FCOLI	220			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Dec-05	1245	0.3	FCOLI	66	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Dec-05			FCOLI	66			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-06	1230	0.3	FCOLI	84	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-06			FCOLI	84			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Feb-06	910	0.25	FCOLI	133	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-06			FCOLI	133			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Mar-06	820	0.3	FCOLI	116	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-06			FCOLI	116			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-06	1250	0.25	FCOLI	220	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-06			FCOLI	220			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-May-06	1240	0.25	FCOLI	150	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-May-06			FCOLI	150			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Jun-06	1105	0.2	FCOLI	74	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jun-06			FCOLI	74			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jul-06	1000	0.3	FCOLI	230	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jul-06			FCOLI	230			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Sep-06	1100	0.25	FCOLI	64	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Sep-06			FCOLI	64			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Oct-06	1100	0.25	FCOLI	1740	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Oct-06			FCOLI	1740			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Nov-06	1100	0.25	FCOLI	210	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-06			FCOLI	210			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Dec-06	925	0.23	FCOLI	86	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Dec-06			FCOLI	86			Q	1	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	3-Jan-07	840	0.25	FCOLI	148	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jan-07			FCOLI	148			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Feb-07	1240	0.25	FCOLI	104	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-07			FCOLI	104			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Mar-07	1200	0.3	FCOLI	210	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Mar-07			FCOLI	210			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-07	1205	0.2	FCOLI	250	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-07			FCOLI	250			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-May-07	1050	0.3	FCOLI	680	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-May-07			FCOLI	680			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jun-07	950	0.2	FCOLI	240	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-07			FCOLI	240			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-07	1150	0.3	FCOLI	560	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-07			FCOLI	560			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Jul-07	1145	0.3	FCOLI	130	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Jul-07			FCOLI	130			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-07	1010	0.3	FCOLI	120	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-07			FCOLI	120			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Oct-07	1230	0.3	FCOLI	140	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Oct-07			FCOLI	140			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-07	1100	0.3	FCOLI	240	B	BQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Nov-07			FCOLI	240			BQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-07	1030	0.3	FCOLI	70	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-07			FCOLI	70			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-08	1225	0.2	FCOLI	52	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-08			FCOLI	52			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-08	1230	0.25	FCOLI	130	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-08			FCOLI	130			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Mar-08	815	0.3	FCOLI	72	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Mar-08			FCOLI	72			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-08	1045	0.25	FCOLI	280	Q	Q		10	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-08			FCOLI	280			Q	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-May-08	815	0.2	FCOLI	280	Q	Q		9	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	6-May-08			FCOLI	280			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 34930	27-May-08	1200	0.3	FCOLI	12	A	ABQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34932	27-May-08	950	0.3	FCOLI	56	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLGW 34933	27-May-08	1040	0.3	FCOLI	8	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34934	27-May-08	1000	0.3	FCOLI	48	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLGW 34939	27-May-08	940	0.3	FCOLI	15	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34940	27-May-08	1145	0.3	FCOLI	7	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34941	27-May-08	1125	0.3	FCOLI	2	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34943	27-May-08	1220	0.3	FCOLI	13	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34945	27-May-08	1115	0.3	FCOLI	1	U	UQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34947	27-May-08	1020	0.3	FCOLI	8	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34949	27-May-08	1100	0.3	FCOLI	7	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34950	27-May-08	1225	0.3	FCOLI	11	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34929	28-May-08	1115	0.3	FCOLI	10	A	ABQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34931	28-May-08	1015	0.3	FCOLI	56	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLGW 34935	28-May-08	1100	0.3	FCOLI	52	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLGW 34936	28-May-08	1200	0.3	FCOLI	1	U	UQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34937	28-May-08	935	0.3	FCOLI	46	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLGW 34938	28-May-08	1135	0.3	FCOLI	3	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34942	28-May-08	1125	0.3	FCOLI	8	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34944	28-May-08	1030	0.3	FCOLI	30	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34946	28-May-08	1050	0.3	FCOLI	23	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Jun-08	1105		FCOLI	250	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jun-08			FCOLI	250			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 34948	16-Jun-08	920	0.15	FCOLI	160	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34951	17-Jun-08	940	0.3	FCOLI	110	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLGW 34955	17-Jun-08	1035	0.3	FCOLI	44	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLGW 34957	17-Jun-08	955	0.3	FCOLI	23	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34952	19-Jun-08	905	0.3	FCOLI	280	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLGW 34953	19-Jun-08	1000	0.3	FCOLI	10	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34954	19-Jun-08	930	0.3	FCOLI	31	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 34956	19-Jun-08	915	0.3	FCOLI	64	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLGW 34958	19-Jun-08	1015	0.3	FCOLI	21	B	BQ		2	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-08	1115		FCOLI	320	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			FCOLI	320			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Aug-08	1155		FCOLI	1100	B	BQ		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Aug-08			FCOLI	1100			BQ	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Sep-08	1050		FCOLI	340	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Sep-08			FCOLI	340			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 34921	15-Sep-08	910	0.3	FCOLI	8	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLGW 3516	30-Sep-08	1100		FCOLI	66	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Sep-08			FCOLI	66			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Nov-08	1155		FCOLI	220	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Nov-08			FCOLI	220			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Dec-08	1045		FCOLI	120	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Dec-08			FCOLI	120			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Dec-08	1020	0.3	FCOLI	76	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Dec-08			FCOLI	76			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-09	1135	0.3	FCOLI	280	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-09			FCOLI	280			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Mar-09	1400	0.2	FCOLI	150	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Mar-09			FCOLI	150			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Apr-09	1045	0.3	FCOLI	260	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-09			FCOLI	260			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-May-09	1130	0.25	FCOLI	350	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-May-09			FCOLI	350			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-09	1015	0.3	FCOLI	74	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-09			FCOLI	74			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jul-09	1115	0.3	FCOLI	90	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jul-09			FCOLI	90			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Aug-09	1025	0.3	FCOLI	110	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Aug-09			FCOLI	110			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Sep-09	1045	0.3	FCOLI	3100	B	BQ		10	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Sep-09			FCOLI	3100			BQ	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-09	1100	0.3	FCOLI	230	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Oct-09			FCOLI	230			Q	9	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	4-Nov-09	1030	0.3	FCOLI	710	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Nov-09			FCOLI	710			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Dec-09	845	0.25	FCOLI	370	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Dec-09			FCOLI	370			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jan-10	1100	0.3	FCOLI	120	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jan-10			FCOLI	120			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Feb-10	1105	0.3	FCOLI	280	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Feb-10			FCOLI	280			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Mar-10	1115		FCOLI	100	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Mar-10			FCOLI	100			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Apr-10	1140	0.3	FCOLI	72	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Apr-10			FCOLI	72			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-May-10	905	0.25	FCOLI	98	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-May-10			FCOLI	98			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-10	905	0.3	FCOLI	550	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-10			FCOLI	550			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jul-10	915		FCOLI	790	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jul-10			FCOLI	790			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Aug-10	940		FCOLI	1600	B	BQ		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Aug-10			FCOLI	1600			BQ	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Sep-10	915	0.3	FCOLI	410	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Sep-10			FCOLI	410			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-10	910	0.2	FCOLI	450	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Oct-10			FCOLI	450			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Nov-10	930	0.2	FCOLI	900	B	BQ		10	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-10			FCOLI	900			BQ	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Dec-10	1135		FCOLI	300	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Dec-10			FCOLI	300			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-11	1130		FCOLI	150	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-11			FCOLI	150			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Feb-11	1110	0.25	FCOLI	200	Q	Q		10	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Feb-11			FCOLI	200			Q	10	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Mar-11	850	0.3	FCOLI	660	B	BQ		9	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	2-Mar-11			FCOLI	660			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Apr-11	1200	0.3	FCOLI	520	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Apr-11			FCOLI	520			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-May-11	1135	0.2	FCOLI	290	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-May-11			FCOLI	290			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jun-11	1120	0.2	FCOLI	100	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-11			FCOLI	100			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-11	1150	0.3	FCOLI	88	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-11			FCOLI	88			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	11-Jul-11	1100	0.3	FCOLI	256	B	BJ		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Jul-11	1130	0.3	FCOLI	20	J	J		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Aug-11	915	0.3	FCOLI	560	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Aug-11			FCOLI	560			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-11	1115	0.25	FCOLI	490	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Sep-11			FCOLI	490			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Oct-11	930	0.3	FCOLI	390	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Oct-11			FCOLI	390			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-11	1100	0.3	FCOLI	800	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Nov-11			FCOLI	800			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Dec-11	1133	0.3	FCOLI	210	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Dec-11			FCOLI	210			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-12	1302	0.3	FCOLI	84	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-12			FCOLI	84			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Feb-12	1311	0.25	FCOLI	210	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Feb-12			FCOLI	210			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	29-Feb-12	825	0.3	FCOLI	540	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Feb-12			FCOLI	540			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	5-Mar-12	1046	0.3	FCOLI	153	B	BJ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Apr-12	1339	0.2	FCOLI	260	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-12			FCOLI	260			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-12	1103	0.2	FCOLI	120	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-12			FCOLI	120			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	4-Jun-12	1119	0.3	FCOLI	116	B	BJ		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	7-Jun-12	1145	0.5	FCOLI	500	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jun-12			FCOLI	500			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	9-Jul-12	1142	0.3	FCOLI	1100	B	BQ		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Jul-12			FCOLI	1100			BQ	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Aug-12	1050	0.3	FCOLI	330	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Aug-12			FCOLI	330			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Sep-12	1140	0.3	FCOLI	190	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Sep-12			FCOLI	190			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	10-Sep-12	1059	0.3	FCOLI	9	J	J		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Oct-12	1117	0.3	FCOLI	3000	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-12			FCOLI	3000			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	29-Oct-12	1200	0.3	FCOLI	230	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Oct-12			FCOLI	230			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	28-Nov-12	1205	0.3	FCOLI	56	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	28-Nov-12			FCOLI	56			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Jan-13	820	0.3	FCOLI	86	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jan-13			FCOLI	86			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	4-Feb-13	1205	0.3	FCOLI	0.5	U	UJ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Feb-13	1242	0.3	FCOLI	670	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Feb-13			FCOLI	670			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	11-Mar-13	1130	0.3	FCOLI	130	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	11-Mar-13			FCOLI	130			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-13	1248	0.3	FCOLI	100	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-13			FCOLI	100			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	29-Apr-13	1220	0.25	FCOLI	80	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Apr-13			FCOLI	80			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Jun-13	1140	0.3	FCOLI	280	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jun-13			FCOLI	280			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-13	1120	0.3	FCOLI	230	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-13			FCOLI	230			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Aug-13	1247	0.3	FCOLI	430	Q	Q		10	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Aug-13	1137	0.3	FCOLI	140	B	BJ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Aug-13			FCOLI	430			Q	10	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	3-Sep-13	1120	0.3	FCOLI	140	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Sep-13			FCOLI	140			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Oct-13	1350	0.3	FCOLI	110	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-13			FCOLI	110			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Nov-13	930	0.3	FCOLI	130	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Nov-13			FCOLI	130			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Dec-13	1150	0.3	FCOLI	76	A	AQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Dec-13			FCOLI	76			AQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-14	1300	0.3	FCOLI	42	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-14			FCOLI	42			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-14	1035	0.3	FCOLI	100	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-14			FCOLI	100			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Mar-14	1130	0.3	FCOLI	62	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Mar-14			FCOLI	62			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-14	1100	0.3	FCOLI	90	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-14			FCOLI	90			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-May-14	1330	0.3	FCOLI	130	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-May-14			FCOLI	130			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jun-14	1030	0.3	FCOLI	450	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-14			FCOLI	450			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Jun-14	1050	0.3	FCOLI	100	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Jun-14			FCOLI	100			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Jul-14	1050	0.3	FCOLI	110	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Jul-14			FCOLI	110			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Sep-14	1350	0.3	FCOLI	120	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Sep-14			FCOLI	120			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Oct-14	1105	0.3	FCOLI	100	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-14			FCOLI	100			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Nov-14	1020	0.3	FCOLI	130	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Nov-14			FCOLI	130			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-14	1130	0.3	FCOLI	130	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-14			FCOLI	130			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jan-15	1040	0.3	FCOLI	72	A	AQ		2	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jan-15			FCOLI	72			AQ	2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-15			FCOLI	80			AQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Mar-15	1225	0.3	FCOLI	110	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Mar-15			FCOLI	110			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Mar-15	1230	0.3	FCOLI	150	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Mar-15			FCOLI	150			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Apr-15	1020	0.3	FCOLI	150	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Apr-15			FCOLI	150			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Jun-15	1130	0.2	FCOLI	160	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jun-15			FCOLI	160			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-15	1245	0.3	FCOLI	63	A	AQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-15			FCOLI	63			AQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Aug-15	1330	0.3	FCOLI	140	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Aug-15			FCOLI	140			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-15	1145	0.3	FCOLI	490	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Sep-15			FCOLI	490			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-15	1300	0.3	FCOLI	210	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Oct-15			FCOLI	210			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Nov-15	1005	0.3	FCOLI	110	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-15			FCOLI	110			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Dec-15	1200	0.3	FCOLI	700	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Dec-15			FCOLI	700			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jan-16	1240	0.3	FCOLI	220	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jan-16			FCOLI	220			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Feb-16	1145	0.3	FCOLI	200	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-16			FCOLI	200			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	29-Feb-16	1145	0.3	FCOLI	270	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Feb-16			FCOLI	270			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	31-Mar-16	1325	0.3	FCOLI	110	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	31-Mar-16			FCOLI	110			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	28-Apr-16	1000	0.3	FCOLI	590	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	28-Apr-16			FCOLI	590			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	31-May-16	1110	0.3	FCOLI	15000	B	BQ		100	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	31-May-16			FCOLI	15000			BQ	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-16	1205	0.29	FCOLI	150	B	BQ		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-16			FCOLI	150			BQ	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Aug-16	850	0.3	FCOLI	630	B	BQ		9	IWR58
2634	Tomoka River - 3F	21FLGW 49971	2-Aug-16	1220	0.1	FCOLI	600	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Aug-16			FCOLI	630			BQ	9	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	31-Aug-16			FCOLI				O	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Oct-16	1140	0.3	FCOLI	4000	Q	Q		100	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Oct-16			FCOLI	4000			Q	100	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Nov-16	1050	0.3	FCOLI	54	Q	Q		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Nov-16			FCOLI	54			Q	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Nov-16	1130	0.3	FCOLI	280	Q	Q		9	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Nov-16			FCOLI	280			Q	9	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	3-Oct-11	1050	1.3	FE	476.7	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	3-Oct-11	1121	0.5	FE	543.1	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 49971	2-Aug-16	1220	0.1	GUTH	0.00115	U	UJ		0.0023	IWR58
2634	Tomoka River - 3F	21FLSJWMTR11	14-Jul-93	1100		K	38.4					IWR58
2634	Tomoka River - 3F	21FLGW 3516	14-Oct-98	1245	0.5	K	0.903	J	J		0.015	IWR58
2634	Tomoka River - 3F	21FLSJWMTR11	14-Jul-93	1100		NA	848					IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-02	1220	0.3	NH4	0.014	I	IV		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-02			NH4	0.014			IV	0.01	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Aug-03	1000	0.5	NH4	0.026	A	AV		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Aug-03			NH4	0.026			AV	0.01	SJRWMD
2634	Tomoka River - 3F	21FLGW 34934	27-May-08	1000	0.3	NH4	0.096	J	J		0.01	IWR58
2634	Tomoka River - 3F	21FLGW 34946	28-May-08	1050	0.3	NH4	0.11	J	J		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			NH4	0.022			Y	0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR06	10-Dec-08	1350	0.2	NH4	1.0192	Q	Q		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	7-Jan-09	1210	0.3	NH4	0.0774	Q	Q		0.01	IWR58
2634	Tomoka River - 3F	21FLGW 3516	29-Feb-12	825	0.3	NH4	0.027	J	J		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Feb-12			NH4	0.027			J	0.01	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	29-Apr-13	1220	0.25	NH4	0.025	J	JJ		0.002	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Apr-13			NH4	0.025			JJ	0	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Jun-13	1140	0.3	NH4	0.017	J	J		0.002	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jun-13			NH4	0.017			J	0.002	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Aug-13	1247	0.3	NH4	0.013	J	J		0.002	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Aug-13			NH4	0.013			J	0.002	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Oct-13	1350	0.3	NH4	0.013	J	J		0.002	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-13			NH4	0.013			J	0.002	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jan-14	1300	0.3	NH4	0.016	J	JJ		0.002	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-14			NH4	0.016			JJ	0.002	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-14	1100	0.3	NH4	0.018	J	JJ		0.002	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-14			NH4	0.018			JJ	0.002	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jun-14	1030	0.3	NH4	0.019	J	J		0.002	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-14			NH4	0.019			J	0.002	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Jun-14	1050	0.3	NH4	0.022	J	J		0.002	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Jun-14			NH4	0.022			J	0.002	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Jul-14	1050	0.3	NH4	0.016	J	J		0.002	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	30-Jul-14			NH4	0.016			J	0.002	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-18			NH4	0.02222				0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-18			NH4	0.017985			I	0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Aug-18			NH4	0.02364			Y	0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-18			NH4	0.021554				0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-18			NH4	0.028687				0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-18			NH4	0.009586			I	0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-19			NH4	0.008234			I	0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-19			NH4	0.01044			I	0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Mar-19			NH4	0.02199				0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-19			NH4	0.024649				0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-19			NH4	0.018585			I	0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-19			NH4	0.0243				0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-19			NH4	0.009913			I	0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-19			NH4	0.013651			I	0.005	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	31-Oct-19			NH4	0.016884			I	0.005	SJRWMD
2634	Tomoka River - 3F	21FLA 27010572	22-Oct-85	1540	5	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010573	22-Oct-85	1550	3	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010574	22-Oct-85	1612	7	NO3O2	0.04	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLA 27010578	22-Oct-85	1430	3	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010579	22-Oct-85	1500	1	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010574	11-Feb-86	1532	7	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010578	11-Feb-86	900	5	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010579	11-Feb-86	825	1	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010572	28-Apr-86	1448	5	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010573	28-Apr-86	1515	3	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010574	28-Apr-86	1501	6	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010578	28-Apr-86	1400	6	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010579	28-Apr-86	1325	1	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010572	23-Jun-86	1315	7	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010573	23-Jun-86	1325	3	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010574	23-Jun-86	1340	8	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010578	23-Jun-86	1250	6	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010579	23-Jun-86	1225	1	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010572	28-Jul-86	1425	5	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010573	28-Jul-86	1440	2	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010574	28-Jul-86	1501	4	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010578	28-Jul-86	1245	5	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010579	28-Jul-86	1315	1	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010572	25-Aug-86	1428	5	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010574	25-Aug-86	1501	6	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLA 27010578	25-Aug-86	1245	5	NO3O2	0.04	K				IWR58
2634	Tomoka River - 3F	21FLGW 3516	15-Nov-99	1000	0.5	NO3O2	0.018	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-99			NO3O2	0.018			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	16-Dec-99	1215	0.4	NO3O2	0.011	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	16-Dec-99			NO3O2	0.011			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-00			NO3O2	0.055			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-00			NO3O2	0.066			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	18-Sep-00			NO3O2	0.019			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Mar-01	1305	0.1	NO3O2	0.023	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Mar-01			NO3O2	0.023			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-01	1300	0.5	NO3O2	0.05	J	J		0.004	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-01			NO3O2	0.05			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Mar-02	900	0.5	NO3O2	0.029	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-02			NO3O2	0.029			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-02	915	0.2	NO3O2	0.07	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-02			NO3O2	0.07			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Jun-02	950	0.3	NO3O2	0.058	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-02			NO3O2	0.058			J	0.004	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-02	940	0.6	NO3O2	0.056	J	J		0.02	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-02			NO3O2	0.056			J	0.02	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	4-Aug-03	1040	0.8	NO3O2	0.035	J	J		0.0021	IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	4-Aug-03	1100	0.6	NO3O2	0.027	J	J		0.0021	IWR58
2634	Tomoka River - 3F	21FLCEN 27010579	6-Aug-03	924	0.5	NO3O2	0.016	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLCEN 27010579	6-Aug-03	925	0.5	NO3O2	0.014	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Sep-03	1130	0.35	NO3O2	0.059	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Sep-03			NO3O2	0.059			J	0.004	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	1-Mar-04	945	0.45	NO3O2	0.021	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	1-Mar-04	1015	0.4	NO3O2	0.032	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	1-Mar-04	1040	0.25	NO3O2	0.026	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	11-Oct-04	940	1.05	NO3O2	0.048	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Oct-04	955	0.8	NO3O2	0.033	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	11-Oct-04	1015	0.5	NO3O2	0.017	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	7-Feb-05	945	1.25	NO3O2	0.029	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	8-Aug-05	1200	0.6	NO3O2	0.07	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	8-Aug-05	1225	2.4	NO3O2	0.036	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	5-Dec-05	1100	0.3	NO3O2	0.0046	T	TQ		0.01	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	9-Jan-06	1015	0.3	NO3O2	0.057	J	J		0	IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Feb-06	910	0.25	NO3O2	0.063	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-06			NO3O2	0.063			J	0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR06	10-Mar-08	1540	0.5	NO3O2	-0.0009	T	TQ		0.01	IWR58
2634	Tomoka River - 3F	21FLGW 3516	2-Apr-08	1045	0.25	NO3O2	0.051	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-08			NO3O2	0.051			J	0	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR06	14-Apr-08	920	0.4	NO3O2	0.0882	Q	Q		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			NO3O2	0.061			Y	0	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWMNCBTR06	1-Mar-10	1340	0.5	NO3O2	0.051	Q	Q		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	1-Mar-10	1341	0.5	NO3O2	0.052	Q	Q		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	15-Dec-10	1500	0.1	NO3O2	0.0162	I	IQ		0.01	IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Jul-11	1150	0.3	NO3O2	0.062	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-11			NO3O2	0.062			J	0	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR06	11-Jul-11	1400	0.5	NO3O2	0.0409	I	IQ		0.01	IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Jan-13	820	0.3	NO3O2	0.02	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jan-13			NO3O2	0.02			J	0.004	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Feb-13	1242	0.3	NO3O2	0.028	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Feb-13			NO3O2	0.028			J	0.004	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	5-Aug-13	1137	0.6	NO3O2	0.009	Q	Q		0.011	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-18			NO3O2	0.0936			Q	0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-18			NO3O2	0.0983				0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Aug-18			NO3O2	0.0745				0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-18			NO3O2	0.1178				0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-18			NO3O2	0.1814				0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-18			NO3O2	0.0546				0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-19			NO3O2	0.03			I	0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-19			NO3O2	0.0248			I	0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Mar-19			NO3O2	0.0653				0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-19			NO3O2	0.1008				0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-19			NO3O2	0.0789				0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-19			NO3O2	0.0768			Q	0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-19			NO3O2	0.0241			I	0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-19			NO3O2	0.0449				0.01	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	31-Oct-19			NO3O2	0.0543				0.01	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Oct-11	930	0.3	PH	7.2	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Oct-11	932	0.7	PH	7.2	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Oct-11			PH	7.2			J		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Oct-11			PH	7.2			J		SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	8-Aug-16	1125	1.05	PH	7.17	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	8-Aug-16	1207	0.6	PH	7.57	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	7-Nov-16	1019	1.6	PH	7.14	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.6	PH	7.19	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	13-Mar-17	1100	1.3	PH	7.3	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	13-Mar-17	1144	0.5	PH	7.5	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	13-Nov-17	1055	1.3	PH	6.75	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	13-Nov-17	1127	0.7	PH	6.25	J	J			IWR58
2634	Tomoka River - 3F	21FLA 27010579	22-Sep-92	850	0.82	PHEOA	0.5	K				IWR58
2634	Tomoka River - 3F	21FLA 27010579	16-Mar-93	1430	1.15	PHEOA	0.5	K				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-97	1030		PHEOA	8.3	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-97	1330		PHEOA	1.9	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	19-Nov-98	1230	0.2	PHEOA	0.5	U	YU		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-99	1330	0.5	PHEOA	0.18	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-99			PHEOA	0.18			J	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-99	1100	0.4	PHEOA	0.69	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-99			PHEOA	0.69			J	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-99	915	0.3	PHEOA	0.36	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-99	916	0	PHEOA	0.21	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Sep-99			PHEOA	0.21			J	1	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	3-Jan-00	1000	1	PHEOA	-0.01					IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	12-Jan-00			PHEOA	0.84			J	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	9-Aug-01			PHEOA	1			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-01			PHEOA	0.85			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-01			PHEOA	0.85			Q	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Aug-02	1320	0.5	PHEOA	0.31	J	J		0.85	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Aug-02			PHEOA	0.31			J	0.85	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Aug-03			PHEOA	0.085			J	0.85	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Apr-04	1145	0.3	PHEOA	0.425	U	UQ		0.85	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Apr-04			PHEOA	0.425			UQ	0.85	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-04	1330	0.5	PHEOA	0.55	U	UQ		1.1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Sep-04			PHEOA	0.55			UQ	1.1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Aug-05			PHEOA	0.54			J	0.85	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR05	26-Oct-05	1520	0.5	PHEOA	-0.052065	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR05	7-Nov-05	1410	0.5	PHEOA	-0.009345	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	14-Jan-08	1040	0.5	PHEOA	-0.482825	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Feb-08	1500	0.1	PHEOA	-0.224725	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	10-Mar-08	1540	0.5	PHEOA	-0.052065	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	14-Apr-08	920	0.4	PHEOA	-0.37825	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	15-Jul-08	1530	0.3	PHEOA	-0.33375	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	4-Aug-08	1410	0.3	PHEOA	-0.500625	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	9-Sep-08	1350	0.5	PHEOA	-0.22695	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	15-Oct-08	1430	0.5	PHEOA	-0.02225	T	T		1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	8-Sep-09	1500	0.5	PHEOA	-0.260325	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	2-Nov-09	1123	0.5	PHEOA	-0.24					IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	15-Dec-10	1500	0.1	PHEOA	-0.05751	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	10-Jan-11	1140	0.5	PHEOA	-0.1				1	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	9-Feb-11	1400	0.3	PHEOA	-0.01068	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	3-Oct-11	1121	0.5	PHEOA	-0.03					IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Mar-12	1046	0.5	PHEOA	-0.3					IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	10-Sep-12	1128	0.4	PHEOA	-0.07				1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	3-Dec-12	1142	0.4	PHEOA	-0.05				1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	6-May-13	1105	1.5	PHEOA	0.77	Q	Q			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	6-May-13	1130	0.7	PHEOA	-0.23	Q	Q			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	8-Aug-16	1207	0.6	PHEOA	-0.2492	T	T		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.4	PHEOA	0.023735	T	TY		1	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	2-Mar-98	1140	1.64	PORD	0.02	J				IWR58
2634	Tomoka River - 3F	21FLGW 3516	14-Oct-98	1245	0.5	PORD	0.021	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jan-99			PORD	0.026				0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-99	1330	0.5	PORD	0.015	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-99			PORD	0.015			Q	0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Mar-99	1200	0.5	PORD	0.002	U	UQ		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Mar-99			PORD	0.005			UQ	0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Apr-99	1230	0.5	PORD	0.016	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Apr-99			PORD	0.016			Q	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-May-99			PORD	0.017				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-99			PORD	0.025				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-99			PORD	0.004			I	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Aug-99			PORD	0.018				0.015	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	7-Sep-99			PORD	0.022				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	20-Oct-99			PORD	0.024				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-99			PORD	0.018				0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	16-Dec-99	1215	0.4	PORD	0.009	I	IV		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	16-Dec-99			PORD	0.009			I	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	12-Jan-00			PORD	0.017				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	8-Feb-00			PORD	0.011				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-00			PORD	0.016				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-00			PORD	0.026			A	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-00			PORD	0.019				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-00			PORD	0.03			A	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	19-Jul-00			PORD	0.025			A	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	17-Aug-00			PORD	0.037				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	18-Sep-00			PORD	0.016				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	11-Oct-00			PORD	0.024				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-00			PORD	0.012			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	14-Dec-00			PORD	0.014			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jan-01	1200	0.05	PORD	0.02	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jan-01			PORD	0.02			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Feb-01			PORD	0.01				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	8-Mar-01			PORD	0.019				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-01			PORD	0.032				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-01			PORD	0.024				0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jun-01	1120	0.1	PORD	0.025	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-01			PORD	0.025			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	9-Jul-01			PORD	0.035				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	9-Aug-01			PORD	0.074				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-01			PORD	0.028				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-01			PORD	0.043				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Nov-01			PORD	0.023				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Dec-01			PORD	0.031				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-02			PORD	0.023				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Feb-02			PORD	0.024				0.015	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-02			PORD	0.015				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Apr-02			PORD	0.03				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-02			PORD	0.038				0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-02			PORD	0.023				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	8-Jul-02			PORD	0.065				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Aug-02			PORD	0.044				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-02			PORD	0.036				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Oct-02			PORD	0.03				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	14-Nov-02			PORD	0.016				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-02			PORD	0.067				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-03			PORD	0.076				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Feb-03			PORD	0.016				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	19-Mar-03			PORD	0.037				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-03			PORD	0.029				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-May-03			PORD	0.048				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jun-03			PORD	0.031				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jul-03			PORD	0.033				0.004	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	4-Aug-03	1040	0.8	PORD	0.02	J	J		0.0018	IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	4-Aug-03	1100	0.6	PORD	0.02	J	J		0.0018	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Aug-03			PORD	0.043				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Sep-03			PORD	0.037				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Oct-03			PORD	0.054				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Nov-03			PORD	0.03				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Dec-03			PORD	0.024				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	13-Jan-04			PORD	0.015				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	10-Feb-04			PORD	0.026				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	8-Mar-04			PORD	0.024				0.004	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Apr-04	1145	0.3	PORD	0.022	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Apr-04			PORD	0.022			Q	0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	10-May-04			PORD	0.022				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-04			PORD	0.017				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jul-04			PORD	0.026				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	9-Aug-04			PORD	0.03				0.004	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-04	1330	0.5	PORD	0.062	Q	Q		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Sep-04			PORD	0.062			Q	0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Oct-04			PORD	0.044				0.004	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	11-Oct-04	940	1.05	PORD	0.034	Q	Q		0.008	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	11-Oct-04	955	0.8	PORD	0.023	I	IQ		0.008	IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	11-Oct-04	1015	0.5	PORD	0.009	I	IQ		0.008	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Nov-04			PORD	0.026				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Dec-04			PORD	0.019				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-05			PORD	0.015				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-05			PORD	0.013				0.004	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	7-Feb-05	945	1.25	PORD	0.0035	T	TQ		0.008	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Mar-05			PORD	0.021				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-05			PORD	0.031				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-05			PORD	0.03				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-05			PORD	0.018				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jul-05			PORD	0.037				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Aug-05			PORD	0.026				0.004	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	8-Aug-05	1200	0.6	PORD	0.022	I	IQ		0.008	IWR58
2634	Tomoka River - 3F	21FLVEMDTR05	8-Aug-05	1225	2.4	PORD	0.034	Q	Q		0.008	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	12-Sep-05			PORD	0.024				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Oct-05			PORD	0.024				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-05			PORD	0.03			V	0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Dec-05			PORD	0.016				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-06			PORD	0.016				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-06			PORD	0.022				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-06			PORD	0.018				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-06			PORD	0.024				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-May-06			PORD	0.02				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jun-06			PORD	0.02				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jul-06			PORD	0.024				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Aug-06			PORD	0.023				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Sep-06			PORD	0.028				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Oct-06			PORD	0.021				0.004	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	2-Nov-06			PORD	0.025				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Dec-06			PORD	0.024				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jan-07			PORD	0.025				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Feb-07			PORD	0.056				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Mar-07			PORD	0.014				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-07			PORD	0.023				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-May-07			PORD	0.021				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-07			PORD	0.026				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-07			PORD	0.03				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	30-Jul-07			PORD	0.033				0.004	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-07			PORD	0.024				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Oct-07			PORD	0.045				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Nov-07			PORD	0.019				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-07			PORD	0.02				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-08			PORD	0.044				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-08			PORD	0.021				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Mar-08			PORD	0.017				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-08			PORD	0.027				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-May-08			PORD	0.026				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Jun-08			PORD	0.029				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			PORD	0.028			Y	0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Aug-08			PORD	0.038				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Sep-08			PORD	0.085				0	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR06	15-Dec-10	1500	0.1	PORD	0.00105	T	TQ		0.012	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Aug-13	1137	0.6	PORD	0.0015	U	UQ		0.003	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-18			PORD	0.0359			IQ	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-18			PORD	0.022			IQ	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Aug-18			PORD	0.0235			I	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-18			PORD	0.0236			I	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-18			PORD	0.0246			I	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-18			PORD	0.0163			I	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-19			PORD	0.00225			T	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-19			PORD	0.00385			T	0.012	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	5-Mar-19			PORD	0.0165			I	0.012	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	11-Mar-19	936	0.5	PORD	-0.0024	T	T		0.012	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-19			PORD	0.0031			T	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-19			PORD	0.0032			T	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-19			PORD	0.00405			T	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-19			PORD	0.00255			T	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-19			PORD	0.0126			I	0.012	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	31-Oct-19			PORD	0.0254			I	0.012	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	8-Aug-16	1125	1.05	SALIN	9.83	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	8-Aug-16	1207	0.6	SALIN	0.22	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	7-Nov-16	1019	1.6	SALIN	0.44	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.6	SALIN	0.17	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	13-Mar-17	1100	1.3	SALIN	7.61	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	13-Mar-17	1144	0.5	SALIN	0.22	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	13-Nov-17	1127	0.7	SALIN	0.06	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Mar-94	1015	1.64	SD	10	L				IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Feb-01	1040	0.9	SD	9					IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	7-May-01	940	2.5	SD	25					IWR58
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-02	1220	0.3	SD	0.5	L	LV			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-02			SD	0.5			LV		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-18			SILCA	4.7013				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-18			SILCA	3.7008				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Aug-18			SILCA	4.1044				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-18			SILCA	5.0923				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-18			SILCA	7.9923				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-18			SILCA	7.3343				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-19			SILCA	5.4933				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-19			SILCA	3.4882				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Mar-19			SILCA	4.4969				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-19			SILCA	6.255				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-19			SILCA	6.0449				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-19			SILCA	6.5638				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-19			SILCA	3.7729				0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-19			SILCA	5.6778				0.2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	31-Oct-19			SILCA	4.7				0.2	SJRWMD
2634	Tomoka River - 3F	21FLA 27010579	16-Mar-93	1430	3.28	SO4	1	K				IWR58
2634	Tomoka River - 3F	21FLSJWMTR11	16-Jun-93	1000		SO4	219					IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			SO4	11			Y	0.2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	30-Jun-14	1050	0.3	STAGE	65.6					IWR58
2634	Tomoka River - 3F	21FLGW 3516	30-Jun-14	1052	0.6	STAGE	65.6					IWR58
2634	Tomoka River - 3F	21FLA 27010578	13-Jan-09	930	0.18	STREV	0.1	K	K			IWR58
2634	Tomoka River - 3F	21FLA 27010924	13-Jan-09	905	0.15	STREV	0.1	K	K			IWR58
2634	Tomoka River - 3F	21FLA 27010429FLA	11-Feb-09	850	0.15	STREV	0.1	K	K			IWR58
2634	Tomoka River - 3F	21FLA 27010429FLA	14-Apr-09	1130	0.17	STREV	0.1	K	K			IWR58
2634	Tomoka River - 3F	21FLA 27010578	14-Apr-09	1145	0.1	STREV	0.1	K	K			IWR58
2634	Tomoka River - 3F	21FLA 27010924	14-Apr-09	1055	0.15	STREV	0.1	K	K			IWR58
2634	Tomoka River - 3F	21FLA 27010429FLA	15-Jul-09	1040	0.45	STREV	0.1	K	K			IWR58
2634	Tomoka River - 3F	21FLA 27010429FLA	8-Oct-09	1000	0.4	STREV	0.1	K	K			IWR58
2634	Tomoka River - 3F	21FLA 27010578	8-Oct-09	935	0.3	STREV	0.1	K	K			IWR58
2634	Tomoka River - 3F	21FLGW 3516	6-Oct-15	1300	0.3	SUC	0.083	J	J		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Aug-95	1000		TCOLI	5000	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Nov-95	1100		TCOLI	800	Q				IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	4-Dec-95	810	0.98	TCOLI	5	K				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Feb-96	1145		TCOLI	500	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Feb-96	1146		TCOLI	300	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Apr-96	1140		TCOLI	800	Q				IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	6-May-96	940	0.98	TCOLI	5	K				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	25-Jun-96	1215		TCOLI	1300	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	25-Jun-96	1216		TCOLI	500	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Aug-96	1315		TCOLI	3000	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	14-Oct-96	1345		TCOLI	800	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	18-Dec-96	1105		TCOLI	500	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-97	1030		TCOLI	3000	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	28-Apr-97	800		TCOLI	800	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-97	1330		TCOLI	2300	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	13-Aug-97	1145		TCOLI	100	Q				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLVEMDTR05	2-Feb-98	1205	0.98	TCOLI	10	K				IWR58
2634	Tomoka River - 3F	21FLGW 3516	14-Oct-98	1245	0.5	TCOLI	700	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	14-Oct-98	1245		TCOLI	700	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	19-Nov-98	1230	0.2	TCOLI	430	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	19-Nov-98	1230		TCOLI	430	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	21-Dec-98	1300	0.3	TCOLI	330	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	21-Dec-98	1300		TCOLI	330	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	5-Jan-99	1100	0.5	TCOLI	490	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jan-99			TCOLI	490			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Feb-99	1330	0.5	TCOLI	3750	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-99			TCOLI	3750			AQ		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Mar-99	1200	0.5	TCOLI	6800	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Mar-99			TCOLI	6800			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Apr-99	1230	0.5	TCOLI	3200	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Apr-99			TCOLI	3200			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-May-99	1000	0.3	TCOLI	620	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-May-99			TCOLI	620			AQ		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-Jun-99	930	0.2	TCOLI	1500	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jun-99			TCOLI	1500			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-99	1100	0.4	TCOLI	1900	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-99			TCOLI	1900			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Aug-99	845	0.2	TCOLI	3800	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Aug-99			TCOLI	3800			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-99	915	0.3	TCOLI	5000	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-99	916	0	TCOLI	5000	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Sep-99			TCOLI	5000			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	20-Oct-99	930	0.5	TCOLI	700	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	20-Oct-99			TCOLI	700			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Nov-99	1000	0.5	TCOLI	560	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-99			TCOLI	560			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	16-Dec-99	1215	0.4	TCOLI	280	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	16-Dec-99			TCOLI	280			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	12-Jan-00			TCOLI	510			Q		SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	8-Feb-00			TCOLI	180			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Mar-00			TCOLI	550			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Apr-00			TCOLI	2500			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-00			TCOLI	1700			AQ		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-00			TCOLI	670			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	19-Jul-00			TCOLI	1400			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	17-Aug-00			TCOLI	3100			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	18-Sep-00			TCOLI	5300			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	11-Oct-00			TCOLI	570			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-00			TCOLI	460			Q		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	14-Dec-00			TCOLI	260			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Jan-01	1200	0.05	TCOLI	300	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jan-01			TCOLI	300			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Feb-01	1115	0.15	TCOLI	500	A	AQ		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Feb-01			TCOLI	500			AQ		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	8-Mar-01	1305	0.1	TCOLI	200	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	8-Mar-01			TCOLI	200			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-01	945	0.5	TCOLI	630	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-01			TCOLI	630			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-01	1025	0.2	TCOLI	1000	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-01			TCOLI	1000			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	6-Jun-01	1120	0.1	TCOLI	140	Q	Q		1	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-Jun-01			TCOLI	140			Q		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Jan-10	1100	0.3	TEMP	5.91	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 3516	7-Jan-10	1102	0.5	TEMP	5.89	J	J			IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jan-10			TEMP	5.91			J		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	7-Jan-10			TEMP	5.89			J		SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	8-Aug-16	1125	1.05	TEMP	31.98	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	8-Aug-16	1207	0.6	TEMP	26.23	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	7-Nov-16	1019	1.6	TEMP	21.97	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Nov-16	1055	0.6	TEMP	21.38	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	13-Mar-17	1100	1.3	TEMP	22.5	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	13-Mar-17	1144	0.5	TEMP	20	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-18			TEMP				O		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-18			TEMP				O		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Aug-18			TEMP				O		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-18			TEMP				O		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-18			TEMP				O		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-18			TEMP				O		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-19			TEMP				O		SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-19			TEMP				O		SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Apr-99	1230	0.5	TKN	0.62	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Apr-99			TKN	0.62			J	0.06	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Aug-99	845	0.2	TKN	0.55	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Aug-99			TKN	0.55			J	0.06	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Apr-01	945	0.5	TKN	0.91	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Apr-01			TKN	0.91			J	0.06	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	9-Jul-01	1000	0.2	TKN	0.63	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	9-Jul-01			TKN	0.63			J	0.06	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Sep-01	1300	0.5	TKN	1	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Sep-01			TKN	1			J	0.06	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-02	915	0.2	TKN	0.66	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-02			TKN	0.66			J	0.06	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	10-Jul-06	1105	1.9	TKN	0.67	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	10-Jul-06	1130	0.6	TKN	0.54	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	2-Oct-06	1005	1.1	TKN	0.71	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	2-Oct-06	1025	0.4	TKN	0.53	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	5-Feb-07	1015	1	TKN	0.5	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Feb-07	1030	0.6	TKN	0.44	J	J		0.06	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	6-Aug-07	1118	1.4	TKN	0.77	Q	Q		0.08	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	6-Aug-07	1144	0.8	TKN	0.67	Q	Q		0.08	IWR58
2634	Tomoka River - 3F	21FLGW 34939	27-May-08	940	0.3	TKN	0.83	J	J		0.08	IWR58
2634	Tomoka River - 3F	21FLGW 34950	27-May-08	1225	0.3	TKN	1.1	J	J		0.16	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			TKN	0.81			Y	0.08	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	4-Mar-09	1400	0.2	TKN	0.66	J	J		0.08	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Mar-09			TKN	0.66			J	0.08	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-11	1130		TKN	0.6	J	JJ		0.08	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jan-11			TKN	0.6			J	0.08	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-18			TKN	1.3664				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jul-18			TKN	1.5889				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Aug-18			TKN	1.1234			Y	0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-18			TKN	1.1917				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Oct-18			TKN	0.9151				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-18			TKN	0.6002				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Jan-19			TKN	1.0141				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Feb-19			TKN	0.9263				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	5-Mar-19			TKN	0.8667				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-Apr-19			TKN	0.5576				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-19			TKN	0.5489				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	4-Jun-19			TKN	0.5959				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-19			TKN	0.5637				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-19			TKN	1.0424				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	31-Oct-19			TKN	1.3408				0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWMTR11	10-Feb-94	1140		TOC	17.5	Q				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	12-Jan-98	1230		TOC	45.2	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	15-Apr-99	1230	0.5	TOC	16	I	IQ		5	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Apr-99			TOC	16			IQ	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	20-Oct-99	930	0.5	TOC	48	J	J		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	20-Oct-99			TOC	48			J	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Nov-99	1000	0.5	TOC	52	J	J		5	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-99			TOC	52			J	1	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	16-Dec-99	1215	0.4	TOC	38	J	J		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	16-Dec-99			TOC	38			J	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	10-Jan-01			TOC	0			O	1	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			TOC	14			Y	1	SJRWMD
2634	Tomoka River - 3F	21FLA 27010574	16-Dec-85	1554	6	TP	0.02	K				IWR58
2634	Tomoka River - 3F	21FLA 27010579	16-Dec-85	1330	2	TP	0.02	K				IWR58
2634	Tomoka River - 3F	21FLA 27010579	28-Apr-86	1325	1	TP	0.02	K				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Jun-95	1245		TP	0.093	Q				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLGW 3516	6-May-99	1000	0.3	TP	0.047	Q	Q		0.016	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	6-May-99			TP	0.047			Q	0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-99	915	0.3	TP	0.033	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLGW 3516	7-Sep-99	916	0	TP	0.031	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	7-Sep-99			TP	0.031			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	20-Oct-99	930	0.5	TP	0.056	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	20-Oct-99			TP	0.056			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Nov-99	1000	0.5	TP	0.028	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	15-Nov-99			TP	0.028			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-00			TP	0.042			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	11-Oct-00			TP	0.026			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	2-May-01	1025	0.2	TP	0.049	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	2-May-01			TP	0.049			J	0.015	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	3-Dec-02	1220	0.3	TP	0.019	J	JA		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-02			TP	0.019			JA	0.004	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	10-Feb-04	1245	0.3	TP	0.028	J	J		0.004	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Feb-04			TP	0.028			J	0.004	SJRWMD
2634	Tomoka River - 3F	21FLCEN 27010596	31-Jan-05	908	0.2	TP	0.072	A	AJ		0.02	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	10-Jul-06	1130	0.6	TP	0.05	I	IV		0.02	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			TP	0.083			Y	0	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR06	6-Apr-11	1420	0.5	TP	0.0323	I	IQ		0.01	IWR58
2634	Tomoka River - 3F	21FLSJWMTR11	24-Aug-94	1030		TSS	4	Q				IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Jun-95	750	0.82	TSS	17.5	J				IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	5-Jun-95	800	0.82	TSS	14	J				IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	10-Oct-95	1200		TSS	2	Q				IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	3-Mar-97	925	4.1	TSS	6	J				IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	1-Feb-99	1005	0.75	TSS	1	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	1-Feb-99	1025	0.25	TSS	1	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	7-Jun-99	1020	0.5	TSS	4.1	J	J			IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	7-Sep-99	1045	0.2	TSS	1.2	J	J			IWR58
2634	Tomoka River - 3F	21FLGW 3516	20-Oct-99	930	0.5	TSS	5	Q	Q		4	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	20-Oct-99			TSS	5			Q	4	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	15-Nov-99	1000	0.5	TSS	5	K	KV		5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			TSS	18			Y	4	SJRWMD
2634	Tomoka River - 3F	21FLSJWMNCBTR06	2-Feb-09	1320	0.5	TSS	1.5	Q	QT		5	IWR58
2634	Tomoka River - 3F	21FLSJWMNCBTR06	13-Sep-10	1310	0.5	TSS	3.5	I	IY		2.9	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	6-May-13	1105	1.5	TSS	0.1	J	JT		0.4	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	6-May-13	1130	0.7	TSS	0.5	I	JI		0.4	IWR58
2634	Tomoka River - 3F	21FLVEMDTR03	16-Jul-18	956	0.5	TSS	-0.5	T	T		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Aug-18			TSS	-0.1			T	2	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	3-Dec-18			TSS	0.8			TQ	2	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR04	11-Mar-19	916	0.45	TSS	-0.1	T	T		2	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	29-Aug-19			TSS	-0.2			T	2	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	19-Nov-98	1230	0.2	TURB	2	Q	Q		0.05	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	19-Nov-98	1230		TURB	2	Q				IWR58
2634	Tomoka River - 3F	21FLGW 3516	1-Jul-99	1100	0.4	TURB	8.4	Q	Q		0.05	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-99			TURB	8.4			Q	0.5	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	5-Apr-04	1145	0.3	TURB	2.8	Q	Q		0.05	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	5-Apr-04			TURB	2.8			Q	0.05	SJRWMD
2634	Tomoka River - 3F	21FLGW 3516	1-Sep-04	1330	0.5	TURB	1.6	Q	Q		0.05	IWR58
2634	Tomoka River - 3F	21FLSJWM27010579	1-Sep-04			TURB	1.6			Q	0.05	SJRWMD
2634	Tomoka River - 3F	21FLSJWM27010579	1-Jul-08			TURB	3			Y	0.1	SJRWMD
2634	Tomoka River - 3F	21FLVEMDTR03	15-Nov-18	1018	0.5	TURB	6.3864	Q	Q		0.5	IWR58
2634	Tomoka River - 3F	21FLVEMDTR04	15-Nov-18	958	0.5	TURB	2.63641	Q	Q		0.5	IWR58
2634	Tomoka River - 3F	21FLA 27010924	11-Feb-09	830	0.1	WINDV	1	K	K			IWR58
2634	Tomoka River - 3F	21FLGW 3516	4-Jan-11	1130		ZN	2.5	U	UJ		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Dec-04	1120	0.5	AG	-0.80145	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Feb-05	945	0.5	AG	-2.21645	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Apr-05	930	0.5	AG	-0.007785	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-05	920	0.5	AG	-0.0037	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Aug-06	945	0.5	AG	-0.22275	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Jun-07	930	0.5	AG	-0.25605	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-07	915	0.5	AG	-2.75	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-08	900	0.5	AG	-0.18555	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	3-Apr-08	930	0.5	AG	-1.10981	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jun-08	905	0.5	AG	-3.478465	T	T		5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-08	1015	0.5	AG	-0.191465	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Apr-11	930	0.5	AG	-0.15612	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Jun-11	1020	0.5	AG	-0.15173	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Aug-11	1020	0.5	AG	-0.425455	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Nov-11	1200	0.5	AG	-0.19294	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jan-12	925	1.3	AG	-0.170745	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Sep-12	1015	0.5	AG	-0.02037	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Nov-12	940	0.5	AG	-0.284955	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-13	945	0.5	AG	-0.136895	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-May-13	1010	0.5	AG	-0.08846	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Jul-13	925	0.5	AG	-0.322335	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Sep-13	905	0.5	AG	-0.185405	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	27-Mar-14	915	0.5	AG	-0.13355	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-May-14	1000	0.5	AG	-0.03786	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Sep-14	920	0.5	AG	-0.175675	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-16	1037	0.52	AG	-0.188145	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-17	908	0.51	AG	-0.0451	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			AG	-0.0872735			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Dec-17			AG	-0.0016725			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-May-18			AG	-0.0047515			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jun-18			AG	-0.0032825			T	0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jul-18			AG	-0.02314			T	0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-18			AG	-0.000899			T	0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			AG	-0.016853			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-19			AG	-0.01265			T	0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Mar-19			AG	-0.0015715			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			AG	0.0160625			TQ	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-19			AG	-0.0152695			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			AL	260.287762			IQ	30	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Nov-11	1200	0.5	ALK	147.06331	Q	Q		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Nov-12	940	0.5	ALK	142.37883	Q	Q		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-13	945	0.5	ALK	144.25105	Q	Q		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM44601	10-Jan-13	945	0.5	ALK	144.25105	Q	Q		5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-13	955	0.5	ALK	141.72139	Q	Q		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Sep-13	905	0.5	ALK	143.71338	Q	Q		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-May-17	923	0.6	ALK	144.82764	Q	Q		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM44601	9-May-17	923	0.6	ALK	144.82764	Q	Q		5	IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	AS	930					IWR58
2634A	Tomoka River - 3M	21FLSJWMTOMKA	28-May-92	1320		AS	2	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Dec-00	1130	0.5	AS	-2	T	T		3.6	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Apr-01	1315	0.5	AS	-0.19	T	T		3.6	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	30-Dec-02	950	0.5	AS	-0.1255	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jun-04	1015	0.5	AS	-1.3001	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Oct-04	930	0.5	AS	-0.21063	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Apr-05	930	0.5	AS	-1.473	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Feb-06	1000	0.5	AS	-6.015	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Dec-06	910	0.5	AS	-0.9035	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Feb-07	1115	0.5	AS	-5.74	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Jun-07	930	0.5	AS	-13.17	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Oct-07	930	0.5	AS	-5.4	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jun-08	905	0.5	AS	-12.18746	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-08	920	0.5	AS	-16.14794	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Feb-09	920	0.5	AS	-0.46514	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Aug-09	925	0.5	AS	-1.03932	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	20-Oct-10	1000	0.5	AS	-0.31983	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			AS	3.8280685			TQ	10	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010024	7-Jul-92	1100	8.2	BA	9	J				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			BA	26.583007			Q	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-16	1037	0.52	BE	-0.17871	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-17	908	0.51	BE	-0.02928	T	T		0.2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-17	939	0.5	BE	-0.0036	T	T		0.2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			BE	-0.0796685			T	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Dec-17			BE	-0.030166			T	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-18			BE	-0.024603			T	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			BE	-0.023546			T	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			BE	0.0036965			TQ	0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	CA	24260					IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			CA	315.36607			Q	2	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010023	6-Nov-73	1125	9	CD	0	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	6-Nov-73	1125	9	CD	0	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	12-Dec-73	1205	8	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	16-Jan-74	1135	5	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Feb-74	1140	6	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Mar-74	1205	5	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	3-Apr-74	1110	6	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	1-May-74	1115	6	CD	10	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	5-Jun-74	1150	6	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	10-Jul-74	1015	6	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	7-Aug-74	1055	5	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Sep-74	1110	4	CD	5	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	2-Oct-74	1900	7	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Nov-74	1420	6	CD	0	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	9-Dec-74	1130	6	CD	2	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	14-Jan-75	1125	5	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	5-Feb-75	1145	7	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	2-Apr-75	1135	6	CD	0	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	CD	400	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	6	CD	0	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Aug-75	1140	6	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	3-Sep-75	1300	7	CD	0	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Nov-75	1145	7	CD	0	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	3-Mar-76	1300	6	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-Apr-76	1330	7	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	1-Jun-76	1140	5	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Jul-76	100	5	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Jul-76	1100	5	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jun-79	1210	5	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	10-Sep-79	1345	6	CD	1	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	7-Apr-80	1330	6	CD	10	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLA 27010023	4-Jan-82	1301	6	CD	0.8	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jan-82	1301	65	CD	0.8	K				IWR58
2634A	Tomoka River - 3M	21FLSJWMTOMKA	28-May-92	1320		CD	0.5	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-98	1100	0.5	CD	-0.005	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Jun-99	1000	0.5	CD	-0.13	T	T		40	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Oct-00	1115	0.5	CD	-0.94	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Dec-00	1130	0.5	CD	-0.024	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Feb-01	1115	0.5	CD	-0.0445	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Apr-01	1315	0.5	CD	-0.01	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-01	1055	0.5	CD	-0.013	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Jun-02	1040		CD	-0.115	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Aug-02	1100	0.5	CD	-0.057	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Oct-02	1140	0.5	CD	-0.0805	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Oct-02	1141	0.5	CD	-0.075	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	30-Dec-02	950	0.5	CD	-0.0175	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Feb-03	1115	0.5	CD	-0.0255	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Jun-03	1040	0.52	CD	-0.031	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-04	1010	0.5	CD	-0.0195	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Oct-04	930	0.5	CD	-0.00769	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Feb-05	945	0.5	CD	-1.56365	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Apr-05	930	0.5	CD	-0.04401	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Jun-07	930	0.5	CD	-0.01285	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Aug-07	955	0.5	CD	-0.046	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Oct-07	930	0.5	CD	-0.4	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-07	915	0.5	CD	-1.85	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	3-Apr-08	930	0.5	CD	-0.303265	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jun-08	905	0.5	CD	-0.015685	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jun-09	920	0.5	CD	-0.01449	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Aug-09	925	0.5	CD	-0.016885	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Feb-11	1030	0.5	CD	-0.00226	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Apr-11	930	0.5	CD	-0.02083	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Jun-11	1020	0.5	CD	-0.0446	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Aug-11	1020	0.5	CD	-0.018605	T	T		0.5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jan-12	925	1.3	CD	-0.0211	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Jul-12	930	0.5	CD	-0.0042	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-13	955	0.5	CD	-0.05155	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Jul-13	925	0.5	CD	-0.001425	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Sep-13	905	0.5	CD	-0.01998	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Nov-13	900	0.5	CD	-0.047105	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-May-14	1000	0.5	CD	-0.01498	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Sep-14	920	0.5	CD	-0.09721	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Nov-16	935	0.48	CD	-0.042535	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Dec-16	931	0.6	CD	-0.02313	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Mar-17	959	0.5	CD	-0.19839	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-17	1003	0.5	CD	-0.022615	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			CD	-0.0647615			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jan-18			CD	-0.005729			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-18			CD	-0.0244945			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-18			CD	-0.0232395			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Nov-18			CD	-0.050915			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Feb-19			CD	-0.064192			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			CD	0.096145			TQ	1	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010023	6-Dec-77	840	1	CHLA	0.55	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	3-Jan-78	1100	0	CHLA	0.55	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Oct-96	1030		CHLA	8.7	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-96	1245		CHLA	2.6	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Feb-97	800		CHLA	1.9	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-97	1015		CHLA	5.5	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Jun-97	1030		CHLA	26.3	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Aug-05	915	0.5	CHLA	2.12068	I	IJ		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-05	920	0.5	CHLA	1.64873	I	IJ		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-May-13	949	0.4	CHLA	4.28	Q	Q		0.8	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-May-13	1033	0.6	CHLA	4.52	Q	Q		0.8	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Oct-96	1030		CHLAC	1.3	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-96	1245		CHLAC	1.8	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Feb-97	800		CHLAC	2.3	Q				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-97	1015		CHLAC	4.5	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Jun-97	1030		CHLAC	18.5	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Aug-05	915	0.5	CHLAC	1.4685	I	IJ		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-05	920	0.5	CHLAC	1.335	I	IJ		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	4-Nov-08	1105	2.9	CHLAC	-0.18				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	11-Jul-11	955	0.5	CHLAC	9.97	Q	Q		0.5	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	11-Jul-11	1030	0.4	CHLAC	22.37	Q	Q		0.5	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	3-Oct-11	942	0.5	CHLAC	5.1	J	J		0.5	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	3-Oct-11	1016	0.4	CHLAC	9.7	J	J		0.5	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-May-13	949	0.4	CHLAC	3.79	Q	Q		0.68	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-May-13	1033	0.6	CHLAC	4.17	Q	Q		0.68	IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Dec-77	840	1	CHLB	0.08	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	3-Jan-78	1100	0	CHLB	0.08	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Oct-96	1030		CHLB	0.9	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-96	1245		CHLB	0	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-97	1015		CHLB	0.6	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Jun-97	1030		CHLB	1.5	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-98	1100	0.5	CHLB	-0.023925	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	21-Dec-98	1015	0.5	CHLB	-0.00774	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Feb-99	1130	0.5	CHLB	-0.050935	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Jun-99	1000	0.5	CHLB	-0.0247	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Oct-99	1130	0.5	CHLB	-0.074145	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Dec-99	1100	0.5	CHLB	-0.091445	T	TJ		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Jun-01	1145	0.5	CHLB	-0.37319	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Oct-01	1155	0.5	CHLB	-0.14459	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Oct-01	1156		CHLB	-0.139585	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-01	1055	0.5	CHLB	-0.077765	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	18-Feb-02	1210	0.5	CHLB	-0.188585	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Oct-02	1140	0.5	CHLB	-0.218875	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Apr-03	1030	0.5	CHLB	-0.05566	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Aug-03	1300	0.5	CHLB	-0.08658	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	3-Dec-03	1045	0.5	CHLB	-0.10093	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Feb-04	1050	0.5	CHLB	-0.580835	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLVEMDTR01	1-Mar-04	845	0.6	CHLB	-0.06				1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jun-04	1015	0.5	CHLB	-0.01307	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Aug-04	1005	0.5	CHLB	-0.334375	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Oct-04	930	0.5	CHLB	-1.199895	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Dec-04	1120	0.5	CHLB	-0.188695	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Feb-05	945	0.5	CHLB	-0.190795	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Aug-05	915	0.5	CHLB	-0.11994	T	TJ		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-05	920	0.5	CHLB	-0.14729	T	TJ		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Dec-05	1035	0.5	CHLB	-0.20105	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	9-Jan-06	915	0.3	CHLB	-0.02				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	9-Jan-06	935	0.3	CHLB	-0.02				1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Apr-06	940	0.5	CHLB	-0.20455	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jun-06	945	0.5	CHLB	-0.29345	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Aug-06	945	0.5	CHLB	-0.126015	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Oct-06	930	0.5	CHLB	-0.1181	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Dec-06	910	0.5	CHLB	-0.20159	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Feb-07	1115	0.5	CHLB	-0.16831	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Apr-07	915	0.5	CHLB	-0.06259	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	7-May-07	858	0.3	CHLB	-0.14				1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Aug-07	955	0.5	CHLB	-0.465815	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Oct-07	930	0.5	CHLB	-0.239815	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	4-Feb-08	1005	0.55	CHLB	-0.02				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	4-Feb-08	1032	0.45	CHLB	-0.38				1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-08	900	0.5	CHLB	-0.405465	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jun-08	905	0.5	CHLB	-0.1347	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	4-Aug-08	1007	2.9	CHLB	-0.02				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	4-Aug-08	1050	3.5	CHLB	-2.4				1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Oct-08	1010	0.5	CHLB	-0.055165	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	4-Nov-08	1105	2.9	CHLB	-0.31				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	2-Feb-09	1125	0.9	CHLB	-0.03					IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Apr-09	940	0.5	CHLB	-0.151635	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jun-09	920	0.5	CHLB	-0.02556	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	3-Aug-09	1352	0.5	CHLB	-0.04					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLVEMDTR01	1-Mar-10	1000	0.4	CHLB	-0.13				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	5-Apr-10	1000	0.4	CHLB	-1.07					IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	5-Apr-10	1051	0.3	CHLB	-0.41					IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	12-Jul-10	1030	0.6	CHLB	-0.52				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	10-Jan-11	1009	0.5	CHLB	-0.82				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	11-Apr-11	1052	0.4	CHLB	-0.37				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-May-13	949	0.4	CHLB	0.24	Q	Q			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-May-13	1033	0.6	CHLB	0.05	Q	Q			IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-May-13	1010	0.5	CHLB	-0.1471	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Jul-13	925	0.5	CHLB	-0.00823	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Sep-13	905	0.5	CHLB	-0.18499	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	27-Mar-14	915	0.5	CHLB	-0.008835	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-May-14	1000	0.5	CHLB	-0.06479	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Jul-14	920	0.5	CHLB	-0.004755	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Sep-14	920	0.5	CHLB	-0.04796	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	8-Aug-16	1045	1.2	CHLB	-0.25863	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Nov-16	943	0.4	CHLB	0.08085	T	TY		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Nov-16	935	0.48	CHLB	-0.0467	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-17	908	0.51	CHLB	-0.05384	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-18			CHLB	-0.07056			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLVEMDTR02	16-Jul-18	1015	0.51	CHLB	-0.003475	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			CHLB	-0.009415			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLVEMDTR02	14-Jan-19	926	0.5	CHLB	-0.01797	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Dec-77	840	1	CHLC	0.06	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	3-Jan-78	1100	0	CHLC	0.06	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Oct-96	1030		CHLC	0.2	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Feb-97	800		CHLC	0.3	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-97	1015		CHLC	1.9	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Jun-97	1030		CHLC	5.8	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Oct-01	1155	0.5	CHLC	-0.21969	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Oct-01	1156		CHLC	-0.22837	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Aug-04	1005	0.5	CHLC	-0.235095	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Oct-04	930	0.5	CHLC	-1.37119	T	T		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Aug-05	915	0.5	CHLC	-0.11414	T	TJ		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-05	920	0.5	CHLC	0.000565	T	TJ		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Oct-07	930	0.5	CHLC	-0.19315	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	4-Nov-08	1105	2.9	CHLC	-0.43				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	3-Aug-09	1352	0.5	CHLC	-0.14					IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	5-Apr-10	1051	0.3	CHLC	-0.37					IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-May-13	949	0.4	CHLC	0.85	Q	Q			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-May-13	1033	0.6	CHLC	0.73	Q	Q			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Nov-16	943	0.4	CHLC	-0.07041	T	TY		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	13-Nov-17	1010	0.2	CHLC	-0.060565	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	3-Jan-18	1026	0.4	CHLC	-0.00635	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-18			CHLC	-0.04002			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLVEMDTR02	14-Jan-19	926	0.5	CHLC	-0.025895	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Mar-12	1030	1.5	CHLOR	14121.22	Q	Q		183	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Sep-13	905	0.5	CHLOR	2507.52	Q	Q		30	IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	COD	49800					IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jan-12	925	1.3	COLOR	34.53212	Q	Q		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-May-12	905	0.5	COLOR	32.11505	Q	QJ		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-13	955	0.5	COLOR	27.78858	Q	Q		2	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	4-Nov-13	945	1.5	COLOR	80	Q	Q		3	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	4-Nov-13	1045	2	COLOR	125	Q	Q		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-17	853	0.51	COLOR	25.61674	Q	Q		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM44601	7-Feb-17	853	0.51	COLOR	25.61674	Q	Q		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM44601	5-Jul-17	948	0.5	COLOR	59.49757	Q	Q		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			COLOR	59.4975662			Q	2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM44601	11-Jun-18	1033	0.5	COLOR	436.9826	Q	Q		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jun-18			COLOR	436.982605			Q	2	SJRWMD
2634A	Tomoka River - 3M	21FLVEMDTR02	16-Jul-18	1015	0.51	COLOR	651.98401	Q	Q		4	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	11-Mar-19	1004	0.5	COLOR	230.17758	Q	Q		2	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	9-Sep-02	925	0.4	COND	80200					IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	9-Sep-02	925	1.5	COND	80600					IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	9-Sep-02	925	2.6	COND	81500					IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-Dec-04	920	1.65	COND	89500					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-13	945	0.5	COND	37800	Q	Q		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM44601	10-Jan-13	945	0.5	COND	37800	Q	Q		50	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	8-Aug-16	1045	1.2	COND	15270	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Nov-16	943	2	COND	12600	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	13-Mar-17	957	1.6	COND	21400	J	J			IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	CR3	31900000					IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jun-79	1210	5	CR3	100	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	7-Apr-80	1330	6	CR3	50	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Feb-05	945	0.5	CR3	-0.6236	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Feb-07	1115	0.5	CR3	-0.4798	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-07	915	0.5	CR3	-1.65	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			CR3	0.3617525			TQ	2	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010023	6-Nov-73	1125	9	CU	0.05	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	6-Nov-73	1125	9	CU	0.05	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	10-Jul-74	1015	6	CU	0.05	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	7-Aug-74	1055	5	CU	0.05	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Sep-74	1110	4	CU	0.05	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	2-Oct-74	1900	7	CU	0.05	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Nov-74	1420	6	CU	0.025	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	9-Dec-74	1130	6	CU	0.05	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	14-Jan-75	1125	5	CU	0.025	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	5-Feb-75	1145	7	CU	0.025	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	2-Dec-75	1115	6	CU	260000					IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jan-82	1301	6	CU	25	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jan-82	1301	65	CU	25	K				IWR58
2634A	Tomoka River - 3M	21FLSJWMTOMKA	28-May-92	1320		CU	2	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	3-Dec-03	1045	0.5	CU	-0.091	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-04	1010	0.5	CU	-0.0175	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jun-04	1015	0.5	CU	-5.66215	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Jun-05	930	0.5	CU	-0.6405	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Jun-07	930	0.5	CU	-1.292	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-07	915	0.5	CU	-5.05	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	3-Apr-08	930	0.5	CU	-2.3536	T	T		30	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-08	920	0.5	CU	-0.76898	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Dec-10	1010	0.5	CU	-0.005055	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			CU	0.316824			TQ	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWMTRUS1	14-Jul-93	1015		DISS	14800	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-97	1015		DISS	22800	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Aug-01	1245	0.5	DISS	1300	Q	Q		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Aug-11	1020	0.5	DISS	14000	Q	Q		92	IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-Jan-09	1030	1.6	DO	9.55	J	J			IWR58
2634A	Tomoka River - 3M	21FLA 27010023	14-Apr-09	1220	1.1	DO	5.15	J	J			IWR58
2634A	Tomoka River - 3M	21FLA 27010024	14-Apr-09	1300	0.8	DO	5.06	J	J			IWR58
2634A	Tomoka River - 3M	21FLA 27010925	14-Apr-09	1345	0.6	DO	3.65	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	9-Mar-15	1035	2.8	DO	7.26	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	8-Aug-16	1045	1.2	DO	5.61	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Nov-16	943	2	DO	3.26	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	13-Mar-17	957	1.6	DO	5.8	J	J			IWR58
2634A	Tomoka River - 3M	21FLSJWM44601	10-Jan-13	945	0.5	DOC	9.54	I	IQ		1	IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-Jan-09	1030	1.6	DOSAT	108.9	J	J			IWR58
2634A	Tomoka River - 3M	21FLA 27010023	14-Apr-09	1220	1.1	DOSAT	68.3	J	J			IWR58
2634A	Tomoka River - 3M	21FLA 27010024	14-Apr-09	1300	0.8	DOSAT	68.9	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	1-Mar-93	845	0.98	ENCOC	5	K				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	3-Mar-97	850	0.98	ENCOC	5	K				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-Apr-98	925	0.98	ENCOC	10	K				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	5-Apr-99	905	1.6	ENCOC	10	K	K			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Jun-99	950	1.6	ENCOC	10	K	K			IWR58
2634A	Tomoka River - 3M	21FLGW 14277	24-Jun-02	1020	0.5	ENCOC	71	A	AQ		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	11-Oct-04	845	1.7	ENCOC	5	K	K		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	11-Oct-04	905	1.85	ENCOC	5	K	K		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-Dec-04	845	1.7	ENCOC	5	K	K		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-Dec-04	920	1.65	ENCOC	5	K	K		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	4-May-09	947	0.5	ENCOC	0.5	U	UJ		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	11-Jul-11	955	0.3	ENCOC	42	J	J		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	11-Jul-11	1030	0.3	ENCOC	4	J	J		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	10-Sep-12	941	0.3	ENCOC	33	J	J		1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLVEMDTR02	10-Sep-12	1024	0.3	ENCOC	18	J	J		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	21-Jun-95	1310		FCOLI	7	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Aug-95	1140		FCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Oct-95	1310		FCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	26-Feb-96	1300		FCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	24-Apr-96	1100		FCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jun-96	1200		FCOLI	40	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Aug-96	1030		FCOLI	300	Q				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	9-Sep-96	828	5.58	FCOLI	18	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Oct-96	1030		FCOLI	130	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-96	1245		FCOLI	230	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Feb-97	800		FCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-97	1015		FCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Jun-97	1030		FCOLI	40	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Aug-97	915		FCOLI	80	Q				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-Jul-99	910	1.55	FCOLI	10	K	K			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-Jul-99	1015	1.8	FCOLI	10	K	K			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	7-Sep-99	907	1.95	FCOLI	10	K	K			IWR58
2634A	Tomoka River - 3M	21FLGW 14277	24-Jun-02	1020	0.5	FCOLI	54	A	AQ		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-Dec-04	845	1.7	FCOLI	5	K	K		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-Dec-04	920	1.65	FCOLI	5	K	K		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	3-Apr-06	935	0.3	FCOLI	5	K	K		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	4-May-09	947	0.5	FCOLI	2	J	J		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	11-Jul-11	955	0.3	FCOLI	40	J	J		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	11-Jul-11	1030	0.3	FCOLI	11	J	J		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	10-Sep-12	941	0.3	FCOLI	76	B	BJ		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	10-Sep-12	1024	0.3	FCOLI	21	J	J		1	IWR58
2634A	Tomoka River - 3M	21FLA 27010023	16-Jan-74	1135	5	FE	50	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Feb-74	1140	6	FE	50	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Nov-74	1420	6	FE	500	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	2-Apr-75	1135	6	FE	100	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	FE	85800000					IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-May-77	1135	6	FE	100	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLVEMDTR01	3-Oct-11	942	1.3	FE	566.6	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	3-Oct-11	1016	1.8	FE	233	J	J			IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			FE	357.631992			Q	10	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jun-96	1200		HARD	17894.8	$				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			HARD	4066.32305			Q	13.23	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010023	7-Apr-80	1330	6	HG	0.2	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	K	1225					IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			K	247.820058			Q	2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jun-96	1200		MG	4260					IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			MG	796.224859			Q	2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			MN	17.026054			IQ	2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			MO	7.574592			IQ	2	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010024	7-Jul-92	1100	8.2	NA	686	J				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			NA	6440.52587			Q	2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Apr-99	1015	0.5	NH4	-0.0035	T	T		0.005	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Aug-01	1245	0.5	NH4	0.192	Q	Q		0.005	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Jun-03	1040	0.52	NH4	-0.0005	T	T		0.01	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-04	1010	0.5	NH4	-0.001325	T	T		0.01	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Apr-06	940	0.5	NH4	-0.00325	T	T		0.05	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Dec-06	910	0.5	NH4	-0.0076	T	T		0.05	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-08	900	0.5	NH4	-0.0071	T	T		0.05	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-08	920	0.5	NH4	-0.0132	T	T		0.05	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Apr-09	940	0.5	NH4	-0.01465	T	T		0.05	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Dec-10	1010	0.5	NH4	0.00185	T	TQ		0.05	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Nov-11	1200	0.5	NH4	0.1672	I	IQ		0.1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jan-12	925	1.3	NH4	0.0317	T	TQ		0.1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-13	945	0.5	NH4	0.0399	T	TQ		0.1	IWR58
2634A	Tomoka River - 3M	21FLSJWM44601	10-Jan-13	945	0.5	NH4	0.05	U	UQ		0.1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	29-Jan-14	900	0.5	NH4	-0.0107	T	T		0.015	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			NH4	0.113406				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Aug-17			NH4	0.143941				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Nov-17			NH4	0.084752				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Dec-17			NH4	0.061572				0.005	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jan-18			NH4	0.096151				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-18			NH4	0.041258				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-18			NH4	0.009992			I	0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-18			NH4	0.025951				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-May-18			NH4	0.007721			I	0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jun-18			NH4	0.046207				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jul-18			NH4	0.032068				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-18			NH4	0.039574				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Sep-18			NH4	0.01944			I	0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-18			NH4	0.012851			I	0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Nov-18			NH4	0.040414				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			NH4	0.04235				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-19			NH4	0.074037				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Feb-19			NH4	0.035547				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Mar-19			NH4	0.044533				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			NH4	0.00928			I	0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-19			NH4	0.025034				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-19			NH4	0.07817				0.005	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	NI	8600000	K				IWR58
2634A	Tomoka River - 3M	21FLSJWMTOMKA	28-May-92	1320		NI	2	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Feb-99	1130	0.5	NI	-0.35	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Jun-99	1000	0.5	NI	-4.65	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	3-Aug-99	1040	0.5	NI	-2.4	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Oct-04	930	0.5	NI	-0.54875	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Dec-04	1120	0.5	NI	-3.3771	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Apr-05	930	0.5	NI	-0.14085	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Jun-05	930	0.5	NI	-1.0595	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Aug-05	915	0.5	NI	-0.1682	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-05	920	0.5	NI	-0.2109	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Feb-06	1000	0.5	NI	-0.49725	T	T		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Aug-06	945	0.5	NI	-2.552	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Feb-07	1115	0.5	NI	-5.41	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Apr-07	915	0.5	NI	-6.48	T	T		20	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Jun-07	930	0.5	NI	-7.955	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Aug-07	955	0.5	NI	-7.53	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Oct-07	930	0.5	NI	-6.3	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-07	915	0.5	NI	-10.1	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jun-08	905	0.5	NI	-6.72379	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-08	1015	0.5	NI	-0.213945	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Oct-08	1010	0.5	NI	-0.88878	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-08	920	0.5	NI	-8.959285	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jun-09	920	0.5	NI	-0.25496	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Feb-11	1030	0.5	NI	-0.2476	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Apr-11	930	0.5	NI	-0.39057	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jan-12	925	1.3	NI	-0.09674	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Sep-12	1015	0.5	NI	-0.094475	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	29-Jan-14	900	0.5	NI	-0.012155	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Sep-14	920	0.5	NI	-0.121735	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			NI	-0.048902			TQ	2	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	NO2	0.082	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	22-Oct-85	1510	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	22-Oct-85	1512	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	22-Oct-85	1442	5	NO3O2	0.02	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	23-Oct-85	855	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	23-Oct-85	900	7	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	11-Feb-86	1353	7	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	28-Apr-86	1429	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	28-Apr-86	1431	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	28-Apr-86	1348	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	28-Apr-86	1350	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	28-Apr-86	1400	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	28-Apr-86	1402	7	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	23-Jun-86	1243	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	23-Jun-86	1245	7	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	23-Jun-86	1148	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	23-Jun-86	1150	7	NO3O2	0.04	K				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLA 27010569	23-Jun-86	1208	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	23-Jun-86	1210	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	28-Jul-86	1355	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	28-Jul-86	1308	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	28-Jul-86	1310	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	28-Jul-86	1320	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	28-Jul-86	1322	5	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	29-Jul-86	1048	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	29-Jul-86	1050	5	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	29-Jul-86	958	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	29-Jul-86	1000	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	29-Jul-86	1018	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	29-Jul-86	1020	5	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	25-Aug-86	1408	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	25-Aug-86	1410	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	25-Aug-86	1310	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	25-Aug-86	1312	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	25-Aug-86	1329	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	25-Aug-86	1330	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	26-Aug-86	915	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	26-Aug-86	830	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	26-Aug-86	832	6	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	26-Aug-86	848	1	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010569	26-Aug-86	850	5	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	7-Oct-86	1135	5	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	6-Jan-87	915	8	NO3O2	0.04	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	10-Apr-89	900	2	NO3O2	0.02	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	11-Jul-89	850	2	NO3O2	0.02	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010024	17-Apr-90	925	6.56	NO3O2	0.02	K				IWR58
2634A	Tomoka River - 3M	21FLSJWMTOMKA	28-May-92	1320		NO3O2	0.007	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	20-Apr-98	1030		NO3O2	820					IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Jun-01	1145	0.5	NO3O2	-0.003	T	T		0.007	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	1-Mar-04	845	0.6	NO3O2	0.026	Q	Q		0.004	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLVEMDTR02	1-Mar-04	915	0.45	NO3O2	0.054	Q	Q		0.004	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	11-Oct-04	845	1.7	NO3O2	0.046	Q	Q		0.004	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	11-Oct-04	905	1.85	NO3O2	0.039	Q	Q		0.004	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	7-Feb-05	845	1.7	NO3O2	0.002	U	UQ		0.004	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Feb-05	920	1.75	NO3O2	0.06	Q	Q		0.004	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Dec-05	1035	0.5	NO3O2	0.2524	Q	Q		0.01	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	9-Jan-06	935	0.3	NO3O2	0.092	J	J		0	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Apr-11	930	0.5	NO3O2	0.0261	I	IQ		0.01	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Mar-12	1030	1.5	NO3O2	0.021	I	IQ		0.01	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-17	939	0.5	NO3O2	0.0206	I	IQ		0.01	IWR58
2634A	Tomoka River - 3M	21FLSJWM44601	10-Apr-17	939	0.5	NO3O2	0.0206	I	IQ		0.01	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			NO3O2	0.03			I	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Aug-17			NO3O2	0.0831				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Nov-17			NO3O2	0.1141				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM44601	11-Dec-17	942	0.48	NO3O2	0.1112	Q	Q		0.01	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Dec-17			NO3O2	0.1112			Q>	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jan-18			NO3O2	0.1215				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-18			NO3O2	0.0637				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-18			NO3O2	0.0035			T	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-18			NO3O2	0.0145			I	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-May-18			NO3O2	0.00095			T	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jun-18			NO3O2	0.1022				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jul-18			NO3O2	0.1181				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-18			NO3O2	0.0701				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Sep-18			NO3O2	0.0468				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-18			NO3O2	0.0159			I	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Nov-18			NO3O2	0.0445				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			NO3O2	0.0383			I	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-19			NO3O2	0.1105				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Feb-19			NO3O2	0.0364			I	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Mar-19			NO3O2	0.0486				0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			NO3O2	0			T	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-19			NO3O2	0.0382			I	0.01	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-19			NO3O2	0.0224			JIQY	0.01	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010024	12-Dec-73	1205	8	PB	20	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	16-Jan-74	1135	5	PB	20	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	10-Jul-74	1015	6	PB	10	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	2-Oct-74	1900	7	PB	50	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Nov-74	1420	6	PB	20	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	9-Dec-74	1130	6	PB	20	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	14-Jan-75	1125	5	PB	20	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	5-Feb-75	1145	7	PB	20	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	2-Apr-75	1135	6	PB	10	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	PB	50000000					IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	6	PB	10	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	3-Mar-76	1300	6	PB	20	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jun-79	1210	5	PB	10	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	10-Sep-79	1345	6	PB	10	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	7-Apr-80	1330	6	PB	50	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jan-82	1301	6	PB	20	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jan-82	1301	65	PB	20	K				IWR58
2634A	Tomoka River - 3M	21FLSJWMTOMKA	28-May-92	1320		PB	2	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Apr-99	1015	0.5	PB	-0.55	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	3-Aug-99	1040	0.5	PB	-1.35	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Dec-00	1130	0.5	PB	-0.037	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Apr-01	1315	0.5	PB	-0.475	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	27-Oct-03	1050	0.5	PB	-0.2125	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	3-Dec-03	1045	0.5	PB	-0.4588	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Dec-04	1120	0.5	PB	-0.84715	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Feb-06	1000	0.5	PB	-1.048	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-07	915	0.5	PB	-2.65	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-08	900	0.5	PB	-1.280025	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Oct-08	1010	0.5	PB	-0.69913	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-08	920	0.5	PB	-0.66602	T	T		20	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Feb-09	920	0.5	PB	-0.012915	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Apr-09	940	0.5	PB	-0.46861	T	T		2	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jun-09	920	0.5	PB	-0.07917	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Dec-10	1010	0.5	PB	-0.17924	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-16	1037	0.52	PB	-0.137355	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			PB	0.0988355			TQ	1	SJRWMD
2634A	Tomoka River - 3M	21FLVEMDTR02	8-Aug-16	1045	1.2	PH	7.6	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Nov-16	943	2	PH	7.17	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	13-Mar-17	957	1.6	PH	7.3	J	J			IWR58
2634A	Tomoka River - 3M	21FLA 27010024	11-Jul-89	850	1.15	PHEOA	0.5	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Oct-96	1030		PHEOA	2.2	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Feb-97	800		PHEOA	7.4	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Dec-99	1100	0.5	PHEOA	-10.79424	T	TJ		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Feb-05	945	0.5	PHEOA	-0.14992	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Aug-05	915	0.5	PHEOA	0.471255	T	TJ		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-05	920	0.5	PHEOA	0.19691	T	TJ		1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	4-Feb-08	1032	0.45	PHEOA	-0.1				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	4-Aug-08	1050	3.5	PHEOA	-2.18				1	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-May-13	949	0.4	PHEOA	0.62	Q	Q			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-May-13	1033	0.6	PHEOA	0.33	Q	Q			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Nov-16	943	0.4	PHEOA	-0.01068	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLA 27010024	31-Aug-98	1110	3.94	PORD	0.05	Q				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	11-Oct-04	845	1.7	PORD	0.055	Q	Q		0.008	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	11-Oct-04	905	1.85	PORD	0.035	Q	Q		0.008	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	7-Feb-05	845	1.7	PORD	0.0025	T	TQ		0.008	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Feb-05	920	1.75	PORD	0.0025	T	TQ		0.008	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Dec-05	1035	0.5	PORD	0.0322	I	IQ		0.012	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Apr-11	930	0.5	PORD	0.0698	Q	Q		0.012	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Mar-12	1030	1.5	PORD	0.0519	Q	Q		0.012	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			PORD	0.0849				0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Aug-17			PORD	0.083				0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Nov-17			PORD	0.0511				0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Dec-17			PORD	0.0497				0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jan-18			PORD	0.0278			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-18			PORD	0.00495			T	0.012	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-18			PORD	0.00585			T	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-18			PORD	0.0276			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-May-18			PORD	0.0307			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jun-18			PORD	0.0526				0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jul-18			PORD	0.0385			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLVEMDTR02	16-Jul-18	1015	0.51	PORD	0.0209	I	IQ		0.012	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-18			PORD	0.034			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Sep-18			PORD	0.0433				0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-18			PORD	0.0409				0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Nov-18			PORD	0.0321			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			PORD	0.0218			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-19			PORD	0.0383			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLVEMDTR02	14-Jan-19	926	0.5	PORD	-0.0006	T	T		0.012	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Feb-19			PORD	0.0209			I>	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Mar-19			PORD	0.0227			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			PORD	0.0186			I	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-19			PORD	0.054				0.012	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-19			PORD	0.0482			JQY	0.012	SJRWMD
2634A	Tomoka River - 3M	21FLVEMDTR01	2-Aug-99	905	1.7	SALIN	98.4					IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	8-Aug-16	1045	1.2	SALIN	8.84	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Nov-16	943	2	SALIN	7.09	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	13-Mar-17	957	1.6	SALIN	12.87	J	J			IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-16	1037	0.52	SB	-0.02074	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			SB	-0.067962			TQ	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Dec-00	1130	0.5	SE	-1.1	T	T		4.1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Feb-01	1115	0.5	SE	-0.95	T	T		4.1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Aug-01	1245	0.5	SE	-0.1685	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Oct-02	1140	0.5	SE	-0.0035	T	T		3	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Feb-03	1115	0.5	SE	-0.521	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Jun-03	1040	0.52	SE	-0.142	T	T		2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Apr-05	930	0.5	SE	-1.6445	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-05	920	0.5	SE	-0.881	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Dec-05	1035	0.5	SE	-0.969	T	T		5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Feb-06	1000	0.5	SE	-14.27	T	T		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Oct-06	930	0.5	SE	-9.35	T	T		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Dec-06	910	0.5	SE	-13.76	T	T		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Apr-07	915	0.5	SE	-13.53	T	T		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Jun-07	930	0.5	SE	-26.31	T	T		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Aug-07	955	0.5	SE	-6.31	T	T		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Oct-07	930	0.5	SE	-5.5	T	T		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-07	915	0.5	SE	-5.5	T	T		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jun-08	905	0.5	SE	-2.908685	T	T		50	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Oct-08	1010	0.5	SE	-2.44876	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Feb-09	920	0.5	SE	-2.055765	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	20-Oct-10	1000	0.5	SE	-1.82112	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Aug-11	1020	0.5	SE	-1.609515	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Jul-12	930	0.5	SE	-0.29654	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-13	955	0.5	SE	-1.05802	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Sep-13	905	0.5	SE	-1.798285	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	27-Mar-14	915	0.5	SE	-2.083805	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Sep-14	920	0.5	SE	-2.648385	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Nov-17			SE	-0.6416735			T	14	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Dec-17			SE	-1.5752145			T	14	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jan-18			SE	-3.949662			T	14	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-18			SE	-0.7571385			T	14	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-18			SE	-1.931726			T	14	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-May-18			SE	-0.4922775			T	14	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jun-18			SE	-0.023344			T	5	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			SE	6.8545335			TQ	14	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			SILCA	7.8808				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Aug-17			SILCA	8.5748				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Nov-17			SILCA	4.7909				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Dec-17			SILCA	2.6865				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jan-18			SILCA	3.9949				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-18			SILCA	3.0943				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-18			SILCA	0.6979			I	0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-18			SILCA	1.1222				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-May-18			SILCA	2.5803			Y	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jun-18			SILCA	5.9516				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jul-18			SILCA	5.4891				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-18			SILCA	5.1579				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Sep-18			SILCA	4.9199				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-18			SILCA	5.4519				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Nov-18			SILCA	3.8584				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			SILCA	2.6918				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-19			SILCA	5.6459				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Feb-19			SILCA	2.3565				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Mar-19			SILCA	2.9277			>	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			SILCA	0.9566			I	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-19			SILCA	1.3052				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-19			SILCA	5.9464			J	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Nov-12	940	0.5	SILCO	2696.74	Q	Q		100	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-16	1033	0.52	SN	-0.116585	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-16	1037	0.52	SN	-0.292995	T	T		5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-17	908	0.51	SN	-0.155	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-May-17	923	0.6	SN	-0.068535	T	T		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			SN	-0.0970415			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jul-18			SN	-0.004841			T	0.5	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-18			SN	-0.007681			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			SN	-0.0025355			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-19			SN	-0.005158			T	0.5	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			SN	0.050443			TQ	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-19			SN	-0.097477			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-19			SN	-0.006369			T	1	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	19-Mar-12	1030	1.5	SO4	2089.4336	Q	Q		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Sep-13	905	0.5	SO4	319.5834	Q	Q		30	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			STR	5544.3861			Q	10	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Aug-95	1140		TCOLI	130	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	23-Oct-95	1310		TCOLI	80	Q				IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLVEMDTR01	6-Nov-95	915	0.98	TCOLI	5	K				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	4-Dec-95	925	0.98	TCOLI	5	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	26-Feb-96	1300		TCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	1-Apr-96	810	0.98	TCOLI	5	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	24-Apr-96	1100		TCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-May-96	810	0.98	TCOLI	5	K				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-May-96	820	0.98	TCOLI	5	K				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	3-Jun-96	800	0.98	TCOLI	5	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jun-96	1200		TCOLI	1300	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Aug-96	1030		TCOLI	2300	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Oct-96	1030		TCOLI	500	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-96	1245		TCOLI	300	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Feb-97	800		TCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Apr-97	1015		TCOLI	20	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	2-Jun-97	1030		TCOLI	1300	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Aug-97	915		TCOLI	100	Q				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	1-Jun-98	940	0.98	TCOLI	10	K				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	8-Aug-16	1045	1.2	TEMP	29.64	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	7-Nov-16	943	2	TEMP	23.15	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	13-Mar-17	957	1.6	TEMP	21.3	J	J			IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	18-Oct-17			TEMP				O		SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Aug-01	1245	0.5	TKN	1.24	Q	Q		0.07	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	10-Jul-06	1010	1.8	TKN	0.59	J	J		0.06	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	10-Jul-06	1035	2.2	TKN	0.62	J	J		0.06	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	2-Oct-06	910	1.8	TKN	1.83	J	J		0.06	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	2-Oct-06	940	1.8	TKN	0.87	J	J		0.06	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	5-Feb-07	915	1.5	TKN	0.42	J	J		0.06	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	5-Feb-07	950	1.7	TKN	0.49	J	J		0.06	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-Aug-07	955	1	TKN	0.96	Q	Q		0.08	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-Aug-07	1045	1.9	TKN	0.93	Q	Q		0.08	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			TKN	0.9118				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Aug-17			TKN	0.8548				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	15-Nov-17			TKN	0.9637				0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Dec-17			TKN	0.4501				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Jan-18			TKN	0.7653				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Feb-18			TKN	0.7263				0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Mar-18			TKN	0.4371			I	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-18			TKN	0.5324			I	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-May-18			TKN	0.5862			I	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Jun-18			TKN	1.063				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jul-18			TKN	1.2394				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-18			TKN	1.0162				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Sep-18			TKN	0.9175				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-18			TKN	0.7311				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Nov-18			TKN	0.6098				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			TKN	0.5378				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-19			TKN	0.9822				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Feb-19			TKN	0.5729				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	7-Mar-19			TKN	0.6705				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			TKN	0.4813				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-19			TKN	0.6289				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Aug-19			TKN	0.4298				0.05	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010024	7-Jul-92	1100	8.2	TL	37.5	T				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-16	1033	0.52	TL	-0.01538	T	T		0.2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	13-Oct-16	1037	0.52	TL	-0.19841	T	T		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-17	908	0.51	TL	-0.021585	T	T		0.2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-17	939	0.5	TL	-0.00496	T	T		0.2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-May-17	923	0.6	TL	-0.01097	T	T		0.2	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	5-Jul-17			TL	-0.0941815			T	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	11-Dec-17			TL	-0.0005085			T	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Jul-18			TL	-0.0160265			T	0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Oct-18			TL	-0.0180935			T	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Dec-18			TL	-0.018999			T	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-19			TL	-0.006904			T	0.05	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			TL	0.004732			TQ	0.2	SJRWMD
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-19			TL	-0.008577			T	0.2	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	20-Apr-98	1030		TN	820.998	+				IWR58
2634A	Tomoka River - 3M	21FLSJWMTOMKA	28-May-92	1320		TOC	1.5	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	12-Jan-98	930		TOC	35.4	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Aug-05	915	0.5	TOC	25.04	Q	Q		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Dec-08	920	0.5	TOC	12.5	Q	Q		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-13	945	0.5	TOC	9.26	I	IQ		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM44601	10-Jan-13	945	0.5	TOC	9.26	I	IQ		1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	21-Jun-95	1310		TORTH	0.053	Q				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	16-Jun-03	1040	0.52	TORTH	0.037	I	QI		0.012	IWR58
2634A	Tomoka River - 3M	21FLA 27010024	14-Sep-93	1215	6.56	TP	0.14	J				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Aug-01	1245	0.5	TP	0.186	Q	Q		0.004	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Oct-07	930	0.5	TP	0.15059	I	YI		0.05	IWR58
2634A	Tomoka River - 3M	21FLA 27010925	11-Feb-09	1040	0.25	TP	0.056	A	AJ		0.008	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	3-Mar-97	815	5.25	TSS	17	J				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	3-Mar-97	830	5.25	TSS	15	J				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	3-Mar-97	850	5.74	TSS	6.8	J				IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	1-Feb-99	900	1.75	TSS	12	J	J			IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	1-Feb-99	935	1.9	TSS	2.3	J	J			IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-Aug-01	1245	0.5	TSS	20	Q	Q		5	IWR58
2634A	Tomoka River - 3M	21FLA 27010023	8-Oct-09	1140	1.8	TSS	5	I	IQ		4	IWR58
2634A	Tomoka River - 3M	21FLA 27010024	8-Oct-09	1110	1.8	TSS	8	I	IQ		4	IWR58
2634A	Tomoka River - 3M	21FLA 27010925	8-Oct-09	1035	0.6	TSS	11	I	IQ		4	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR01	6-May-13	949	2.2	TSS	7.8	J	J		0.4	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	6-May-13	1033	2.1	TSS	1.6	J	J		0.4	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	8-Apr-02	1050	0.5	TURB	6.26	Q	Q		0.1	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	1-Apr-11	930	0.5	TURB	11.83366	Q	Q		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	14-May-12	905	0.5	TURB	10.02144	Q	Q		0.5	IWR58
2634A	Tomoka River - 3M	21FLVEMDTR02	15-Nov-18	1057	0.5	TURB	3.86037	Q	Q		0.5	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	9-Nov-16	935	0.48	VAN	-0.13876	T	T		12	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Jan-17	908	0.51	VAN	-0.414135	T	T		12	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-17	939	0.5	VAN	-0.41315	T	T		12	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	6-Jun-17	1003	0.5	VAN	-0.424675	T	T		12	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	10-Apr-18			VAN	-0.0161275			T	12	SJRWMD

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			VAN	3.9532805			TQ	12	SJRWMD
2634A	Tomoka River - 3M	21FLA 27010023	16-Jan-74	1135	5	ZN	250	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Sep-74	1110	4	ZN	100	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	2-Oct-74	1900	7	ZN	100	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	6-Nov-74	1420	6	ZN	100	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	13-May-75	1200	0	ZN	25000	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jan-82	1301	6	ZN	25	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jan-82	1301	65	ZN	25	K				IWR58
2634A	Tomoka River - 3M	21FLA 27010023	4-Jan-83	1401	5	ZN	10	K				IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	31-May-00	1040	0.5	ZN	-1.7045	T	T		10	IWR58
2634A	Tomoka River - 3M	21FLSJWM27010024	4-Apr-19			ZN	2.060172			TQ	10	SJRWMD
2635	Groover Branch - 3F	21FLCEN 27010580	29-Oct-15	1030	0.3	BOD	1.1	I	IJ		0.2	IWR58
2635	Groover Branch - 3F	21FLA 27010582	28-Apr-09	1107	0.5	COND	16019					IWR58
2635	Groover Branch - 3F	21FLA 27010582	28-Apr-09	1107	0.5	DISS	3740				150	IWR58
2635	Groover Branch - 3F	21FLA 27010027FLA	28-Apr-09	1150	0.55	DO	1.34	J	J			IWR58
2635	Groover Branch - 3F	21FLA 27010580	28-Apr-09	1215	0.25	DO	1.63	J	J			IWR58
2635	Groover Branch - 3F	21FLA 27010582	28-Apr-09	1107	0.5	DO	2.15	J	J			IWR58
2635	Groover Branch - 3F	21FLA 27010027FLA	28-Apr-09	1150	0.55	DOSAT	13.5	J	J			IWR58
2635	Groover Branch - 3F	21FLA 27010580	28-Apr-09	1215	0.25	DOSAT	17.9	J	J			IWR58
2635	Groover Branch - 3F	21FLA 27010582	28-Apr-09	1107	0.5	DOSAT	26.4	J	J			IWR58
2635	Groover Branch - 3F	21FLCEN G5CE0040	29-Jan-19	1045	0.3	ECOLI	0.5	Q	QU		1	IWR58
2635	Groover Branch - 3F	21FLCEN G5CE0041	29-Jan-19	1032	0.3	ECOLI	0.5	Q	QU		1	IWR58
2635	Groover Branch - 3F	21FLGW 34899	16-Sep-08	955	0.2	ENCOC	44	Q	Q		2	IWR58
2635	Groover Branch - 3F	21FLGW 34905	16-Sep-08	1130	0.3	ENCOC	1100	B	BQ		9	IWR58
2635	Groover Branch - 3F	21FLGW 34899	16-Sep-08	955	0.2	FCOLI	120	B	BQ		2	IWR58
2635	Groover Branch - 3F	21FLGW 34905	16-Sep-08	1130	0.3	FCOLI	460	Q	Q		9	IWR58
2635	Groover Branch - 3F	21FLA 27010582	28-Apr-09	1107	0.5	MG	147				0.8	IWR58
2635	Groover Branch - 3F	21FLA 27010575	22-Oct-85	1340	2	NO3O2	0.04	K				IWR58
2635	Groover Branch - 3F	21FLA 27010575	28-Apr-86	1450	1	NO3O2	0.04	K				IWR58
2635	Groover Branch - 3F	21FLA 27010575	28-Jul-86	1205	1	NO3O2	0.04	K				IWR58
2635	Groover Branch - 3F	21FLA 27010575	25-Aug-86	1155	1	NO3O2	0.04	K				IWR58
2635	Groover Branch - 3F	21FLA 27010580	22-Jan-09	1135	0.29	NO3O2	0.035	J	J		0.008	IWR58
2635	Groover Branch - 3F	21FLA 27010582	28-Apr-09	1107	0.5	SALIN	9.57					IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2635	Groover Branch - 3F	21FLA 27010582	28-Apr-09	1107	0.5	SO4	280				20	IWR58
2635	Groover Branch - 3F	21FLA 27010027FLA	22-Jan-09	1155	0.55	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010580	22-Jan-09	1135	0.29	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010582	22-Jan-09	1120	0.2	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010027FLA	26-Feb-09	1340	0.6	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010580	26-Feb-09	1320	0.26	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010582	26-Feb-09	1305	0.5	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010027FLA	28-Apr-09	1150	0.55	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010580	28-Apr-09	1215	0.25	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010582	28-Apr-09	1107	0.5	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010027FLA	1-Oct-09	1035	0.06	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010027FLA	15-Dec-09	1540	0.2	STREV	0.1	K	K			IWR58
2635	Groover Branch - 3F	21FLA 27010580	22-Jan-09	1135	0.29	WINDV	1	K	K			IWR58
2640	Unnamed Branch - 3M	21FLCEN 27010597	27-Oct-15	1201	0.3	BOD	1	I	IJ		0.2	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	11-Sep-06	1100	4.4	CHLB	-0.24				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	11-Sep-06	1200	4	CHLB	-0.88				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	11-Sep-06	1130	2.7	CHLB	-0.02				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	4-Oct-06	1010	0.4	CHLB	-0.77				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	4-Oct-06	1040	0.7	CHLB	-2.01				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	29-Jun-07	1200	0.3	CHLB	-1.86				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	8-Jul-08	945	0.3	CHLB	-0.15				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	20-Apr-09	1120	0.5	CHLB	-0.05					IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	13-Jul-09	1000	0.5	CHLB	-0.2					IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	9-Mar-10	1130	0.5	CHLB	-0.6				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	9-Mar-10	1210	0.5	CHLB	-0.04				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	4-Oct-06	1020	0.25	CHLC	-0.13				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	13-Jul-09	1000	0.5	CHLC	-0.04					IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	25-Sep-07	1100	0.4	DOSAT	245	+				IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	6-Dec-07	1030	2.3	NH4	0.238	I	IV		0.073	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	18-Mar-08	1130	0.5	NH4	0.139	I	IV		0.065	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	18-Mar-08	1155	0.4	NH4	0.12	I	IV		0.065	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	18-Mar-08	1315	0.4	NH4	0.114	I	IV		0.065	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	18-Mar-08	1235	0.4	NH4	0.077	I	IV		0.065	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2640	Unnamed Branch - 3M	21FLVEMDVC-086	21-Oct-08	1110	3.6	NH4	0.103	I	IV		0.058	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	21-Oct-08	1125	2.3	NH4	0.194	I	IV		0.058	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	21-Oct-08	1145	3.7	NH4	0.011	T	TV		0.058	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	21-Oct-08	950	2.1	NH4	0.081	I	IV		0.058	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	21-Feb-06	1020	4	NO3O2	0.075	J	J		0	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	21-Feb-06	1040	0.3	NO3O2	0.016	J	J		0	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	21-Feb-06	1100	0.3	NO3O2	0.089	J	J		0	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	21-Feb-06	1130	2.1	NO3O2	0.07	J	J		0	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	11-Sep-06	1200	4	PHEOA	-0.4				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	4-Oct-06	1010	0.4	PHEOA	-3.57				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	4-Oct-06	1040	0.7	PHEOA	-1.06				1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	21-Feb-06	1100	0.3	PORD	0.011	J	J		0.008	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	11-Jan-06	1120	0.6	TKN	0.985	J	J		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	11-Jan-06	1300	0.8	TKN	1.16	J	J		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	11-Jan-06	1320	0.9	TKN	1.01	J	J		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	11-Jan-06	1220	0.7	TKN	1.2	J	J		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	21-Feb-06	1020	4	TKN	1.5	Q	Q		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	21-Feb-06	1040	0.3	TKN	0.941	Q	Q		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	21-Feb-06	1100	0.3	TKN	1.7	Q	Q		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	21-Feb-06	1130	2.1	TKN	0.942	Q	Q		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	11-Sep-06	1100	4.4	TKN	0.15	U	UJ		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	11-Sep-06	1110	2.8	TKN	0.15	U	UJ		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	11-Sep-06	1200	4	TKN	0.15	U	UJ		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	11-Sep-06	1130	2.7	TKN	0.15	U	UJ		0.3	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	25-Sep-07	1100	2.7	TKN	1.151	Q	Q		0.1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	25-Sep-07	1130	1.8	TKN	0.871	Q	Q		0.1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	25-Sep-07	1240	3.2	TKN	1.283	Q	Q		0.1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	25-Sep-07	1200	2.8	TKN	1.124	Q	Q		0.1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	25-Sep-07	1100	2.7	TP	0.167	Q	Q		0.042	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	25-Sep-07	1130	1.8	TP	0.129	I	IQ		0.042	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	25-Sep-07	1240	3.2	TP	0.15	I	IQ		0.042	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	25-Sep-07	1200	2.8	TP	0.113	I	IQ		0.042	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	29-Jun-07	1100	0.3	TSS	14.8	Q	Q		1.5	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2640	Unnamed Branch - 3M	21FLVEMDVC-087	29-Jun-07	1120	0.3	TSS	13.8	Q	Q		1.5	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	29-Jun-07	1200	0.3	TSS	20	Q	Q		1.5	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	29-Jun-07	1220	0.3	TSS	51.7	Q	Q		1.5	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-086	13-Jan-09	1030	0.2	TSS	2.3	J	J		1.1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-087	13-Jan-09	1200	0.2	TSS	1.2	J	J		1.1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-088	13-Jan-09	1140	0.5	TSS	11.1	J	J		1.1	IWR58
2640	Unnamed Branch - 3M	21FLVEMDVC-089	13-Jan-09	1120	0.2	TSS	4.7	J	J		1.1	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0084	7-Aug-19	1105	0.1	24D	0.0061	I	IJ		0.002	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0032	7-Aug-19	1050	0.05	AFIDO	0.001	U	UJ		0.002	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0084	7-Aug-19	1105	0.1	AFIDO	0.001	U	UJ		0.002	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0032	7-Aug-19	1050	0.05	BENVF	0.001	U	UJ		0.002	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0084	7-Aug-19	1105	0.1	BENVF	0.001	U	UJ		0.002	IWR58
2641	Unnamed Branch - 3F	21FLCEN 27010142	27-Jul-10	1032	0.2	BOD	1.2	I	IJ		0.2	IWR58
2641	Unnamed Branch - 3F	21FLCEN 27010469	27-Jul-10	945	0.2	BOD	0.49	I	IJ		0.2	IWR58
2641	Unnamed Branch - 3F	21FLCEN 27010469	27-Jul-10	946	0.2	BOD	0.39	I	IJ		0.2	IWR58
2641	Unnamed Branch - 3F	21FLCEN 27010469	4-Oct-10	1055	0.1	COND	6289					IWR58
2641	Unnamed Branch - 3F	21FLCEN 27010469	4-Oct-10	1055	0.1	DISS	1280				60	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0084	15-Mar-17	1215	0.1	DISS	259	Q	Q		15	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0032	29-Jan-19	1113	0.1	ECOLI	0.5	Q	QU		1	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0084	29-Jan-19	1126	0.2	ECOLI	0.5	Q	QU		1	IWR58
2641	Unnamed Branch - 3F	21FLA 27010469	9-Sep-96	959	0.49	FCOLI	1500	Q				IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0084	25-Jan-17	1205	0.1	GFDP	20	T	TJ		64000	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0032	7-Aug-19	1050	0.05	MANDS	0.001	U	UJ		0.002	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0084	7-Aug-19	1105	0.1	MANDS	0.001	U	UJ		0.002	IWR58
2641	Unnamed Branch - 3F	21FLCEN 27010469	18-Feb-10	1054	0.5	NH4	0.015	I	IJ		0.01	IWR58
2641	Unnamed Branch - 3F	21FLCEN 27010469	26-Sep-05	936	0.3	NO3O2	0.07	J	J		0.004	IWR58
2641	Unnamed Branch - 3F	21FLCEN 27010469	7-Dec-05	1102	0.3	NO3O2	0.081	J	J		0.004	IWR58
2641	Unnamed Branch - 3F	21FLCEN 27010469	4-Oct-10	1055	0.1	SALIN	3.45					IWR58
2641	Unnamed Branch - 3F	21FLA 27010213	2-Feb-10	1340	0.25	TKN	0.57	J	J		0.08	IWR58
2641	Unnamed Branch - 3F	21FLCEN G5CE0084	7-Aug-19	1105	0.1	TOLFP	0.001	U	UJ		0.002	IWR58
2642	Unnamed Branch - 3M	21FLCEN 27010570	27-Oct-15	1227	0.3	BOD	1.1	I	IJ		0.2	IWR58
2642	Unnamed Branch - 3M	21FLCEN G5CE0017	19-Dec-16	1145	0.3	CHLA	14	Q	Q		0.4	IWR58
2642	Unnamed Branch - 3M	21FLCEN G5CE0017	19-Dec-16	1145	0.3	CHLAC	12	Q	Q		0.55	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2642	Unnamed Branch - 3M	21FLVEMDVC-085	11-Sep-06	1030	2.8	CHLB	-1.93				1	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	4-Oct-06	940	0.2	CHLB	-3.48				1	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	9-Mar-10	1100	0.5	CHLB	-0.32				1	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	18-Mar-08	1055	0.5	NH4	0.11	I	IV		0.065	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	21-Oct-08	1040	3.1	NH4	0.029	T	TV		0.058	IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	23-Oct-85	815	1	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	23-Oct-85	820	2	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	28-Apr-86	1408	1	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	28-Apr-86	1410	2	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	23-Jun-86	1218	1	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	23-Jun-86	1220	2	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	28-Jul-86	1332	2	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	29-Jul-86	1028	1	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	29-Jul-86	1030	2	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	25-Aug-86	1350	2	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	26-Aug-86	858	1	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLA 27010570	26-Aug-86	900	2	NO3O2	0.04	K				IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	21-Feb-06	950	2.7	NO3O2	0.018	J	J		0	IWR58
2642	Unnamed Branch - 3M	21FLCEN G5CE0017	11-Apr-17	1328	0.3	NO3O2	0.005	I	IY		0.004	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	11-Sep-06	1030	2.8	PHEOA	-1.94				1	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	4-Oct-06	940	0.2	PHEOA	-2.88				1	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	21-Oct-08	1040	3.1	PHEOA	-0.25				1	IWR58
2642	Unnamed Branch - 3M	21FLCEN G5CE0017	19-Dec-16	1145	0.3	PHEOA	2.6	Q	Q		0.4	IWR58
2642	Unnamed Branch - 3M	21FLCEN G5CE0017	19-Dec-16	1145	0.3	PORD	0.044	Q	Q		0.004	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	11-Jan-06	1140	0.3	TKN	1.46	J	J		0.3	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	21-Feb-06	950	2.7	TKN	1.01	Q	Q		0.3	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	11-Sep-06	1030	2.8	TKN	0.15	U	UJ		0.3	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	25-Sep-07	1050	2.1	TKN	1.111	Q	Q		0.1	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	25-Sep-07	1050	2.1	TP	0.162	I	IQ		0.042	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	29-Jun-07	1030	0.3	TSS	16.2	Q	Q		1.5	IWR58
2642	Unnamed Branch - 3M	21FLVEMDVC-085	13-Jan-09	1050	0.2	TSS	7.6	J	J		1.1	IWR58
2642	Unnamed Branch - 3M	21FLCEN G5CE0017	30-Aug-16	1000	0.3	TSS	3	I	IQ		3	IWR58
2642	Unnamed Branch - 3M	21FLCEN G5CE0017	19-Dec-16	1145	0.3	TURB	4.1	Q	Q		0.1	IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2645	Mizners Branch - 3F	21FLCEN 27010068	16-Feb-10	1105	0.15	BOD	0.41	I	IJ		0.2	IWR58
2645	Mizners Branch - 3F	21FLCEN 27010069	23-Mar-17	1045	0.3	BOTTM	0.6	J	J			IWR58
2645	Mizners Branch - 3F	21FLCEN G5CE0093	23-Mar-17	1045	0.3	BOTTM	0.6	J	J			IWR58
2645	Mizners Branch - 3F	21FLCEN 27010070	16-Nov-10	1054	0.3	COND	26535					IWR58
2645	Mizners Branch - 3F	21FLCEN 27010070	16-Nov-10	1054	0.3	DISS	8720				600	IWR58
2645	Mizners Branch - 3F	21FLCEN 27010068	16-Feb-10	1105	0.15	DO	8.7	J	J			IWR58
2645	Mizners Branch - 3F	21FLGW 34924	23-Sep-08	925	0.3	ENCOC	1700	B	BQ		9	IWR58
2645	Mizners Branch - 3F	21FLGW 34924	23-Sep-08	925	0.3	FCOLI	1100	B	BQ		9	IWR58
2645	Mizners Branch - 3F	21FLCEN 27010070	16-Nov-10	1054	0.3	NO3O2	0.058	J	J		0.004	IWR58
2645	Mizners Branch - 3F	21FLCEN 27010595	16-Nov-10	1115	0.2	NO3O2	0.18	J	J		0.004	IWR58
2645	Mizners Branch - 3F	21FLCEN 27010595	16-Nov-10	1116	0.2	NO3O2	0.17	J	J		0.004	IWR58
2645	Mizners Branch - 3F	21FLCEN 27010070	16-Nov-10	1054	0.3	SALIN	16.28					IWR58
2645	Mizners Branch - 3F	21FLCEN 27010070	16-Nov-10	1054	0.3	SO4	670				20	IWR58
2645	Mizners Branch - 3F	21FLGW 34924	23-Sep-08	925	0.3	TKN	0.76	J	J		0.08	IWR58
2645	Mizners Branch - 3F	21FLCEN 27010070	20-May-10	1034	0.2	TKN	0.55	J	J		0.08	IWR58
2645	Mizners Branch - 3F	21FLCEN 27010069	10-Feb-10	1212	0.2	TP	0.076	A	AJ		0.005	IWR58
2646	Little Tomoka River - 3F	21FLCEN 27010577	11-Apr-05	1118	0.5	BOTTM	26					IWR58
2646	Little Tomoka River - 3F	21FLCEN 27010583	20-Apr-10	1028	0.2	CHLAC	0.275	U	UJ		0.55	IWR58
2646	Little Tomoka River - 3F	21FLCEN 27010577	18-Feb-10	1210	0.5	CU	2.57	J	J		0.5	IWR58
2646	Little Tomoka River - 3F	21FLCEN 27010577	18-Feb-10	1211	0.5	CU	1.95	J	J		0.5	IWR58
2646	Little Tomoka River - 3F	21FLCEN 27010583	18-Feb-10	1224	0.5	CU	2.21	J	J		0.5	IWR58
2646	Little Tomoka River - 3F	21FLA 27010577	22-Oct-85	1400	3	NO3O2	0.04	K				IWR58
2646	Little Tomoka River - 3F	21FLA 27010577	11-Feb-86	920	3	NO3O2	0.04	K				IWR58
2646	Little Tomoka River - 3F	21FLA 27010577	28-Apr-86	1425	2	NO3O2	0.04	K				IWR58
2646	Little Tomoka River - 3F	21FLA 27010577	28-Jul-86	1230	3	NO3O2	0.04	K				IWR58
2646	Little Tomoka River - 3F	21FLCEN 27010139	30-Nov-10	1134	0.1	NO3O2	0.31	J	J		0.004	IWR58
2646	Little Tomoka River - 3F	21FLCEN 27010583	20-Apr-10	1028	0.2	PHEOA	0.2	U	UJ		0.4	IWR58
2646	Little Tomoka River - 3F	112WRD 02247600	15-May-70	1315		STAGE	56					IWR58
2647	Holly Hill Ditch - 3M	21FLA 27010021	28-Apr-09	935	0.15	DO	3.7	J	J			IWR58
2647	Holly Hill Ditch - 3M	21FLA 27010022	28-Apr-09	1000	0.25	DO	7.09	J	J			IWR58
2647	Holly Hill Ditch - 3M	21FLA 27010026FLA	28-Apr-09	1020	0.35	DO	2.92	J	J			IWR58
2647	Holly Hill Ditch - 3M	21FLA 27010021	28-Apr-09	935	0.15	DOSAT	45.8	J	J			IWR58
2647	Holly Hill Ditch - 3M	21FLA 27010022	28-Apr-09	1000	0.25	DOSAT	87.1	J	J			IWR58

WBID	Waterbody	Station	Date	Time	Depth	Master Code	Result Value	IWR rCode	IWR new Comment	SJRWMD Qualifier	MDL	Data Source
2647	Holly Hill Ditch - 3M	21FLGW 34909	15-Sep-08	820	0.3	ENCOC	260	Q	Q		9	IWR58
2647	Holly Hill Ditch - 3M	21FLGW 34909	15-Sep-08	820	0.3	FCOLI	130	B	BQ		2	IWR58
2647	Holly Hill Ditch - 3M	21FLA 27010026FLA	1-Oct-09	940	26.9	STREV	0.1	K	K			IWR58
2647	Holly Hill Ditch - 3M	21FLCEN 27010072	7-Apr-05	910	0.2	TKN	0.88	J	JA		0.12	IWR58
2647	Holly Hill Ditch - 3M	21FLCEN 27010072	21-Sep-05	941	0.3	TKN	0.69	J	JA		0.12	IWR58
2647	Holly Hill Ditch - 3M	21FLCEN 27010071	31-Jan-05	1227	0.5	TP	0.13	A	AJ		0.02	IWR58
2647	Holly Hill Ditch - 3M	21FLCEN 27010072	21-Sep-05	941	0.3	TP	0.19	J	JA		0.02	IWR58
2647	Holly Hill Ditch - 3M	21FLA 27010022	22-Jan-09	1030	0.3	WINDV	1	K	K			IWR58
2647	Holly Hill Ditch - 3M	21FLA 27010026FLA	22-Jan-09	1013	0.3	WINDV	1	K	K			IWR58
2647	Holly Hill Ditch - 3M	21FLA 27010021	23-Jul-09	905	0.15	WINDV	1	K	K			IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA282	26-Oct-04	830	1.5	ENCOC	1	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	26-Oct-04	810	1.5	ENCOC	1	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	28-Dec-04	820	1.5	ENCOC	6	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA282	12-Apr-05	725	1.5	ENCOC	16	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA282	23-May-06	730	1.5	ENCOC	3	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	23-May-06	745	1.5	ENCOC	4	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA282	20-Mar-07	715	1.5	ENCOC	6	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	20-Mar-07	730	1.5	ENCOC	12	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	23-Dec-08	845	1.5	ENCOC	1	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	12-Oct-10	840	1.5	ENCOC	0.5	U	UQ		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA282	23-Aug-11	1010	1.5	ENCOC	7	J	J		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	23-Oct-13	810	1.5	ENCOC	5	U	YU		10	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA282	26-Oct-04	830	1.5	FCOLI	0.5	U	UQ		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	26-Oct-04	810	1.5	FCOLI	1	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	28-Dec-04	820	1.5	FCOLI	15	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA282	12-Apr-05	725	1.5	FCOLI	6	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA282	23-May-06	730	1.5	FCOLI	3	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	23-May-06	745	1.5	FCOLI	4	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA282	20-Mar-07	715	1.5	FCOLI	5	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	20-Mar-07	730	1.5	FCOLI	3	Q	Q		1	IWR58
8118	Atlantic Ocean (Volusia County) - 3M	21FLDOH VOLUSIA283	23-Dec-08	845	1.5	FCOLI	5	Q	Q		1	IWR58

Appendix B-B
Trend Test Methodology

Trend Analysis Steps

In the first step of each trend analysis, a time series plot of the raw data is prepared for the period of record. Figure B-1 displays a sample page of the actual output. This figure provides a valuable time-series of the trends in the data.

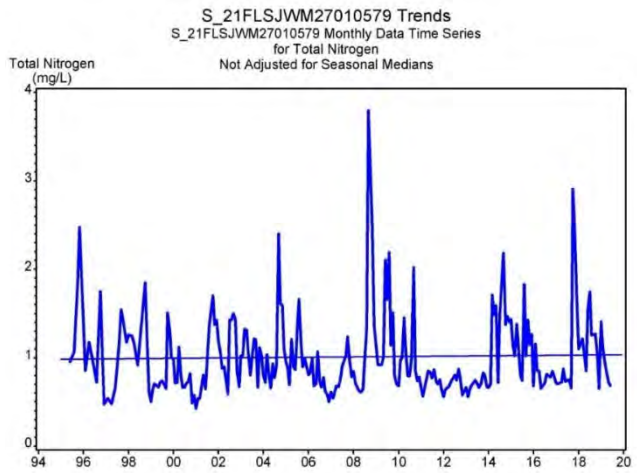


Figure B-1. Sample trend results output for step 1.

In the second step of the trend analysis, the time series data are averaged to monthly values, and a complete set of univariate statistics is calculated to present the seasonality of the data on a monthly intra-annual basis. Figure B-2 presents an example page from the results of the second step and provides a valuable overall view of the seasonality of the data. The annotated labels indicate the following features: 1 = the maximum value, 2= the minimum value, 3 = the median value, 4 = the lower 95% confidence limit of the median value, 5 = the mean value, 6 = the 75th percentile, 7 = the 25th percentile. If the confidence limits around the medians for any pair of months do not overlap, then the medians are considered to be significantly different at an alpha level of 0.05.

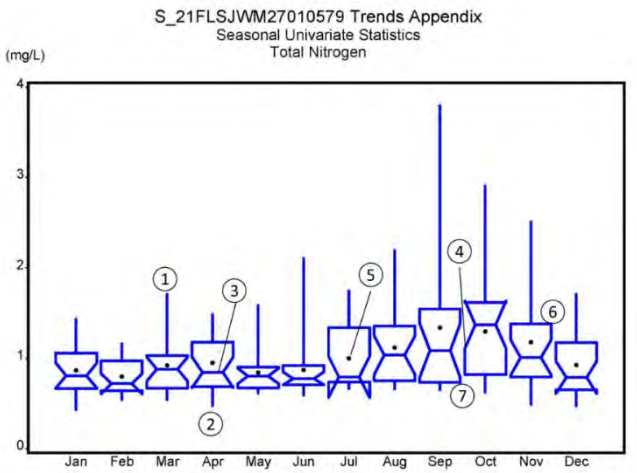


Figure B-2. Sample seasonal univariate results output for step 2 (annotated labels are circled and are not part of the actual outputs).

In the third step of the analysis, a correlation analysis is performed for each monthly value, the previous month's value, two months prior, etc., until correlation statistics have been calculated for all previous months up to 15 months prior. A table of these values is provided in the output (not shown).

In the fourth step of the analysis, a determination is made as to whether seasonality exists in the time series of data. An operationally defined and objective test to identify the presence of seasonality was applied.

A correlogram is provided as part of the output (example in Figure B-3). If a correlation value on this plot is statistically significant then it will lie beyond the confidence limits shown. If the data presented by the plot have seasonality, then one would expect the 6-month lag values to be negatively correlated and the 12-month lag values to be positively correlated.

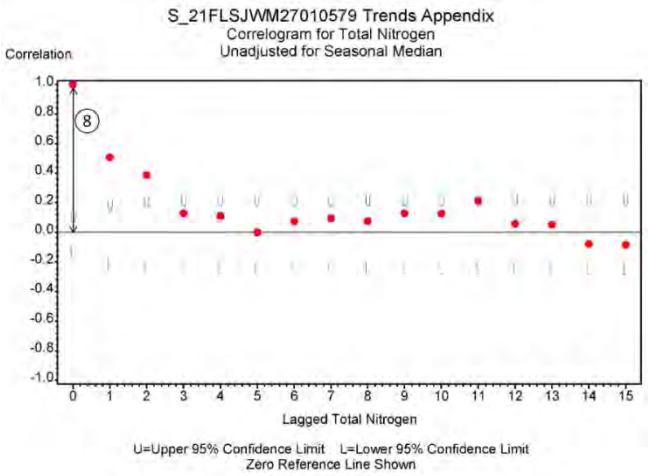


Figure B-3. Sample seasonality test information output for step 4.

The objective test measures the proportional distance between the zero line and the lower 95% confidence limit for the 6-month lag correlation, and the proportional distance between the zero reference line and the upper 95% confidence limit for the 12-month lag correlation (label 9). If the sum of these distances is greater than 1, or if distance 8 is greater than 1, then seasonality is determined to exist.

If the data are determined to be seasonal, then the data are adjusted for season by subtracting the median monthly value from each data point. The season-adjusted data are then applied to a Kendall Tau test. The Kendall Tau test determines the slope of the time series of data, and p-values for various data conditions. Tables of these values are provided in the results (examples not shown). However, in all cases summary trend tables are provided in the appendices showing the appropriate p-values, slopes, and significance results for each trend.

The next step is to test the data for autocorrelation in a similar fashion to that completed to identify seasonality. In the first phase of this analysis, the season-adjusted data are de-trended by removing the effects of the slope identified. A diagnostic figure is then provided of these data (Figure B-4).

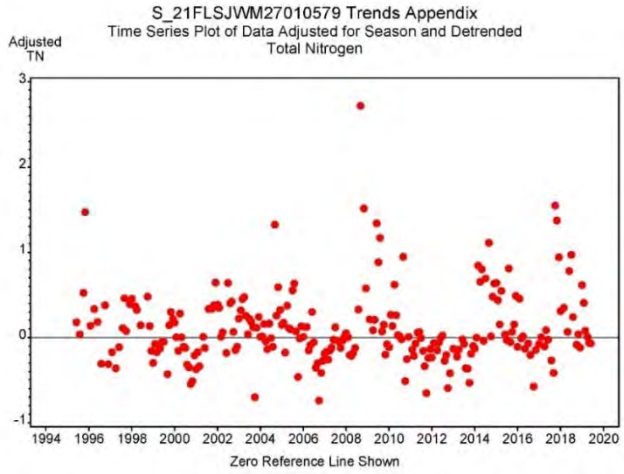


Figure B-4. Sample of the season adjusted and de-trended data.

In the next step of the analysis, the season-adjusted and de-trended data are prepared in the form of a correlogram to test for the presence of autocorrelation in the time series. Figure B-5 presents an example of this page of the detailed output. If both the 1-month lag (label 10) and the 2-month lag (label 11) are significantly correlated with the present values, then the data are identified as auto-correlated and an adjustment is made to the p-value.

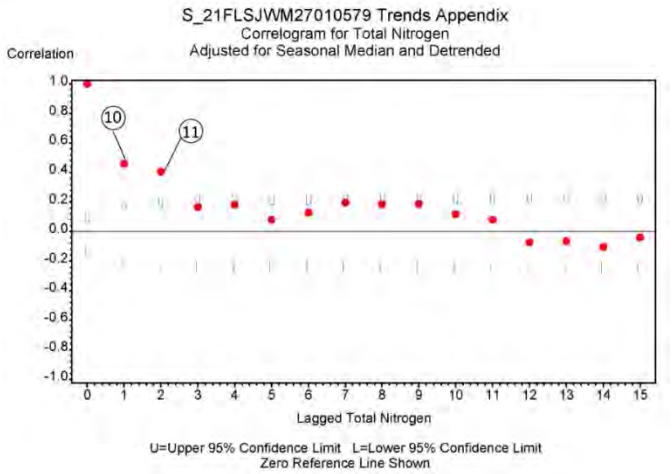


Figure B-5. Sample autocorrelation test figure.

In the final step of each trend analysis, the appropriate p-value (corrected for auto-correlation if necessary), significance assessment (based on alpha = 0.05), slope, autocorrelation assessment (present/absent), and seasonality assessment (present/absent) of the trend analysis are compiled and tabulated in a summary table of trend test results. Trend tests were conducted at the station-level using the monthly average if more than one sample taken in a month at each station.

Appendix B-C
WBID Summary

WBID	Waterbody	Parameter	Start Year	End Year	POR N	POR Median	1990-2019 N	1990-2019 Median
2631	Unnamed Ditch - 3F	Aluminum (ug/L)	2019	2019	1	285.0	1	285.0
		Cadmium (ug/L)	2019	2019	1	0.01	1	0.01
		Copper (ug/L)	2019	2019	1	0.20	1	0.20
		Corrected Chlorophyll-a (ug/L)	2019	2019	1	2.30	1	2.30
		Dissolved Oxygen (%)	2019	2019	1	75.0	1	75.00
		Dissolved Oxygen (mg/L)	2019	2019	1	8.2	1	8.2
		Iron (ug/L)	2019	2019	1	560.0	1	560.0
		Lead (ug/L)	2019	2019	1	0.1	1	0.1
		Manganese (ug/L)	2019	2019	1	6.2	1	6.2
		Nickel (ug/L)	2019	2019	1	0.25	1	0.25
		Salinity (psu)	2019	2019	1	0.12	1	0.12
		Secchi Depth (m)	2019	2019	1	0.5	1	0.5
		Silver (ug/L)	2019	2019	1	0.01	1	0.01
		Specific Conductivity (µmhos/cm)	2019	2019	1	248	1	248
		Total Nitrogen (mg/L)	2019	2019	1	0.96	1	0.96
		Total Phosphorus (mg/L)	2019	2019	1	0.02	1	0.02
		Zinc (ug/L)	2019	2019	1	2.5	1	2.5
2634	Tomoka River - 3F	Aluminum (ug/L)	1983	2019	15	260.0	7	260.0
		Cadmium (ug/L)	1983	2019	61	0.13	53	0.03
		Copper (ug/L)	1983	2019	113	1.50	105	1.50
		Corrected Chlorophyll-a (ug/L)	1985	2019	929	0.84	896	0.82
		Dissolved Oxygen (%)	1967	2019	834	56.5	793	56.30
		Dissolved Oxygen (mg/L)	1967	2019	1003	4.8	962	4.8
		Iron (ug/L)	1983	2019	77	745.0	69	759.0
		Lead (ug/L)	1983	2019	108	0.5	100	0.5
		Manganese (ug/L)	1967	2019	17	15.8	7	17.1
		Nickel (ug/L)	1983	2019	40	1.00	32	1.00
		Salinity (psu)	1967	2019	1023	0.15	978	0.15
		Secchi Depth (m)	1985	2019	793	0.6	759	0.6
		Silver (ug/L)	1992	2019	33	0.50	33	0.50
		Specific Conductivity (µmhos/cm)	1964	2019	1031	315	970	315
		Total Nitrogen (mg/L)	1975	2019	916	0.94	871	0.94
		Total Phosphorus (mg/L)	1968	2019	904	0.05	858	0.05
		Zinc (ug/L)	1983	2019	66	2.5	58	2.5
2635	Groover Branch - 3F	Corrected Chlorophyll-a (ug/L)	1985	2017	36	1.73	29	1.80
		Dissolved Oxygen (%)	1985	2019	67	54.6	60	54.25
		Dissolved Oxygen (mg/L)	1985	2019	67	4.6	60	4.6
		Iron (ug/L)	2000	2005	19	864.0	19	864.0
		Lead (ug/L)	2000	2005	19	2.5	19	2.5
		Salinity (psu)	1985	2019	69	0.14	62	0.15
		Secchi Depth (m)	1985	2019	55	0.4	48	0.4
		Specific Conductivity (µmhos/cm)	1985	2019	69	258	62	270
		Total Nitrogen (mg/L)	1985	2017	38	0.98	31	0.98
		Total Phosphorus (mg/L)	1985	2017	37	0.07	30	0.08
2640	Unnamed Branch - 3M	Corrected Chlorophyll-a (ug/L)	2006	2015	92	10.88	92	10.88
		Dissolved Oxygen (%)	2000	2015	93	59.4	93	59.40
		Dissolved Oxygen (mg/L)	2000	2015	94	4.8	94	4.8
		Iron (ug/L)	2000	2000	1	540.0	1	540.0
		Lead (ug/L)	2000	2000	1	2.5	1	2.5

WBID	Waterbody	Parameter	Start Year	End Year	POR N	POR Median	1990-2019 N	1990-2019 Median
2640	Unnamed Branch - 3M	Salinity (psu)	2000	2015	94	15.07	94	15.07
		Secchi Depth (m)	2000	2015	93	0.8	93	0.8
		Specific Conductivity (µmhos/cm)	2000	2015	94	24749	94	24749
		Total Nitrogen (mg/L)	2000	2015	67	0.75	67	0.75
		Total Phosphorus (mg/L)	2006	2015	56	0.06	56	0.06
2641	Unnamed Branch - 3F	Corrected Chlorophyll-a (ug/L)	2010	2018	36	0.28	36	0.28
		Dissolved Oxygen (%)	1996	2019	65	47.3	65	47.30
		Dissolved Oxygen (mg/L)	1996	2019	65	4.1	65	4.1
		Iron (ug/L)	2000	2000	1	652.0	1	652.0
		Lead (ug/L)	2000	2000	1	0.3	1	0.3
		Salinity (psu)	1996	2019	64	0.22	64	0.22
		Secchi Depth (m)	1996	2019	24	0.2	24	0.2
		Specific Conductivity (µmhos/cm)	1996	2019	64	434	64	434
		Total Nitrogen (mg/L)	1996	2018	47	0.63	47	0.63
		Total Phosphorus (mg/L)	1996	2018	46	0.06	46	0.06
2642	Unnamed Branch - 3M	Corrected Chlorophyll-a (ug/L)	1985	2017	48	9.39	37	11.00
		Dissolved Oxygen (%)	1985	2017	49	61.4	38	58.75
		Dissolved Oxygen (mg/L)	1985	2017	49	4.6	38	4.4
		Salinity (psu)	1985	2017	49	11.43	38	16.13
		Secchi Depth (m)	1985	2017	47	0.7	36	0.8
		Specific Conductivity (µmhos/cm)	1985	2017	49	19413	38	26458
		Total Nitrogen (mg/L)	1985	2017	41	1.10	30	1.08
		Total Phosphorus (mg/L)	1985	2017	38	0.10	27	0.10
2645	Mizners Branch - 3F	Cadmium (ug/L)	2005	2005	11	0.25	11	0.25
		Copper (ug/L)	2005	2005	11	4.59	11	4.59
		Corrected Chlorophyll-a (ug/L)	2008	2017	39	1.30	39	1.30
		Dissolved Oxygen (%)	2005	2017	60	54.0	60	54.00
		Dissolved Oxygen (mg/L)	2005	2017	59	4.3	59	4.3
		Iron (ug/L)	2000	2005	21	332.0	21	332.0
		Lead (ug/L)	2000	2005	21	2.5	21	2.5
		Nickel (ug/L)	2005	2005	11	1.00	11	1.00
		Salinity (psu)	2005	2017	59	0.24	59	0.24
		Secchi Depth (m)	2000	2017	20	0.3	20	0.3
		Silver (ug/L)	2005	2005	11	0.50	11	0.50
		Specific Conductivity (µmhos/cm)	2005	2017	59	461	59	461
		Total Nitrogen (mg/L)	2000	2017	41	0.90	41	0.90
		Total Phosphorus (mg/L)	2008	2017	39	0.11	39	0.11
2646	Little Tomoka River - 3F	Cadmium (ug/L)	2010	2011	13	0.02	13	0.02
		Copper (ug/L)	2010	2011	11	0.75	11	0.75
		Corrected Chlorophyll-a (ug/L)	1985	2013	21	1.10	14	1.15
		Dissolved Oxygen (%)	1969	2013	48	56.1	38	59.15
		Dissolved Oxygen (mg/L)	1969	2013	49	4.6	39	5.0
		Iron (ug/L)	2005	2011	22	837.5	22	837.5
		Lead (ug/L)	2000	2011	35	0.6	35	0.6
		Nickel (ug/L)	2010	2011	13	0.45	13	0.45
		Salinity (psu)	1969	2013	47	0.07	38	0.08
		Secchi Depth (m)	1985	2011	39	0.5	32	0.5
		Silver (ug/L)	2010	2011	13	0.0125	13	0.0
		Specific Conductivity (µmhos/cm)	1964	2013	59	110	39	132

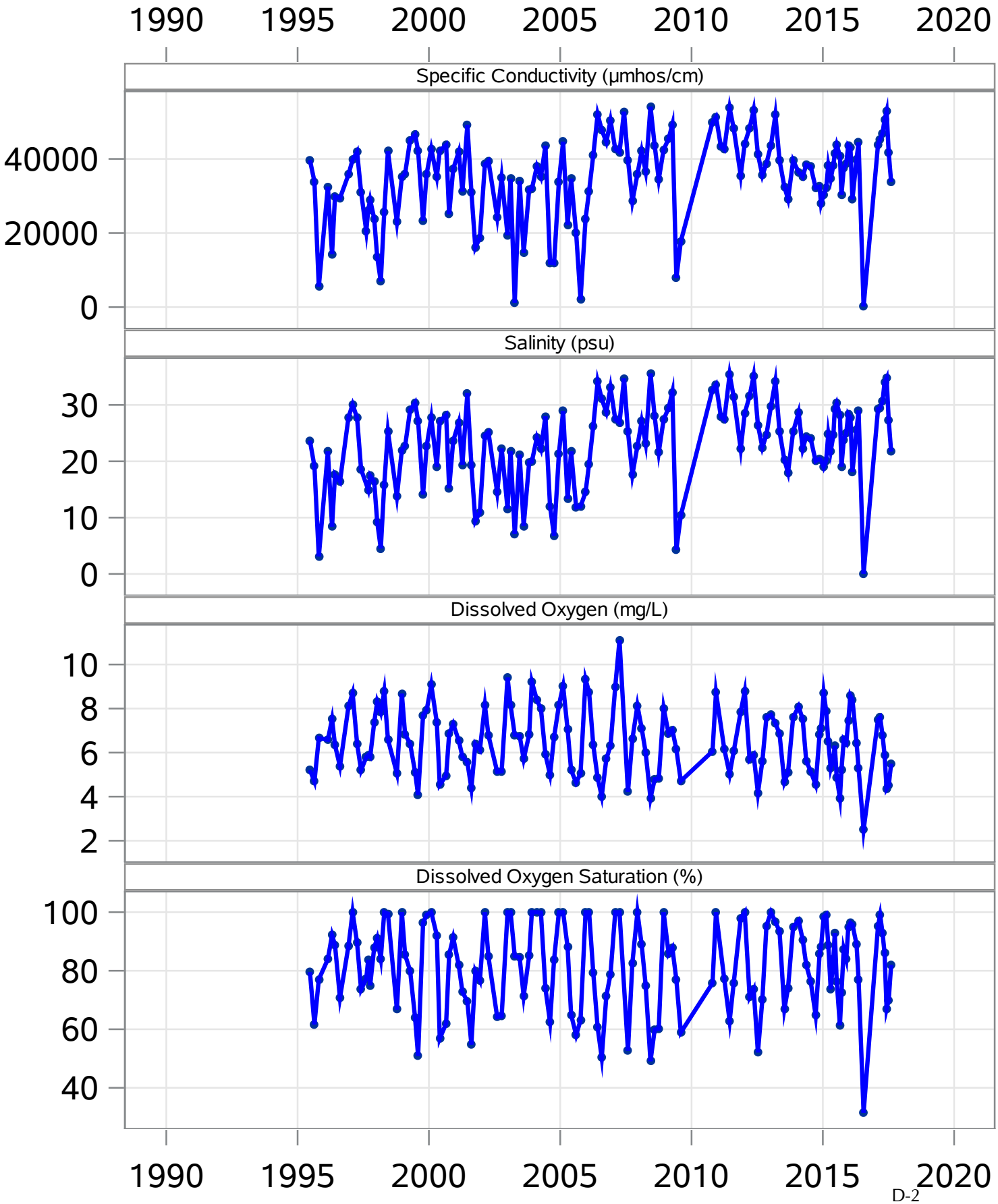
WBID	Waterbody	Parameter	Start Year	End Year	POR N	POR Median	1990-2019 N	1990-2019 Median
		Total Nitrogen (mg/L)	1985	2013	23	1.40	16	1.43
		Total Phosphorus (mg/L)	1969	2013	25	0.04	15	0.04
		Zinc (ug/L)	2010	2011	13	2.5	13	2.5
2647	Holly Hill Ditch - 3M	Corrected Chlorophyll-a (ug/L)	2005	2016	28	4.25	28	4.25
		Dissolved Oxygen (%)	1996	2016	52	42.2	52	42.20
		Dissolved Oxygen (mg/L)	1975	2016	52	3.5	51	3.5
		Salinity (psu)	1996	2016	54	0.69	54	0.69
		Secchi Depth (m)	1996	2016	17	0.6	17	0.6
		Specific Conductivity (µmhos/cm)	1975	2016	55	1411	54	1388
		Total Nitrogen (mg/L)	1975	2016	46	0.98	45	0.96
		Total Phosphorus (mg/L)	1975	2016	44	0.17	43	0.17
2363B	Halifax River - 3M	Aluminum (ug/L)	1992	2017	151	466.3	151	466.3
		Cadmium (ug/L)	1975	2017	122	0.20	110	0.17
		Copper (ug/L)	1973	2017	196	2.50	168	2.50
		Corrected Chlorophyll-a (ug/L)	1982	2019	1746	5.91	1670	5.83
		Dissolved Oxygen (%)	1968	2019	2145	79.6	1856	80.00
		Dissolved Oxygen (mg/L)	1968	2019	2205	6.5	1913	6.5
		Iron (ug/L)	1973	2017	268	485.0	222	531.0
		Lead (ug/L)	1973	2017	156	0.9	133	0.8
		Manganese (ug/L)	1975	2017	127	22.0	126	21.9
		Nickel (ug/L)	1991	2017	111	0.72	111	0.72
		Salinity (psu)	1968	2019	2228	22.70	1952	23.13
		Secchi Depth (m)	1973	2019	1976	0.7	1829	0.7
		Silver (ug/L)	2004	2017	68	0.04	68	0.04
		Specific Conductivity (µmhos/cm)	1968	2019	2227	35500	1935	36500
		Total Nitrogen (mg/L)	1968	2019	1646	0.90	1356	0.87
		Total Phosphorus (mg/L)	1973	2019	1585	0.15	1381	0.14
		Zinc (ug/L)	1974	2017	169	9.6	146	7.8
2363C	Tomoka Basin - 3M	Corrected Chlorophyll-a (ug/L)	1985	2019	146	6.05	135	5.60
		Dissolved Oxygen (%)	1985	2019	161	75.0	150	74.90
		Dissolved Oxygen (mg/L)	1985	2019	164	6.2	153	6.2
		Iron (ug/L)	2012	2015	3	509.2	3	509.2
		Salinity (psu)	1985	2019	167	18.85	156	19.47
		Secchi Depth (m)	1985	2019	183	0.7	172	0.7
		Specific Conductivity (µmhos/cm)	1985	2019	167	30880	156	31550
		Total Nitrogen (mg/L)	1985	2019	174	0.89	163	0.82
		Total Phosphorus (mg/L)	1985	2019	177	0.09	166	0.09
2363J	Palm Coast - 3M	Aluminum (ug/L)	1992	2019	98	389.2	98	389.2
		Cadmium (ug/L)	1992	2019	80	0.15	80	0.15
		Copper (ug/L)	1992	2019	98	1.42	98	1.42
		Corrected Chlorophyll-a (ug/L)	1983	2019	495	6.16	472	6.22
		Dissolved Oxygen (%)	1968	2019	565	74.4	519	74.10
		Dissolved Oxygen (mg/L)	1968	2019	572	6.0	525	5.9
		Iron (ug/L)	1992	2019	104	358.2	104	358.2
		Lead (ug/L)	1992	2019	91	0.3	91	0.3
		Manganese (ug/L)	1992	2019	98	17.3	98	17.3
		Nickel (ug/L)	1992	2019	92	0.37	92	0.37
		Salinity (psu)	1968	2019	572	26.20	532	26.43
		Secchi Depth (m)	1978	2019	539	0.7	511	0.7

WBID	Waterbody	Parameter	Start Year	End Year	POR N	POR Median	1990-2019 N	1990-2019 Median
		Silver (ug/L)	1992	2019	73	0.08	73	0.08
		Specific Conductivity (µmhos/cm)	1968	2019	575	40800	535	41223
		Total Nitrogen (mg/L)	1968	2019	514	0.73	477	0.72
		Total Phosphorus (mg/L)	1971	2019	524	0.11	484	0.11
		Zinc (ug/L)	1992	2019	93	2.8	93	2.8
2634A	Tomoka River - 3M	Aluminum (ug/L)	1992	2019	163	386.5	163	386.5
		Cadmium (ug/L)	1975	2019	116	0.08	108	0.07
		Copper (ug/L)	1973	2019	217	1.20	192	1.20
		Corrected Chlorophyll-a (ug/L)	1982	2019	476	5.04	430	5.00
		Dissolved Oxygen (%)	1962	2019	612	63.5	475	65.00
		Dissolved Oxygen (mg/L)	1962	2019	633	5.2	494	5.3
		Iron (ug/L)	1973	2019	255	556.5	213	580.0
		Lead (ug/L)	1973	2019	205	0.5	182	0.5
		Manganese (ug/L)	1975	2019	149	20.4	148	20.3
		Nickel (ug/L)	1992	2019	153	0.56	153	0.56
		Salinity (psu)	1964	2019	623	11.10	494	11.30
		Secchi Depth (m)	1977	2019	475	0.7	384	0.7
		Silver (ug/L)	1992	2019	92	0.05	92	0.05
		Specific Conductivity (µmhos/cm)	1963	2019	632	17650	494	18478
		Total Nitrogen (mg/L)	1968	2019	564	1.01	428	0.99
		Total Phosphorus (mg/L)	1973	2019	552	0.09	423	0.09
		Zinc (ug/L)	1974	2019	199	5.0	176	4.1

Appendix B-D
Time-series Plots for Long-term Stations

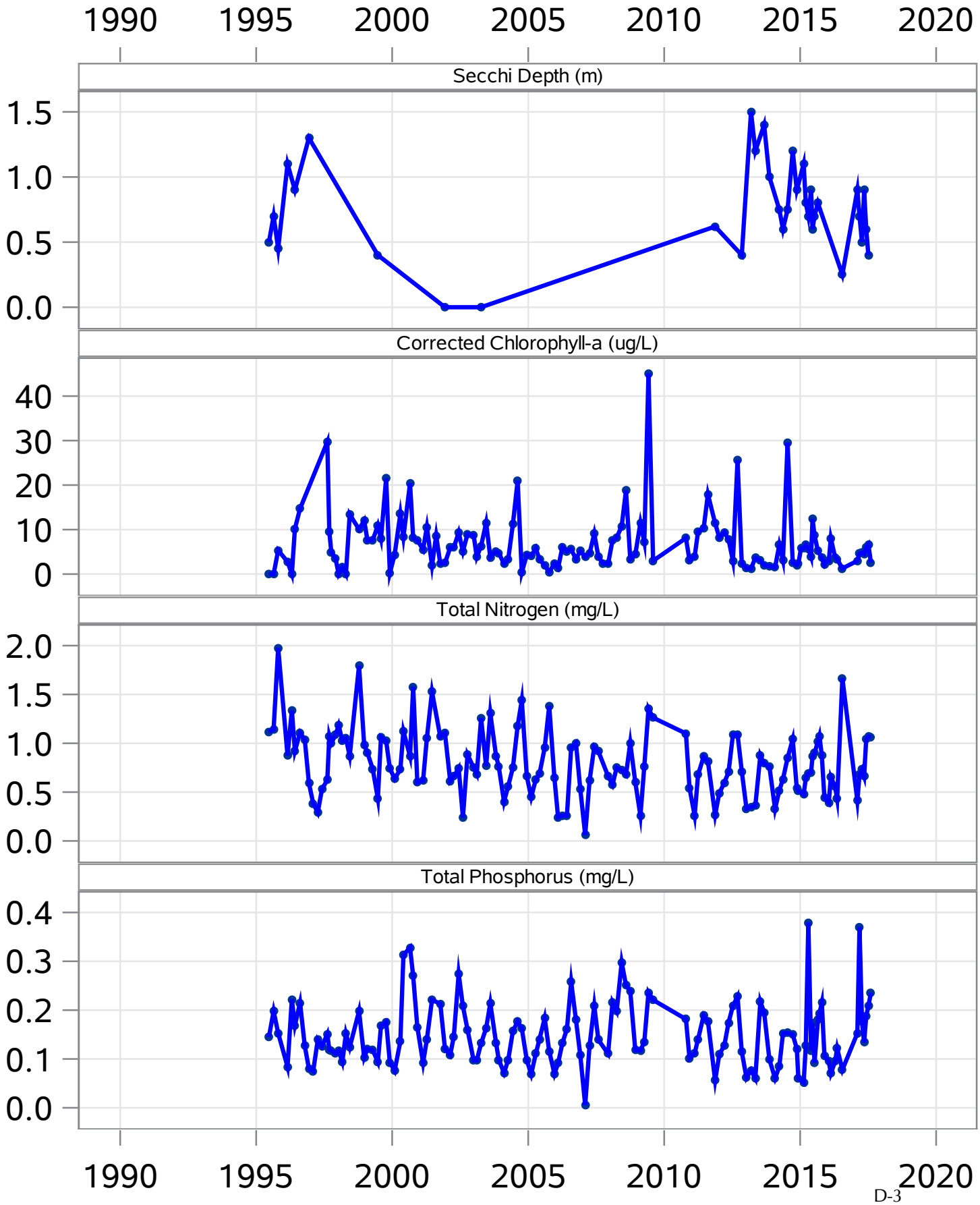
WBID 2363B Halifax River - 3M

Station 21FLSJWM27010037



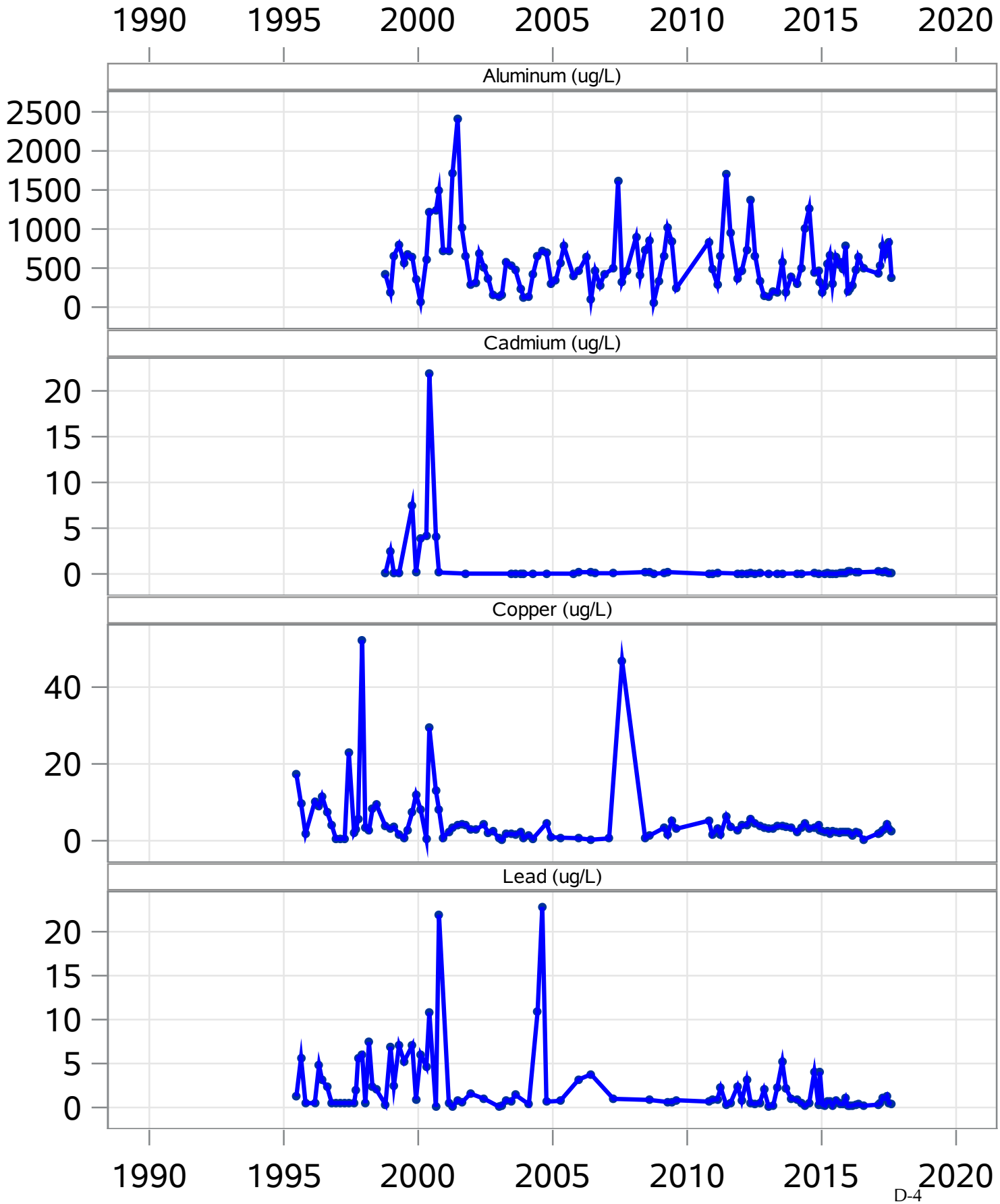
WBID 2363B Halifax River - 3M

Station 21FLSJWM27010037



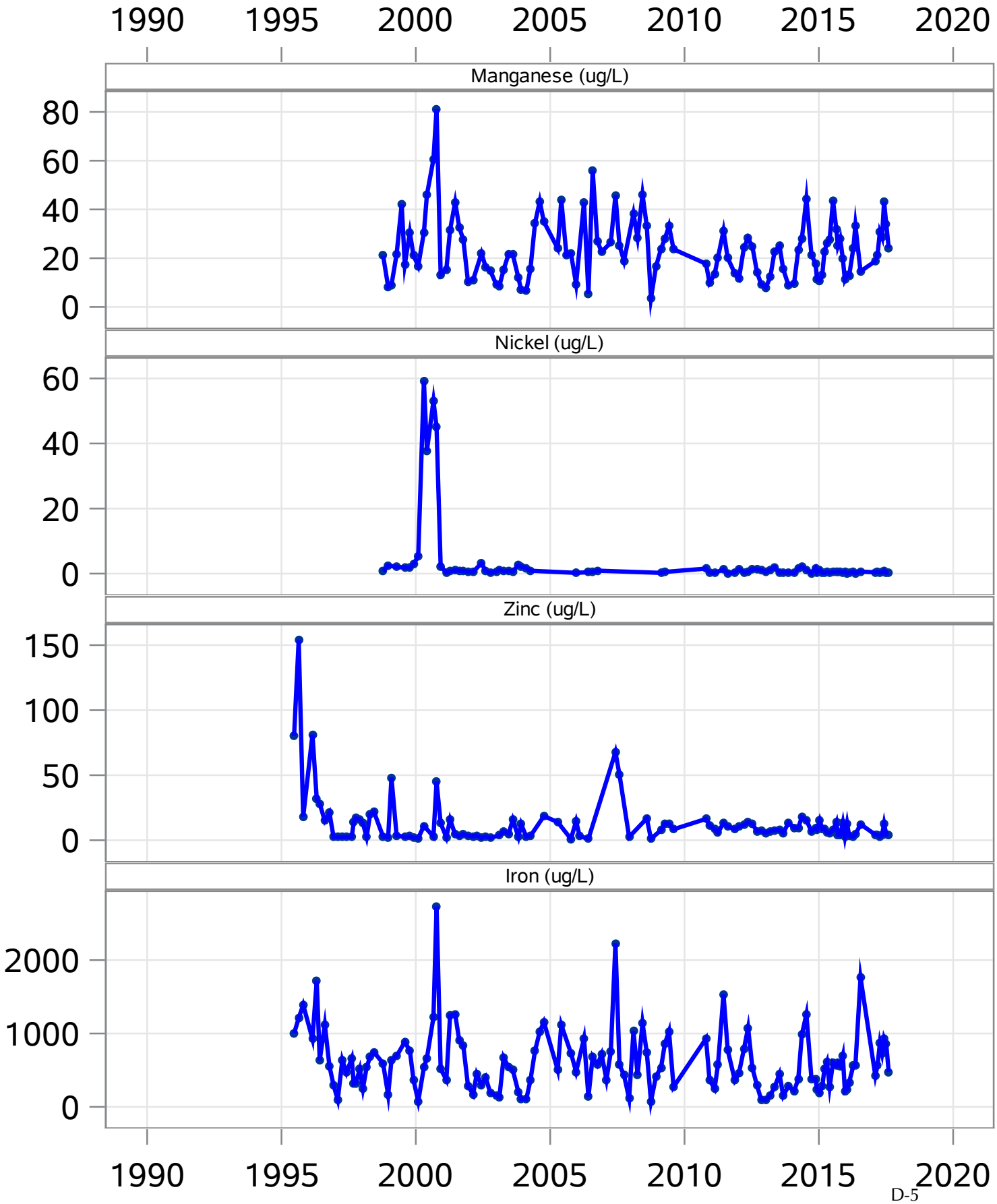
WBID 2363B Halifax River - 3M

Station 21FLSJWM27010037



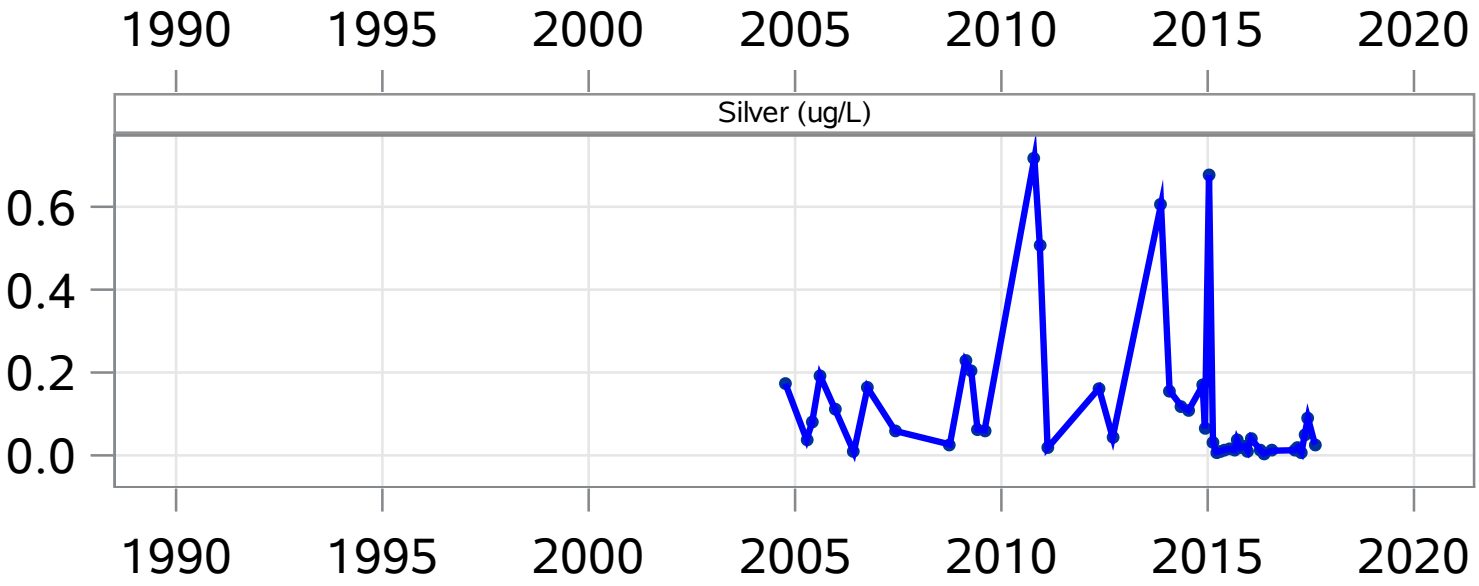
WBID 2363B Halifax River - 3M

Station 21FLSJWM27010037



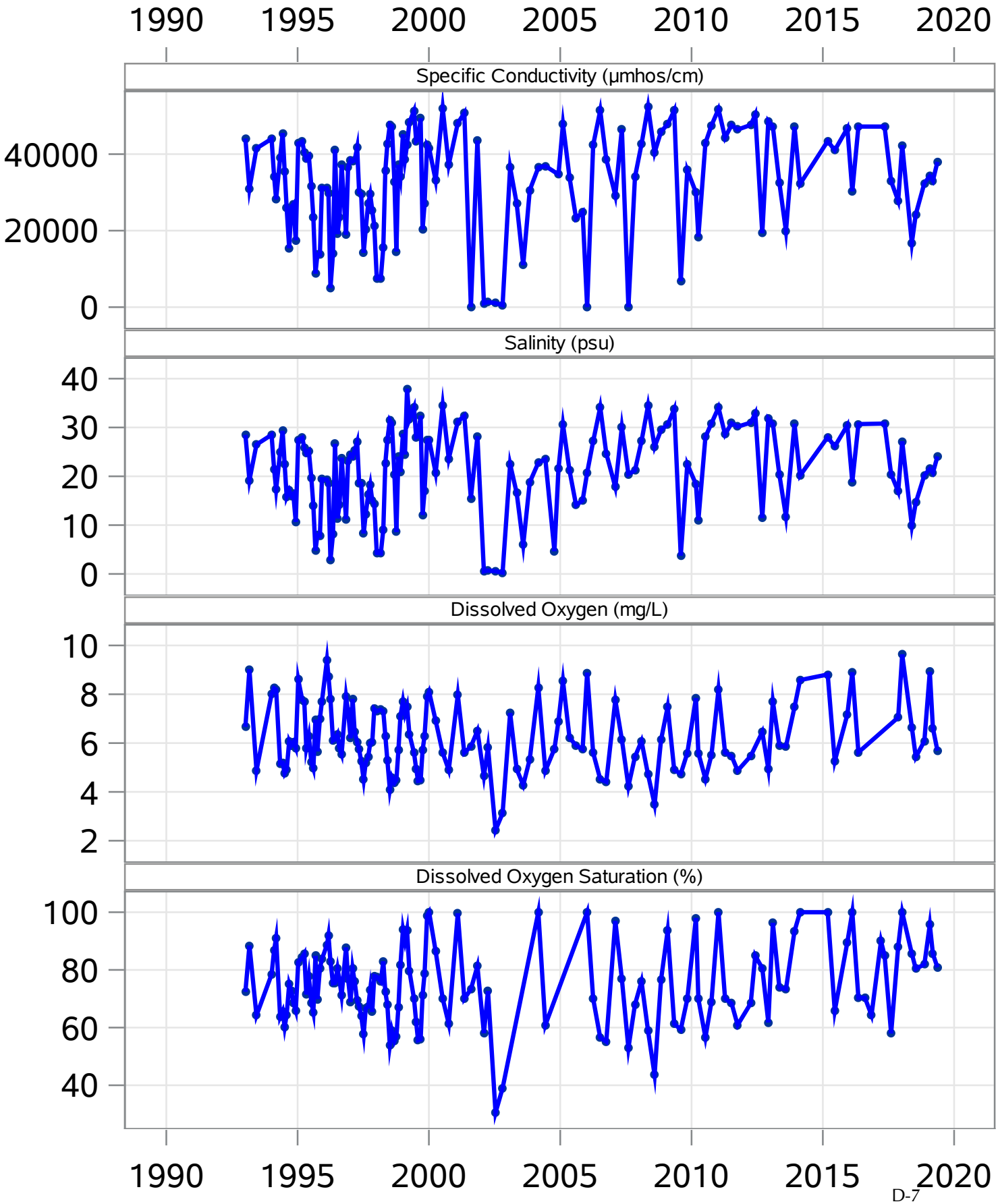
WBID 2363B Halifax River - 3M

Station 21FLSJWM27010037



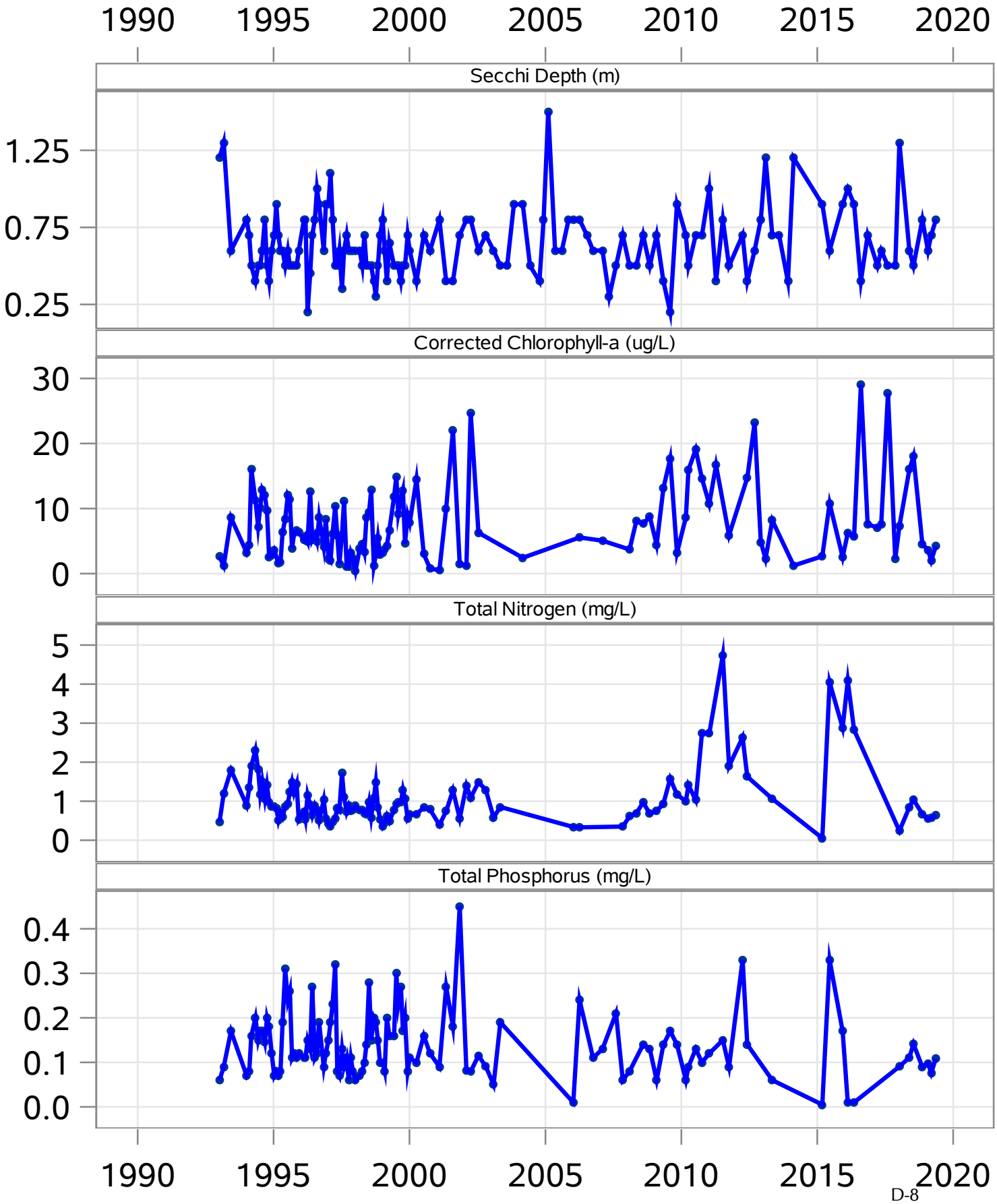
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL04



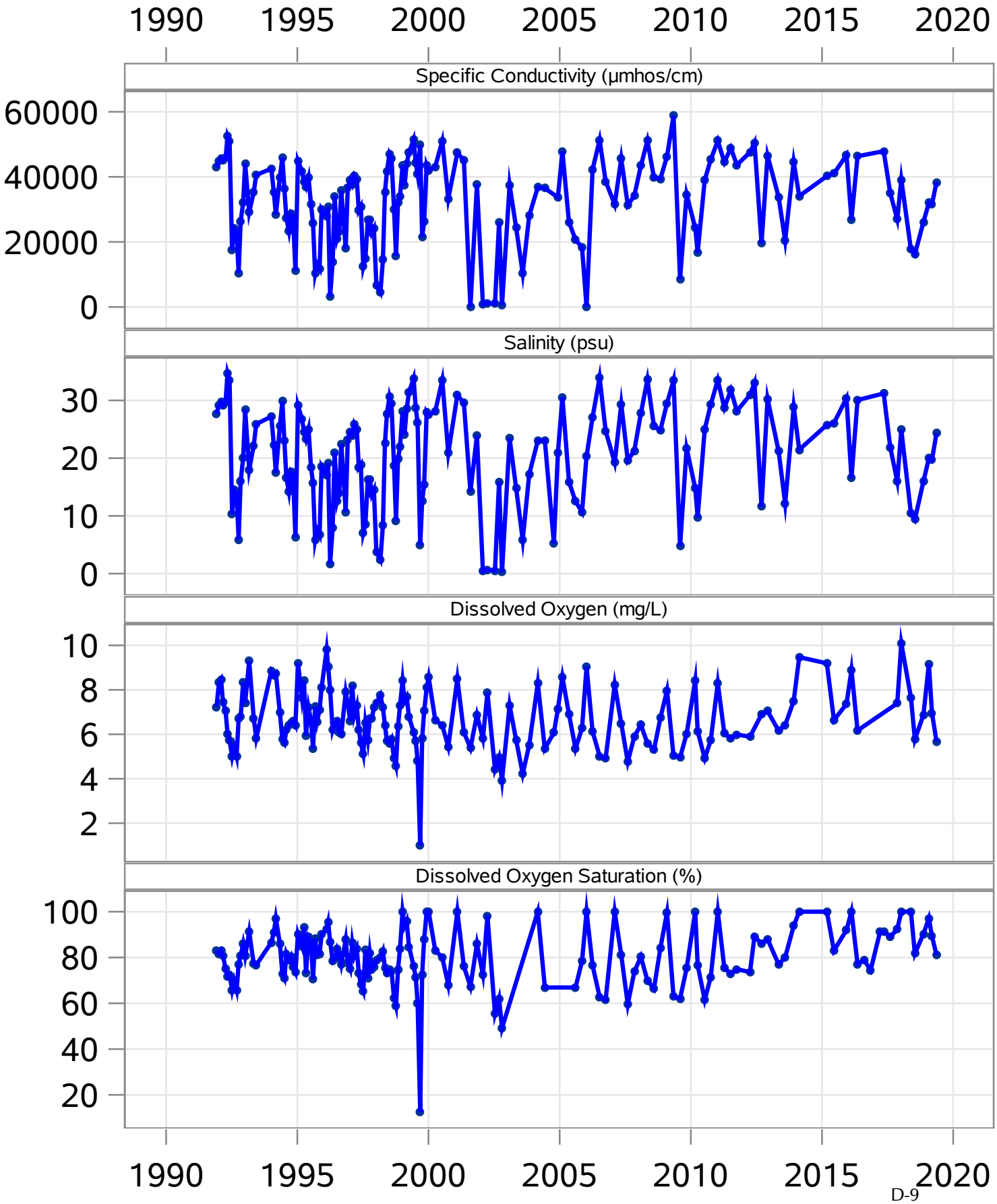
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL04



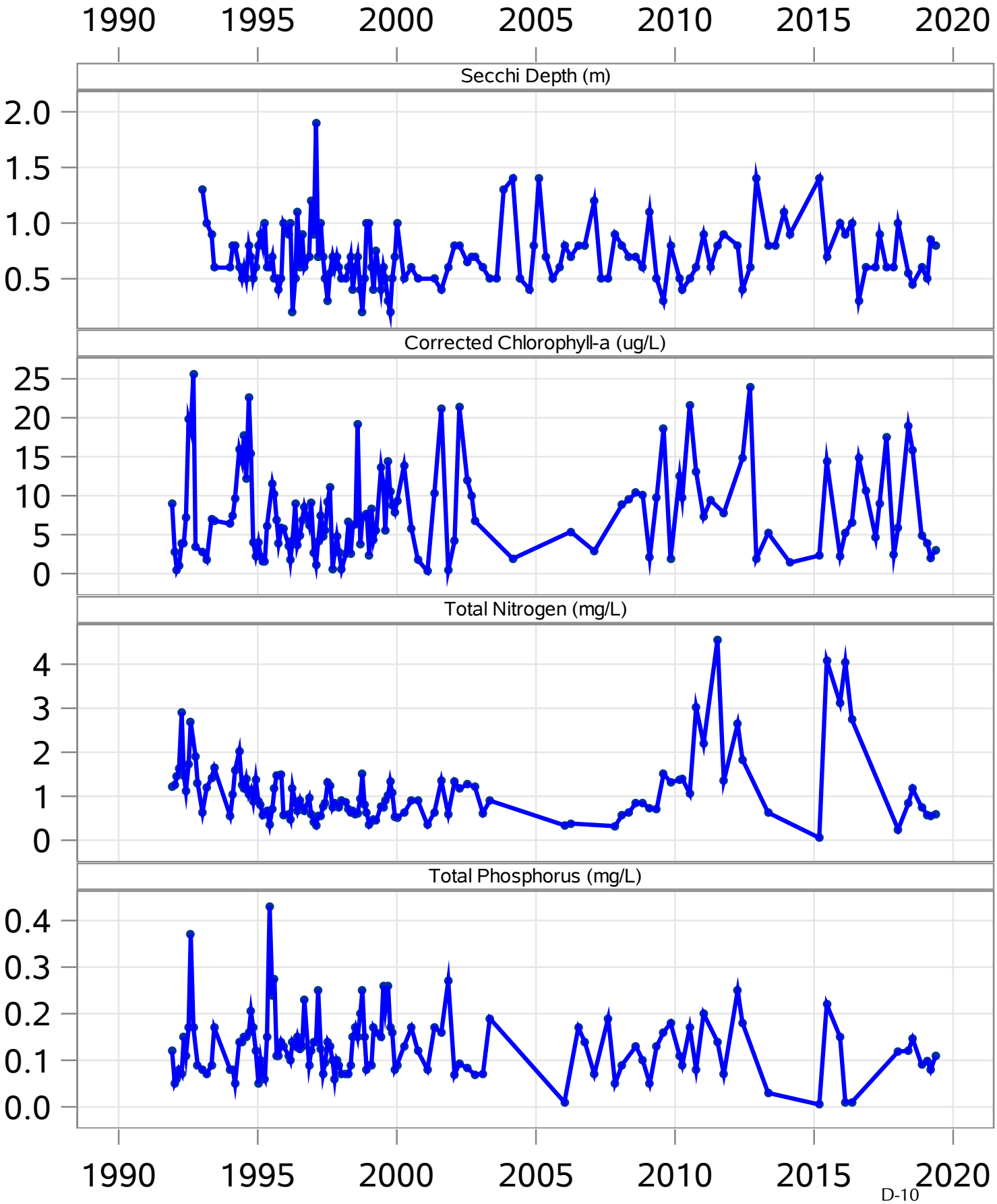
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL05



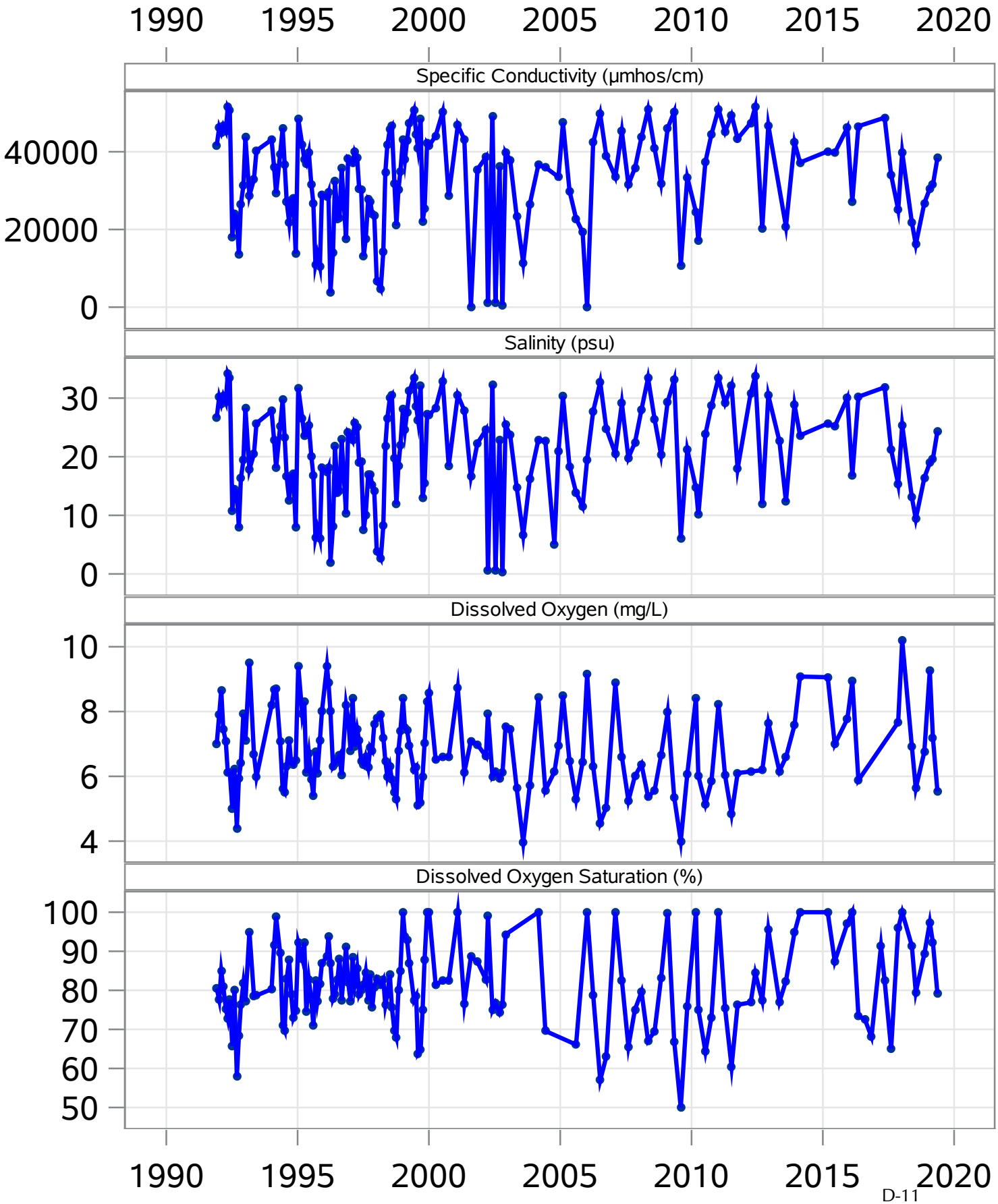
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL05



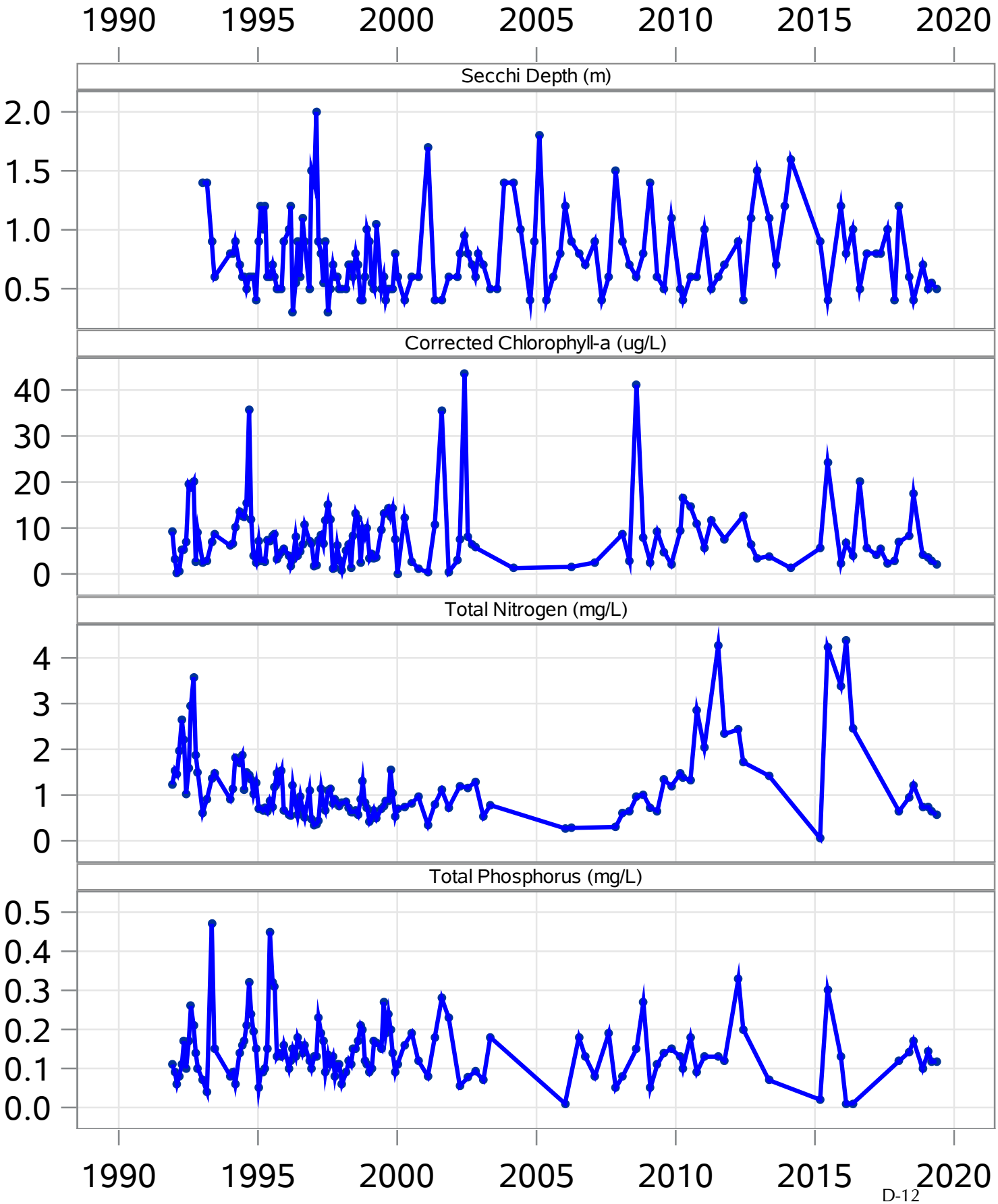
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL06



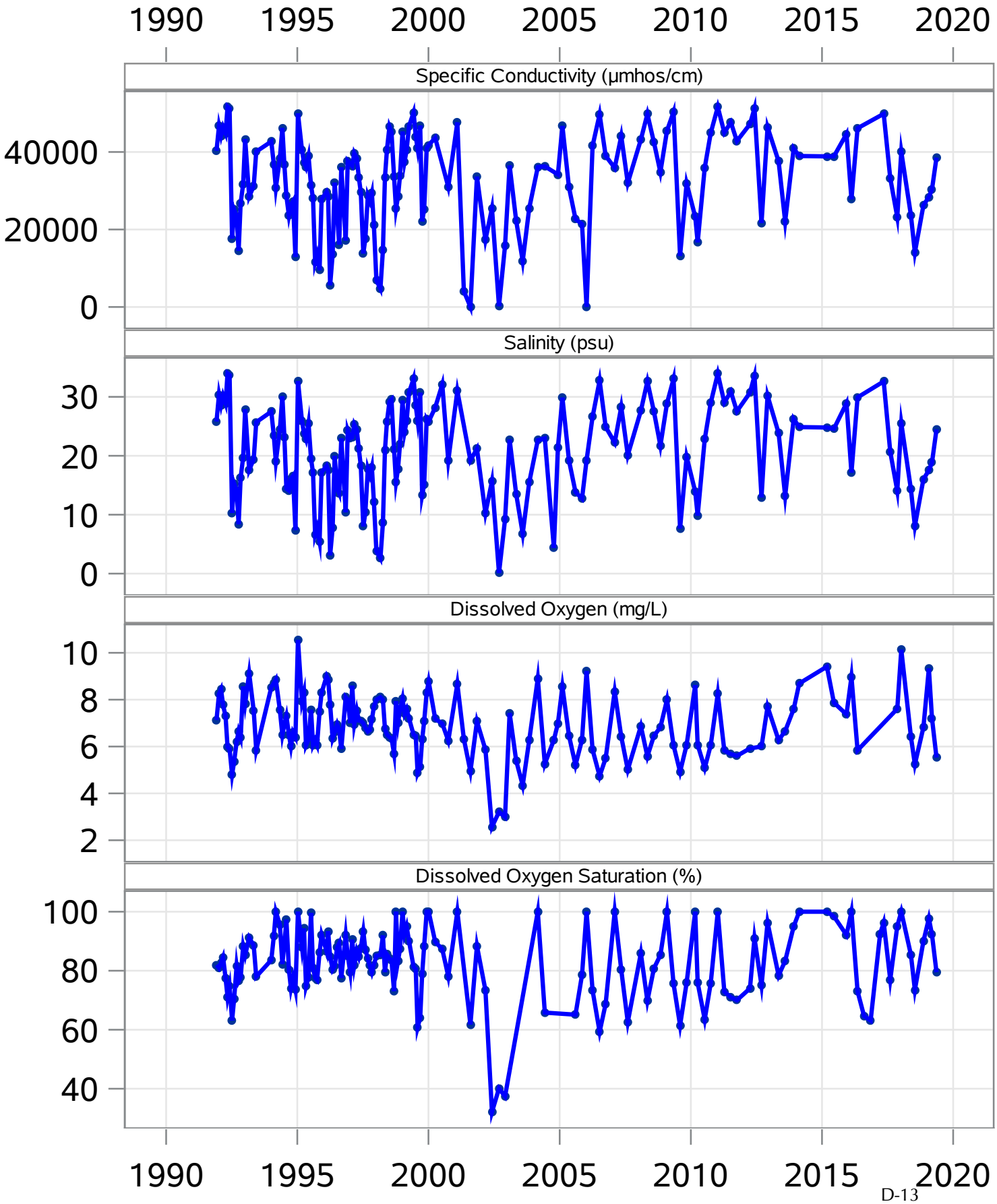
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL06



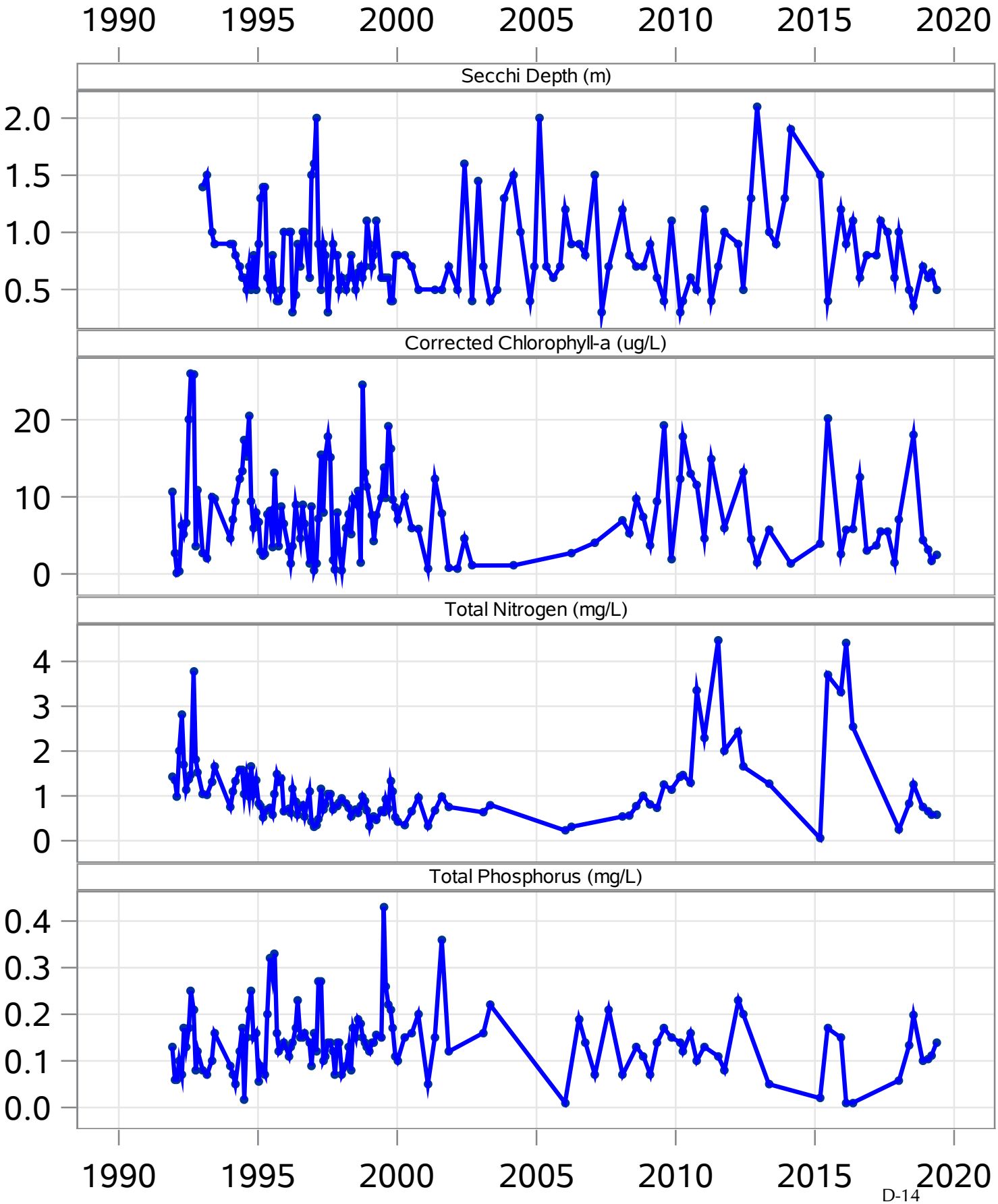
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL07



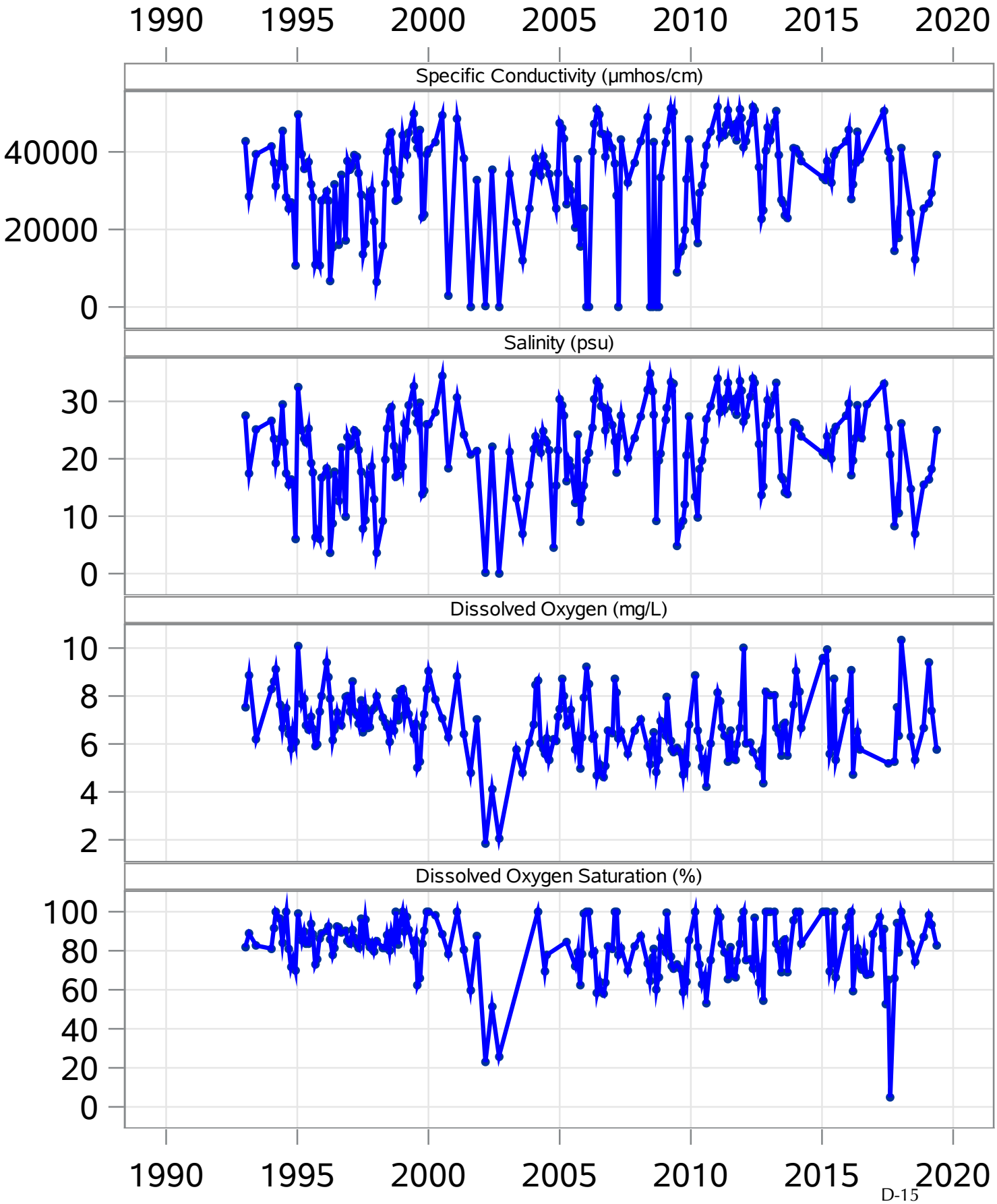
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL07



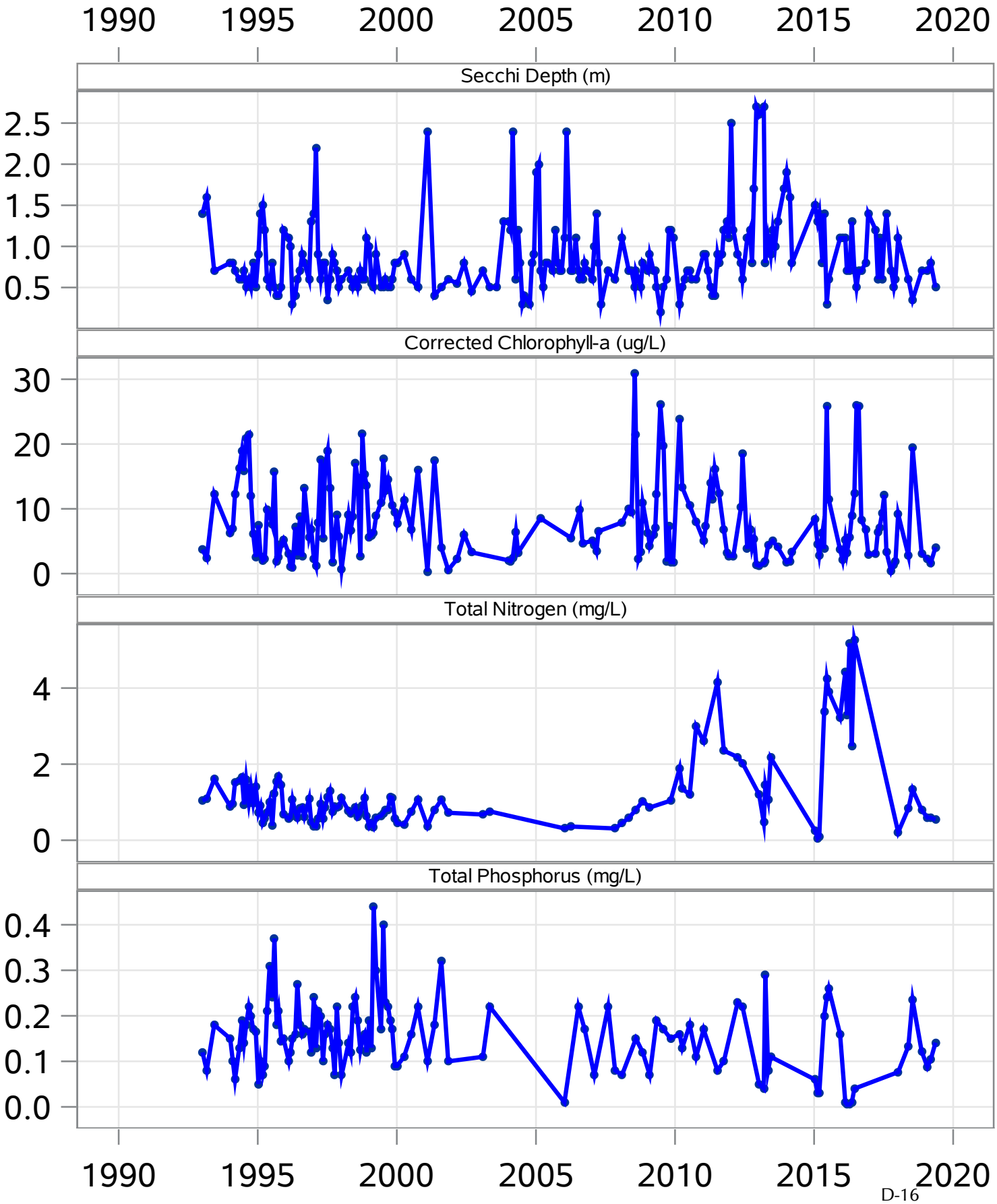
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL08



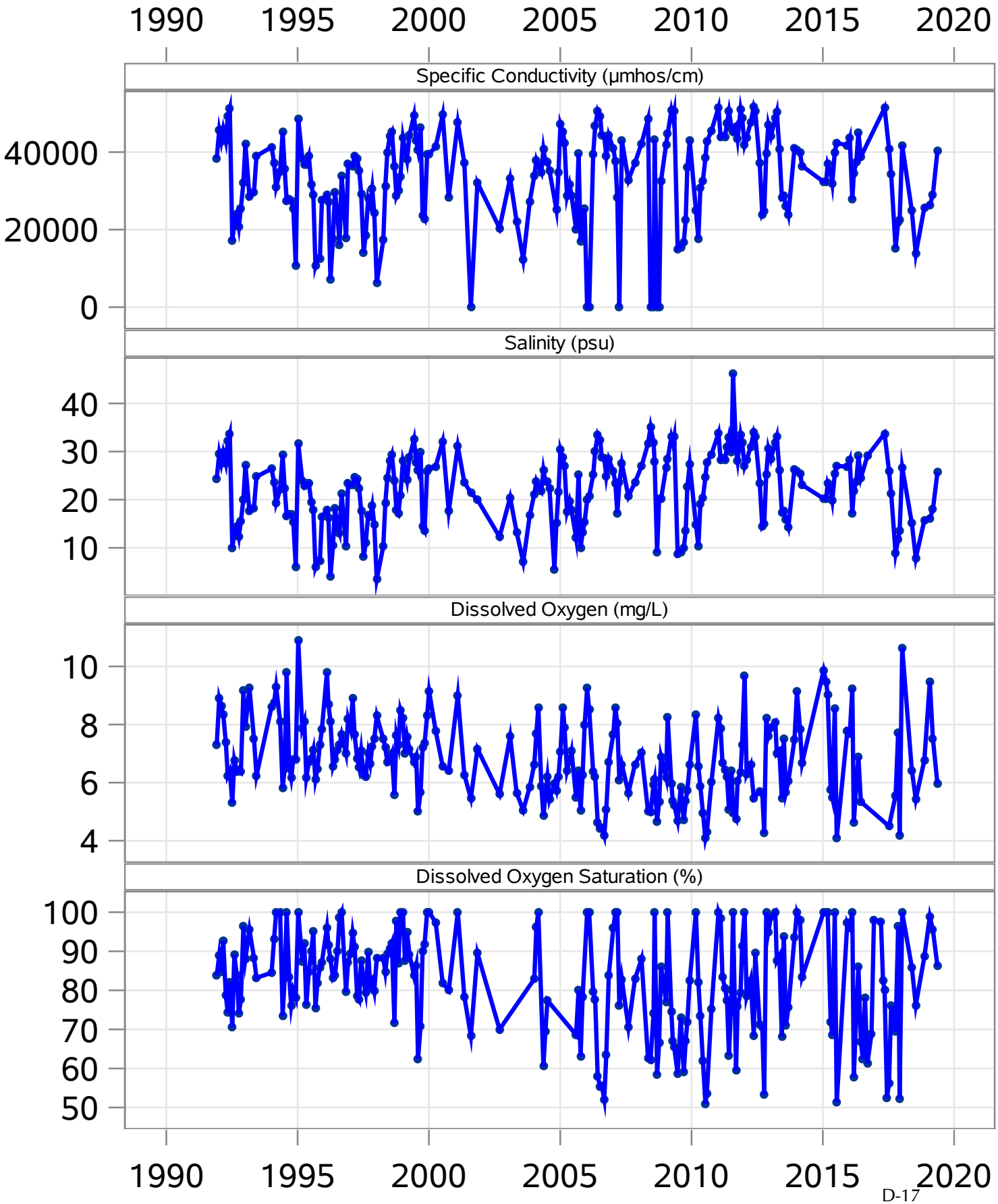
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL08



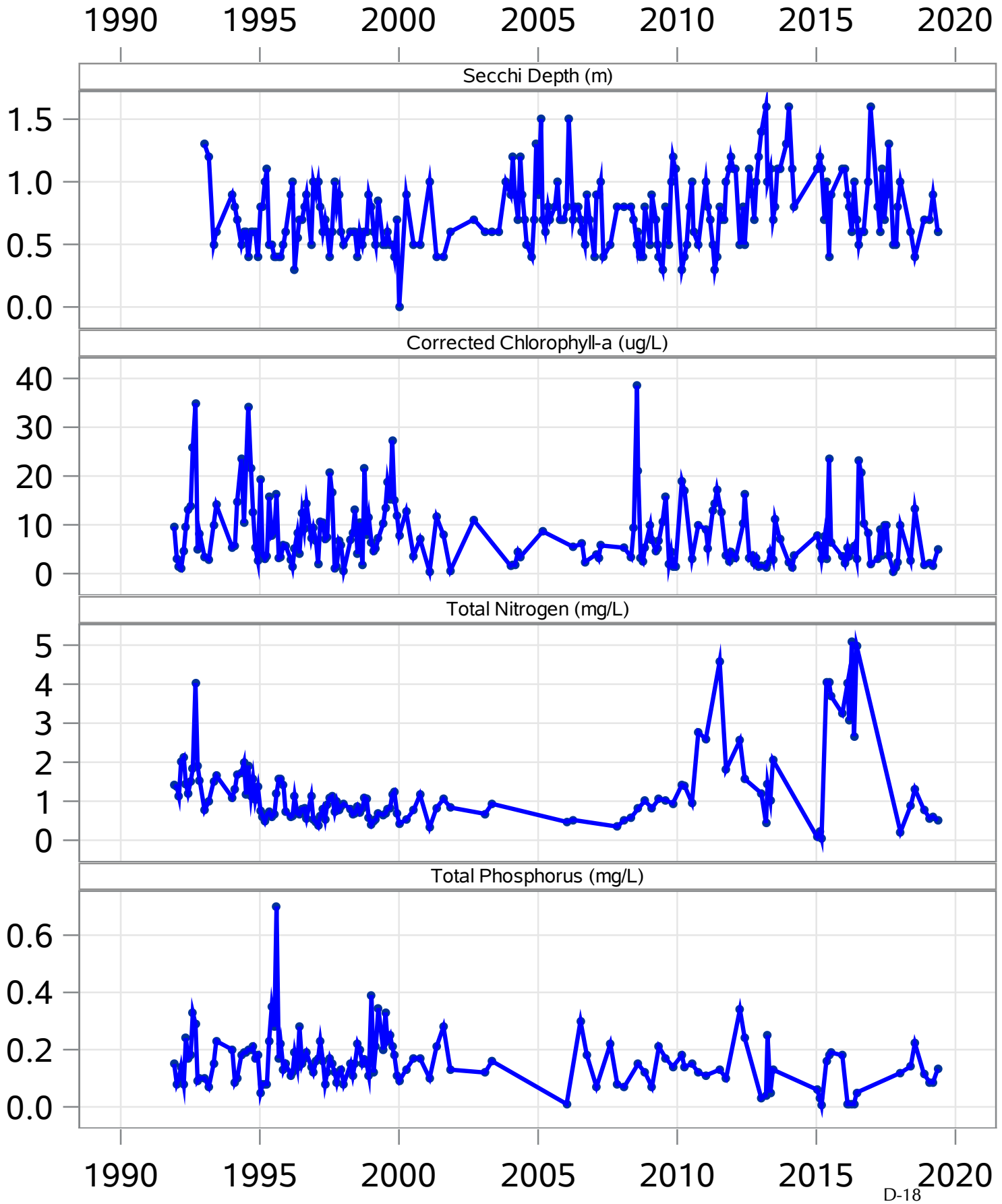
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL09



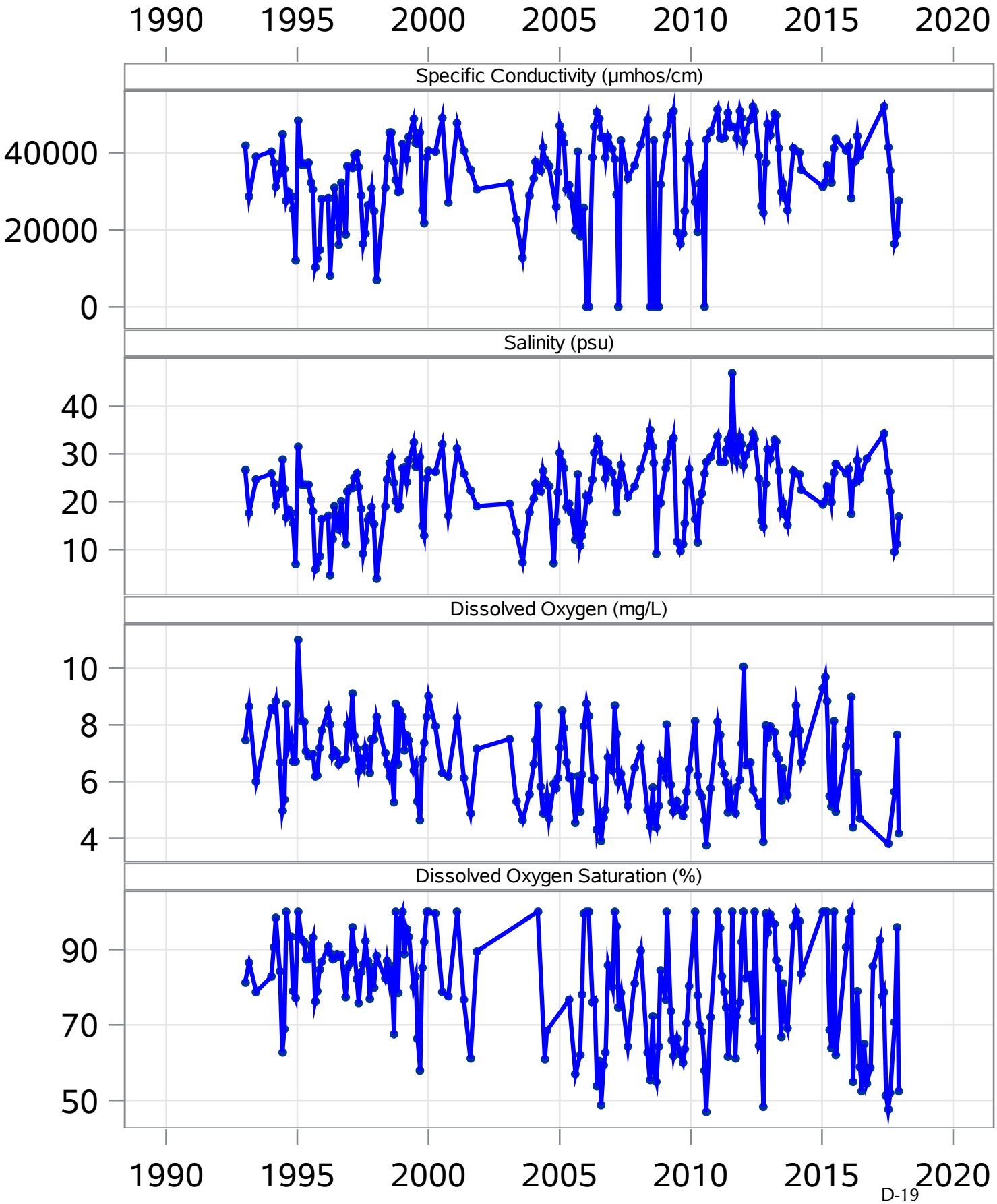
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL09



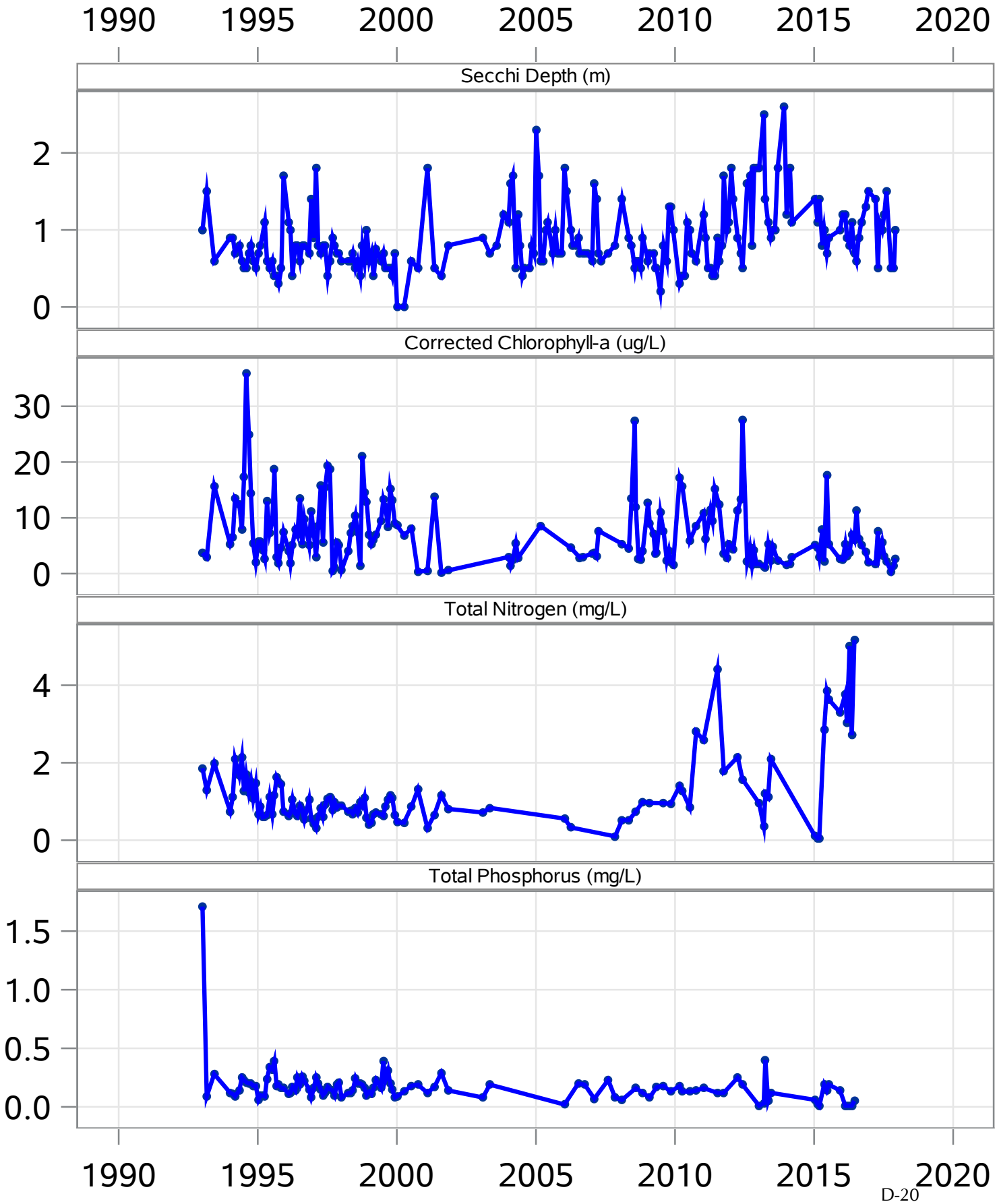
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL10



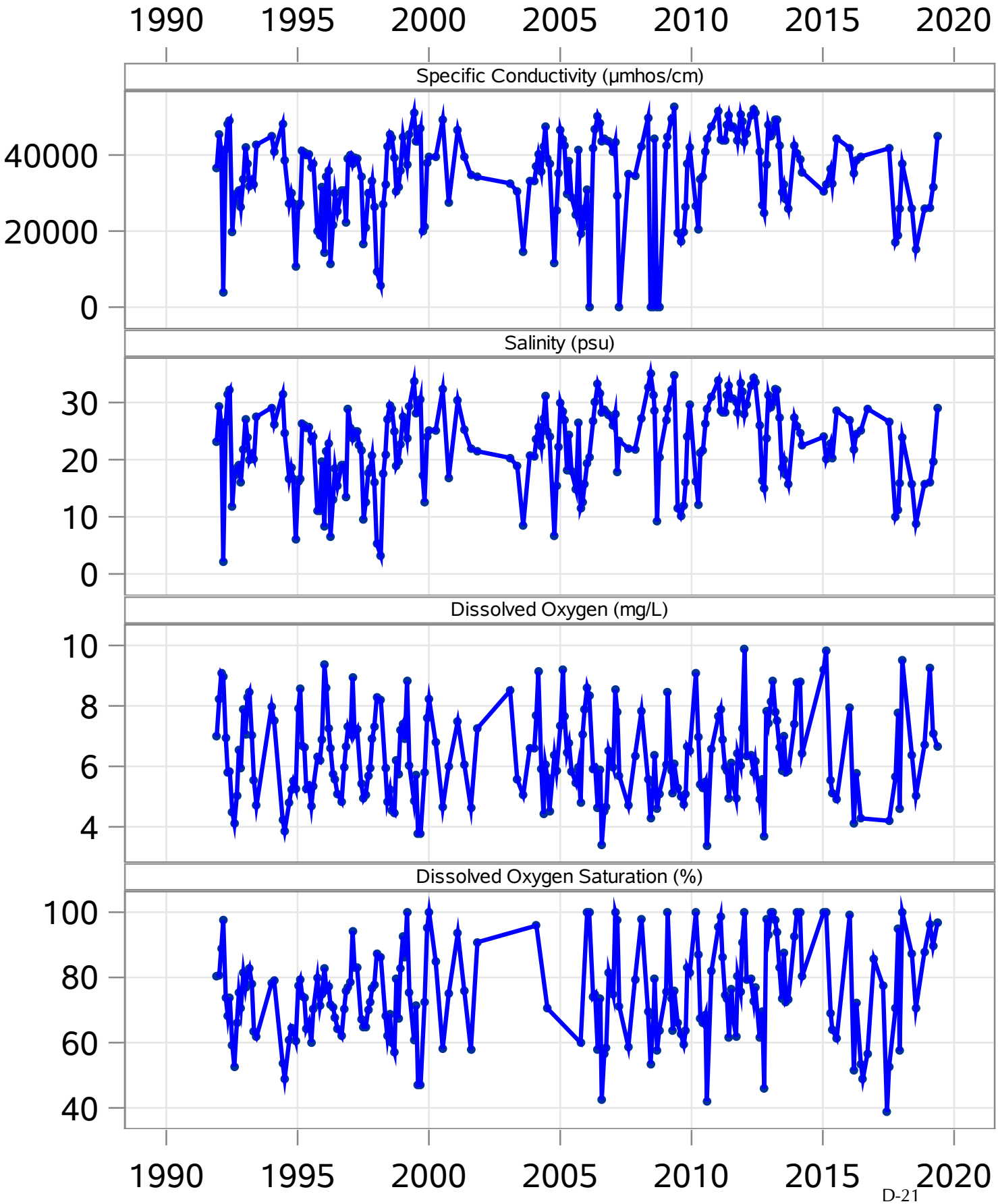
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL10



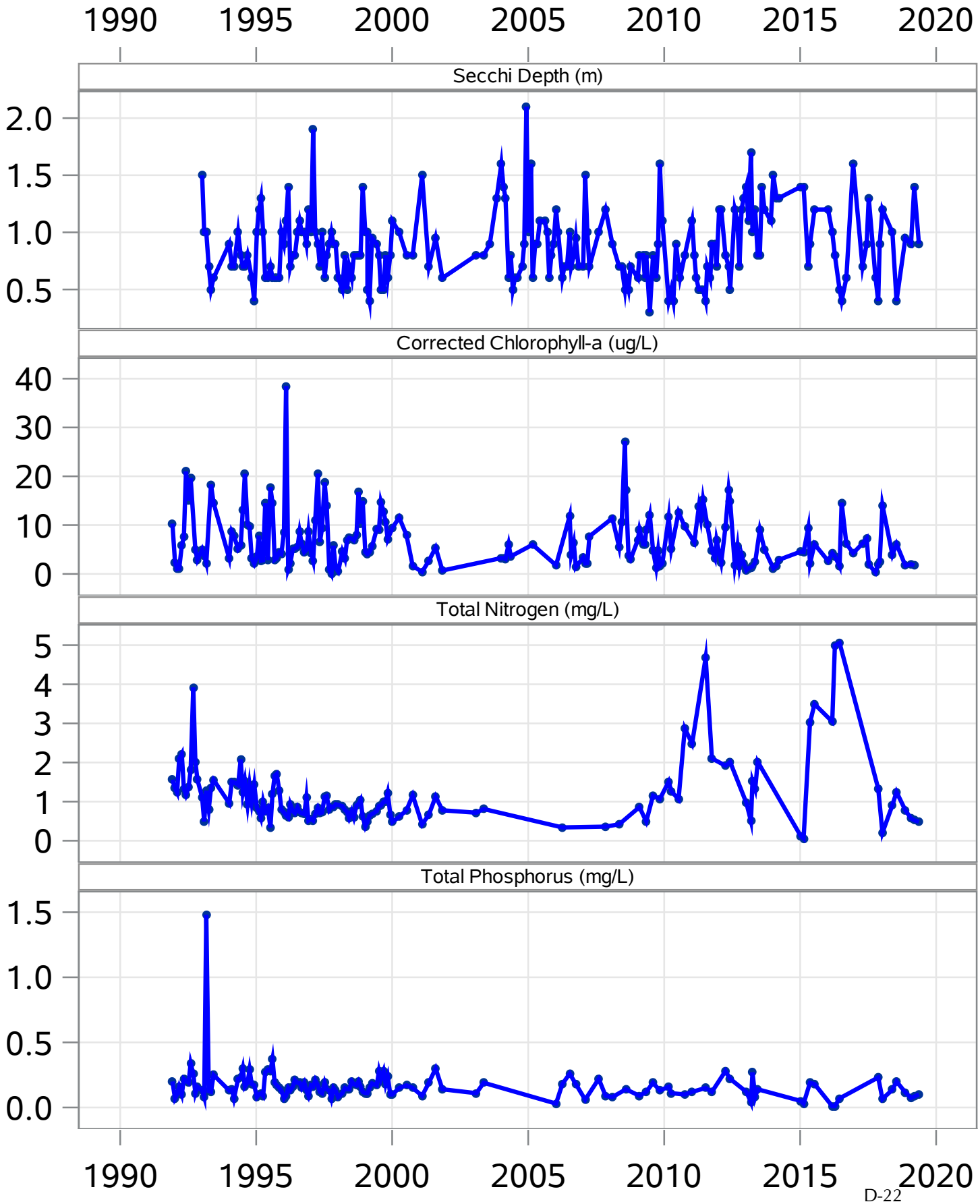
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL11



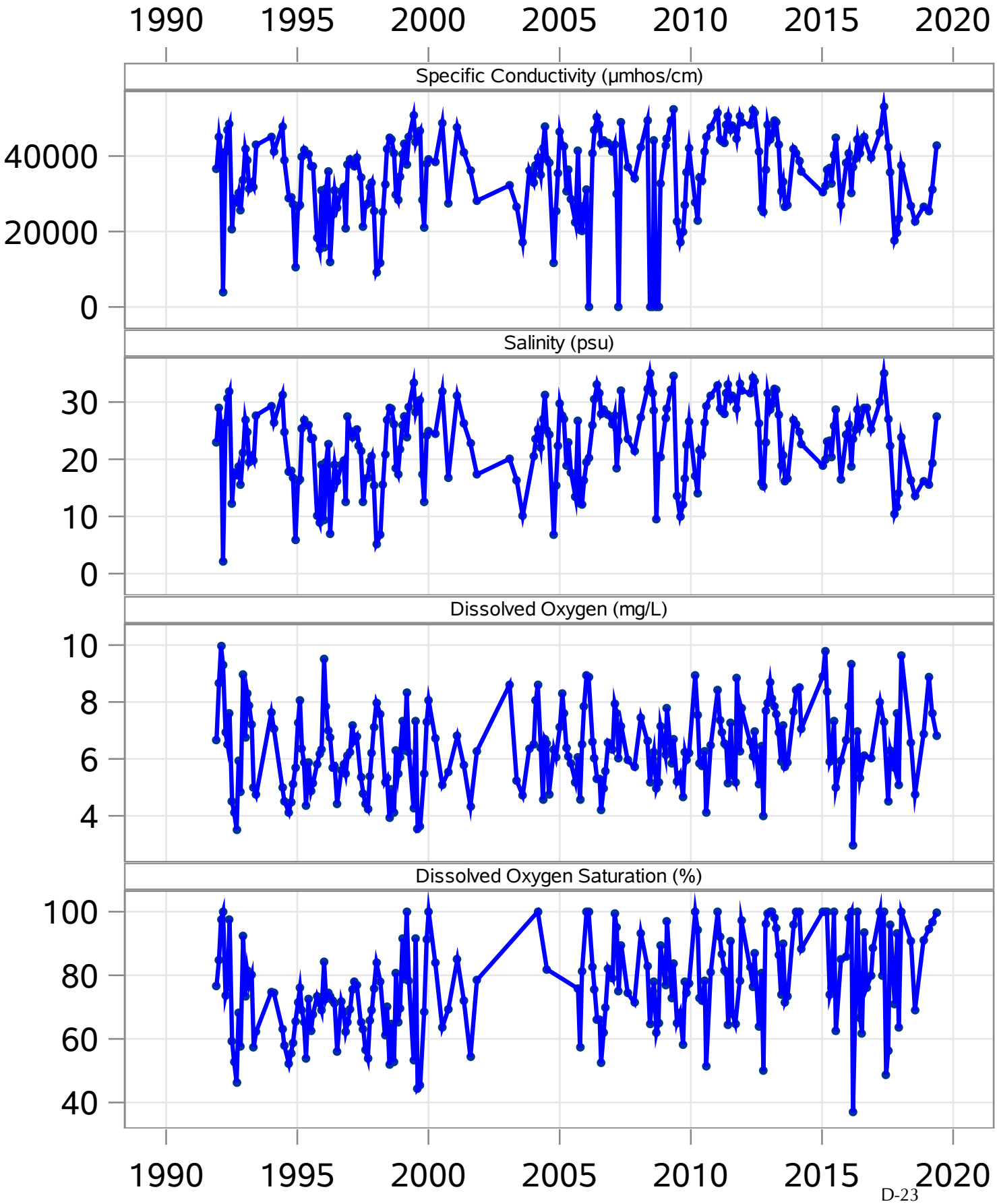
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL11



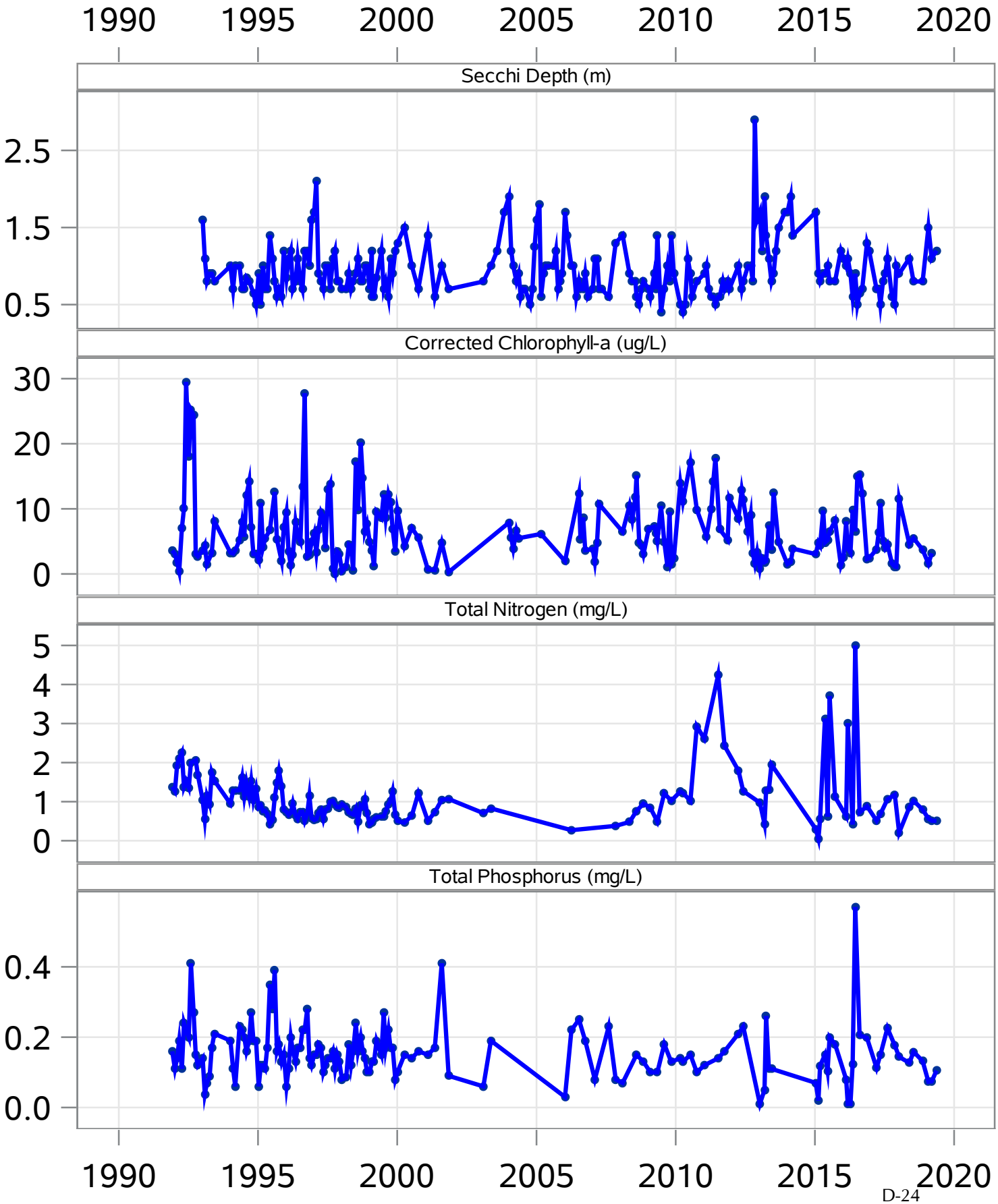
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL12



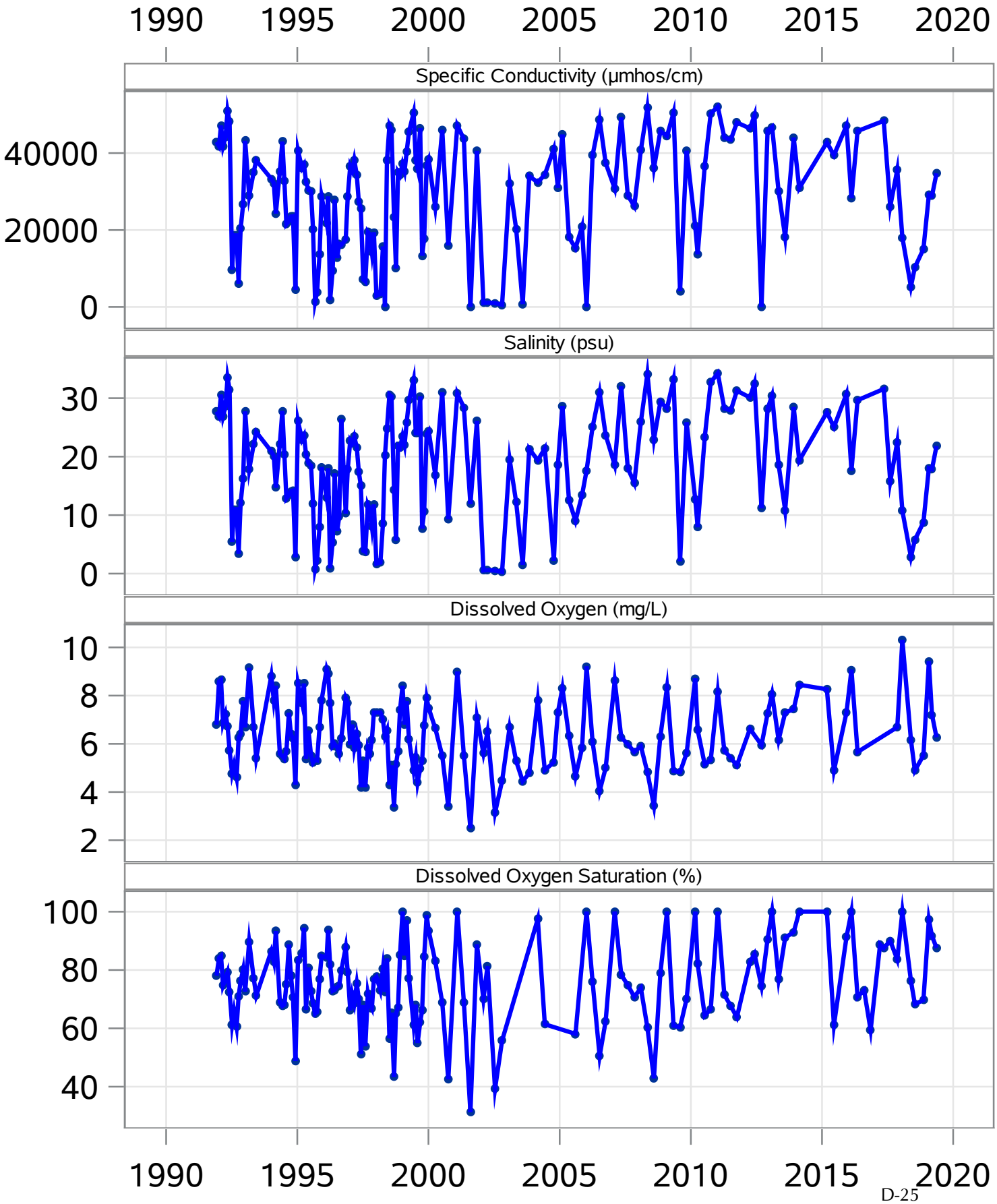
WBID 2363B Halifax River - 3M

Station 21FLVEMDHL12



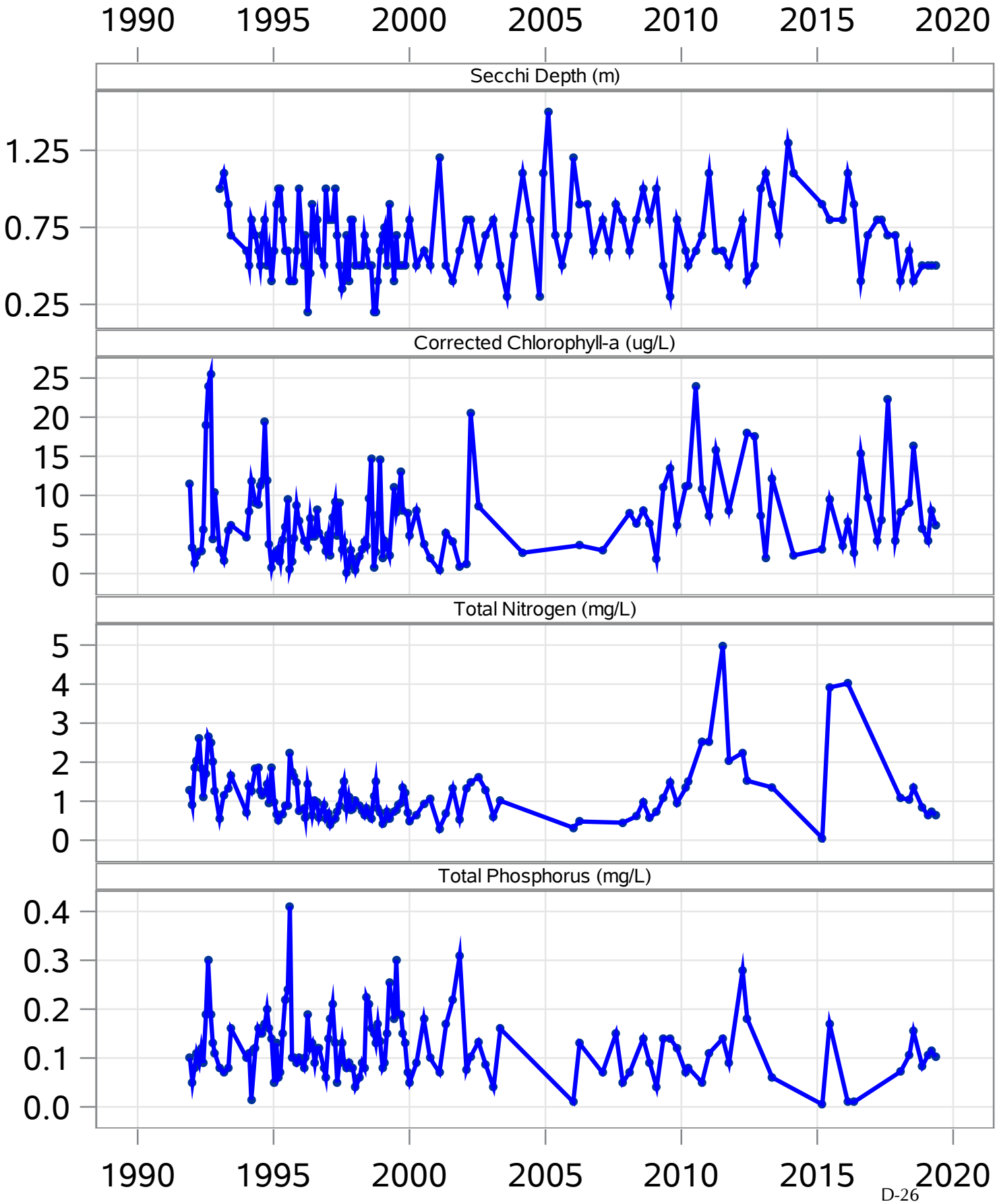
WBID 2363C Tomoka Basin - 3M

Station 21FLVEMDHL03



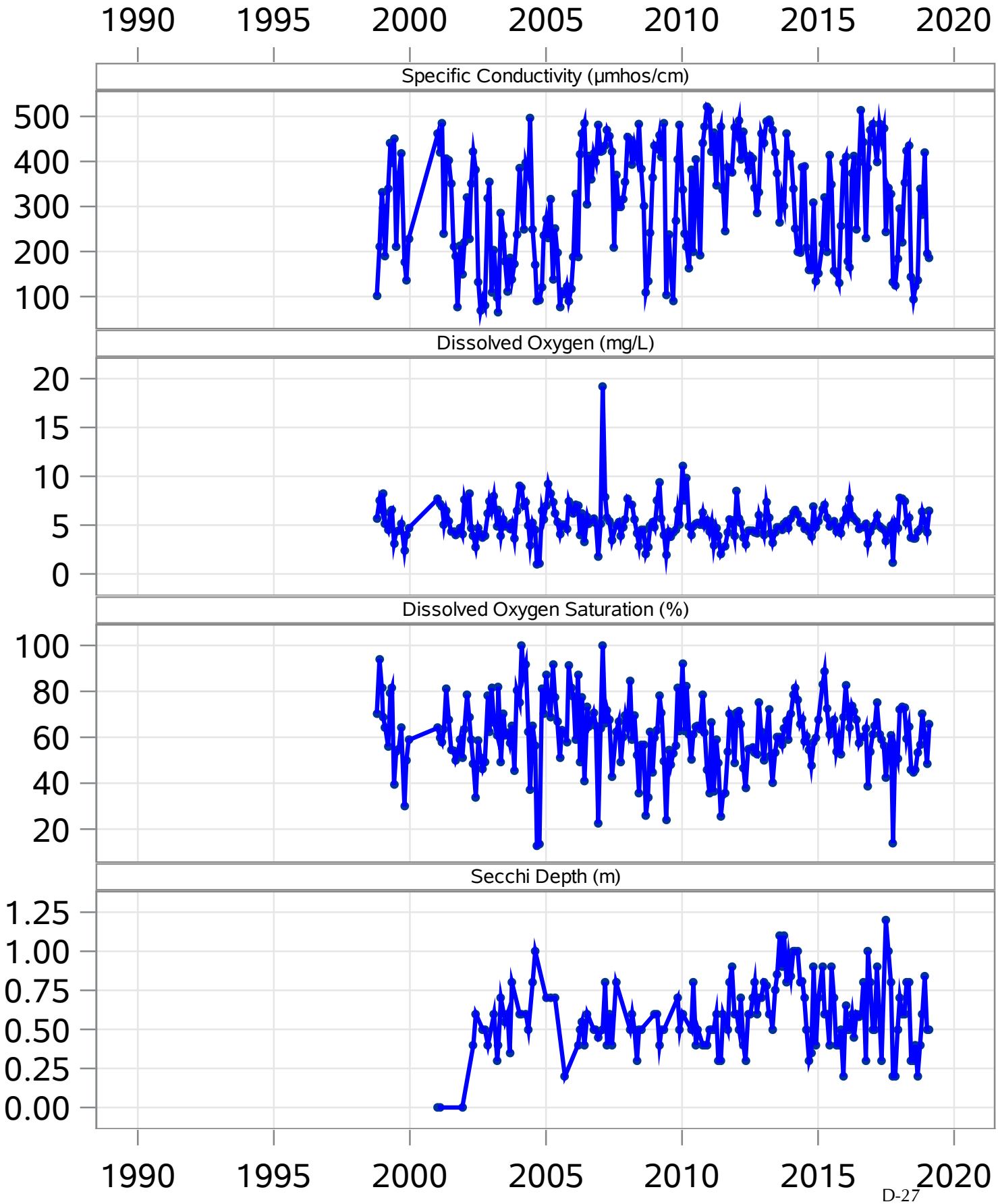
WBID 2363C Tomoka Basin - 3M

Station 21FLVEMDHL03



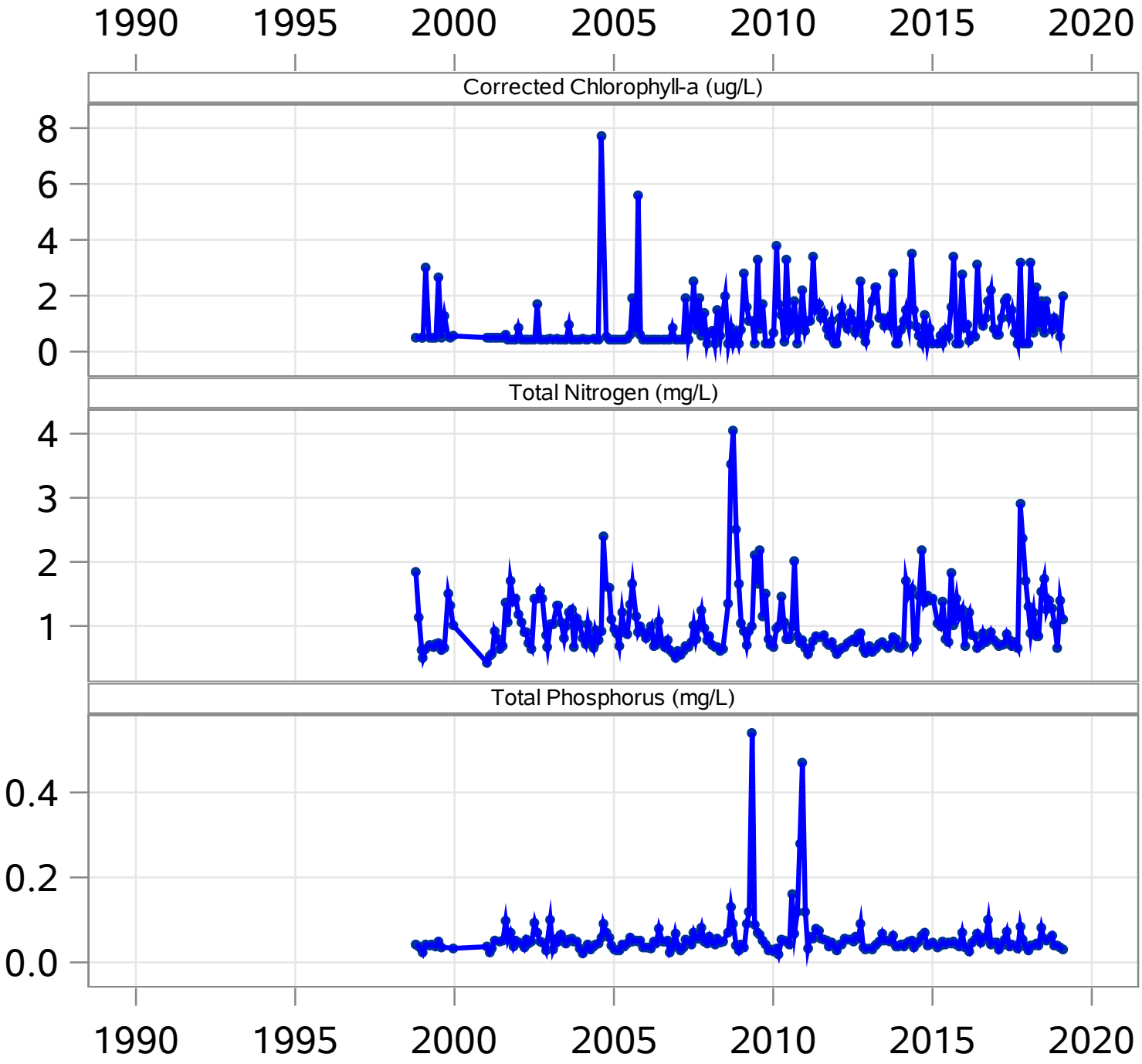
WBID 2634 Tomoka River - 3F

Station 21FLGW 3516



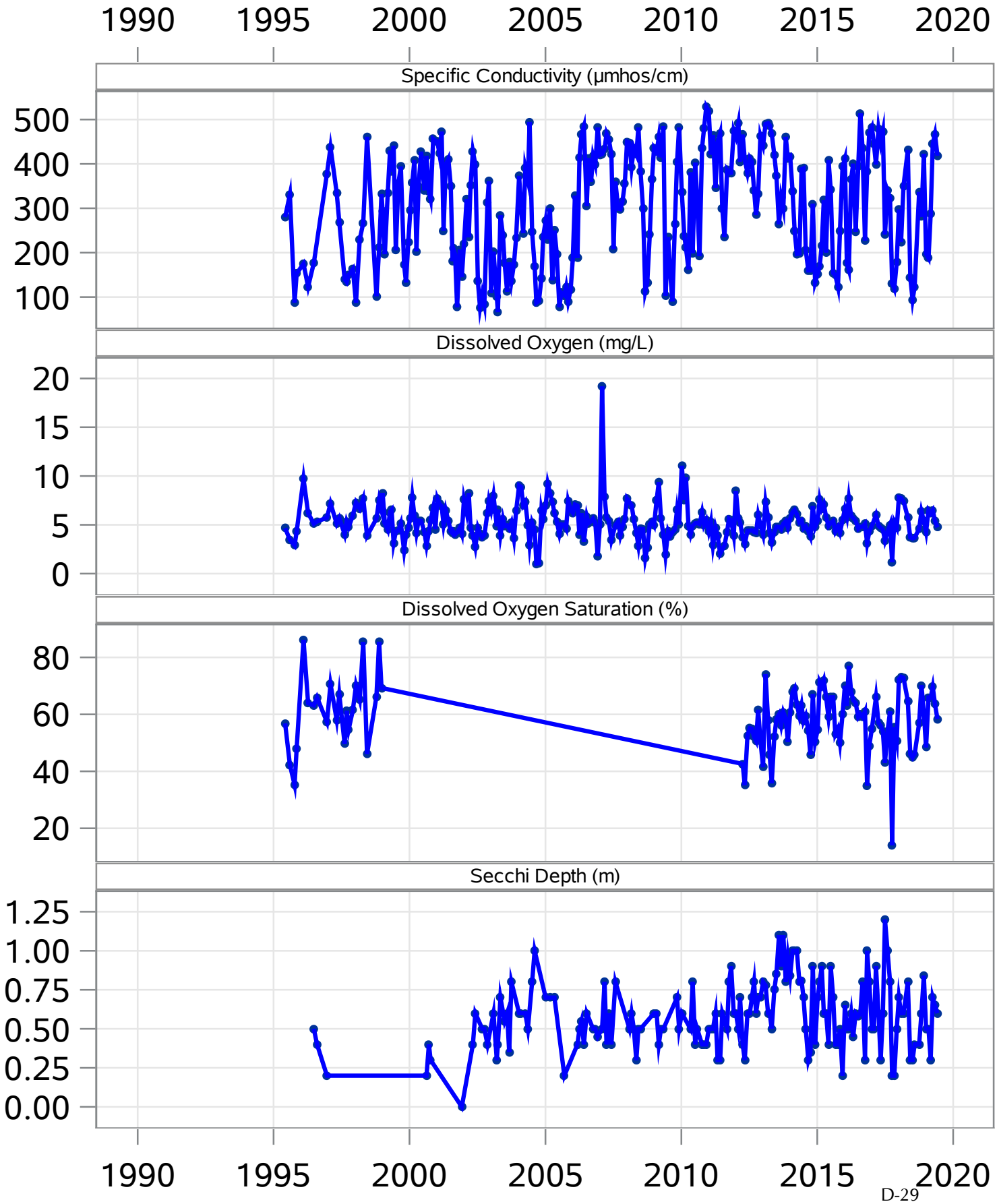
WBID 2634 Tomoka River - 3F

Station 21FLGW 3516



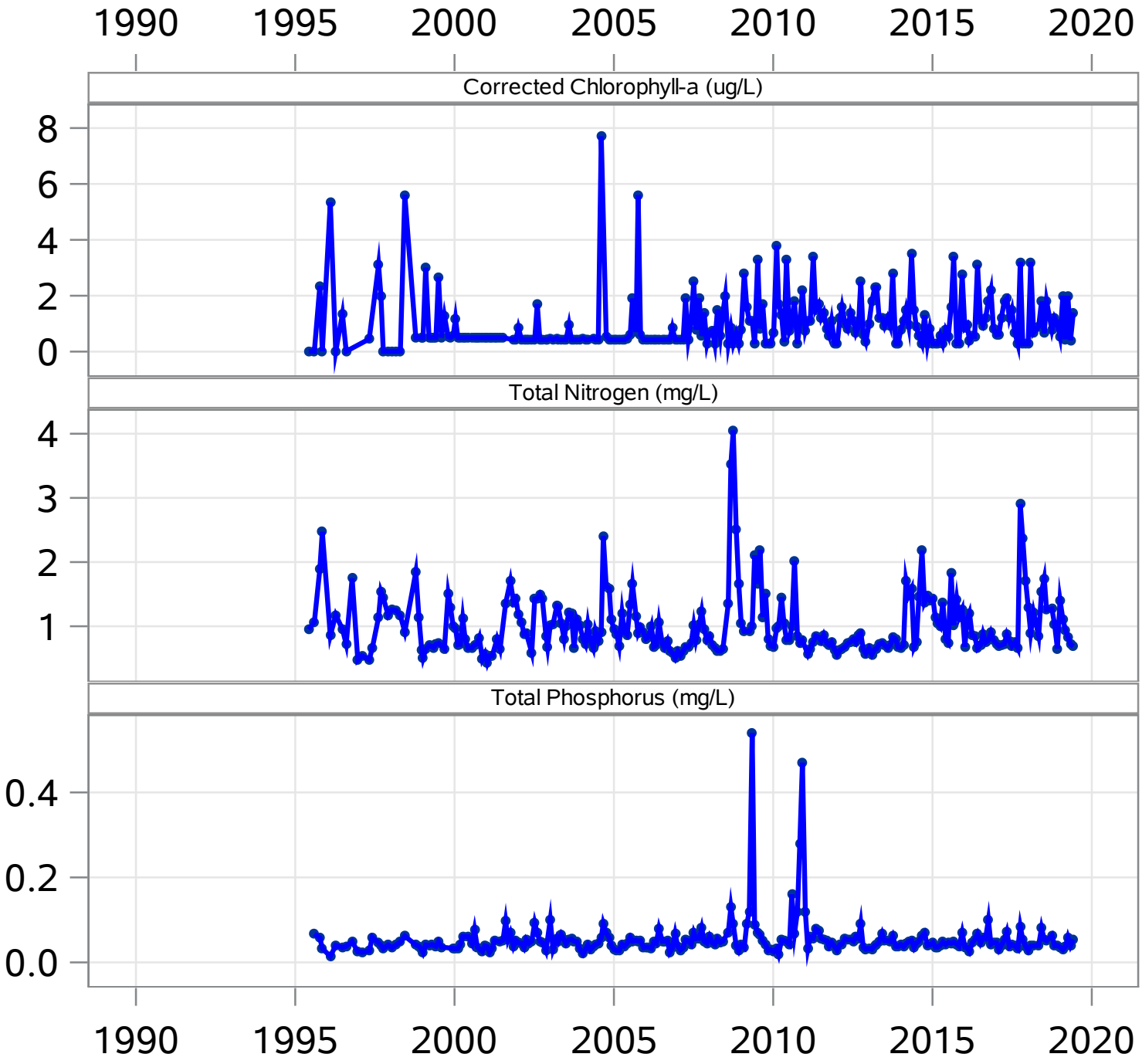
WBID 2634 Tomoka River - 3F

Station 21FLSJWM27010579



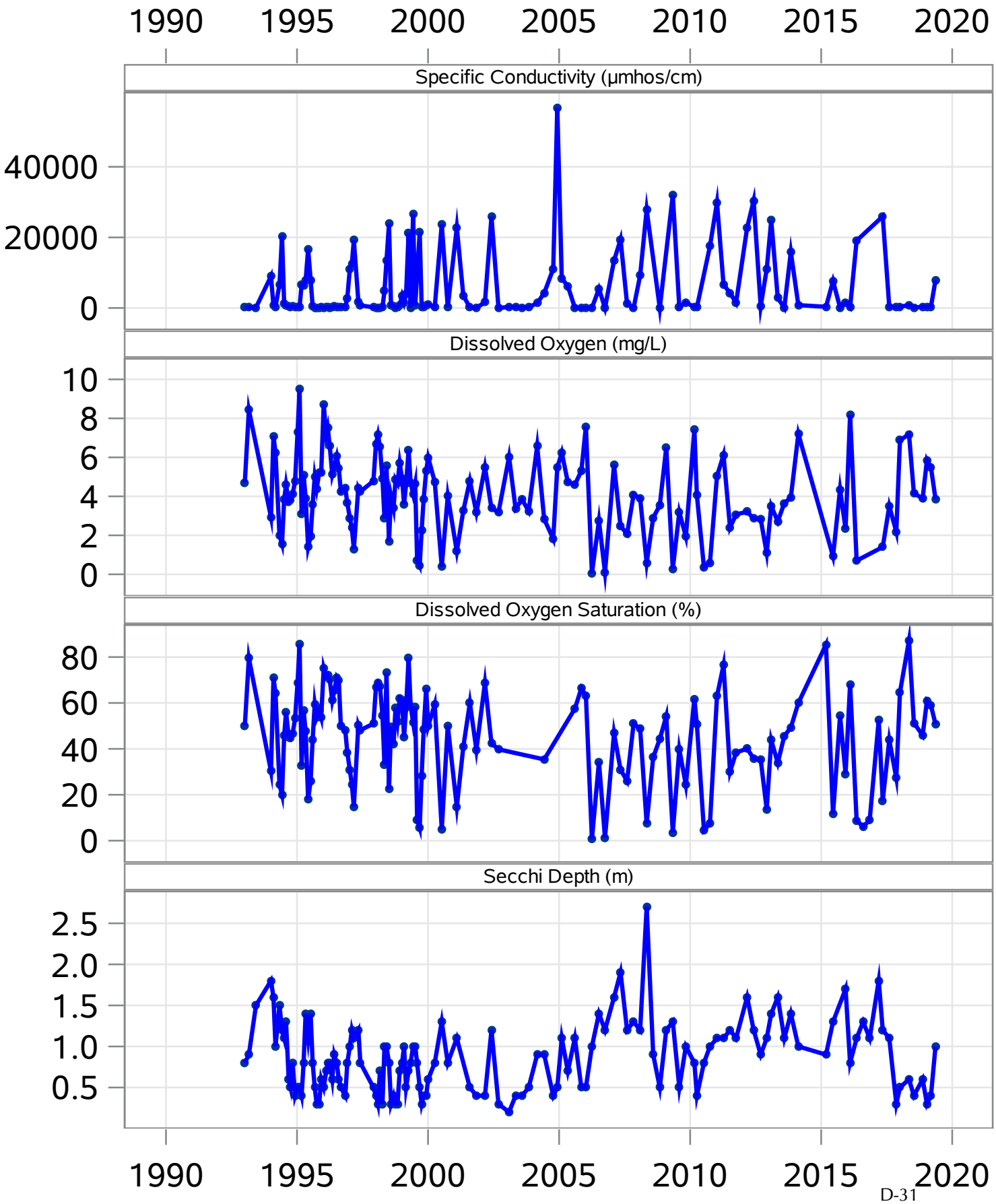
WBID 2634 Tomoka River - 3F

Station 21FLSJWM27010579



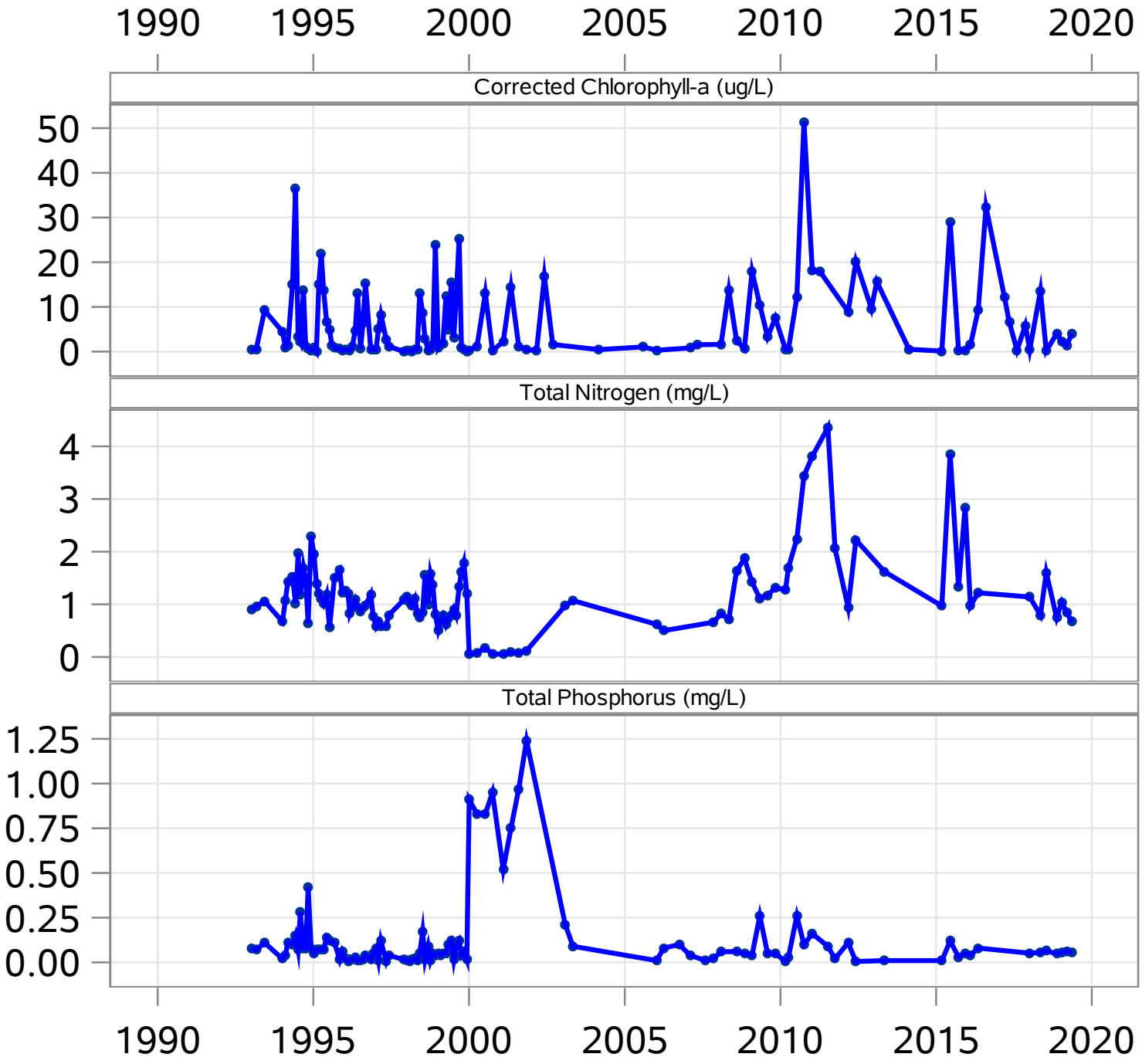
WBID 2634 Tomoka River - 3F

Station 21FLVEMDTR03



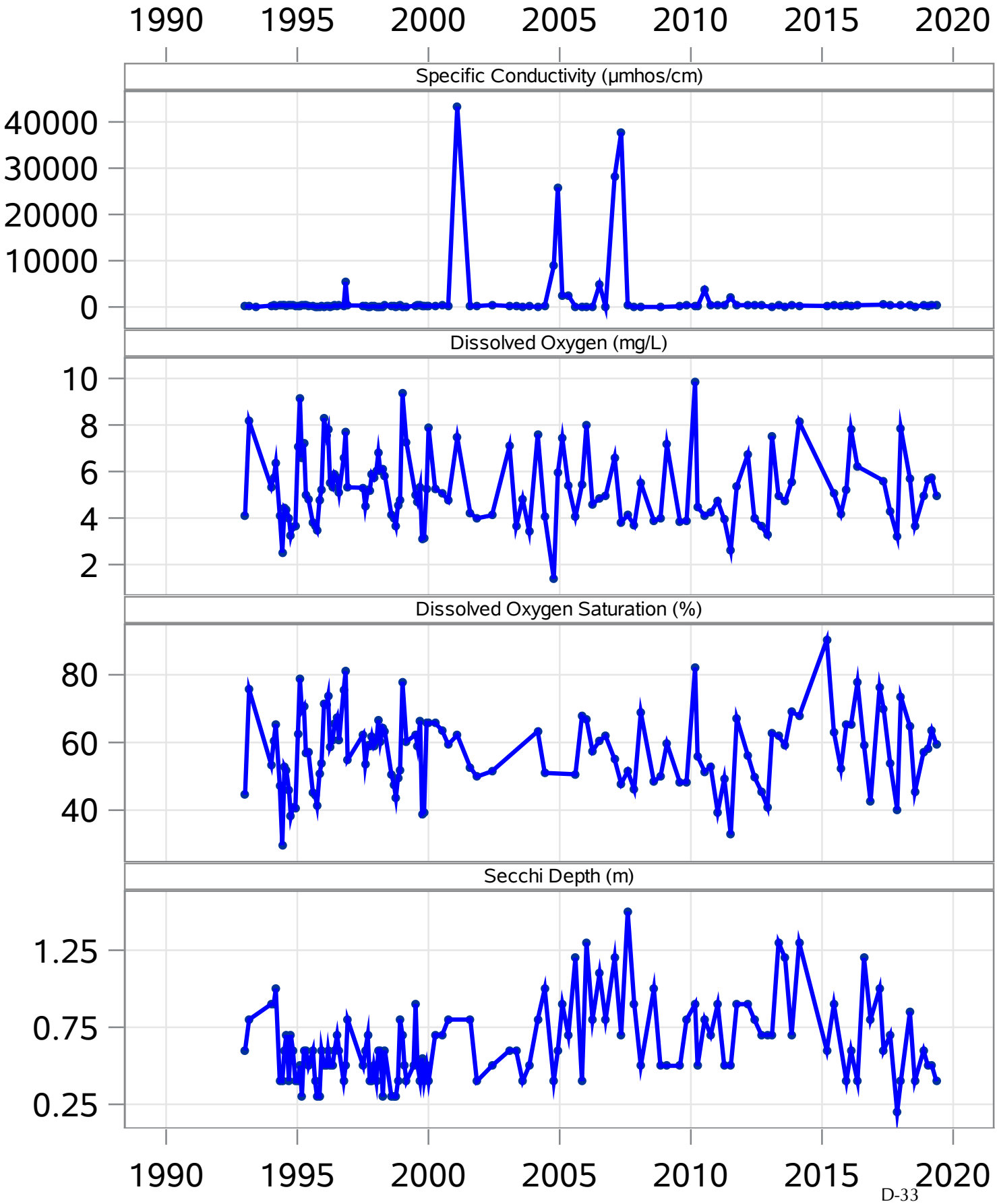
WBID 2634 Tomoka River - 3F

Station 21FLVEMDTR03



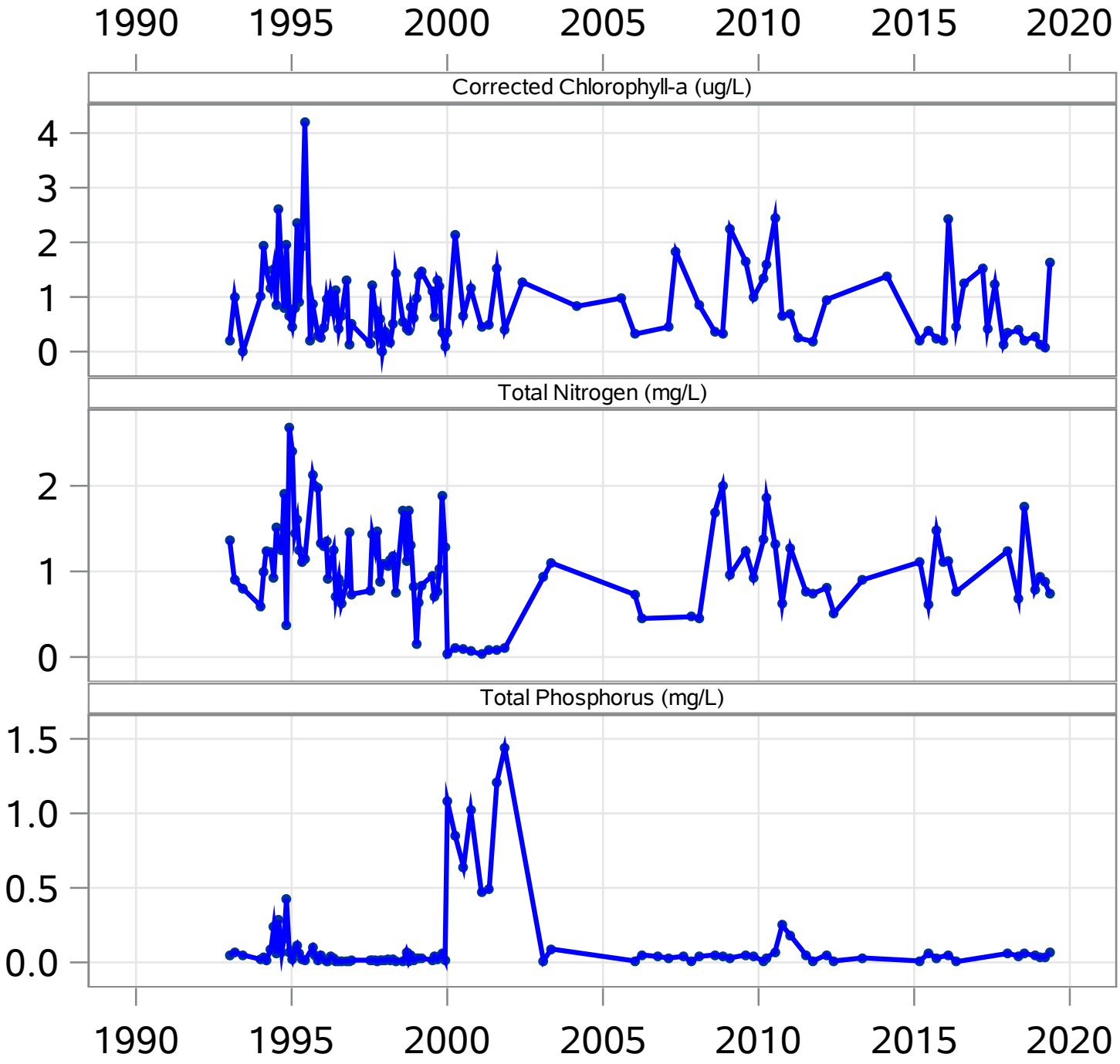
WBID 2634 Tomoka River - 3F

Station 21FLVEMDTR04



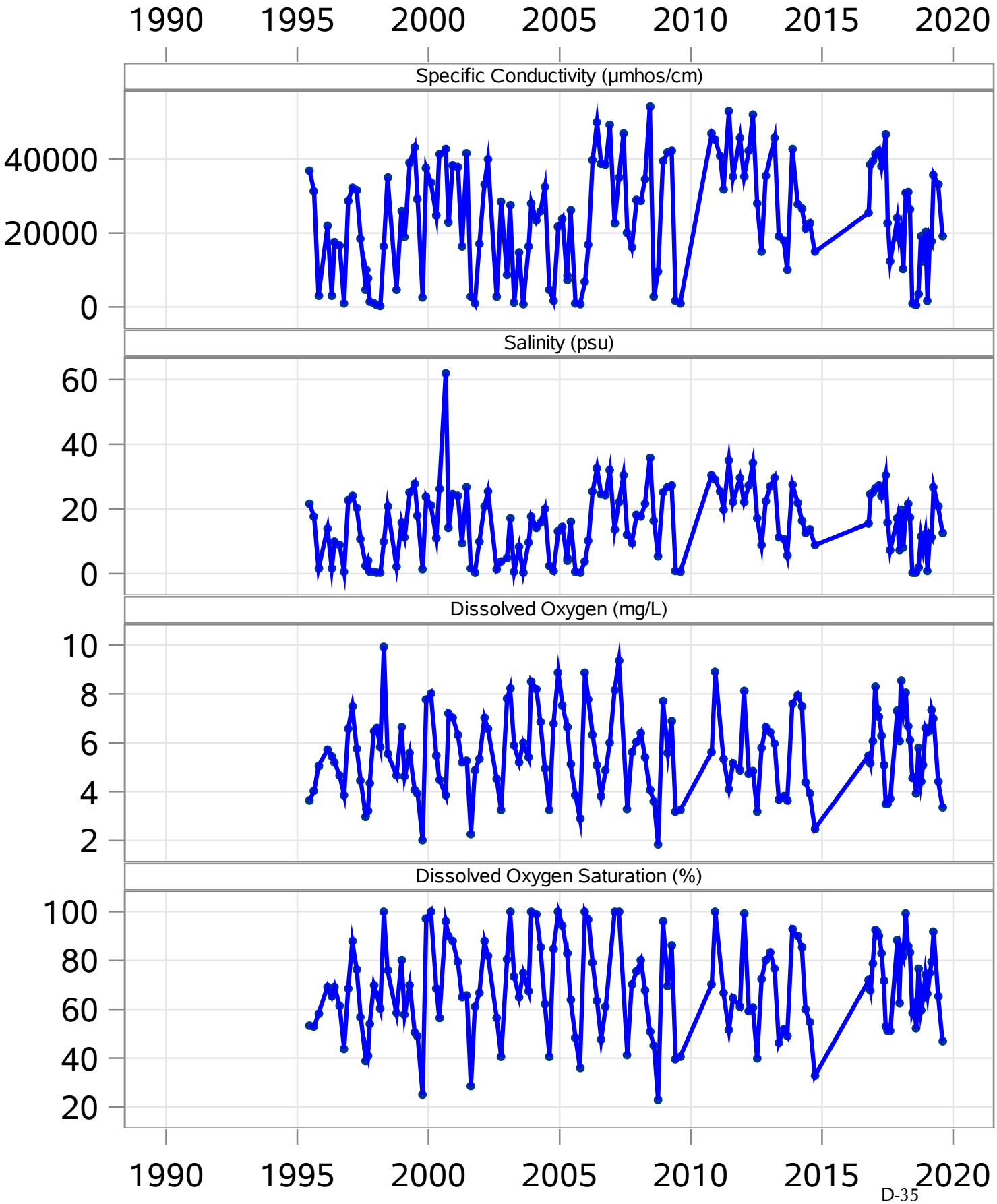
WBID 2634 Tomoka River - 3F

Station 21FLVEMDTR04



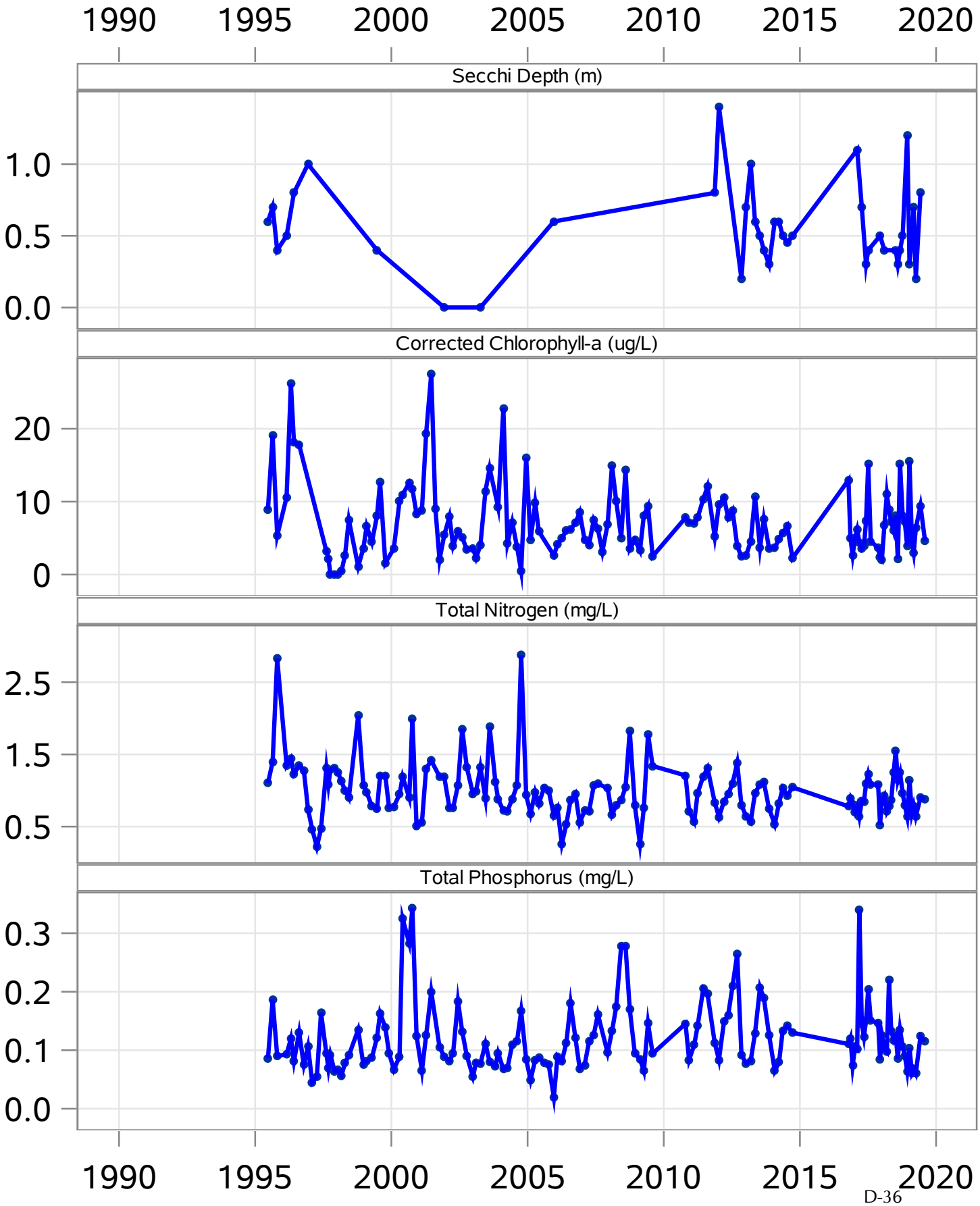
WBID 2634A Tomoka River - 3M

Station 21FLSJWM27010024



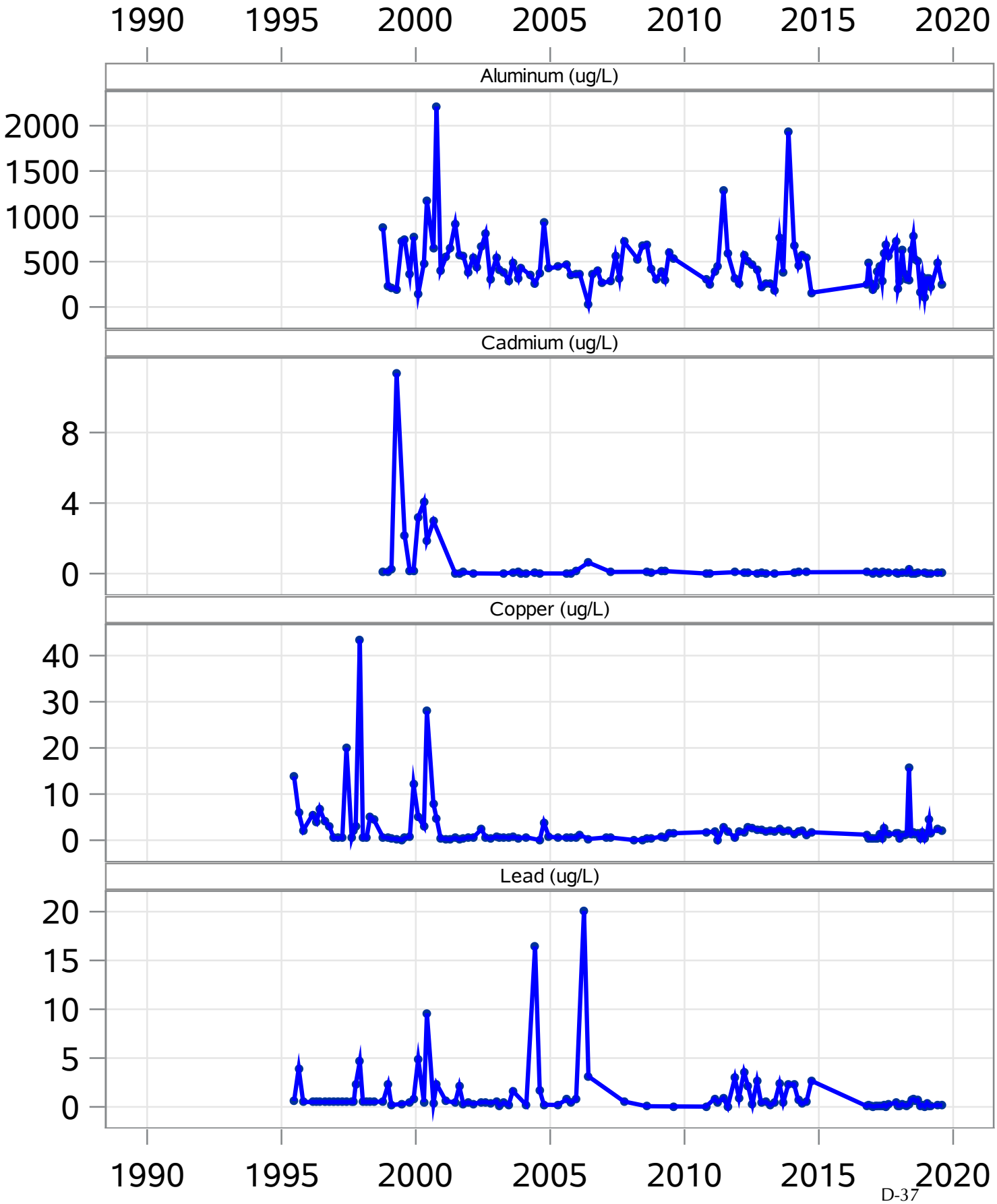
WBID 2634A Tomoka River - 3M

Station 21FLSJWM27010024



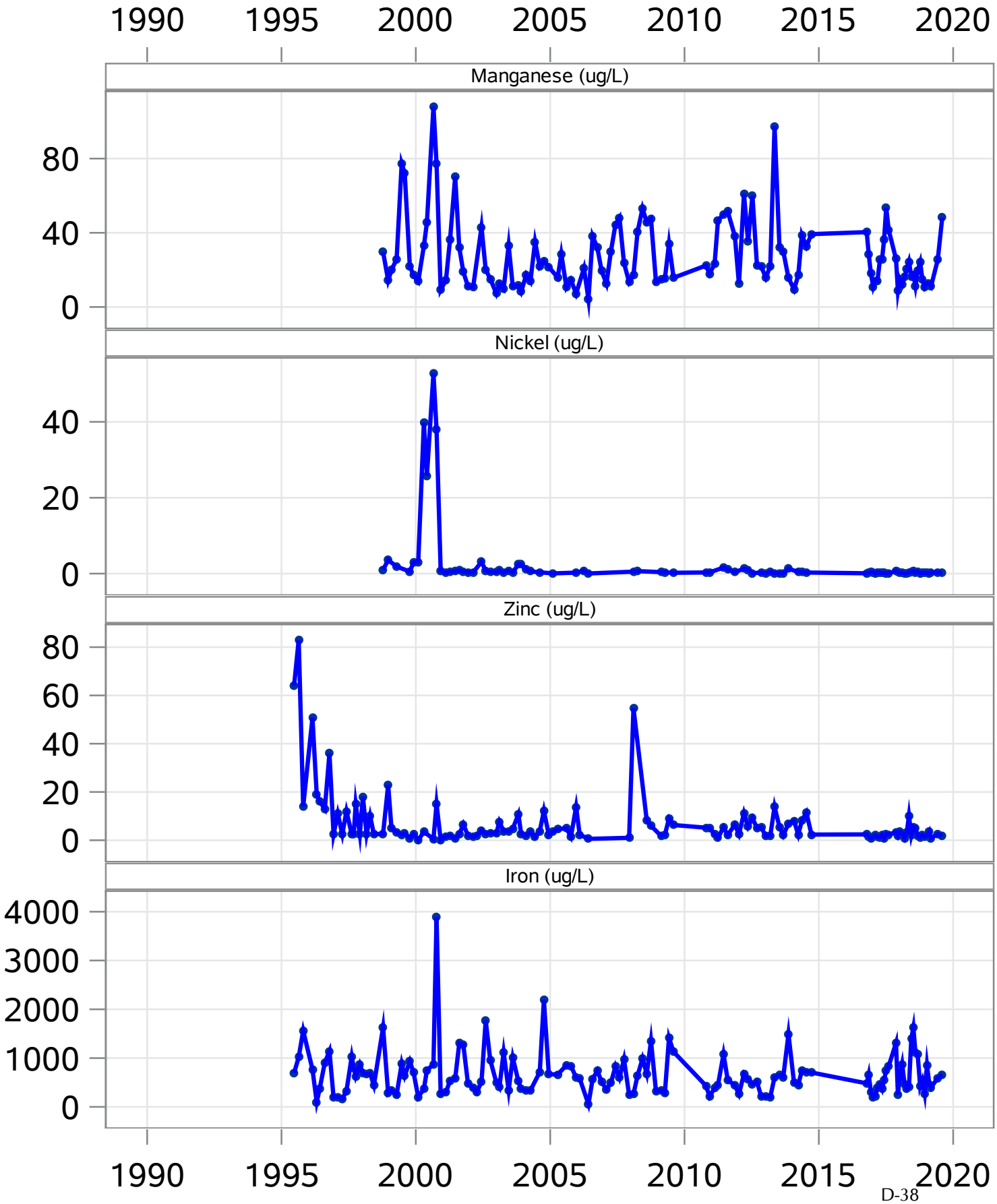
WBID 2634A Tomoka River - 3M

Station 21FLSJWM27010024



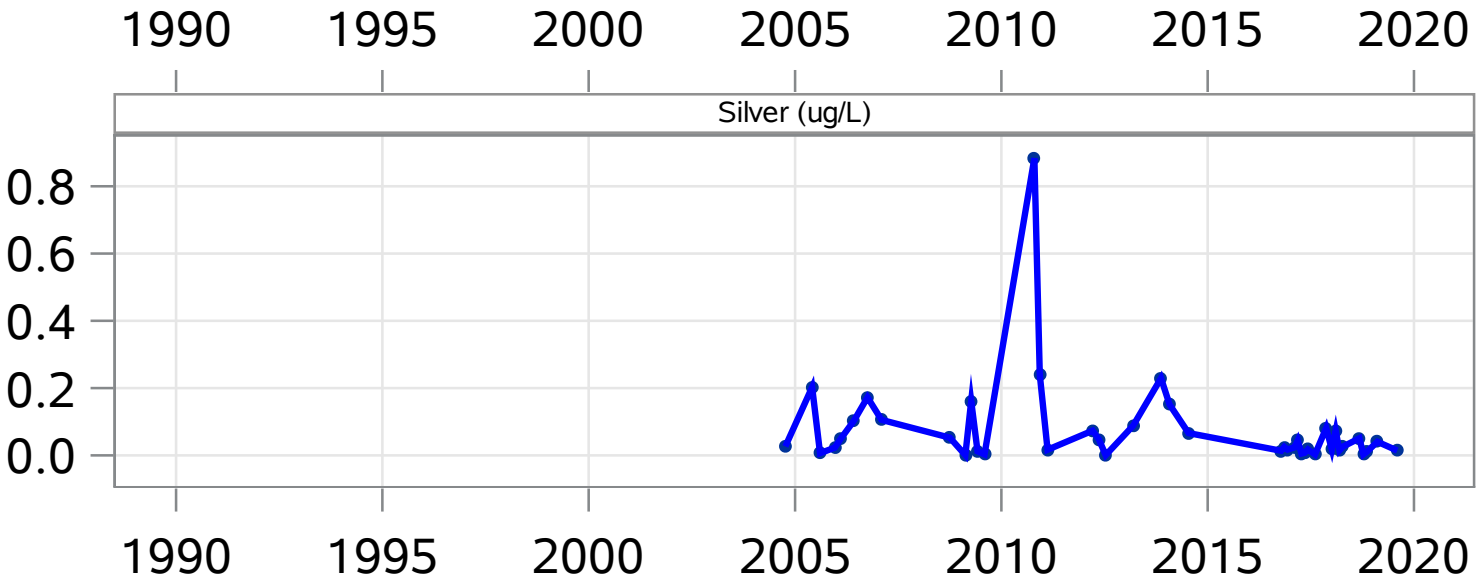
WBID 2634A Tomoka River - 3M

Station 21FLSJWM27010024



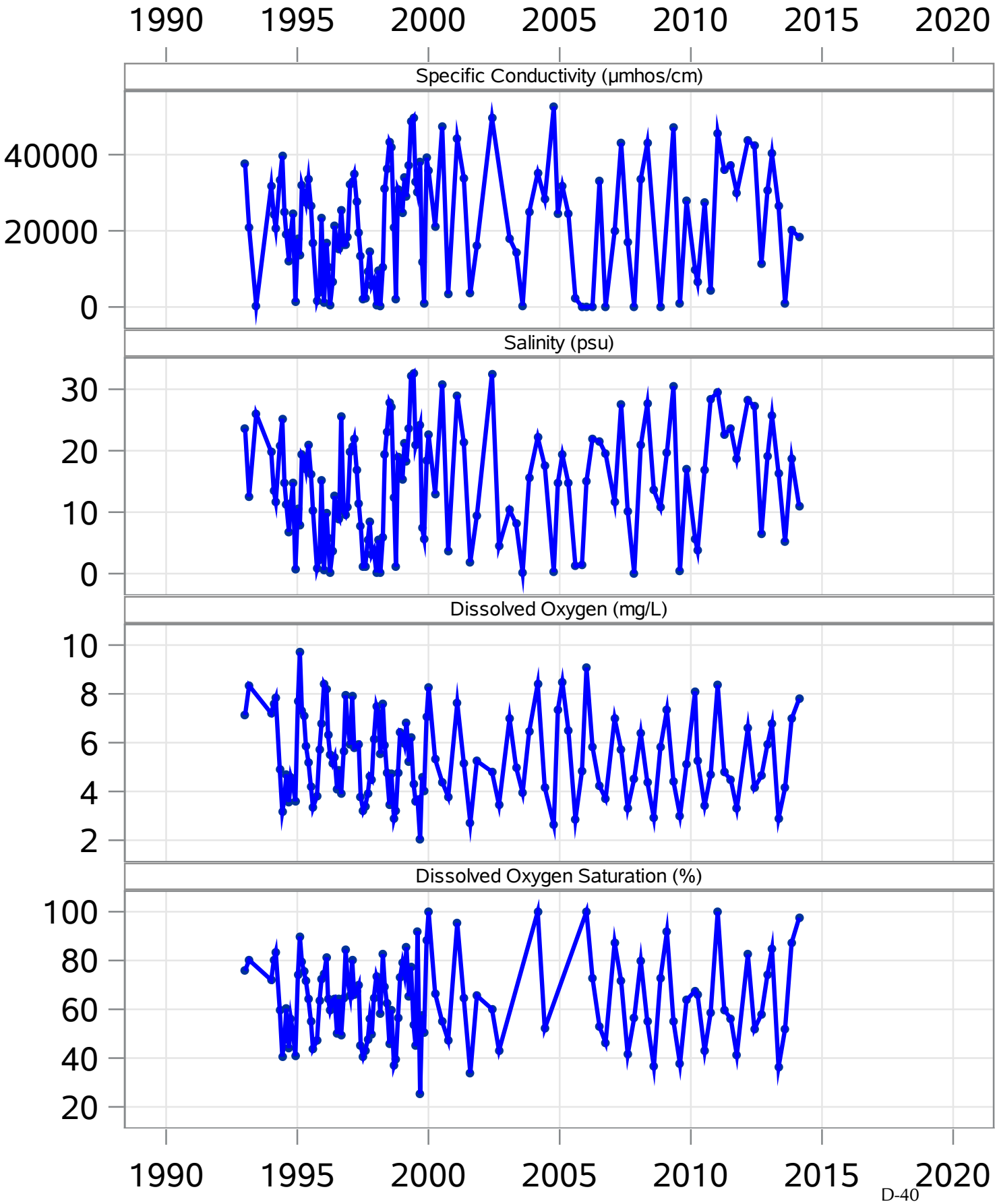
WBID 2634A Tomoka River - 3M

Station 21FLSJWM27010024



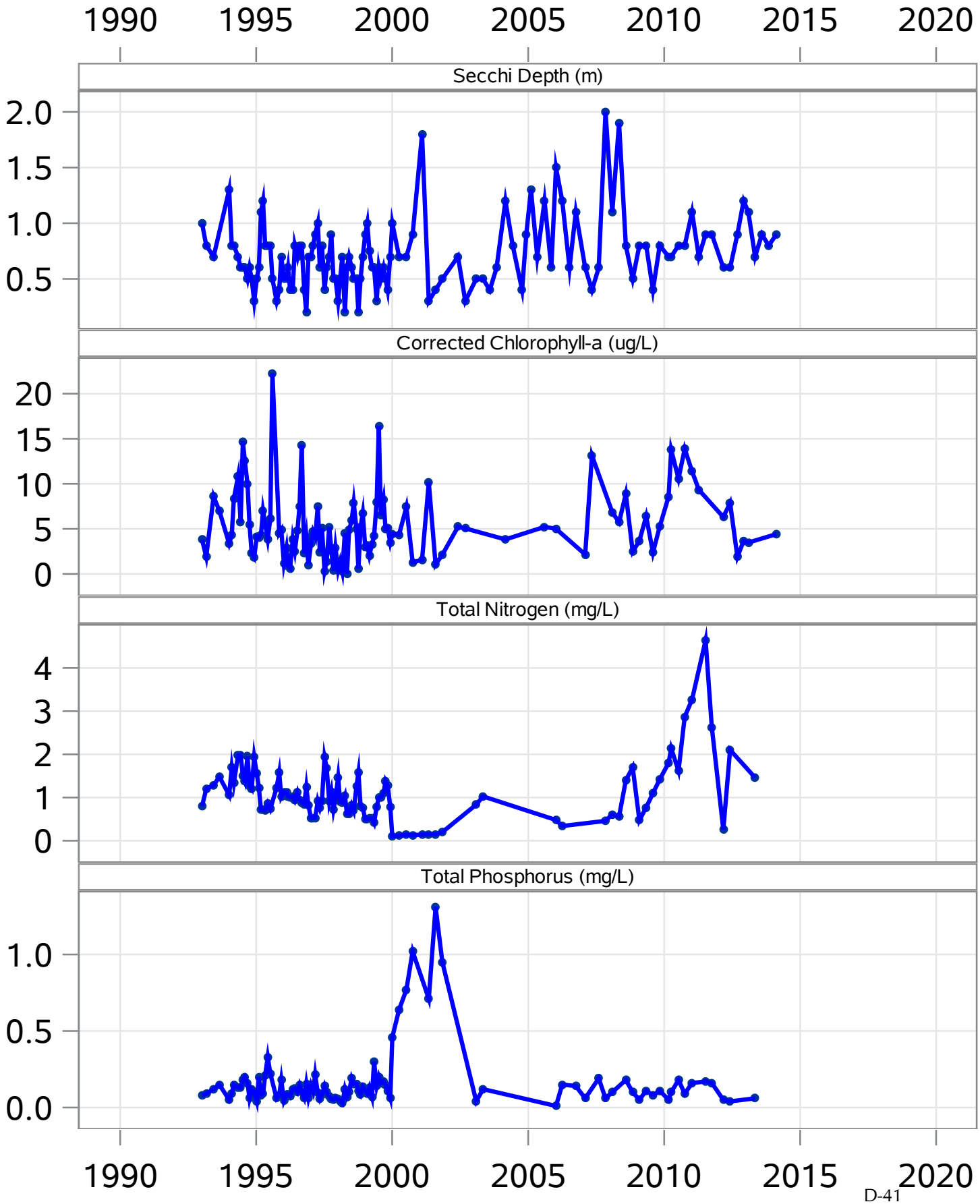
WBID 2634A Tomoka River - 3M

Station 21FLVEMDTR01



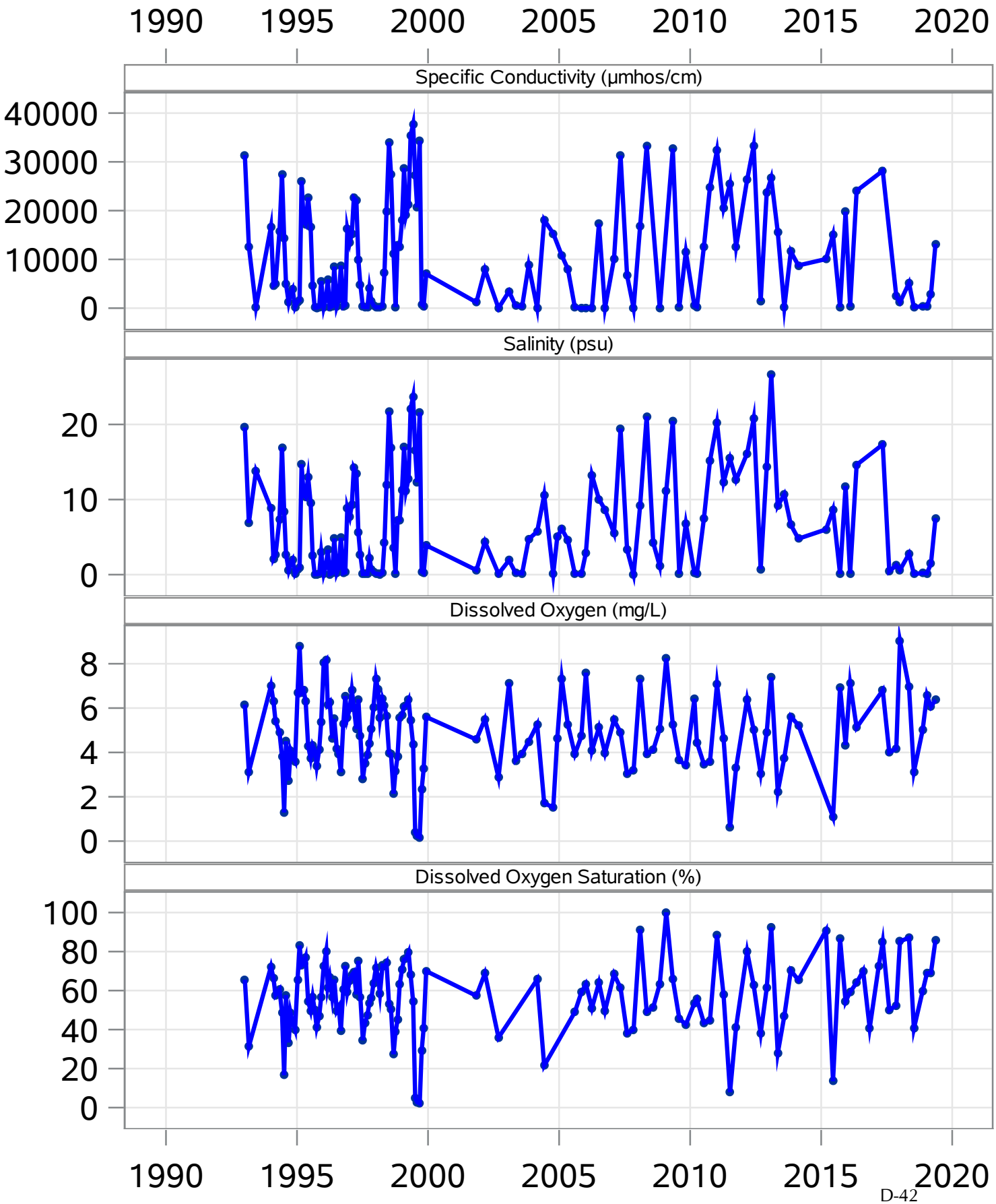
WBID 2634A Tomoka River - 3M

Station 21FLVEMDTR01



WBID 2634A Tomoka River - 3M

Station 21FLVEMDTR02

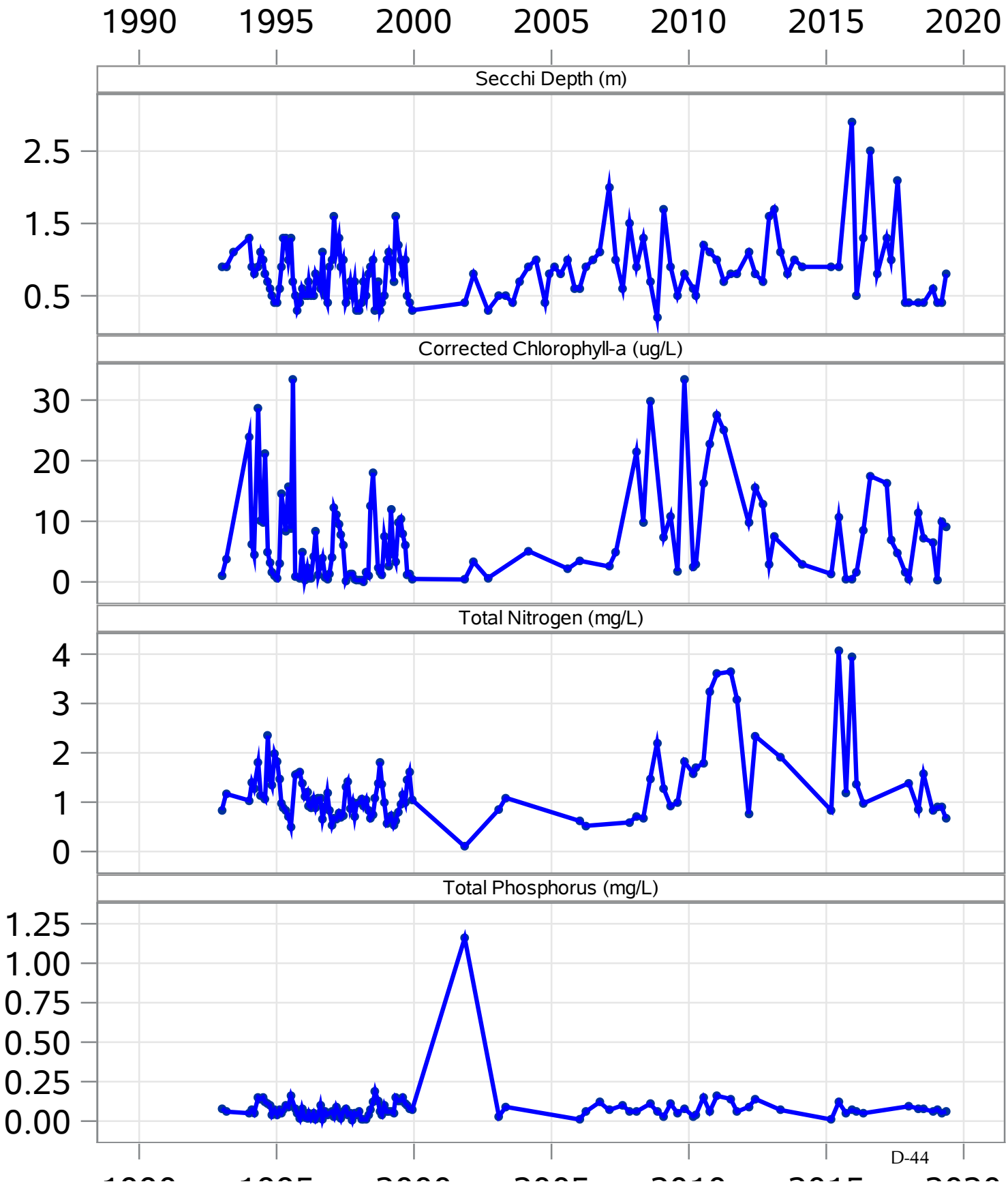


WBID #byval(wbid) #byval(waterbody)
Station #byval(sta)

Continuing contents of page 43, which would not fit on a single physical page

WBID 2634A Tomoka River - 3M

Station 21FLVEMDTR02



Appendix B-E
Trend Test Results and Output

Station	WBID	Waterbody	Parameter (Units)	Min Year	Max Year	Median	N	Tau	p	Slope	Trend Direction	Trend Magnitude	Seasonality	corr_1	corr_2	auto-correlation
21FLSJWM27010024	2634A	Tomoka River - 3M	Corrected Chlorophyll-a (ug/L)	1995	2019	6.10	132	-0.059	0.405	-0.049	No Trend	Shallow	N	N	Y	N
21FLSJWM27010024	2634A	Tomoka River - 3M	Specific Conductivity (umhos/cm)	1995	2019	24700	139	0.077	0.457	231.500	No Trend	Shallow	Y	Y	Y	Y
21FLSJWM27010024	2634A	Tomoka River - 3M	Dissolved Oxygen (mg/L)	1995	2019	5.52	138	0.042	0.545	0.007	No Trend	Shallow	Y	N	N	N
21FLSJWM27010024	2634A	Tomoka River - 3M	Dissolved Oxygen (%)	1995	2019	68.48	137	0.073	0.288	0.180	No Trend	Shallow	Y	N	N	N
21FLSJWM27010024	2634A	Tomoka River - 3M	Salinity (psu)	1995	2019	15.8	140	0.098	0.328	0.188	No Trend	Shallow	Y	Y	Y	Y
21FLSJWM27010024	2634A	Tomoka River - 3M	Total Phosphorus (mg/L)	1995	2019	0.106	139	0.089	0.406	0.001	No Trend	Shallow	Y	Y	Y	Y
21FLSJWM27010024	**2634A**	**Tomoka River - 3M**	**Total Nitrogen (mg/L)**	**1995**	**2019**	**0.948**	**139**	**-0.197**	**0.003**	**-0.011**	**Decreasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLVEMDTR01	2634A	Tomoka River - 3M	Corrected Chlorophyll-a (ug/L)	1993	2014	4.52	108	0.074	0.527	0.052	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDTR01	2634A	Tomoka River - 3M	Specific Conductivity (umhos/cm)	1993	2014	21250	125	0.090	0.347	225.098	No Trend	Shallow	N	Y	Y	Y
21FLVEMDTR01	2634A	Tomoka River - 3M	Dissolved Oxygen (mg/L)	1993	2014	5.20	127	-0.099	0.163	-0.023	No Trend	Shallow	Y	N	N	N
21FLVEMDTR01	2634A	Tomoka River - 3M	Dissolved Oxygen (%)	1993	2014	64.14	117	0.046	0.549	0.109	No Trend	Shallow	Y	N	N	N
21FLVEMDTR01	2634A	Tomoka River - 3M	Salinity (psu)	1993	2014	14.8	127	0.155	0.107	0.318	No Trend	Shallow	N	Y	Y	Y
21FLVEMDTR01	2634A	Tomoka River - 3M	Total Phosphorus (mg/L)	1993	2013	0.110	105	0.021	1.000	0.000	No Trend	Shallow	N	N	N	N
21FLVEMDTR01	**2634A**	**Tomoka River - 3M**	**Total Nitrogen (mg/L)**	**1993**	**2013**	**0.990**	**104**	**-0.161**	**0.045**	**-0.029**	**Decreasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDTR01	**2634A**	**Tomoka River - 3M**	**Secchi Depth (m)**	**1993**	**2014**	**0.7**	**128**	**0.192**	**0.005**	**0.011**	**Increasing**	**Shallow**	**N**	**Y**	**N**	**N**
21FLVEMDTR02	2634A	Tomoka River - 3M	Corrected Chlorophyll-a (ug/L)	1993	2019	4.36	116	0.049	0.531	0.023	No Trend	Shallow	N	Y	N	N
21FLVEMDTR02	2634A	Tomoka River - 3M	Specific Conductivity (umhos/cm)	1993	2019	7140	134	0.017	0.864	6.874	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDTR02	2634A	Tomoka River - 3M	Dissolved Oxygen (mg/L)	1993	2019	4.90	136	-0.022	0.763	-0.004	No Trend	Shallow	Y	Y	N	N
21FLVEMDTR02	2634A	Tomoka River - 3M	Dissolved Oxygen (%)	1993	2019	58.23	132	0.049	0.514	0.154	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDTR02	2634A	Tomoka River - 3M	Salinity (psu)	1993	2019	4.7	138	0.070	0.474	0.025	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDTR02	2634A	Tomoka River - 3M	Secchi Depth (m)	1993	2019	0.8	140	0.064	1.000	0.000	No Trend	Shallow	Y	Y	N	N
21FLVEMDTR02	2634A	Tomoka River - 3M	Total Nitrogen (mg/L)	1993	2019	1.048	109	0.017	0.845	0.002	No Trend	Shallow	Y	Y	N	N
21FLVEMDTR02	2634A	Tomoka River - 3M	Total Phosphorus (mg/L)	1993	2019	0.060	111	0.050	1.000	0.000	No Trend	Shallow	Y	Y	Y	Y
21FLSJWM27010579	2634	Tomoka River - 3F	Specific Conductivity (umhos/cm)	1995	2019	322	252	0.141	0.118	3.633	No Trend	Shallow	Y	Y	Y	Y
21FLSJWM27010579	2634	Tomoka River - 3F	Dissolved Oxygen (mg/L)	1995	2019	5.11	251	-0.080	0.082	-0.020	No Trend	Shallow	Y	N	N	N
21FLSJWM27010579	2634	Tomoka River - 3F	Dissolved Oxygen (%)	1995	2019	59.23	98	-0.033	0.717	-0.036	No Trend	Shallow	Y	N	N	N
21FLSJWM27010579	2634	Tomoka River - 3F	Secchi Depth (m)	1996	2019	0.6	153	0.102	0.185	0.001	No Trend	Shallow	N	Y	Y	Y
21FLSJWM27010579	2634	Tomoka River - 3F	Total Nitrogen (mg/L)	1995	2019	0.852	245	-0.009	0.913	-0.001	No Trend	Shallow	N	Y	Y	Y
21FLSJWM27010579	2634	Tomoka River - 3F	Total Phosphorus (mg/L)	1995	2019	0.046	243	0.141	1.000	0.000	No Trend	Shallow	N	Y	N	N
21FLSJWM27010579	**2634**	**Tomoka River - 3F**	**Corrected Chlorophyll-a (ug/L)**	**1995**	**2019**	**0.55**	**244**	**0.185**	**0.000**	**0.019**	**Increasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLSJWM27010579	**2634**	**Tomoka River - 3F**	**Salinity (psu)**	**1995**	**2019**	**0.2**	**252**	**0.179**	**0.000**	**0.003**	**Increasing**	**Shallow**	**N**	**N**	**N**	**N**
21FLVEMDTR03	2634	Tomoka River - 3F	Corrected Chlorophyll-a (ug/L)	1993	2019	1.61	119	0.078	0.299	0.020	No Trend	Shallow	N	Y	N	N

Station	WBID	Waterbody	Parameter (Units)	unadj_Tau	unadj_P without	unadj_P with	unadj_Slope	adj_Tau	adj_P without	adj_P with	adj_Slope
21FLSJWM27010024	2634A	Tomoka River - 3M	Corrected Chlorophyll-a (ug/L)	-0.059	0.405	0.510	-0.049	-0.059	0.405	0.510	-0.049
21FLSJWM27010024	2634A	Tomoka River - 3M	Specific Conductivity (umhos/cm)	0.077	0.256	0.457	231.500	0.077	0.256	0.457	231.500
21FLSJWM27010024	2634A	Tomoka River - 3M	Dissolved Oxygen (mg/L)	0.042	0.545	0.617	0.007	0.042	0.545	0.617	0.007
21FLSJWM27010024	2634A	Tomoka River - 3M	Dissolved Oxygen (%)	0.073	0.288	0.376	0.180	0.073	0.288	0.376	0.180
21FLSJWM27010024	2634A	Tomoka River - 3M	Salinity (psu)	0.098	0.147	0.328	0.188	0.098	0.147	0.328	0.188
21FLSJWM27010024	2634A	Tomoka River - 3M	Total Phosphorus (mg/L)	0.091	0.179	0.398	0.001	0.089	0.190	0.406	0.001
21FLSJWM27010024	**2634A**	**Tomoka River - 3M**	**Total Nitrogen (mg/L)**	**-0.197**	**0.003**	**0.020**	**-0.011**	**-0.197**	**0.003**	**0.020**	**-0.011**
21FLVEMDTR01	2634A	Tomoka River - 3M	Corrected Chlorophyll-a (ug/L)	0.074	0.356	0.527	0.052	0.074	0.356	0.527	0.052
21FLVEMDTR01	2634A	Tomoka River - 3M	Specific Conductivity (umhos/cm)	0.090	0.212	0.347	225.098	0.090	0.212	0.347	225.098
21FLVEMDTR01	2634A	Tomoka River - 3M	Dissolved Oxygen (mg/L)	-0.099	0.163	0.243	-0.023	-0.099	0.163	0.243	-0.023
21FLVEMDTR01	2634A	Tomoka River - 3M	Dissolved Oxygen (%)	0.046	0.549	0.573	0.109	0.046	0.549	0.573	0.109
21FLVEMDTR01	2634A	Tomoka River - 3M	Salinity (psu)	0.155	0.028	0.107	0.318	0.155	0.028	0.107	0.318
21FLVEMDTR01	2634A	Tomoka River - 3M	Total Phosphorus (mg/L)	0.021	0.810	0.860	0.000	0.021	0.810	0.860	0.000
21FLVEMDTR01	**2634A**	**Tomoka River - 3M**	**Total Nitrogen (mg/L)**	**-0.161**	**0.045**	**0.205**	**-0.029**	**-0.161**	**0.045**	**0.205**	**-0.029**
21FLVEMDTR01	**2634A**	**Tomoka River - 3M**	**Secchi Depth (m)**	**0.192**	**0.005**	**0.044**	**0.011**	**0.192**	**0.005**	**0.044**	**0.011**
21FLVEMDTR02	2634A	Tomoka River - 3M	Corrected Chlorophyll-a (ug/L)	0.049	0.531	0.675	0.023	0.049	0.531	0.675	0.023
21FLVEMDTR02	2634A	Tomoka River - 3M	Specific Conductivity (umhos/cm)	0.017	0.821	0.864	6.873	0.017	0.821	0.864	6.874
21FLVEMDTR02	2634A	Tomoka River - 3M	Dissolved Oxygen (mg/L)	-0.022	0.763	0.834	-0.004	-0.022	0.763	0.834	-0.004
21FLVEMDTR02	2634A	Tomoka River - 3M	Dissolved Oxygen (%)	0.049	0.487	0.514	0.154	0.049	0.487	0.514	0.154
21FLVEMDTR02	2634A	Tomoka River - 3M	Salinity (psu)	0.070	0.304	0.474	0.025	0.070	0.304	0.474	0.025
21FLVEMDTR02	2634A	Tomoka River - 3M	Secchi Depth (m)	0.064	0.330	0.509	0.000	0.064	0.330	0.509	0.000
21FLVEMDTR02	2634A	Tomoka River - 3M	Total Nitrogen (mg/L)	0.017	0.845	0.901	0.002	0.017	0.845	0.901	0.002
21FLVEMDTR02	2634A	Tomoka River - 3M	Total Phosphorus (mg/L)	0.050	0.519	0.695	0.000	0.050	0.519	0.695	0.000
21FLSJWM27010579	2634	Tomoka River - 3F	Specific Conductivity (umhos/cm)	0.141	0.002	0.118	3.633	0.141	0.002	0.118	3.633
21FLSJWM27010579	2634	Tomoka River - 3F	Dissolved Oxygen (mg/L)	-0.080	0.082	0.212	-0.020	-0.080	0.082	0.212	-0.020
21FLSJWM27010579	2634	Tomoka River - 3F	Dissolved Oxygen (%)	-0.033	0.717	0.776	-0.036	-0.033	0.717	0.776	-0.036
21FLSJWM27010579	2634	Tomoka River - 3F	Secchi Depth (m)	0.102	0.096	0.185	0.001	0.102	0.096	0.185	0.001
21FLSJWM27010579	2634	Tomoka River - 3F	Total Nitrogen (mg/L)	-0.009	0.851	0.913	-0.001	-0.009	0.851	0.913	-0.001
21FLSJWM27010579	2634	Tomoka River - 3F	Total Phosphorus (mg/L)	0.141	0.003	0.016	0.000	0.140	0.003	0.016	0.000
21FLSJWM27010579	**2634**	**Tomoka River - 3F**	**Corrected Chlorophyll-a (ug/L)**	**0.185**	**0.000**	**0.009**	**0.019**	**0.185**	**0.000**	**0.009**	**0.019**
21FLSJWM27010579	**2634**	**Tomoka River - 3F**	**Salinity (psu)**	**0.179**	**0.000**	**0.044**	**0.003**	**0.179**	**0.000**	**0.044**	**0.003**
21FLVEMDTR03	2634	Tomoka River - 3F	Corrected Chlorophyll-a (ug/L)	0.078	0.299	0.360	0.020	0.076	0.310	0.370	0.020

Station	WBID	Waterbody	Parameter (Units)	Min Year	Max Year	Median	N	Tau	p	Slope	Trend Direction	Trend Magnitude	Seasonality	corr_1	corr_2	auto-correlation
21FLVEMDTR03	2634	Tomoka River - 3F	Specific Conductivity (umhos/cm)	1993	2019	650	135	0.106	0.122	10.031	No Trend	Shallow	Y	N	Y	N
21FLVEMDTR03	2634	Tomoka River - 3F	Salinity (psu)	1993	2019	0.3	139	0.092	0.169	0.004	No Trend	Shallow	Y	N	Y	N
21FLVEMDTR03	2634	Tomoka River - 3F	Secchi Depth (m)	1993	2019	0.8	140	0.094	0.427	0.007	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDTR03	2634	Tomoka River - 3F	Total Nitrogen (mg/L)	1993	2019	1.040	109	-0.031	0.706	-0.002	No Trend	Shallow	Y	Y	N	N
21FLVEMDTR03	2634	Tomoka River - 3F	Total Phosphorus (mg/L)	1993	2019	0.055	111	-0.023	1.000	0.000	No Trend	Shallow	N	N	N	N
21FLVEMDTR03	**2634**	**Tomoka River - 3F**	**Dissolved Oxygen (mg/L)**	**1993**	**2019**	**4.05**	**137**	**-0.170**	**0.012**	**-0.059**	**Decreasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDTR03	**2634**	**Tomoka River - 3F**	**Dissolved Oxygen (%)**	**1993**	**2019**	**49.05**	**132**	**-0.175**	**0.011**	**-0.515**	**Decreasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDTR04	2634	Tomoka River - 3F	Corrected Chlorophyll-a (ug/L)	1993	2019	0.72	107	-0.142	0.074	-0.011	No Trend	Shallow	N	Y	N	N
21FLVEMDTR04	2634	Tomoka River - 3F	Specific Conductivity (umhos/cm)	1993	2019	244	123	0.085	0.243	2.029	No Trend	Shallow	N	N	Y	N
21FLVEMDTR04	2634	Tomoka River - 3F	Dissolved Oxygen (mg/L)	1993	2019	5.05	125	-0.040	0.591	-0.008	No Trend	Shallow	Y	Y	N	N
21FLVEMDTR04	2634	Tomoka River - 3F	Dissolved Oxygen (%)	1993	2019	58.97	121	0.027	0.725	0.034	No Trend	Shallow	Y	Y	N	N
21FLVEMDTR04	2634	Tomoka River - 3F	Salinity (psu)	1993	2019	0.1	126	0.123	0.159	0.001	No Trend	Shallow	N	Y	Y	Y
21FLVEMDTR04	2634	Tomoka River - 3F	Total Phosphorus (mg/L)	1993	2019	0.038	104	0.040	1.000	0.000	No Trend	Shallow	N	N	N	N
21FLVEMDTR04	**2634**	**Tomoka River - 3F**	**Total Nitrogen (mg/L)**	**1993**	**2019**	**1.049**	**102**	**-0.241**	**0.003**	**-0.016**	**Decreasing**	**Shallow**	**N**	**Y**	**N**	**N**
21FLVEMDTR04	**2634**	**Tomoka River - 3F**	**Secchi Depth (m)**	**1993**	**2019**	**0.6**	**129**	**0.194**	**0.005**	**0.009**	**Increasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Specific Conductivity (umhos/cm)	1991	2019	31000	155	0.098	0.288	301.600	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Dissolved Oxygen (%)	1991	2019	74.80	149	0.102	0.107	0.157	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Salinity (psu)	1991	2019	19.4	155	0.089	0.346	0.143	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Secchi Depth (m)	1993	2019	0.7	146	0.066	1.000	0.000	No Trend	Shallow	N	Y	Y	Y
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Total Nitrogen (mg/L)	1991	2019	0.971	126	-0.148	0.260	-0.017	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Total Phosphorus (mg/L)	1991	2019	0.110	129	-0.132	0.057	-0.001	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL03	**2363C**	**Tomoka Basin - 3M**	**Dissolved Oxygen (mg/L)**	**1991**	**2019**	**6.19**	**152**	**-0.133**	**0.034**	**-0.019**	**Decreasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLVEMDHL03	**2363C**	**Tomoka Basin - 3M**	**Corrected Chlorophyll-a (ug/L)**	**1991**	**2019**	**5.55**	**134**	**0.159**	**0.019**	**0.090**	**Increasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLSJWM27010037	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	1995	2017	5.12	130	-0.073	0.300	-0.061	No Trend	Shallow	N	Y	N	N
21FLSJWM27010037	2363B	Halifax River - 3M	Dissolved Oxygen (mg/L)	1995	2017	6.44	132	-0.120	0.086	-0.021	No Trend	Shallow	Y	N	N	N
21FLSJWM27010037	2363B	Halifax River - 3M	Dissolved Oxygen (%)	1995	2017	84.05	132	-0.050	1.000	0.000	No Trend	Shallow	Y	N	N	N
21FLSJWM27010037	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1995	2017	0.750	132	-0.194	0.053	-0.013	No Trend	Shallow	Y	Y	Y	Y
21FLSJWM27010037	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	1995	2017	0.136	132	0.071	0.315	0.001	No Trend	Shallow	Y	N	Y	N
21FLSJWM27010037	**2363B**	**Halifax River - 3M**	**Specific Conductivity (umhos/cm)**	**1995**	**2017**	**36965**	**134**	**0.236**	**0.019**	**543.286**	**Increasing**	**Shallow**	**Y**	**Y**	**Y**	**Y**
21FLSJWM27010037	**2363B**	**Halifax River - 3M**	**Salinity (psu)**	**1995**	**2017**	**23.8**	**133**	**0.244**	**0.012**	**0.411**	**Increasing**	**Shallow**	**Y**	**Y**	**Y**	**Y**
21FLVEMDHL04	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	1993	2019	35600	140	0.141	0.135	357.337	No Trend	Shallow	N	Y	Y	Y
21FLVEMDHL04	2363B	Halifax River - 3M	Dissolved Oxygen (mg/L)	1993	2019	6.01	138	-0.084	0.418	-0.014	No Trend	Shallow	Y	Y	Y	Y

Station	WBID	Waterbody	Parameter (Units)	unadj_Tau	unadj_P without	unadj_P with	unadj_Slope	adj_Tau	adj_P without	adj_P with	adj_Slope
21FLVEMDTR03	2634	Tomoka River - 3F	Specific Conductivity (umhos/cm)	0.106	0.122	0.158	10.031	0.106	0.122	0.158	10.031
21FLVEMDTR03	2634	Tomoka River - 3F	Salinity (psu)	0.092	0.169	0.290	0.004	0.092	0.169	0.290	0.004
21FLVEMDTR03	2634	Tomoka River - 3F	Secchi Depth (m)	0.094	0.155	0.427	0.007	0.094	0.155	0.427	0.007
21FLVEMDTR03	2634	Tomoka River - 3F	Total Nitrogen (mg/L)	-0.031	0.706	0.812	-0.002	-0.031	0.706	0.812	-0.002
21FLVEMDTR03	2634	Tomoka River - 3F	Total Phosphorus (mg/L)	-0.023	0.786	0.871	0.000	-0.023	0.786	0.871	0.000
21FLVEMDTR03	**2634**	**Tomoka River - 3F**	**Dissolved Oxygen (mg/L)**	**-0.170**	**0.012**	**0.092**	**-0.059**	**-0.170**	**0.012**	**0.092**	**-0.059**
21FLVEMDTR03	**2634**	**Tomoka River - 3F**	**Dissolved Oxygen (%)**	**-0.175**	**0.011**	**0.082**	**-0.515**	**-0.175**	**0.011**	**0.082**	**-0.515**
21FLVEMDTR04	2634	Tomoka River - 3F	Corrected Chlorophyll-a (ug/L)	-0.142	0.074	0.219	-0.011	-0.142	0.074	0.219	-0.011
21FLVEMDTR04	2634	Tomoka River - 3F	Specific Conductivity (umhos/cm)	0.085	0.243	0.291	2.029	0.085	0.243	0.291	2.029
21FLVEMDTR04	2634	Tomoka River - 3F	Dissolved Oxygen (mg/L)	-0.040	0.591	0.737	-0.008	-0.040	0.591	0.737	-0.008
21FLVEMDTR04	2634	Tomoka River - 3F	Dissolved Oxygen (%)	0.027	0.725	0.823	0.034	0.027	0.725	0.823	0.034
21FLVEMDTR04	2634	Tomoka River - 3F	Salinity (psu)	0.123	0.076	0.159	0.001	0.123	0.076	0.159	0.001
21FLVEMDTR04	2634	Tomoka River - 3F	Total Phosphorus (mg/L)	0.040	0.632	0.786	0.000	0.040	0.632	0.786	0.000
21FLVEMDTR04	**2634**	**Tomoka River - 3F**	**Total Nitrogen (mg/L)**	**-0.241**	**0.003**	**0.076**	**-0.016**	**-0.241**	**0.003**	**0.076**	**-0.016**
21FLVEMDTR04	**2634**	**Tomoka River - 3F**	**Secchi Depth (m)**	**0.194**	**0.005**	**0.046**	**0.009**	**0.194**	**0.005**	**0.046**	**0.009**
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Specific Conductivity (umhos/cm)	0.098	0.115	0.288	301.600	0.098	0.115	0.288	301.600
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Dissolved Oxygen (%)	0.102	0.107	0.246	0.157	0.102	0.107	0.246	0.157
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Salinity (psu)	0.089	0.155	0.346	0.143	0.089	0.155	0.346	0.143
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Secchi Depth (m)	0.066	0.298	0.430	0.000	0.066	0.298	0.430	0.000
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Total Nitrogen (mg/L)	-0.148	0.036	0.260	-0.017	-0.148	0.036	0.260	-0.017
21FLVEMDHL03	2363C	Tomoka Basin - 3M	Total Phosphorus (mg/L)	-0.132	0.057	0.124	-0.001	-0.132	0.057	0.124	-0.001
21FLVEMDHL03	**2363C**	**Tomoka Basin - 3M**	**Dissolved Oxygen (mg/L)**	**-0.133**	**0.034**	**0.144**	**-0.019**	**-0.133**	**0.034**	**0.144**	**-0.019**
21FLVEMDHL03	**2363C**	**Tomoka Basin - 3M**	**Corrected Chlorophyll-a (ug/L)**	**0.159**	**0.019**	**0.068**	**0.090**	**0.159**	**0.019**	**0.068**	**0.090**
21FLSJWM27010037	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	-0.073	0.300	0.427	-0.061	-0.073	0.300	0.427	-0.061
21FLSJWM27010037	2363B	Halifax River - 3M	Dissolved Oxygen (mg/L)	-0.120	0.086	0.182	-0.021	-0.120	0.086	0.182	-0.021
21FLSJWM27010037	2363B	Halifax River - 3M	Dissolved Oxygen (%)	-0.050	0.474	0.582	0.000	-0.050	0.474	0.582	0.000
21FLSJWM27010037	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	-0.194	0.005	0.053	-0.013	-0.194	0.005	0.053	-0.013
21FLSJWM27010037	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	0.071	0.315	0.530	0.001	0.071	0.315	0.530	0.001
21FLSJWM27010037	**2363B**	**Halifax River - 3M**	**Specific Conductivity (umhos/cm)**	**0.236**	**0.001**	**0.019**	**543.286**	**0.236**	**0.001**	**0.019**	**543.286**
21FLSJWM27010037	**2363B**	**Halifax River - 3M**	**Salinity (psu)**	**0.244**	**0.000**	**0.012**	**0.411**	**0.244**	**0.000**	**0.012**	**0.411**
21FLVEMDHL04	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	0.141	0.033	0.135	357.337	0.141	0.033	0.135	357.337
21FLVEMDHL04	2363B	Halifax River - 3M	Dissolved Oxygen (mg/L)	-0.084	0.213	0.418	-0.014	-0.084	0.213	0.418	-0.014

Station	WBID	Waterbody	Parameter (Units)	Min Year	Max Year	Median	N	Tau	p	Slope	Trend Direction	Trend Magnitude	Seasonality	corr_1	corr_2	auto-correlation
21FLVEMDHL04	2363B	Halifax River - 3M	Dissolved Oxygen (%)	1993	2019	73.30	134	0.090	0.382	0.156	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL04	2363B	Halifax River - 3M	Salinity (psu)	1993	2019	22.4	141	0.153	0.128	0.254	No Trend	Shallow	N	Y	Y	Y
21FLVEMDHL04	2363B	Halifax River - 3M	Secchi Depth (m)	1993	2019	0.6	145	0.109	1.000	0.000	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL04	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1993	2019	0.855	117	0.015	0.907	0.001	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL04	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	1993	2019	0.120	119	-0.120	0.100	-0.001	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL04	**2363B**	**Halifax River - 3M**	**Corrected Chlorophyll-a (ug/L)**	**1993**	**2019**	**6.10**	**122**	**0.150**	**0.038**	**0.103**	**Increasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDHL05	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	1991	2019	6.56	135	0.145	0.115	0.086	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL05	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	1991	2019	34800	154	0.085	0.337	182.245	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL05	2363B	Halifax River - 3M	Dissolved Oxygen (%)	1991	2019	80.40	150	0.081	0.199	0.114	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL05	2363B	Halifax River - 3M	Salinity (psu)	1991	2019	21.7	155	0.060	0.339	0.082	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL05	2363B	Halifax River - 3M	Secchi Depth (m)	1993	2019	0.6	145	0.047	1.000	0.000	No Trend	Shallow	Y	N	N	N
21FLVEMDHL05	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1991	2019	0.876	129	-0.146	0.227	-0.009	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL05	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	1991	2019	0.120	131	-0.030	1.000	0.000	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL05	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**1991**	**2019**	**6.60**	**152**	**-0.149**	**0.017**	**-0.023**	**Decreasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLVEMDHL06	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	1991	2019	6.42	138	0.024	0.729	0.016	No Trend	Shallow	Y	N	N	N
21FLVEMDHL06	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	1991	2019	35700	155	0.105	0.238	239.000	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL06	2363B	Halifax River - 3M	Dissolved Oxygen (mg/L)	1991	2019	6.61	154	-0.116	0.062	-0.017	No Trend	Shallow	Y	N	N	N
21FLVEMDHL06	2363B	Halifax River - 3M	Dissolved Oxygen (%)	1991	2019	80.85	151	0.080	0.201	0.088	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL06	2363B	Halifax River - 3M	Salinity (psu)	1991	2019	22.3	157	0.090	0.319	0.138	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL06	2363B	Halifax River - 3M	Secchi Depth (m)	1993	2019	0.7	148	0.047	1.000	0.000	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL06	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1991	2019	0.904	129	-0.126	0.357	-0.011	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL06	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	1991	2019	0.130	131	-0.070	0.311	-0.001	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL07	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	1991	2019	6.65	132	-0.072	0.299	-0.064	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL07	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	1991	2019	33900	151	0.087	0.316	185.539	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL07	2363B	Halifax River - 3M	Dissolved Oxygen (%)	1991	2019	83.55	147	0.008	1.000	0.000	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL07	2363B	Halifax River - 3M	Salinity (psu)	1991	2019	21.5	152	0.073	0.428	0.107	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL07	2363B	Halifax River - 3M	Secchi Depth (m)	1993	2019	0.7	143	0.025	1.000	0.000	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL07	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1991	2019	0.847	125	-0.183	0.187	-0.017	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL07	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	1991	2019	0.140	127	0.002	1.000	0.000	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL07	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**1991**	**2019**	**6.82**	**150**	**-0.184**	**0.003**	**-0.029**	**Decreasing**	**Shallow**	**Y**	**N**	**Y**	**N**
21FLVEMDHL08	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	1993	2019	6.30	175	-0.071	0.403	-0.051	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL08	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	1993	2019	35985	208	0.120	0.160	254.845	No Trend	Shallow	Y	Y	Y	Y

Station	WBID	Waterbody	Parameter (Units)	unadj_Tau	unadj_P without	unadj_P with	unadj_Slope	adj_Tau	adj_P without	adj_P with	adj_Slope
21FLVEMDHL04	2363B	Halifax River - 3M	Dissolved Oxygen (%)	0.090	0.188	0.382	0.156	0.090	0.188	0.382	0.156
21FLVEMDHL04	2363B	Halifax River - 3M	Salinity (psu)	0.153	0.020	0.128	0.254	0.153	0.020	0.128	0.254
21FLVEMDHL04	2363B	Halifax River - 3M	Secchi Depth (m)	0.109	0.084	0.181	0.000	0.109	0.084	0.181	0.000
21FLVEMDHL04	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	0.015	0.858	0.907	0.001	0.015	0.858	0.907	0.001
21FLVEMDHL04	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	-0.115	0.116	0.160	-0.001	-0.120	0.100	0.143	-0.001
21FLVEMDHL04	**2363B**	**Halifax River - 3M**	**Corrected Chlorophyll-a (ug/L)**	**0.150**	**0.038**	**0.109**	**0.103**	**0.150**	**0.038**	**0.109**	**0.103**
21FLVEMDHL05	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	0.145	0.032	0.115	0.086	0.145	0.032	0.115	0.086
21FLVEMDHL05	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	0.085	0.174	0.337	182.245	0.085	0.174	0.337	182.245
21FLVEMDHL05	2363B	Halifax River - 3M	Dissolved Oxygen (%)	0.081	0.199	0.362	0.114	0.081	0.199	0.362	0.114
21FLVEMDHL05	2363B	Halifax River - 3M	Salinity (psu)	0.060	0.339	0.502	0.082	0.060	0.339	0.502	0.082
21FLVEMDHL05	2363B	Halifax River - 3M	Secchi Depth (m)	0.047	0.468	0.545	0.000	0.047	0.468	0.545	0.000
21FLVEMDHL05	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	-0.146	0.037	0.227	-0.009	-0.146	0.037	0.227	-0.009
21FLVEMDHL05	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	-0.030	0.675	0.690	0.000	-0.030	0.675	0.690	0.000
21FLVEMDHL05	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**-0.149**	**0.017**	**0.110**	**-0.023**	**-0.149**	**0.017**	**0.110**	**-0.023**
21FLVEMDHL06	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	0.024	0.729	0.758	0.016	0.024	0.729	0.758	0.016
21FLVEMDHL06	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	0.105	0.092	0.238	239.000	0.105	0.092	0.238	239.000
21FLVEMDHL06	2363B	Halifax River - 3M	Dissolved Oxygen (mg/L)	-0.116	0.062	0.197	-0.017	-0.116	0.062	0.197	-0.017
21FLVEMDHL06	2363B	Halifax River - 3M	Dissolved Oxygen (%)	0.080	0.201	0.322	0.088	0.080	0.201	0.322	0.088
21FLVEMDHL06	2363B	Halifax River - 3M	Salinity (psu)	0.090	0.143	0.319	0.138	0.090	0.143	0.319	0.138
21FLVEMDHL06	2363B	Halifax River - 3M	Secchi Depth (m)	0.047	0.458	0.500	0.000	0.047	0.458	0.500	0.000
21FLVEMDHL06	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	-0.126	0.072	0.357	-0.011	-0.126	0.072	0.357	-0.011
21FLVEMDHL06	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	-0.070	0.311	0.352	-0.001	-0.070	0.311	0.352	-0.001
21FLVEMDHL07	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	-0.072	0.299	0.400	-0.064	-0.072	0.299	0.400	-0.064
21FLVEMDHL07	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	0.087	0.169	0.316	185.539	0.087	0.169	0.316	185.539
21FLVEMDHL07	2363B	Halifax River - 3M	Dissolved Oxygen (%)	0.008	0.910	0.929	0.000	0.008	0.910	0.929	0.000
21FLVEMDHL07	2363B	Halifax River - 3M	Salinity (psu)	0.073	0.250	0.428	0.107	0.073	0.250	0.428	0.107
21FLVEMDHL07	2363B	Halifax River - 3M	Secchi Depth (m)	0.025	0.714	0.742	0.000	0.025	0.714	0.742	0.000
21FLVEMDHL07	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	-0.185	0.009	0.183	-0.017	-0.183	0.010	0.187	-0.017
21FLVEMDHL07	2363B	Halifax River - 3M	Total Phosphorus (mg/L)	0.002	1.000	1.000	0.000	0.002	1.000	1.000	0.000
21FLVEMDHL07	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**-0.184**	**0.003**	**0.046**	**-0.029**	**-0.184**	**0.003**	**0.046**	**-0.029**
21FLVEMDHL08	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	-0.071	0.214	0.403	-0.051	-0.071	0.214	0.403	-0.051
21FLVEMDHL08	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	0.120	0.020	0.160	254.845	0.120	0.020	0.160	254.845

Station	WBID	Waterbody	Parameter (Units)	Min Year	Max Year	Median	N	Tau	p	Slope	Trend Direction	Trend Magnitude	Seasonality	corr_1	corr_2	auto-correlation
21FLVEMDHL08	2363B	Halifax River - 3M	Salinity (psu)	1993	2019	22.8	211	0.136	0.129	0.193	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL08	2363B	Halifax River - 3M	Secchi Depth (m)	1993	2019	0.7	218	0.143	0.056	0.007	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL08	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1993	2019	0.869	121	0.028	0.811	0.003	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL08	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**1993**	**2019**	**0.150**	**125**	**-0.190**	**0.042**	**-0.002**	**Decreasing**	**Shallow**	**Y**	**Y**	**Y**	**Y**
21FLVEMDHL08	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**1993**	**2019**	**6.67**	**205**	**-0.232**	**0.000**	**-0.042**	**Decreasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLVEMDHL08	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (%)**	**1993**	**2019**	**82.78**	**200**	**-0.152**	**0.003**	**-0.244**	**Decreasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDHL09	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	1991	2019	36460	220	0.096	0.237	198.000	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL09	2363B	Halifax River - 3M	Dissolved Oxygen (%)	1991	2019	83.29	213	-0.050	0.474	-0.033	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL09	2363B	Halifax River - 3M	Salinity (psu)	1991	2019	23.4	222	0.117	0.176	0.144	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL09	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1991	2019	0.937	136	-0.102	0.421	-0.010	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL09	**2363B**	**Halifax River - 3M**	**Corrected Chlorophyll-a (ug/L)**	**1991**	**2019**	**5.81**	**188**	**-0.127**	**0.021**	**-0.096**	**Decreasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDHL09	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**1991**	**2019**	**0.150**	**138**	**-0.204**	**0.002**	**-0.002**	**Decreasing**	**Shallow**	**Y**	**N**	**Y**	**N**
21FLVEMDHL09	**2363B**	**Halifax River - 3M**	**Secchi Depth (m)**	**1993**	**2019**	**0.7**	**217**	**0.211**	**0.000**	**0.009**	**Increasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDHL09	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**1991**	**2019**	**6.70**	**218**	**-0.220**	**0.000**	**-0.044**	**Decreasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLVEMDHL10	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	1993	2017	36700	195	0.179	0.054	360.000	No Trend	Shallow	N	Y	Y	Y
21FLVEMDHL10	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1993	2016	0.895	115	0.027	0.835	0.005	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Corrected Chlorophyll-a (ug/L)**	**1993**	**2017**	**5.34**	**169**	**-0.182**	**0.002**	**-0.117**	**Decreasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**1993**	**2016**	**0.150**	**118**	**-0.322**	**0.000**	**-0.004**	**Decreasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Secchi Depth (m)**	**1993**	**2017**	**0.8**	**207**	**0.246**	**0.000**	**0.015**	**Increasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**1993**	**2017**	**6.60**	**194**	**-0.275**	**0.000**	**-0.063**	**Decreasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (%)**	**1993**	**2017**	**81.30**	**187**	**-0.206**	**0.000**	**-0.446**	**Decreasing**	**Shallow**	**Y**	**Y**	**N**	**N**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Salinity (psu)**	**1993**	**2017**	**23.6**	**198**	**0.206**	**0.036**	**0.271**	**Increasing**	**Shallow**	**Y**	**Y**	**Y**	**Y**
21FLVEMDHL11	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	1991	2019	5.16	180	-0.105	0.062	-0.078	No Trend	Shallow	N	Y	N	N
21FLVEMDHL11	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	1991	2019	37550	212	0.091	0.282	174.688	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL11	2363B	Halifax River - 3M	Dissolved Oxygen (mg/L)	1991	2019	6.06	209	0.078	0.128	0.013	No Trend	Shallow	Y	N	N	N
21FLVEMDHL11	2363B	Halifax River - 3M	Salinity (psu)	1991	2019	24.0	214	0.112	0.192	0.146	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL11	2363B	Halifax River - 3M	Secchi Depth (m)	1993	2019	0.8	209	0.069	1.000	0.000	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL11	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1991	2019	0.919	133	-0.156	0.216	-0.017	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL11	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**1991**	**2019**	**0.150**	**137**	**-0.230**	**0.001**	**-0.002**	**Decreasing**	**Shallow**	**N**	**N**	**N**	**N**
21FLVEMDHL11	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (%)**	**1991**	**2019**	**74.70**	**192**	**0.219**	**0.000**	**0.398**	**Increasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLVEMDHL12	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	1991	2019	5.23	189	-0.049	0.376	-0.028	No Trend	Shallow	Y	Y	N	N
21FLVEMDHL12	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	1991	2019	37200	223	0.104	0.184	191.632	No Trend	Shallow	Y	Y	Y	Y

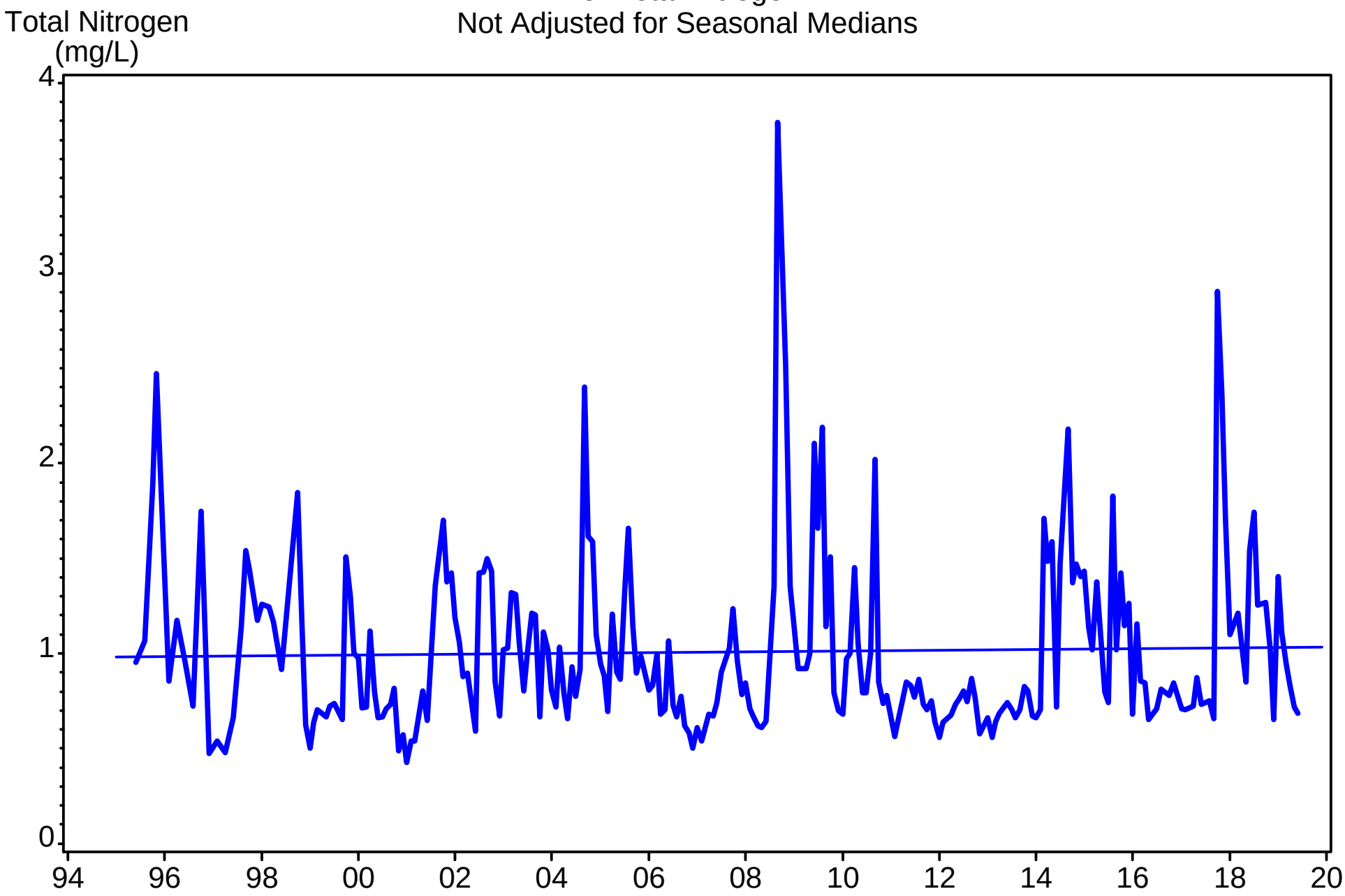
Station	WBID	Waterbody	Parameter (Units)	unadj_Tau	unadj_P without	unadj_P with	unadj_Slope	adj_Tau	adj_P without	adj_P with	adj_Slope
21FLVEMDHL08	2363B	Halifax River - 3M	Salinity (psu)	0.136	0.008	0.129	0.193	0.136	0.008	0.129	0.193
21FLVEMDHL08	2363B	Halifax River - 3M	Secchi Depth (m)	0.143	0.004	0.056	0.007	0.143	0.004	0.056	0.007
21FLVEMDHL08	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	0.028	0.718	0.811	0.003	0.028	0.718	0.811	0.003
21FLVEMDHL08	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**-0.190**	**0.007**	**0.042**	**-0.002**	**-0.190**	**0.007**	**0.042**	**-0.002**
21FLVEMDHL08	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**-0.232**	**0.000**	**0.009**	**-0.042**	**-0.232**	**0.000**	**0.009**	**-0.042**
21FLVEMDHL08	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (%)**	**-0.152**	**0.003**	**0.037**	**-0.244**	**-0.152**	**0.003**	**0.037**	**-0.244**
21FLVEMDHL09	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	0.096	0.054	0.237	198.000	0.096	0.054	0.237	198.000
21FLVEMDHL09	2363B	Halifax River - 3M	Dissolved Oxygen (%)	-0.050	0.319	0.474	-0.033	-0.050	0.319	0.474	-0.033
21FLVEMDHL09	2363B	Halifax River - 3M	Salinity (psu)	0.117	0.019	0.176	0.144	0.117	0.019	0.176	0.144
21FLVEMDHL09	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	-0.102	0.133	0.421	-0.010	-0.102	0.133	0.421	-0.010
21FLVEMDHL09	**2363B**	**Halifax River - 3M**	**Corrected Chlorophyll-a (ug/L)**	**-0.127**	**0.021**	**0.085**	**-0.096**	**-0.127**	**0.021**	**0.085**	**-0.096**
21FLVEMDHL09	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**-0.204**	**0.002**	**0.037**	**-0.002**	**-0.204**	**0.002**	**0.037**	**-0.002**
21FLVEMDHL09	**2363B**	**Halifax River - 3M**	**Secchi Depth (m)**	**0.211**	**0.000**	**0.006**	**0.009**	**0.211**	**0.000**	**0.006**	**0.009**
21FLVEMDHL09	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**-0.220**	**0.000**	**0.020**	**-0.044**	**-0.220**	**0.000**	**0.020**	**-0.044**
21FLVEMDHL10	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	0.179	0.001	0.054	360.000	0.179	0.001	0.054	360.000
21FLVEMDHL10	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	0.027	0.731	0.835	0.005	0.027	0.731	0.835	0.005
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Corrected Chlorophyll-a (ug/L)**	**-0.182**	**0.002**	**0.046**	**-0.117**	**-0.182**	**0.002**	**0.046**	**-0.117**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**-0.322**	**0.000**	**0.002**	**-0.004**	**-0.322**	**0.000**	**0.002**	**-0.004**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Secchi Depth (m)**	**0.246**	**0.000**	**0.004**	**0.015**	**0.246**	**0.000**	**0.004**	**0.015**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**-0.275**	**0.000**	**0.009**	**-0.063**	**-0.275**	**0.000**	**0.009**	**-0.063**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (%)**	**-0.206**	**0.000**	**0.020**	**-0.446**	**-0.206**	**0.000**	**0.020**	**-0.446**
21FLVEMDHL10	**2363B**	**Halifax River - 3M**	**Salinity (psu)**	**0.206**	**0.000**	**0.036**	**0.271**	**0.206**	**0.000**	**0.036**	**0.271**
21FLVEMDHL11	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	-0.105	0.062	0.106	-0.078	-0.105	0.062	0.106	-0.078
21FLVEMDHL11	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	0.091	0.075	0.282	174.688	0.091	0.075	0.282	174.688
21FLVEMDHL11	2363B	Halifax River - 3M	Dissolved Oxygen (mg/L)	0.078	0.128	0.267	0.013	0.078	0.128	0.267	0.013
21FLVEMDHL11	2363B	Halifax River - 3M	Salinity (psu)	0.112	0.027	0.192	0.146	0.112	0.027	0.192	0.146
21FLVEMDHL11	2363B	Halifax River - 3M	Secchi Depth (m)	0.069	0.171	0.351	0.000	0.069	0.171	0.351	0.000
21FLVEMDHL11	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	-0.157	0.021	0.211	-0.017	-0.156	0.023	0.216	-0.017
21FLVEMDHL11	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**-0.230**	**0.001**	**0.007**	**-0.002**	**-0.230**	**0.001**	**0.007**	**-0.002**
21FLVEMDHL11	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (%)**	**0.219**	**0.000**	**0.007**	**0.398**	**0.219**	**0.000**	**0.007**	**0.398**
21FLVEMDHL12	2363B	Halifax River - 3M	Corrected Chlorophyll-a (ug/L)	-0.049	0.376	0.468	-0.028	-0.049	0.376	0.468	-0.028
21FLVEMDHL12	2363B	Halifax River - 3M	Specific Conductivity (umhos/cm)	0.104	0.036	0.184	191.632	0.104	0.036	0.184	191.632

Station	WBID	Waterbody	Parameter (Units)	Min Year	Max Year	Median	N	Tau	p	Slope	Trend Direction	Trend Magnitude	Seasonality	corr_1	corr_2	auto-correlation
21FLVEMDHL12	2363B	Halifax River - 3M	Salinity (psu)	1991	2019	23.9	224	0.123	0.124	0.151	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL12	2363B	Halifax River - 3M	Secchi Depth (m)	1993	2019	0.9	220	-0.002	1.000	0.000	No Trend	Shallow	Y	Y	Y	Y
21FLVEMDHL12	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	1991	2019	0.860	143	-0.222	0.050	-0.016	No Trend	Shallow	N	Y	Y	Y
21FLVEMDHL12	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**1991**	**2019**	**0.150**	**150**	**-0.159**	**0.012**	**-0.002**	**Decreasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLVEMDHL12	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**1991**	**2019**	**6.29**	**220**	**0.236**	**0.000**	**0.042**	**Increasing**	**Shallow**	**Y**	**N**	**N**	**N**
21FLVEMDHL12	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (%)**	**1991**	**2019**	**75.83**	**204**	**0.354**	**0.000**	**0.769**	**Increasing**	**Shallow**	**Y**	**N**	**N**	**N**

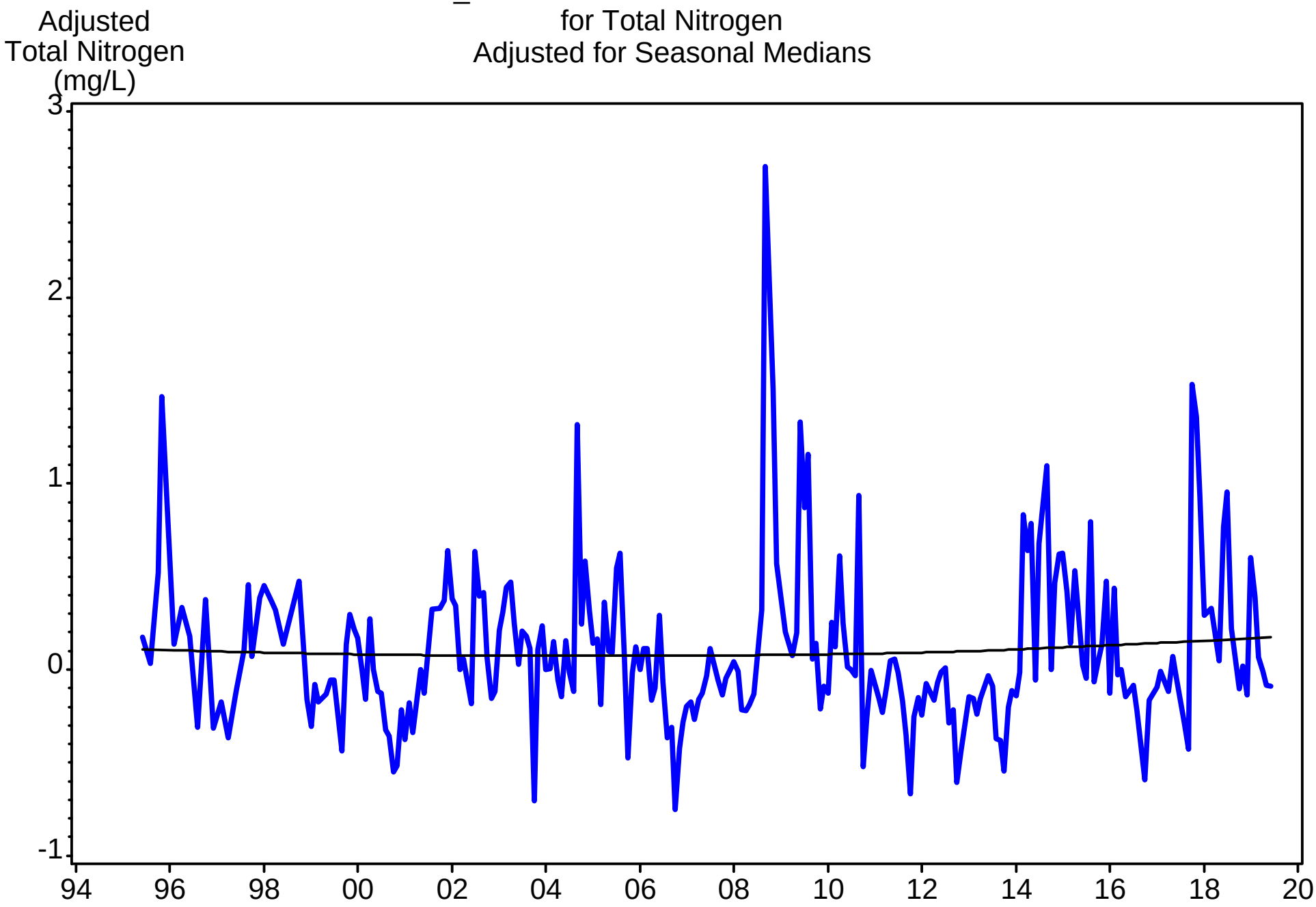
Station	WBID	Waterbody	Parameter (Units)	unadj_Tau	unadj_P without	unadj_P with	unadj_Slope	adj_Tau	adj_P without	adj_P with	adj_Slope
21FLVEMDHL12	2363B	Halifax River - 3M	Salinity (psu)	0.123	0.012	0.124	0.151	0.123	0.012	0.124	0.151
21FLVEMDHL12	2363B	Halifax River - 3M	Secchi Depth (m)	-0.002	0.983	0.988	0.000	-0.002	0.983	0.988	0.000
21FLVEMDHL12	2363B	Halifax River - 3M	Total Nitrogen (mg/L)	-0.222	0.001	0.050	-0.016	-0.220	0.001	0.052	-0.016
21FLVEMDHL12	**2363B**	**Halifax River - 3M**	**Total Phosphorus (mg/L)**	**-0.159**	**0.012**	**0.021**	**-0.002**	**-0.159**	**0.012**	**0.021**	**-0.002**
21FLVEMDHL12	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (mg/L)**	**0.236**	**0.000**	**0.000**	**0.042**	**0.236**	**0.000**	**0.000**	**0.042**
21FLVEMDHL12	**2363B**	**Halifax River - 3M**	**Dissolved Oxygen (%)**	**0.354**	**0.000**	**0.000**	**0.769**	**0.354**	**0.000**	**0.000**	**0.769**

S_21FLSJWM27010579 Trends

S_21FLSJWM27010579 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLSJWM27010579 Trends

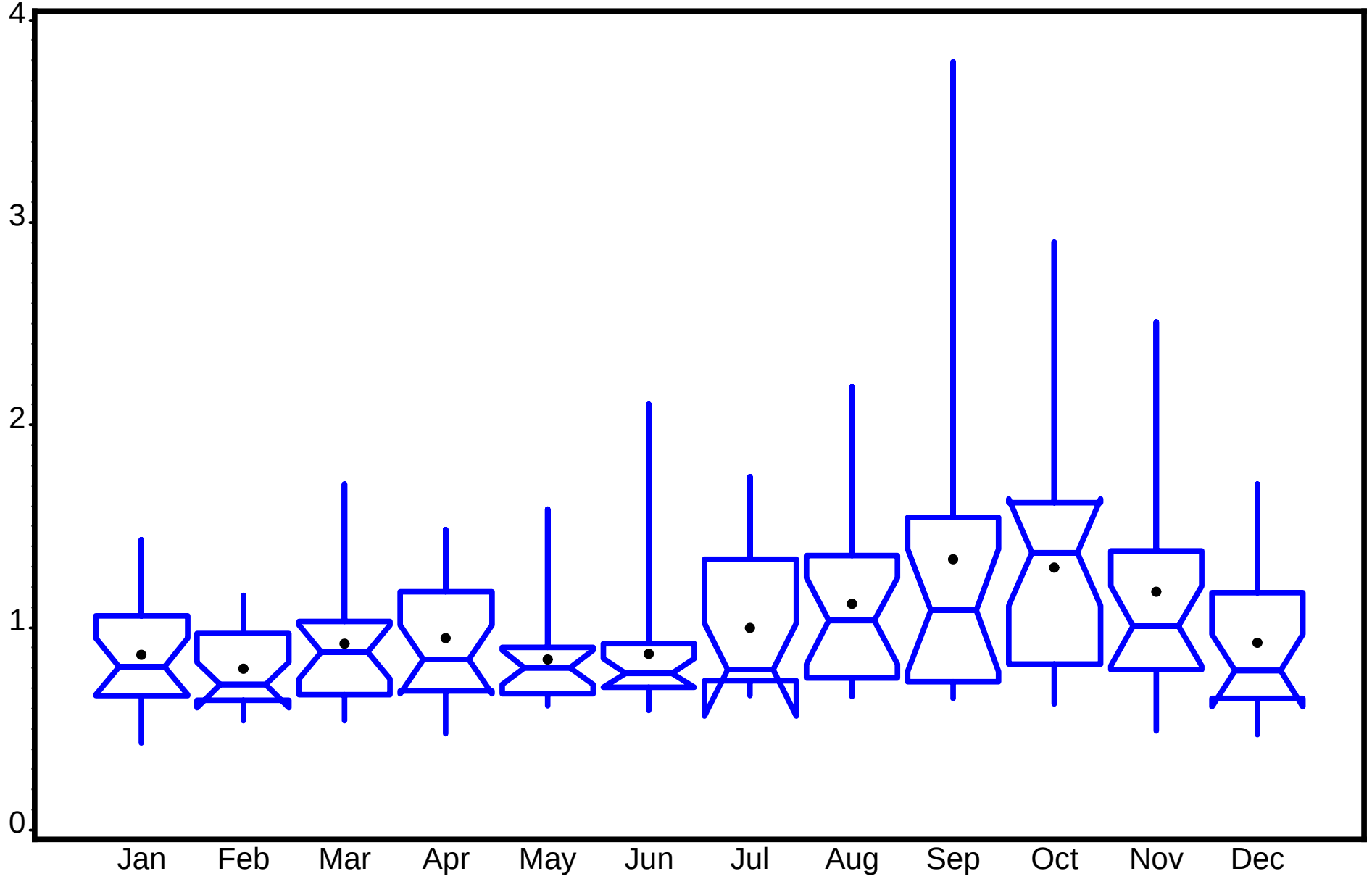


S_21FLSJWM27010579 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



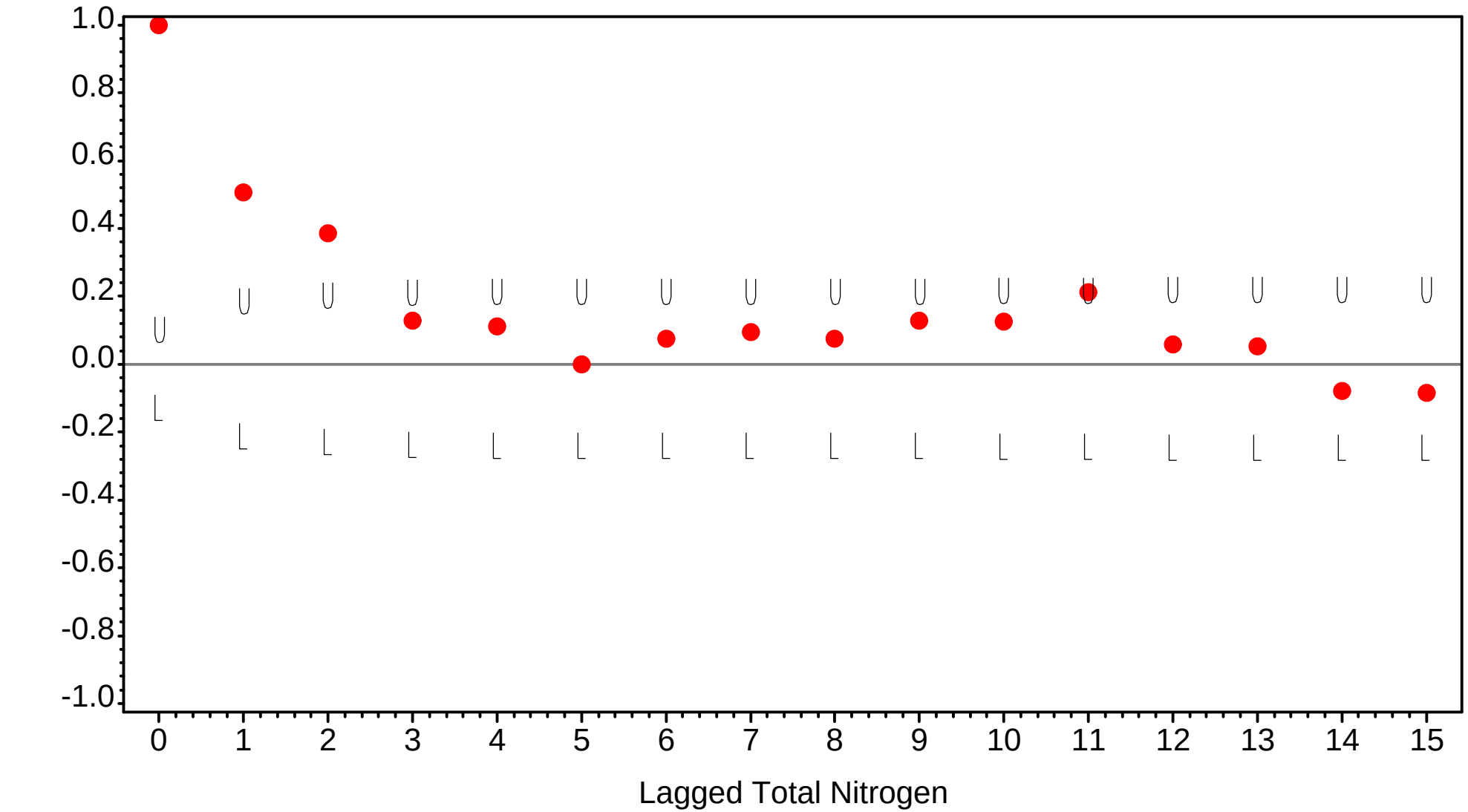
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.506	0.100	0.200	-0.200
2	0.387	0.108	0.216	-0.216
3	0.129	0.113	0.225	-0.225
4	0.112	0.113	0.226	-0.226
5	-0.001	0.114	0.227	-0.227
6	0.075	0.114	0.227	-0.227
7	0.094	0.114	0.227	-0.227
8	0.075	0.114	0.228	-0.228
9	0.127	0.114	0.228	-0.228
10	0.126	0.115	0.229	-0.229
11	0.213	0.115	0.230	-0.230
12	0.057	0.116	0.233	-0.233
13	0.052	0.116	0.233	-0.233
14	-0.079	0.117	0.233	-0.233
15	-0.084	0.117	0.233	-0.233

S_21FLSJWM27010579 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

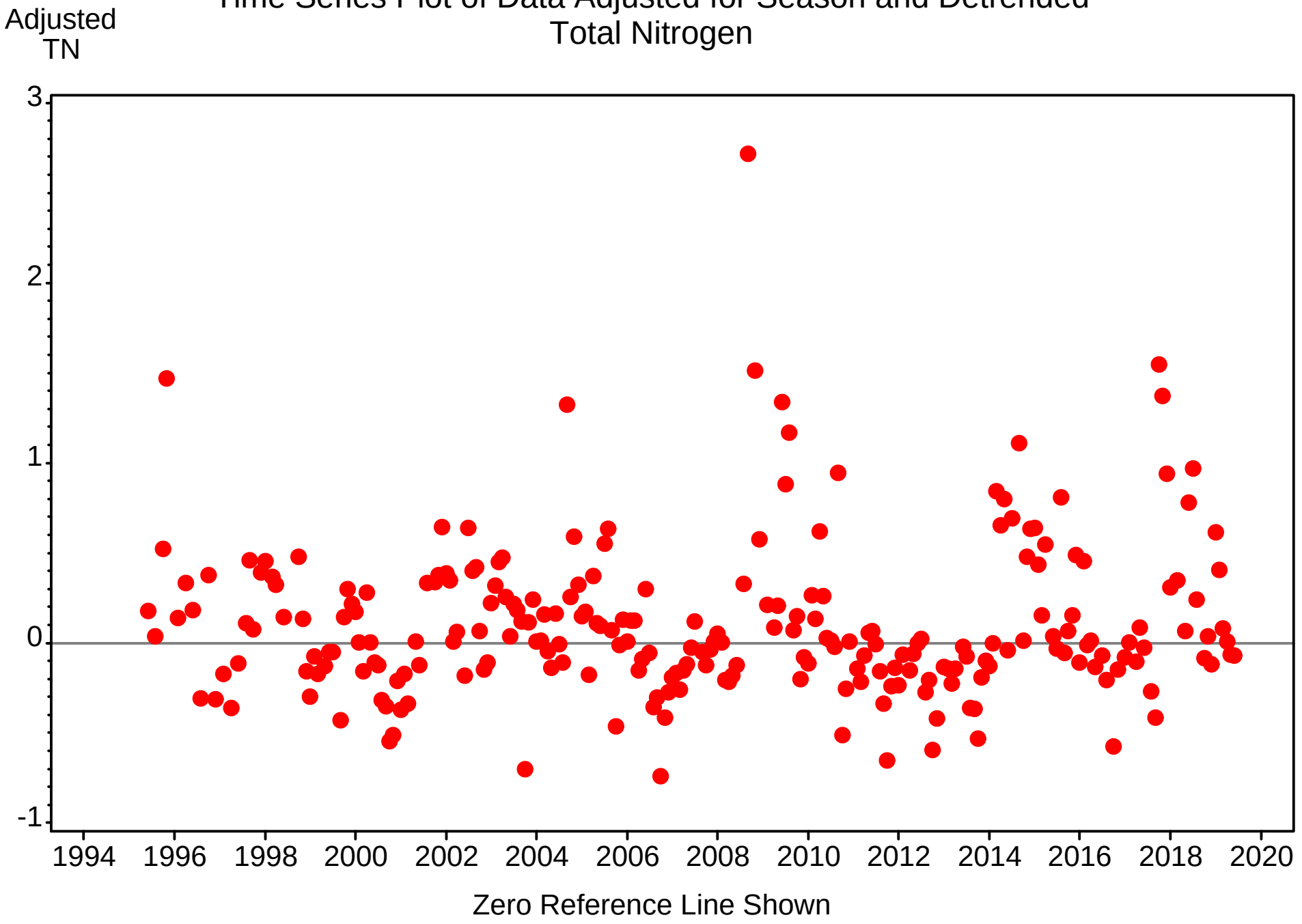
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-.009	0.851	0.913	-.001

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-.00915141	0.85080	0.91313	-.000654762

S_21FLSJWM27010579 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



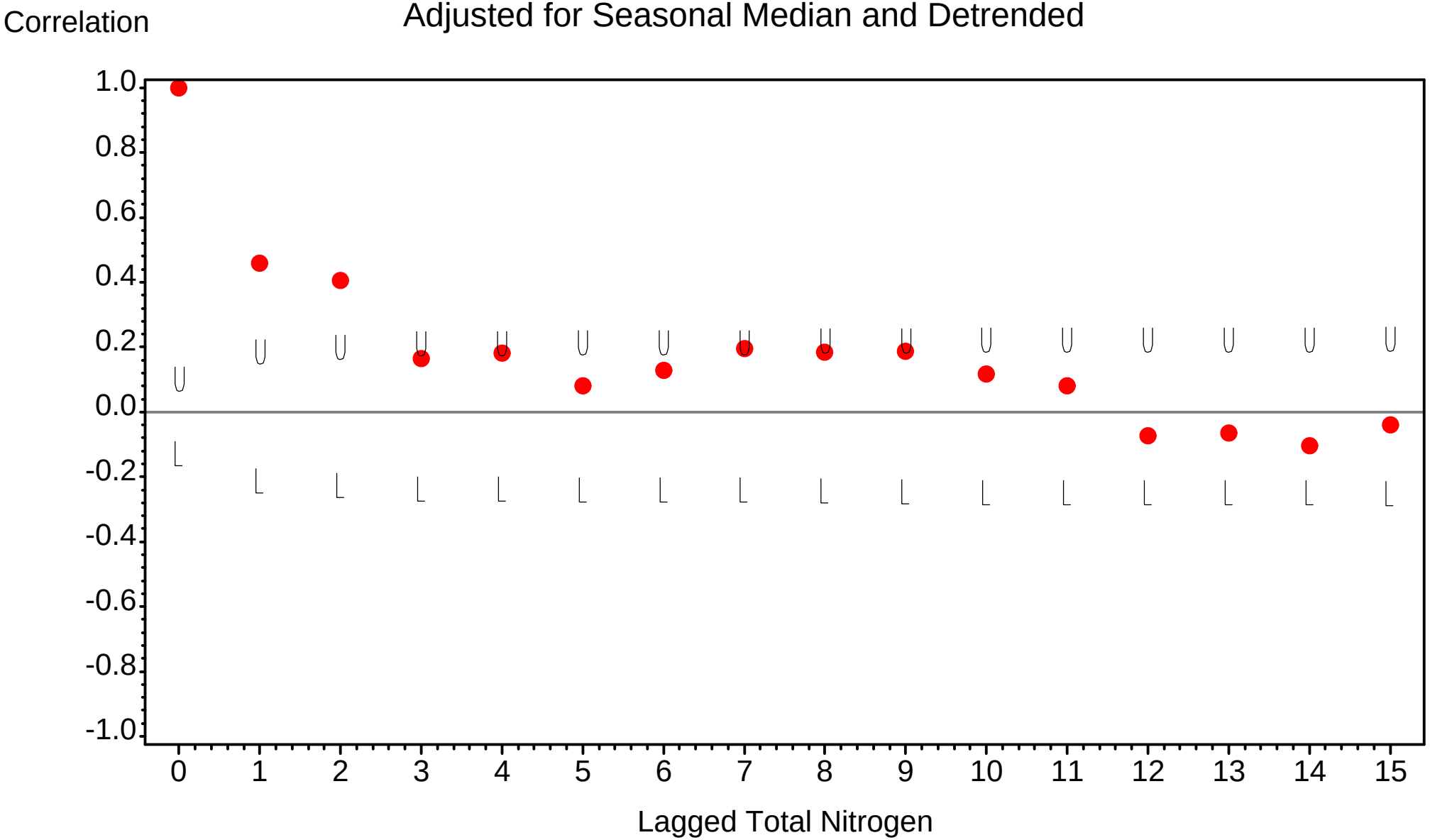
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.458	0.100	0.200	-0.200
2	0.405	0.107	0.214	-0.214
3	0.165	0.112	0.224	-0.224
4	0.181	0.113	0.225	-0.225
5	0.082	0.114	0.227	-0.227
6	0.128	0.114	0.227	-0.227
7	0.195	0.114	0.228	-0.228
8	0.185	0.115	0.231	-0.231
9	0.187	0.116	0.233	-0.233
10	0.117	0.117	0.235	-0.235
11	0.080	0.118	0.235	-0.235
12	-0.072	0.118	0.236	-0.236
13	-0.066	0.118	0.236	-0.236
14	-0.103	0.118	0.236	-0.236
15	-0.041	0.118	0.237	-0.237

S_21FLSJWM27010579 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

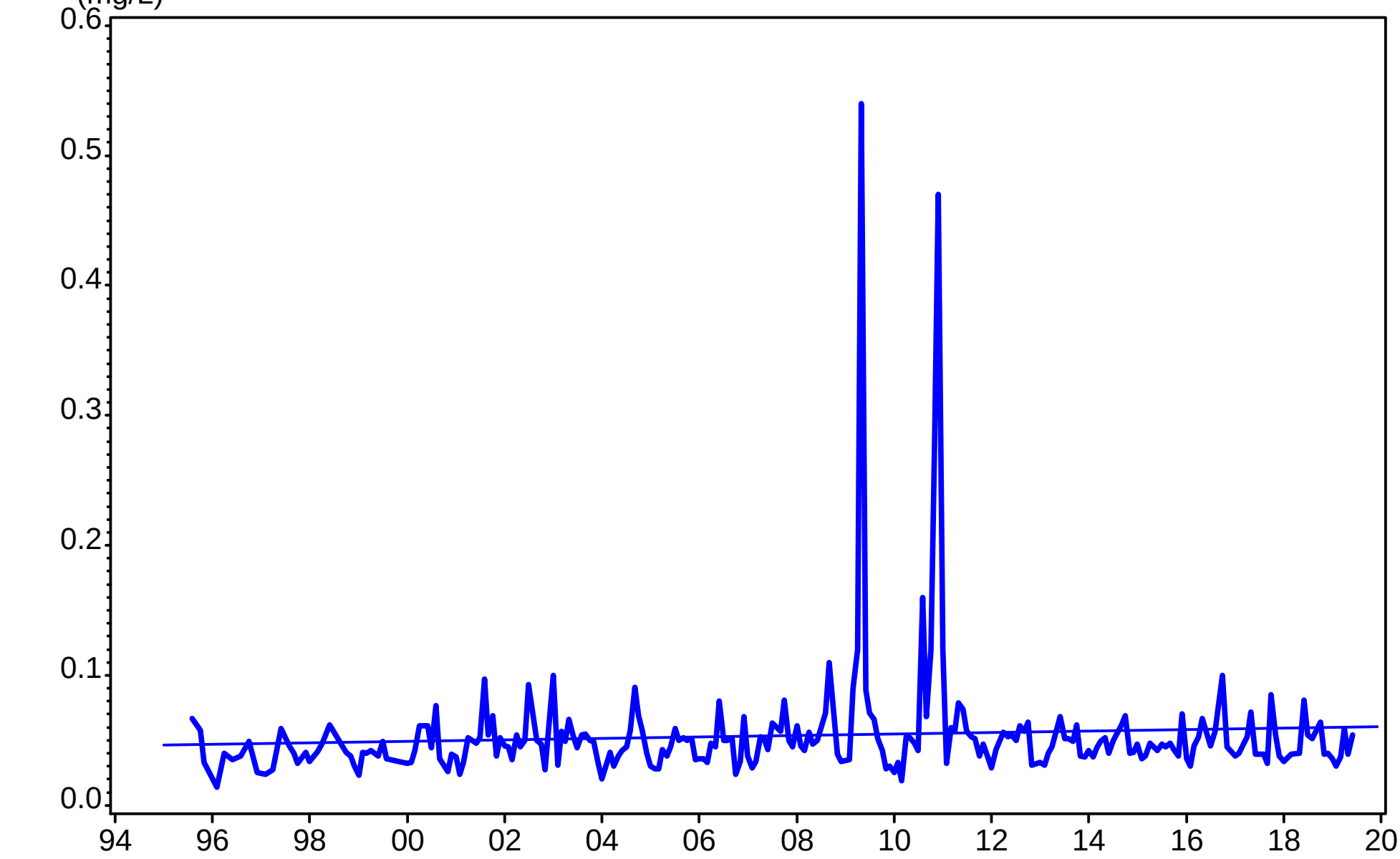


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

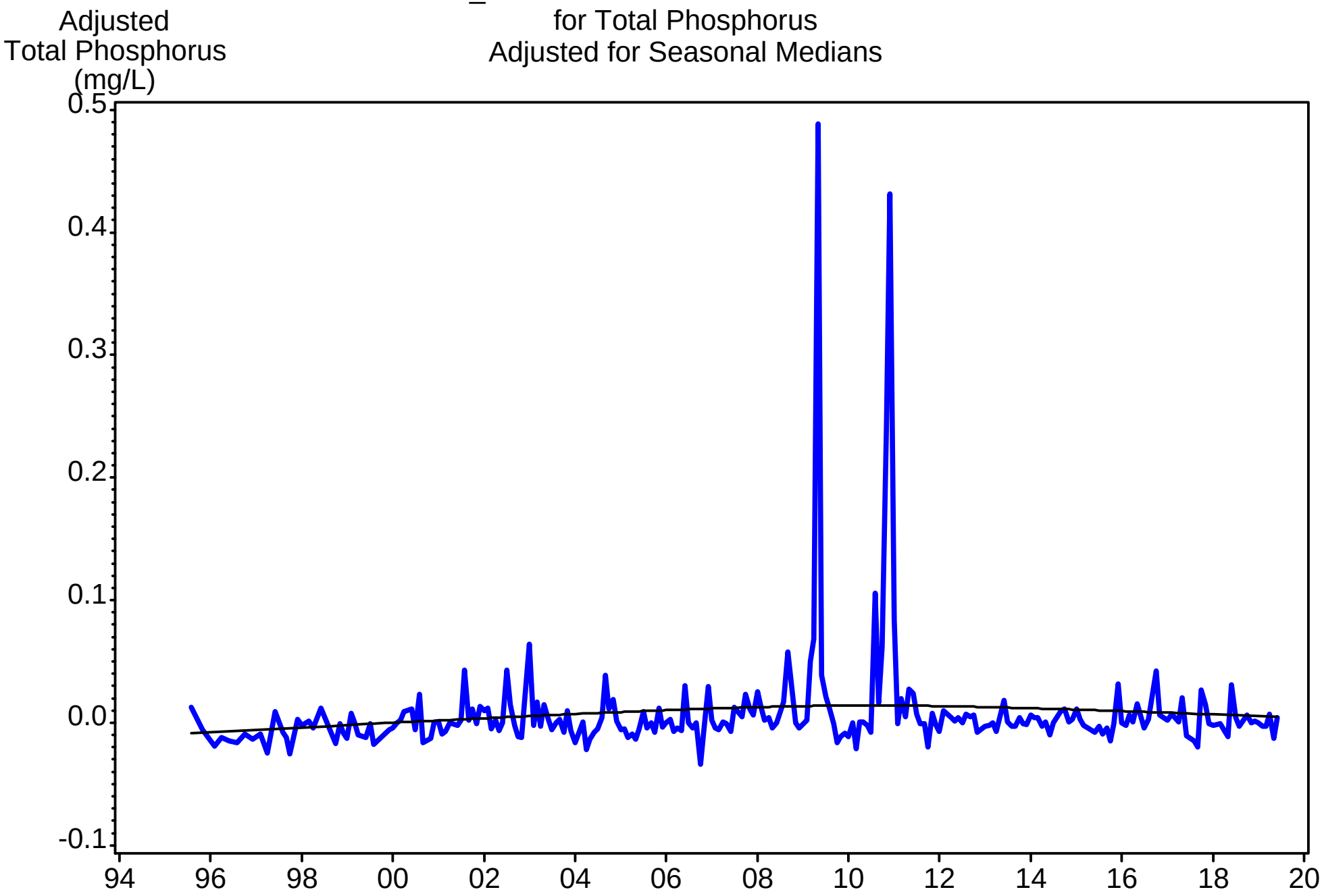
Zero Reference Line Shown

S_21FLSJWM27010579 Trends

S_21FLSJWM27010579 Monthly Data Time Series for Total Phosphorus Not Adjusted for Seasonal Medians



S_21FLSJWM27010579 Trends

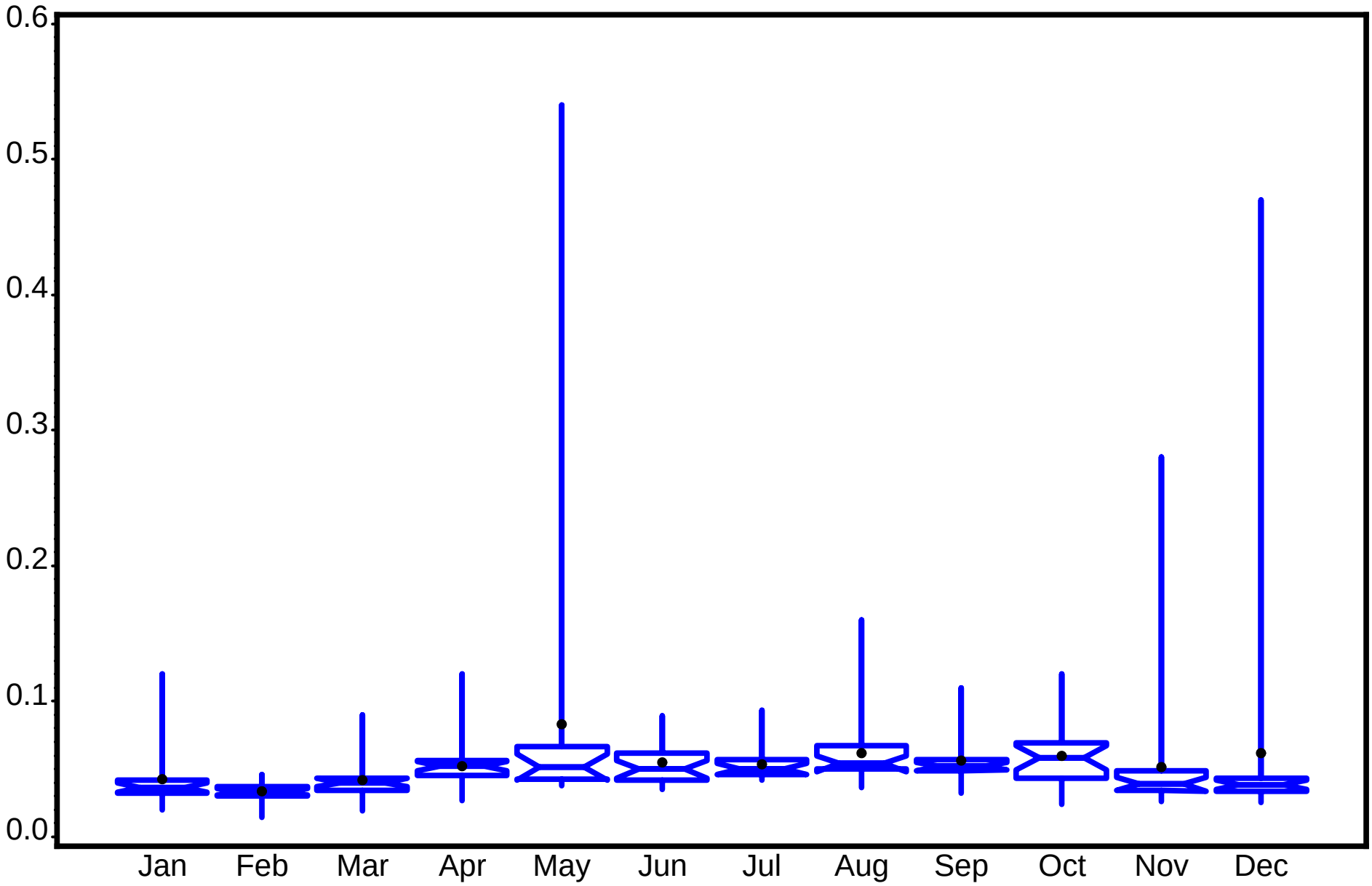


S_21FLSJWM27010579 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



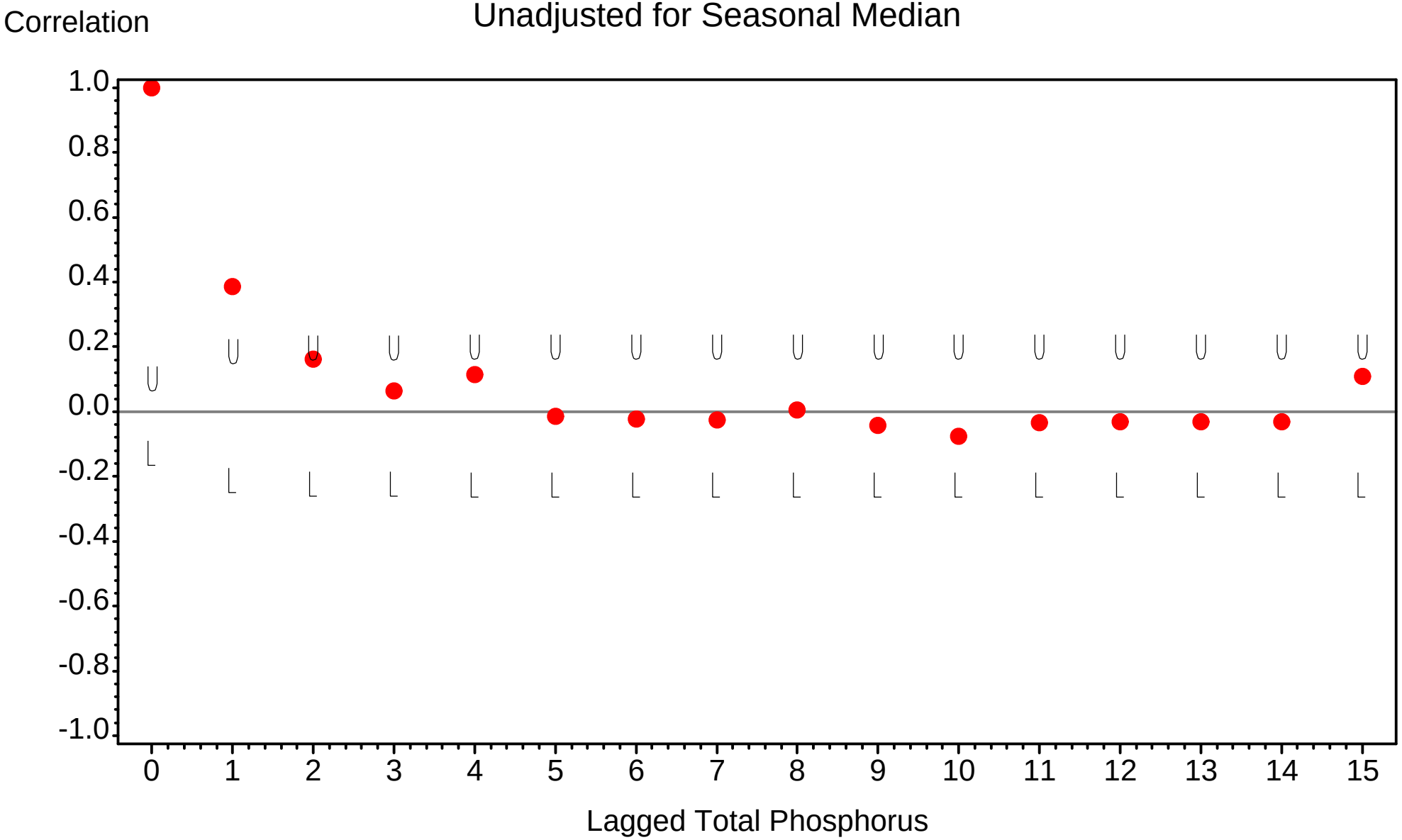
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.386	0.100	0.200	-0.200
2	0.161	0.105	0.210	-0.210
3	0.065	0.106	0.211	-0.211
4	0.115	0.106	0.212	-0.212
5	-0.015	0.106	0.212	-0.212
6	-0.024	0.106	0.212	-0.212
7	-0.025	0.106	0.212	-0.212
8	0.004	0.106	0.213	-0.213
9	-0.043	0.106	0.213	-0.213
10	-0.077	0.106	0.213	-0.213
11	-0.034	0.106	0.213	-0.213
12	-0.030	0.107	0.213	-0.213
13	-0.032	0.107	0.213	-0.213
14	-0.032	0.107	0.213	-0.213
15	0.110	0.107	0.213	-0.213

S_21FLSJWM27010579 Trends Appendix

Correlogram for Total Phosphorus

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

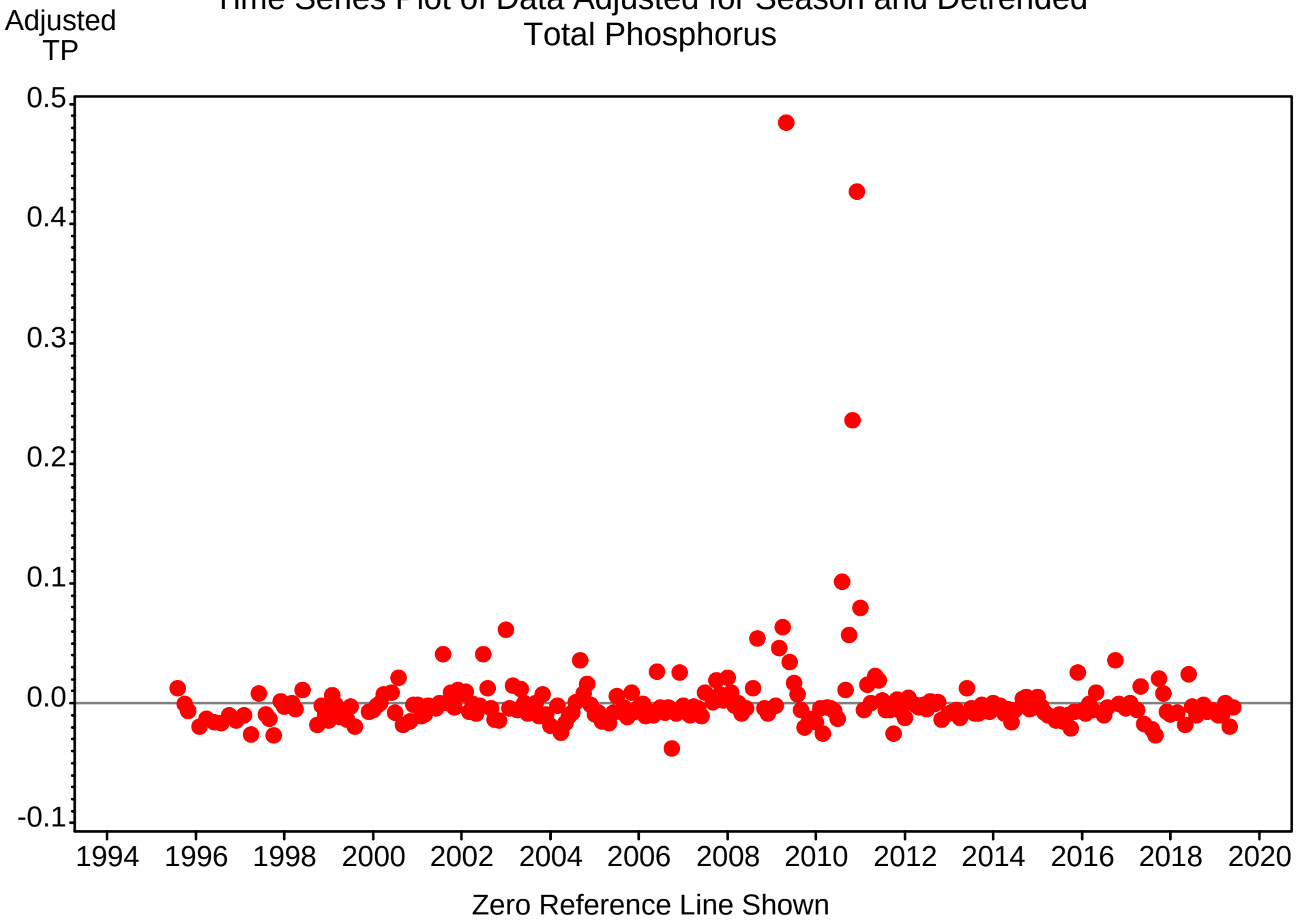
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.141	.003	0.016	0

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.13971	.0027492	0.016238	.000285714

S_21FLSJWM27010579 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

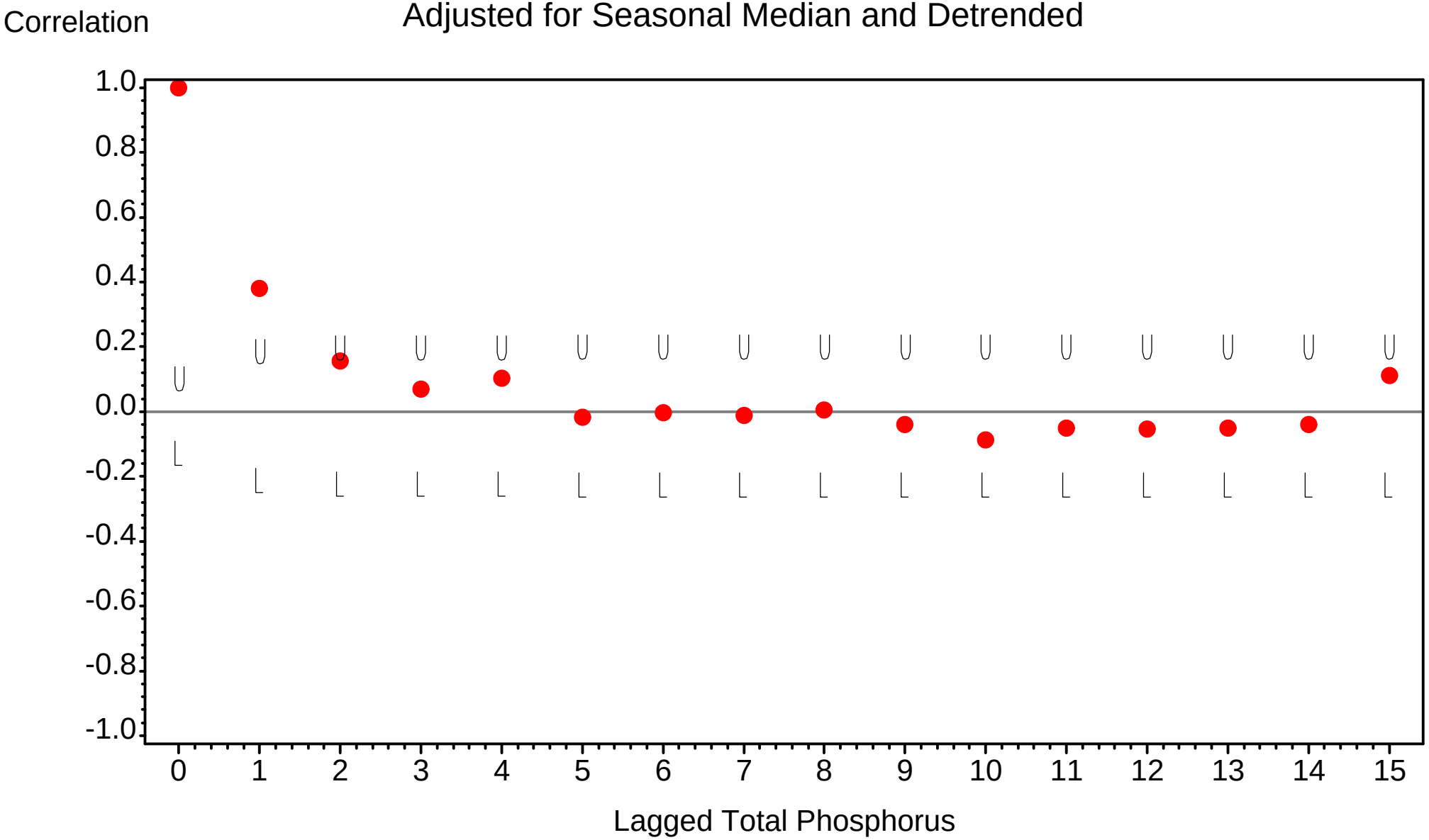


S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.380	0.100	0.200	-0.200
2	0.155	0.105	0.209	-0.209
3	0.069	0.105	0.211	-0.211
4	0.102	0.106	0.211	-0.211
5	-0.016	0.106	0.212	-0.212
6	-0.002	0.106	0.212	-0.212
7	-0.012	0.106	0.212	-0.212
8	0.006	0.106	0.212	-0.212
9	-0.039	0.106	0.212	-0.212
10	-0.086	0.106	0.212	-0.212
11	-0.052	0.106	0.212	-0.212
12	-0.055	0.106	0.213	-0.213
13	-0.051	0.106	0.213	-0.213
14	-0.041	0.106	0.213	-0.213
15	0.111	0.107	0.213	-0.213

S_21FLSJWM27010579 Trends Appendix

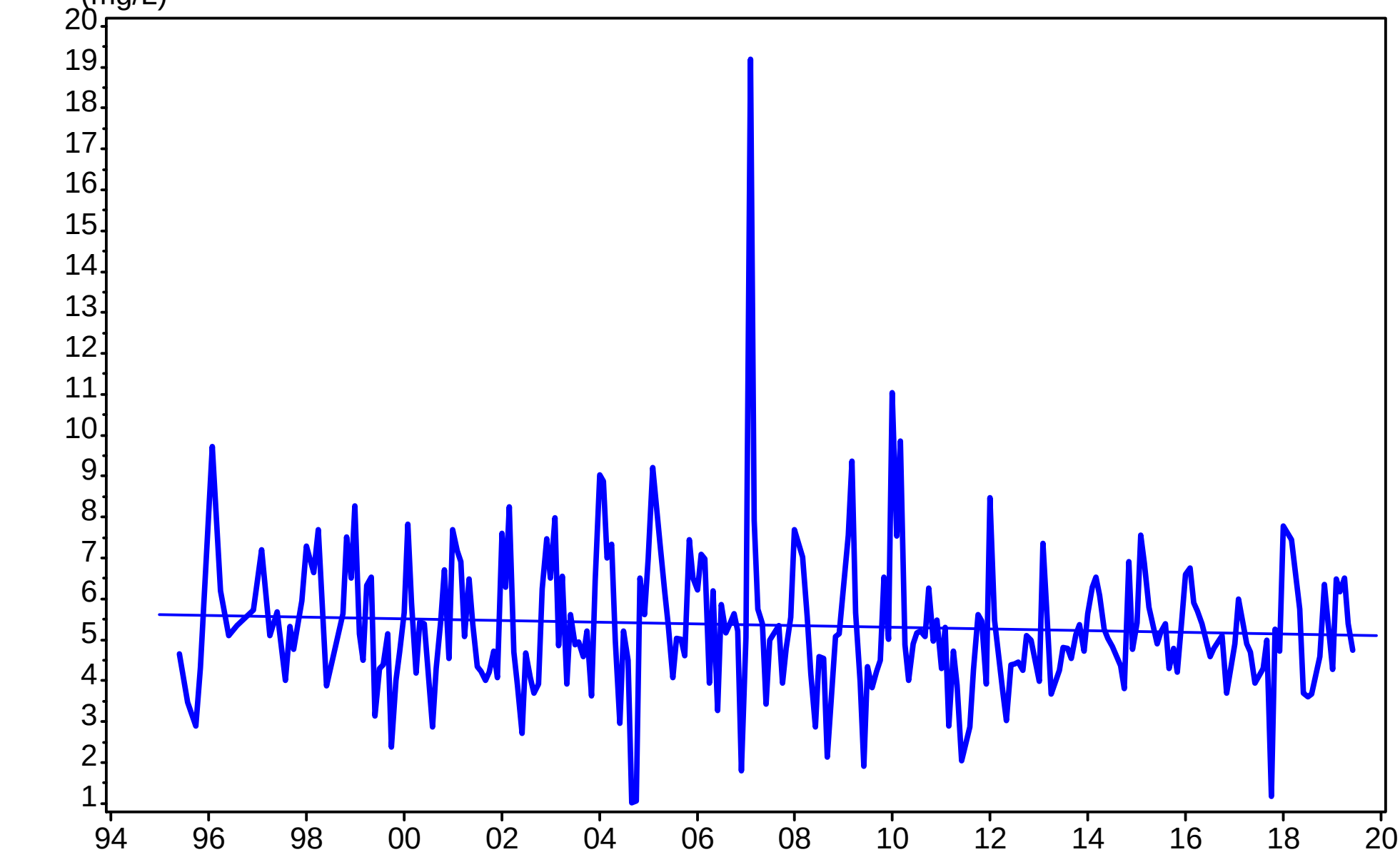
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



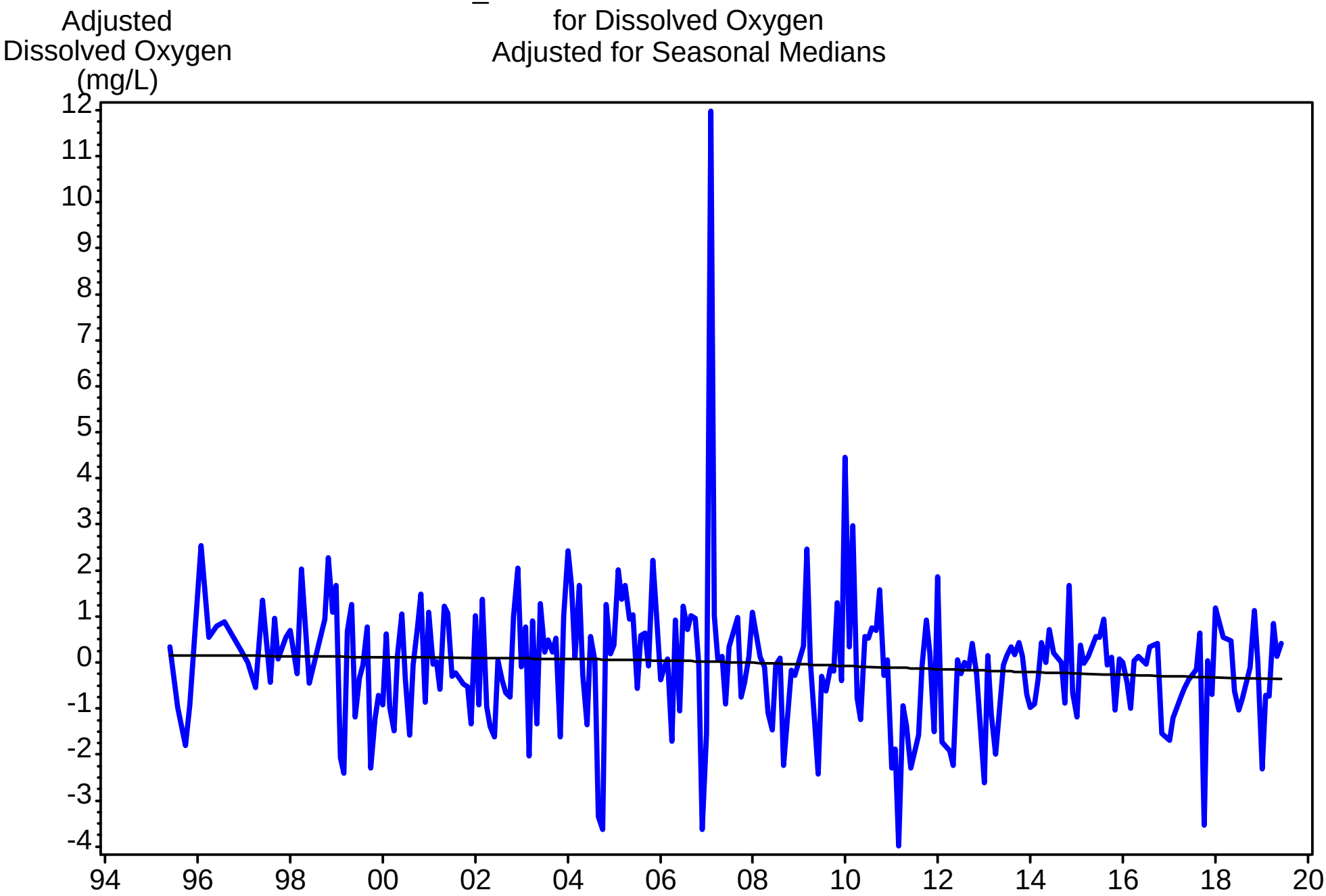
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLSJWM27010579 Trends

S_21FLSJWM27010579 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLSJWM27010579 Trends

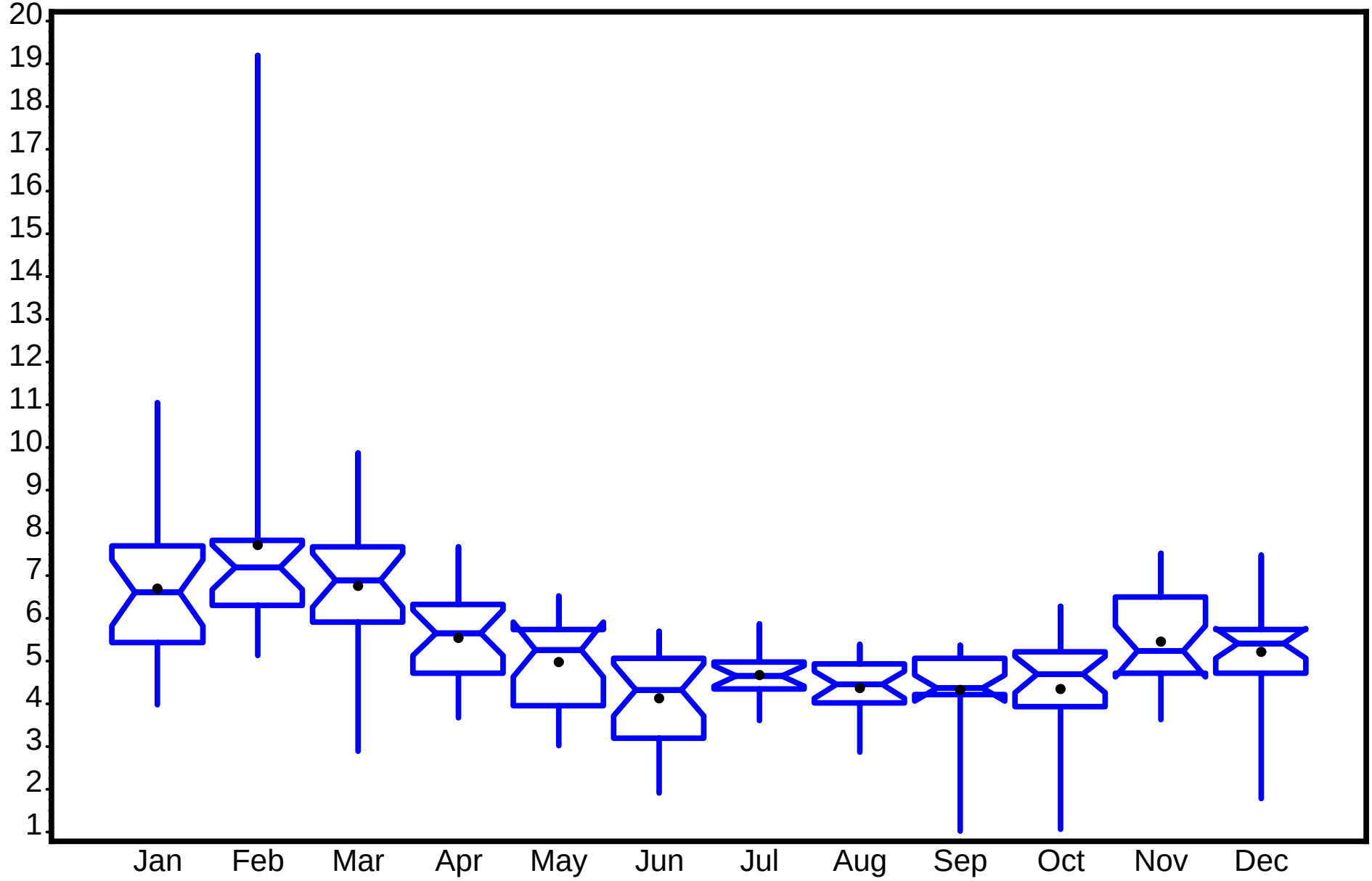


S_21FLSJWM27010579 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



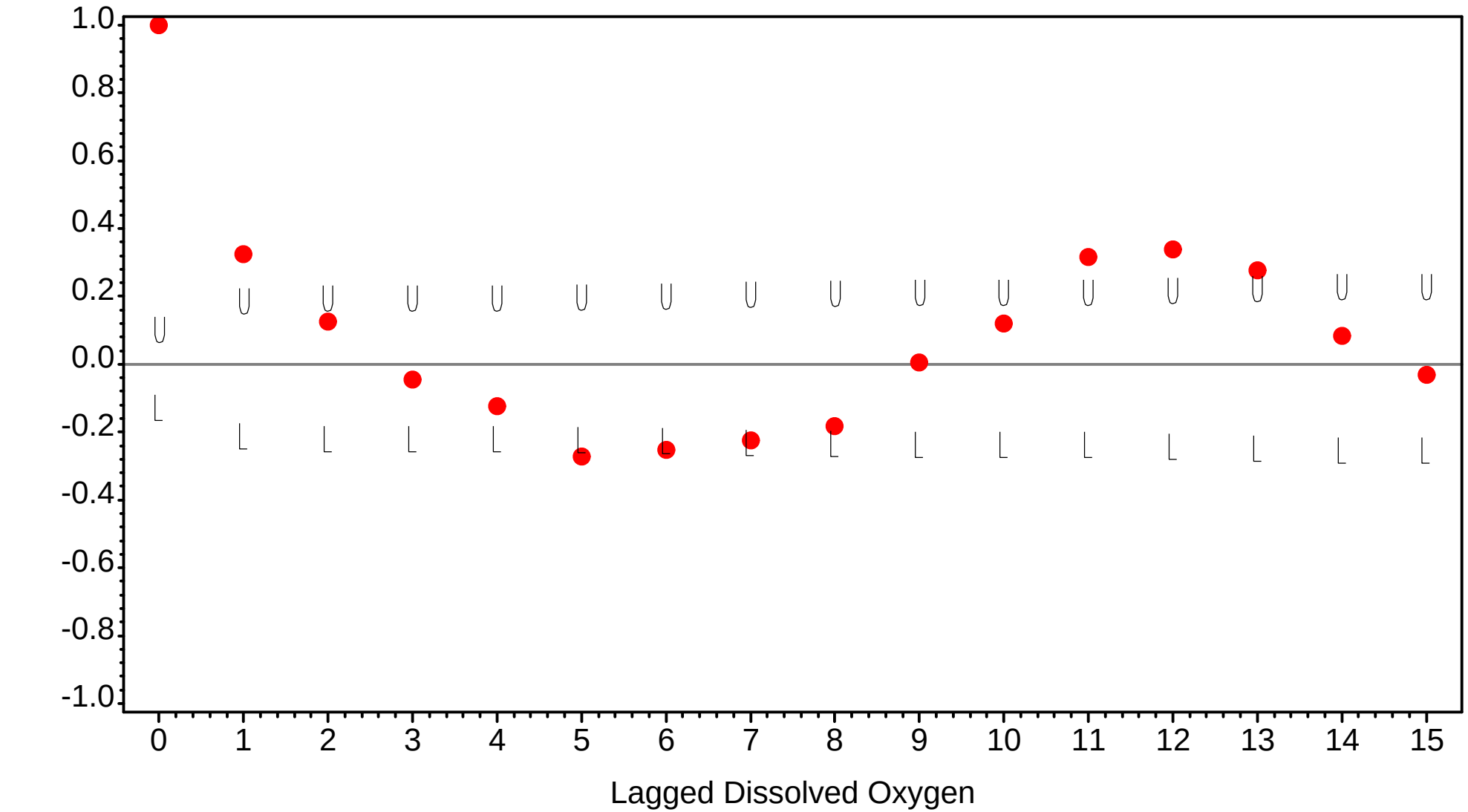
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.324	0.100	0.200	-0.200
2	0.125	0.103	0.207	-0.207
3	-0.044	0.104	0.208	-0.208
4	-0.123	0.104	0.208	-0.208
5	-0.271	0.104	0.209	-0.209
6	-0.252	0.107	0.214	-0.214
7	-0.224	0.109	0.218	-0.218
8	-0.183	0.110	0.221	-0.221
9	0.004	0.111	0.223	-0.223
10	0.119	0.111	0.223	-0.223
11	0.315	0.112	0.223	-0.223
12	0.338	0.115	0.229	-0.229
13	0.277	0.118	0.236	-0.236
14	0.084	0.120	0.240	-0.240
15	-0.030	0.120	0.241	-0.241

S_21FLSJWM27010579 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

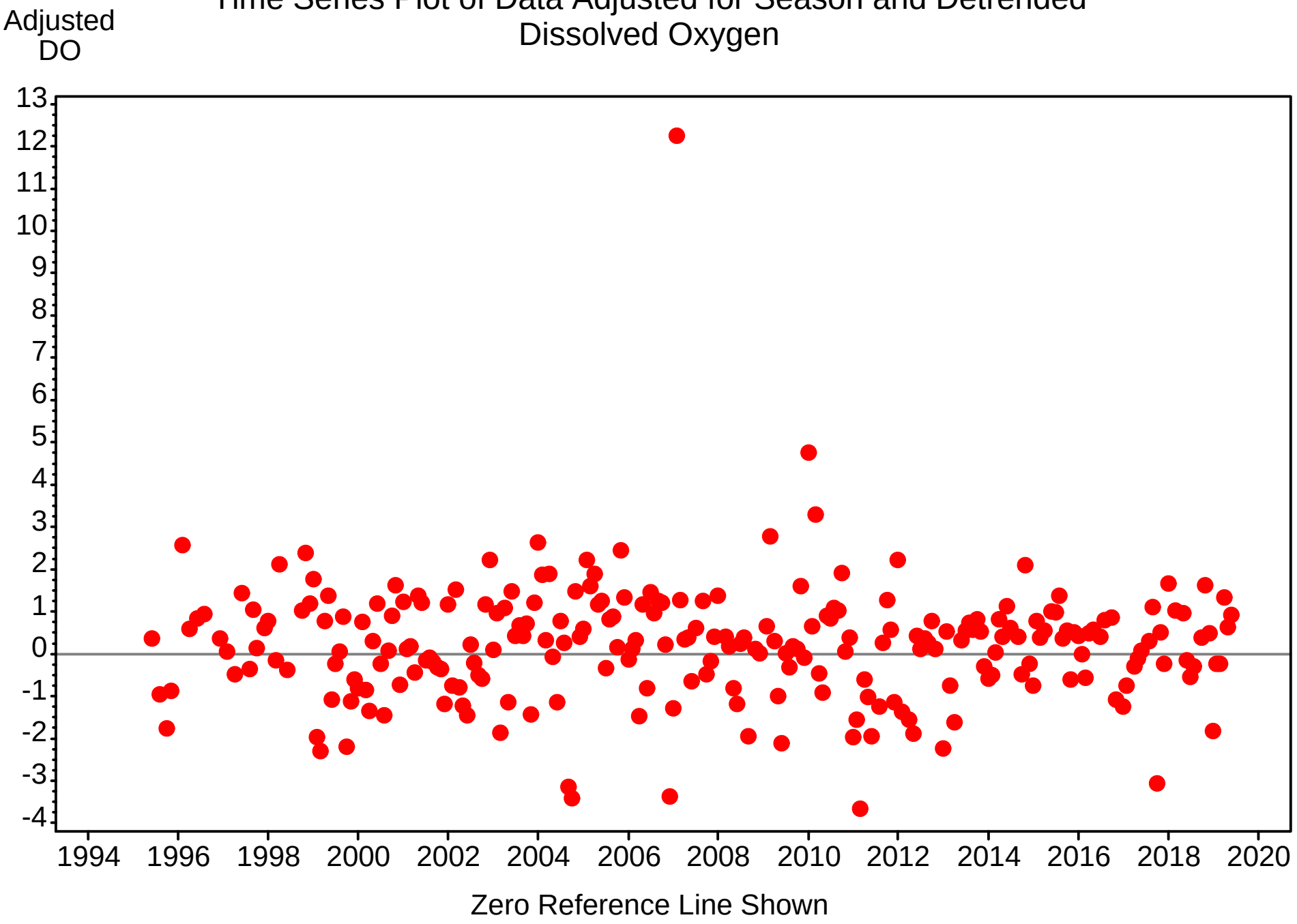
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.08	0.082	0.212	-0.02

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.079889	0.082174	0.21224	-0.019722

S_21FLSJWM27010579 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



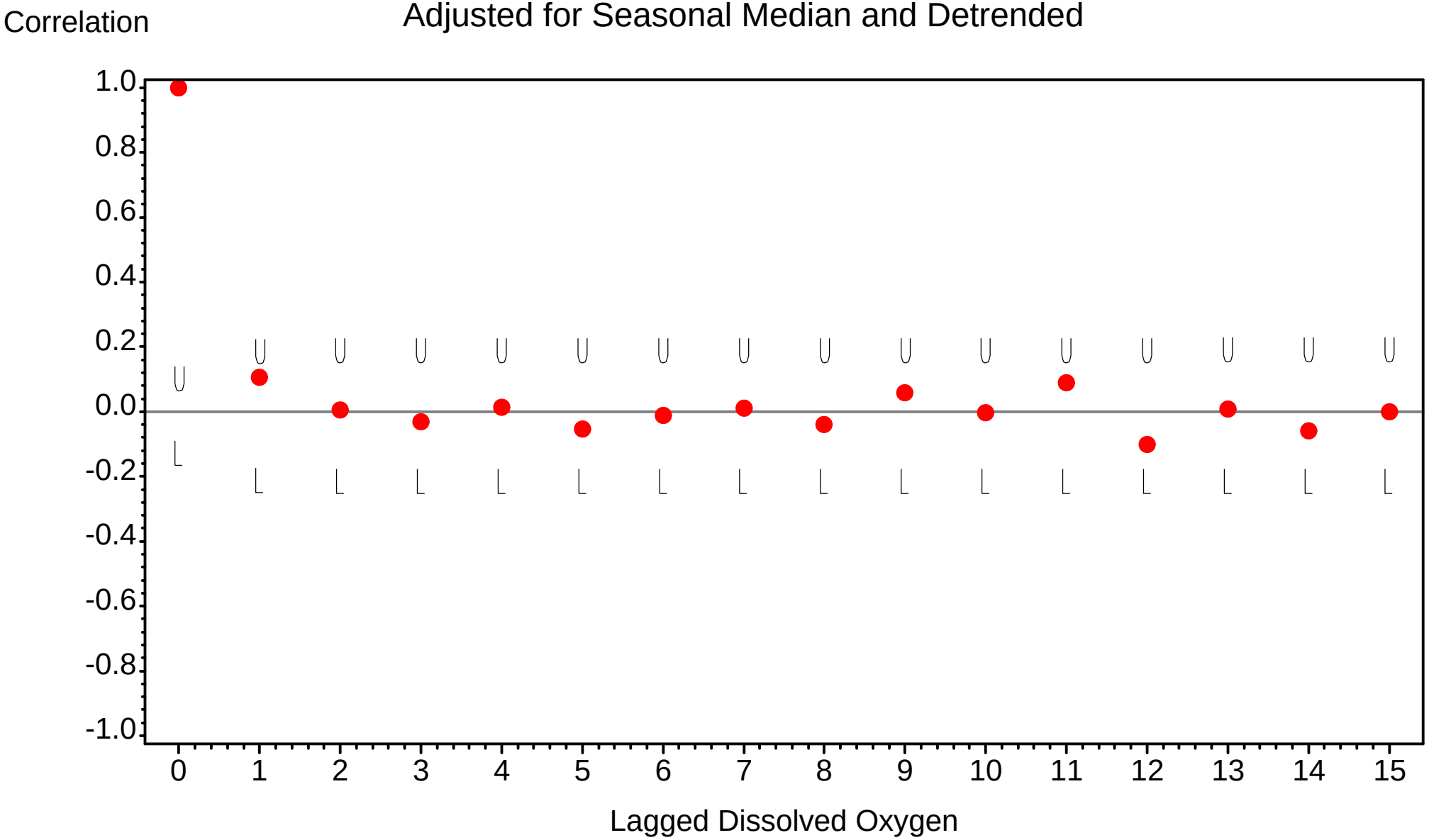
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.105	0.100	0.200	-0.200
2	0.004	0.100	0.201	-0.201
3	-0.031	0.100	0.201	-0.201
4	0.014	0.100	0.201	-0.201
5	-0.053	0.100	0.201	-0.201
6	-0.012	0.100	0.201	-0.201
7	0.012	0.100	0.201	-0.201
8	-0.041	0.101	0.201	-0.201
9	0.059	0.101	0.201	-0.201
10	-0.002	0.101	0.201	-0.201
11	0.089	0.101	0.201	-0.201
12	-0.102	0.101	0.202	-0.202
13	0.007	0.101	0.203	-0.203
14	-0.058	0.101	0.203	-0.203
15	0.000	0.101	0.203	-0.203

S_21FLSJWM27010579 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended

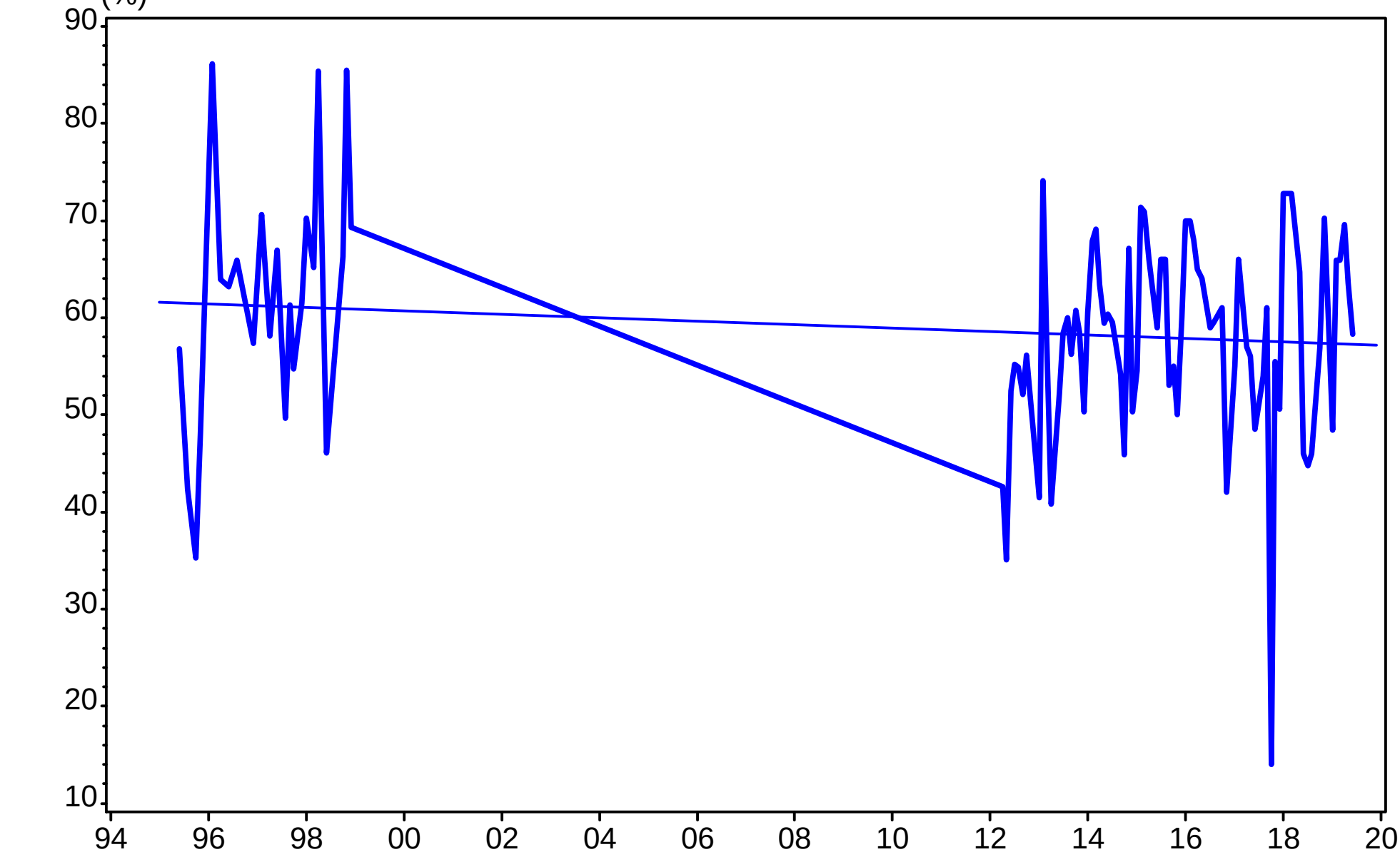


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

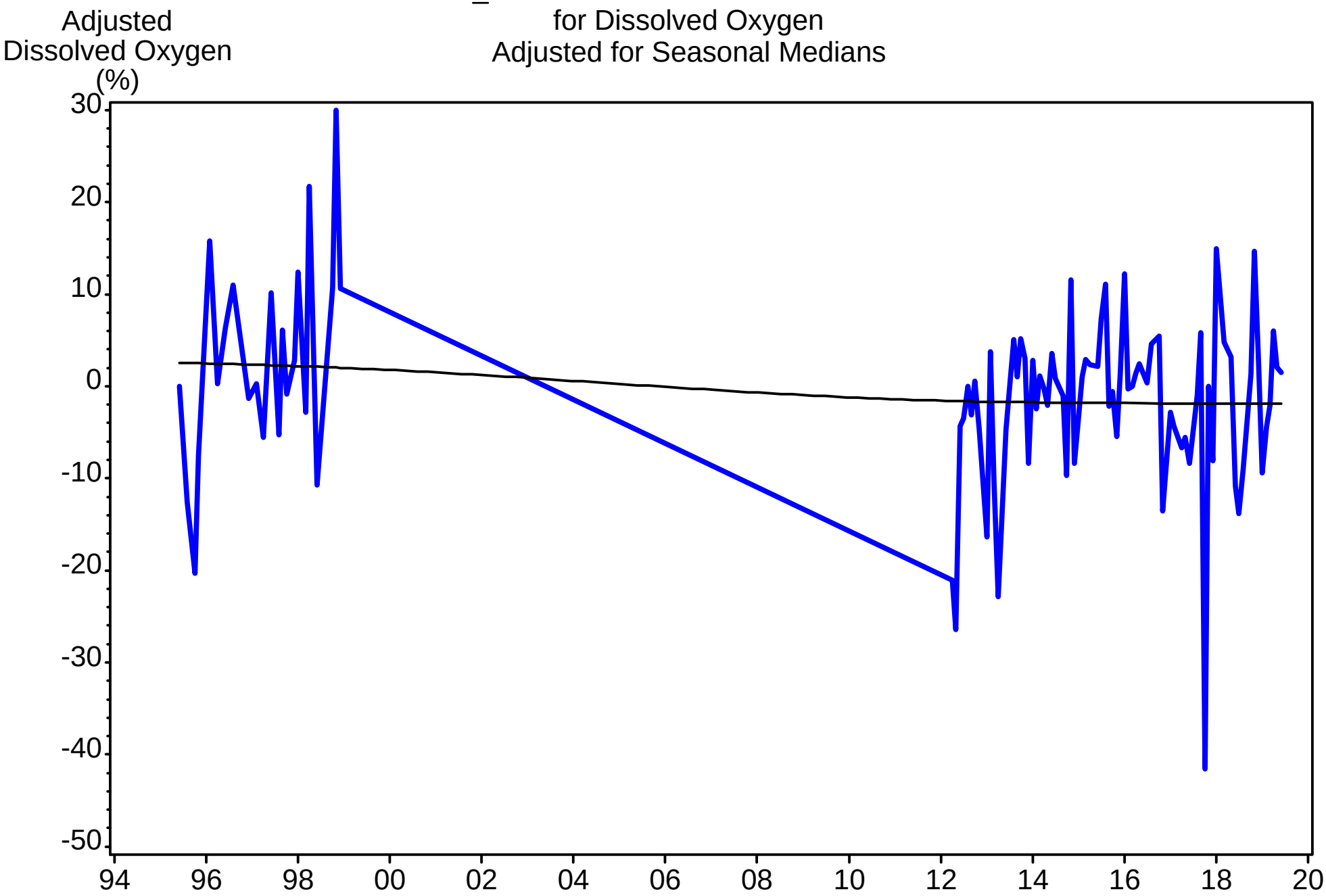
Zero Reference Line Shown

S_21FLSJWM27010579 Trends

S_21FLSJWM27010579 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



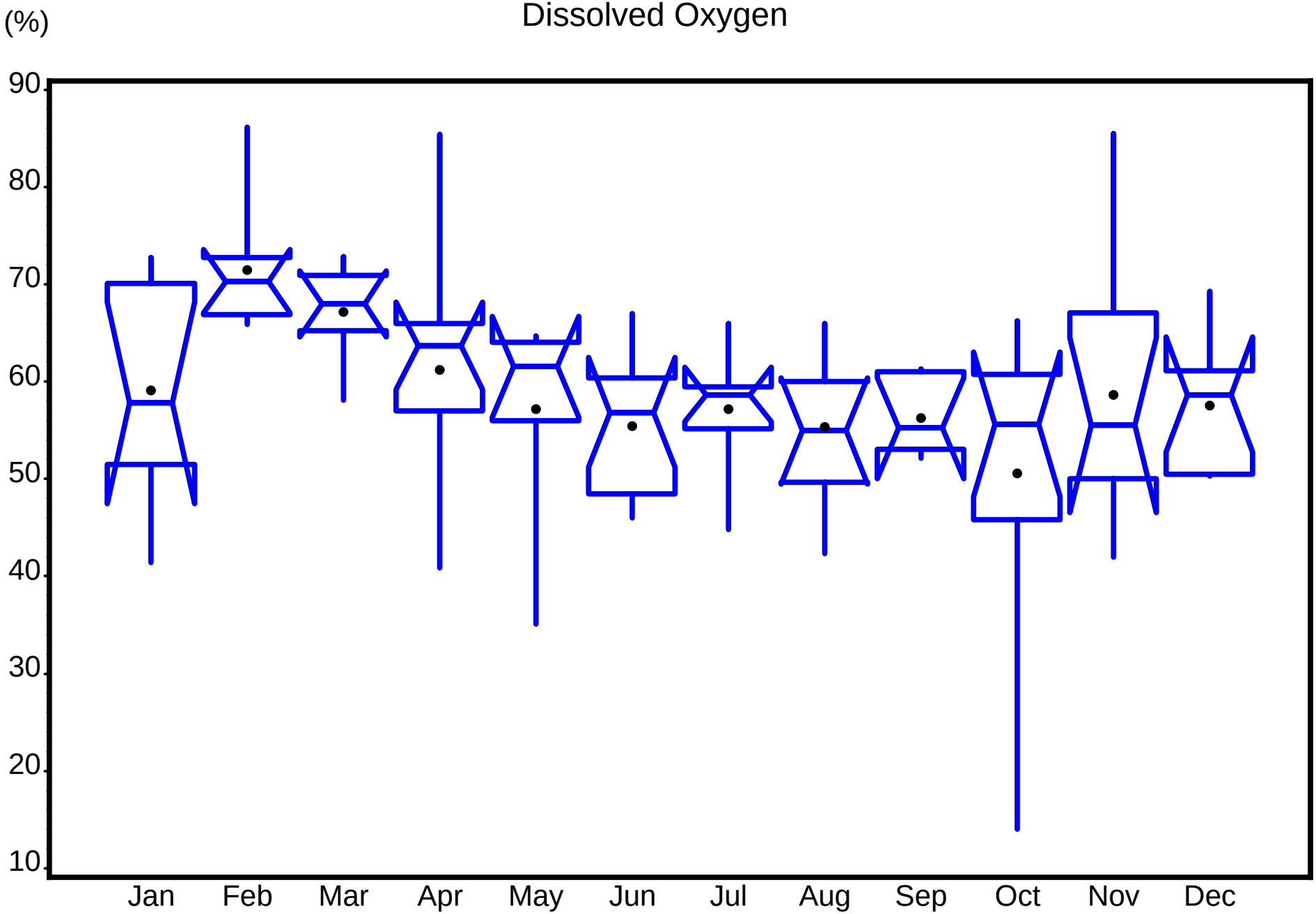
S_21FLSJWM27010579 Trends



S_21FLSJWM27010579 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



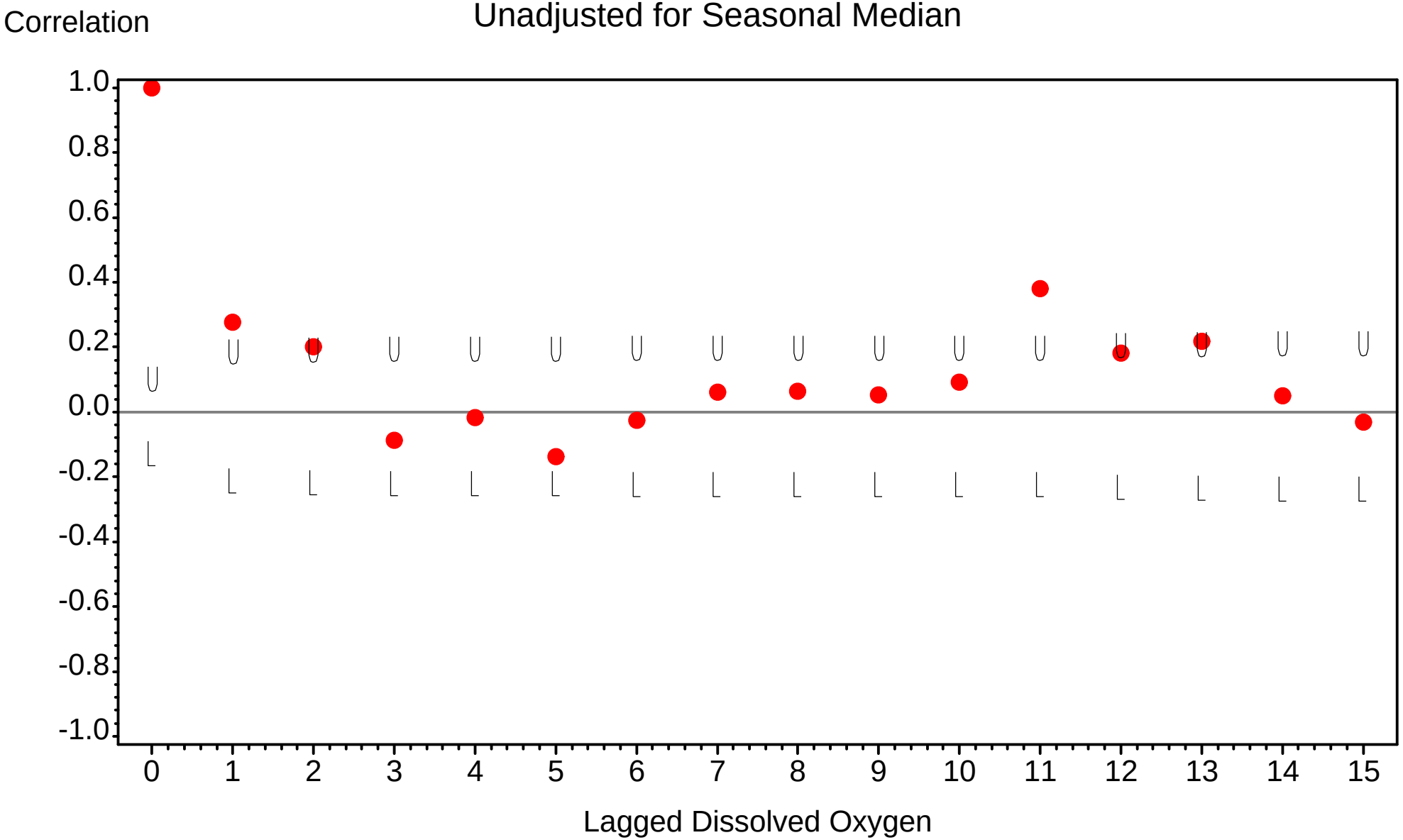
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.276	0.100	0.200	-0.200
2	0.202	0.103	0.205	-0.205
3	-0.087	0.104	0.208	-0.208
4	-0.017	0.104	0.208	-0.208
5	-0.137	0.104	0.208	-0.208
6	-0.025	0.105	0.209	-0.209
7	0.061	0.105	0.209	-0.209
8	0.063	0.105	0.210	-0.210
9	0.053	0.105	0.210	-0.210
10	0.091	0.105	0.210	-0.210
11	0.379	0.105	0.211	-0.211
12	0.182	0.110	0.219	-0.219
13	0.217	0.111	0.221	-0.221
14	0.050	0.112	0.224	-0.224
15	-0.030	0.112	0.224	-0.224

S_21FLSJWM27010579 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

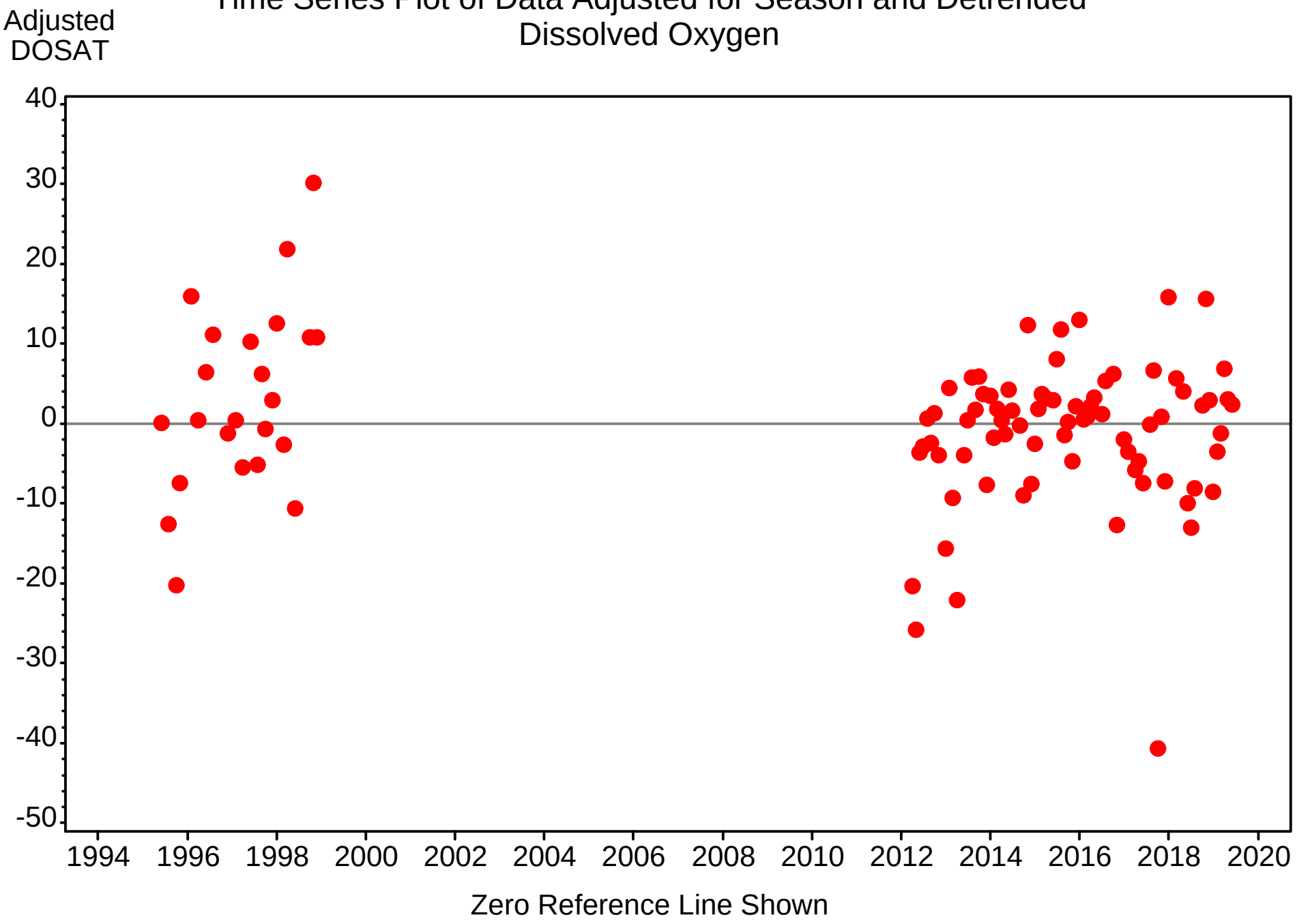
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.033	0.717	0.776	-0.036

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.032698	0.71735	0.77620	-0.036048

S_21FLSJWM27010579 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



Zero Reference Line Shown

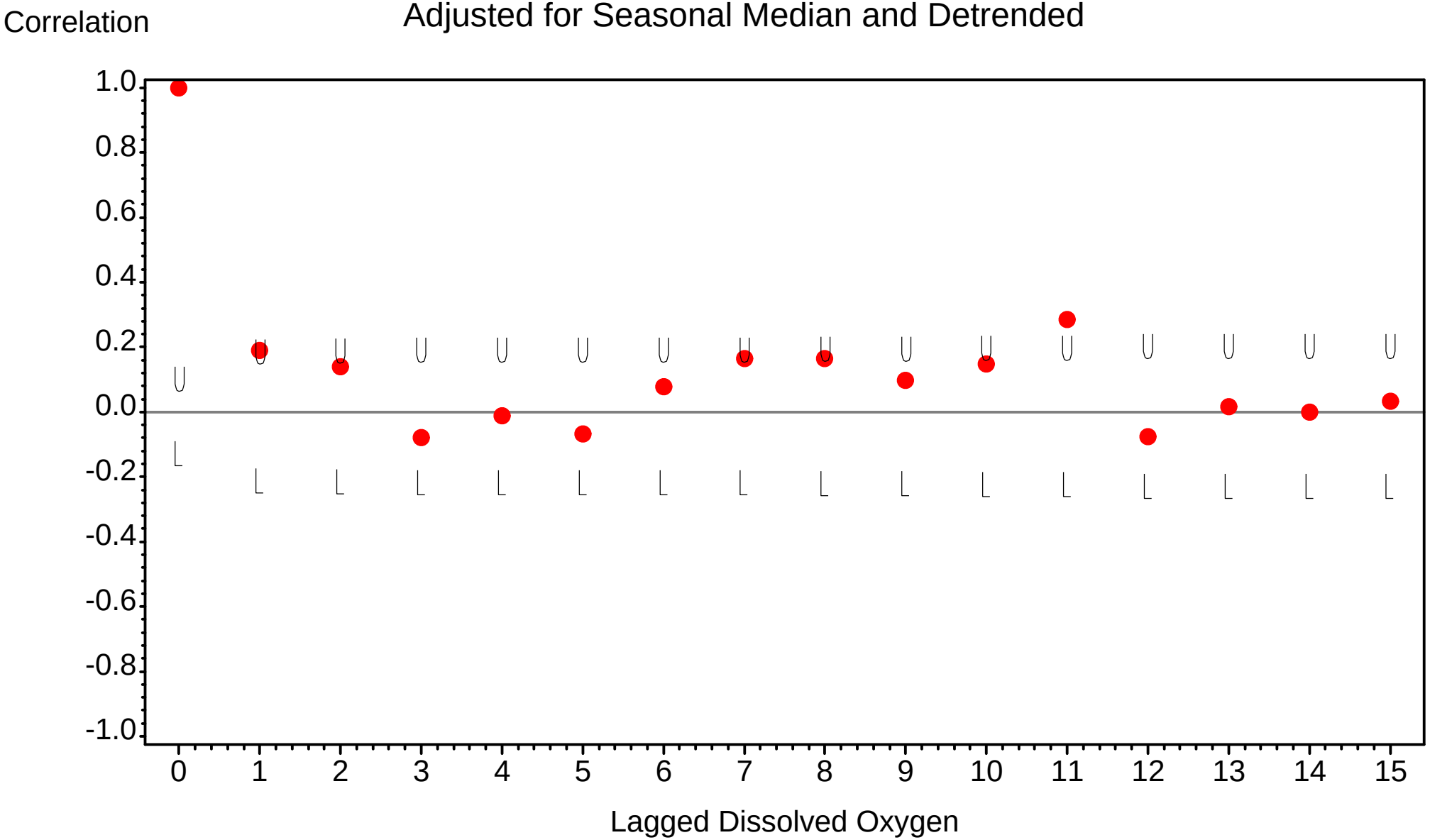
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.191	0.100	0.200	-0.200
2	0.140	0.101	0.202	-0.202
3	-0.079	0.102	0.204	-0.204
4	-0.013	0.102	0.204	-0.204
5	-0.067	0.102	0.204	-0.204
6	0.079	0.102	0.204	-0.204
7	0.166	0.102	0.205	-0.205
8	0.165	0.103	0.207	-0.207
9	0.098	0.104	0.208	-0.208
10	0.149	0.104	0.209	-0.209
11	0.284	0.105	0.210	-0.210
12	-0.075	0.108	0.215	-0.215
13	0.015	0.108	0.216	-0.216
14	-0.001	0.108	0.216	-0.216
15	0.034	0.108	0.216	-0.216

S_21FLSJWM27010579 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended

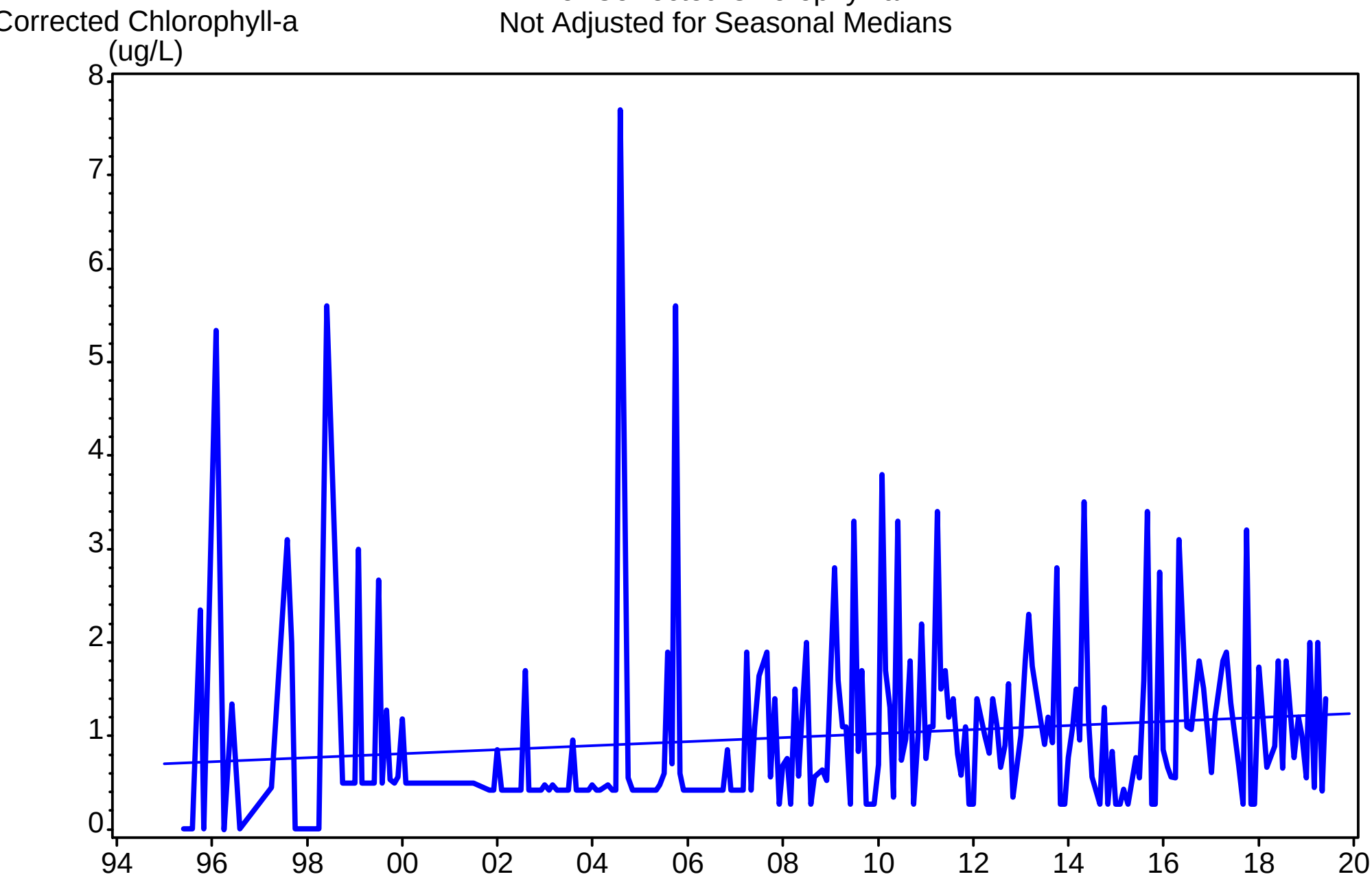


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

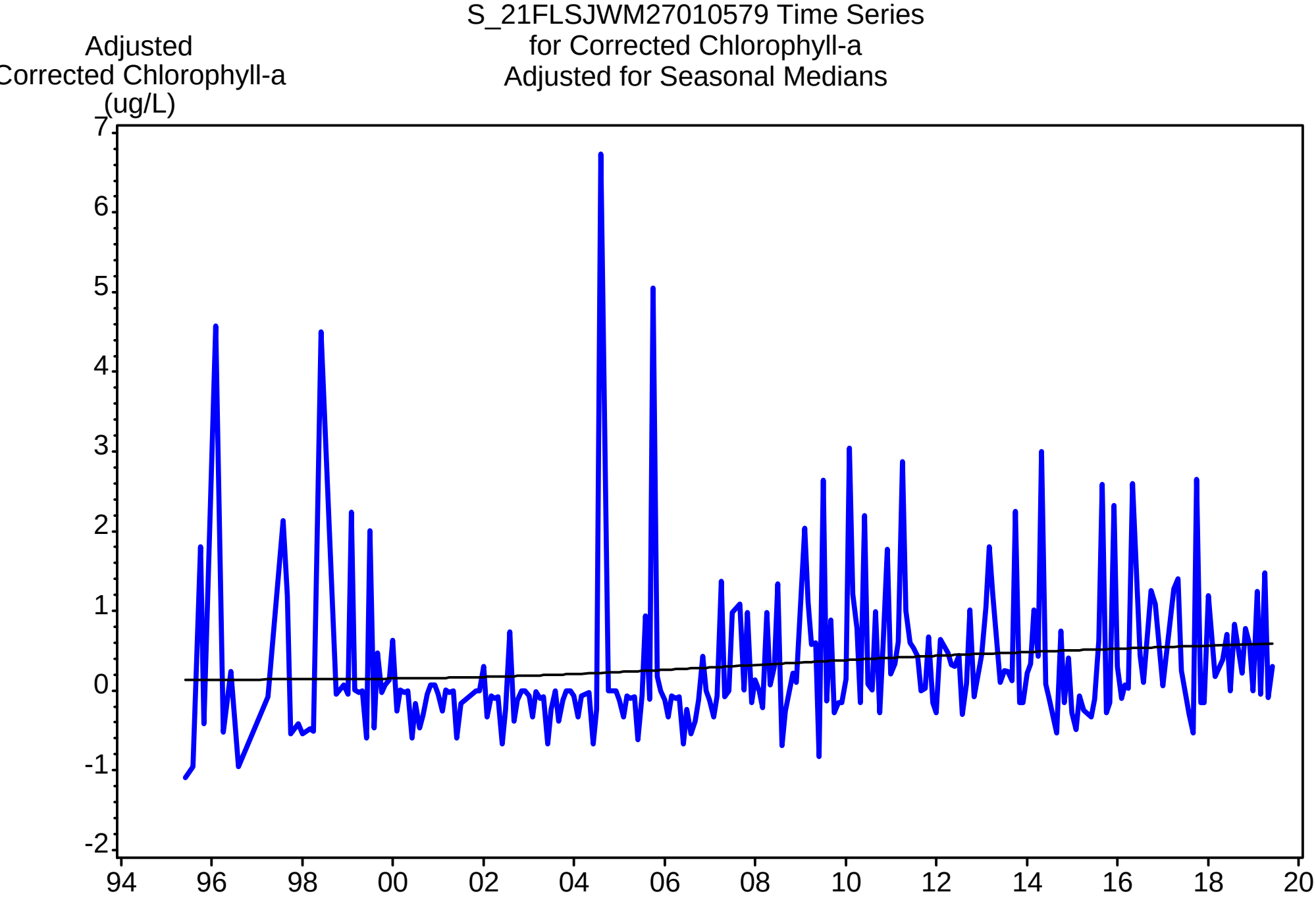
Zero Reference Line Shown

S_21FLSJWM27010579 Trends

S_21FLSJWM27010579 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



S_21FLSJWM27010579 Trends

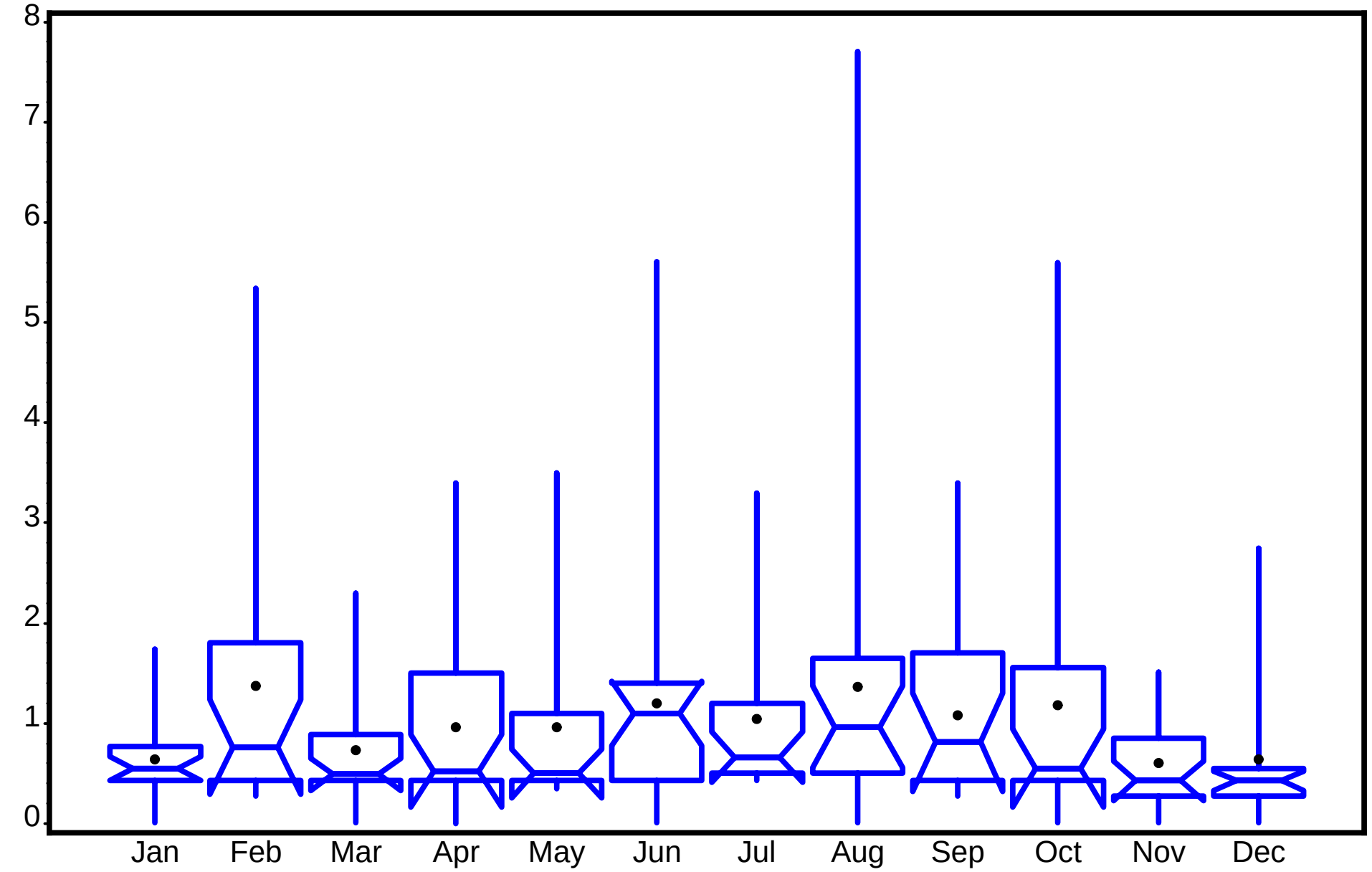


S_21FLSJWM27010579 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a

(ug/L)

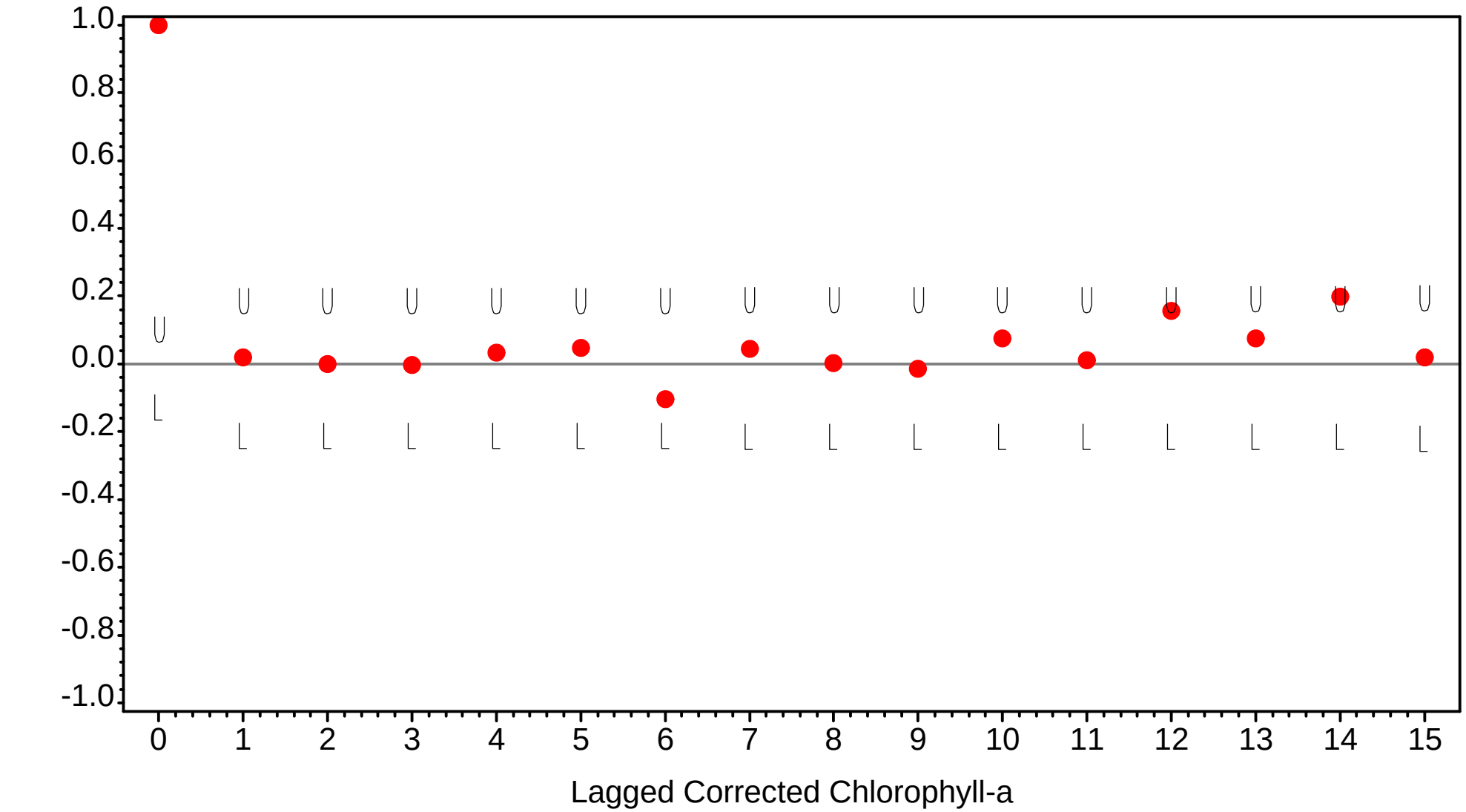


S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.018	0.100	0.200	-0.200
2	-0.001	0.100	0.200	-0.200
3	-0.004	0.100	0.200	-0.200
4	0.034	0.100	0.200	-0.200
5	0.048	0.100	0.200	-0.200
6	-0.103	0.100	0.200	-0.200
7	0.045	0.100	0.201	-0.201
8	0.002	0.101	0.201	-0.201
9	-0.014	0.101	0.201	-0.201
10	0.074	0.101	0.201	-0.201
11	0.012	0.101	0.201	-0.201
12	0.156	0.101	0.201	-0.201
13	0.074	0.102	0.203	-0.203
14	0.199	0.102	0.203	-0.203
15	0.019	0.103	0.206	-0.206

S_21FLSJWM27010579 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

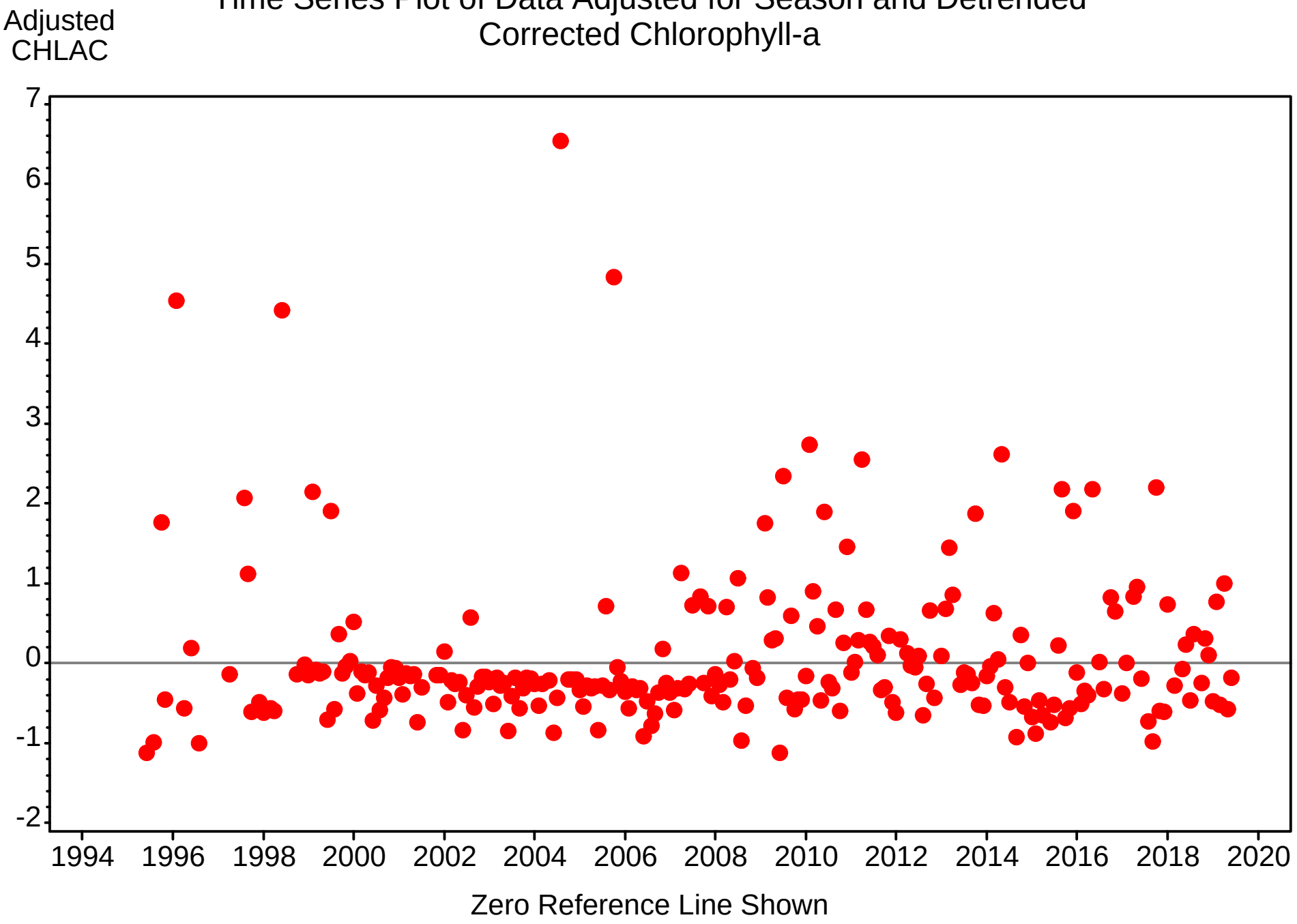
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.185	0	.009	0.019

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.18508	.000061631	.00900435	0.018929

S_21FLSJWM27010579 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a

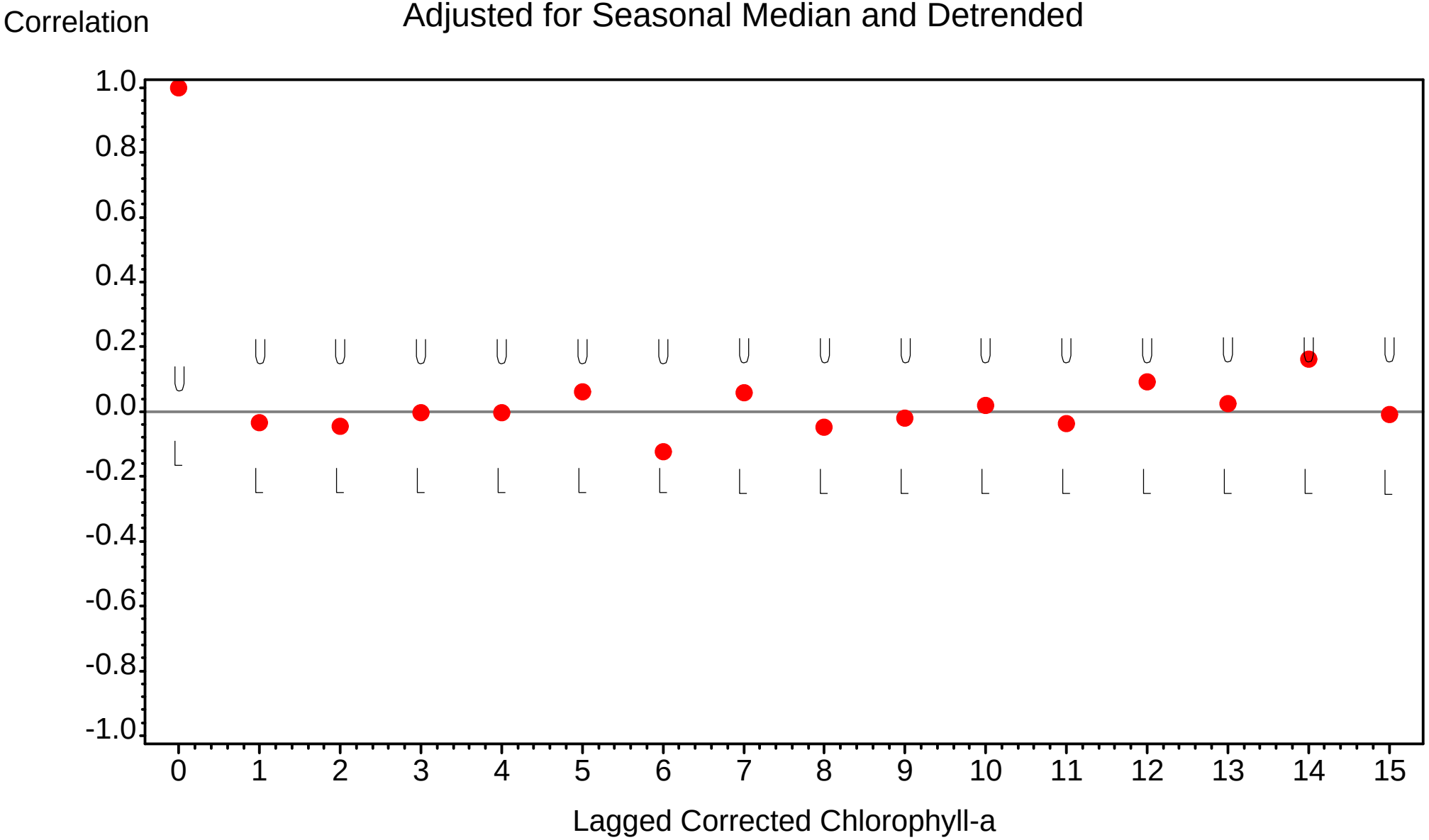


S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	-0.034	0.100	0.200	-0.200
2	-0.045	0.100	0.200	-0.200
3	-0.003	0.100	0.200	-0.200
4	-0.002	0.100	0.200	-0.200
5	0.060	0.100	0.200	-0.200
6	-0.124	0.100	0.200	-0.200
7	0.059	0.101	0.201	-0.201
8	-0.048	0.101	0.202	-0.202
9	-0.019	0.101	0.202	-0.202
10	0.020	0.101	0.202	-0.202
11	-0.037	0.101	0.202	-0.202
12	0.091	0.101	0.202	-0.202
13	0.026	0.101	0.203	-0.203
14	0.163	0.101	0.203	-0.203
15	-0.010	0.102	0.204	-0.204

S_21FLSJWM27010579 Trends Appendix

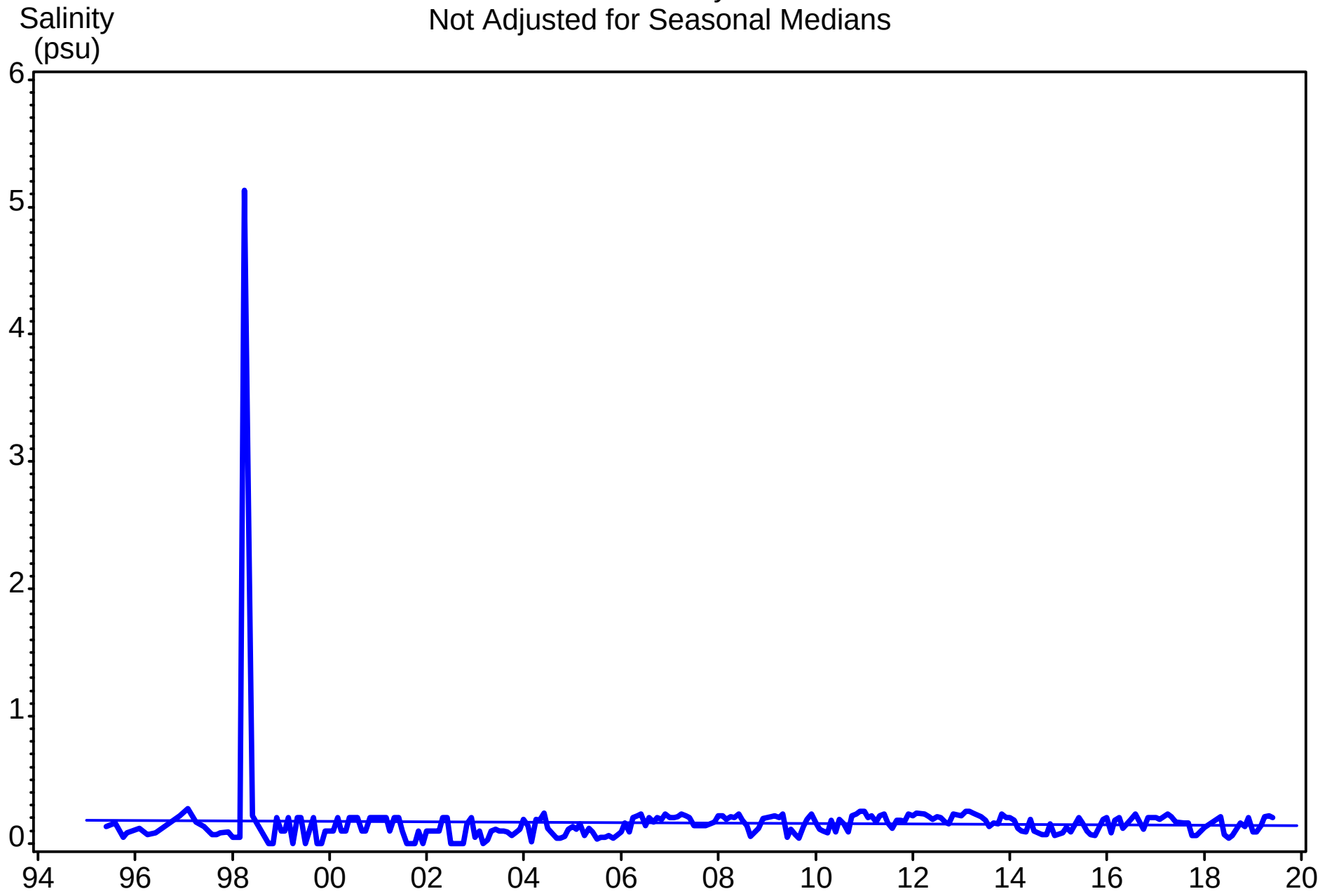
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



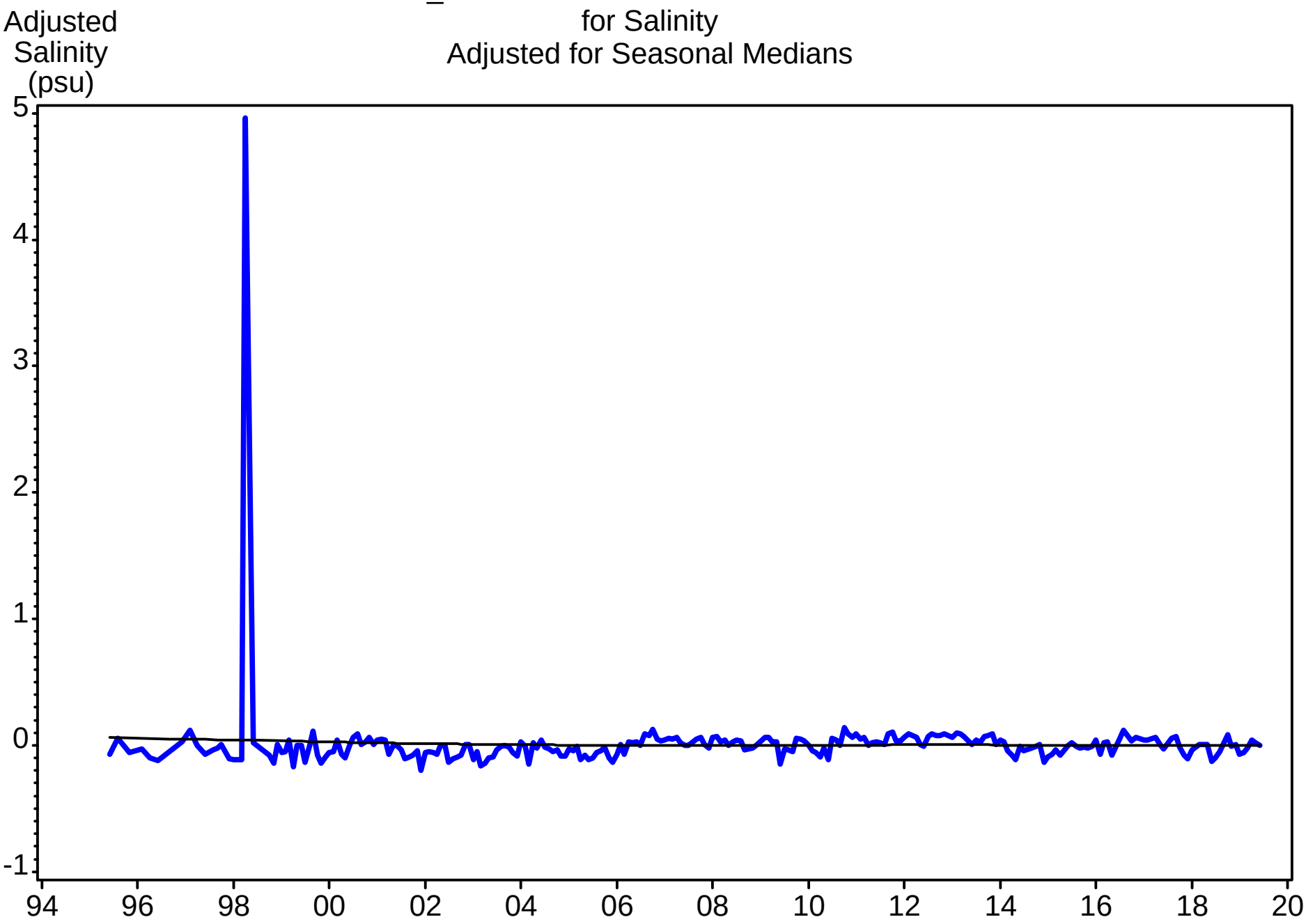
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLSJWM27010579 Trends

S_21FLSJWM27010579 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



S_21FLSJWM27010579 Trends

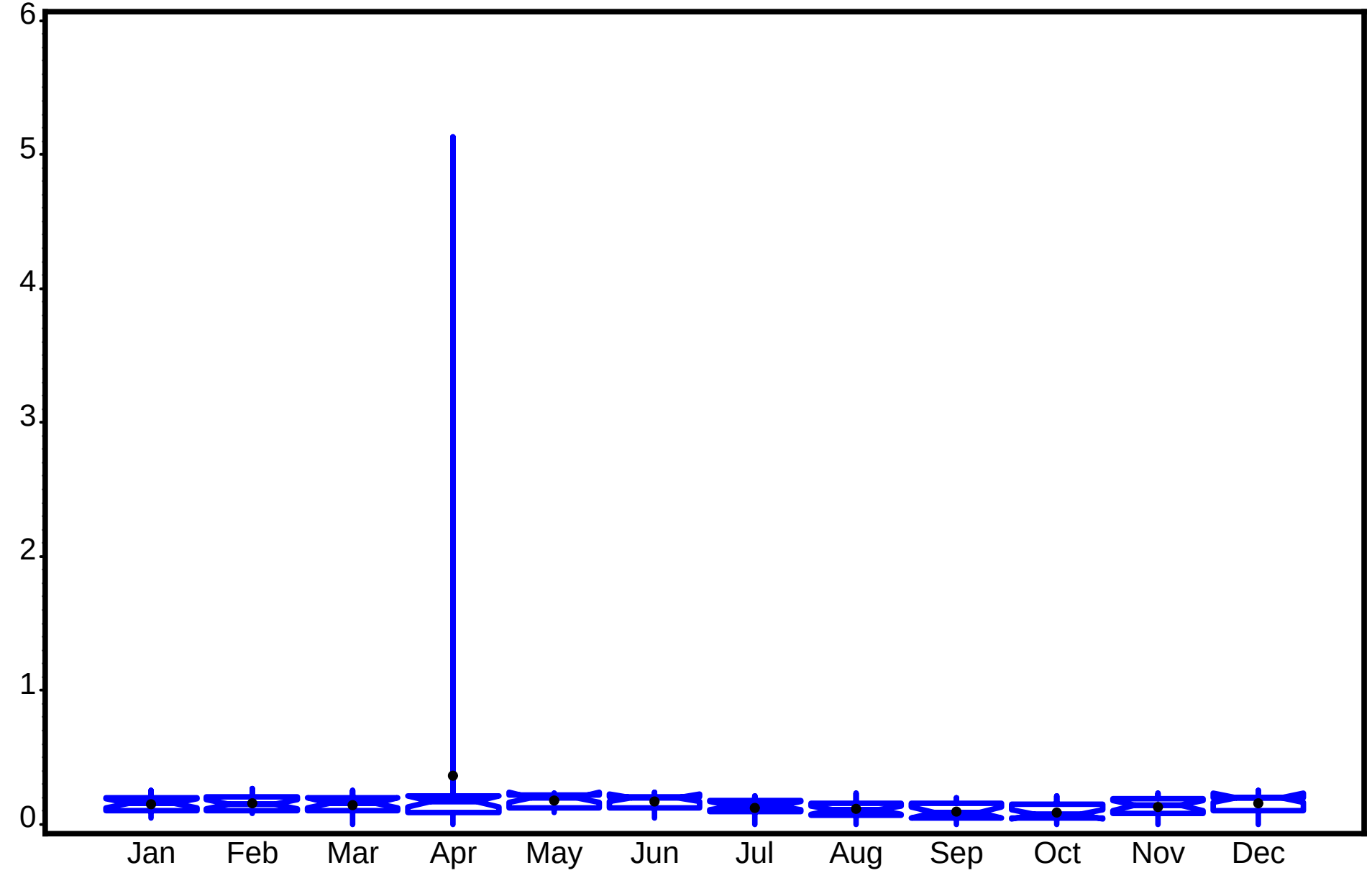


S_21FLSJWM27010579 Trends Appendix

Seasonal Univariate Statistics

Salinity

(psu)



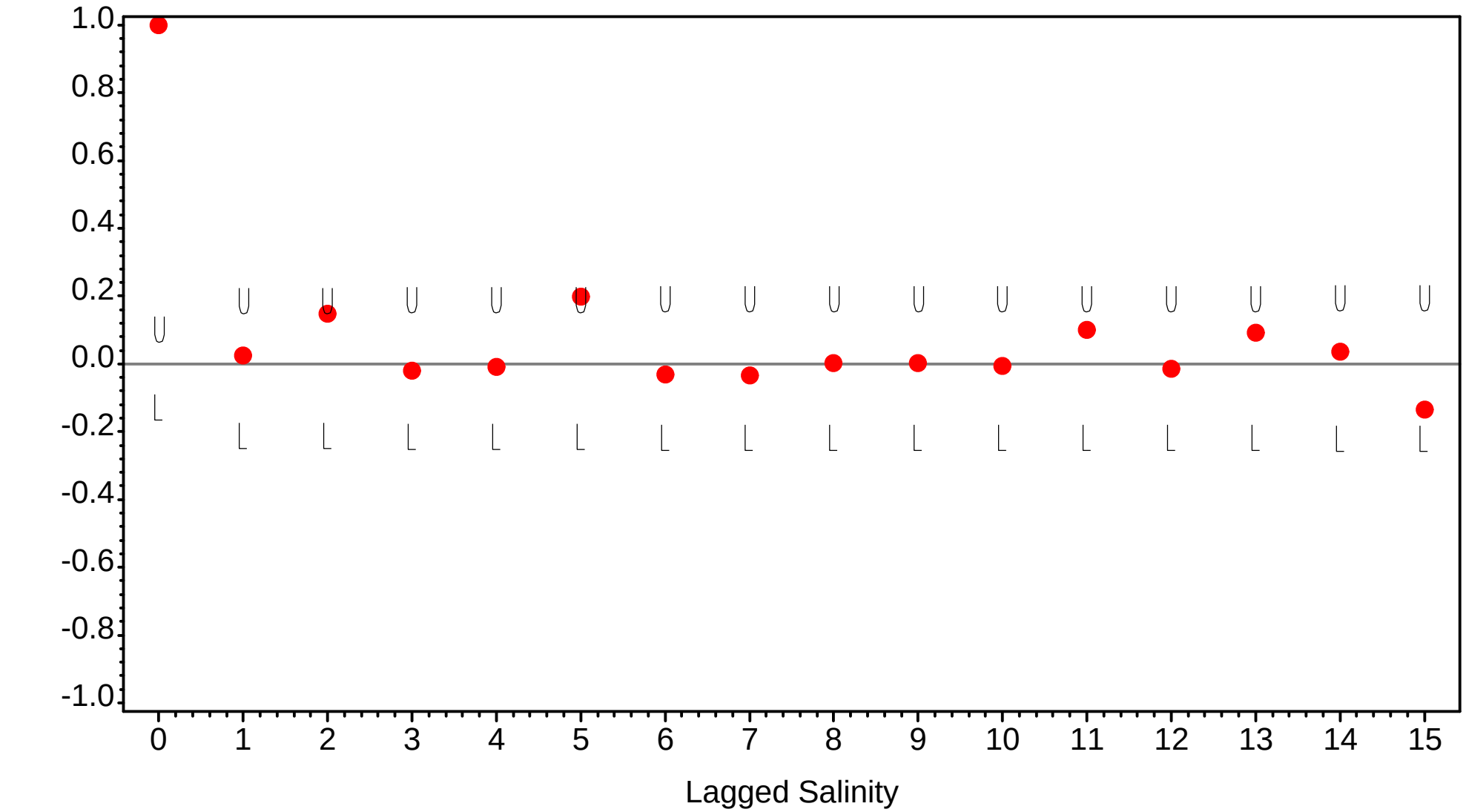
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.026	0.100	0.200	-0.200
2	0.149	0.100	0.200	-0.200
3	-0.021	0.101	0.202	-0.202
4	-0.010	0.101	0.202	-0.202
5	0.199	0.101	0.202	-0.202
6	-0.032	0.102	0.204	-0.204
7	-0.035	0.102	0.204	-0.204
8	0.001	0.102	0.204	-0.204
9	0.002	0.102	0.204	-0.204
10	-0.007	0.102	0.204	-0.204
11	0.101	0.102	0.204	-0.204
12	-0.014	0.102	0.205	-0.205
13	0.093	0.102	0.205	-0.205
14	0.036	0.103	0.206	-0.206
15	-0.135	0.103	0.206	-0.206

S_21FLSJWM27010579 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

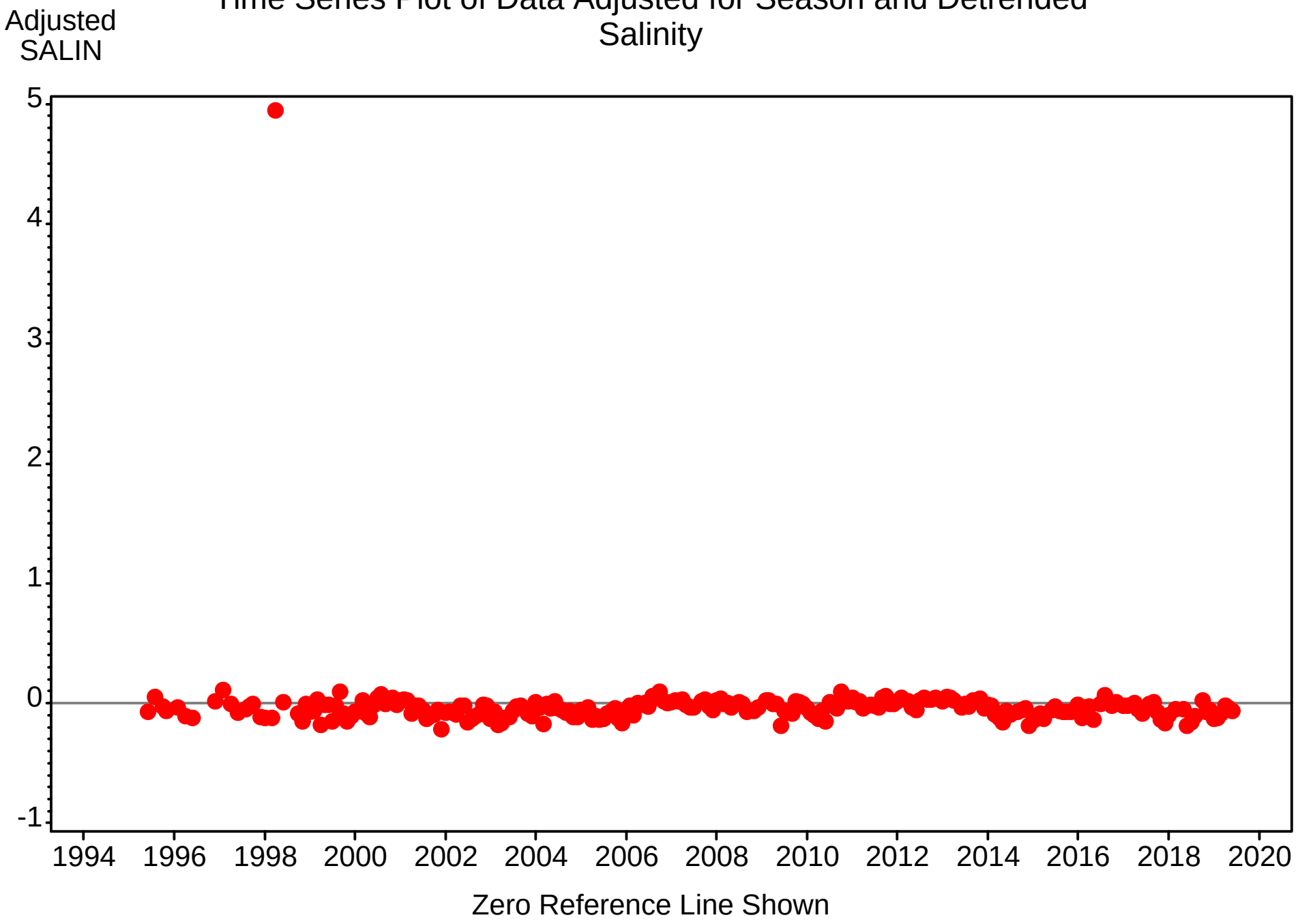
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.179	0	0.044	.003

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.17949	.000076413	0.044293	.0025

S_21FLSJWM27010579 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



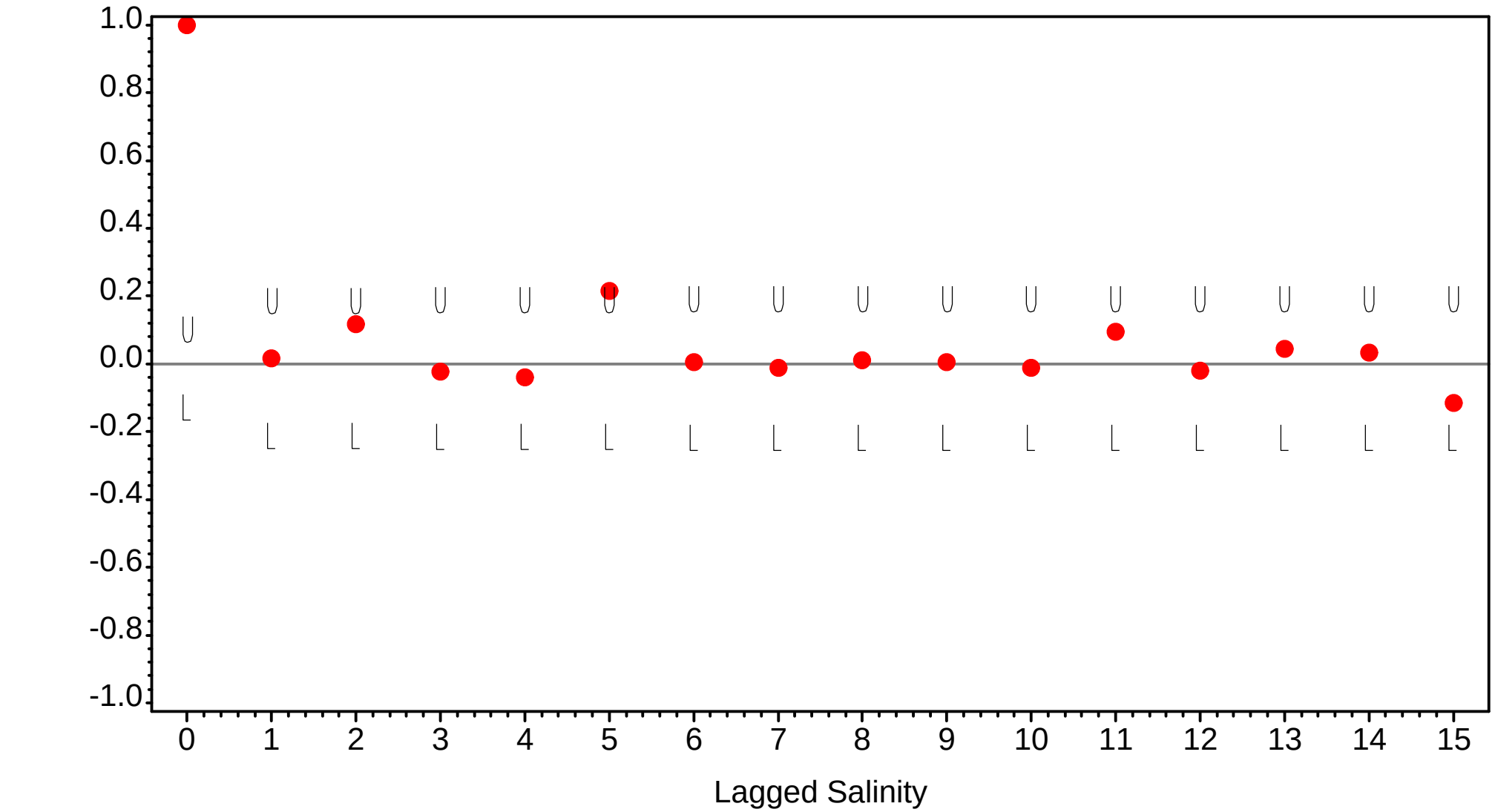
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.016	0.100	0.200	-0.200
2	0.118	0.100	0.200	-0.200
3	-0.022	0.100	0.201	-0.201
4	-0.040	0.100	0.201	-0.201
5	0.215	0.101	0.201	-0.201
6	0.005	0.102	0.204	-0.204
7	-0.012	0.102	0.204	-0.204
8	0.010	0.102	0.204	-0.204
9	0.005	0.102	0.204	-0.204
10	-0.012	0.102	0.204	-0.204
11	0.094	0.102	0.204	-0.204
12	-0.020	0.102	0.205	-0.205
13	0.044	0.102	0.205	-0.205
14	0.032	0.102	0.205	-0.205
15	-0.115	0.102	0.205	-0.205

S_21FLSJWM27010579 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

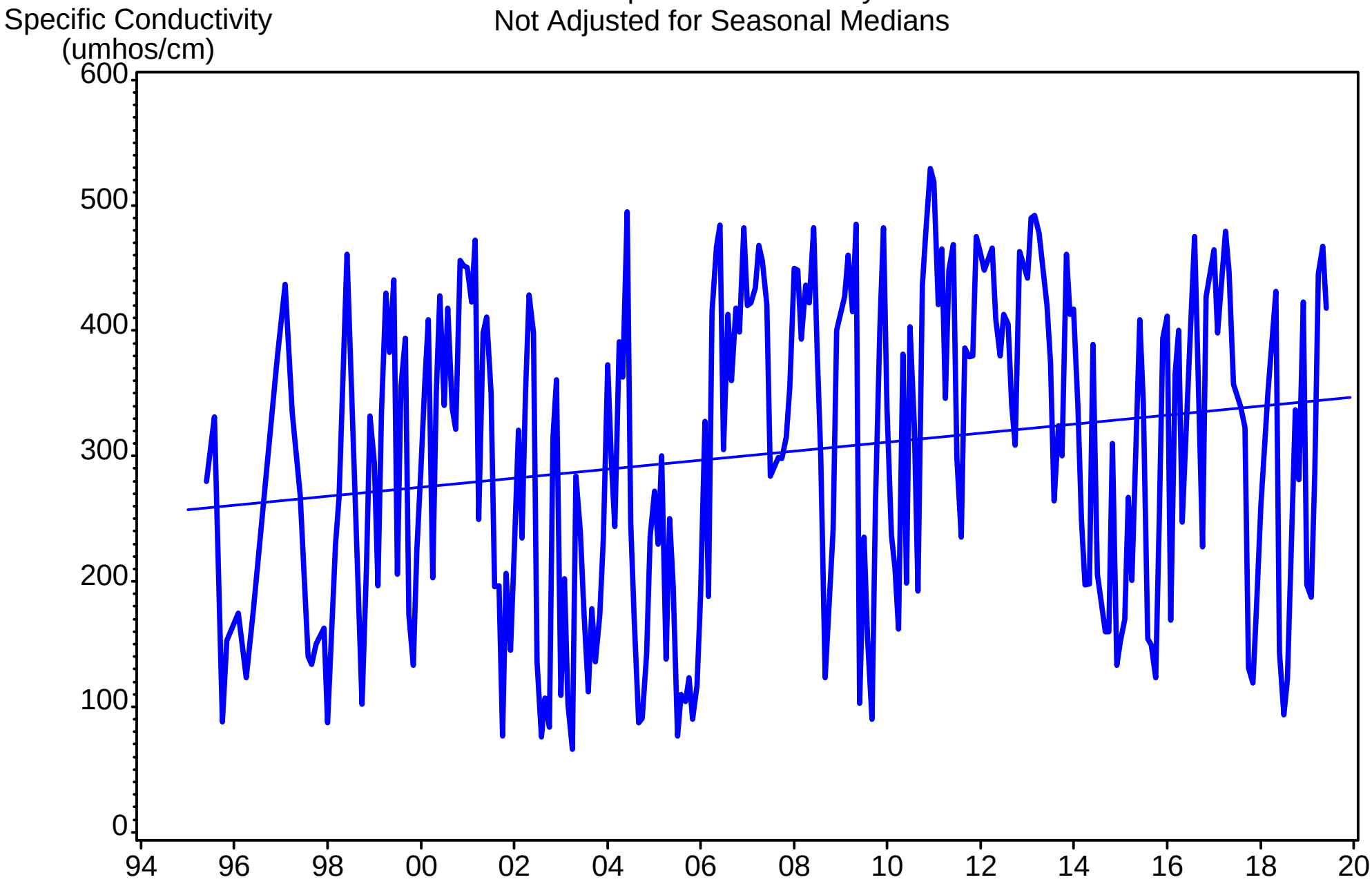


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

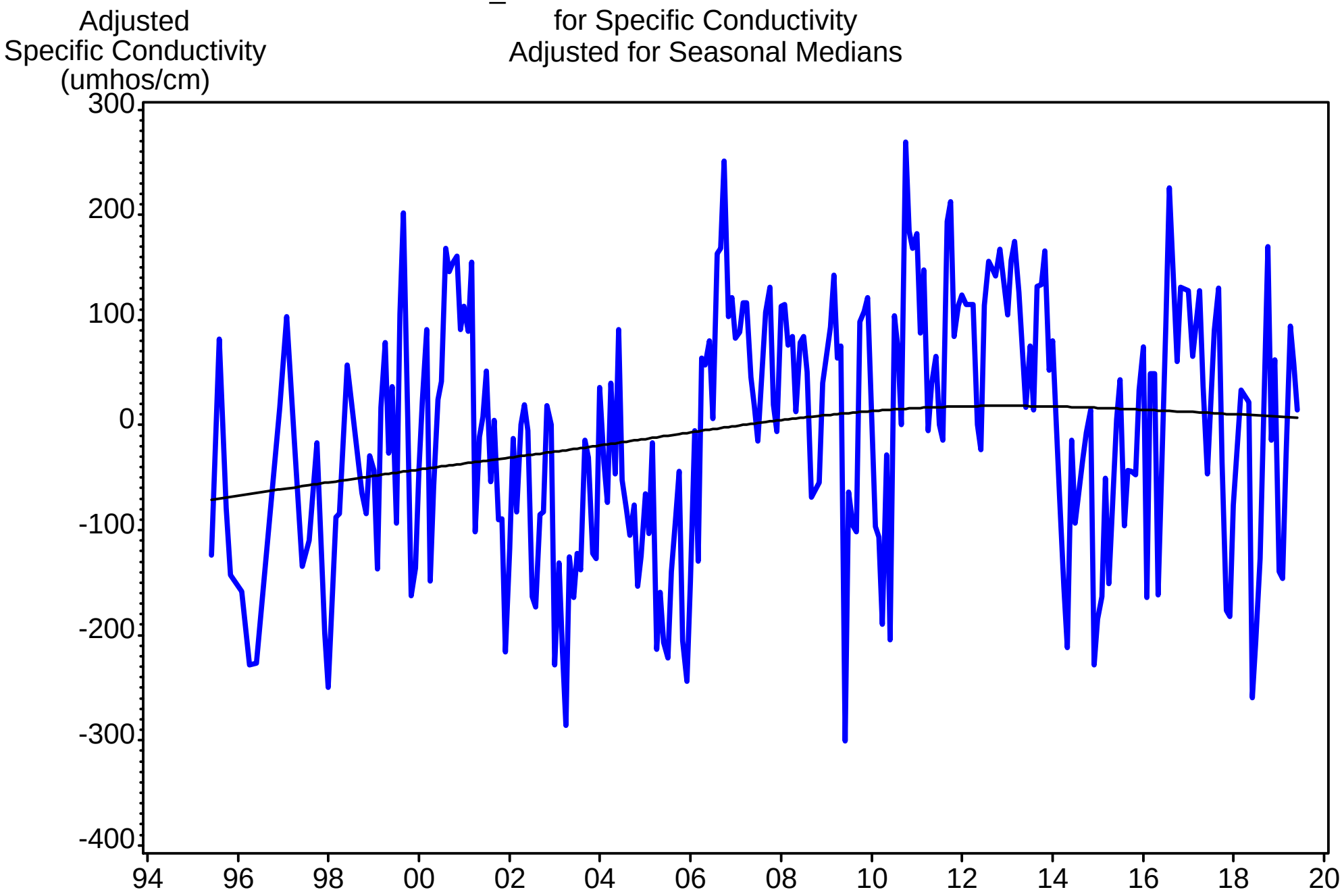
Zero Reference Line Shown

S_21FLSJWM27010579 Trends

S_21FLSJWM27010579 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



S_21FLSJWM27010579 Trends

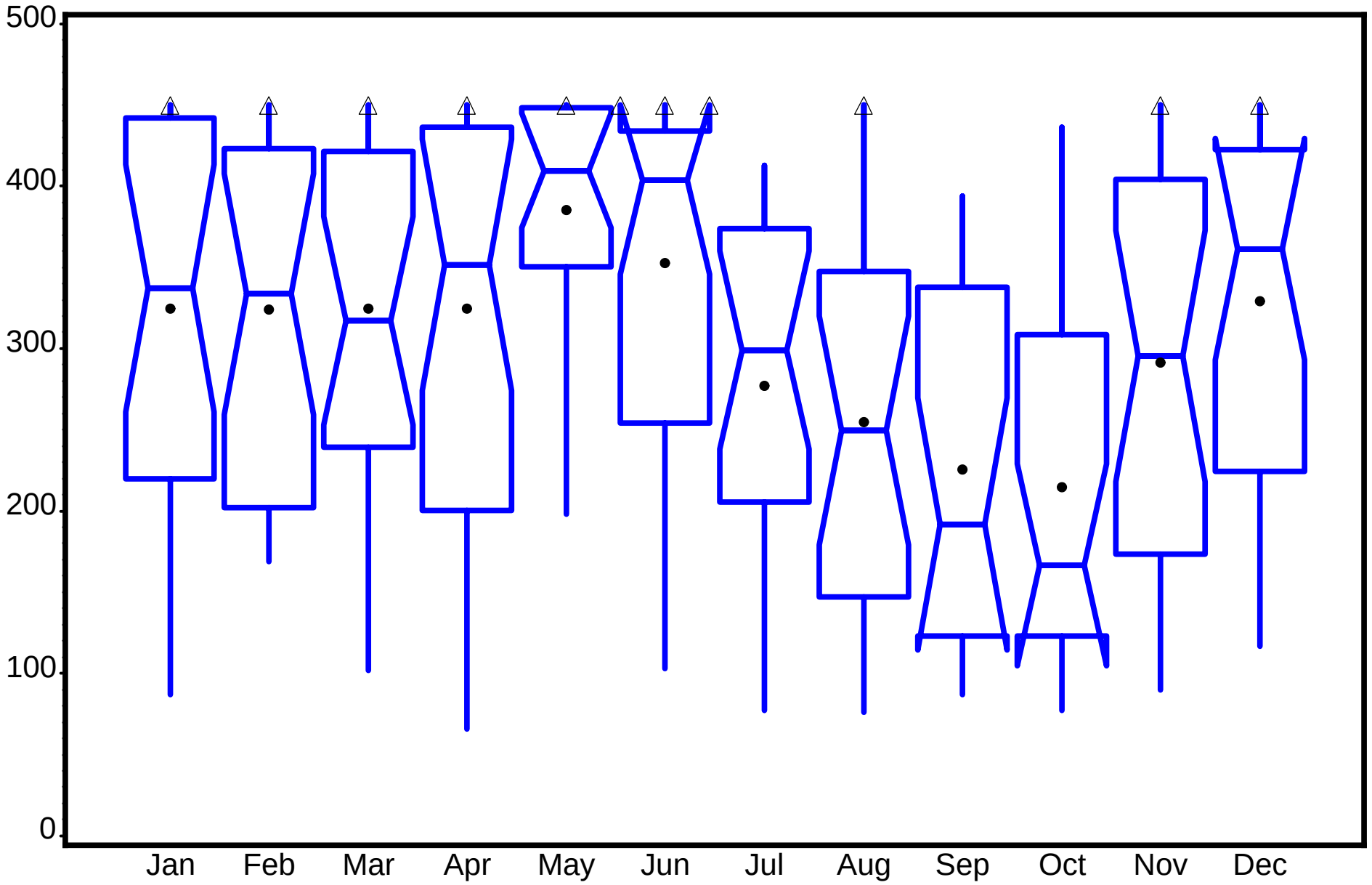


S_21FLSJWM27010579 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



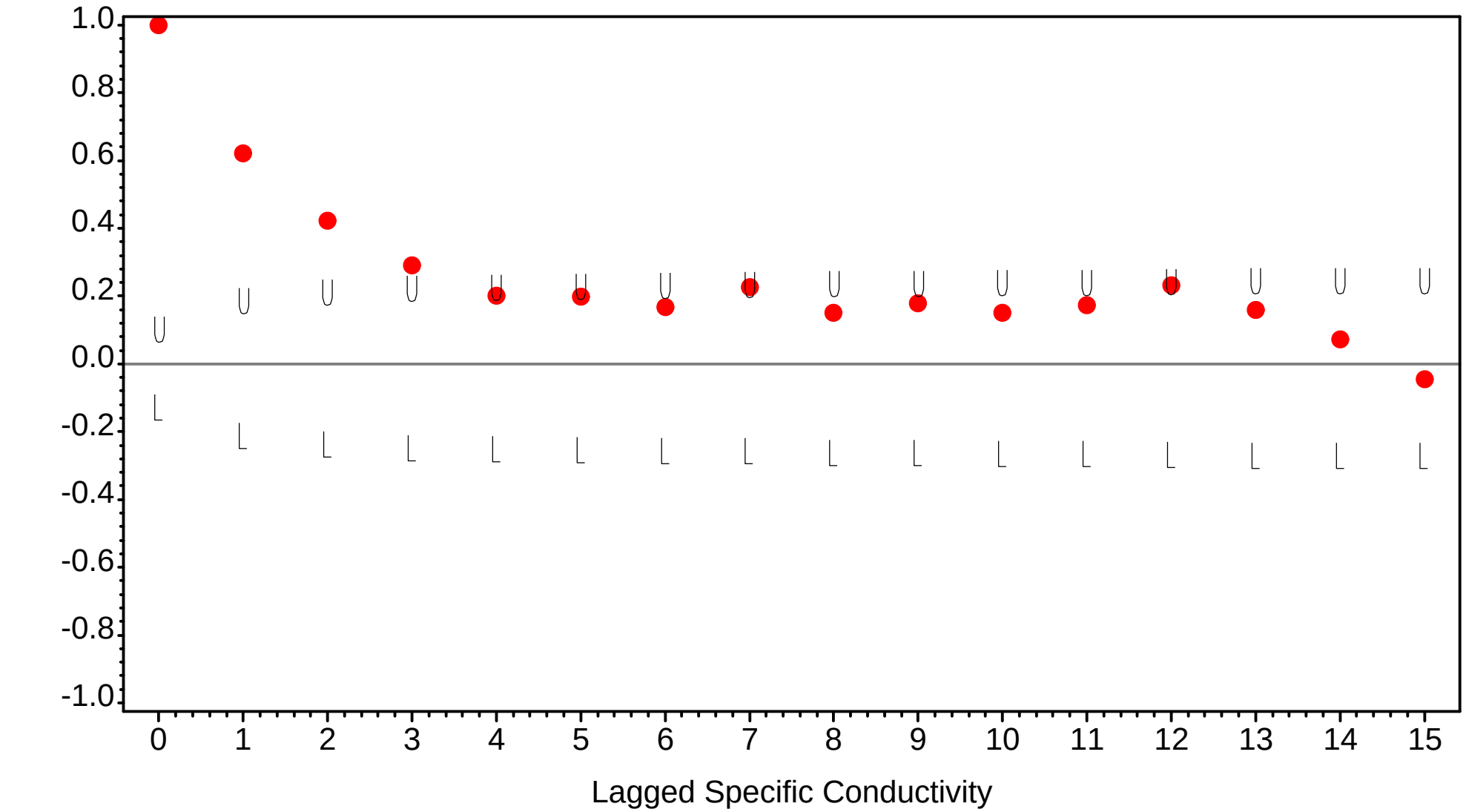
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.622	0.100	0.200	-0.200
2	0.422	0.112	0.224	-0.224
3	0.291	0.117	0.235	-0.235
4	0.202	0.120	0.239	-0.239
5	0.197	0.121	0.242	-0.242
6	0.168	0.122	0.244	-0.244
7	0.226	0.123	0.245	-0.245
8	0.150	0.124	0.248	-0.248
9	0.179	0.125	0.249	-0.249
10	0.150	0.126	0.251	-0.251
11	0.174	0.126	0.252	-0.252
12	0.231	0.127	0.254	-0.254
13	0.160	0.128	0.257	-0.257
14	0.073	0.129	0.258	-0.258
15	-0.044	0.129	0.258	-0.258

S_21FLSJWM27010579 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

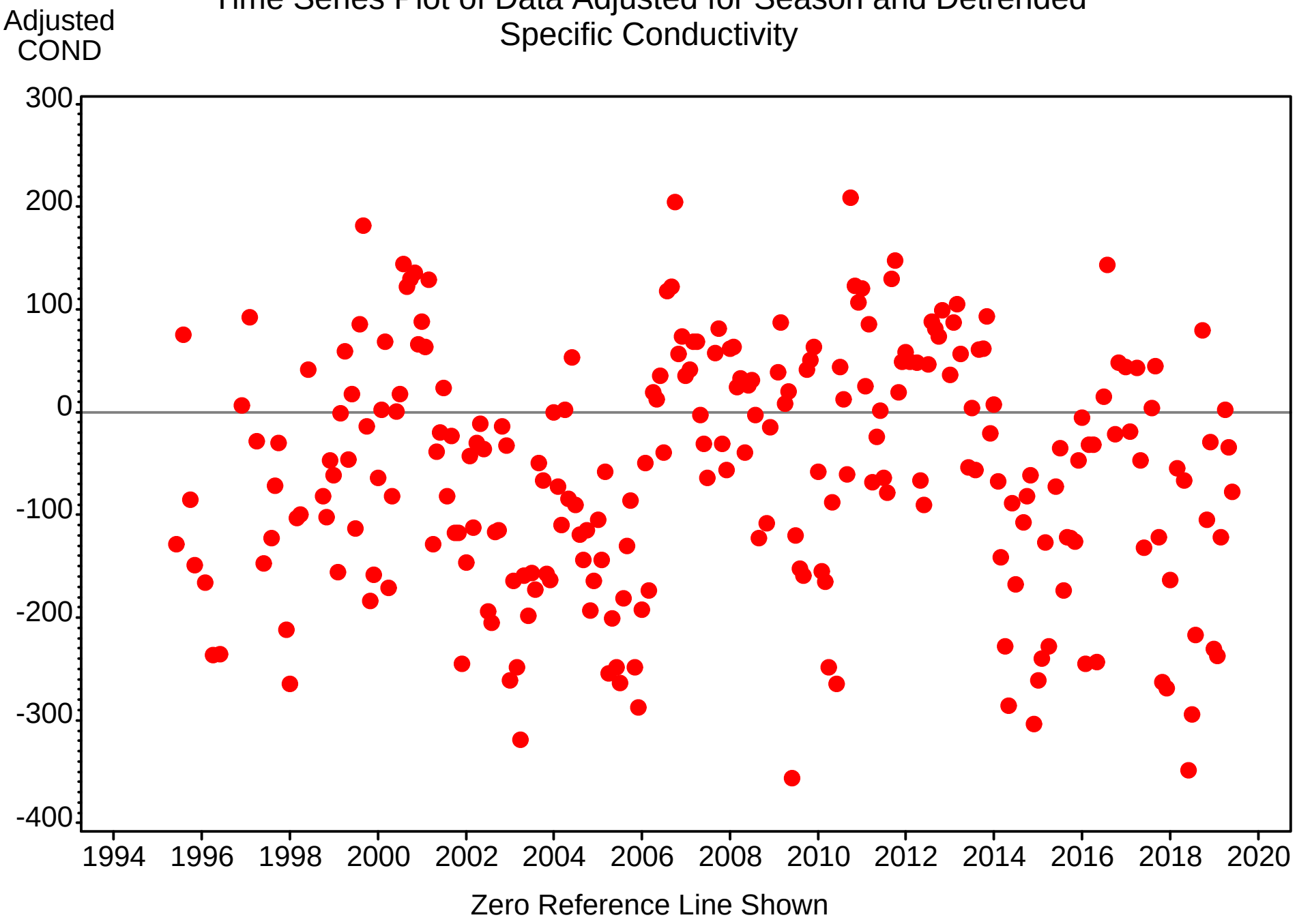
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.141	.002	0.118	3.633

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.14122	.00201964	0.11766	3.63333

S_21FLSJWM27010579 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

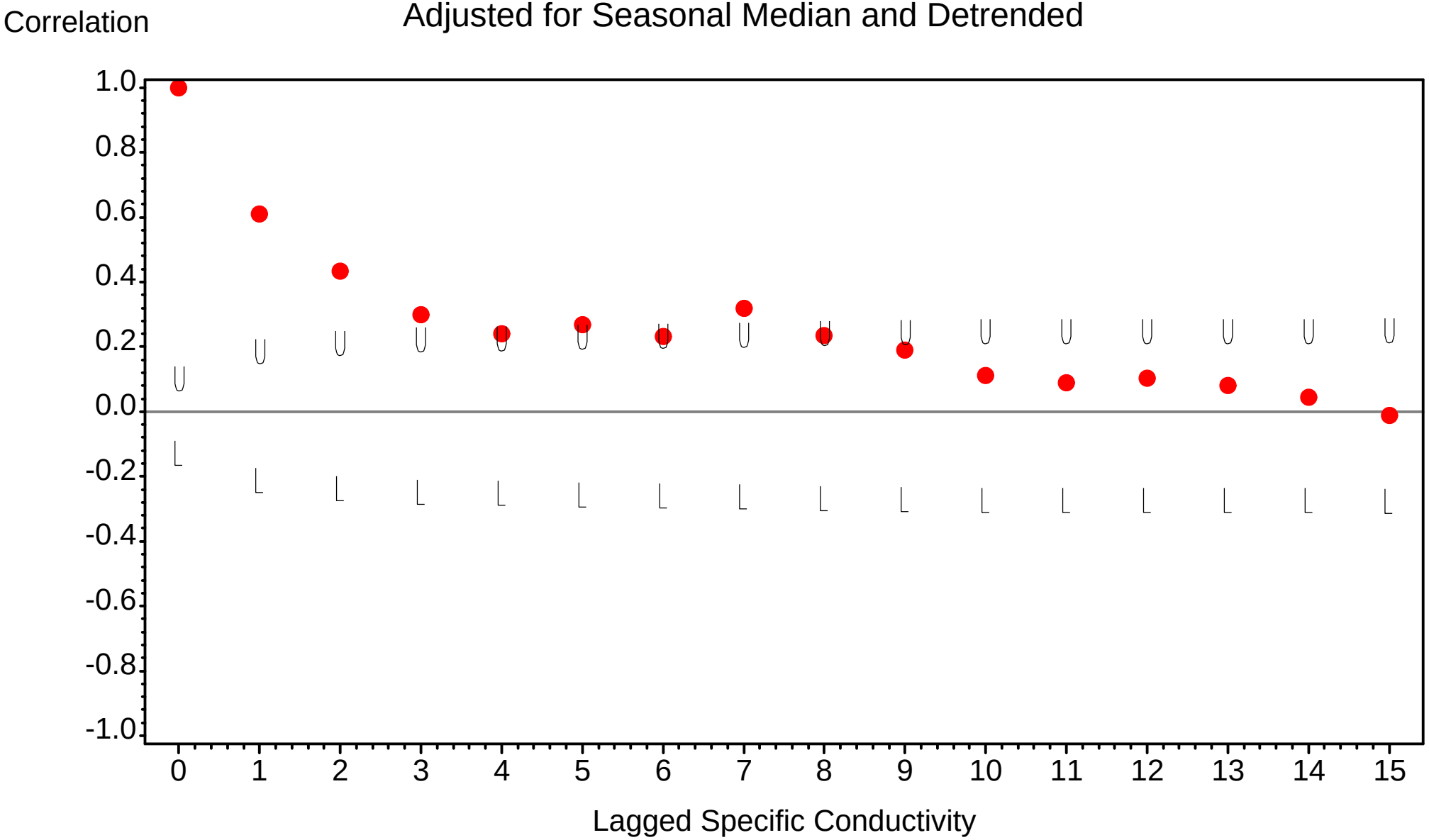


S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.610	0.100	0.200	-0.200
2	0.434	0.112	0.223	-0.223
3	0.299	0.117	0.234	-0.234
4	0.239	0.120	0.239	-0.239
5	0.269	0.121	0.243	-0.243
6	0.233	0.123	0.247	-0.247
7	0.319	0.125	0.249	-0.249
8	0.235	0.127	0.255	-0.255
9	0.191	0.129	0.258	-0.258
10	0.111	0.130	0.260	-0.260
11	0.090	0.130	0.260	-0.260
12	0.102	0.130	0.261	-0.261
13	0.080	0.131	0.261	-0.261
14	0.045	0.131	0.261	-0.261
15	-0.013	0.131	0.262	-0.262

S_21FLSJWM27010579 Trends Appendix

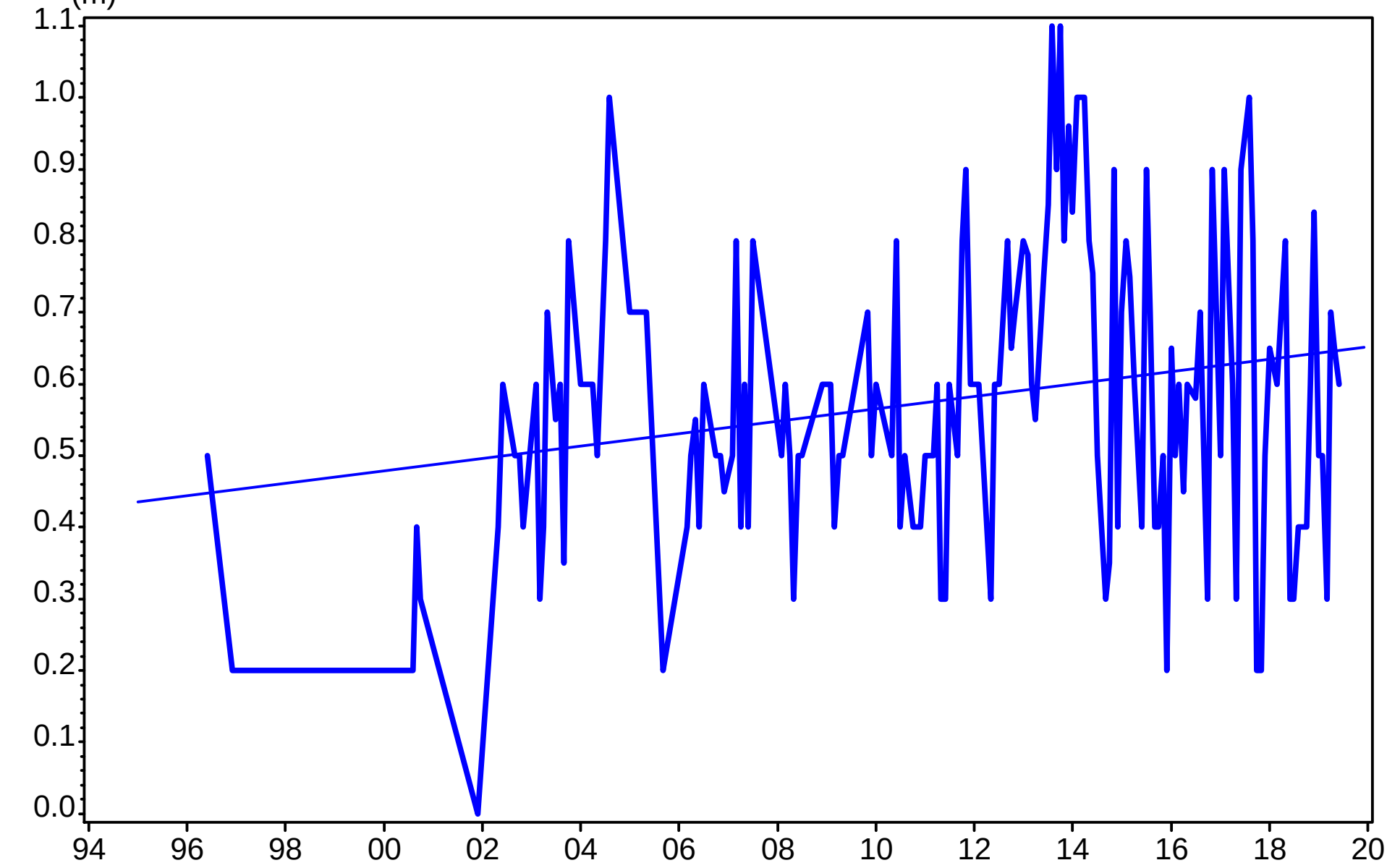
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



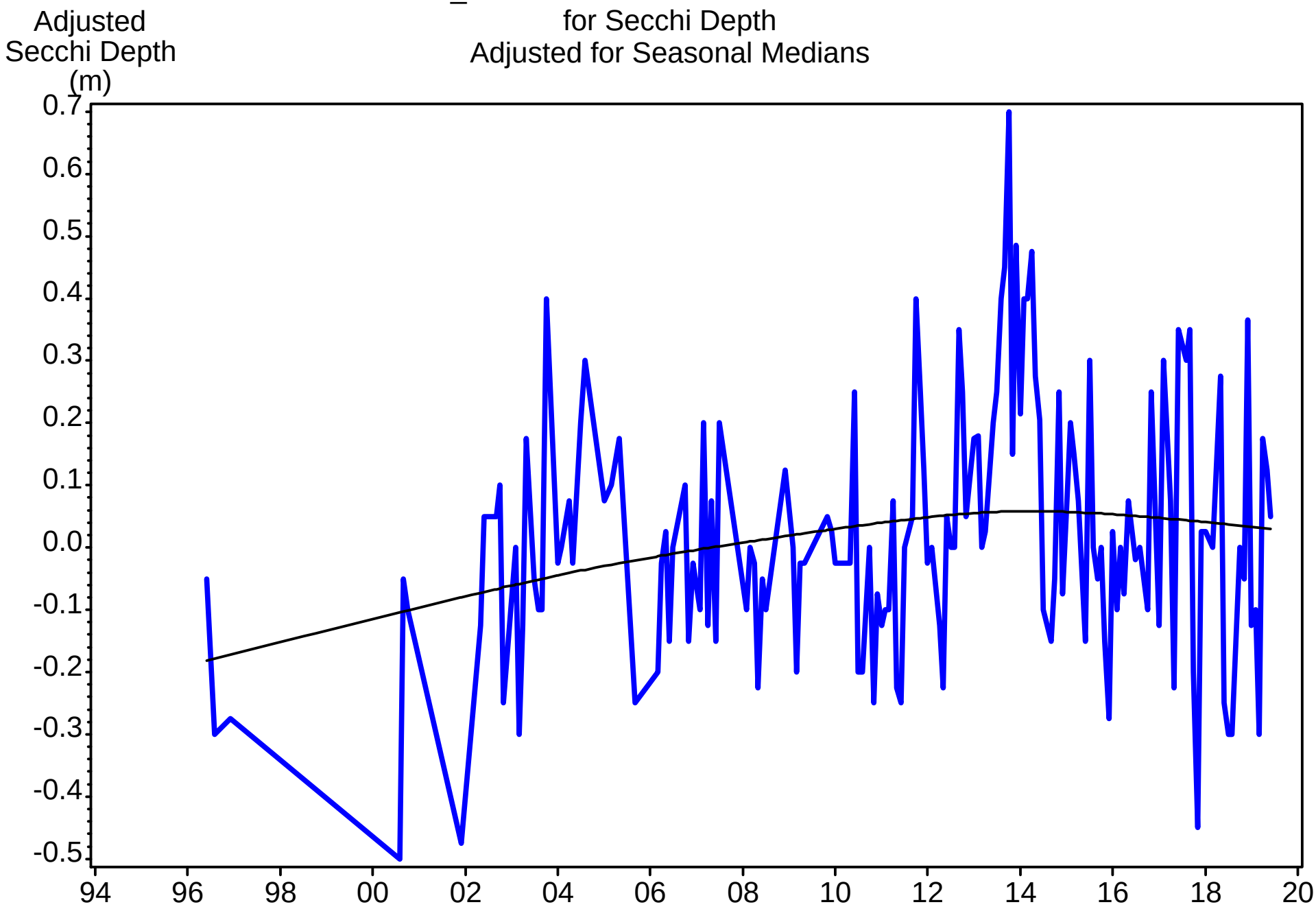
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLSJWM27010579 Trends

S_21FLSJWM27010579 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



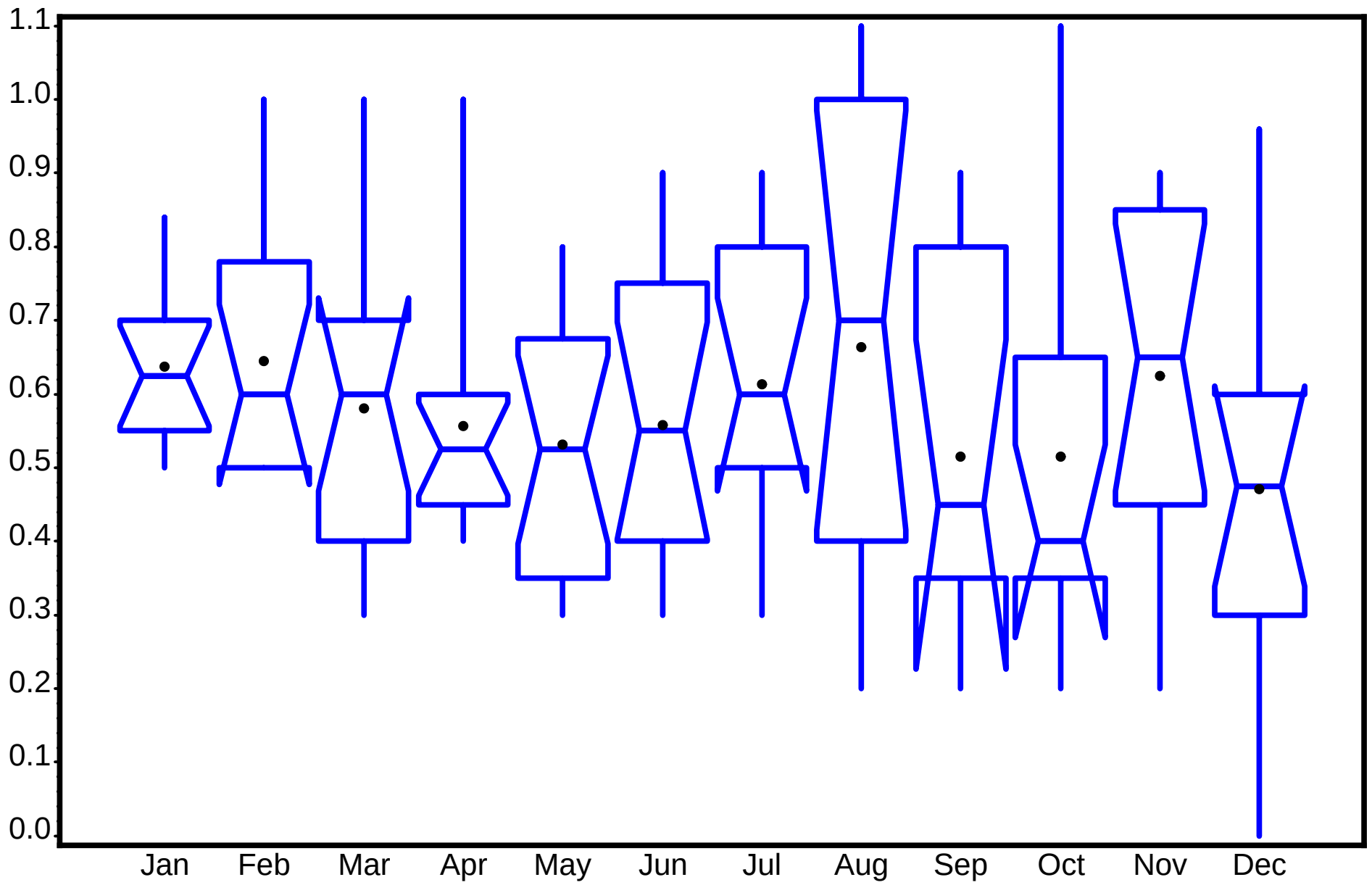
S_21FLSJWM27010579 Trends



S_21FLSJWM27010579 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



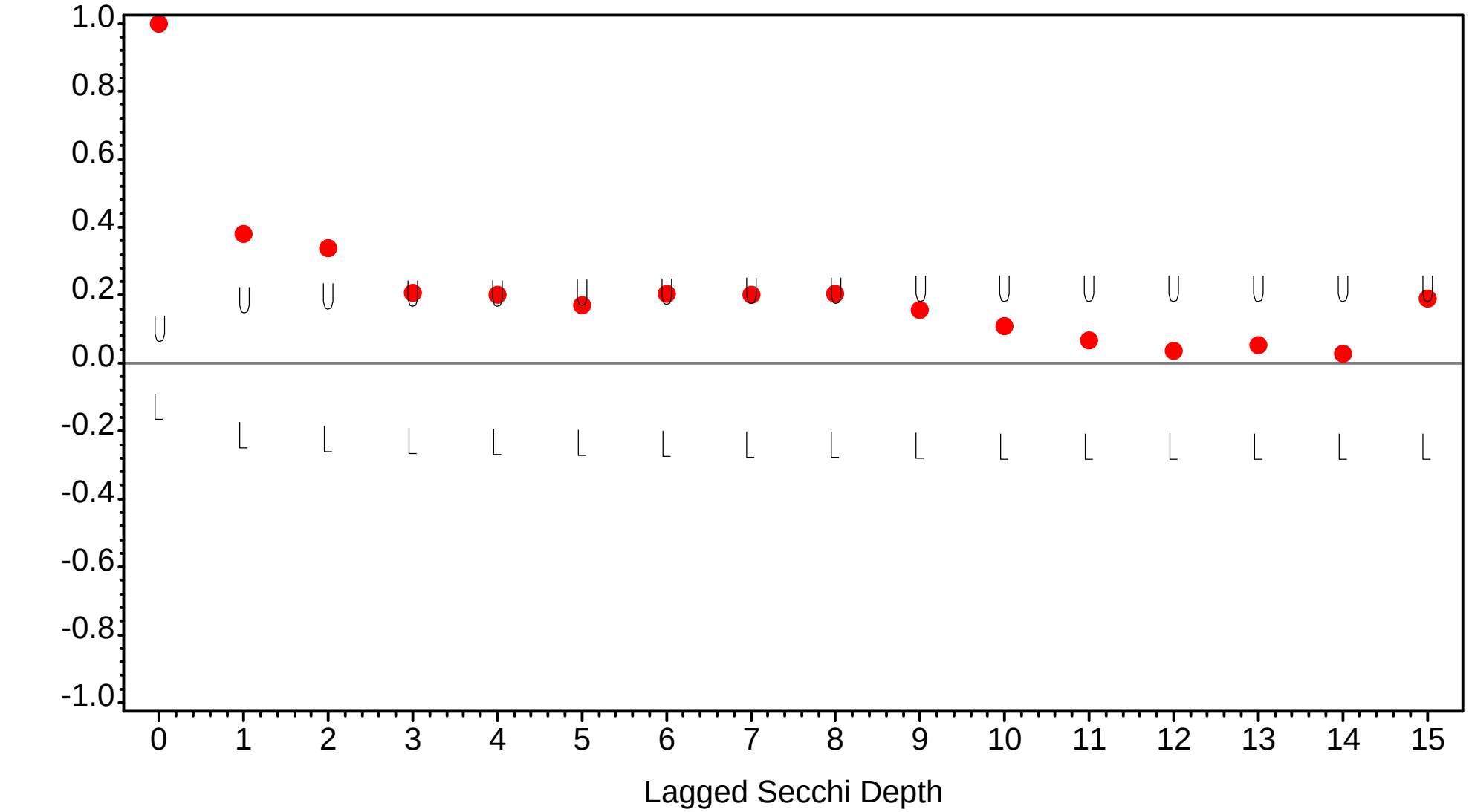
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.381	0.100	0.200	-0.200
2	0.339	0.105	0.209	-0.209
3	0.208	0.108	0.217	-0.217
4	0.201	0.110	0.219	-0.219
5	0.170	0.111	0.222	-0.222
6	0.203	0.112	0.223	-0.223
7	0.200	0.113	0.226	-0.226
8	0.203	0.114	0.228	-0.228
9	0.156	0.115	0.231	-0.231
10	0.109	0.116	0.232	-0.232
11	0.066	0.116	0.233	-0.233
12	0.037	0.116	0.233	-0.233
13	0.054	0.117	0.233	-0.233
14	0.028	0.117	0.233	-0.233
15	0.189	0.117	0.233	-0.233

S_21FLSJWM27010579 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

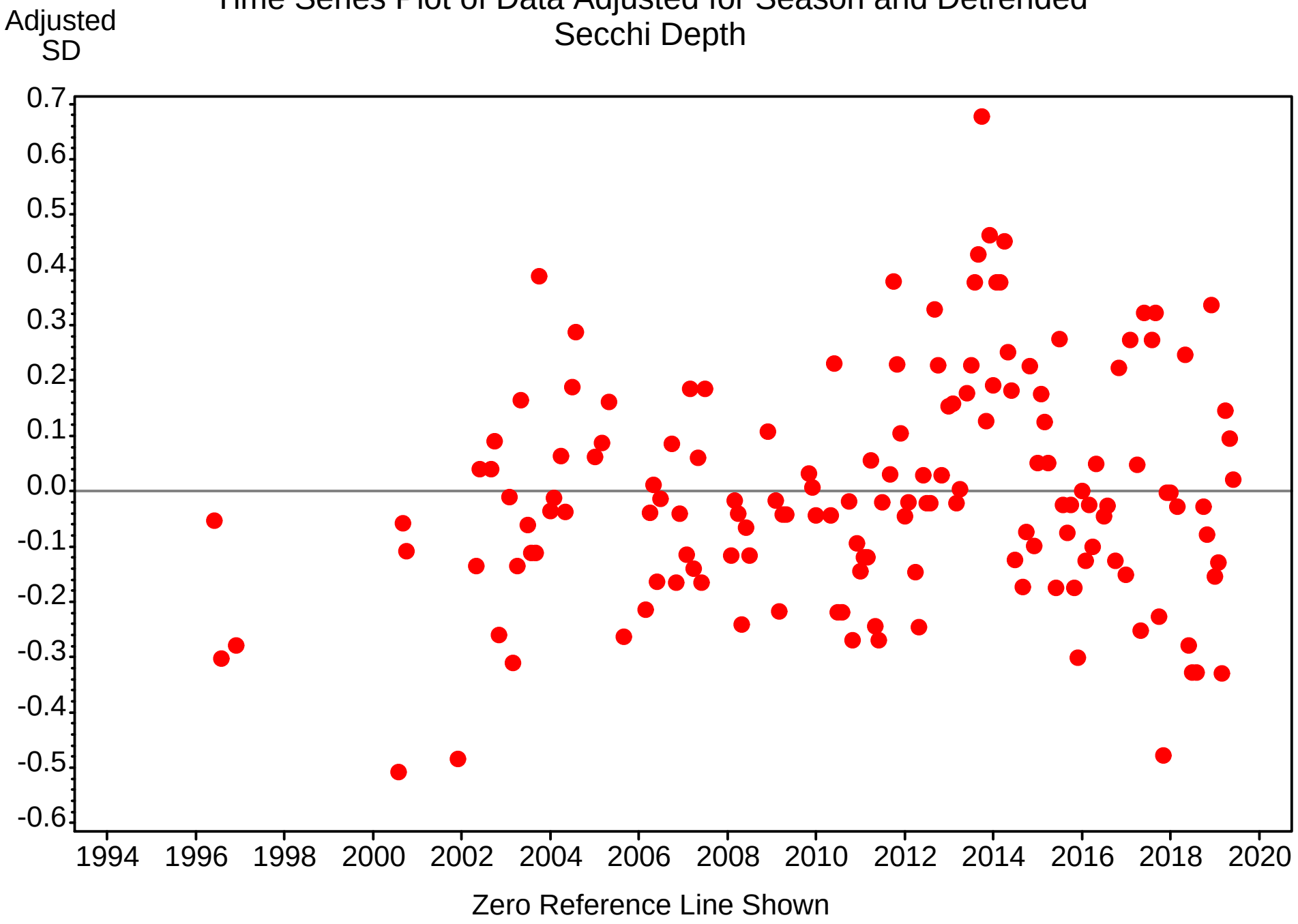
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.102	0.096	0.185	.001

S_21FLSJWM27010579 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.10197	0.095506	0.18499	.00115385

S_21FLSJWM27010579 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth



Zero Reference Line Shown

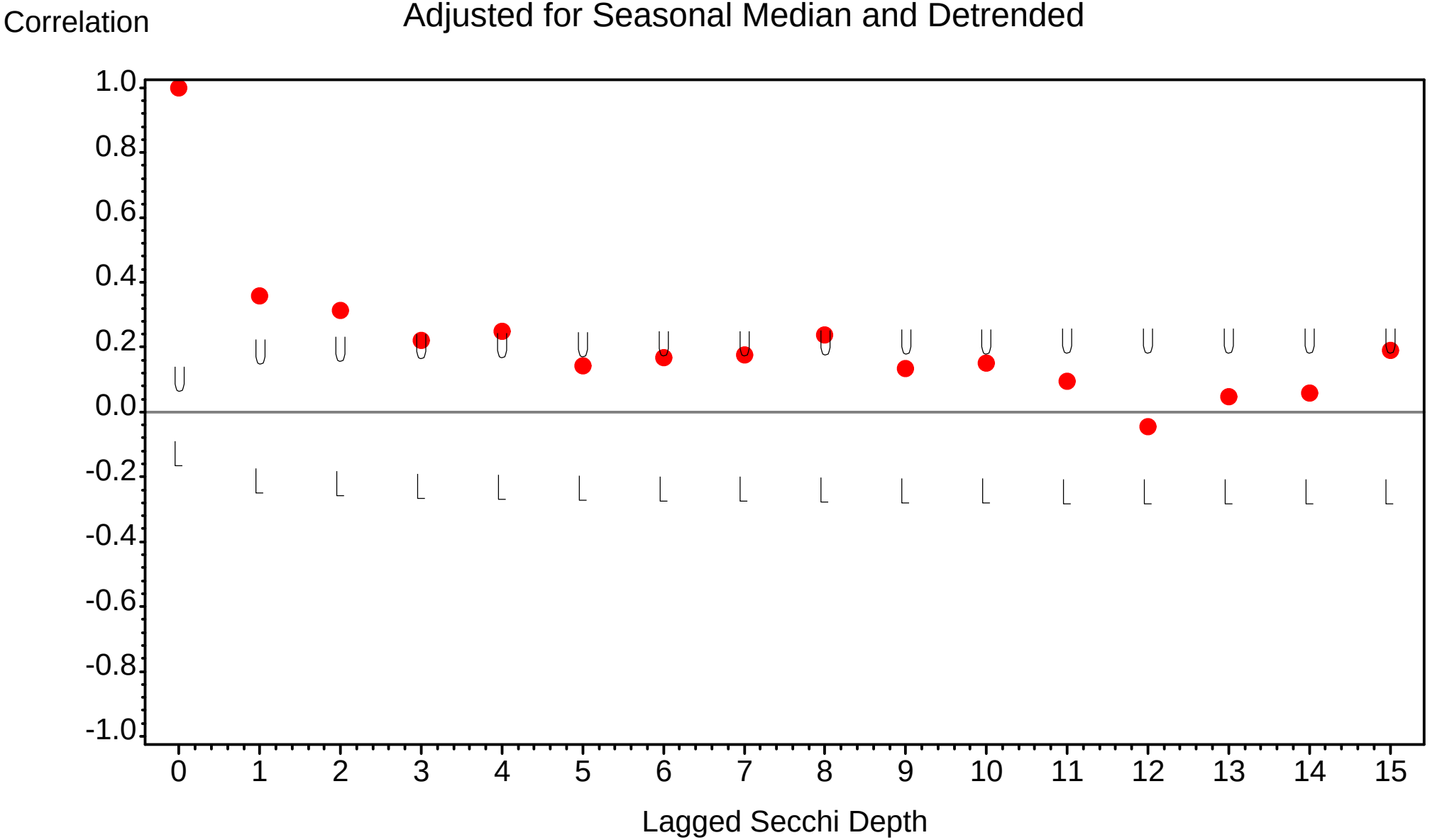
S_21FLSJWM27010579 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.357	0.100	0.200	-0.200
2	0.314	0.104	0.208	-0.208
3	0.221	0.107	0.215	-0.215
4	0.250	0.109	0.218	-0.218
5	0.142	0.111	0.221	-0.221
6	0.167	0.111	0.223	-0.223
7	0.176	0.112	0.224	-0.224
8	0.237	0.113	0.226	-0.226
9	0.133	0.115	0.229	-0.229
10	0.150	0.115	0.230	-0.230
11	0.094	0.116	0.232	-0.232
12	-0.044	0.116	0.232	-0.232
13	0.046	0.116	0.232	-0.232
14	0.057	0.116	0.232	-0.232
15	0.191	0.116	0.233	-0.233

S_21FLSJWM27010579 Trends Appendix

Correlogram for Secchi Depth

Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
2	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
4	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
5	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
6	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
2	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
3	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
4	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
5	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
6	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	0.18508	0.00006	0.00900	0.01893	0.18508	0.00006	0.01893
2	0.14122	0.00202	0.11766	3.63333	0.14122	0.11766	3.63333
3	-0.07989	0.08217	0.21224	-0.01972	-0.07989	0.08217	-0.01972
4	-0.03270	0.71735	0.77620	-0.03605	-0.03270	0.71735	-0.03605
5	0.17949	0.00008	0.04429	0.00250	0.17900	0.00000	0.00300
6	0.10197	0.09551	0.18499	0.00115	0.10200	0.18500	0.00100

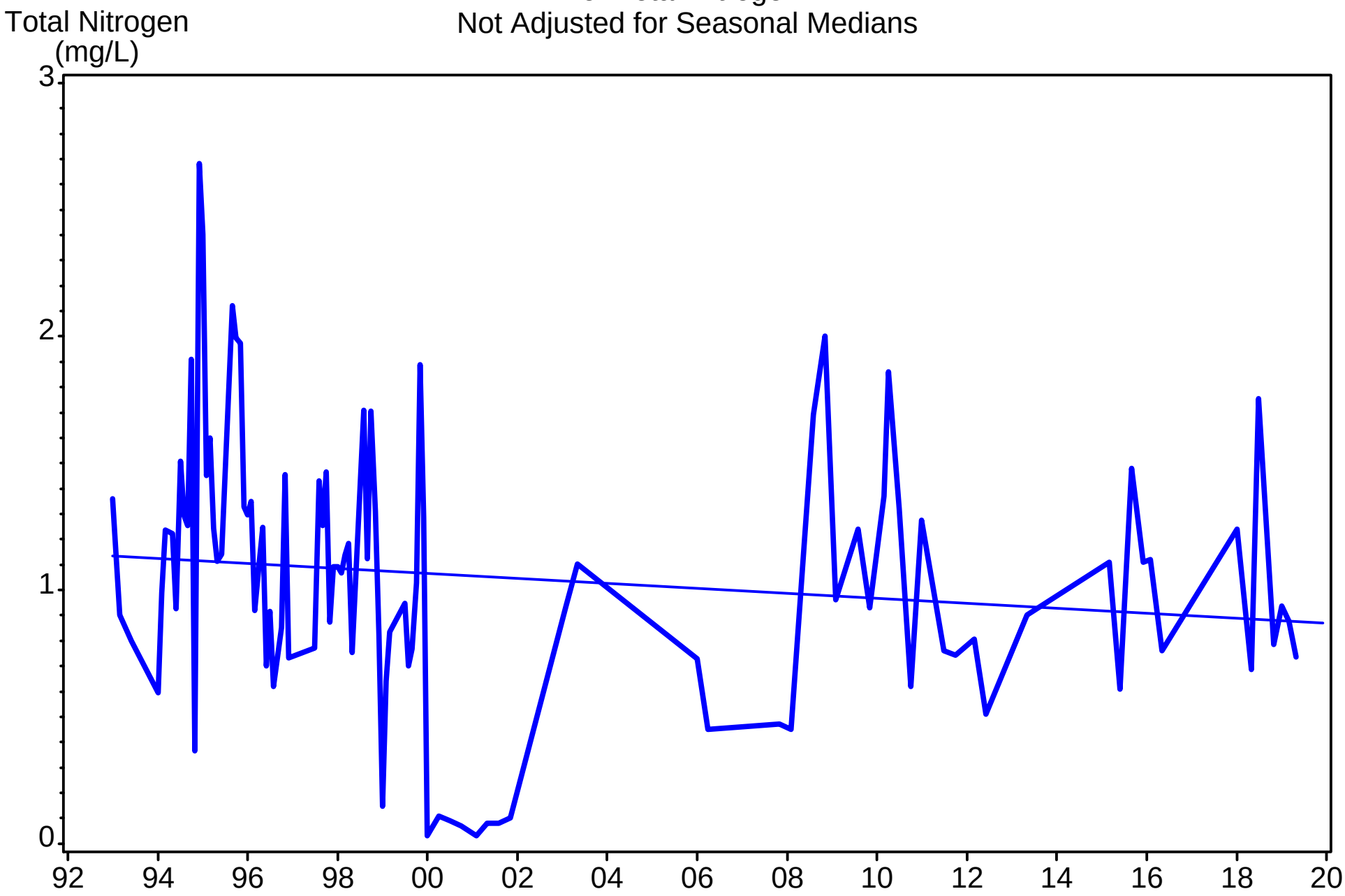
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
7	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
8	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
7	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001
8	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000

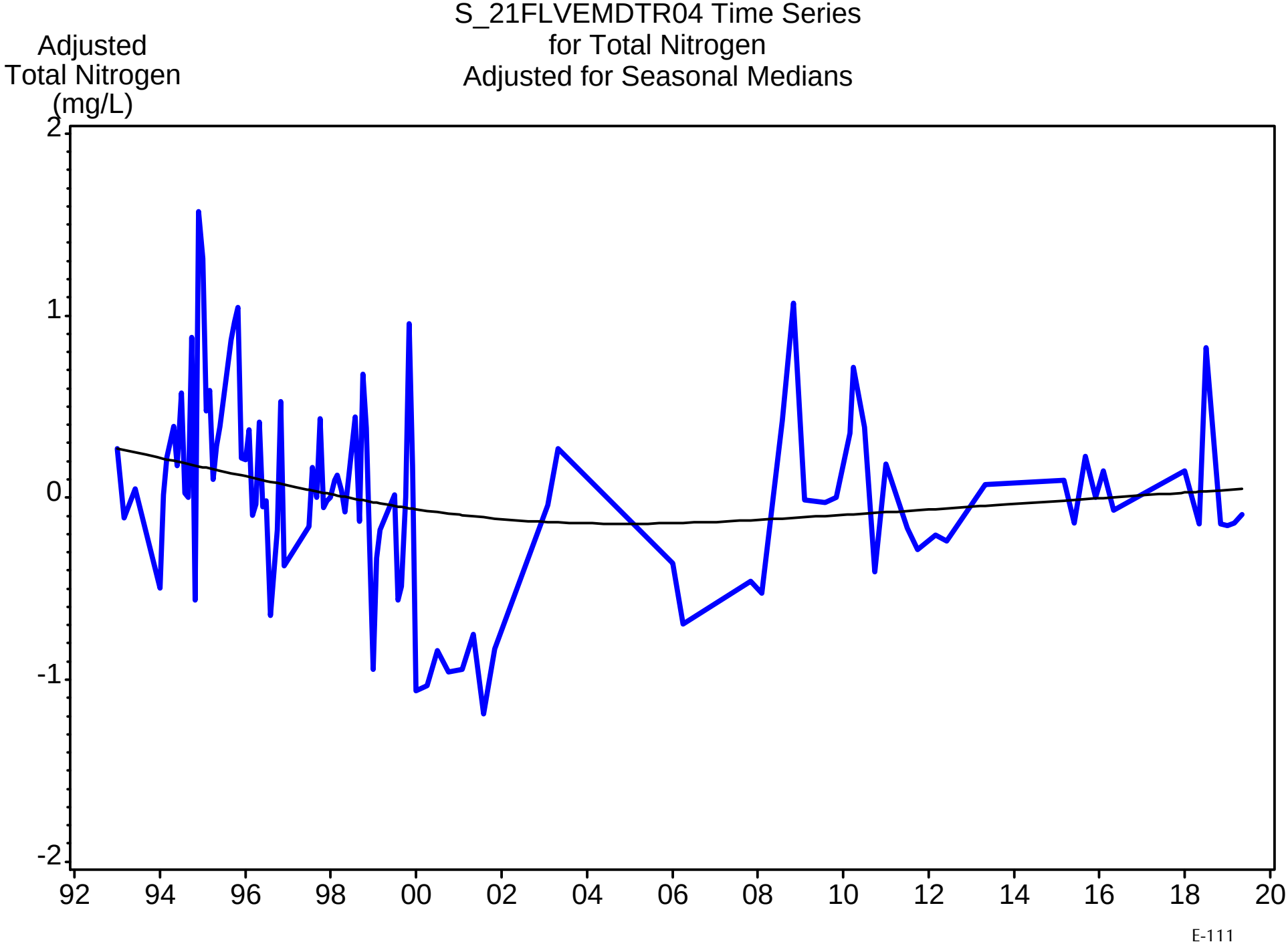
Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
7	-0.00915	0.85080	0.91313	-0.00065	-0.00900	0.91300	-0.00100
8	0.13971	0.00275	0.01624	0.00029	0.14100	0.00300	0.00000

S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLVEMDTR04 Trends

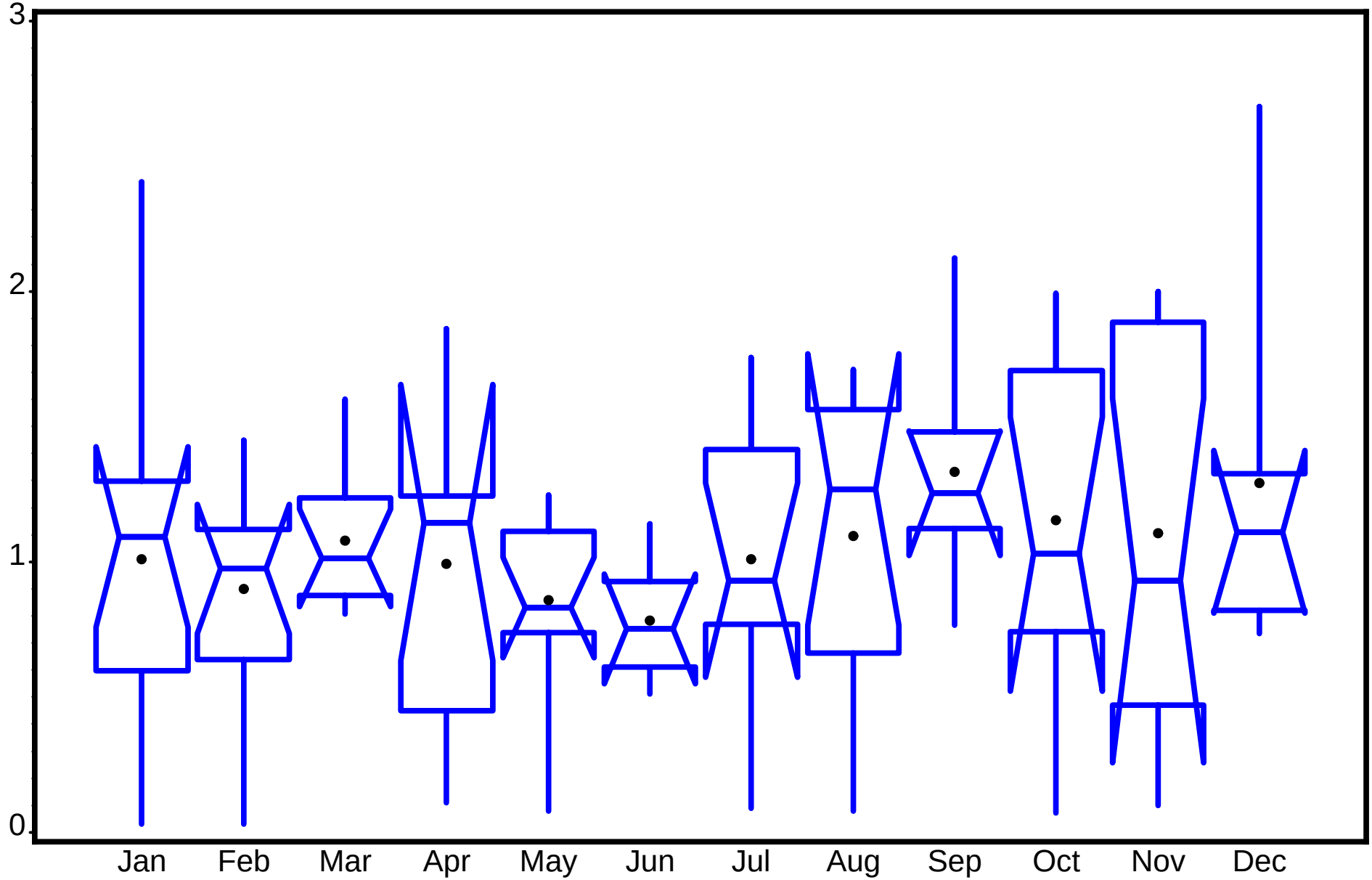


S_21FLVEMDTR04 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



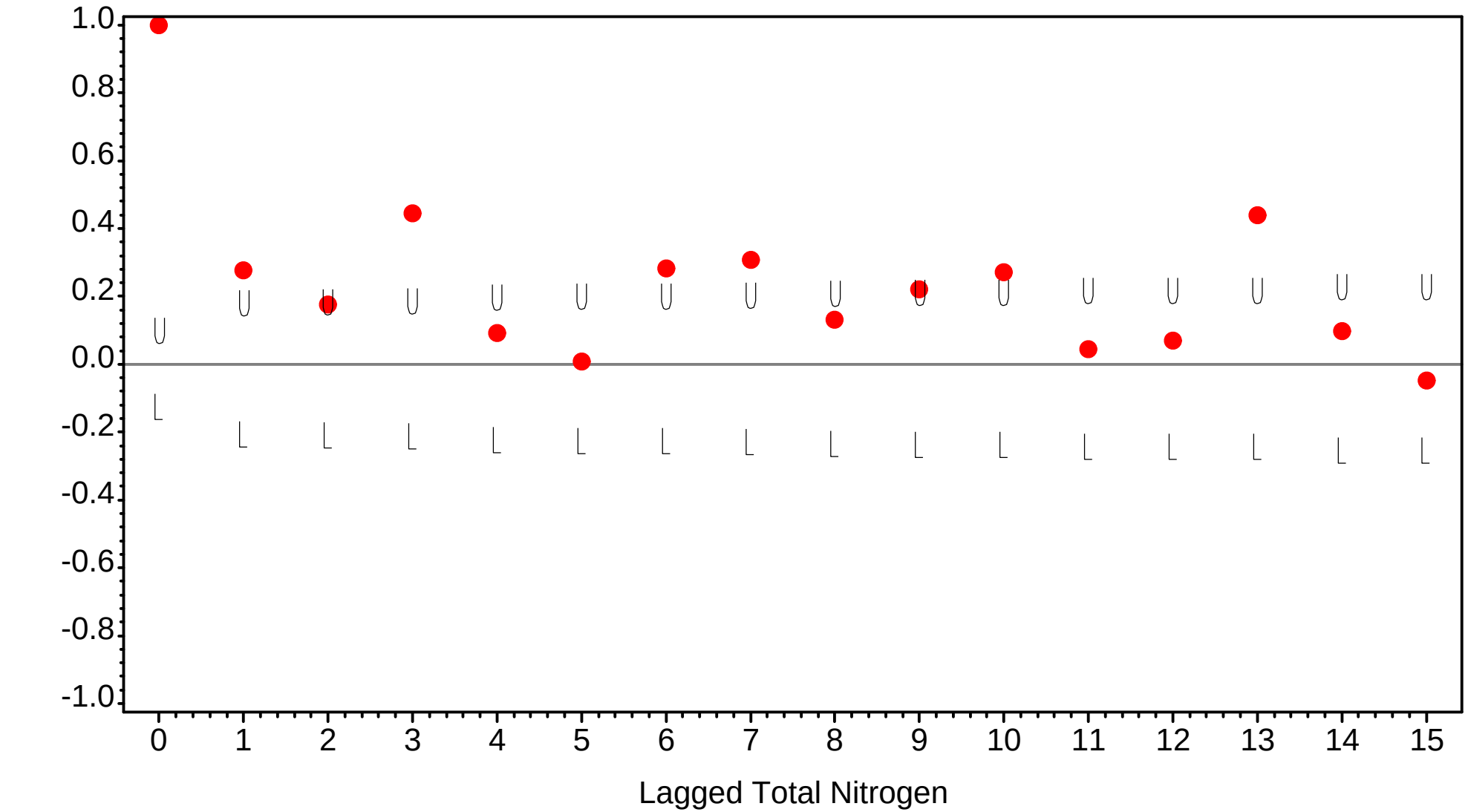
S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.277	0.096	0.192	-0.192
2	0.176	0.099	0.197	-0.197
3	0.445	0.100	0.199	-0.199
4	0.093	0.106	0.211	-0.211
5	0.009	0.106	0.212	-0.212
6	0.282	0.106	0.212	-0.212
7	0.308	0.108	0.216	-0.216
8	0.131	0.111	0.222	-0.222
9	0.220	0.111	0.223	-0.223
10	0.271	0.113	0.225	-0.225
11	0.045	0.115	0.229	-0.229
12	0.070	0.115	0.229	-0.229
13	0.439	0.115	0.230	-0.230
14	0.097	0.120	0.240	-0.240
15	-0.048	0.120	0.240	-0.240

S_21FLVEMDTR04 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

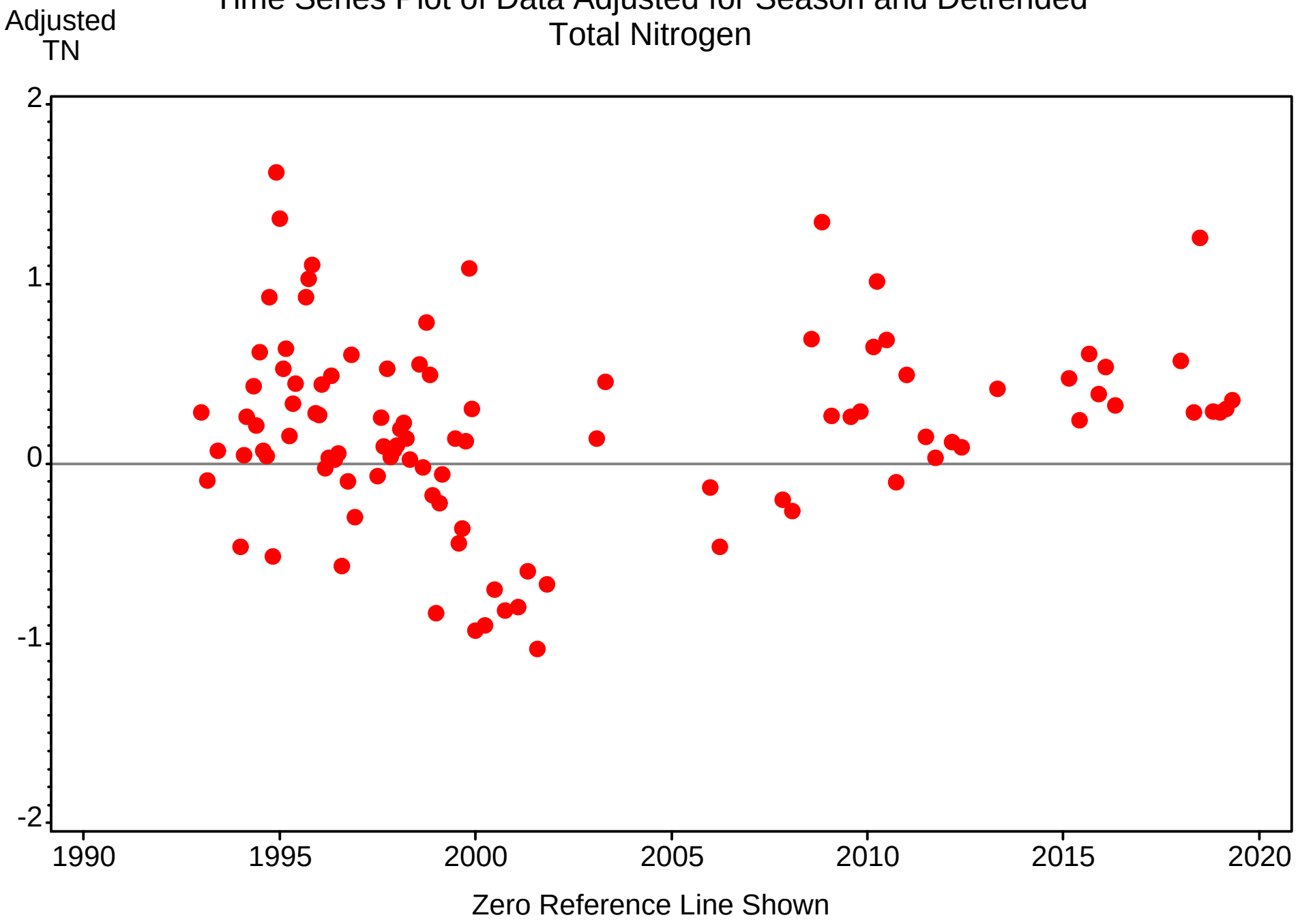
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.241	.003	0.076	-0.016

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.24070	.00314888	0.075958	-0.016231

S_21FLVEMDTR04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



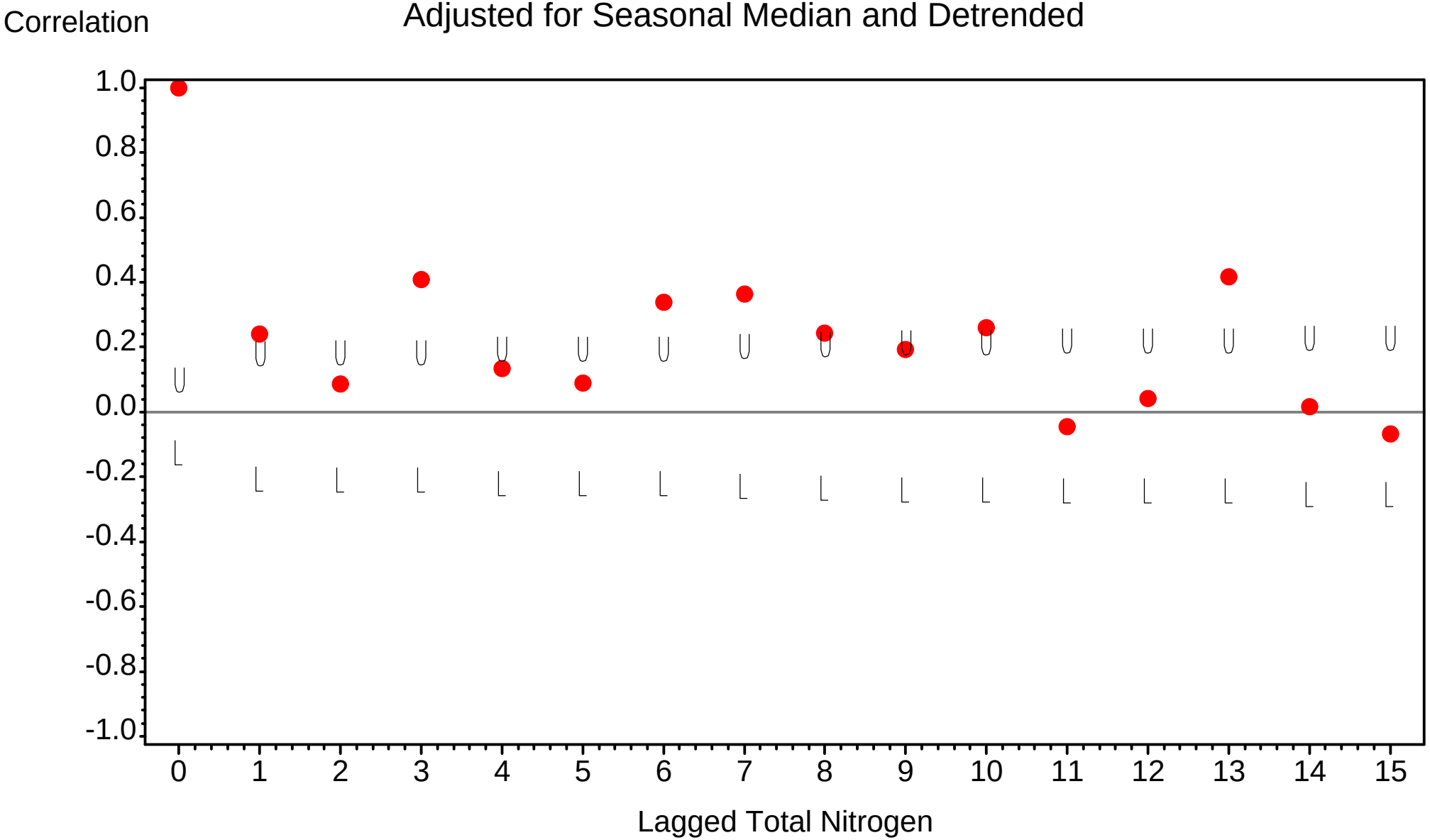
S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.239	0.096	0.192	-0.192
2	0.085	0.098	0.196	-0.196
3	0.408	0.098	0.197	-0.197
4	0.134	0.103	0.207	-0.207
5	0.089	0.104	0.208	-0.208
6	0.337	0.104	0.208	-0.208
7	0.364	0.107	0.215	-0.215
8	0.242	0.111	0.222	-0.222
9	0.192	0.113	0.226	-0.226
10	0.260	0.114	0.228	-0.228
11	-0.044	0.116	0.231	-0.231
12	0.041	0.116	0.231	-0.231
13	0.416	0.116	0.231	-0.231
14	0.016	0.120	0.241	-0.241
15	-0.068	0.120	0.241	-0.241

S_21FLVEMDTR04 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

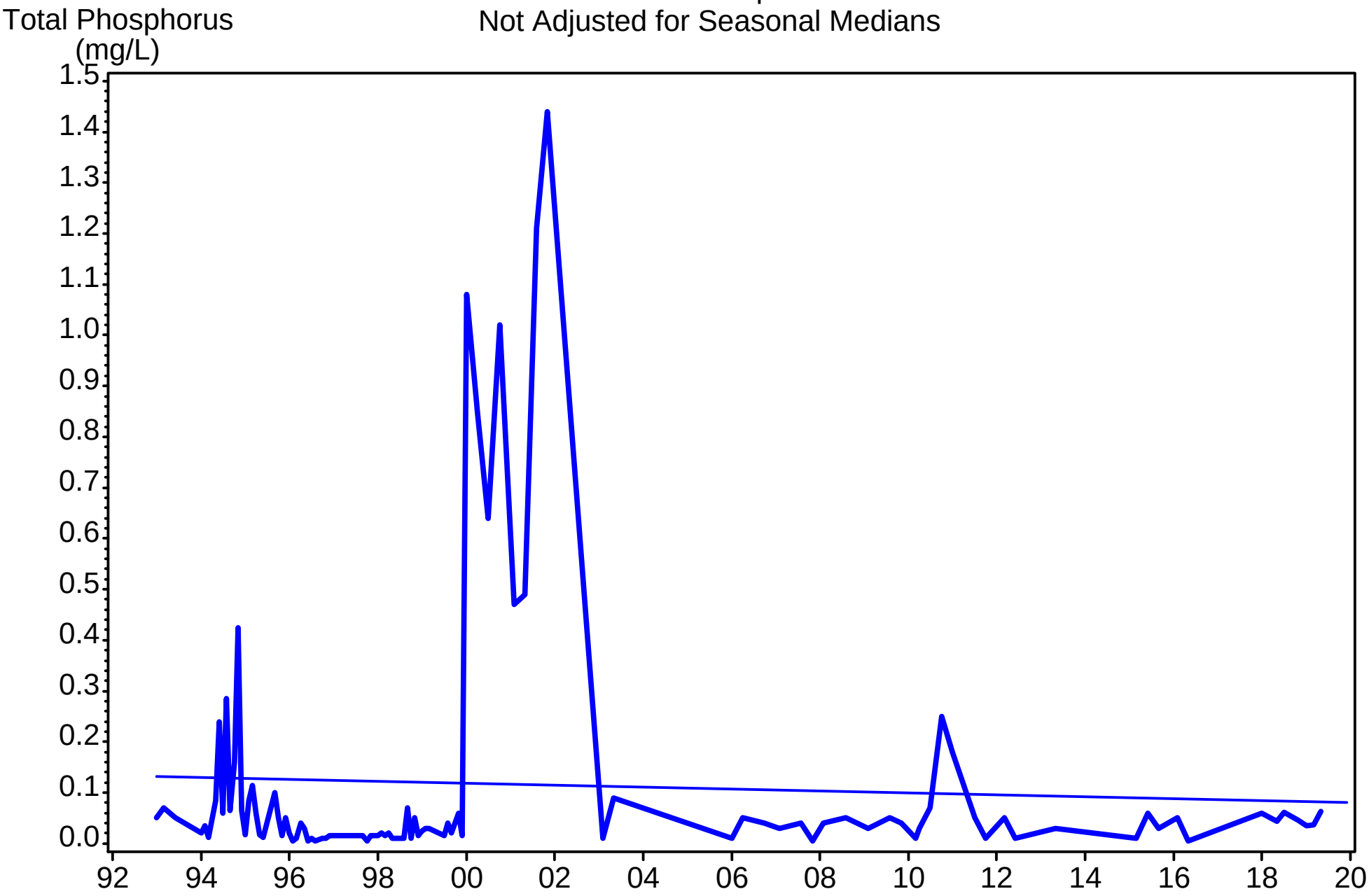


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

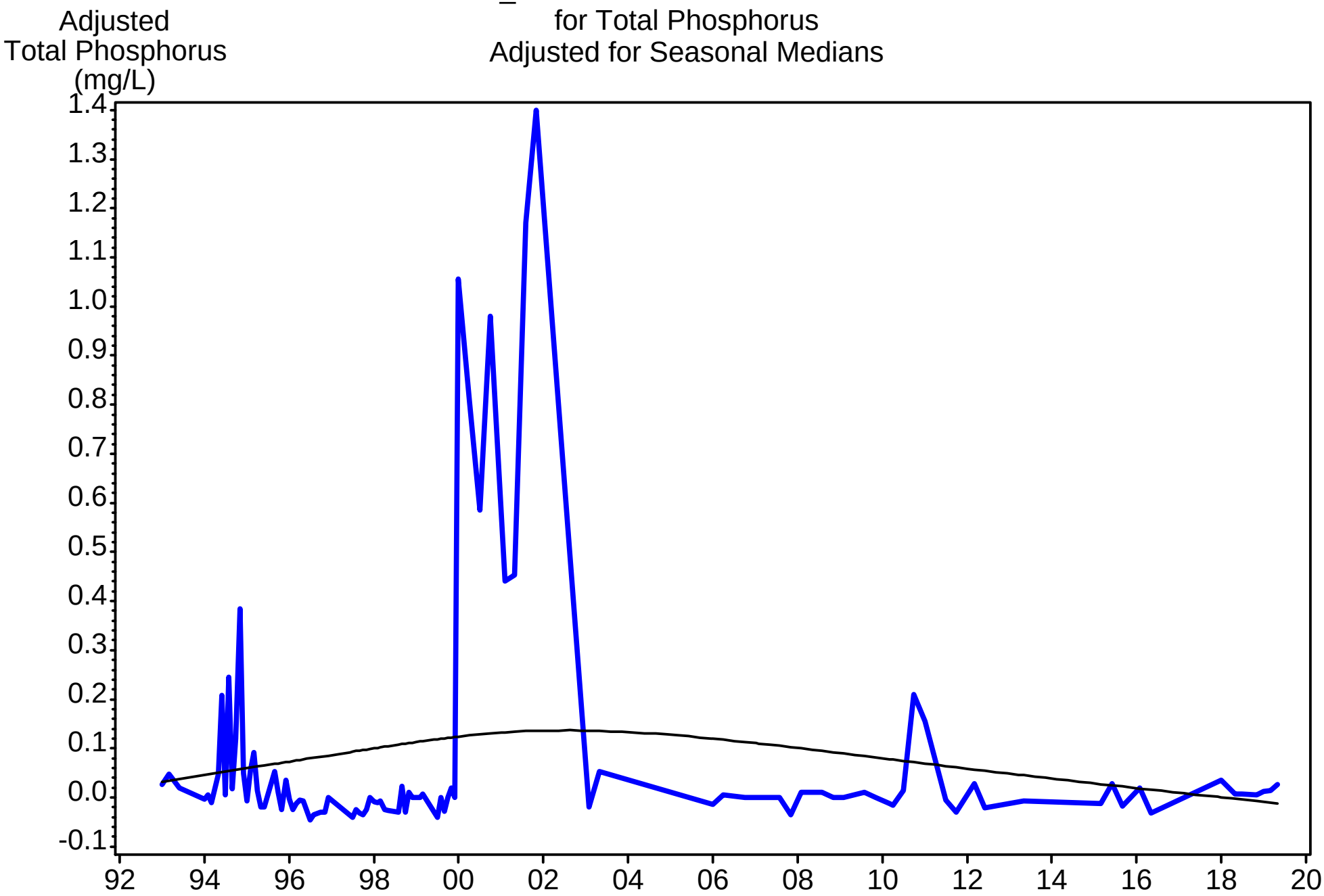
Zero Reference Line Shown

S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



S_21FLVEMDTR04 Trends

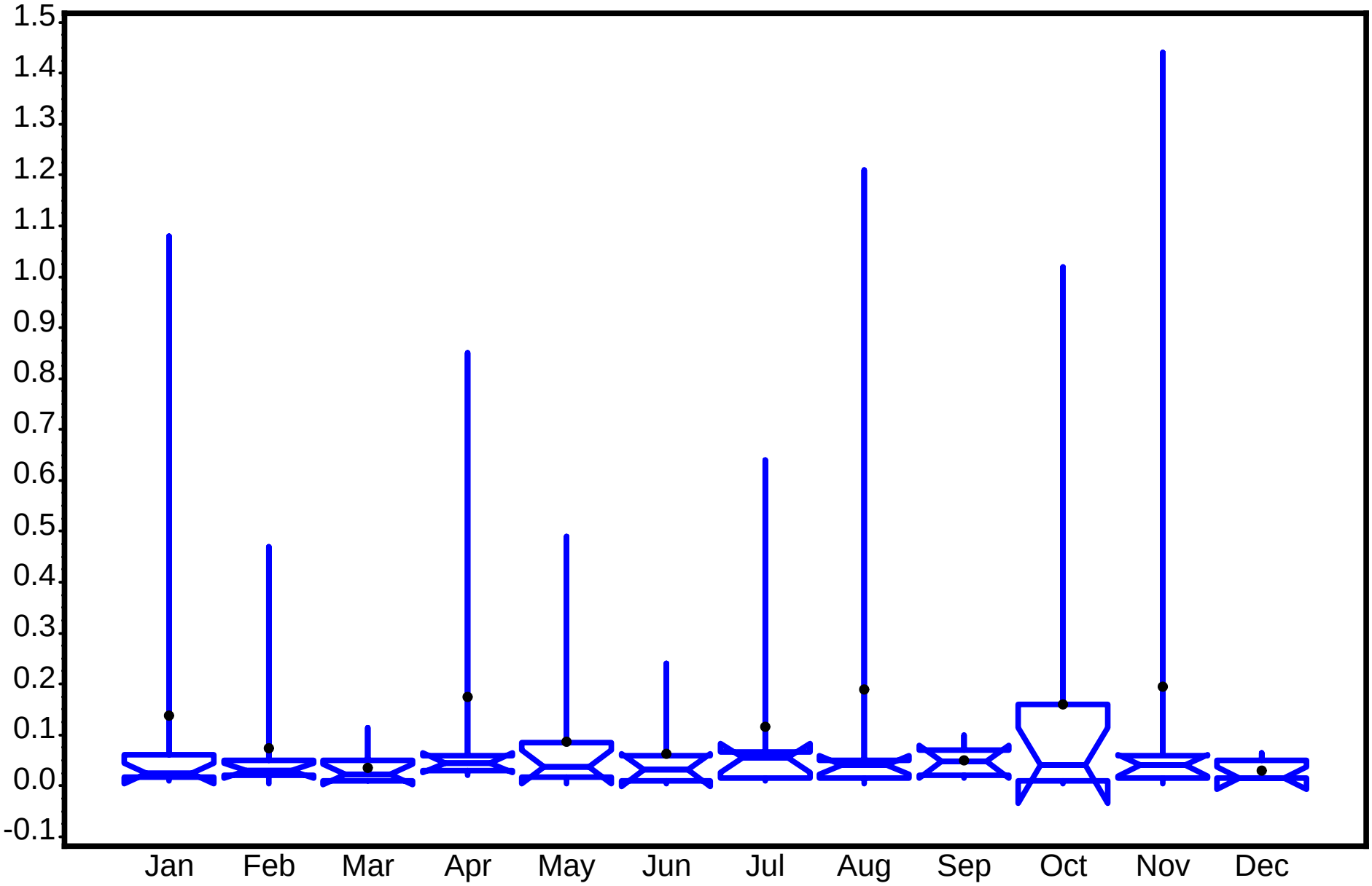


S_21FLVEMDTR04 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)

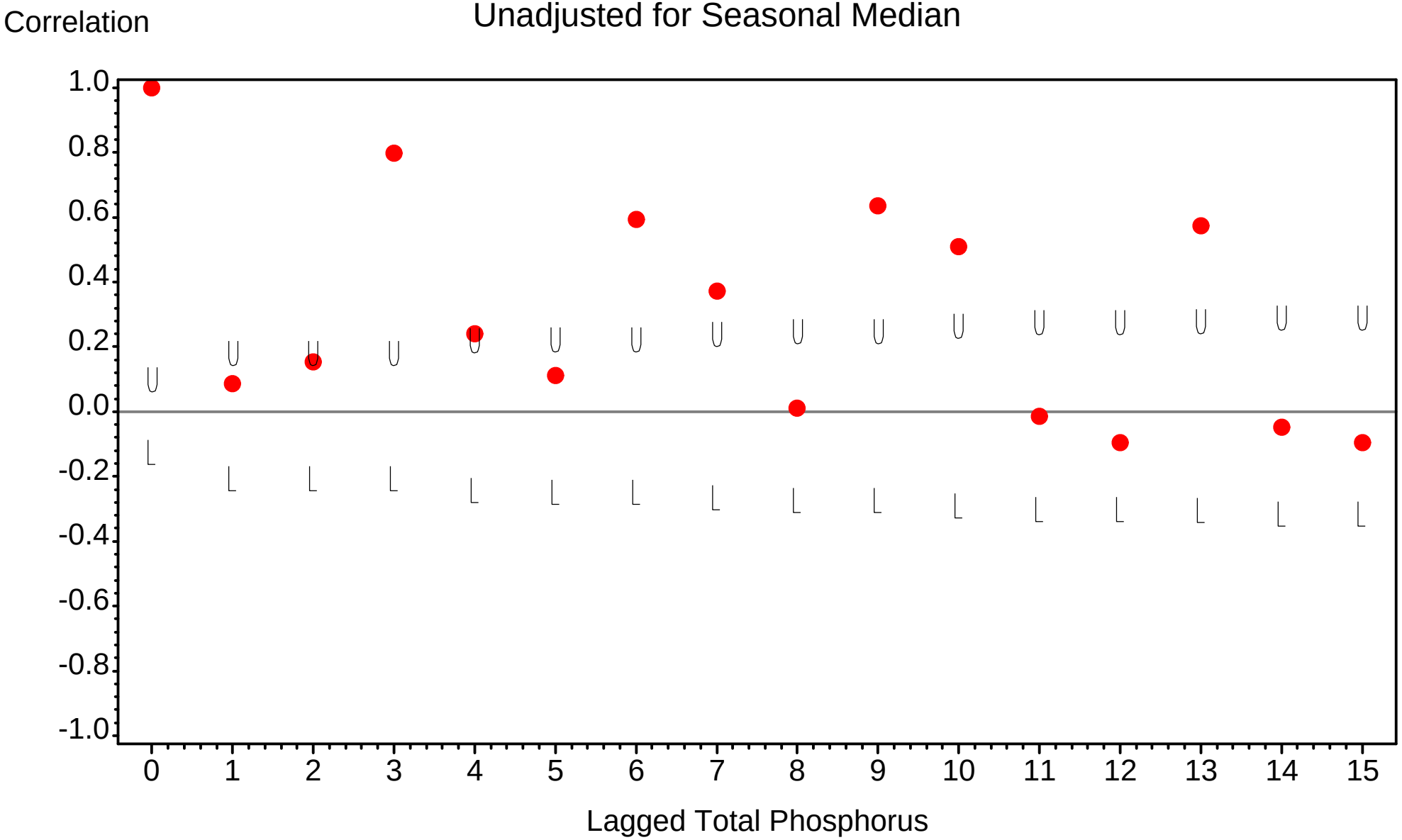


S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.087	0.096	0.192	-0.192
2	0.154	0.096	0.193	-0.193
3	0.798	0.097	0.194	-0.194
4	0.241	0.116	0.231	-0.231
5	0.112	0.117	0.234	-0.234
6	0.592	0.118	0.235	-0.235
7	0.371	0.126	0.253	-0.253
8	0.011	0.130	0.260	-0.260
9	0.634	0.130	0.260	-0.260
10	0.509	0.139	0.278	-0.278
11	-0.014	0.145	0.289	-0.289
12	-0.096	0.145	0.289	-0.289
13	0.573	0.145	0.290	-0.290
14	-0.049	0.152	0.303	-0.303
15	-0.097	0.152	0.303	-0.303

S_21FLVEMDTR04 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

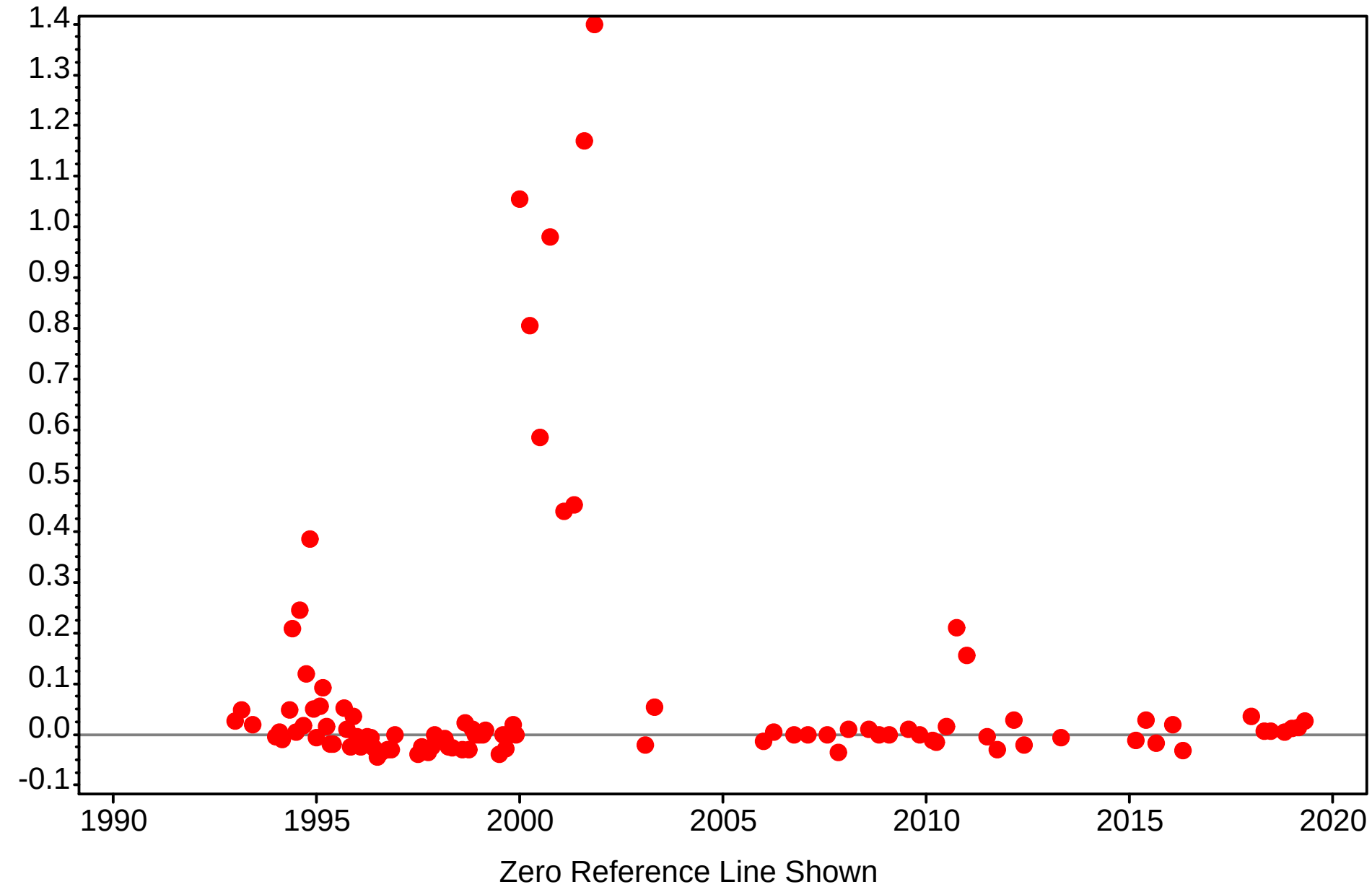
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.04	0.632	0.786	0

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.040094	0.63152	0.78567	0

S_21FLVEMDTR04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

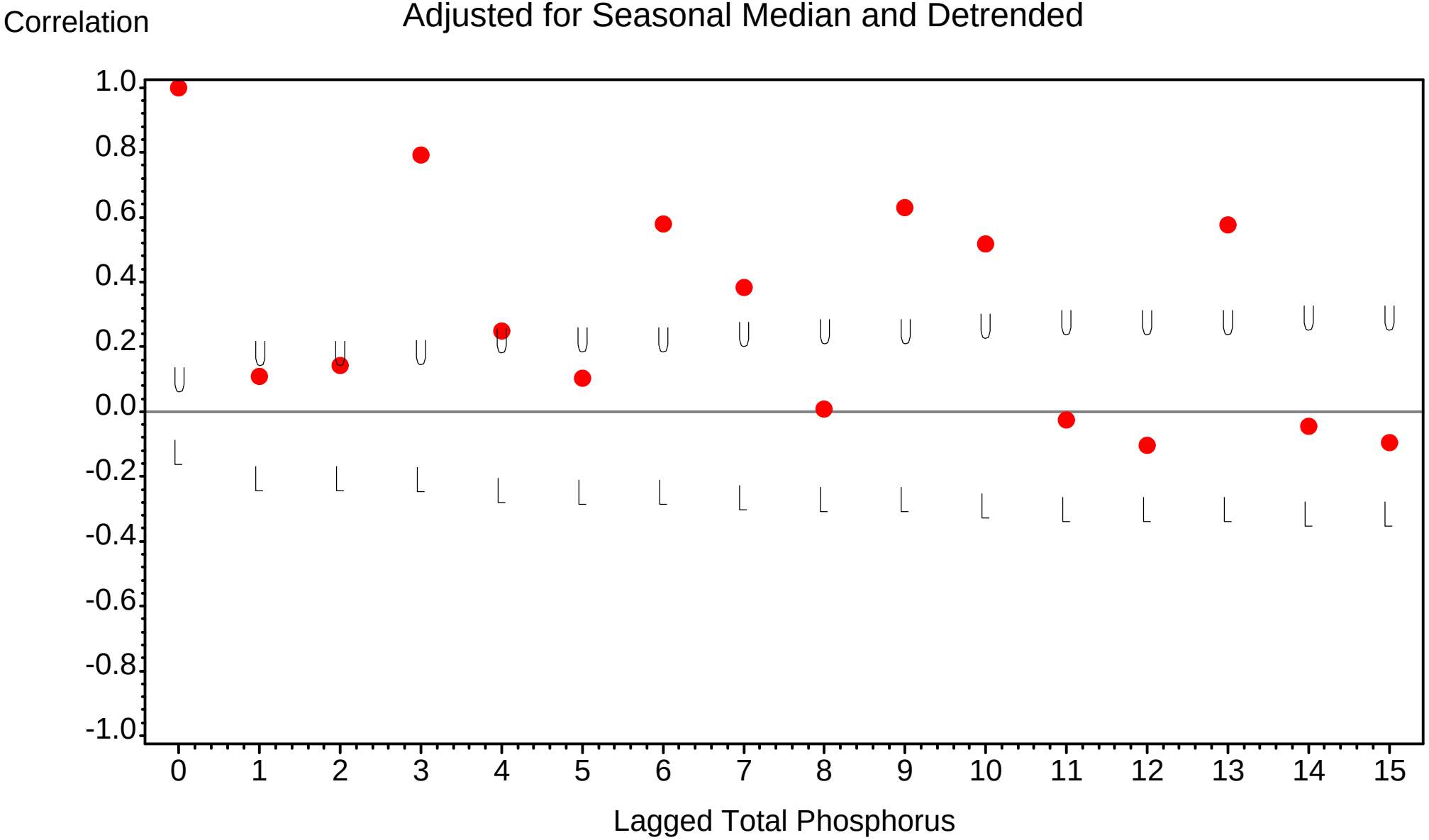


S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.109	0.096	0.192	-0.192
2	0.143	0.097	0.193	-0.193
3	0.791	0.097	0.195	-0.195
4	0.249	0.115	0.231	-0.231
5	0.104	0.117	0.234	-0.234
6	0.580	0.117	0.235	-0.235
7	0.382	0.126	0.252	-0.252
8	0.007	0.129	0.259	-0.259
9	0.629	0.129	0.259	-0.259
10	0.517	0.139	0.277	-0.277
11	-0.025	0.144	0.289	-0.289
12	-0.105	0.144	0.289	-0.289
13	0.575	0.145	0.289	-0.289
14	-0.044	0.152	0.303	-0.303
15	-0.095	0.152	0.303	-0.303

S_21FLVEMDTR04 Trends Appendix

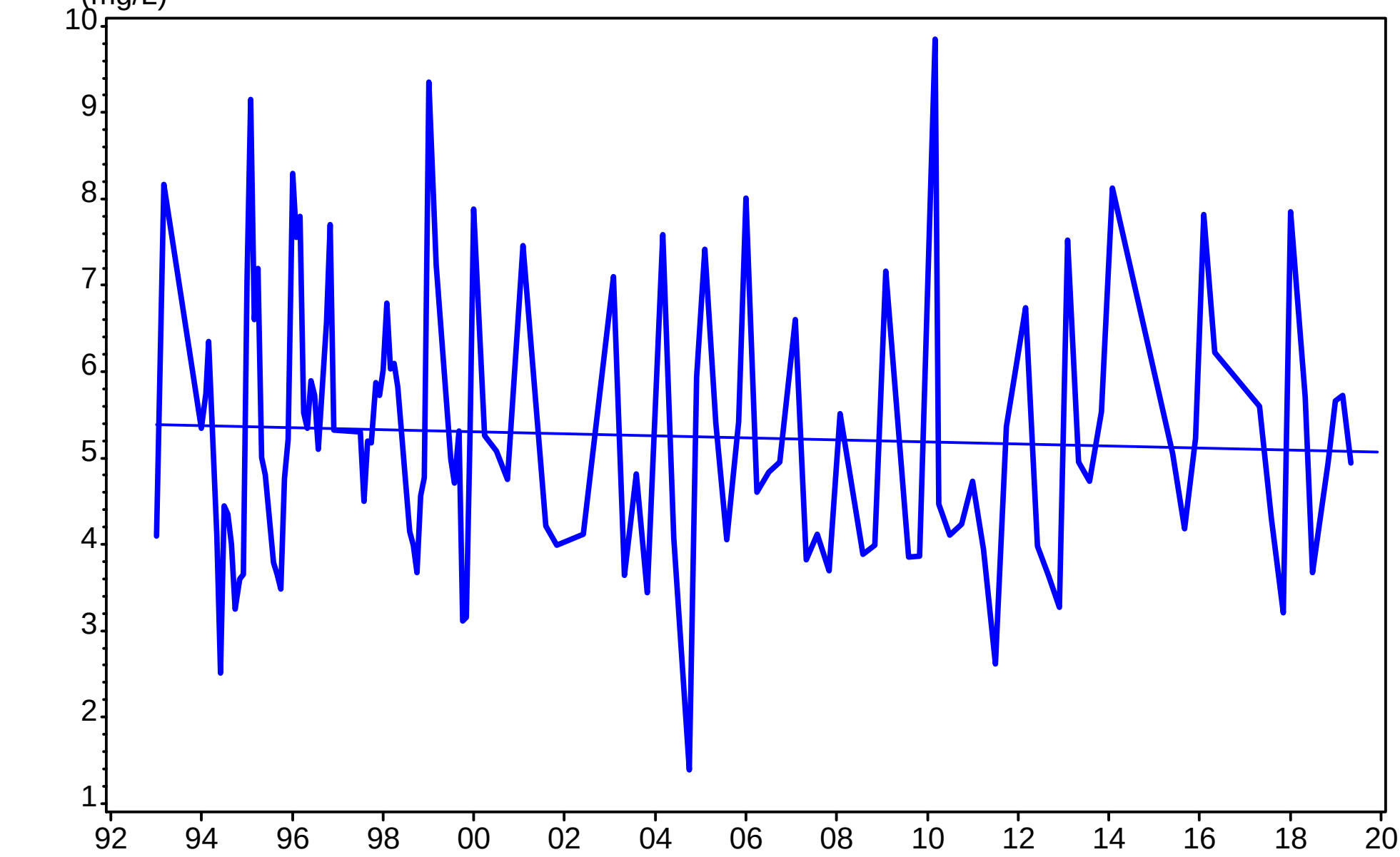
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



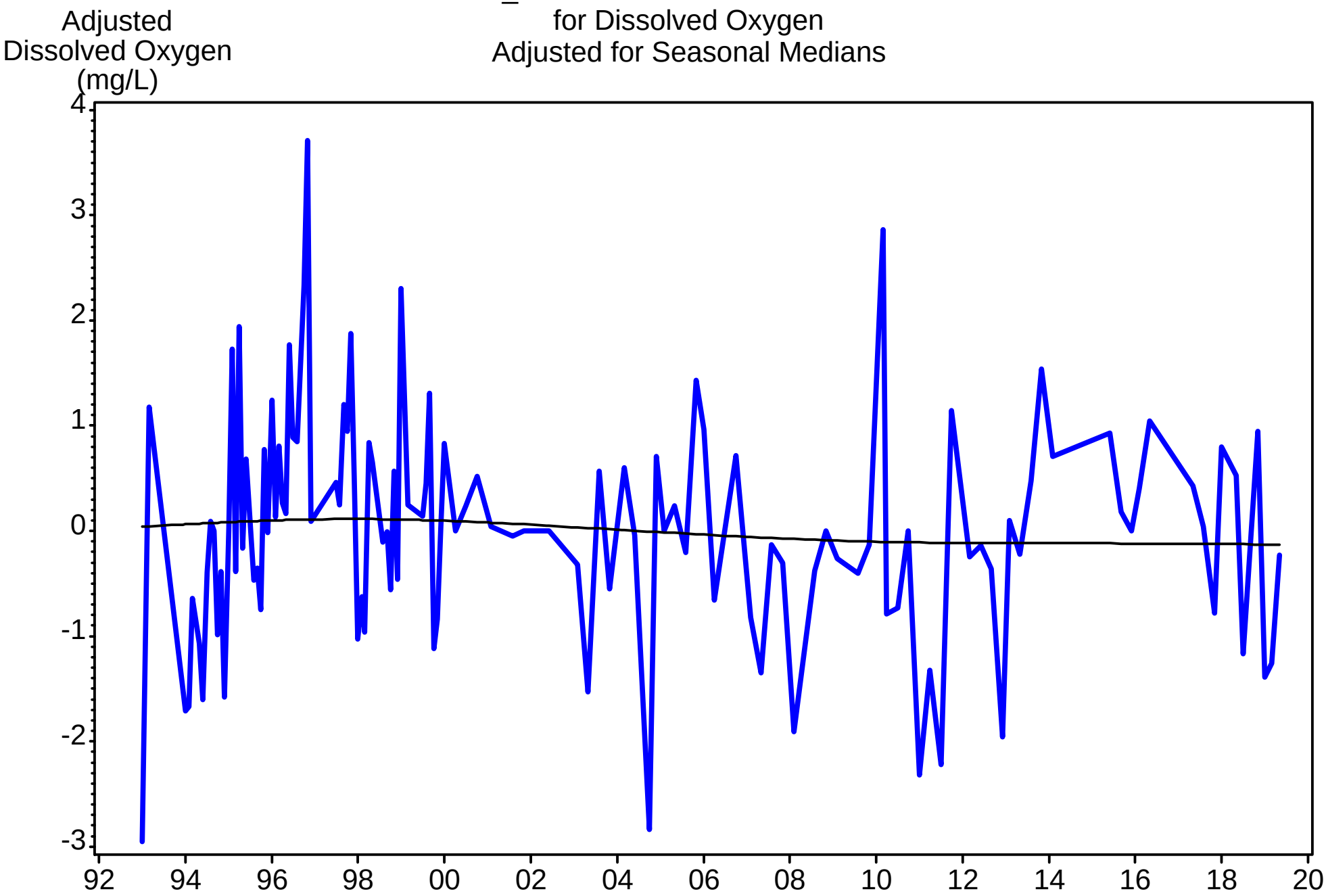
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



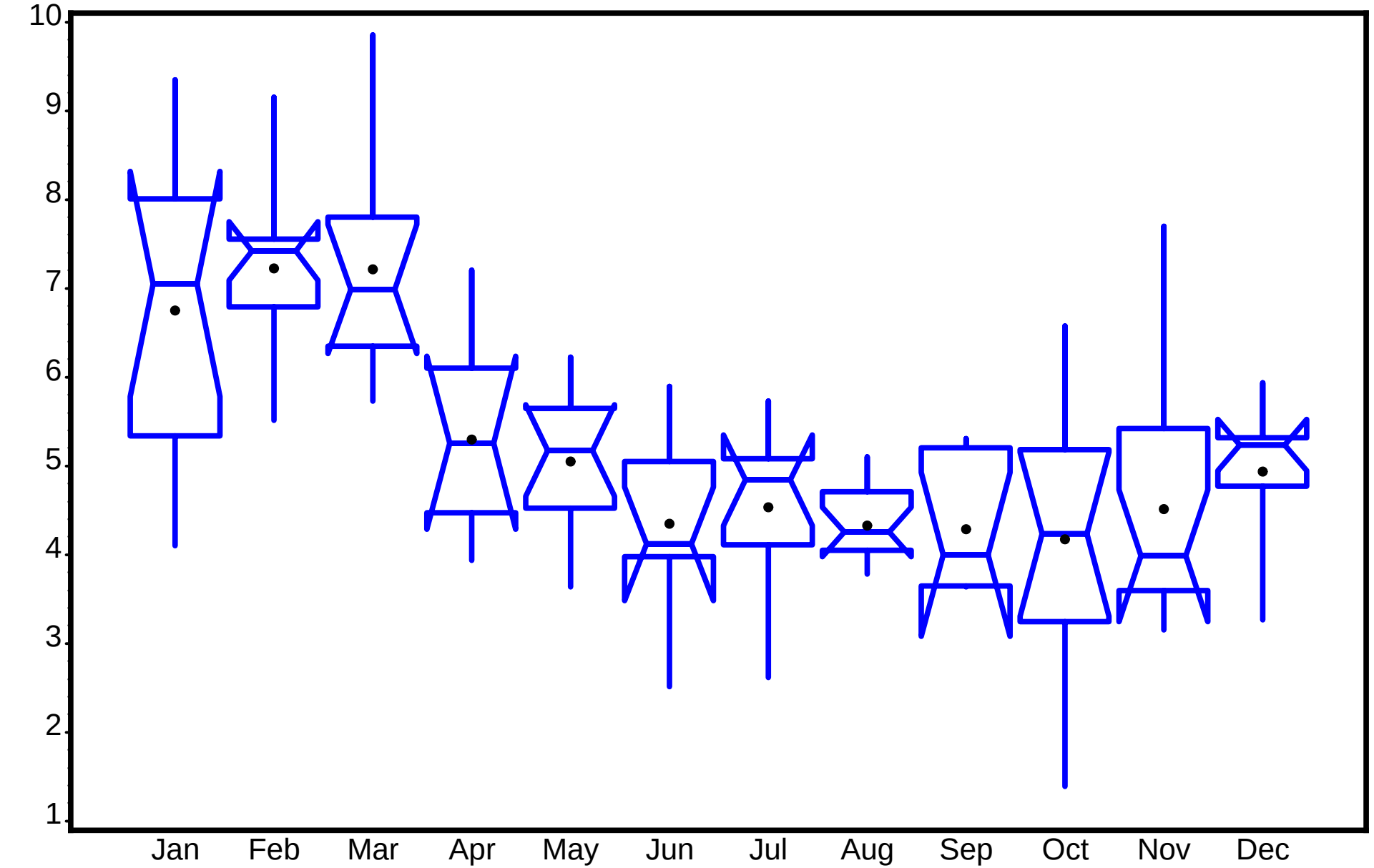
S_21FLVEMDTR04 Trends



S_21FLVEMDTR04 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



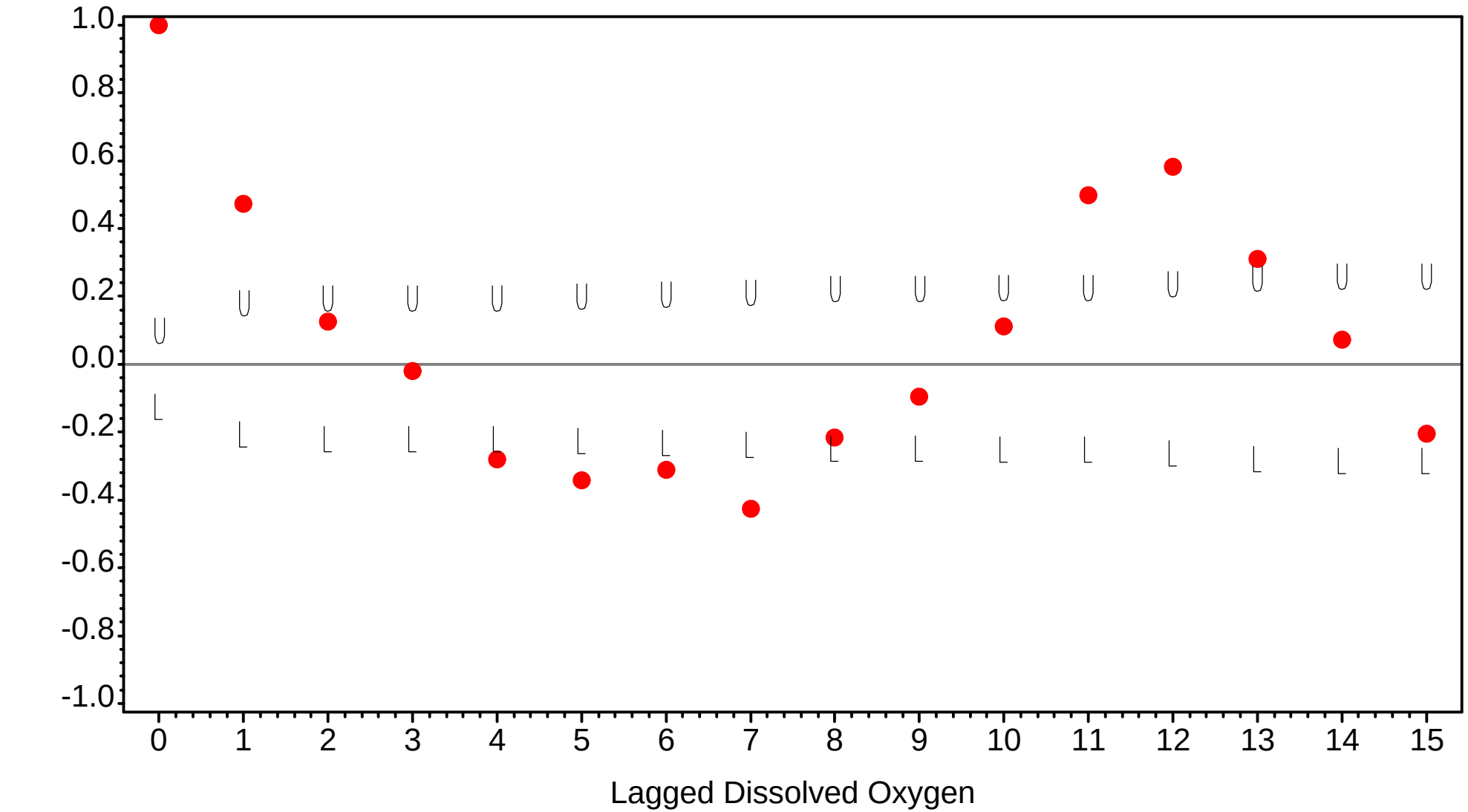
S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.473	0.096	0.192	-0.192
2	0.125	0.103	0.206	-0.206
3	-0.021	0.104	0.207	-0.207
4	-0.280	0.104	0.207	-0.207
5	-0.341	0.106	0.212	-0.212
6	-0.312	0.109	0.219	-0.219
7	-0.425	0.112	0.224	-0.224
8	-0.216	0.117	0.234	-0.234
9	-0.097	0.118	0.236	-0.236
10	0.112	0.118	0.237	-0.237
11	0.497	0.119	0.237	-0.237
12	0.583	0.125	0.250	-0.250
13	0.309	0.133	0.266	-0.266
14	0.072	0.135	0.271	-0.271
15	-0.204	0.135	0.271	-0.271

S_21FLVEMDTR04 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

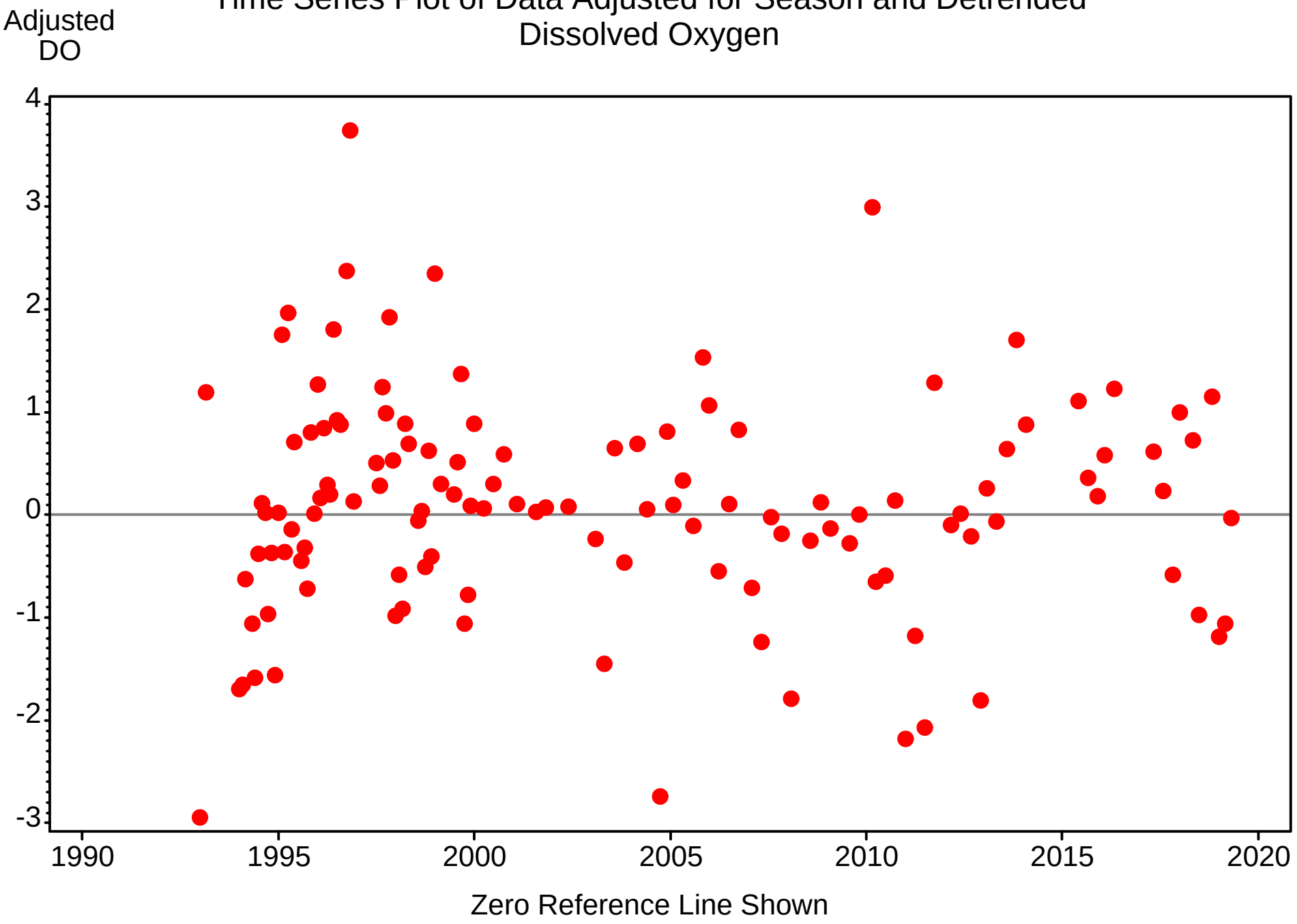
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.04	0.591	0.737	-.008

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.039683	0.59098	0.73685	-.0075

S_21FLVEMDTR04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

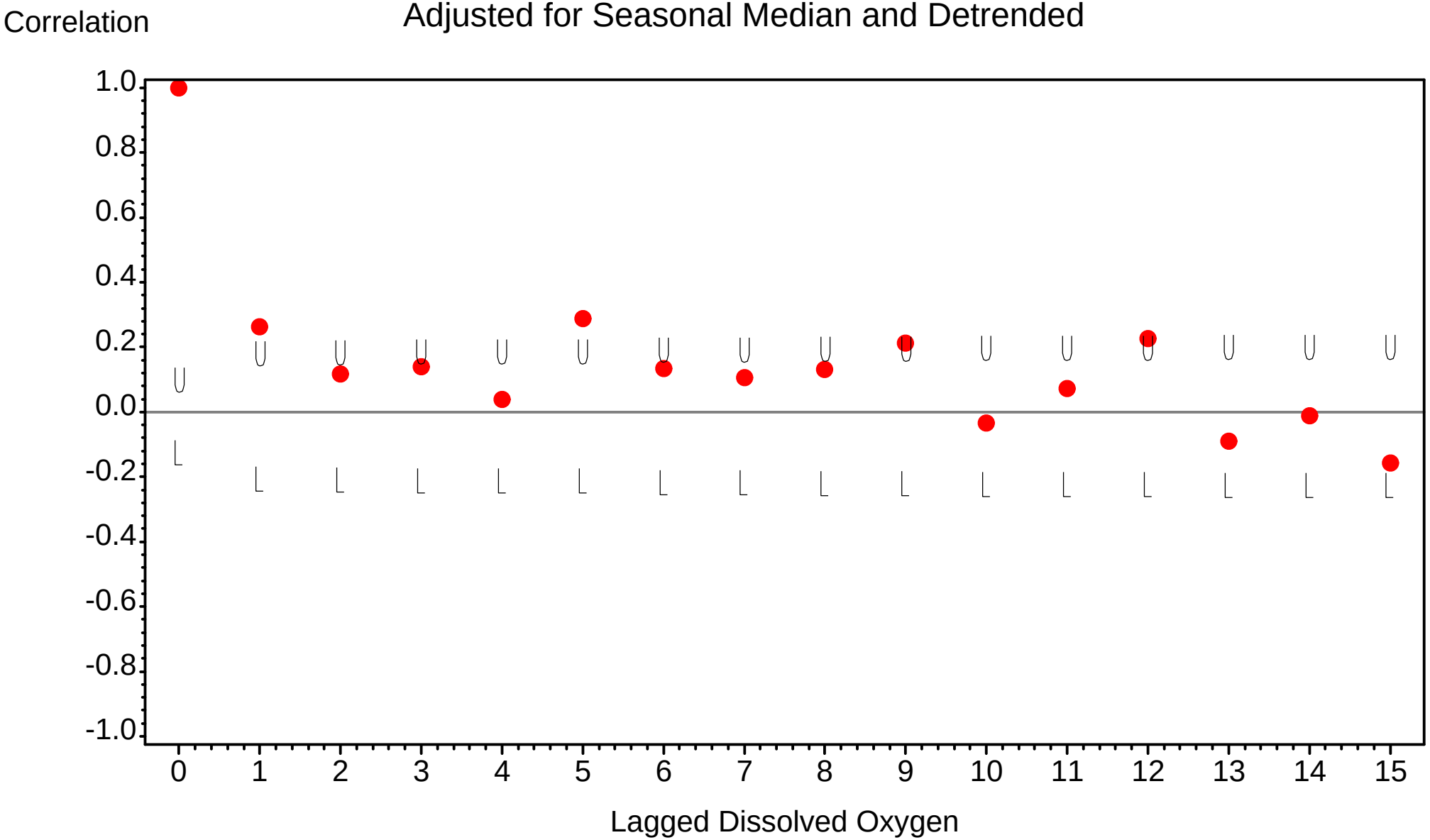


S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.263	0.096	0.192	-0.192
2	0.116	0.098	0.197	-0.197
3	0.140	0.099	0.198	-0.198
4	0.038	0.099	0.199	-0.199
5	0.288	0.099	0.199	-0.199
6	0.133	0.102	0.204	-0.204
7	0.105	0.103	0.205	-0.205
8	0.132	0.103	0.206	-0.206
9	0.212	0.103	0.207	-0.207
10	-0.035	0.105	0.210	-0.210
11	0.073	0.105	0.210	-0.210
12	0.225	0.105	0.210	-0.210
13	-0.089	0.106	0.213	-0.213
14	-0.012	0.107	0.213	-0.213
15	-0.157	0.107	0.213	-0.213

S_21FLVEMDTR04 Trends Appendix

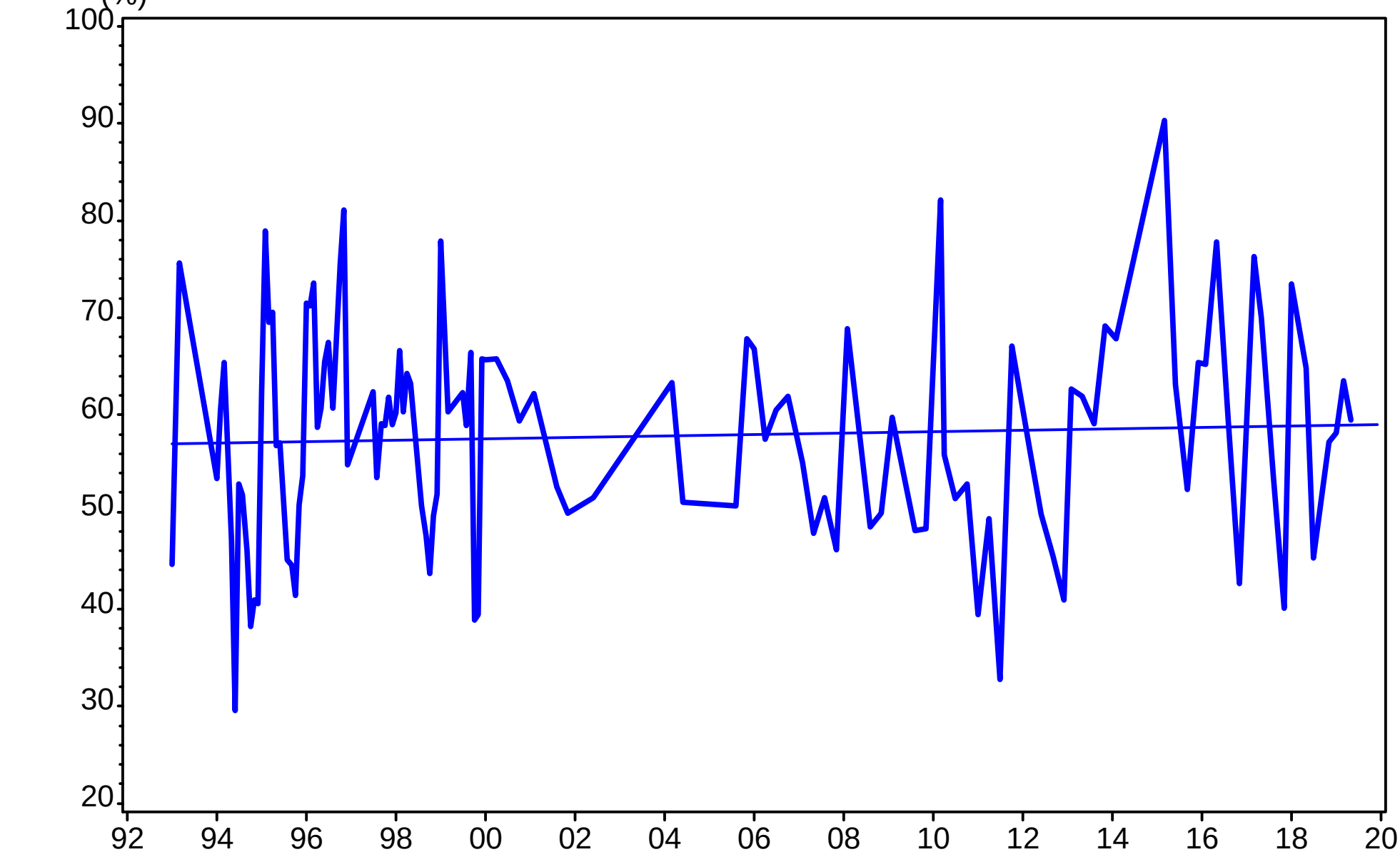
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



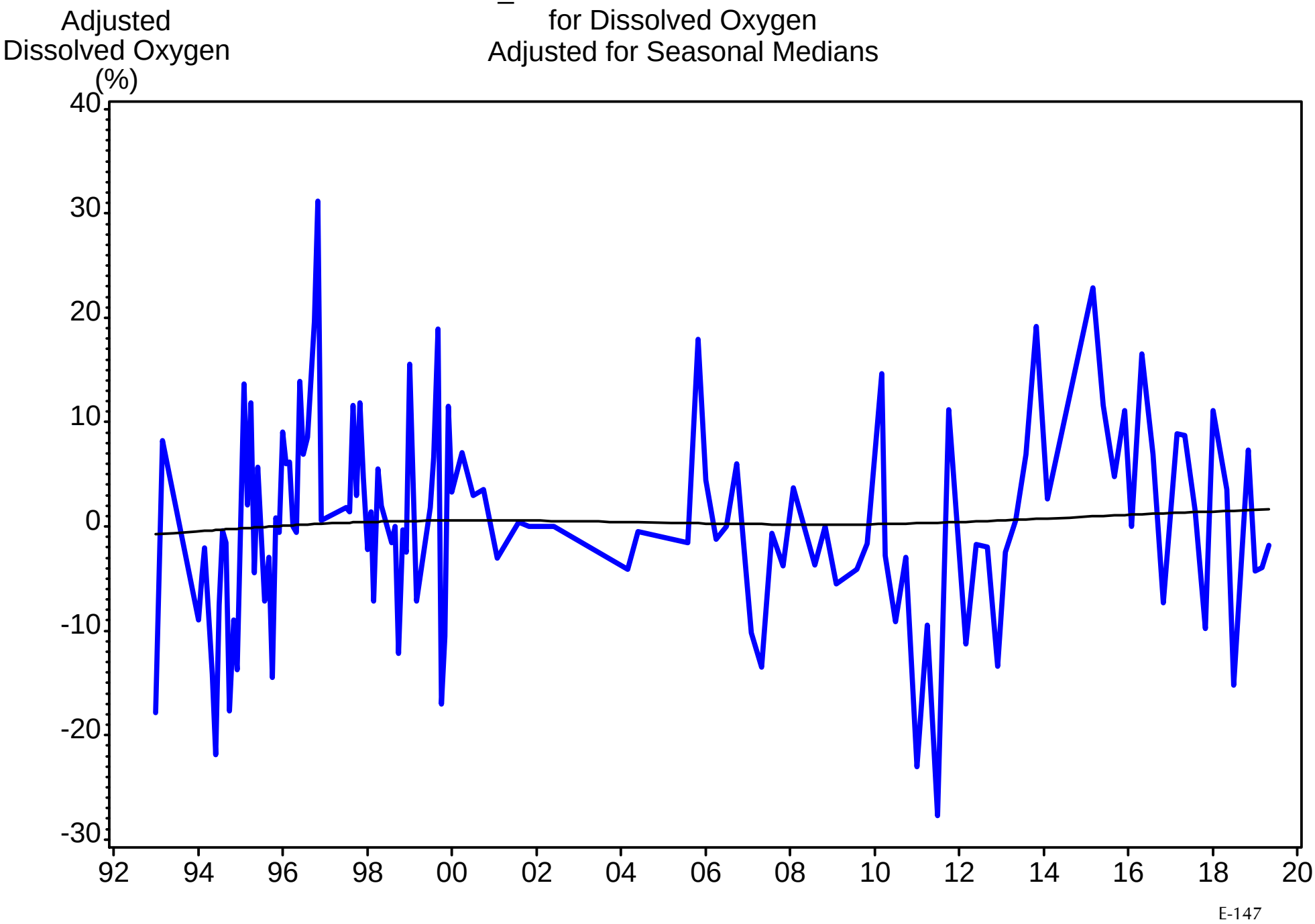
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



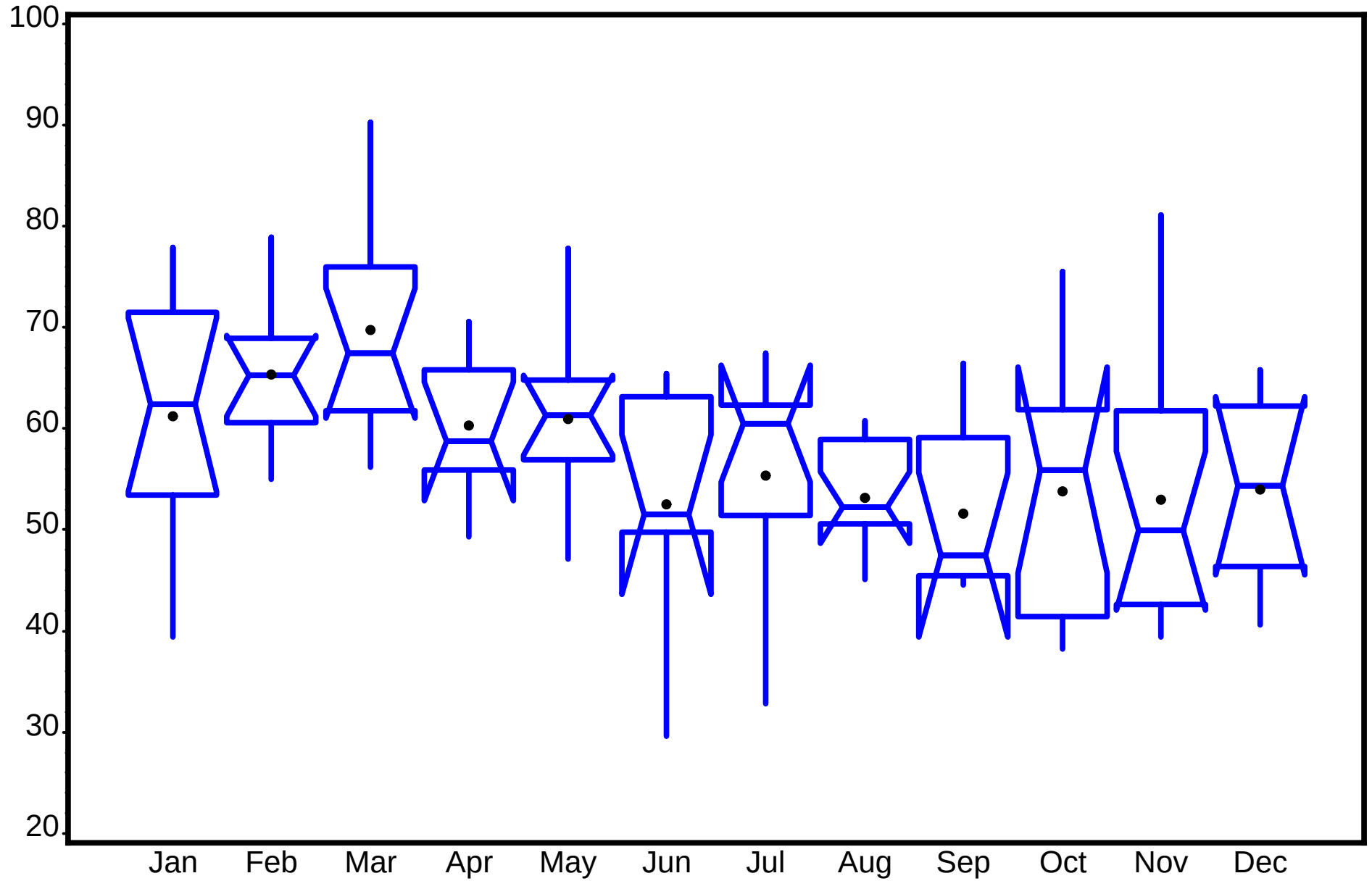
S_21FLVEMDTR04 Trends



S_21FLVEMDTR04 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



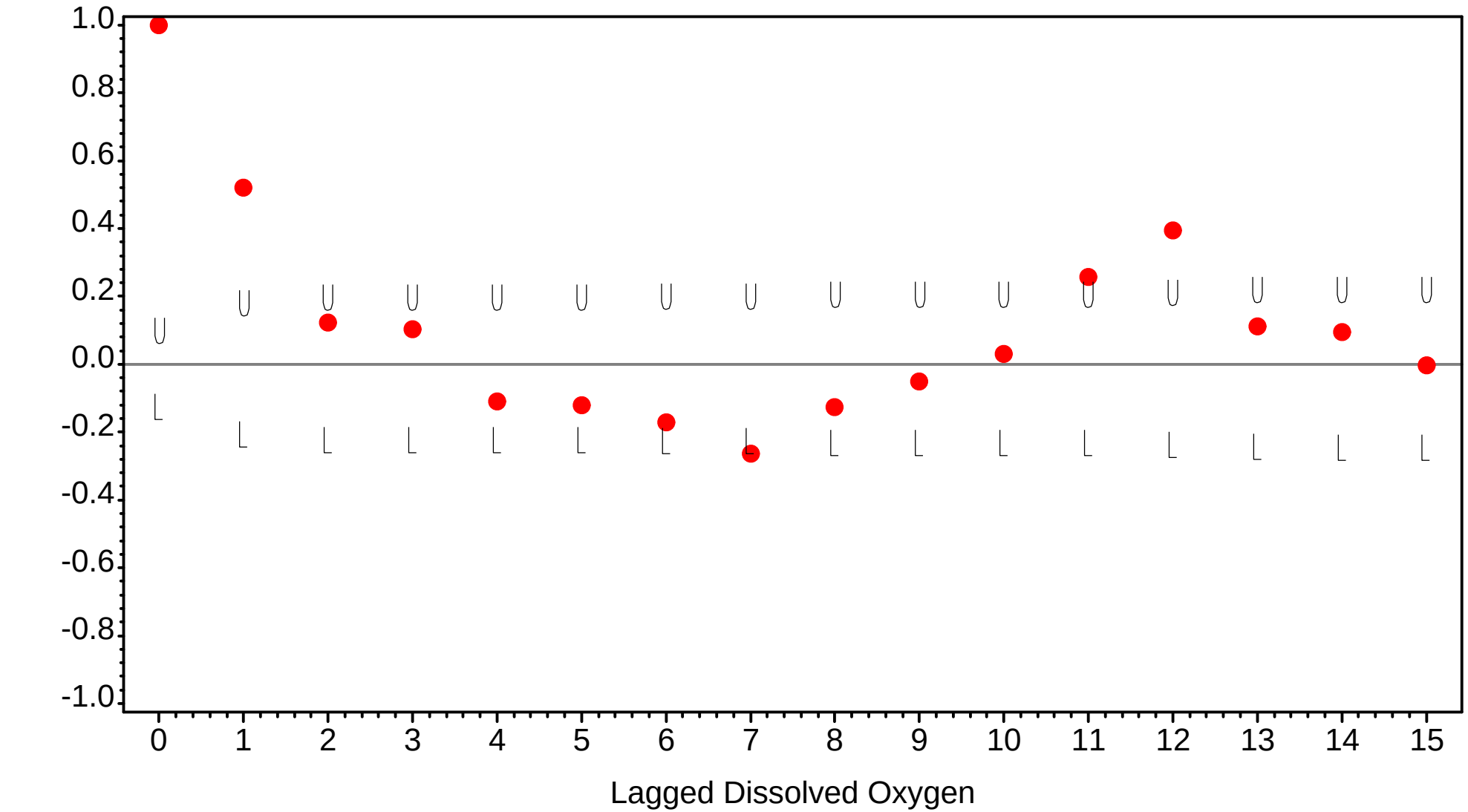
S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.519	0.096	0.192	-0.192
2	0.122	0.104	0.209	-0.209
3	0.104	0.105	0.210	-0.210
4	-0.109	0.105	0.211	-0.211
5	-0.122	0.106	0.211	-0.211
6	-0.172	0.106	0.212	-0.212
7	-0.265	0.107	0.214	-0.214
8	-0.126	0.109	0.218	-0.218
9	-0.050	0.109	0.219	-0.219
10	0.030	0.109	0.219	-0.219
11	0.257	0.109	0.219	-0.219
12	0.394	0.111	0.223	-0.223
13	0.111	0.116	0.231	-0.231
14	0.095	0.116	0.232	-0.232
15	-0.003	0.116	0.232	-0.232

S_21FLVEMDTR04 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

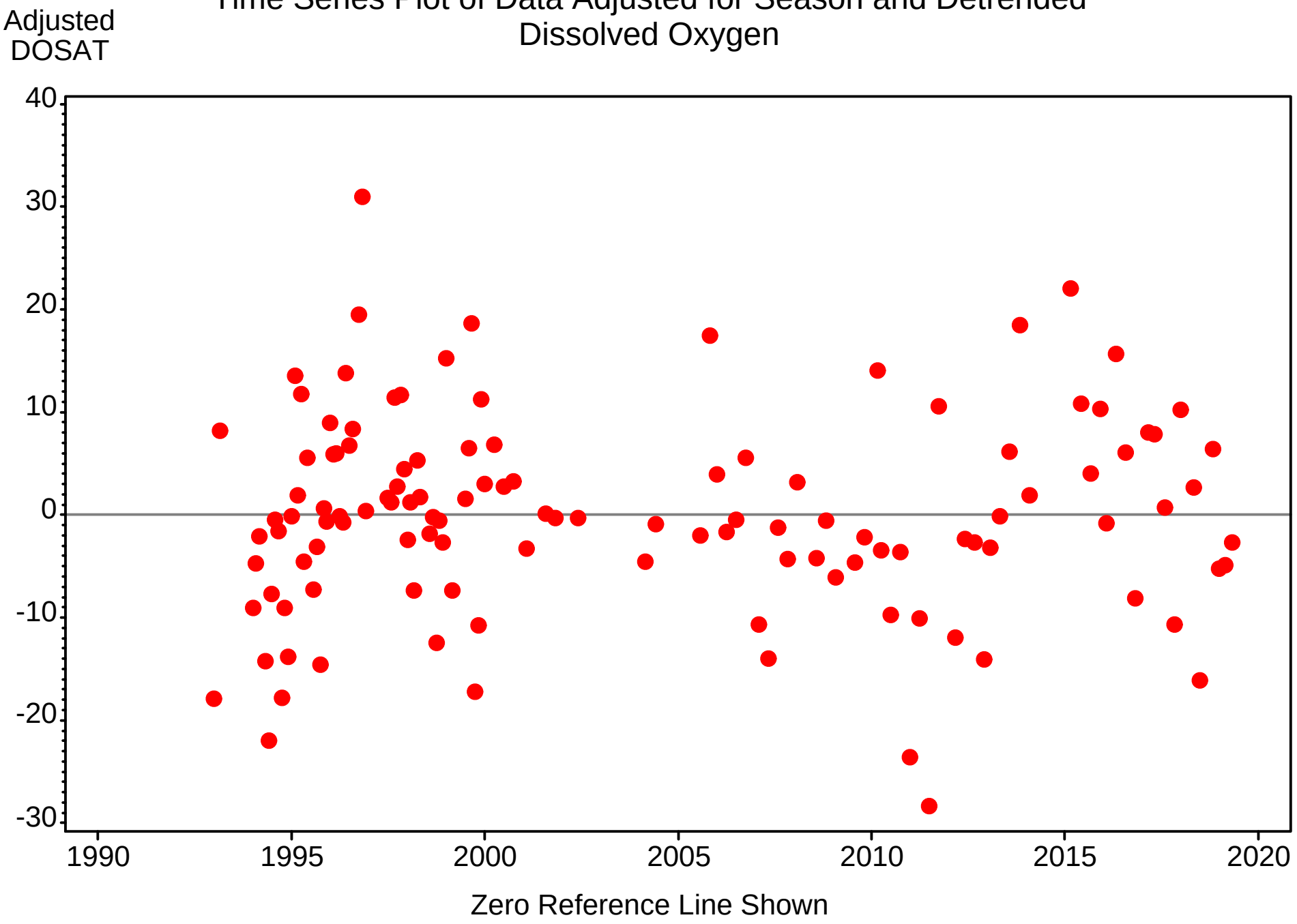
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.027	0.725	0.823	0.034

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.027165	0.72528	0.82342	0.0335

S_21FLVEMDTR04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

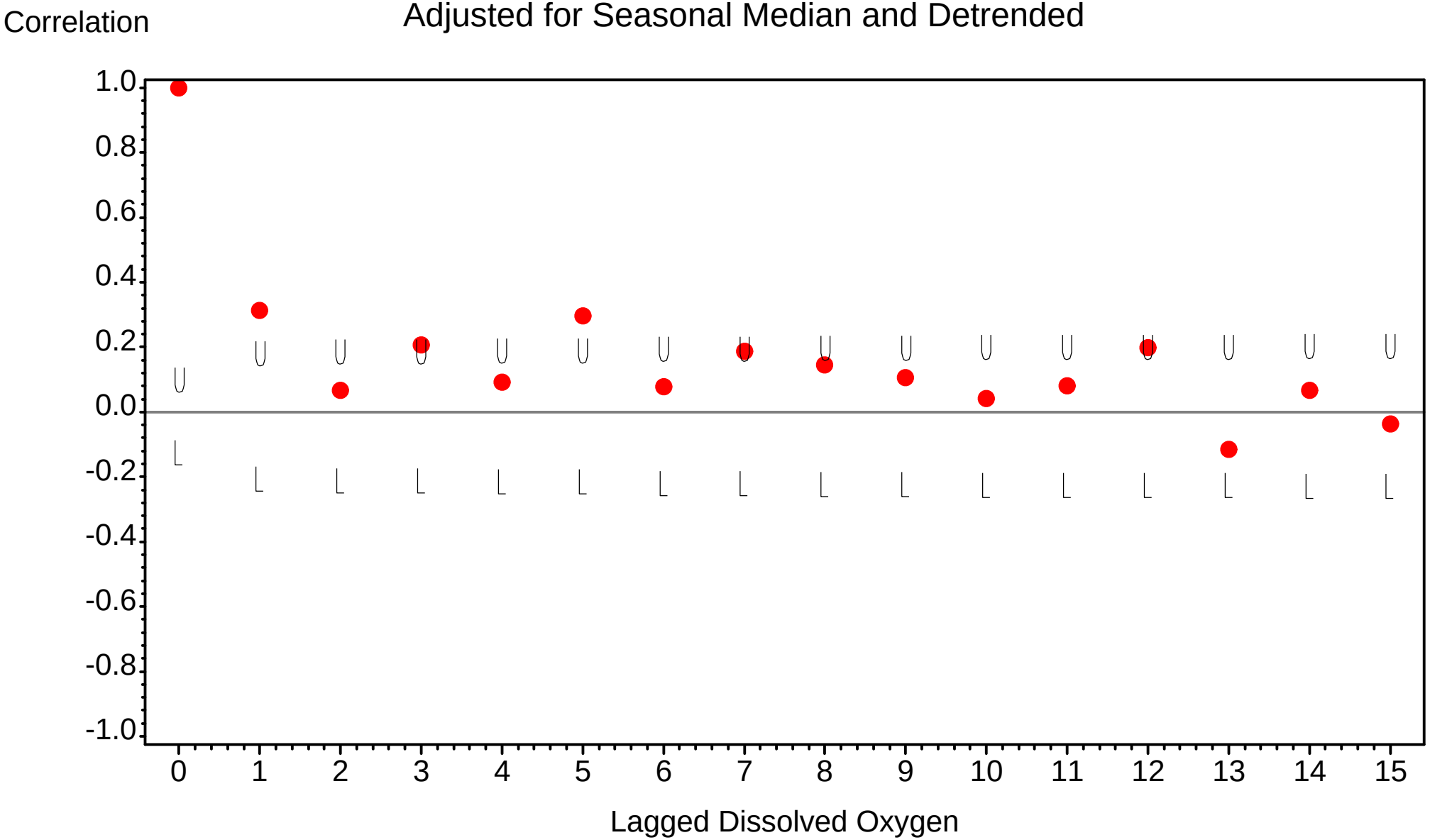


S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.312	0.096	0.192	-0.192
2	0.068	0.099	0.199	-0.199
3	0.206	0.099	0.199	-0.199
4	0.092	0.101	0.201	-0.201
5	0.297	0.101	0.202	-0.202
6	0.079	0.104	0.207	-0.207
7	0.186	0.104	0.208	-0.208
8	0.144	0.105	0.210	-0.210
9	0.106	0.105	0.211	-0.211
10	0.042	0.106	0.212	-0.212
11	0.081	0.106	0.212	-0.212
12	0.199	0.106	0.212	-0.212
13	-0.115	0.107	0.214	-0.214
14	0.068	0.108	0.215	-0.215
15	-0.037	0.108	0.215	-0.215

S_21FLVEMDTR04 Trends Appendix

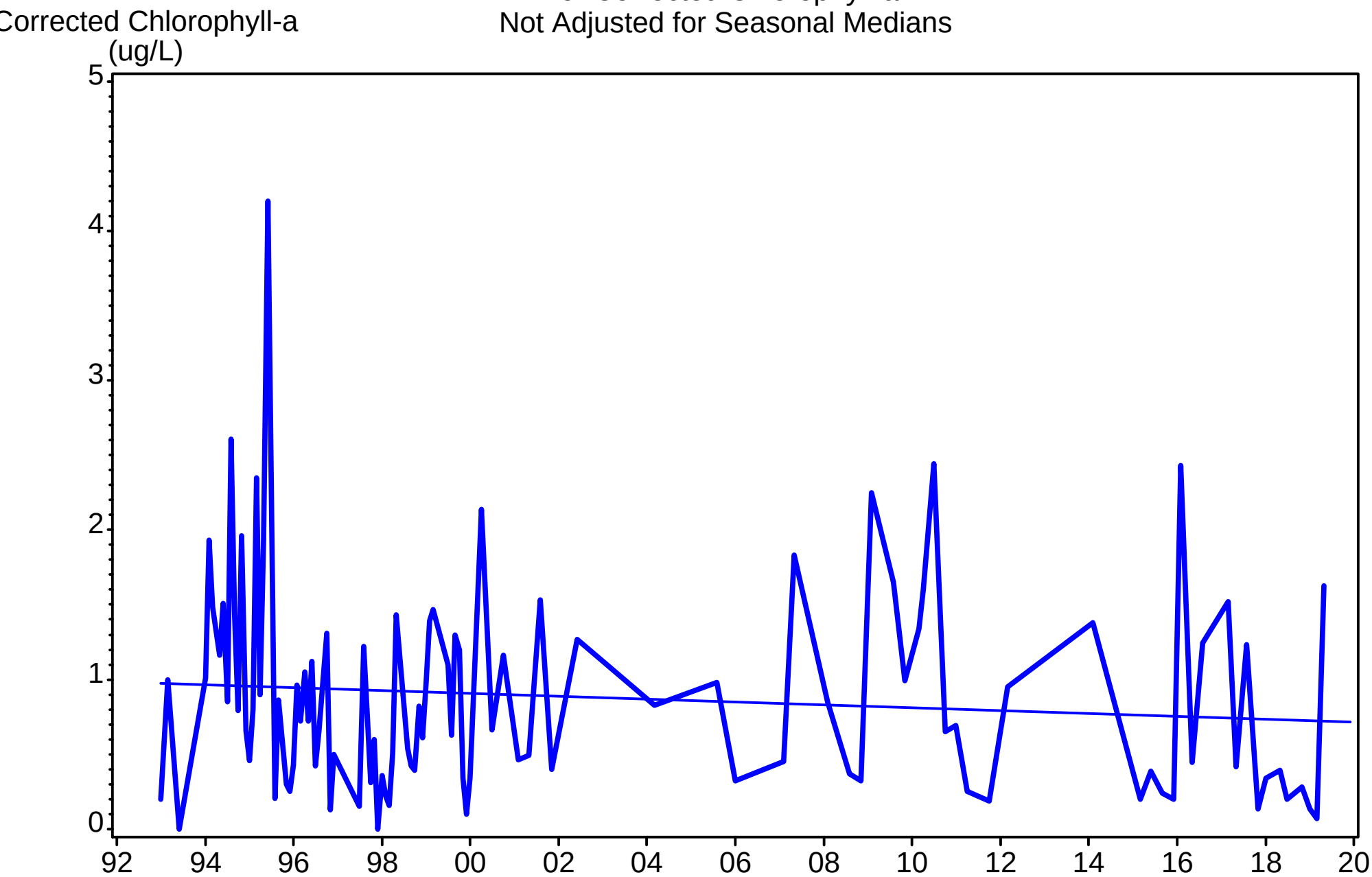
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

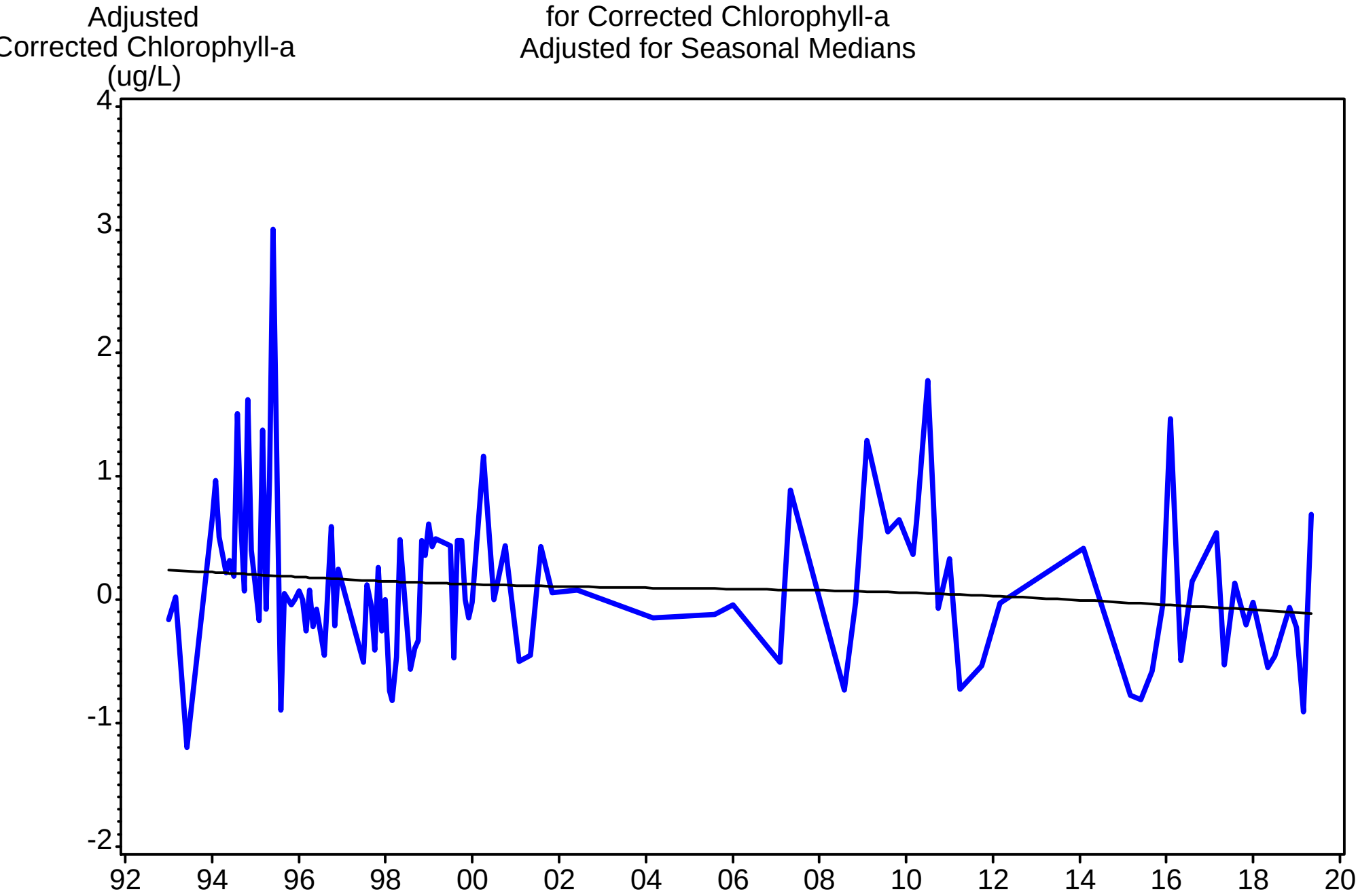
S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Time Series for Corrected Chlorophyll-a Adjusted for Seasonal Medians

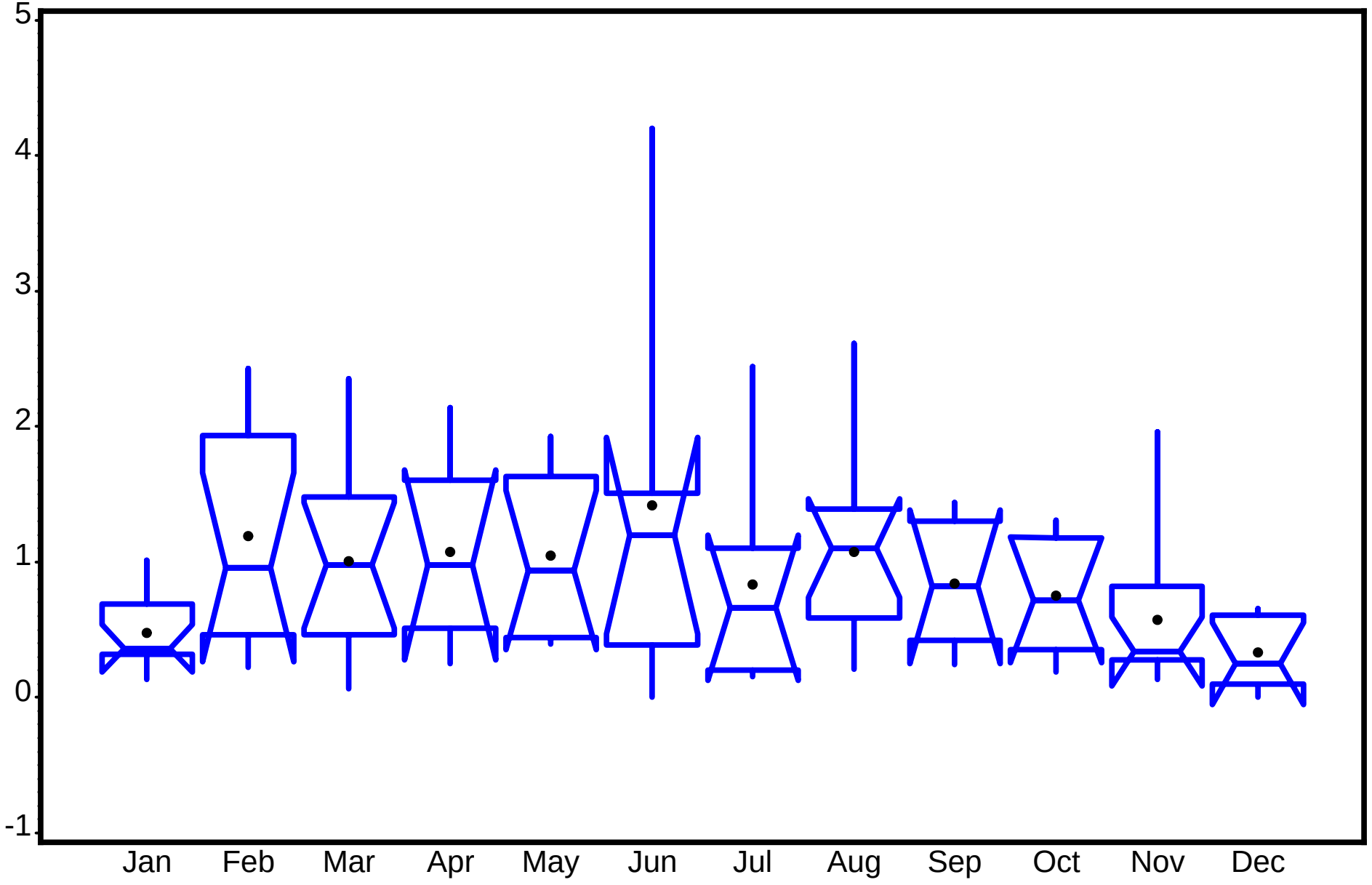


S_21FLVEMDTR04 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a

(ug/L)

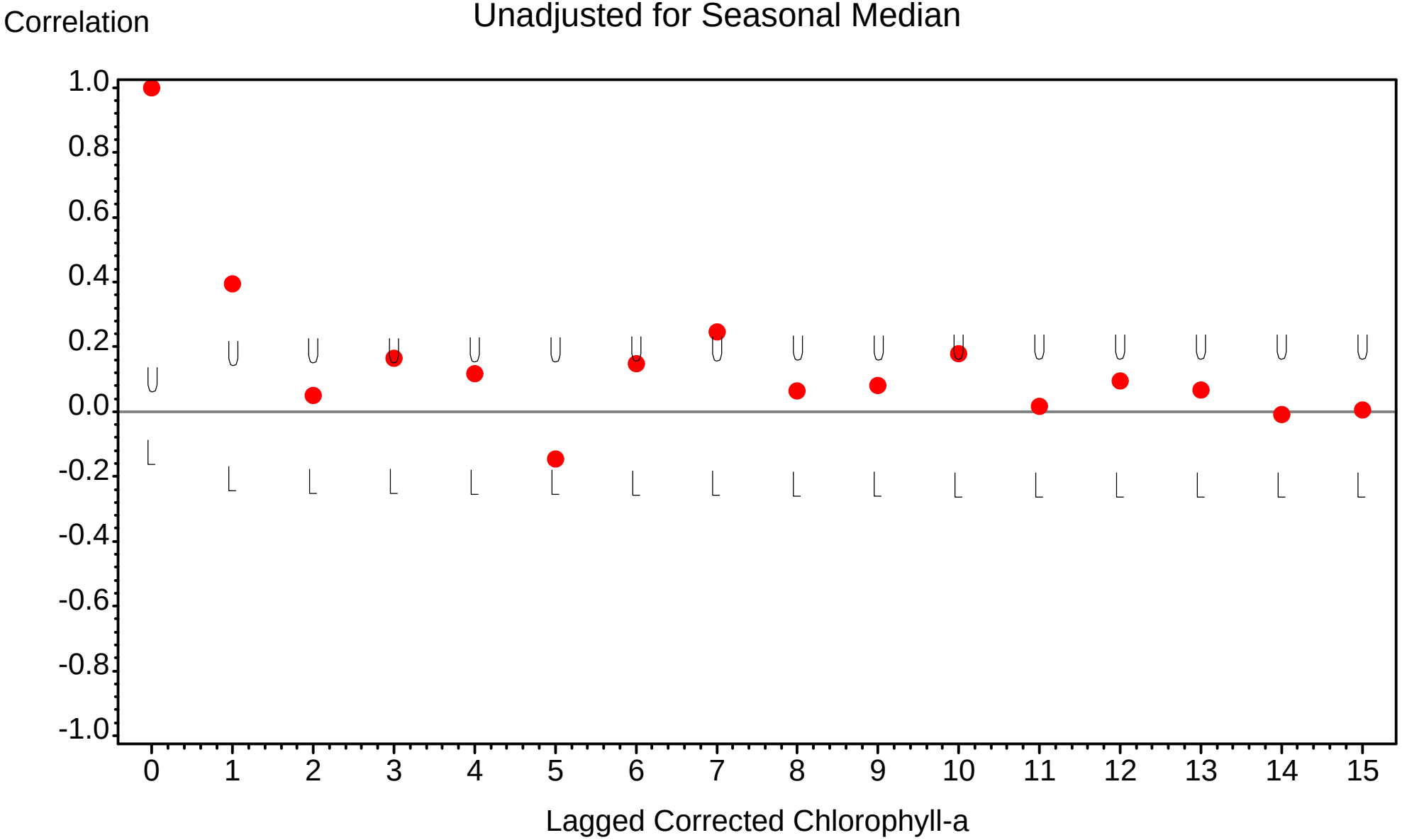


S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.394	0.096	0.192	-0.192
2	0.049	0.101	0.202	-0.202
3	0.164	0.101	0.202	-0.202
4	0.118	0.102	0.204	-0.204
5	-0.146	0.102	0.205	-0.205
6	0.149	0.103	0.206	-0.206
7	0.245	0.104	0.207	-0.207
8	0.064	0.105	0.211	-0.211
9	0.080	0.106	0.211	-0.211
10	0.179	0.106	0.212	-0.212
11	0.016	0.107	0.213	-0.213
12	0.094	0.107	0.213	-0.213
13	0.066	0.107	0.214	-0.214
14	-0.008	0.107	0.214	-0.214
15	0.006	0.107	0.214	-0.214

S_21FLVEMDTR04 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

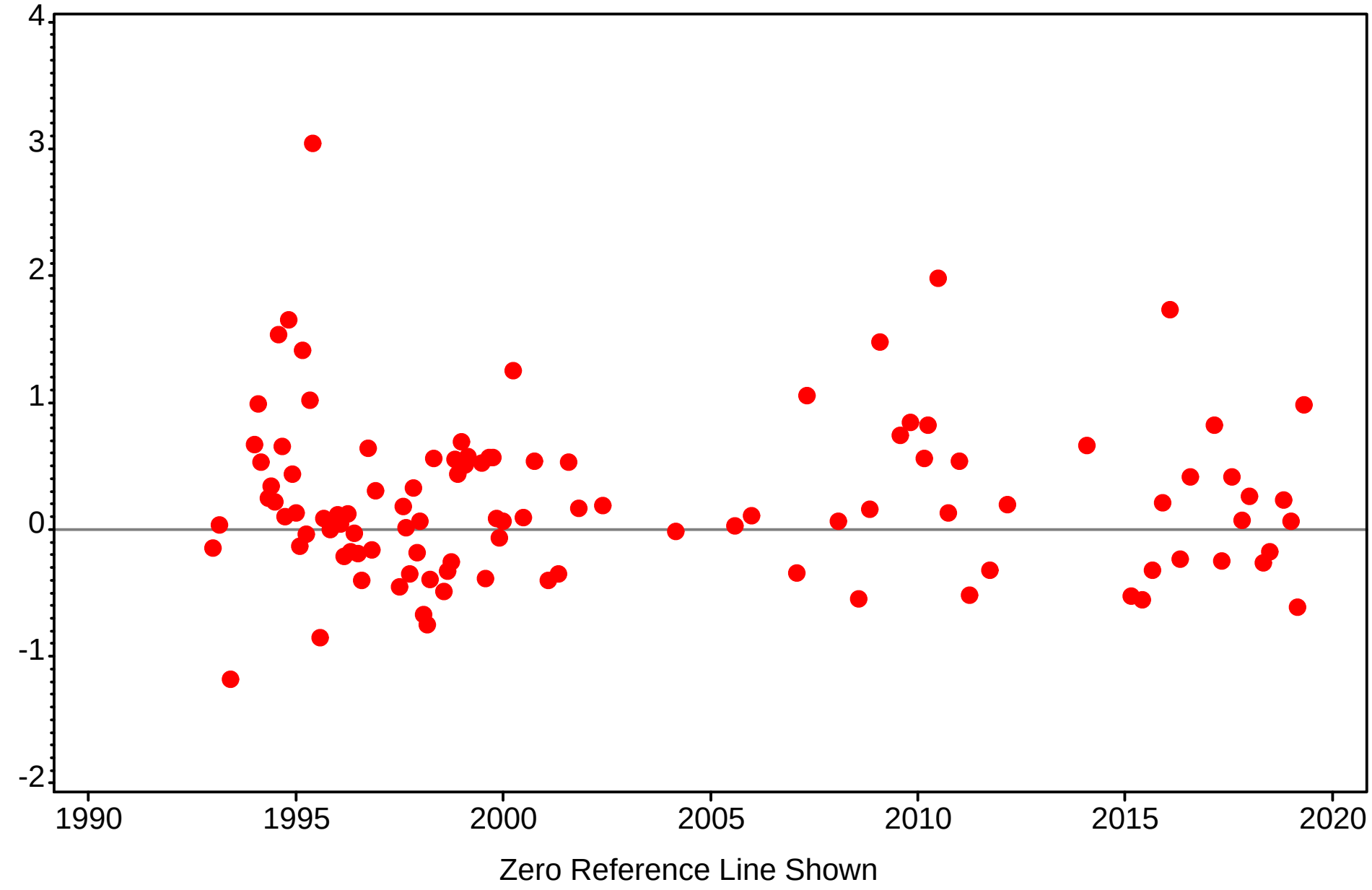
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.142	0.074	0.219	-0.011

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.14223	0.074126	0.21912	-0.010810

S_21FLVEMDTR04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a

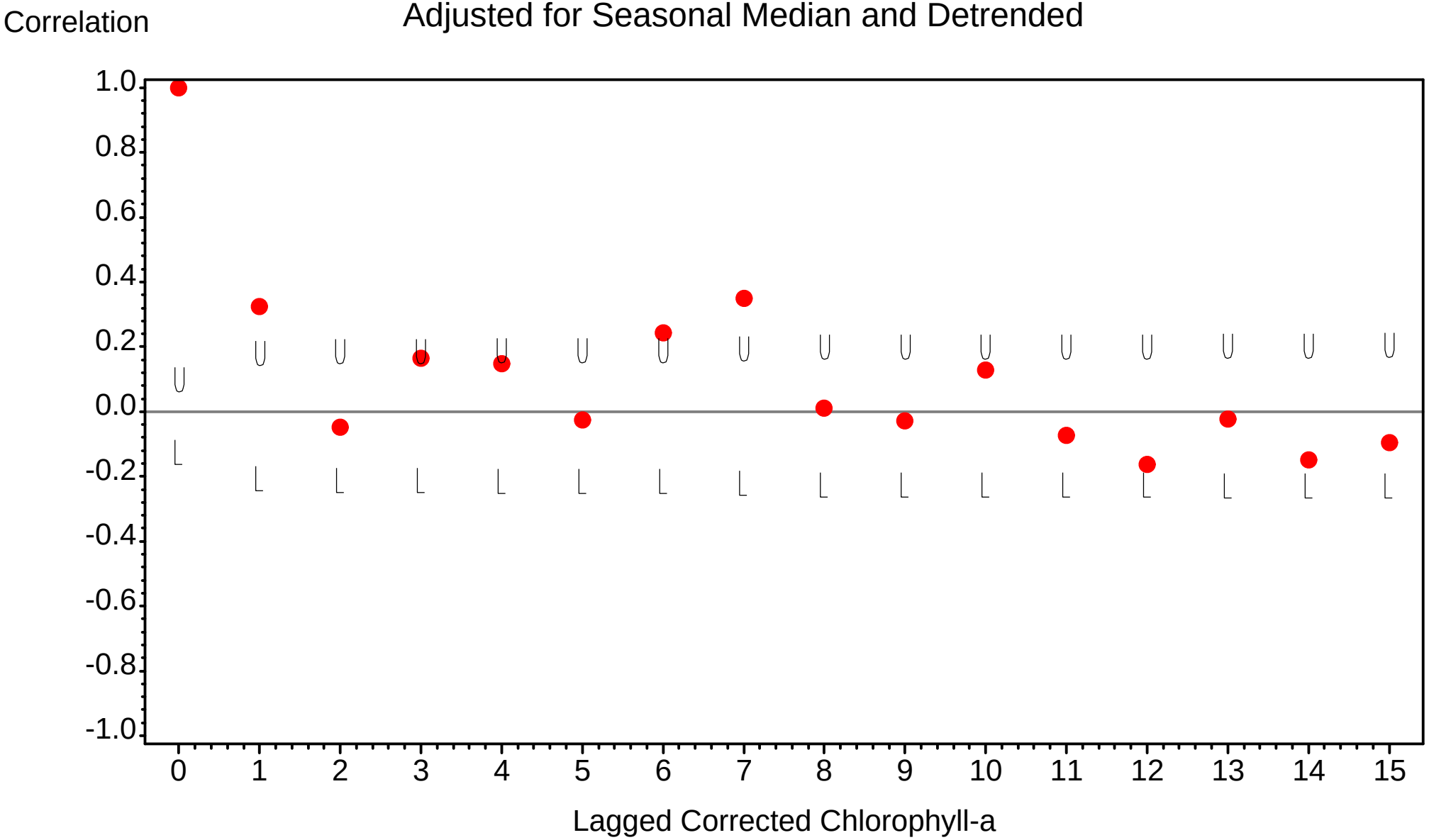


S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.324	0.096	0.192	-0.192
2	-0.049	0.100	0.199	-0.199
3	0.165	0.100	0.199	-0.199
4	0.149	0.100	0.201	-0.201
5	-0.026	0.101	0.202	-0.202
6	0.244	0.101	0.202	-0.202
7	0.349	0.103	0.206	-0.206
8	0.010	0.107	0.213	-0.213
9	-0.028	0.107	0.213	-0.213
10	0.129	0.107	0.213	-0.213
11	-0.074	0.107	0.214	-0.214
12	-0.162	0.107	0.214	-0.214
13	-0.023	0.108	0.216	-0.216
14	-0.150	0.108	0.216	-0.216
15	-0.097	0.109	0.217	-0.217

S_21FLVEMDTR04 Trends Appendix

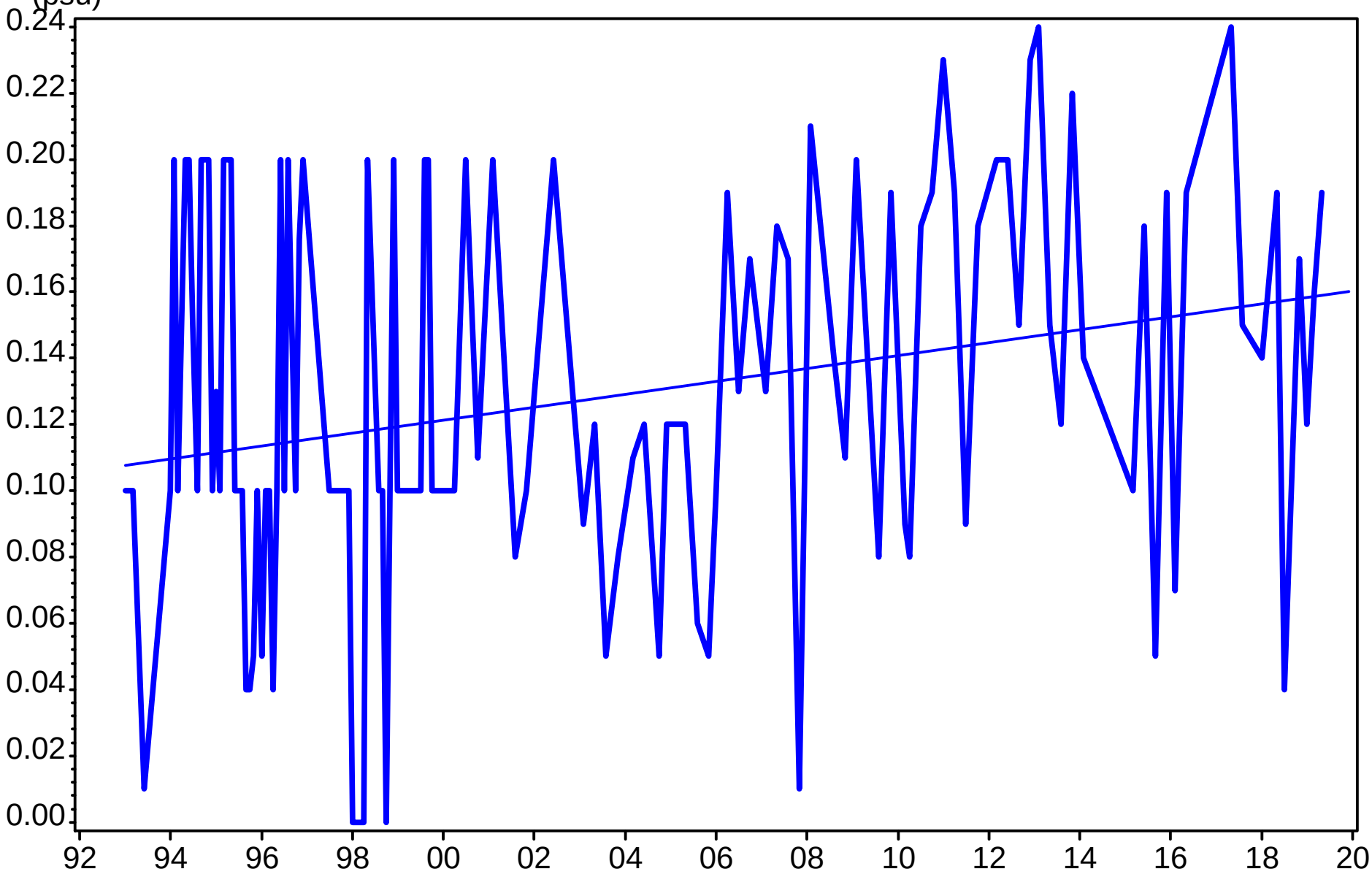
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



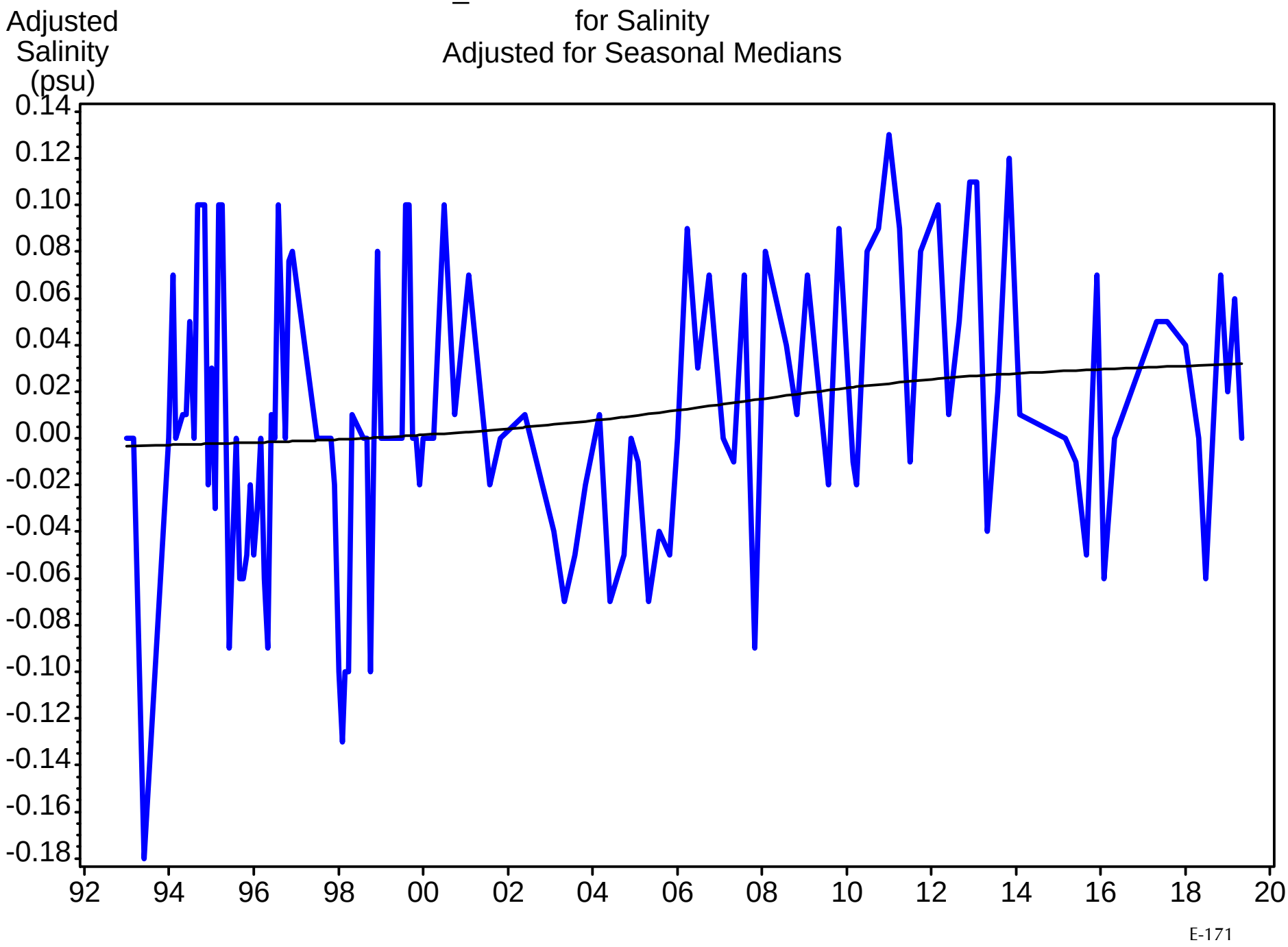
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



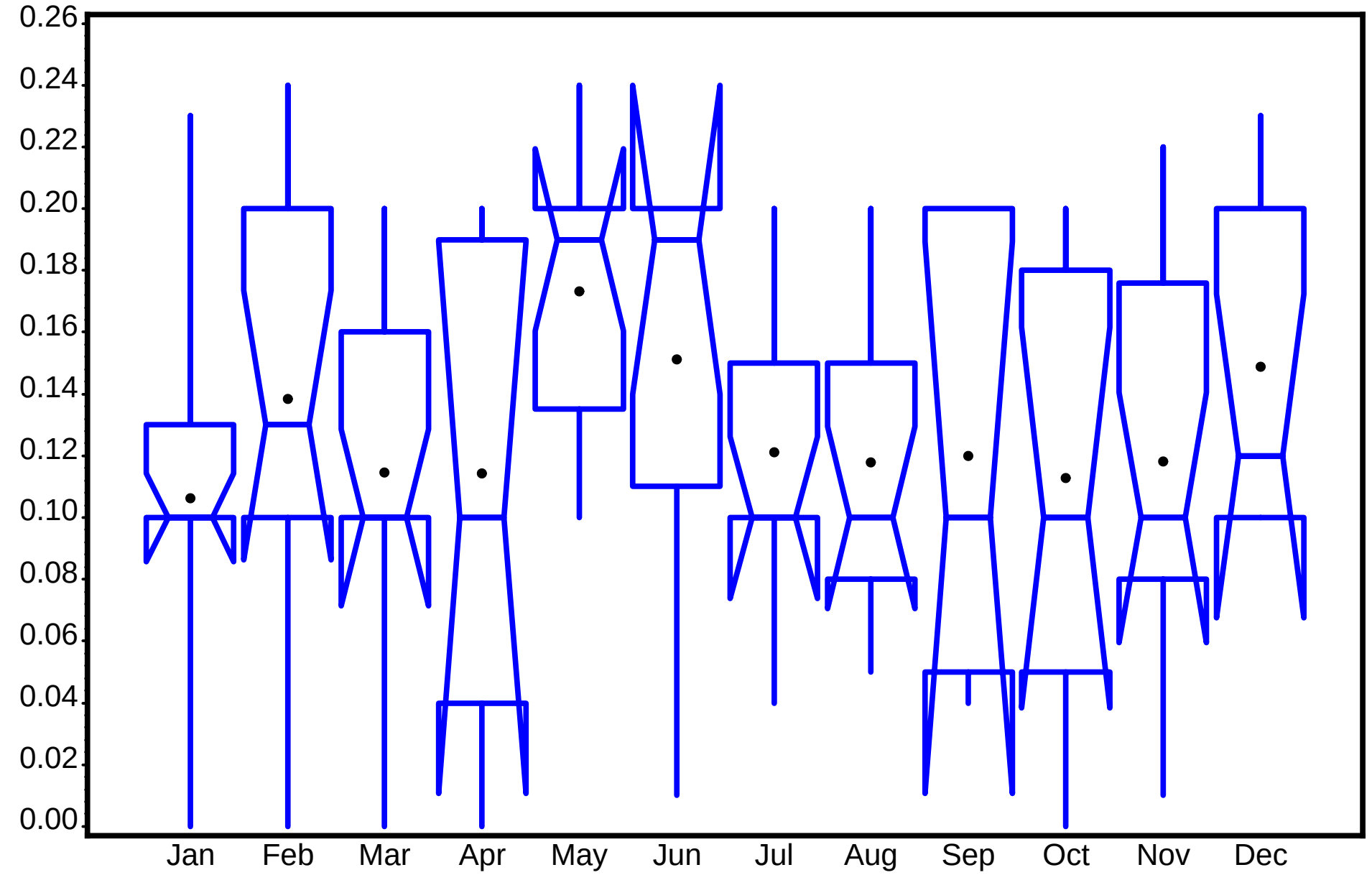
S_21FLVEMDTR04 Trends



S_21FLVEMDTR04 Trends Appendix

Seasonal Univariate Statistics

Salinity



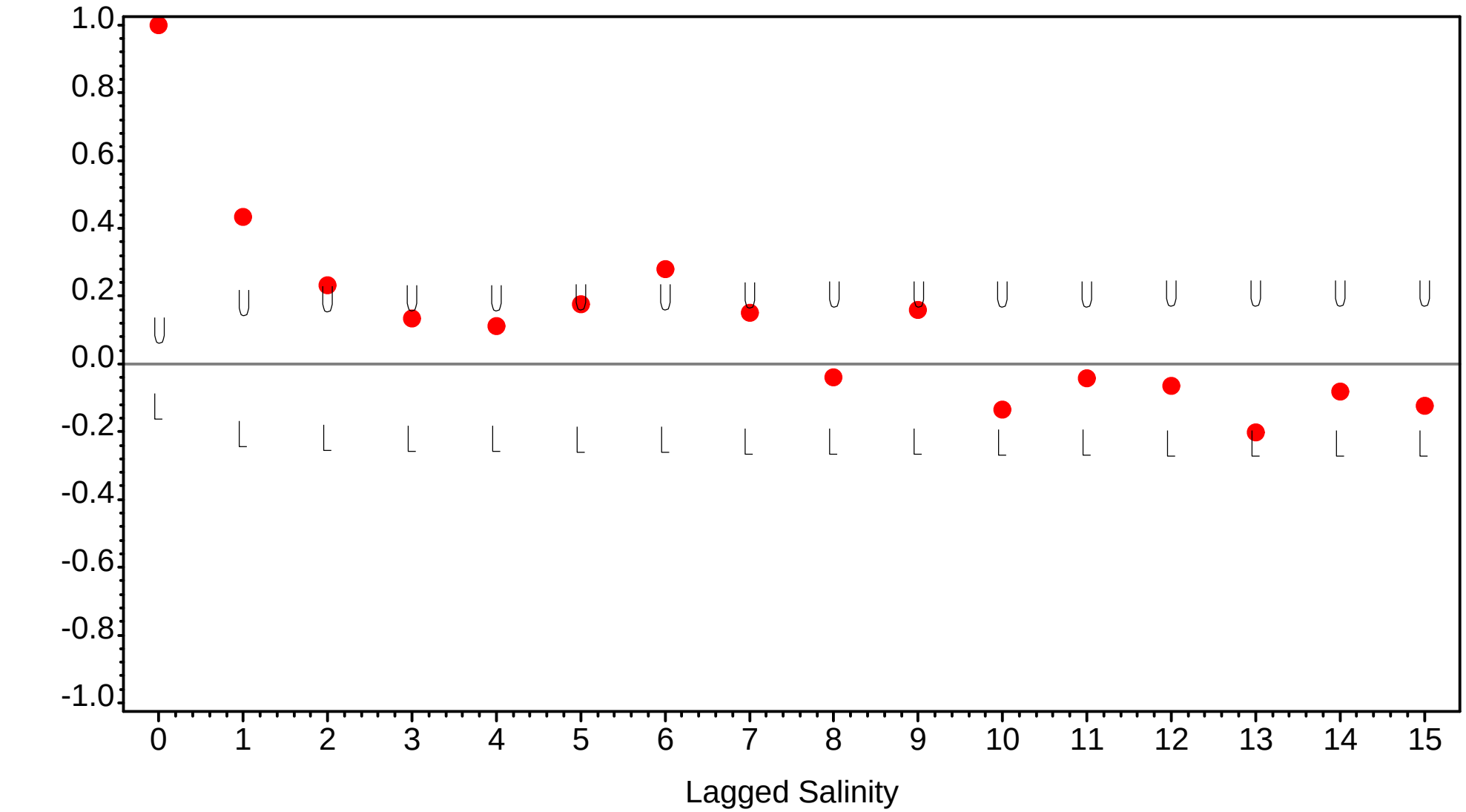
S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.433	0.096	0.192	-0.192
2	0.232	0.102	0.204	-0.204
3	0.133	0.104	0.207	-0.207
4	0.111	0.104	0.208	-0.208
5	0.177	0.105	0.209	-0.209
6	0.279	0.106	0.211	-0.211
7	0.152	0.108	0.216	-0.216
8	-0.040	0.108	0.217	-0.217
9	0.160	0.108	0.217	-0.217
10	-0.136	0.109	0.218	-0.218
11	-0.042	0.110	0.219	-0.219
12	-0.064	0.110	0.220	-0.220
13	-0.203	0.110	0.220	-0.220
14	-0.081	0.111	0.222	-0.222
15	-0.123	0.111	0.222	-0.222

S_21FLVEMDTR04 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

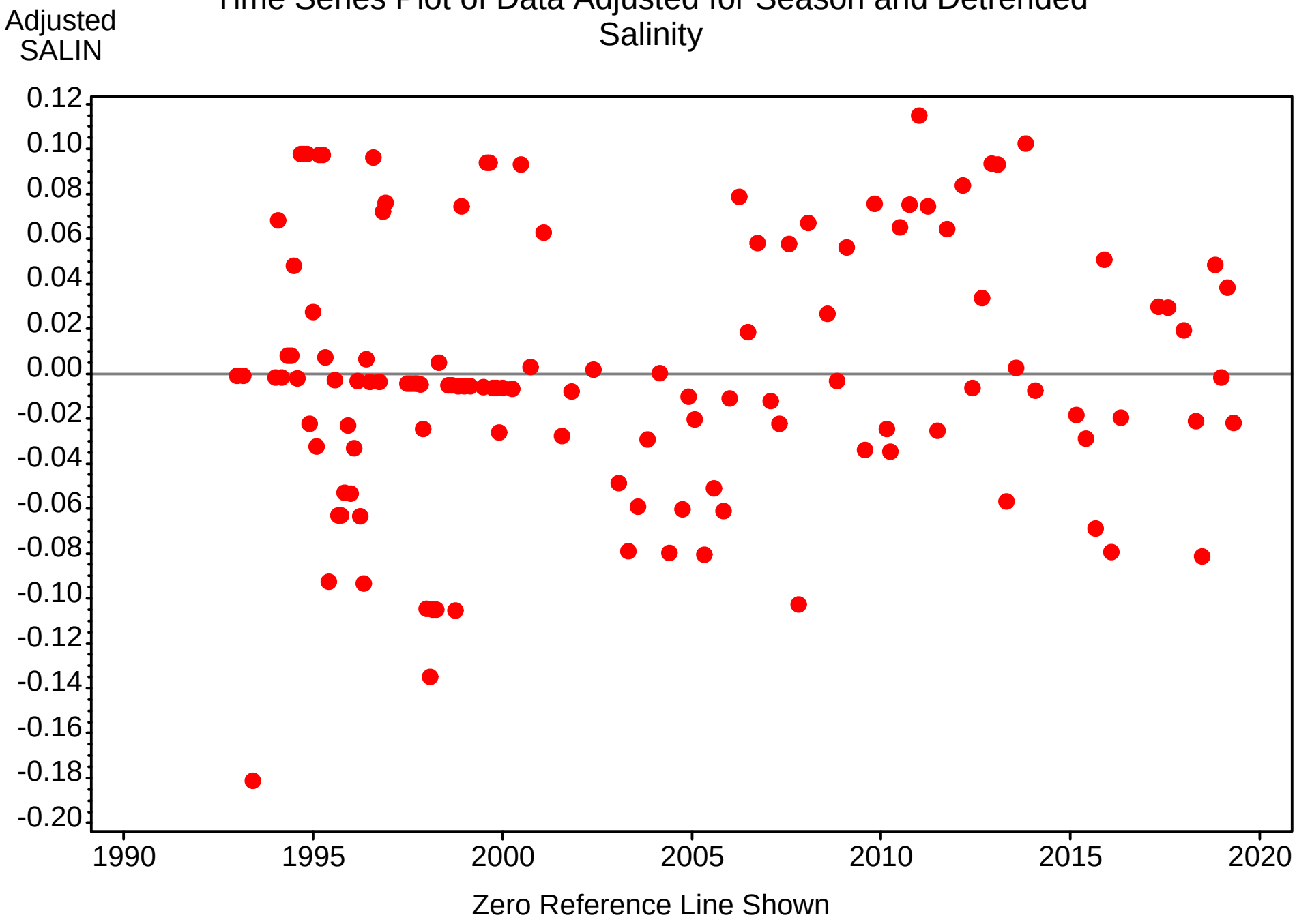
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.123	0.076	0.159	.001

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.12322	0.076169	0.15857	.0008

S_21FLVEMDTR04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



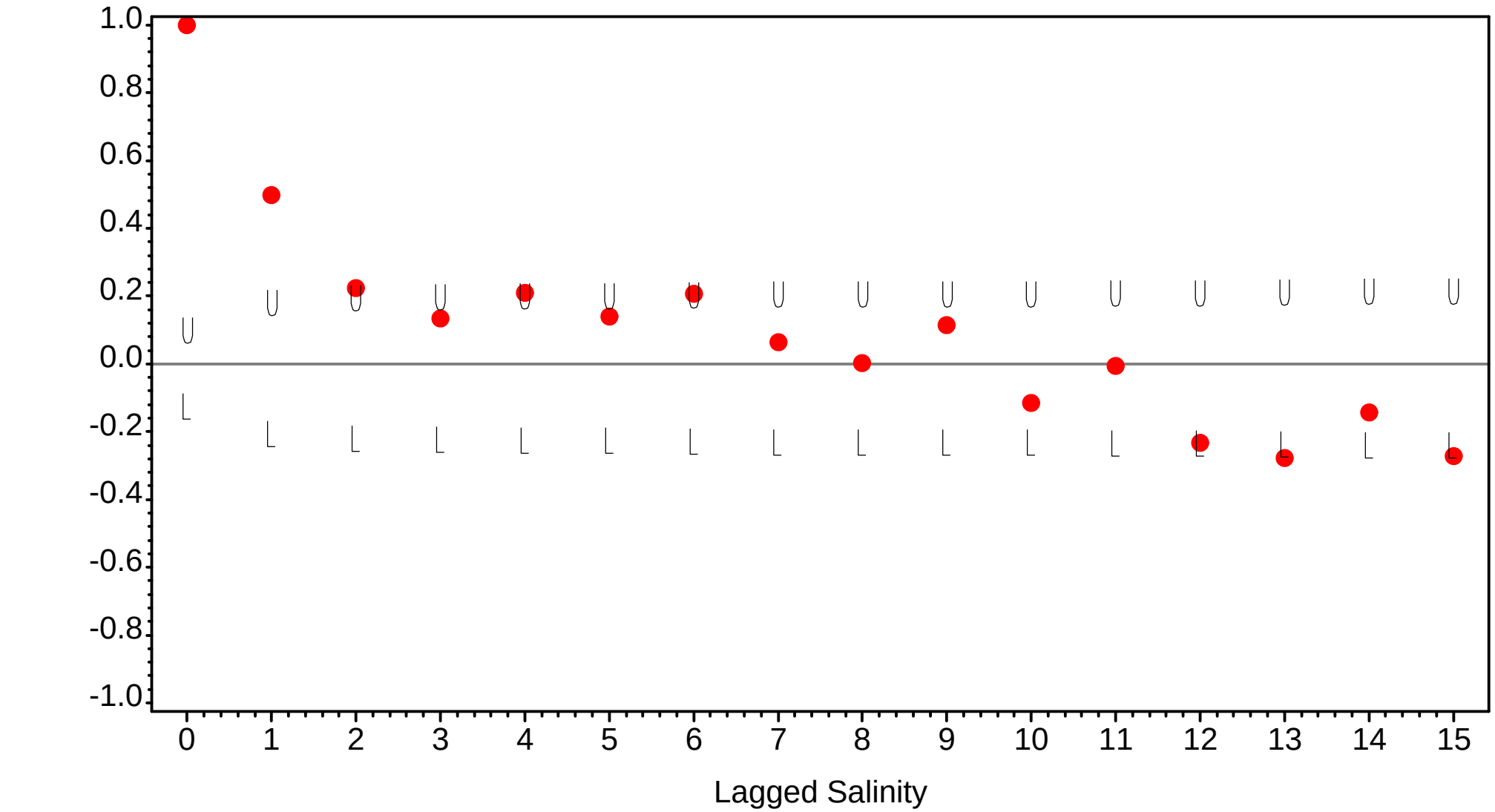
S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.498	0.096	0.192	-0.192
2	0.224	0.104	0.208	-0.208
3	0.133	0.105	0.211	-0.211
4	0.210	0.106	0.212	-0.212
5	0.140	0.107	0.214	-0.214
6	0.206	0.108	0.215	-0.215
7	0.065	0.109	0.218	-0.218
8	0.003	0.109	0.218	-0.218
9	0.115	0.109	0.218	-0.218
10	-0.115	0.109	0.219	-0.219
11	-0.007	0.110	0.220	-0.220
12	-0.233	0.110	0.220	-0.220
13	-0.278	0.111	0.223	-0.223
14	-0.142	0.113	0.227	-0.227
15	-0.272	0.114	0.228	-0.228

S_21FLVEMDTR04 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

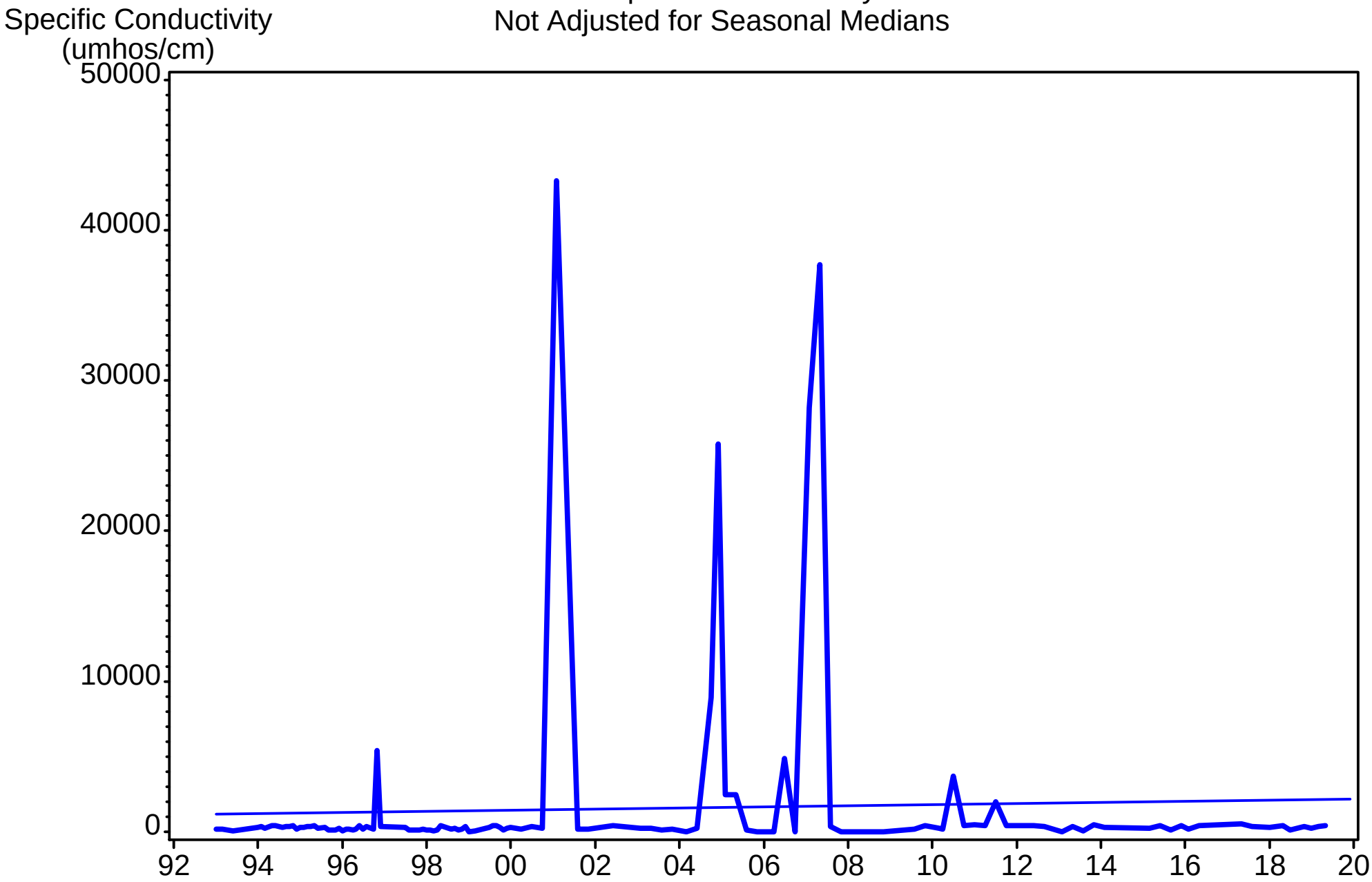


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

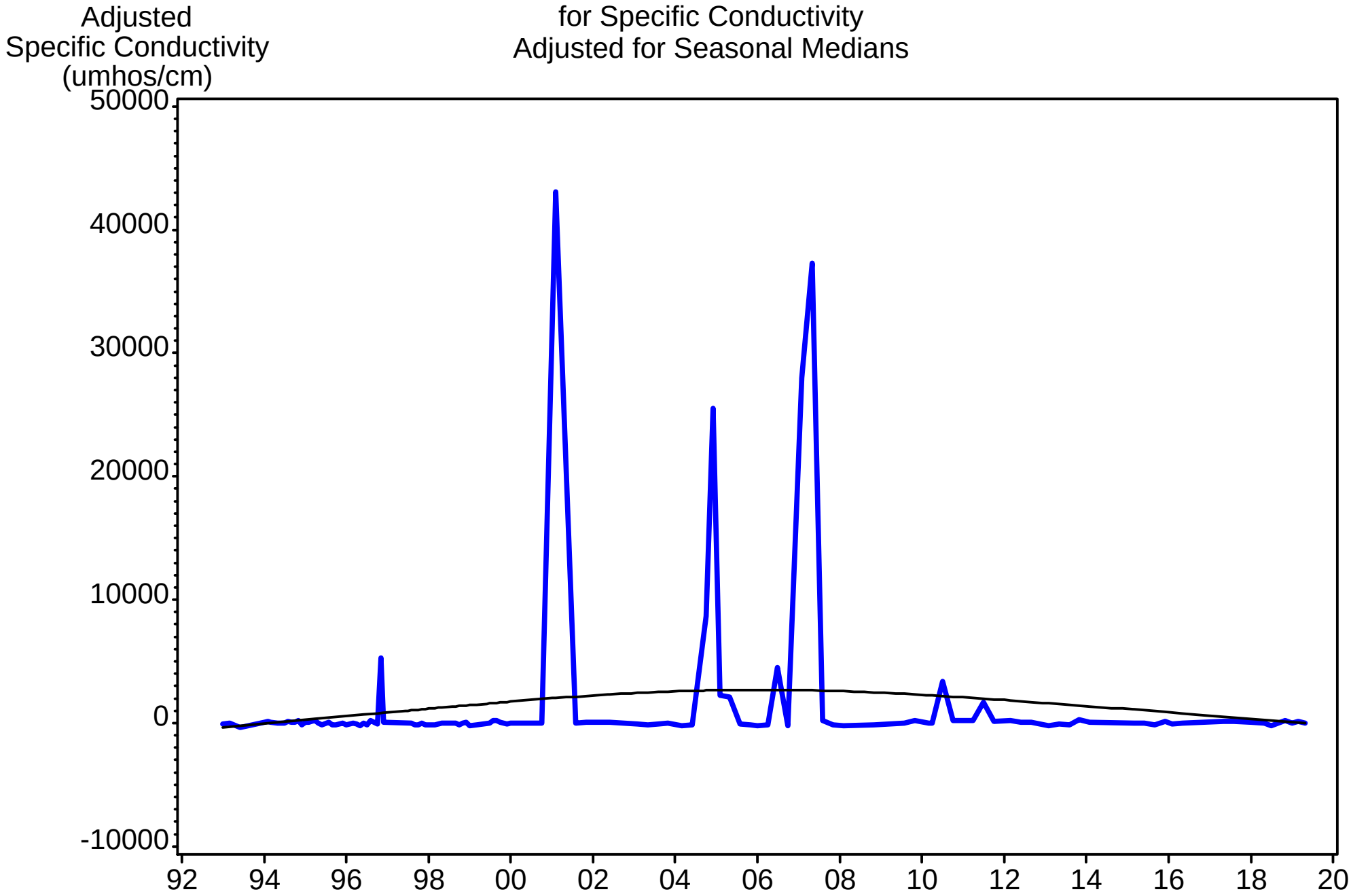
S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Time Series for Specific Conductivity Adjusted for Seasonal Medians

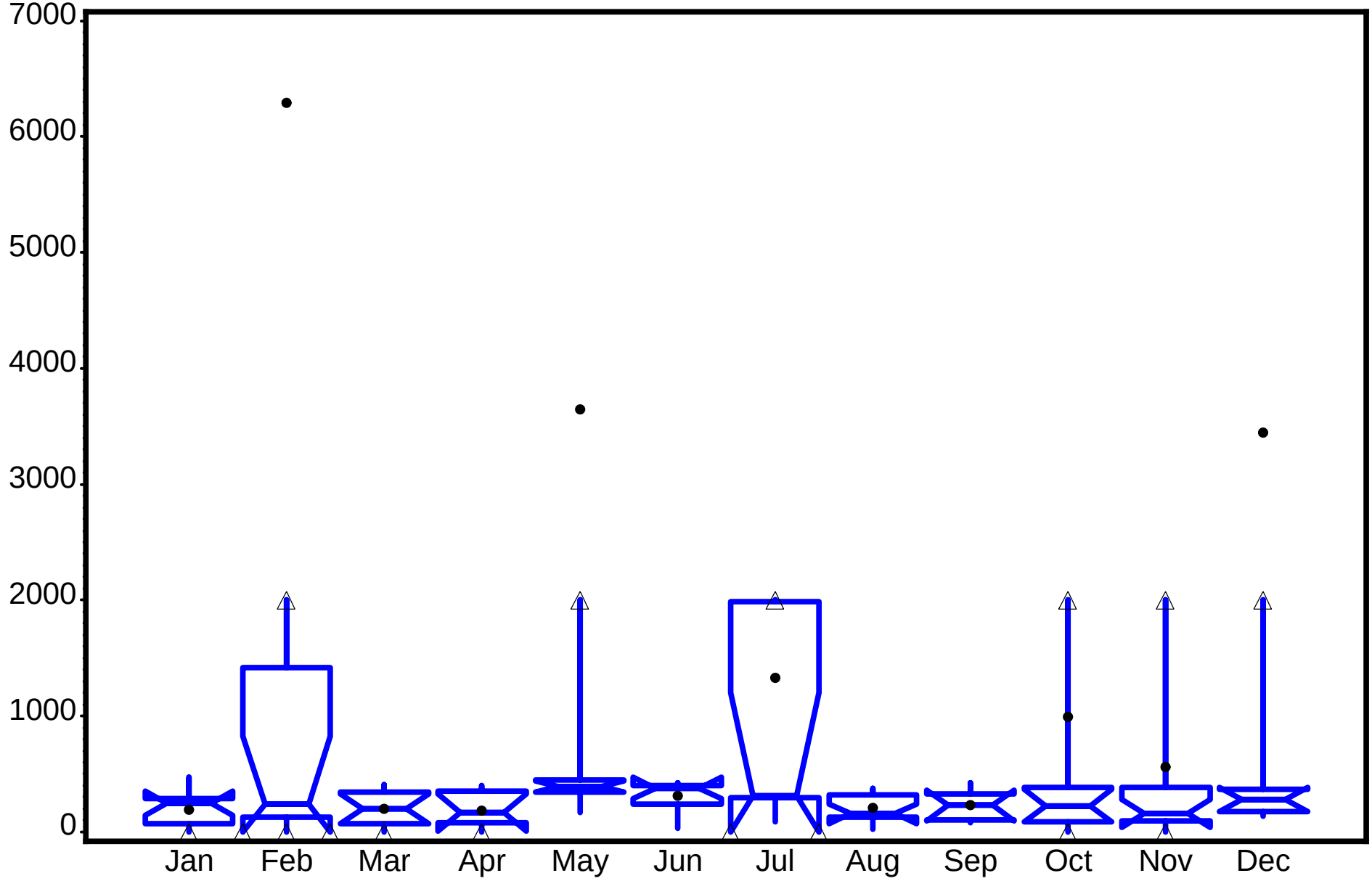


S_21FLVEMDTR04 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



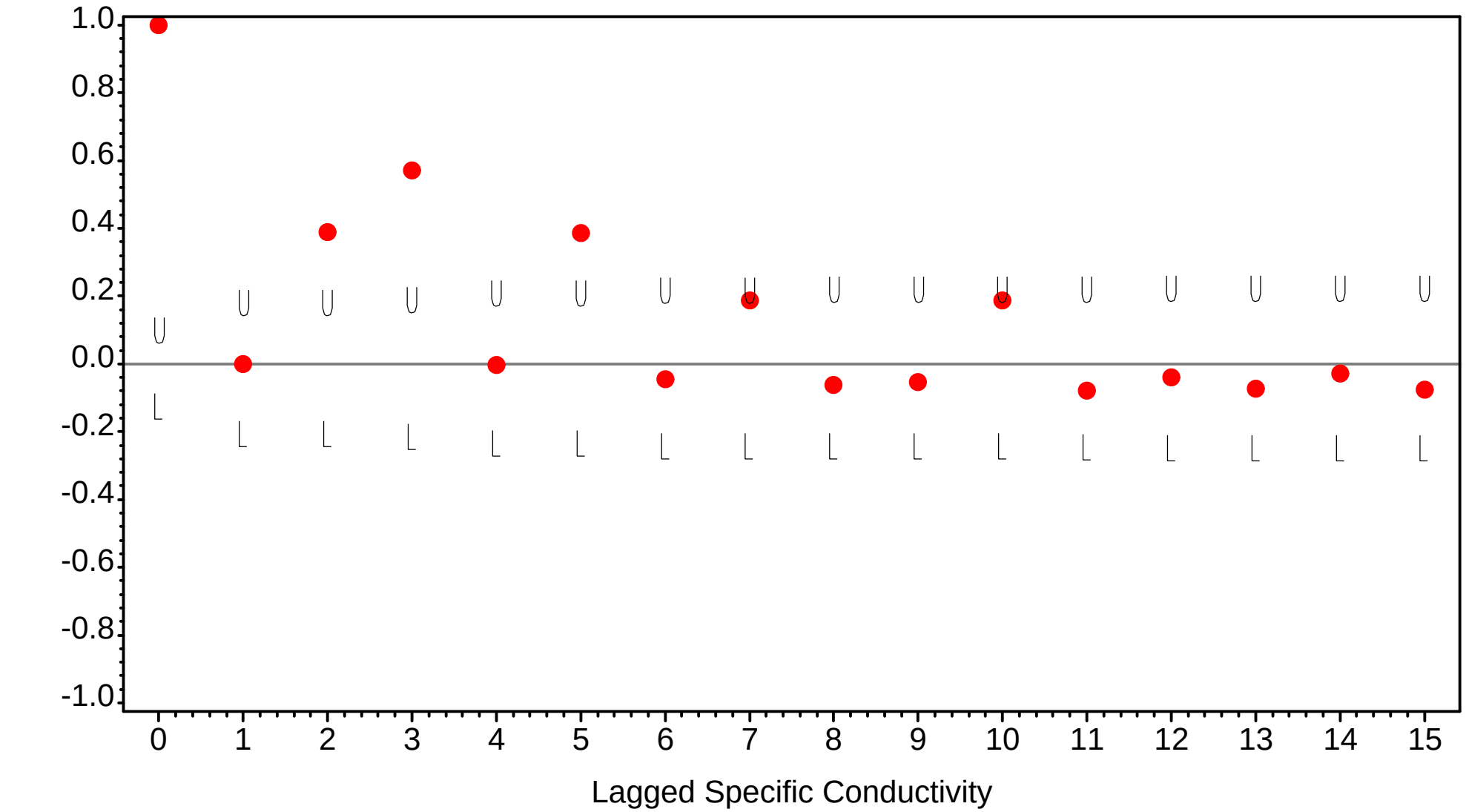
S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	-0.001	0.096	0.192	-0.192
2	0.389	0.096	0.192	-0.192
3	0.570	0.101	0.202	-0.202
4	-0.003	0.110	0.221	-0.221
5	0.386	0.110	0.221	-0.221
6	-0.044	0.115	0.229	-0.229
7	0.186	0.115	0.229	-0.229
8	-0.063	0.116	0.231	-0.231
9	-0.054	0.116	0.231	-0.231
10	0.187	0.116	0.231	-0.231
11	-0.079	0.117	0.233	-0.233
12	-0.040	0.117	0.234	-0.234
13	-0.073	0.117	0.234	-0.234
14	-0.029	0.117	0.234	-0.234
15	-0.076	0.117	0.234	-0.234

S_21FLVEMDTR04 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

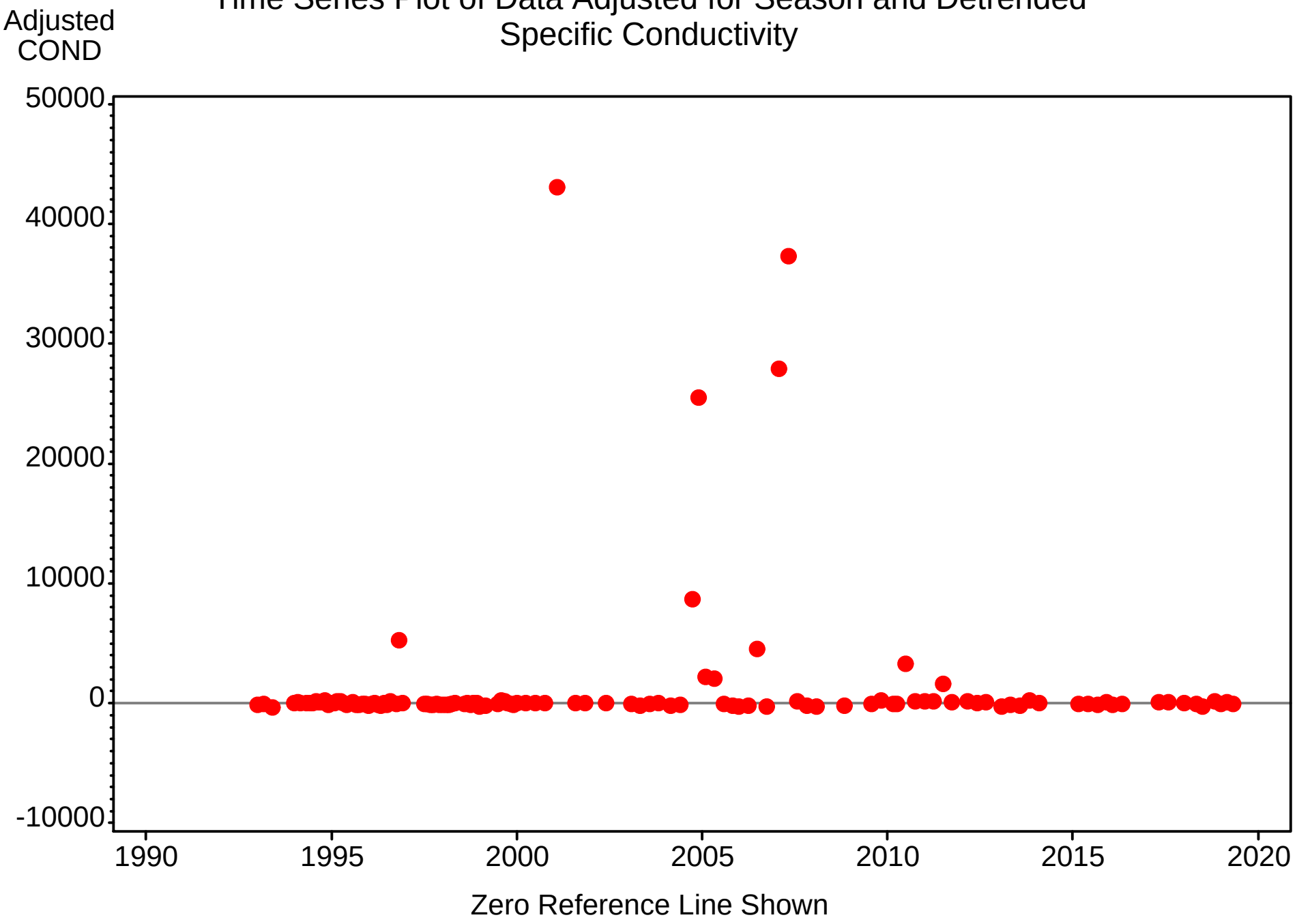
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.085	0.243	0.291	2.029

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.085	0.24287	0.29095	2.02941

S_21FLVEMDTR04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

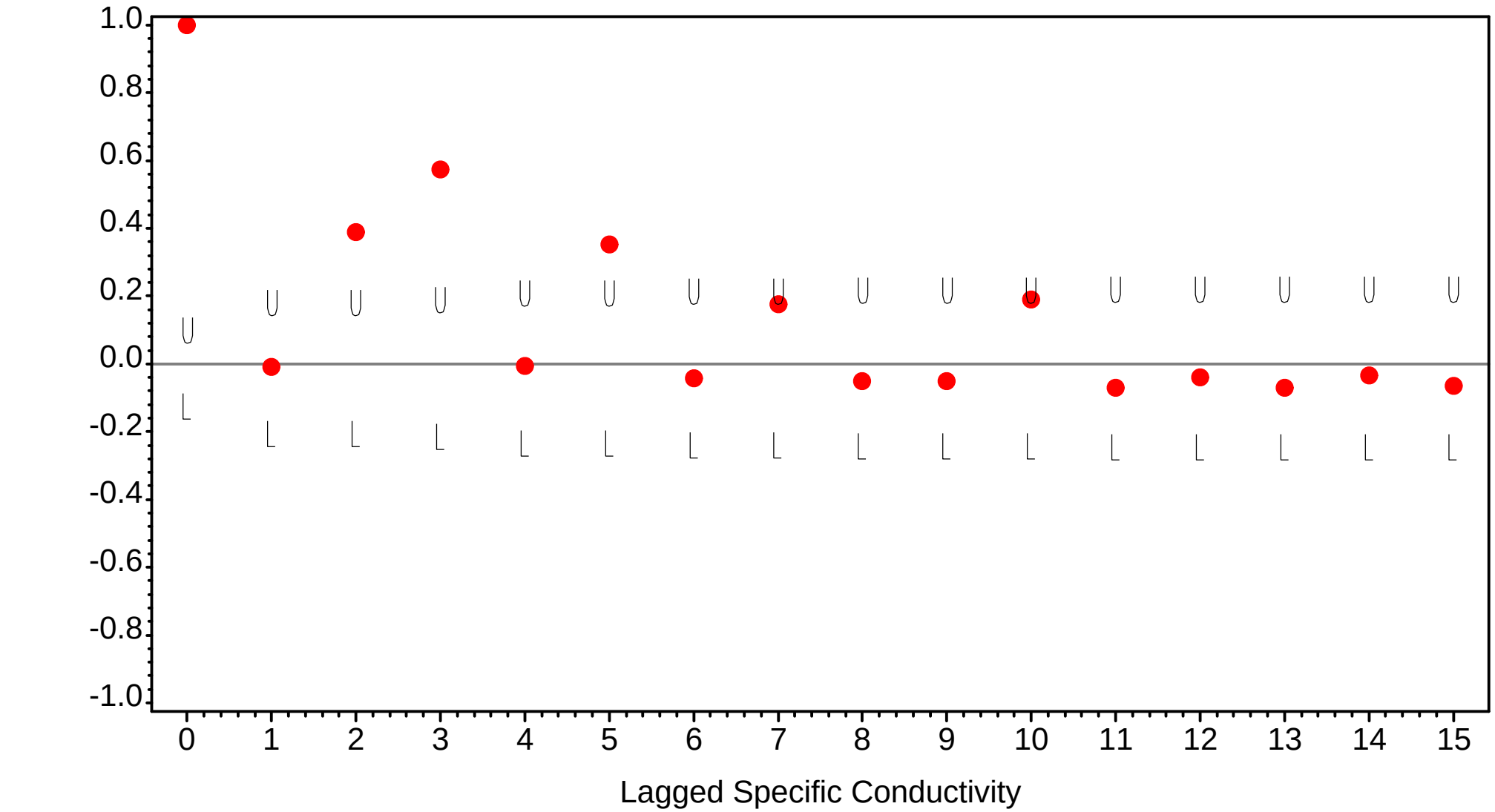


S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	-0.009	0.096	0.192	-0.192
2	0.389	0.096	0.192	-0.192
3	0.574	0.101	0.202	-0.202
4	-0.006	0.111	0.221	-0.221
5	0.351	0.111	0.221	-0.221
6	-0.042	0.114	0.228	-0.228
7	0.176	0.114	0.228	-0.228
8	-0.052	0.115	0.230	-0.230
9	-0.051	0.115	0.230	-0.230
10	0.190	0.115	0.230	-0.230
11	-0.070	0.116	0.232	-0.232
12	-0.039	0.116	0.232	-0.232
13	-0.071	0.116	0.232	-0.232
14	-0.033	0.116	0.233	-0.233
15	-0.065	0.116	0.233	-0.233

S_21FLVEMDTR04 Trends Appendix

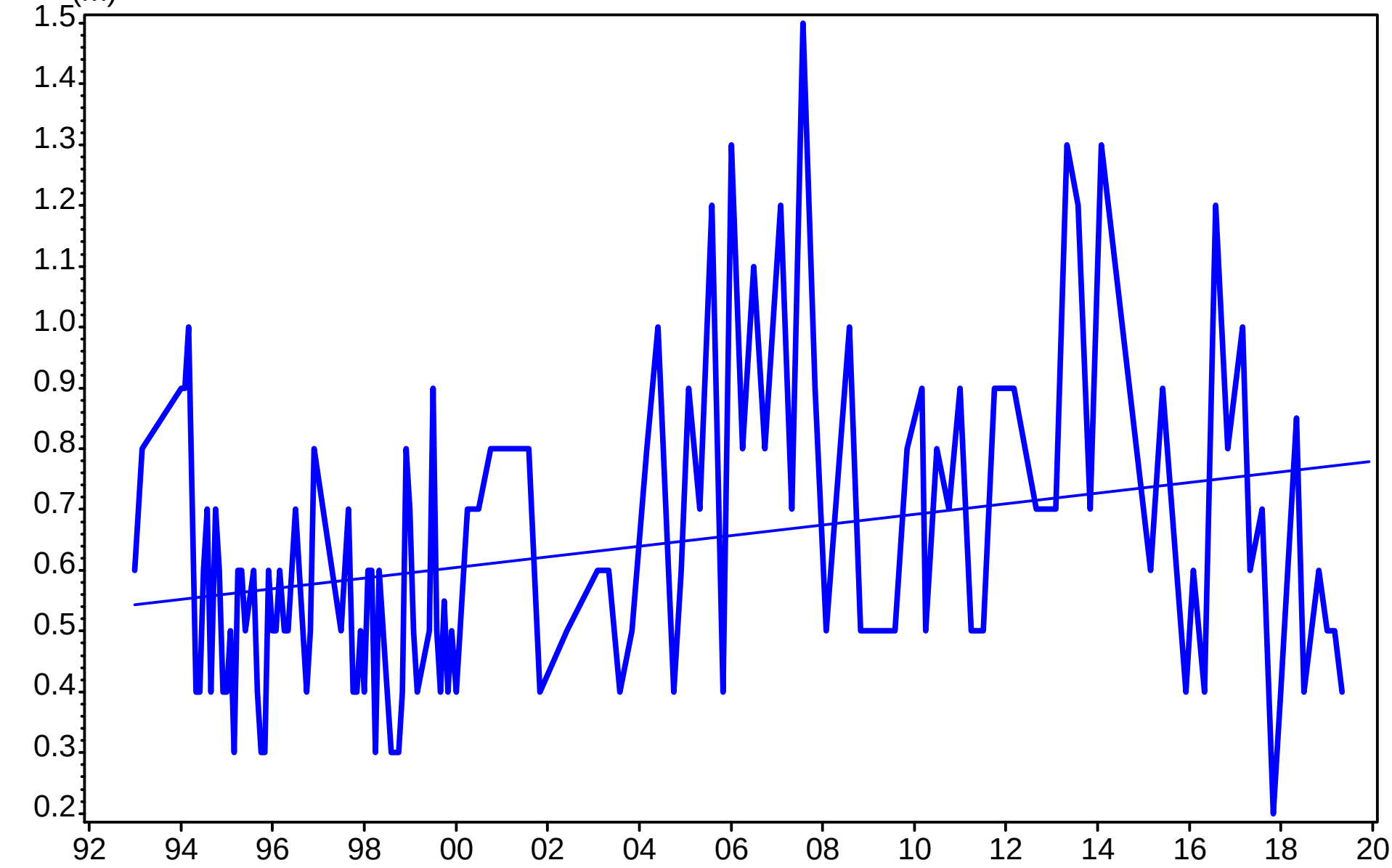
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



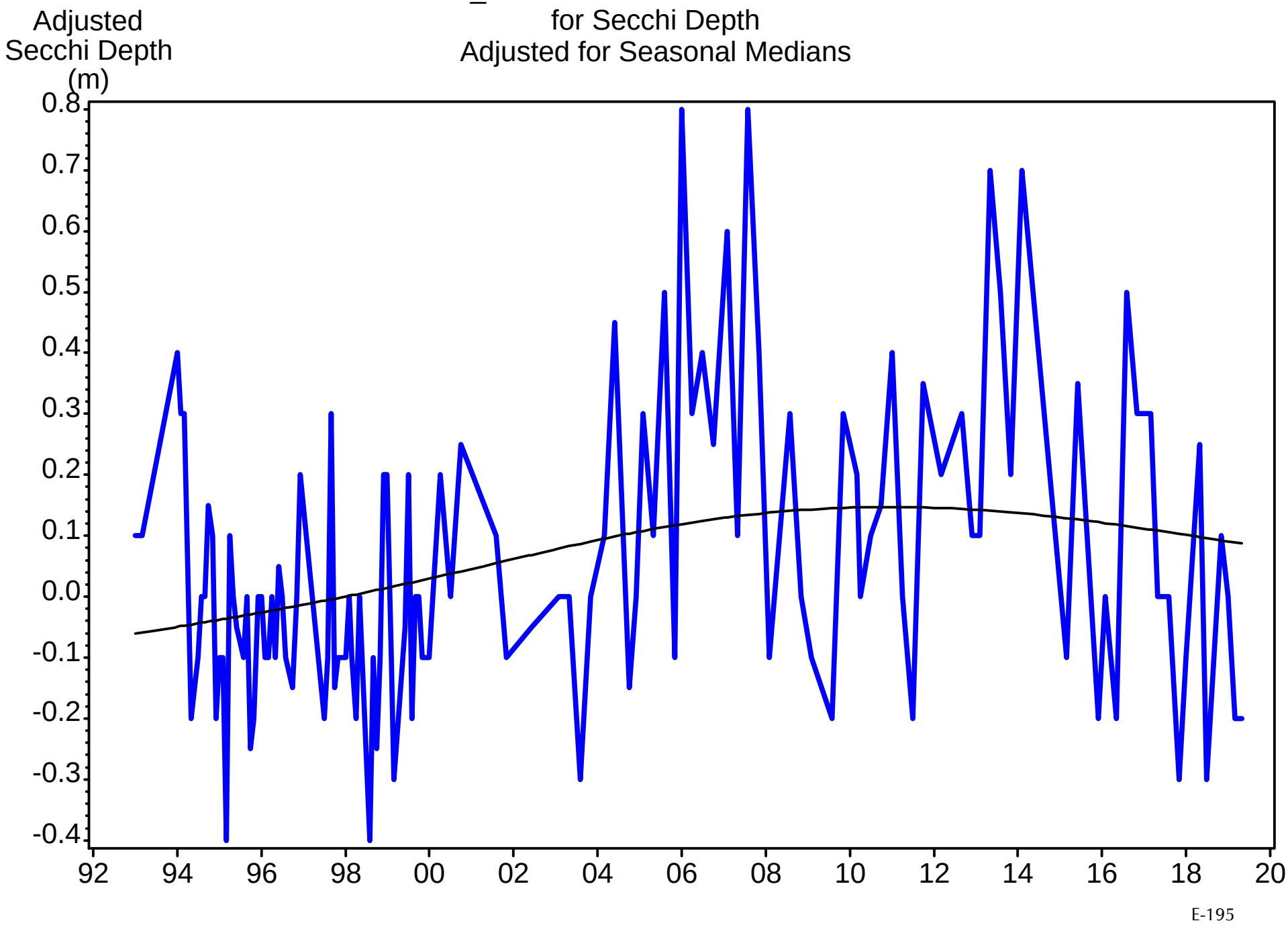
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR04 Trends

S_21FLVEMDTR04 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



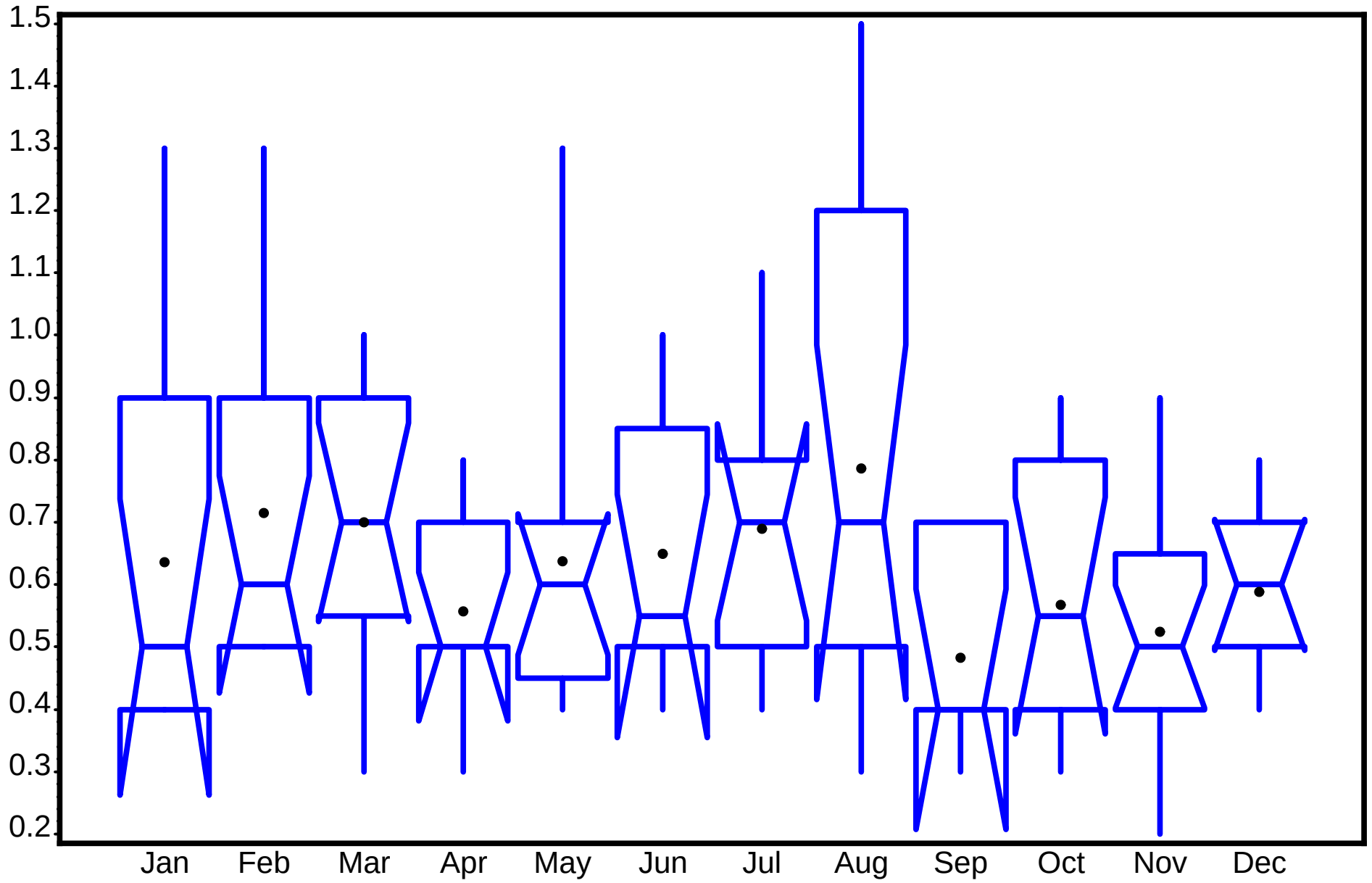
S_21FLVEMDTR04 Trends



S_21FLVEMDTR04 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth

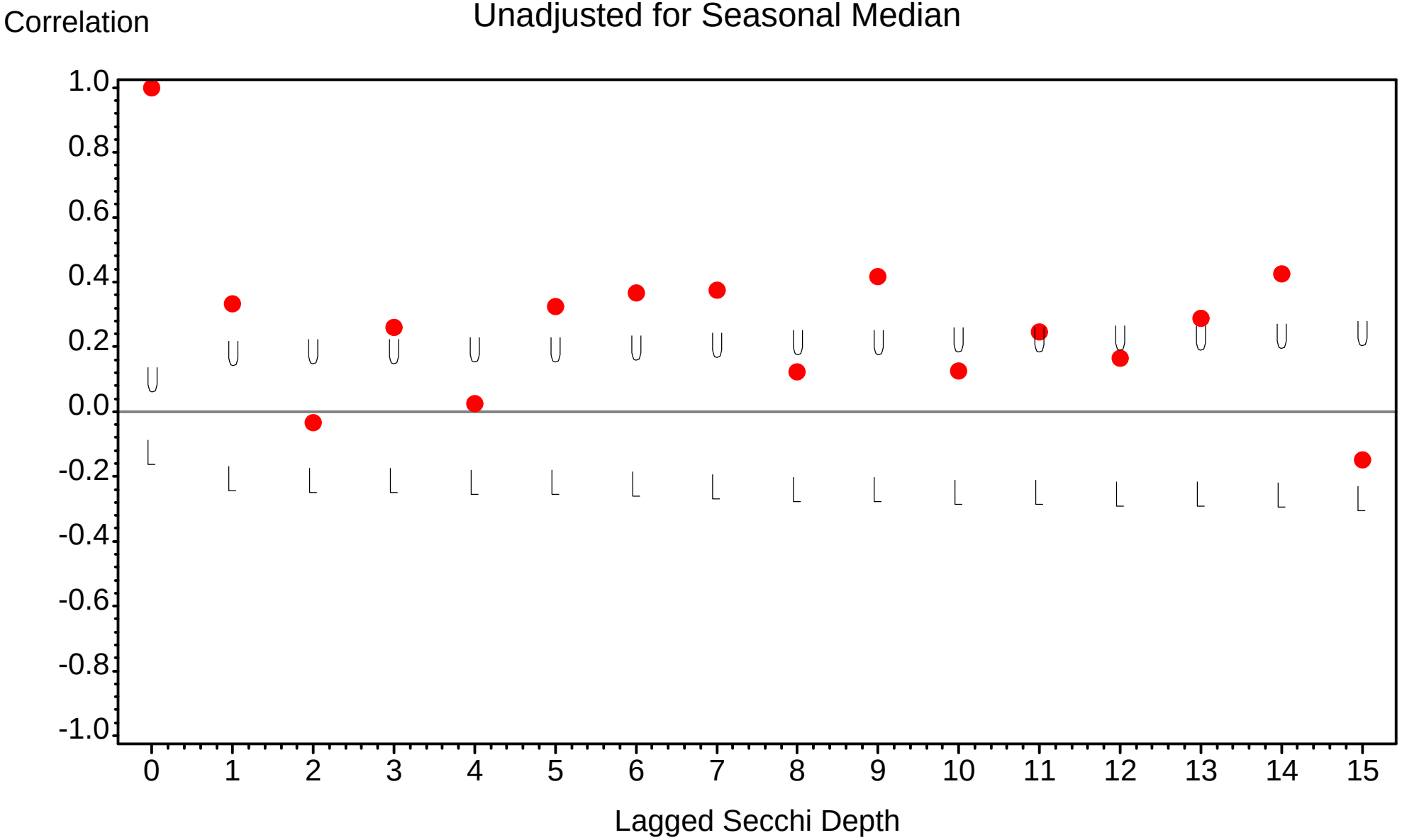


S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.334	0.096	0.192	-0.192
2	-0.035	0.100	0.199	-0.199
3	0.261	0.100	0.200	-0.200
4	0.024	0.102	0.204	-0.204
5	0.323	0.102	0.204	-0.204
6	0.365	0.105	0.210	-0.210
7	0.376	0.109	0.218	-0.218
8	0.122	0.113	0.226	-0.226
9	0.417	0.113	0.226	-0.226
10	0.125	0.118	0.236	-0.236
11	0.247	0.118	0.236	-0.236
12	0.164	0.120	0.240	-0.240
13	0.288	0.120	0.241	-0.241
14	0.425	0.123	0.245	-0.245
15	-0.148	0.127	0.254	-0.254

S_21FLVEMDTR04 Trends Appendix

Correlogram for Secchi Depth
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

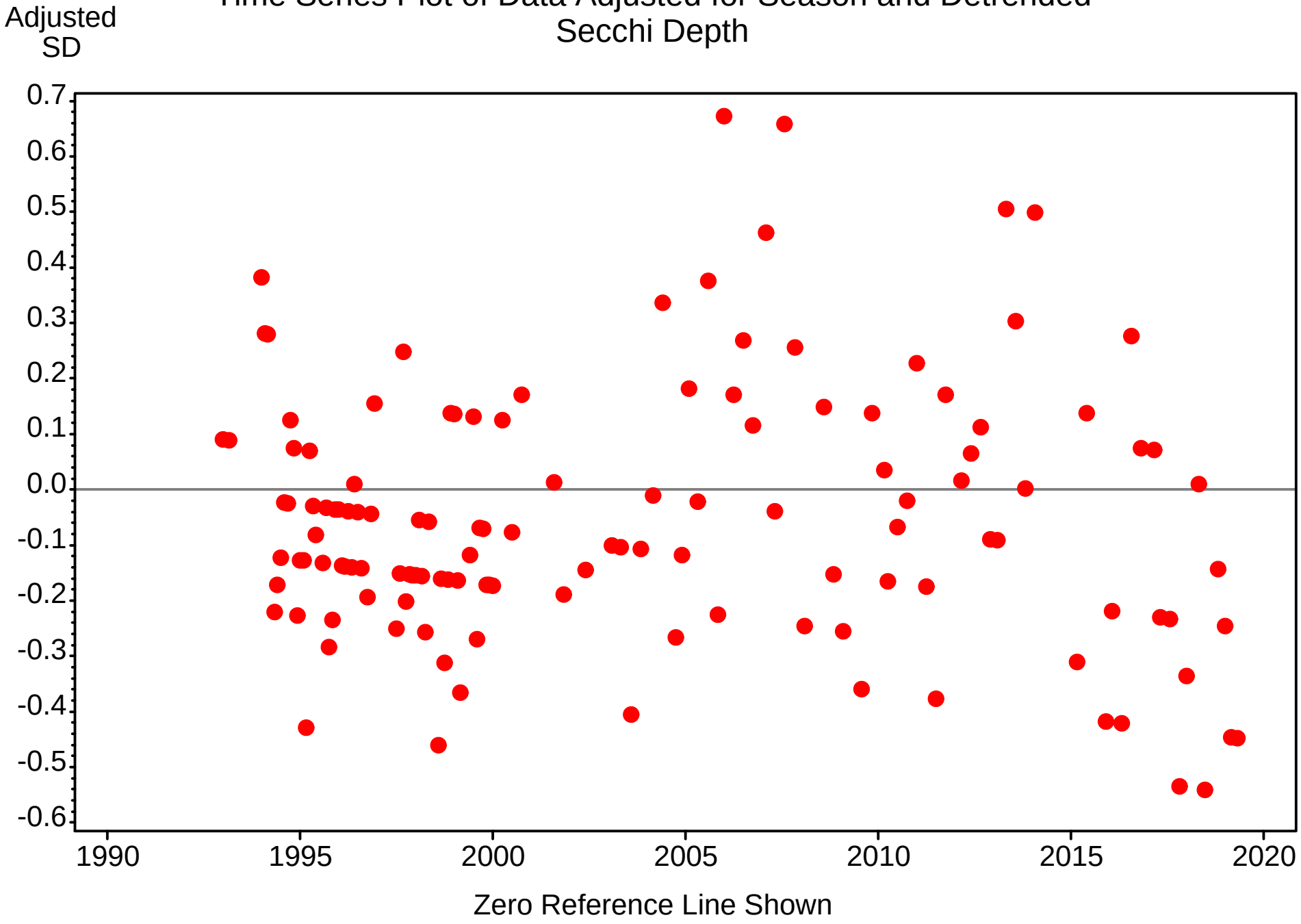
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.194	.005	0.046	.009

S_21FLVEMDTR04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.19383	.00462186	0.046470	.00909091

S_21FLVEMDTR04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth

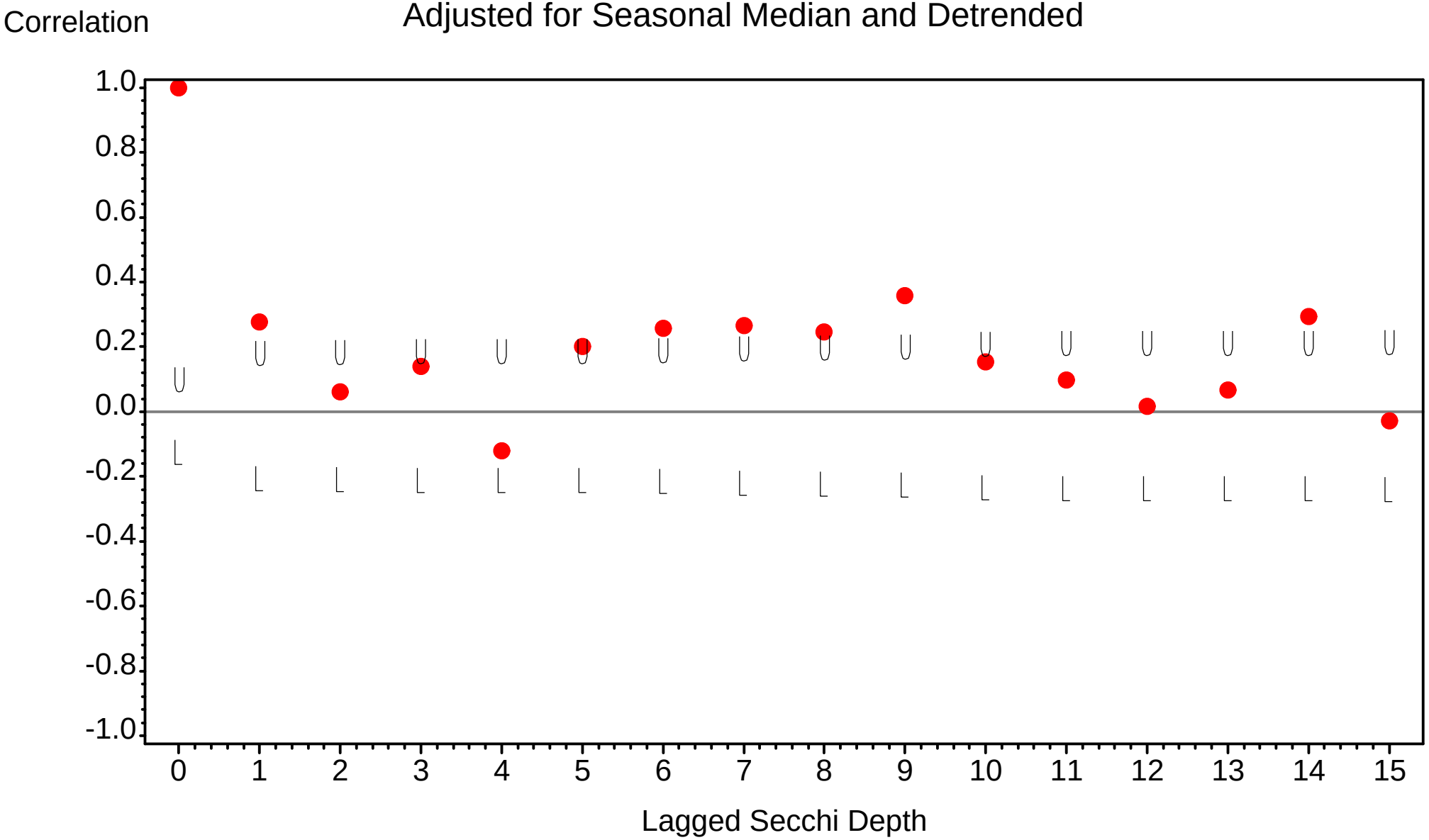


S_21FLVEMDTR04 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.278	0.096	0.192	-0.192
2	0.060	0.099	0.197	-0.197
3	0.140	0.099	0.198	-0.198
4	-0.122	0.099	0.199	-0.199
5	0.202	0.100	0.200	-0.200
6	0.256	0.101	0.202	-0.202
7	0.265	0.103	0.206	-0.206
8	0.246	0.105	0.210	-0.210
9	0.359	0.107	0.214	-0.214
10	0.153	0.111	0.221	-0.221
11	0.097	0.111	0.223	-0.223
12	0.016	0.112	0.223	-0.223
13	0.068	0.112	0.223	-0.223
14	0.294	0.112	0.223	-0.223
15	-0.028	0.114	0.228	-0.228

S_21FLVEMDTR04 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
2	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
4	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
5	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
6	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
7	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
2	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
3	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
4	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
5	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
6	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
7	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	0.18508	0.00006	0.00900	0.01893	0.18508	0.00006	0.01893
2	0.14122	0.00202	0.11766	3.63333	0.14122	0.11766	3.63333
3	-0.07989	0.08217	0.21224	-0.01972	-0.07989	0.08217	-0.01972
4	-0.03270	0.71735	0.77620	-0.03605	-0.03270	0.71735	-0.03605
5	0.17949	0.00008	0.04429	0.00250	0.17900	0.00000	0.00300
6	0.10197	0.09551	0.18499	0.00115	0.10200	0.18500	0.00100
7	-0.00915	0.85080	0.91313	-0.00065	-0.00900	0.91300	-0.00100

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
9	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
10	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19
11	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42
12	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81
13	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00
14	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
9	0.44	N	Y	N	N	-0.142	0.074	0.219	-0.011
10	-9999.00	N	N	Y	N	0.085	0.243	0.291	2.029
11	2.33	Y	Y	N	N	-0.040	0.591	0.737	-0.008
12	1.77	Y	Y	N	N	0.027	0.725	0.823	0.034
13	-9999.00	N	Y	Y	Y	0.123	0.076	0.159	0.001
14	0.68	Y	Y	N	N	0.194	0.005	0.046	0.009

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.13971	0.00275	0.01624	0.00029	0.14100	0.00300	0.00000
9	-0.14223	0.07413	0.21912	-0.01081	-0.14200	0.07400	-0.01100
10	0.08500	0.24287	0.29095	2.02941	0.08500	0.24300	2.02900
11	-0.03968	0.59098	0.73685	-0.00750	-0.03968	0.59098	-0.00750
12	0.02716	0.72528	0.82342	0.03350	0.02716	0.72528	0.03350
13	0.12322	0.07617	0.15857	0.00080	0.12300	0.15900	0.00100
14	0.19383	0.00462	0.04647	0.00909	0.19383	0.00462	0.00909

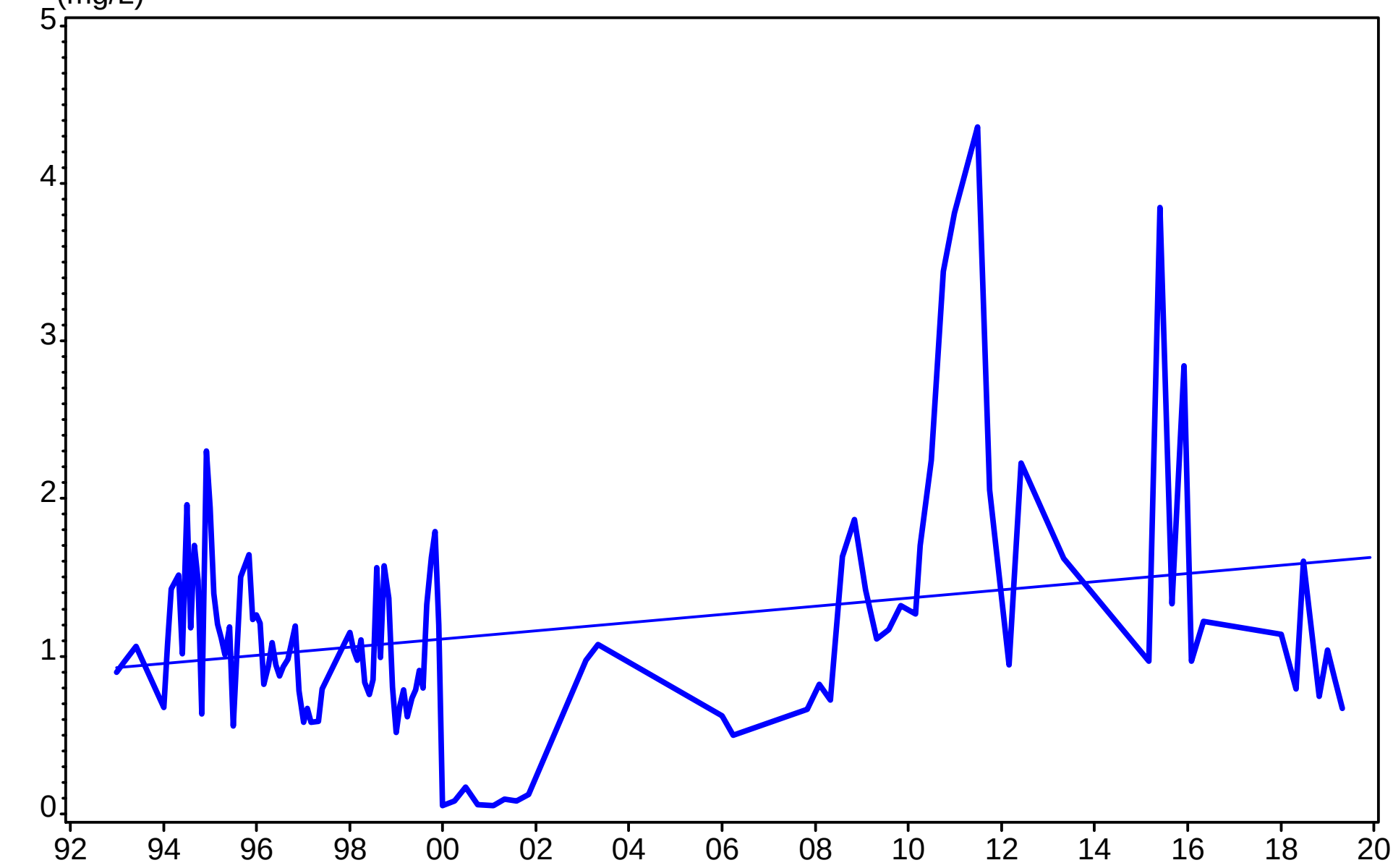
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
16	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	0.31	N	Y	N	N	-0.241	0.003	0.076	-0.016
16	-9999.00	N	N	N	N	0.040	0.632	0.786	0.000

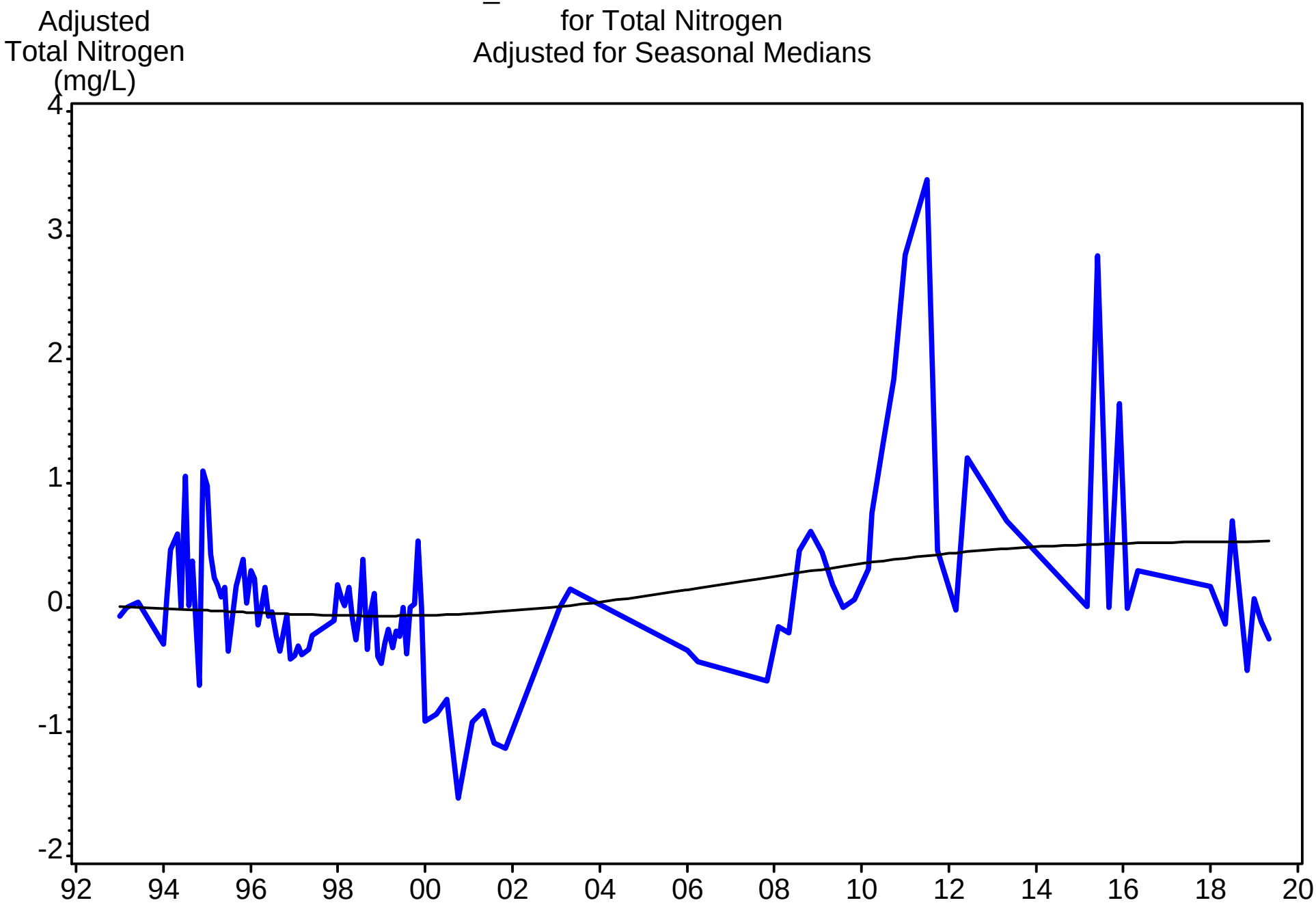
Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	-0.24070	0.00315	0.07596	-0.01623	-0.24100	0.00300	-0.01600
16	0.04009	0.63152	0.78567	0.00000	0.04000	0.63200	0.00000

S_21FLVEMDTR03 Trends

S_21FLVEMDTR03 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLVEMDTR03 Trends

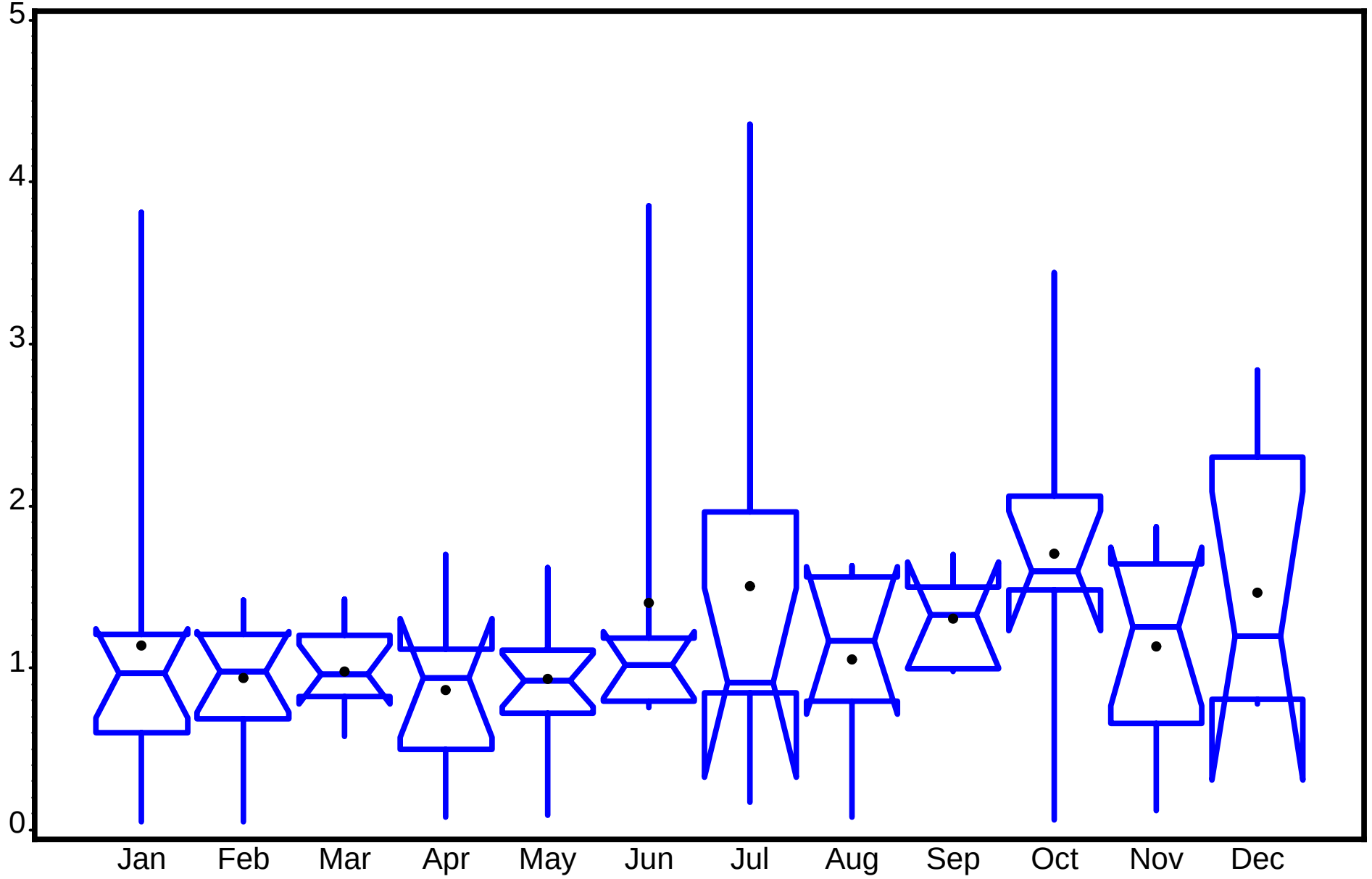


S_21FLVEMDTR03 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



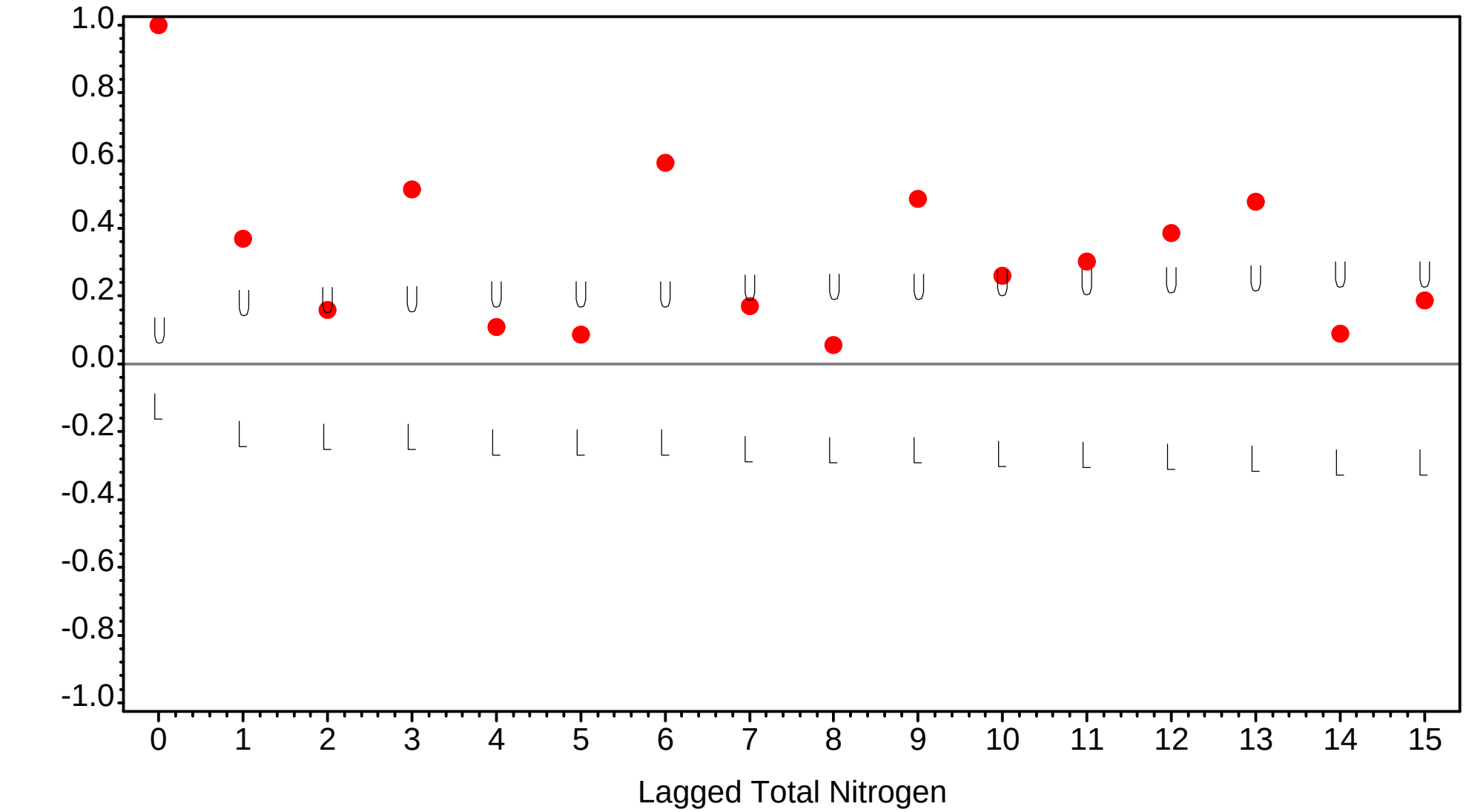
S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.369	0.096	0.192	-0.192
2	0.159	0.100	0.201	-0.201
3	0.515	0.101	0.203	-0.203
4	0.110	0.109	0.218	-0.218
5	0.085	0.109	0.219	-0.219
6	0.594	0.110	0.219	-0.219
7	0.169	0.119	0.238	-0.238
8	0.055	0.120	0.240	-0.240
9	0.488	0.120	0.240	-0.240
10	0.260	0.126	0.252	-0.252
11	0.301	0.128	0.255	-0.255
12	0.386	0.130	0.260	-0.260
13	0.479	0.133	0.267	-0.267
14	0.089	0.138	0.277	-0.277
15	0.187	0.139	0.277	-0.277

S_21FLVEMDTR03 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

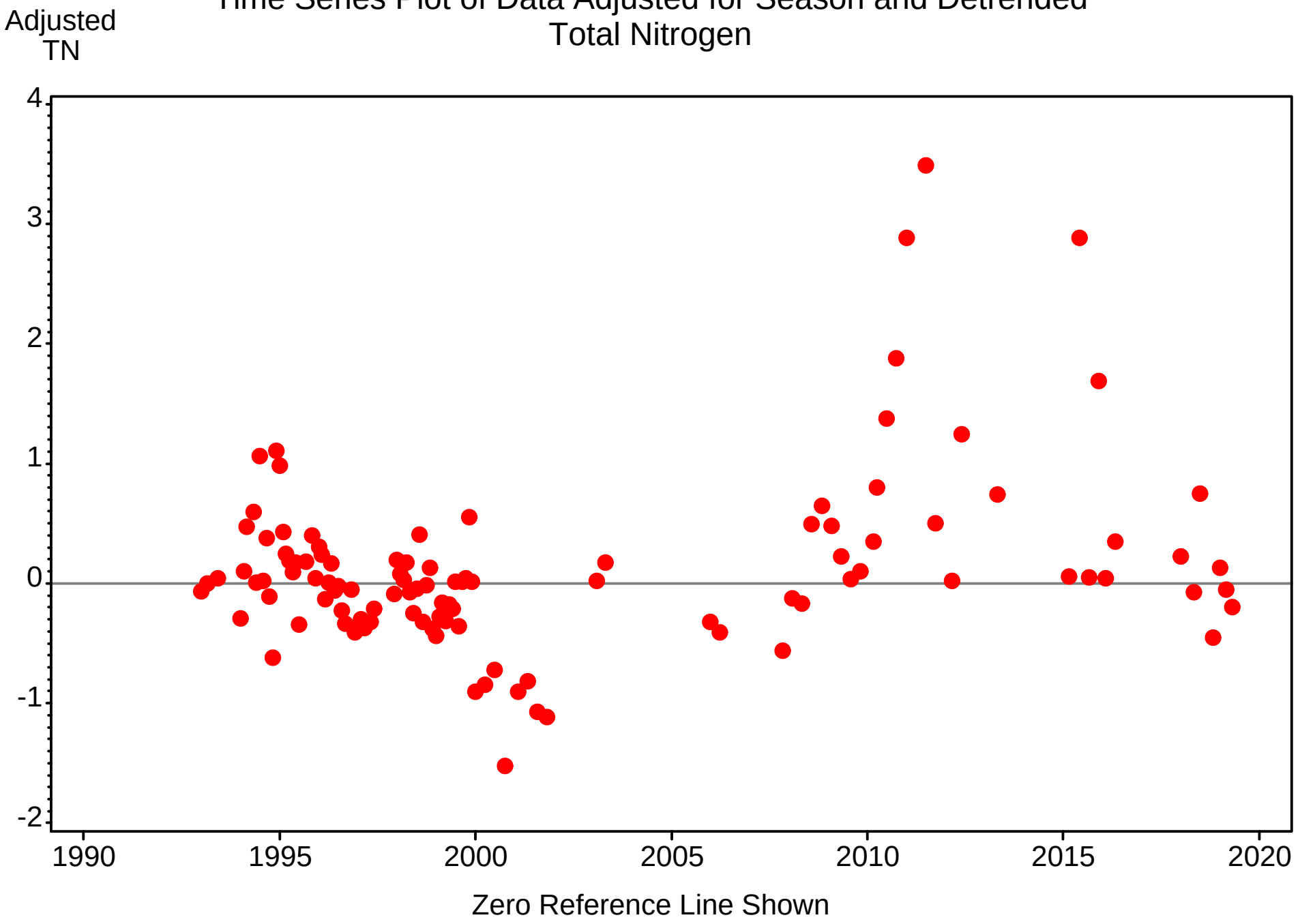
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.031	0.706	0.812	-.002

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.031447	0.70576	0.81201	-.00205

S_21FLVEMDTR03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



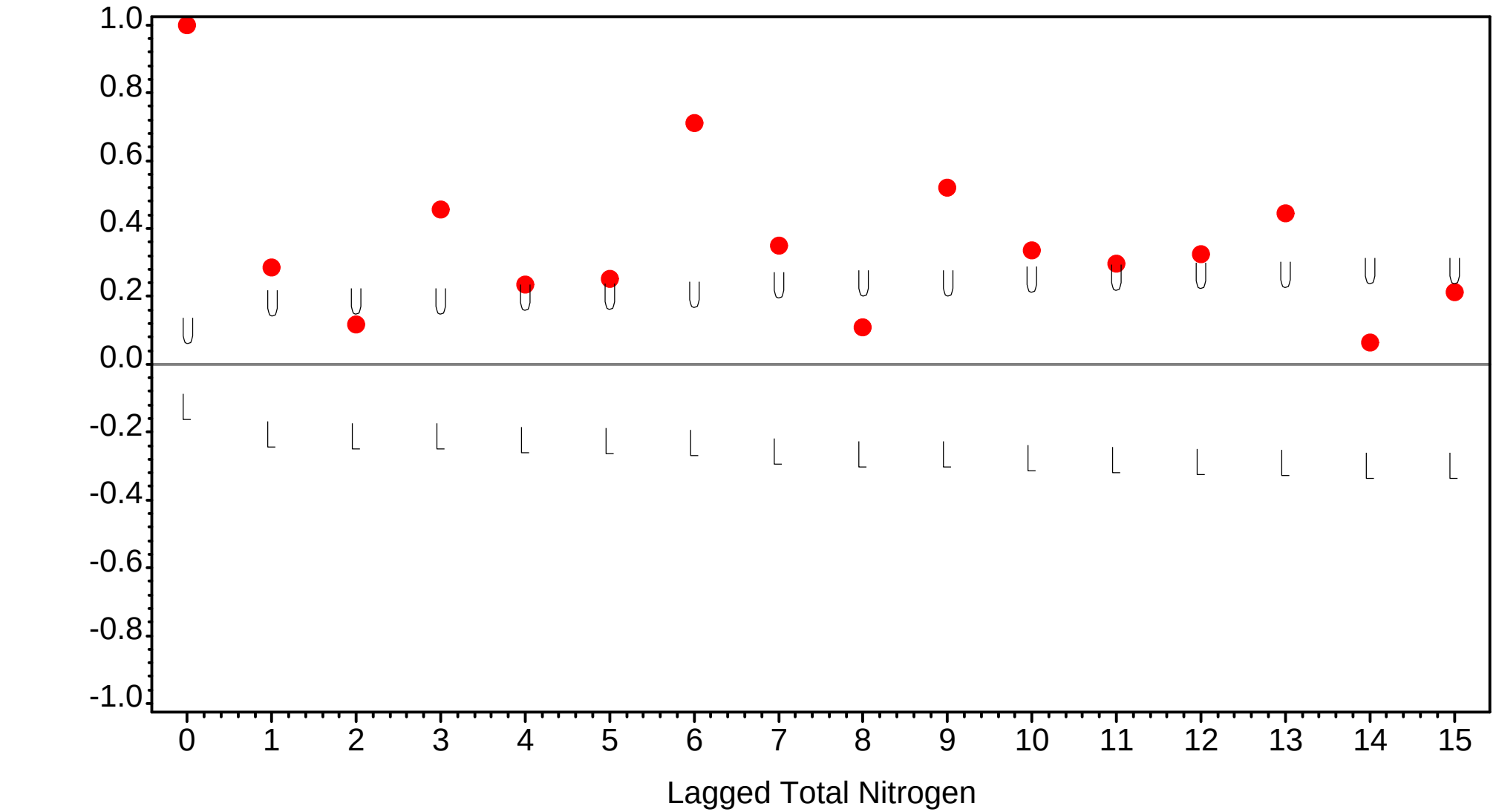
S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.284	0.096	0.192	-0.192
2	0.118	0.099	0.198	-0.198
3	0.457	0.099	0.198	-0.198
4	0.234	0.106	0.211	-0.211
5	0.252	0.107	0.214	-0.214
6	0.710	0.109	0.218	-0.218
7	0.349	0.122	0.245	-0.245
8	0.110	0.125	0.251	-0.251
9	0.521	0.126	0.251	-0.251
10	0.335	0.132	0.264	-0.264
11	0.295	0.135	0.270	-0.270
12	0.325	0.137	0.274	-0.274
13	0.444	0.139	0.278	-0.278
14	0.063	0.143	0.287	-0.287
15	0.211	0.144	0.287	-0.287

S_21FLVEMDTR03 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

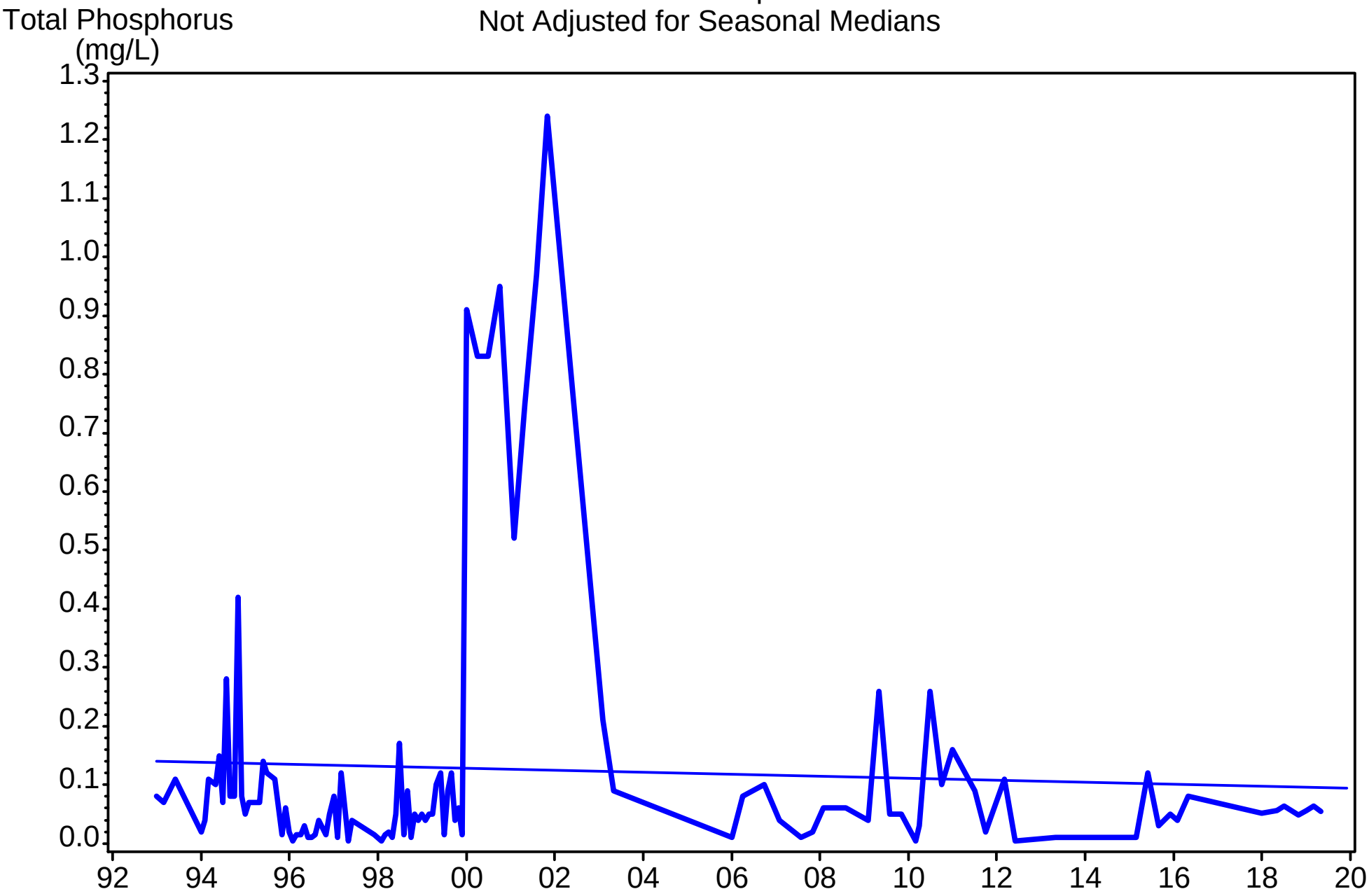


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

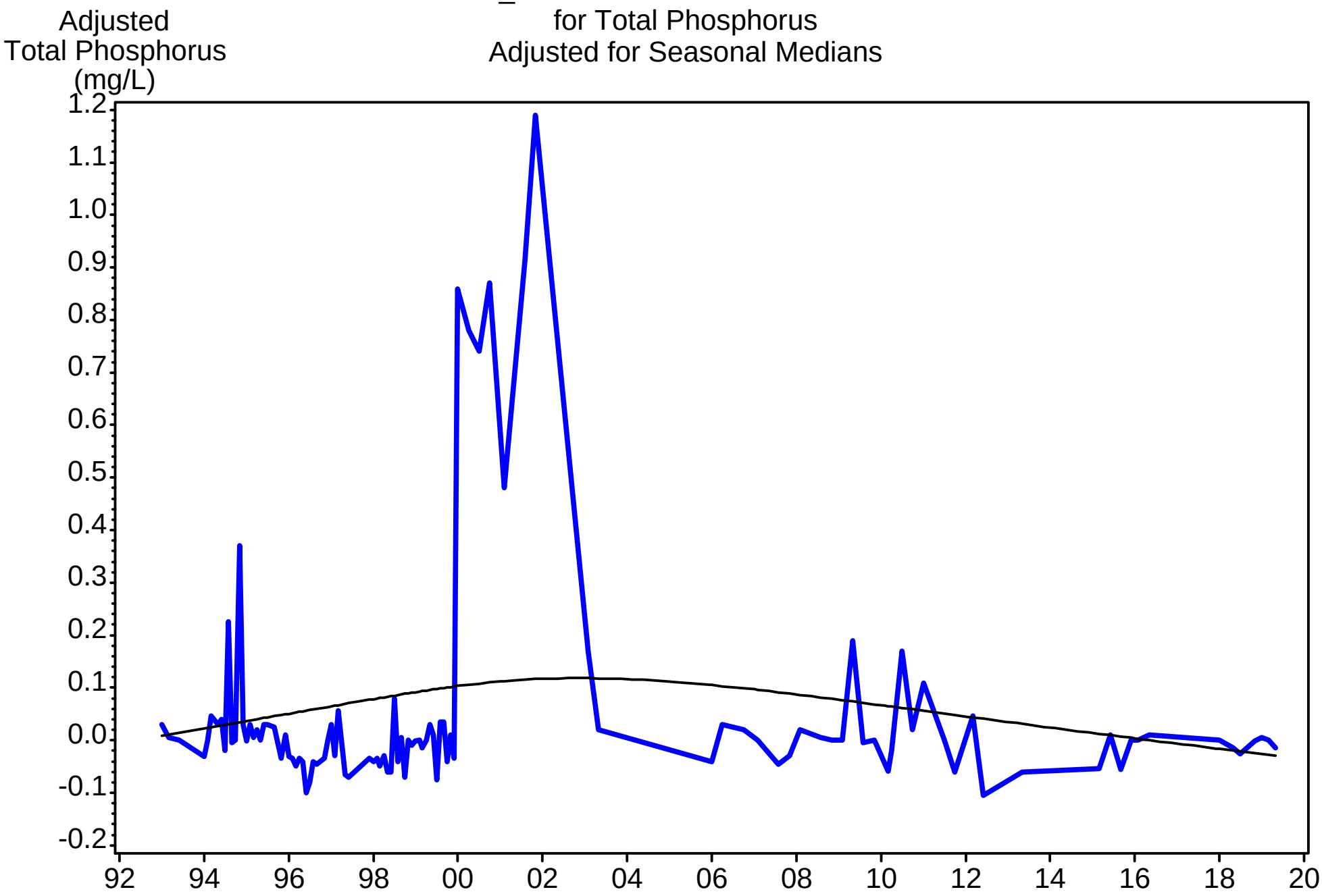
Zero Reference Line Shown

S_21FLVEMDTR03 Trends

S_21FLVEMDTR03 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



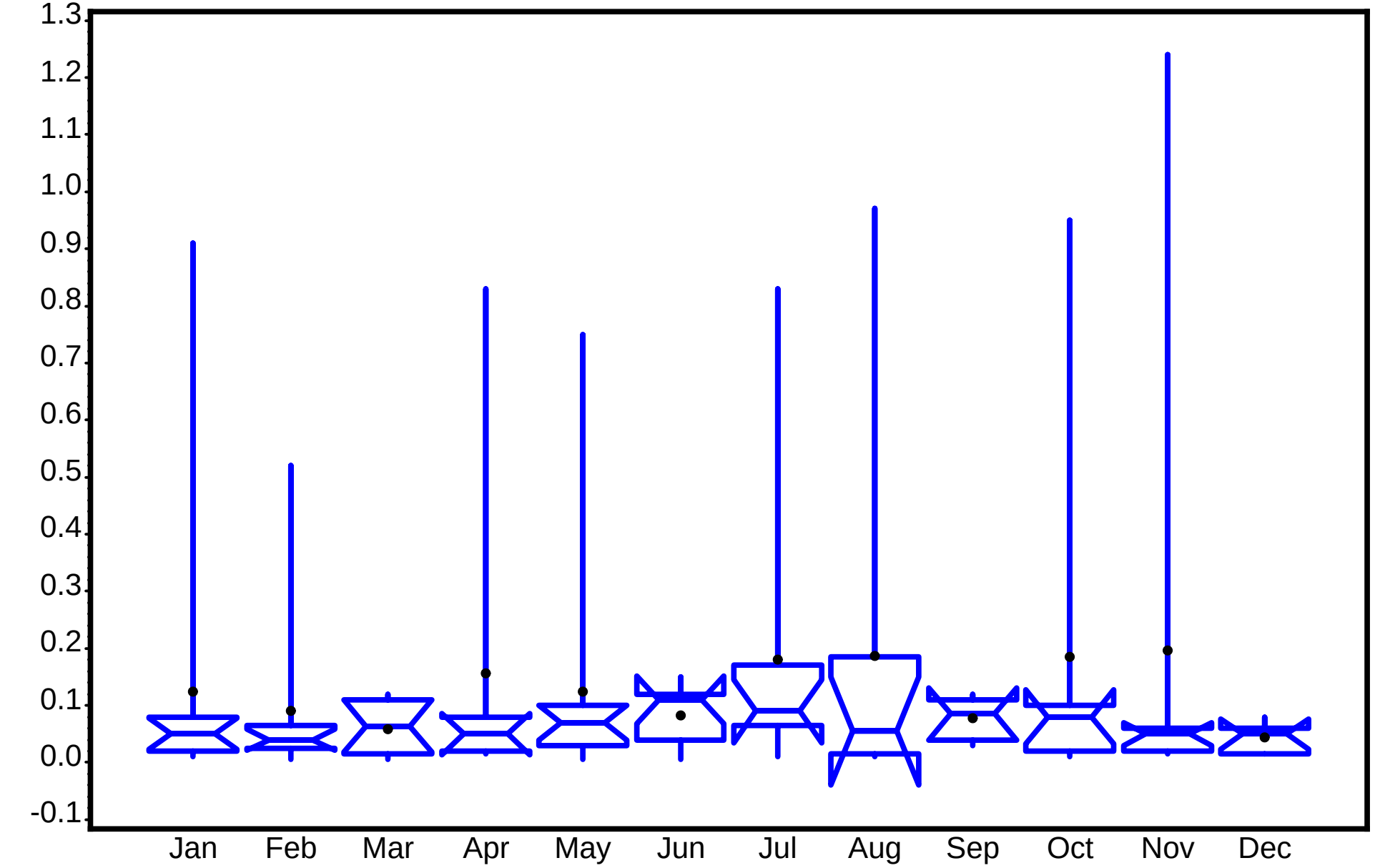
S_21FLVEMDTR03 Trends



S_21FLVEMDTR03 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

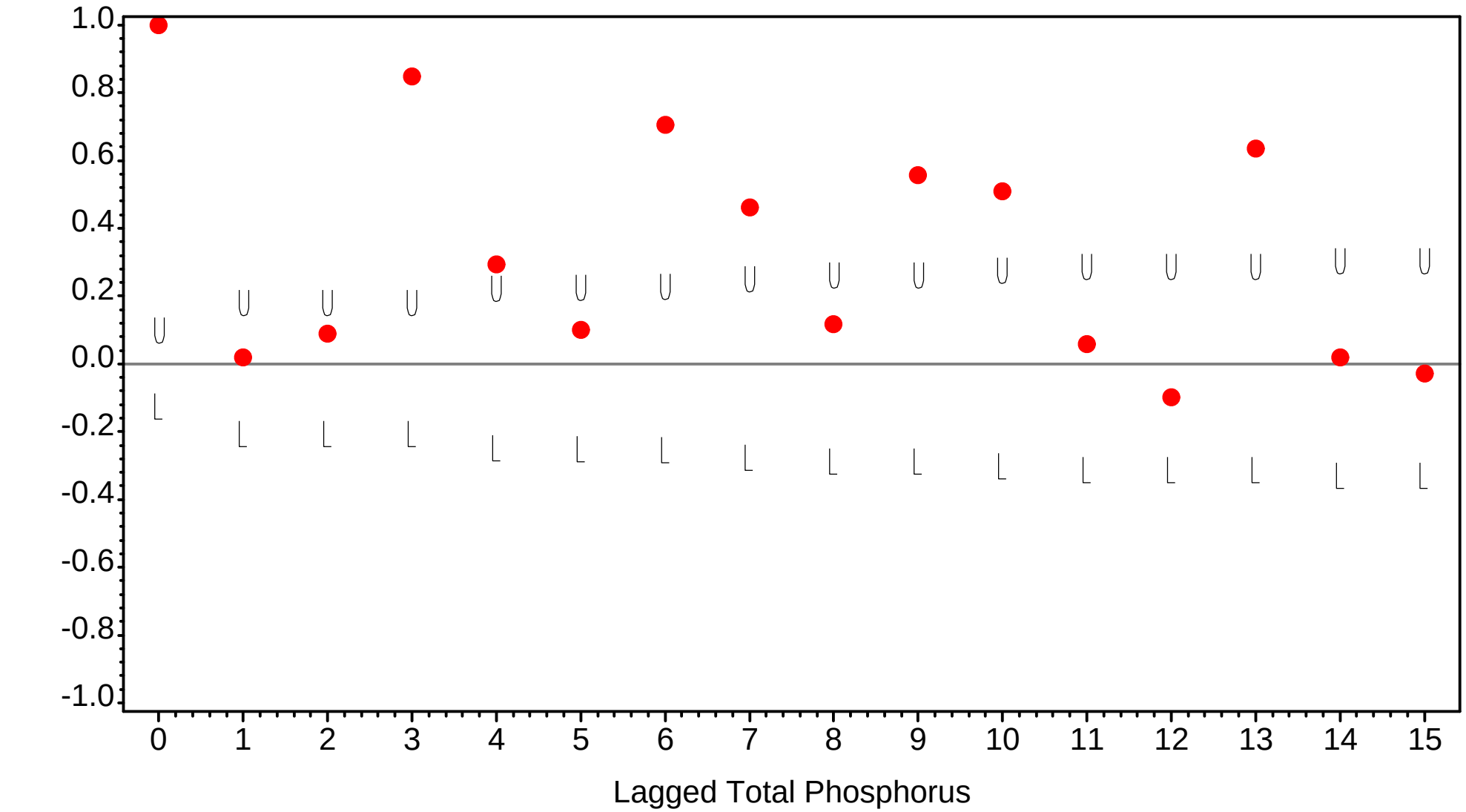


S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.020	0.096	0.192	-0.192
2	0.090	0.096	0.192	-0.192
3	0.849	0.096	0.193	-0.193
4	0.294	0.117	0.235	-0.235
5	0.099	0.120	0.239	-0.239
6	0.705	0.120	0.240	-0.240
7	0.462	0.132	0.264	-0.264
8	0.117	0.137	0.274	-0.274
9	0.557	0.137	0.274	-0.274
10	0.510	0.144	0.288	-0.288
11	0.057	0.149	0.299	-0.299
12	-0.099	0.150	0.299	-0.299
13	0.634	0.150	0.299	-0.299
14	0.019	0.158	0.316	-0.316
15	-0.028	0.158	0.316	-0.316

S_21FLVEMDTR03 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

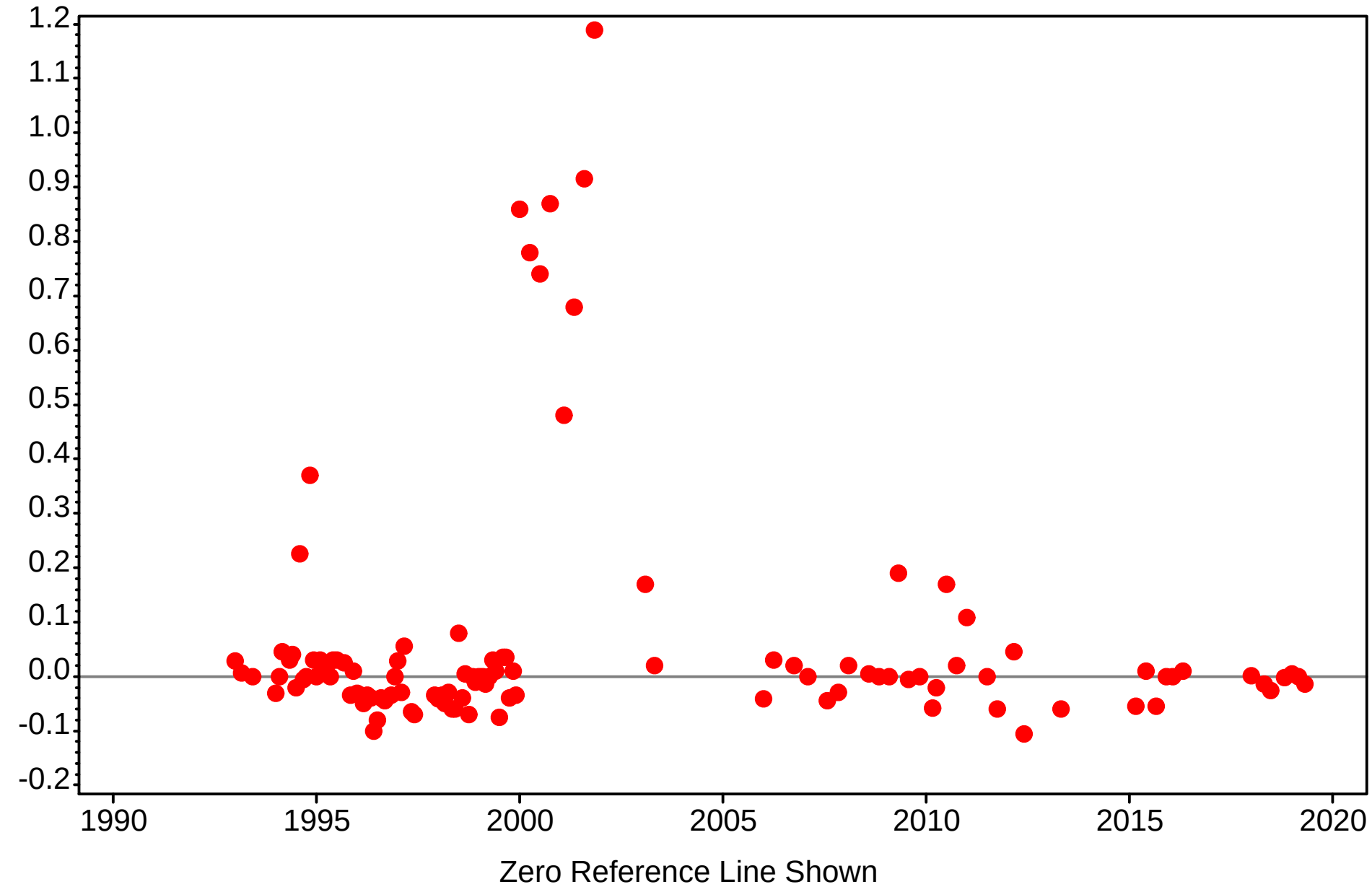
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.023	0.786	0.871	0

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.022541	0.78614	0.87138	0

S_21FLVEMDTR03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

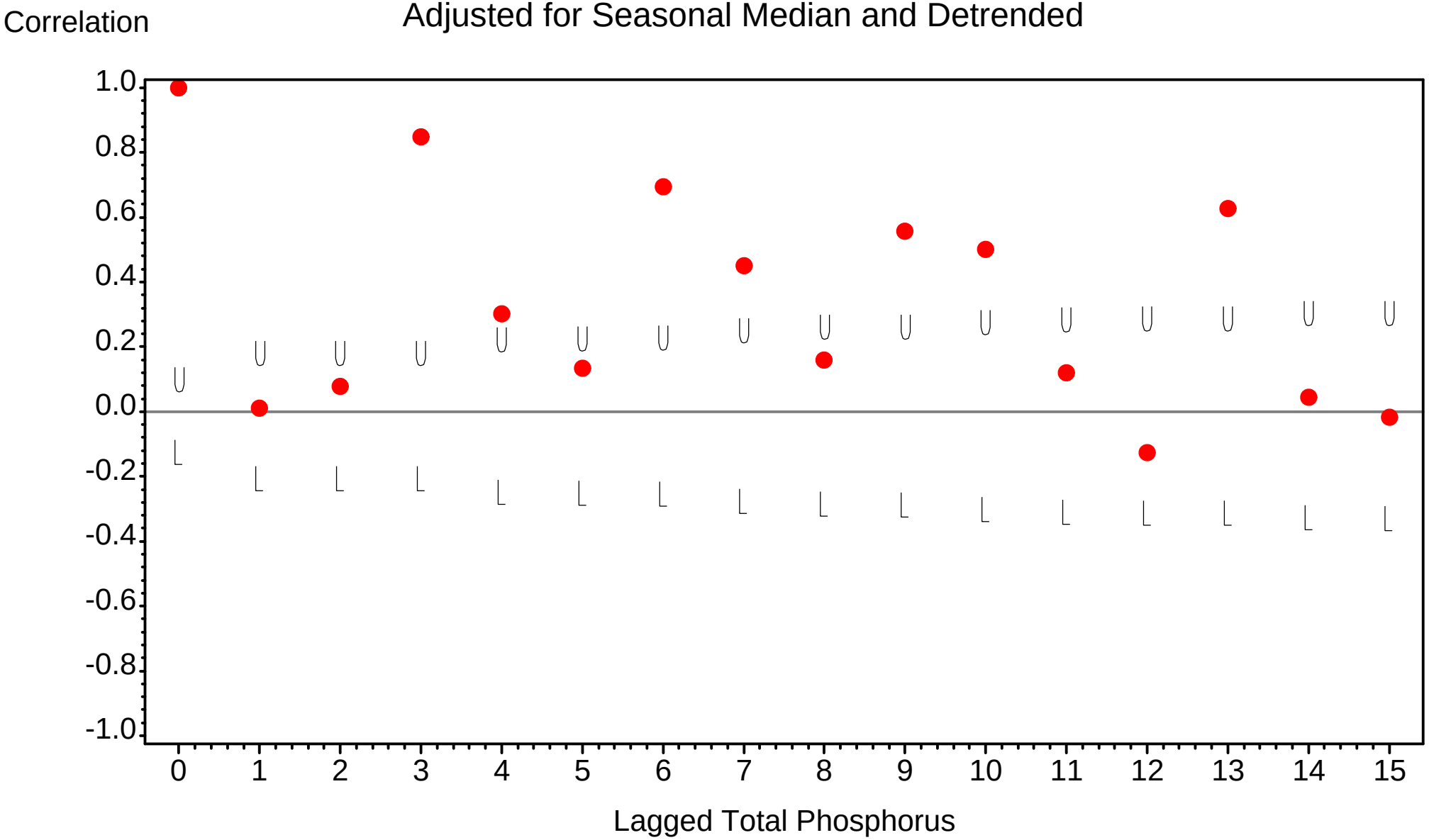


S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.010	0.096	0.192	-0.192
2	0.078	0.096	0.192	-0.192
3	0.849	0.096	0.193	-0.193
4	0.302	0.117	0.234	-0.234
5	0.134	0.120	0.239	-0.239
6	0.694	0.120	0.240	-0.240
7	0.450	0.132	0.264	-0.264
8	0.160	0.137	0.273	-0.273
9	0.556	0.137	0.274	-0.274
10	0.501	0.144	0.288	-0.288
11	0.120	0.149	0.298	-0.298
12	-0.127	0.149	0.299	-0.299
13	0.628	0.150	0.300	-0.300
14	0.045	0.158	0.315	-0.315
15	-0.016	0.158	0.316	-0.316

S_21FLVEMDTR03 Trends Appendix

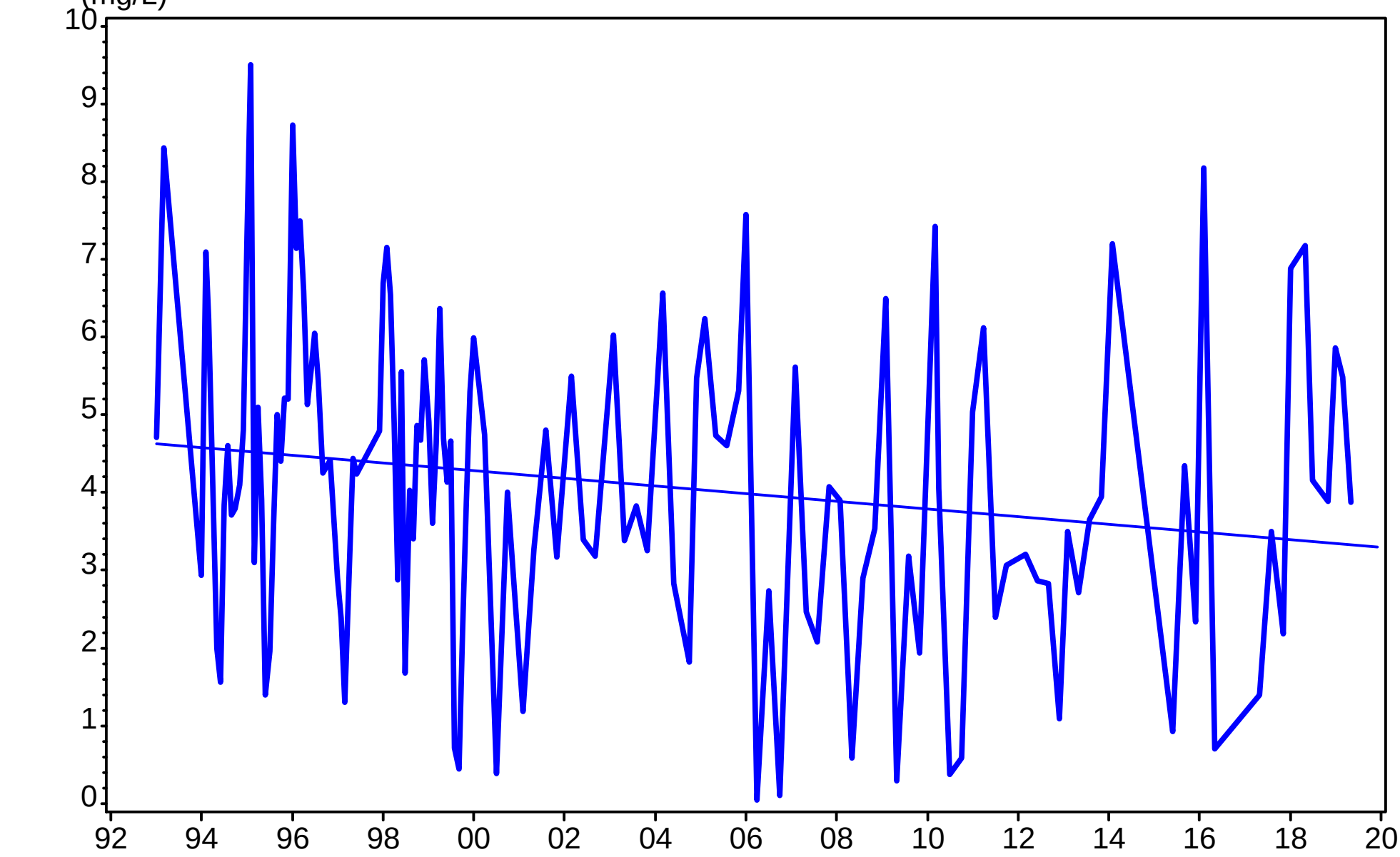
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



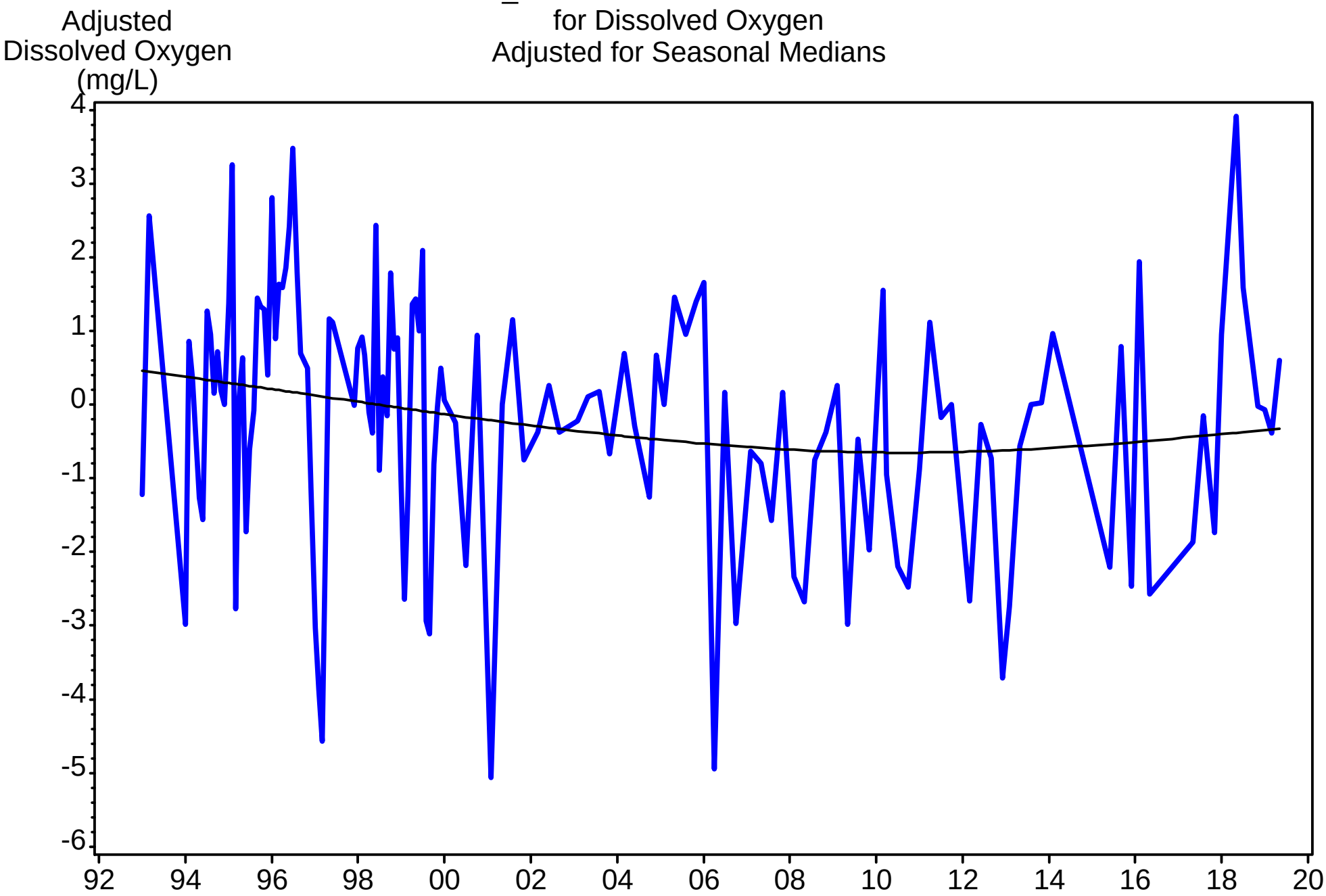
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR03 Trends

S_21FLVEMDTR03 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLVEMDTR03 Trends

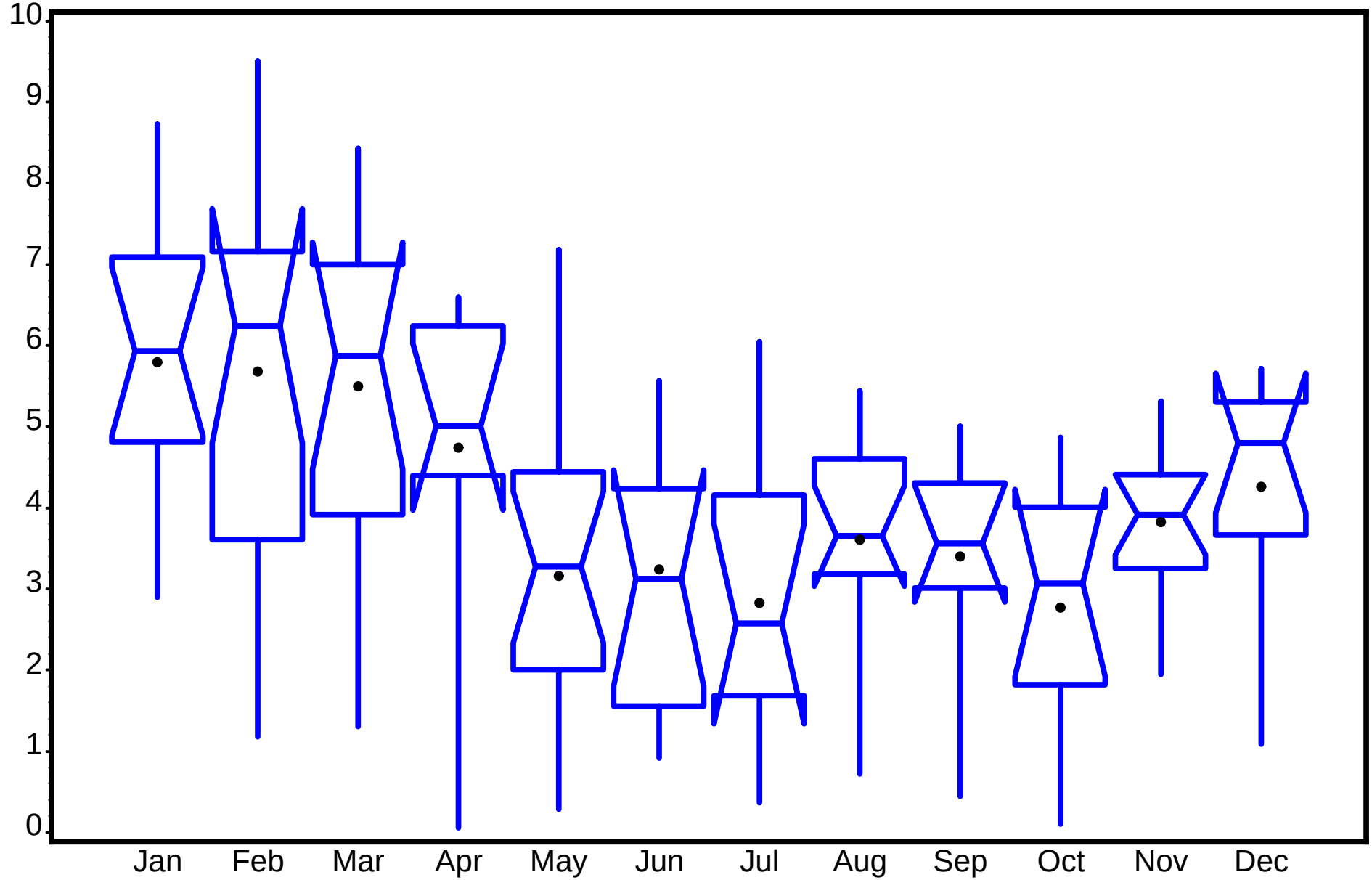


S_21FLVEMDTR03 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



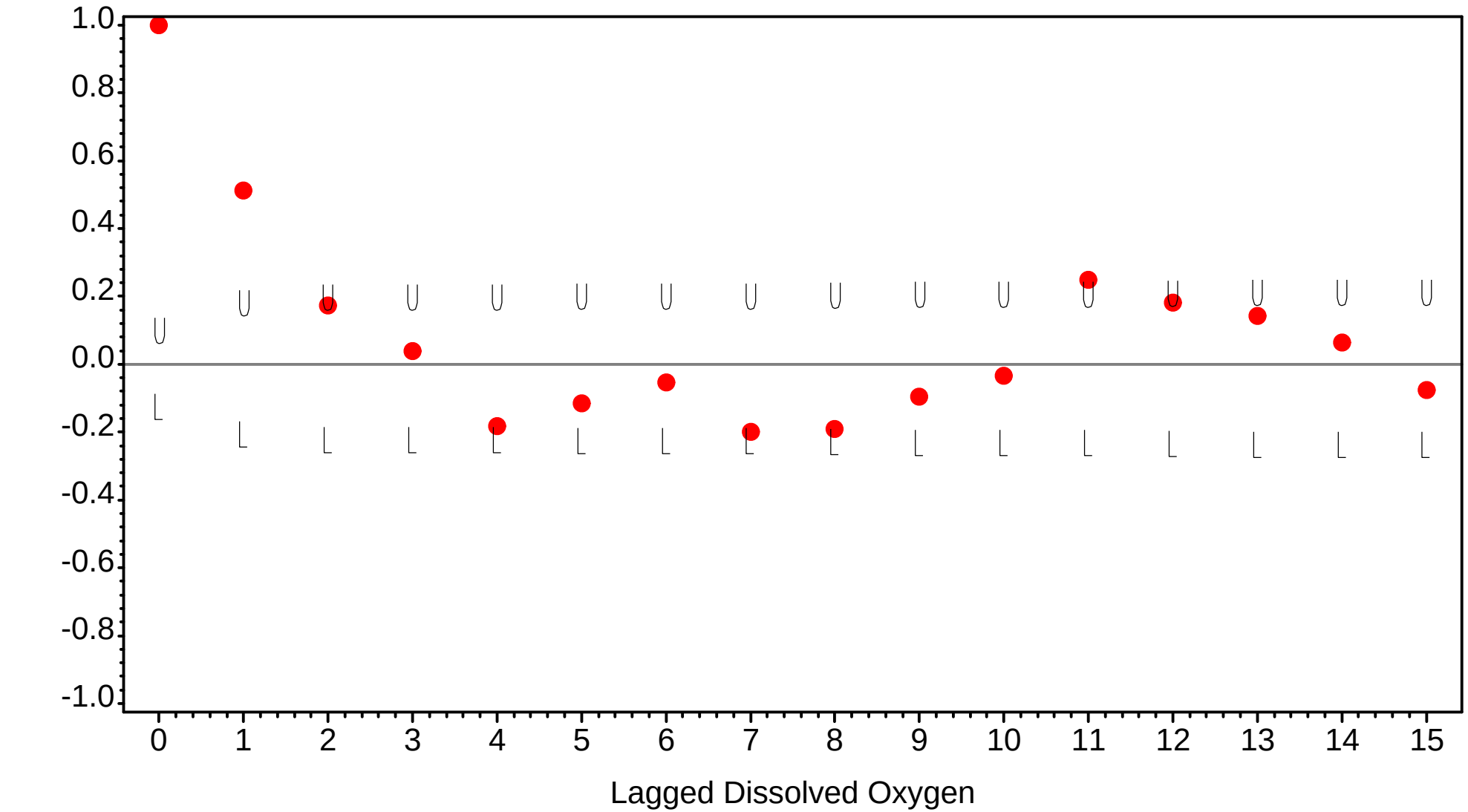
S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.511	0.096	0.192	-0.192
2	0.173	0.104	0.209	-0.209
3	0.038	0.105	0.210	-0.210
4	-0.182	0.105	0.210	-0.210
5	-0.114	0.106	0.212	-0.212
6	-0.054	0.107	0.213	-0.213
7	-0.198	0.107	0.213	-0.213
8	-0.191	0.108	0.215	-0.215
9	-0.096	0.109	0.218	-0.218
10	-0.035	0.109	0.218	-0.218
11	0.249	0.109	0.218	-0.218
12	0.181	0.111	0.222	-0.222
13	0.141	0.112	0.223	-0.223
14	0.064	0.112	0.225	-0.225
15	-0.076	0.112	0.225	-0.225

S_21FLVEMDTR03 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

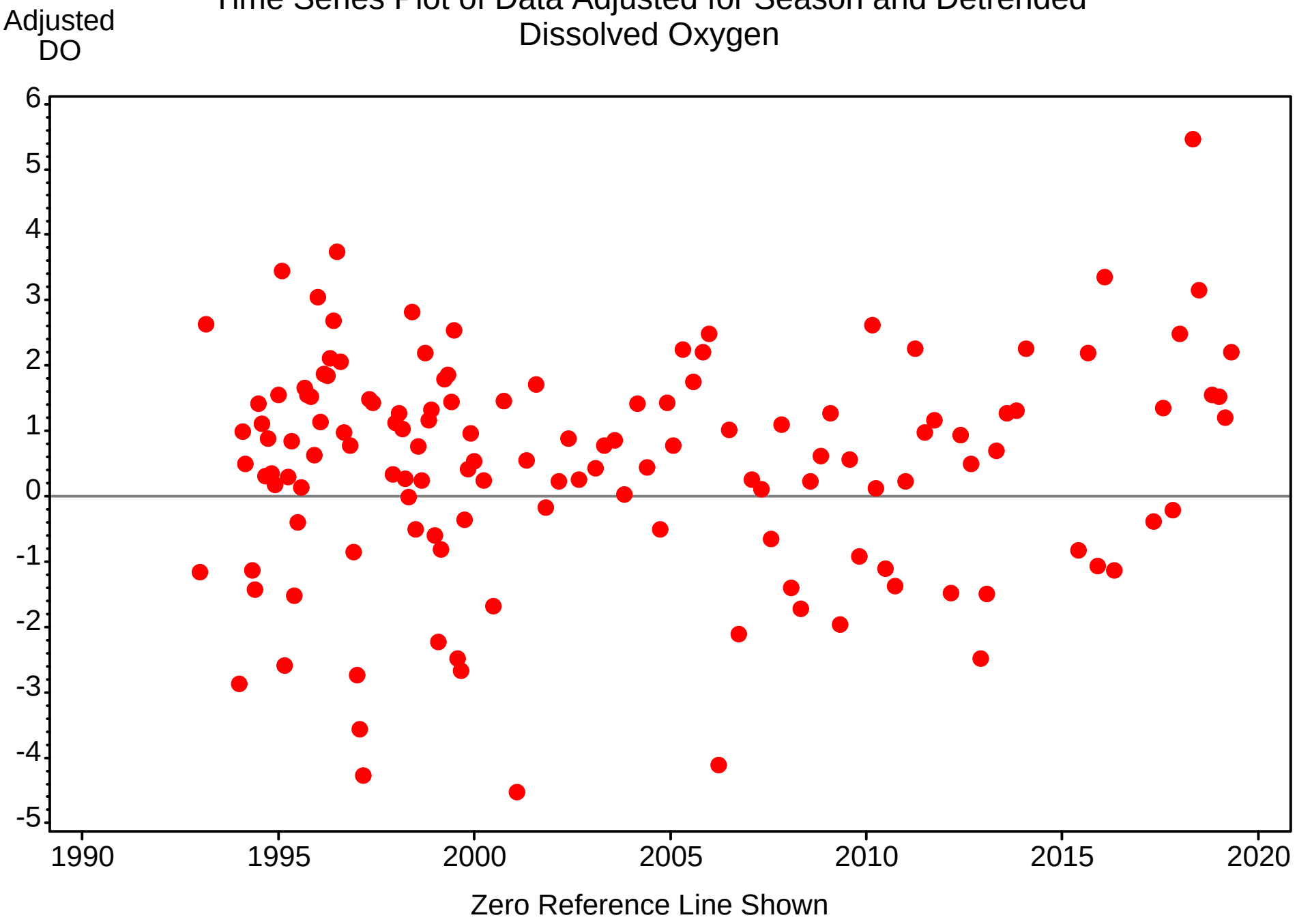
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.17	0.012	0.092	-0.059

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.16974	0.011882	0.092395	-0.058712

S_21FLVEMDTR03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

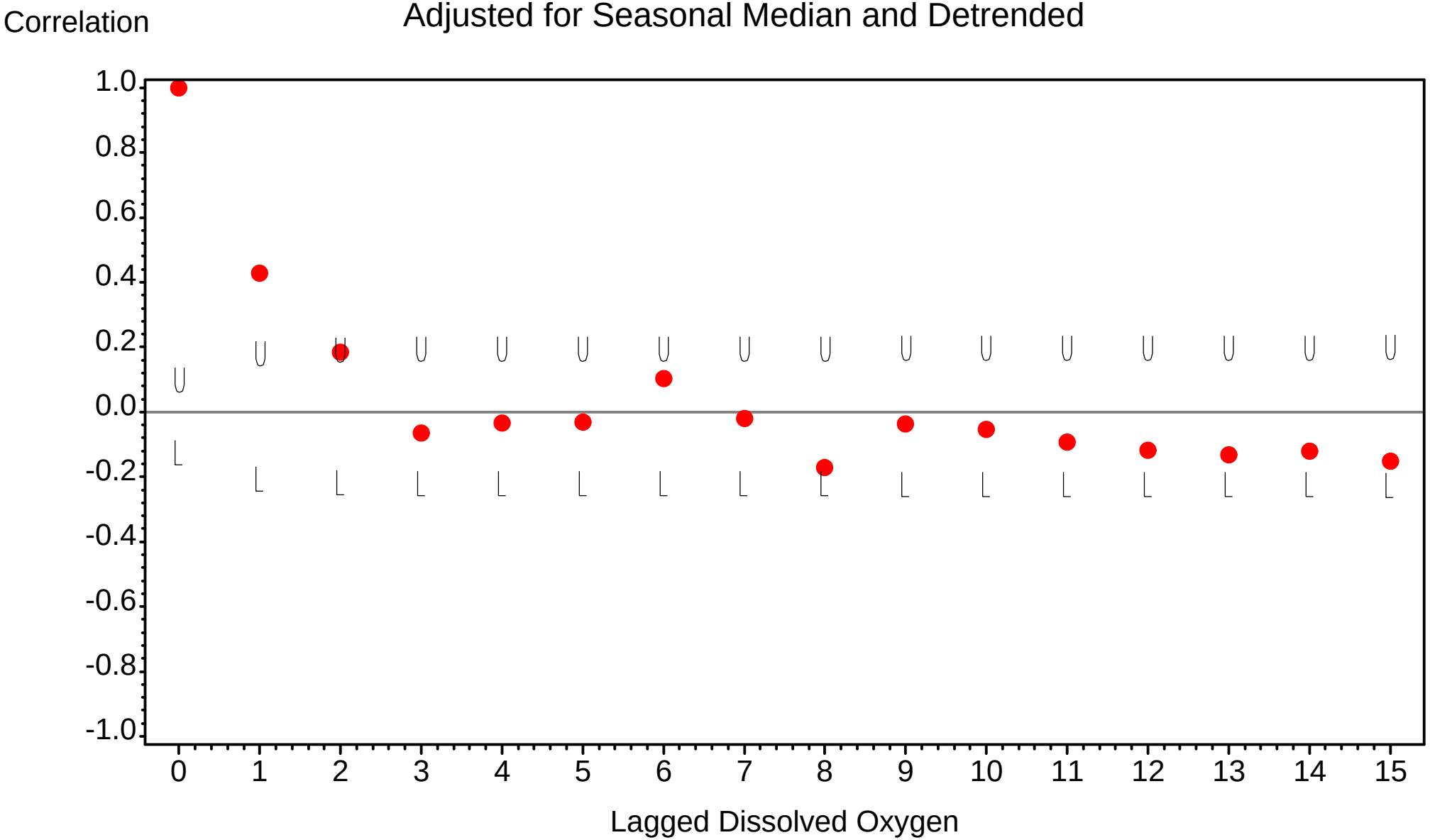


S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.427	0.096	0.192	-0.192
2	0.185	0.102	0.204	-0.204
3	-0.065	0.103	0.206	-0.206
4	-0.035	0.103	0.206	-0.206
5	-0.031	0.103	0.206	-0.206
6	0.102	0.103	0.206	-0.206
7	-0.019	0.103	0.207	-0.207
8	-0.170	0.103	0.207	-0.207
9	-0.038	0.104	0.209	-0.209
10	-0.053	0.104	0.209	-0.209
11	-0.093	0.104	0.209	-0.209
12	-0.118	0.105	0.209	-0.209
13	-0.132	0.105	0.210	-0.210
14	-0.121	0.106	0.211	-0.211
15	-0.153	0.106	0.212	-0.212

S_21FLVEMDTR03 Trends Appendix

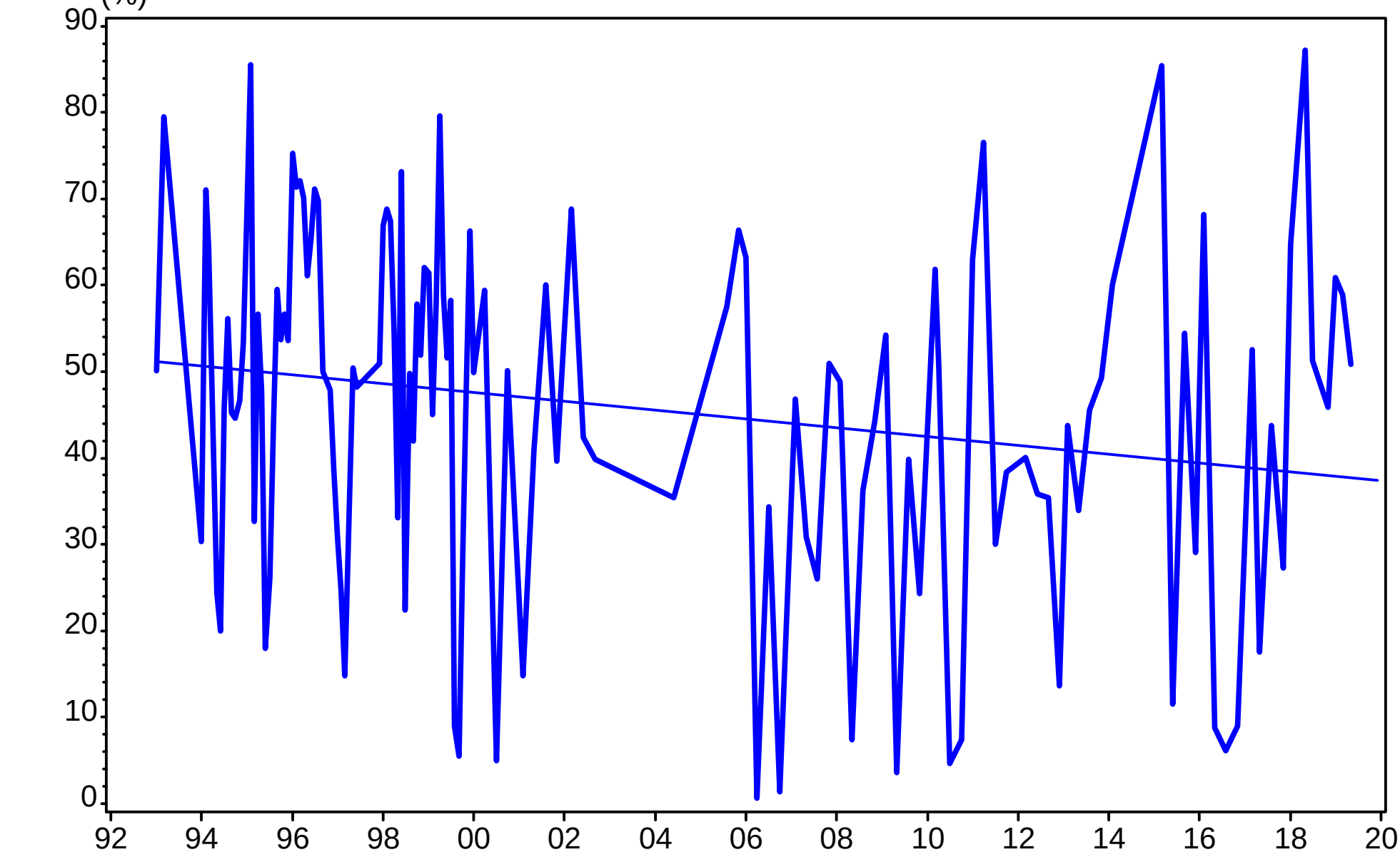
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



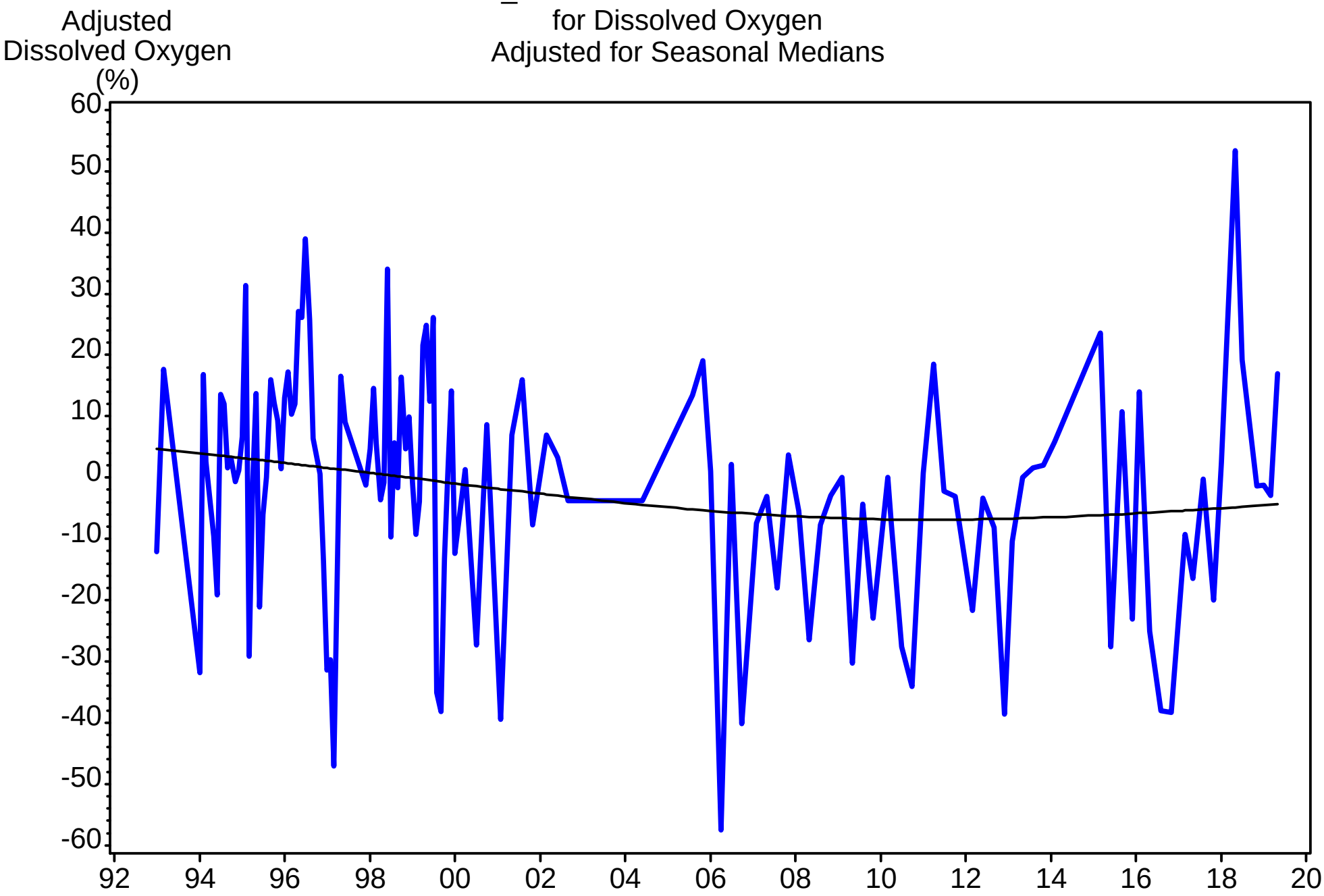
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR03 Trends

S_21FLVEMDTR03 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



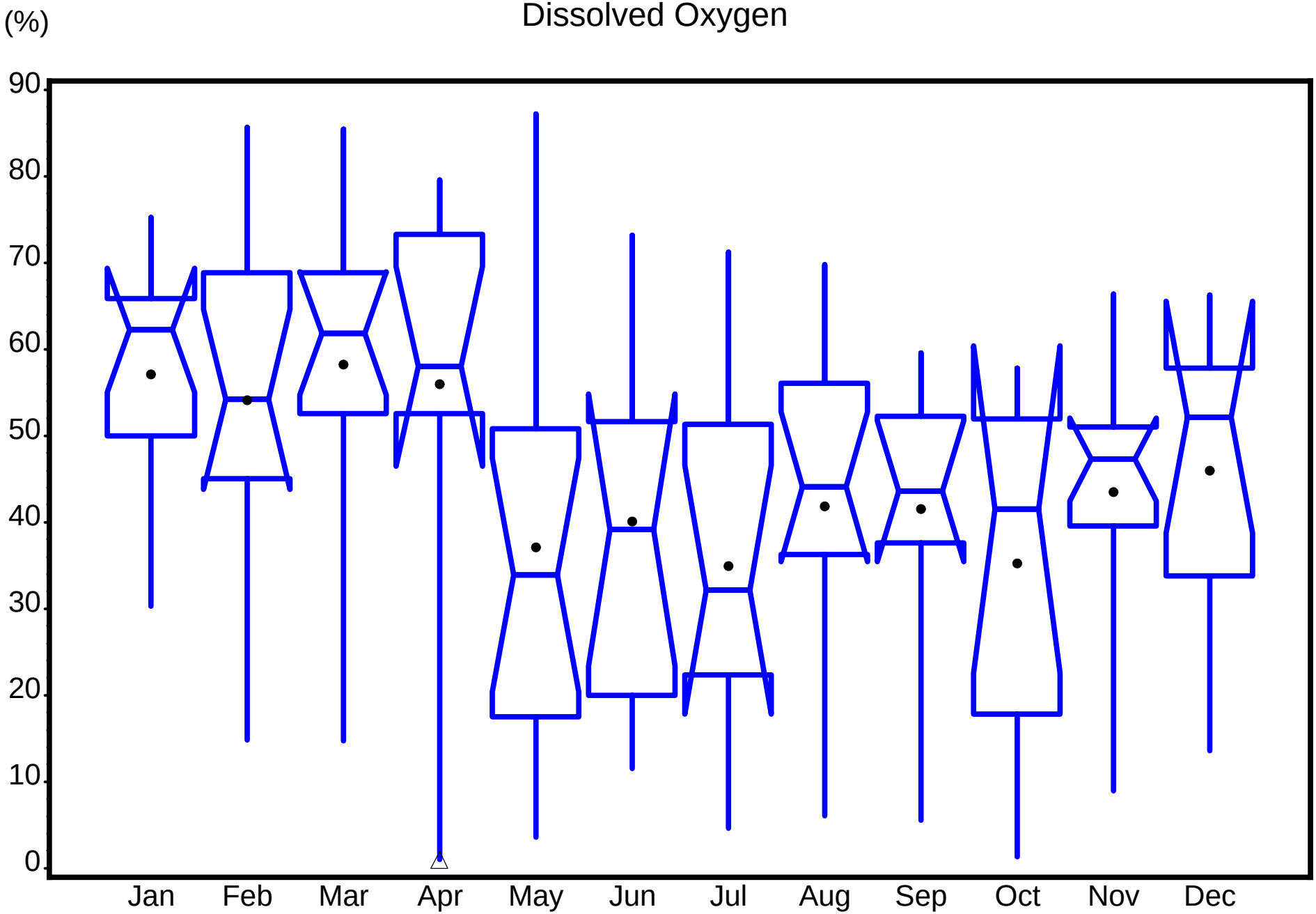
S_21FLVEMDTR03 Trends



S_21FLVEMDTR03 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



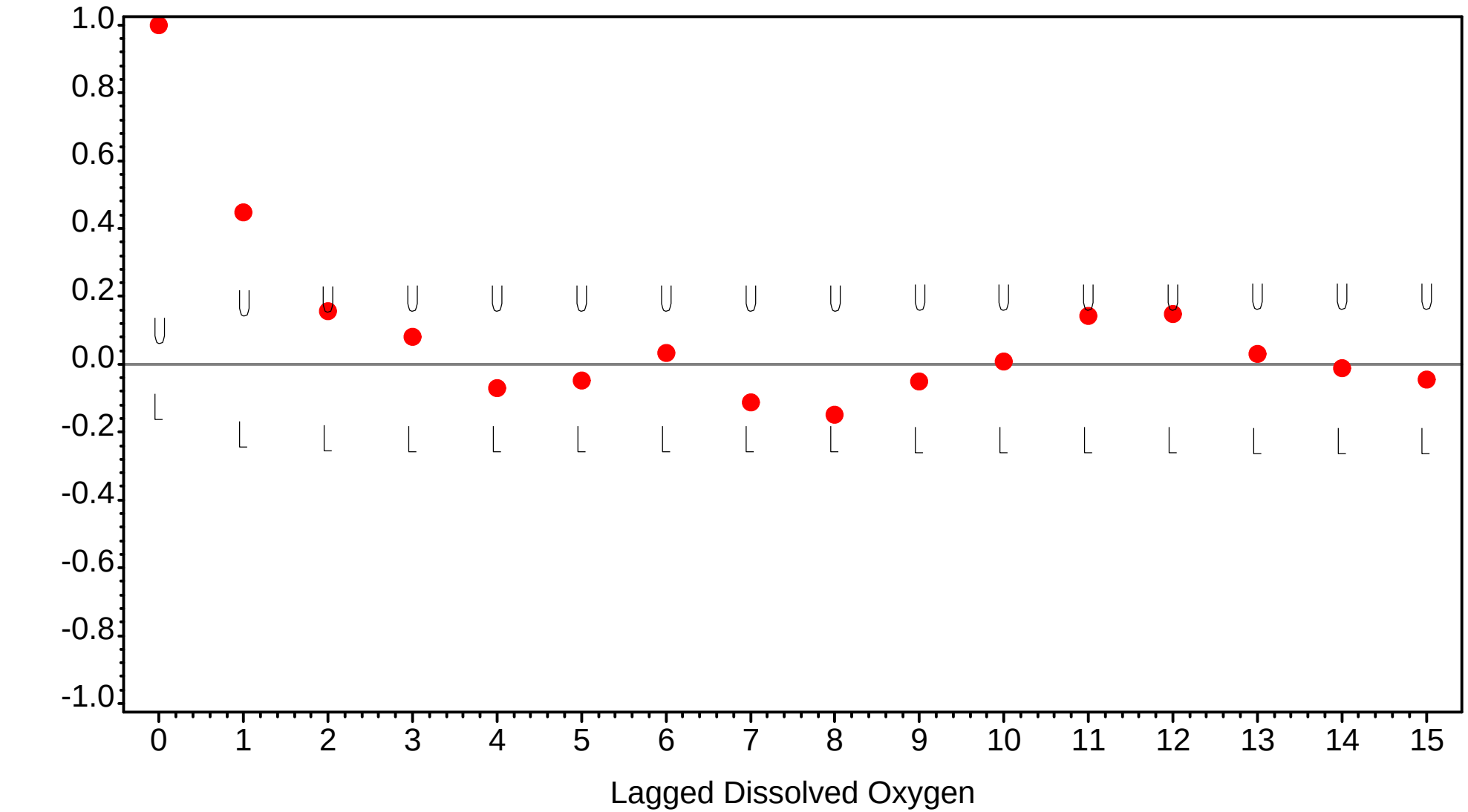
S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.447	0.096	0.192	-0.192
2	0.156	0.102	0.205	-0.205
3	0.082	0.103	0.206	-0.206
4	-0.070	0.103	0.207	-0.207
5	-0.047	0.104	0.207	-0.207
6	0.034	0.104	0.207	-0.207
7	-0.112	0.104	0.207	-0.207
8	-0.150	0.104	0.208	-0.208
9	-0.052	0.105	0.209	-0.209
10	0.008	0.105	0.209	-0.209
11	0.141	0.105	0.209	-0.209
12	0.148	0.105	0.211	-0.211
13	0.031	0.106	0.212	-0.212
14	-0.012	0.106	0.212	-0.212
15	-0.044	0.106	0.212	-0.212

S_21FLVEMDTR03 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

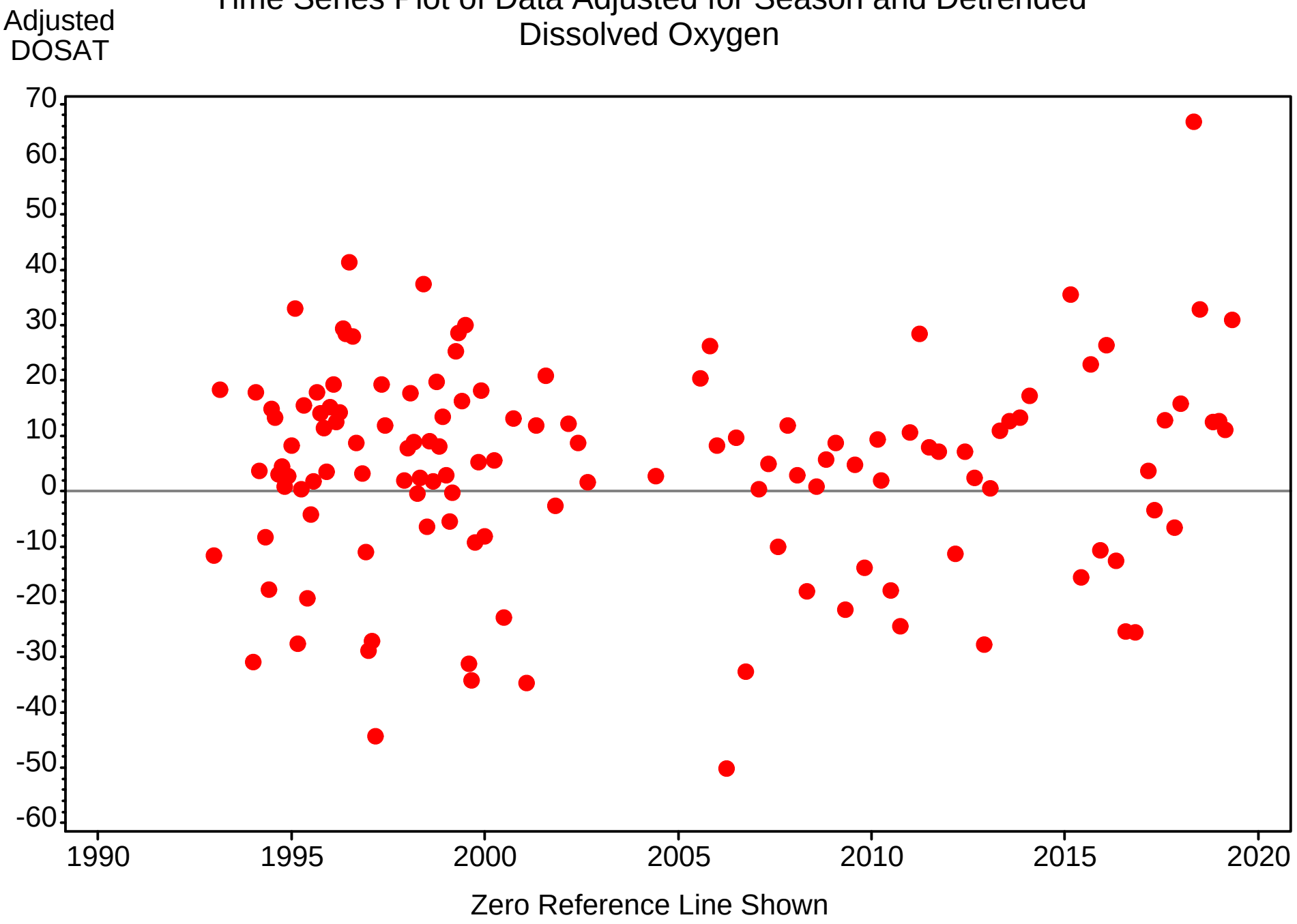
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.175	0.011	0.082	-0.515

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.17479	0.011132	0.082496	-0.51481

S_21FLVEMDTR03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

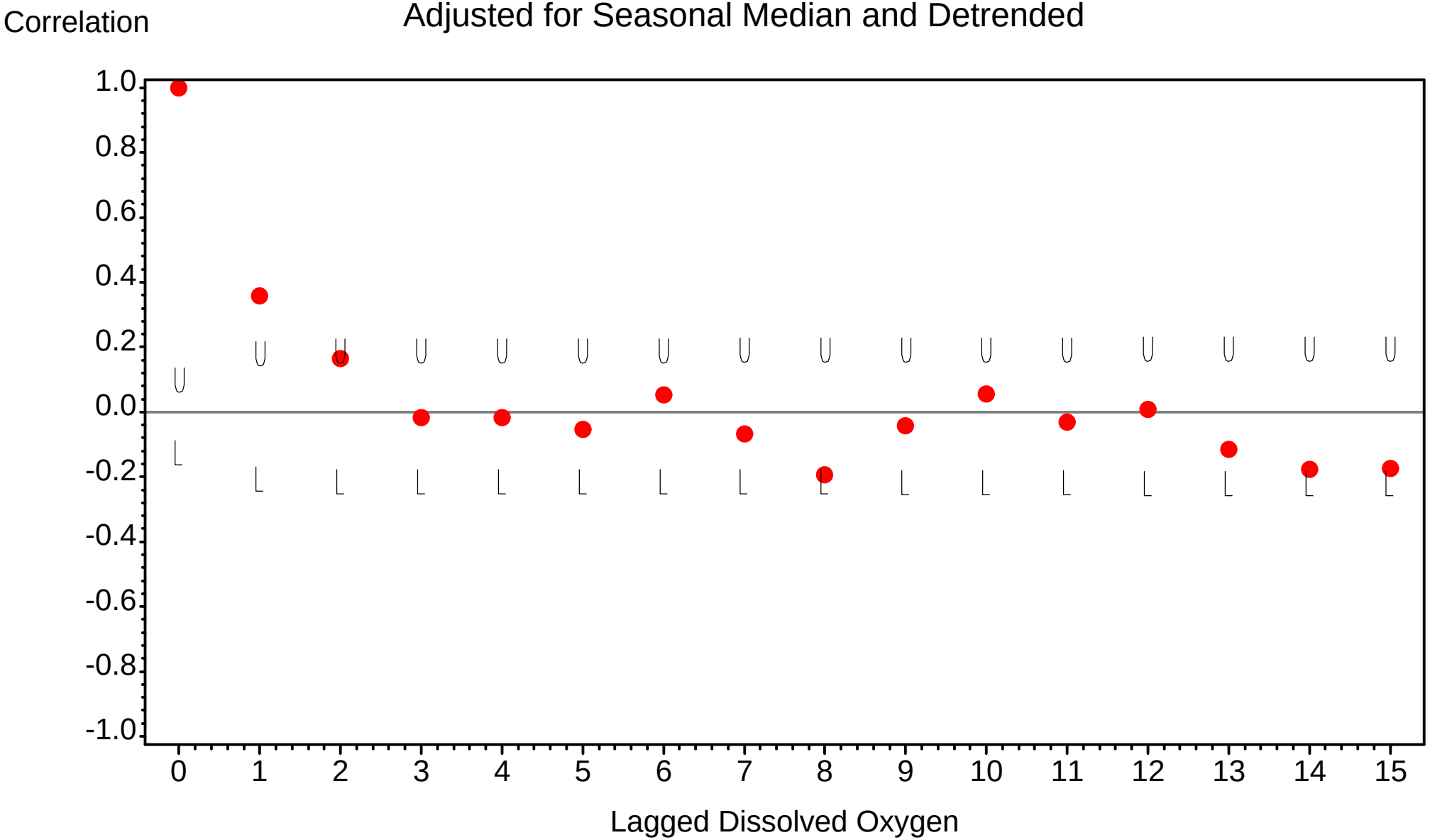


S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.358	0.096	0.192	-0.192
2	0.166	0.100	0.201	-0.201
3	-0.017	0.101	0.202	-0.202
4	-0.018	0.101	0.202	-0.202
5	-0.053	0.101	0.202	-0.202
6	0.052	0.101	0.202	-0.202
7	-0.068	0.101	0.203	-0.203
8	-0.195	0.101	0.203	-0.203
9	-0.043	0.103	0.205	-0.205
10	0.055	0.103	0.205	-0.205
11	-0.031	0.103	0.205	-0.205
12	0.009	0.103	0.206	-0.206
13	-0.115	0.103	0.206	-0.206
14	-0.178	0.103	0.206	-0.206
15	-0.173	0.104	0.208	-0.208

S_21FLVEMDTR03 Trends Appendix

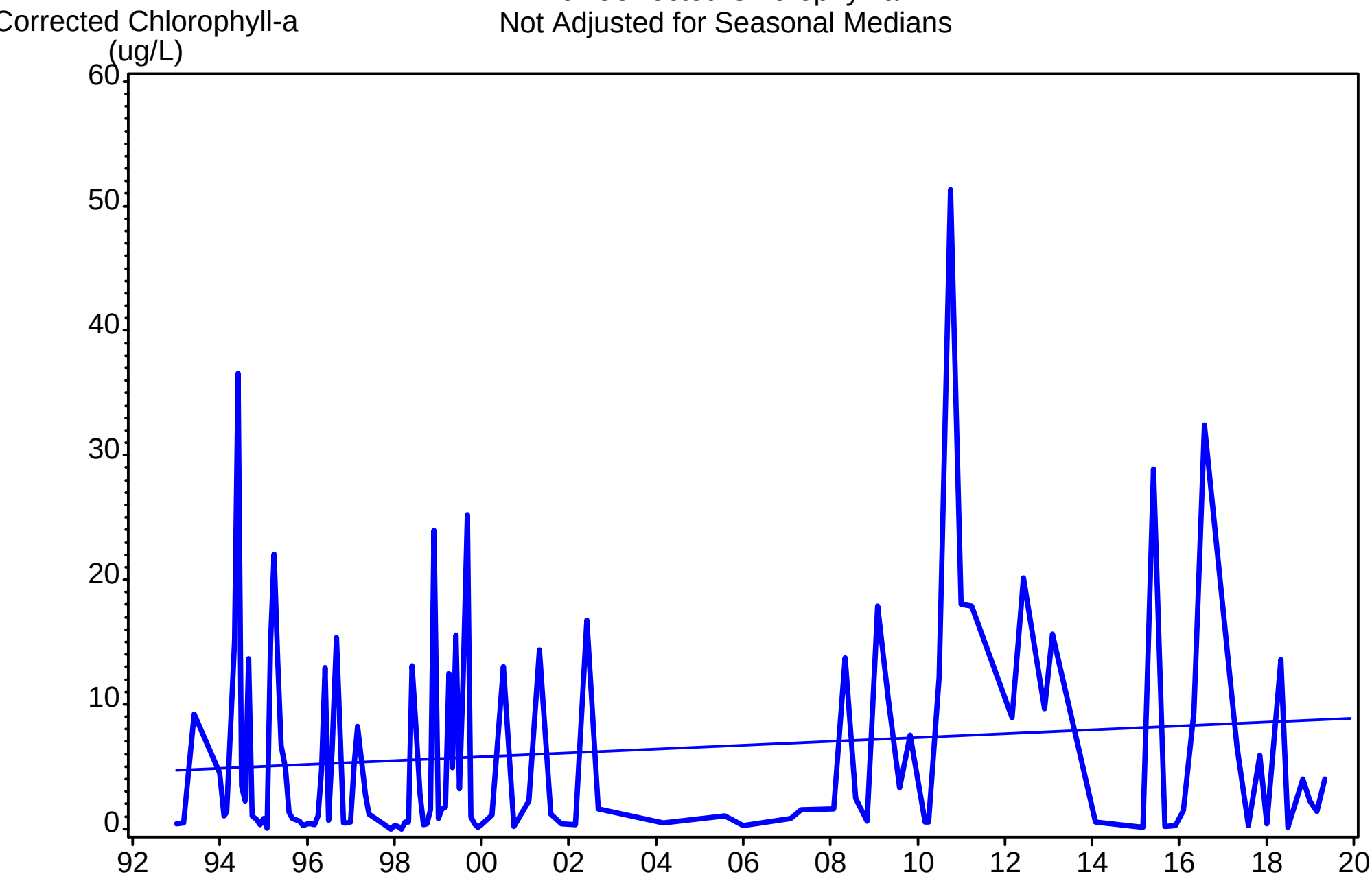
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



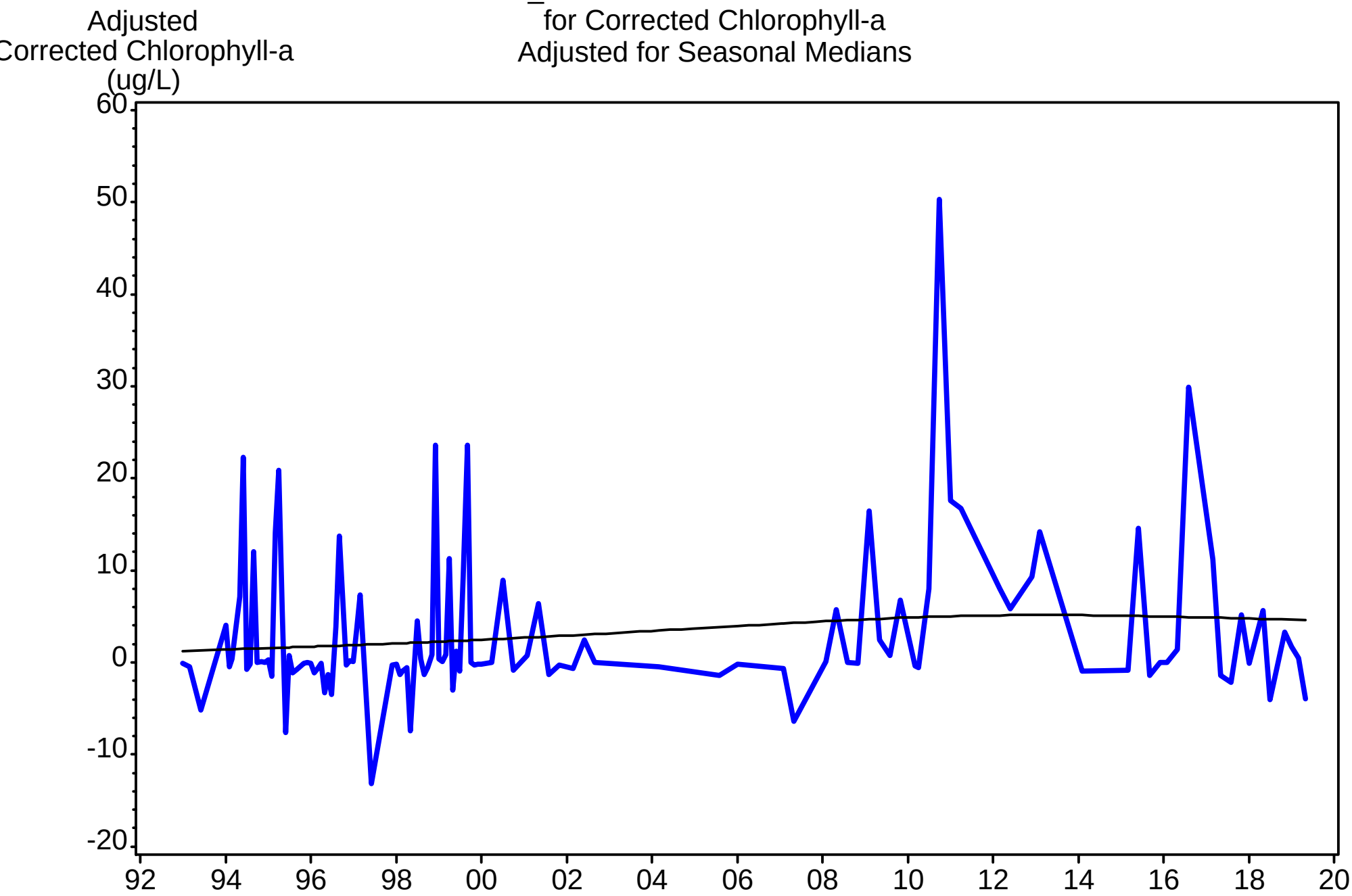
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR03 Trends

S_21FLVEMDTR03 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



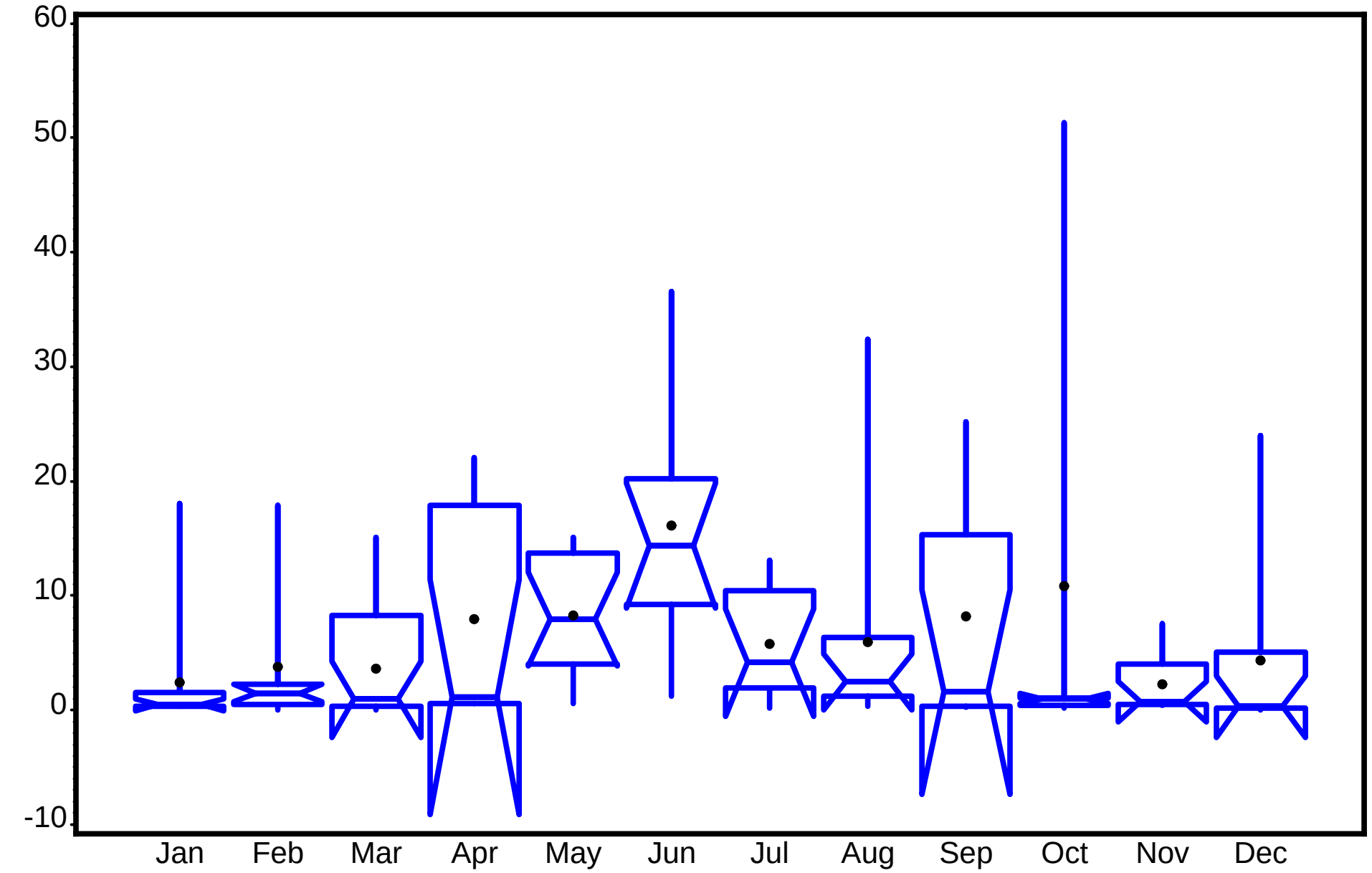
S_21FLVEMDTR03 Trends



S_21FLVEMDTR03 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a

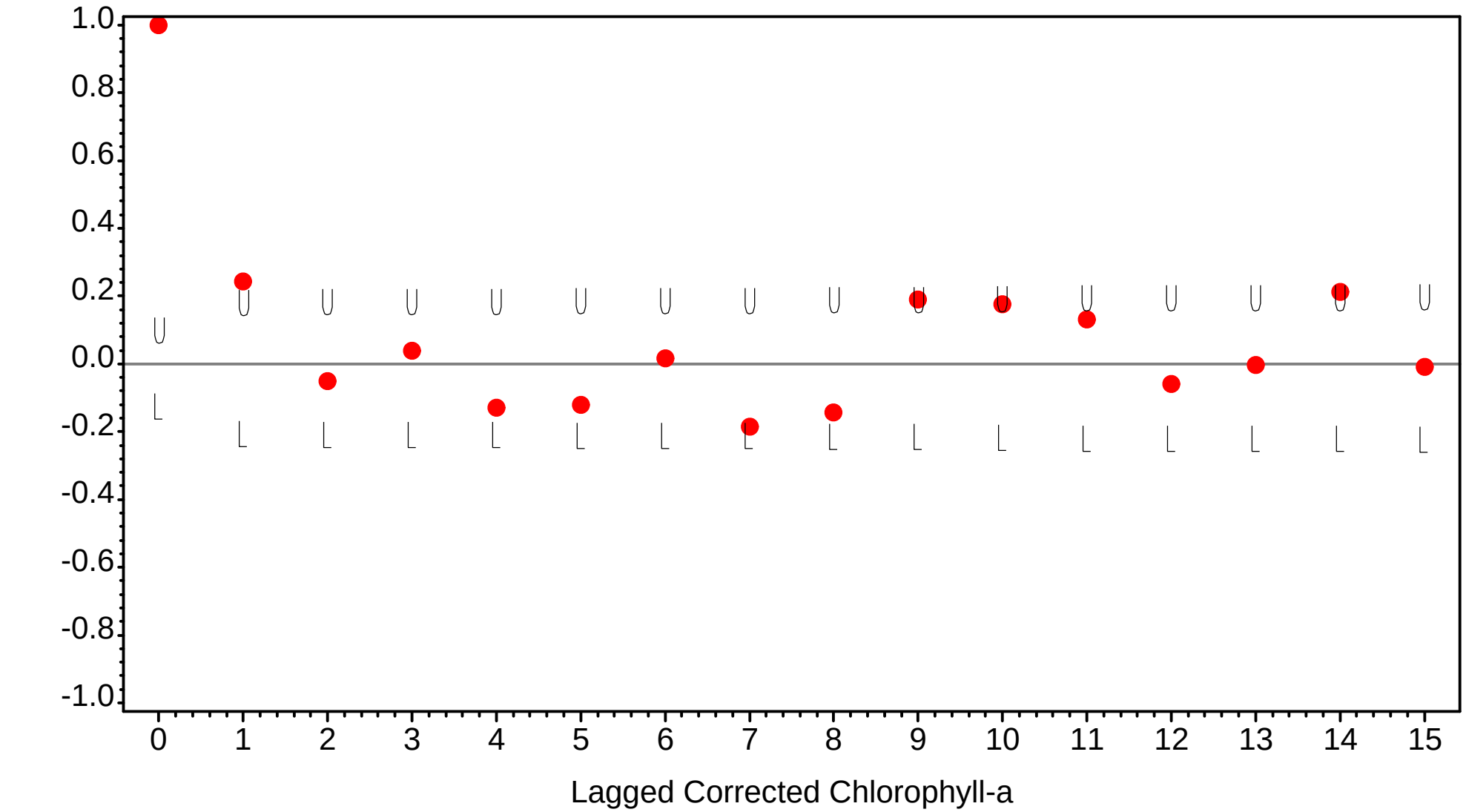


S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.244	0.096	0.192	-0.192
2	-0.051	0.098	0.196	-0.196
3	0.039	0.098	0.196	-0.196
4	-0.129	0.098	0.196	-0.196
5	-0.120	0.099	0.198	-0.198
6	0.016	0.099	0.198	-0.198
7	-0.184	0.099	0.198	-0.198
8	-0.143	0.100	0.201	-0.201
9	0.191	0.101	0.202	-0.202
10	0.177	0.102	0.204	-0.204
11	0.130	0.103	0.206	-0.206
12	-0.058	0.103	0.207	-0.207
13	-0.004	0.104	0.207	-0.207
14	0.212	0.104	0.207	-0.207
15	-0.008	0.105	0.210	-0.210

S_21FLVEMDTR03 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

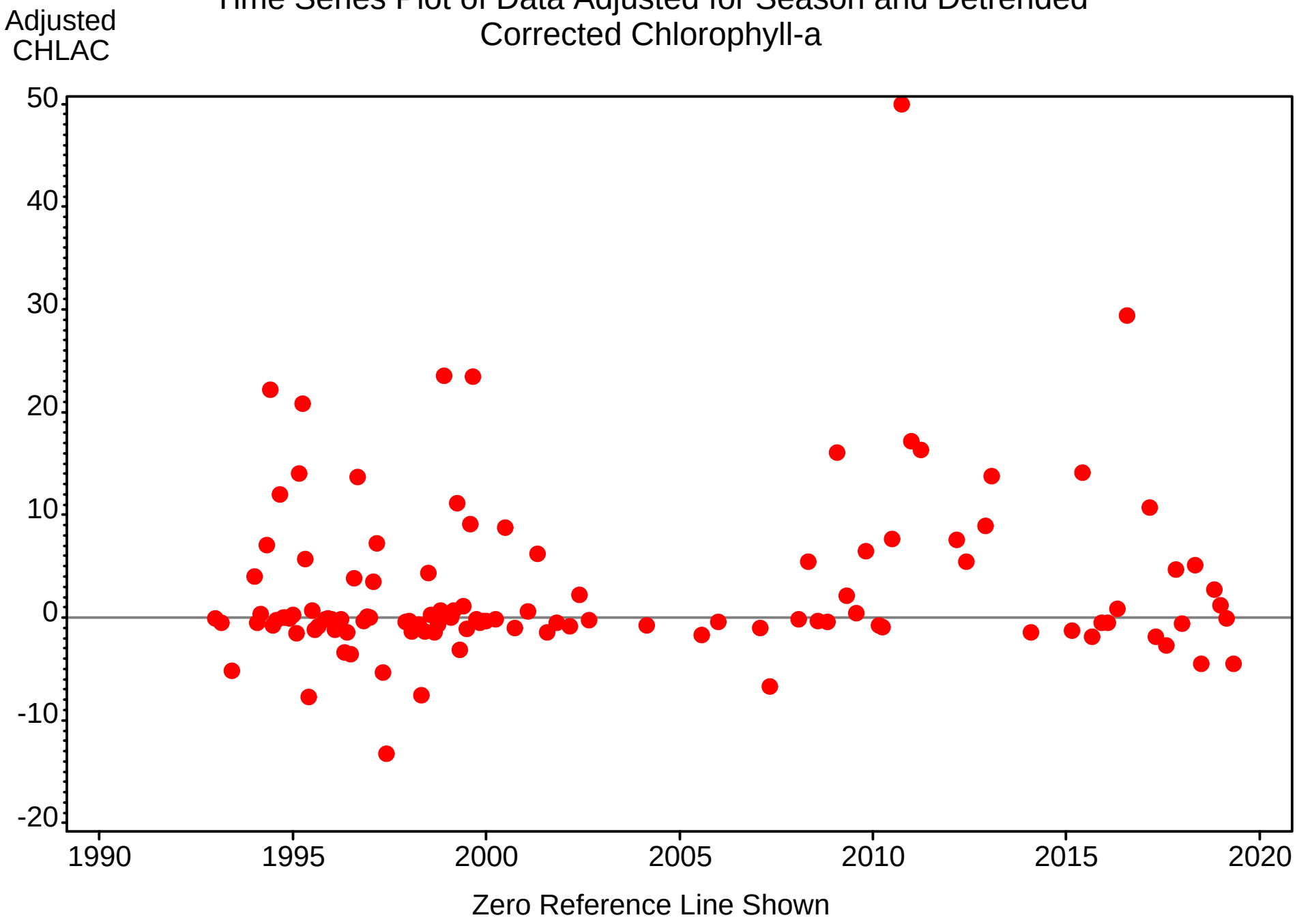
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.078	0.299	0.36	0.02

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.075993	0.31036	0.36979	0.02

S_21FLVEMDTR03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a

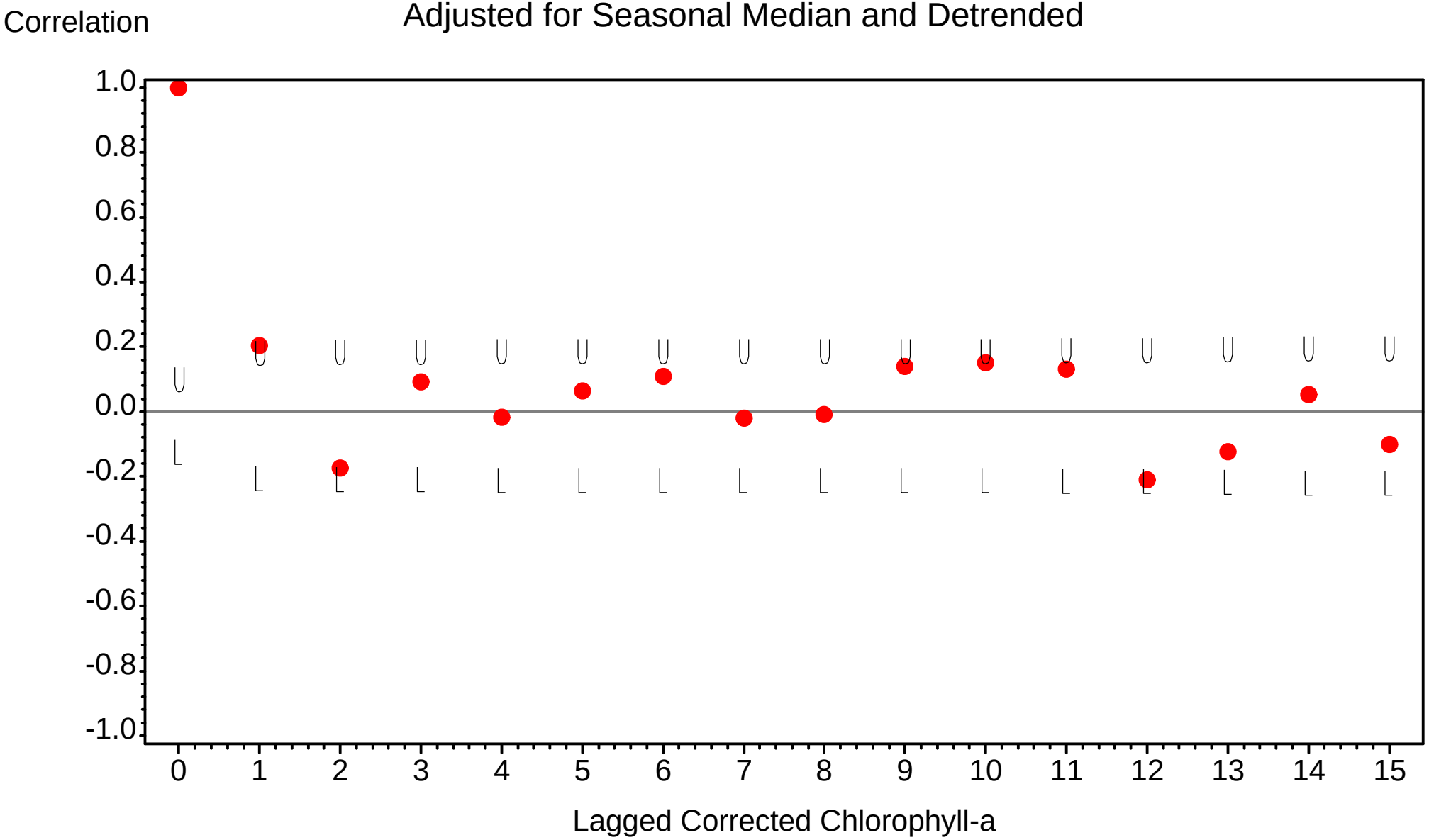


S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.205	0.096	0.192	-0.192
2	-0.175	0.098	0.195	-0.195
3	0.092	0.099	0.197	-0.197
4	-0.016	0.099	0.198	-0.198
5	0.064	0.099	0.198	-0.198
6	0.110	0.099	0.198	-0.198
7	-0.020	0.099	0.199	-0.199
8	-0.008	0.099	0.199	-0.199
9	0.139	0.099	0.199	-0.199
10	0.150	0.100	0.200	-0.200
11	0.131	0.101	0.201	-0.201
12	-0.210	0.101	0.202	-0.202
13	-0.123	0.102	0.205	-0.205
14	0.053	0.103	0.206	-0.206
15	-0.100	0.103	0.206	-0.206

S_21FLVEMDTR03 Trends Appendix

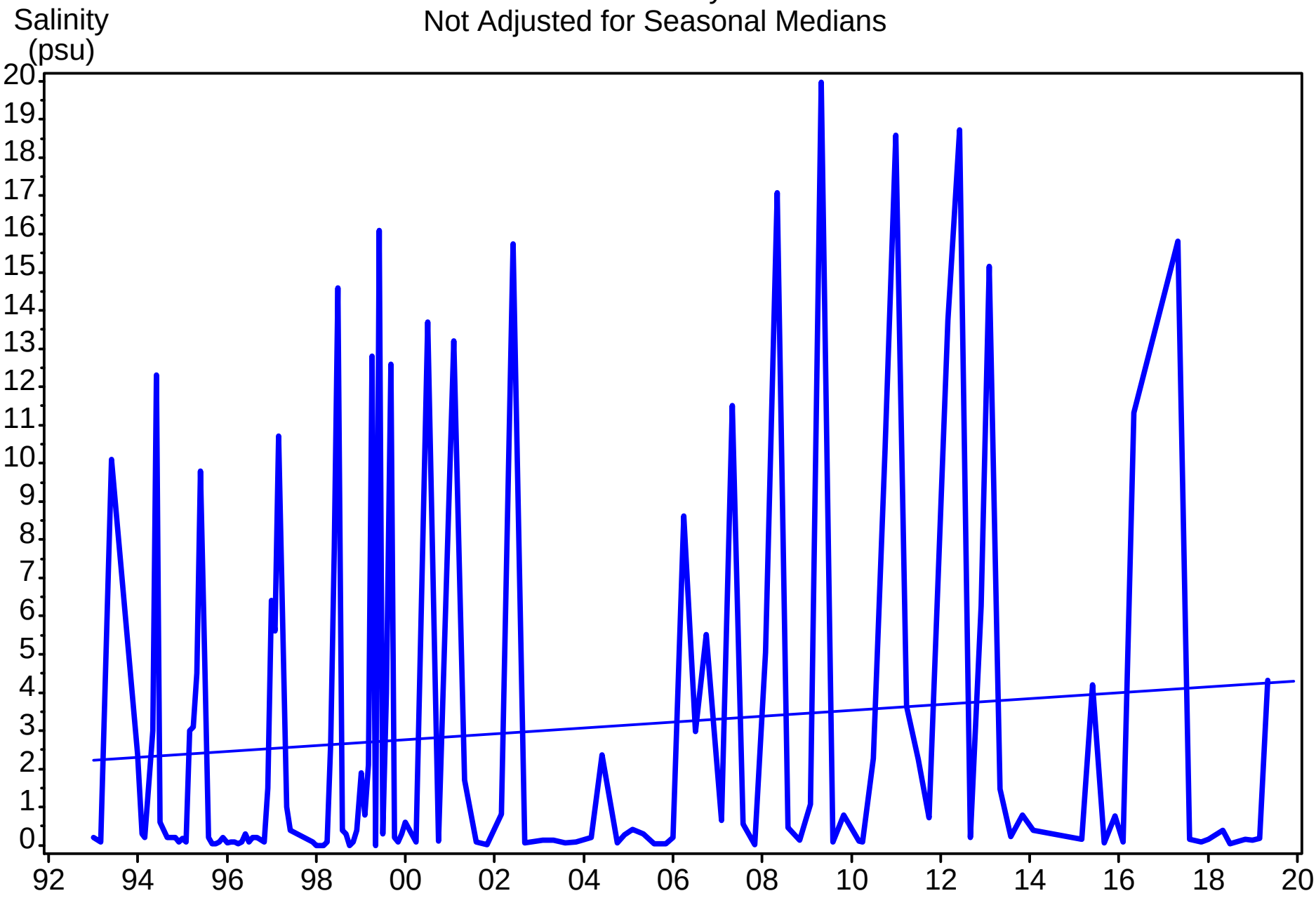
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

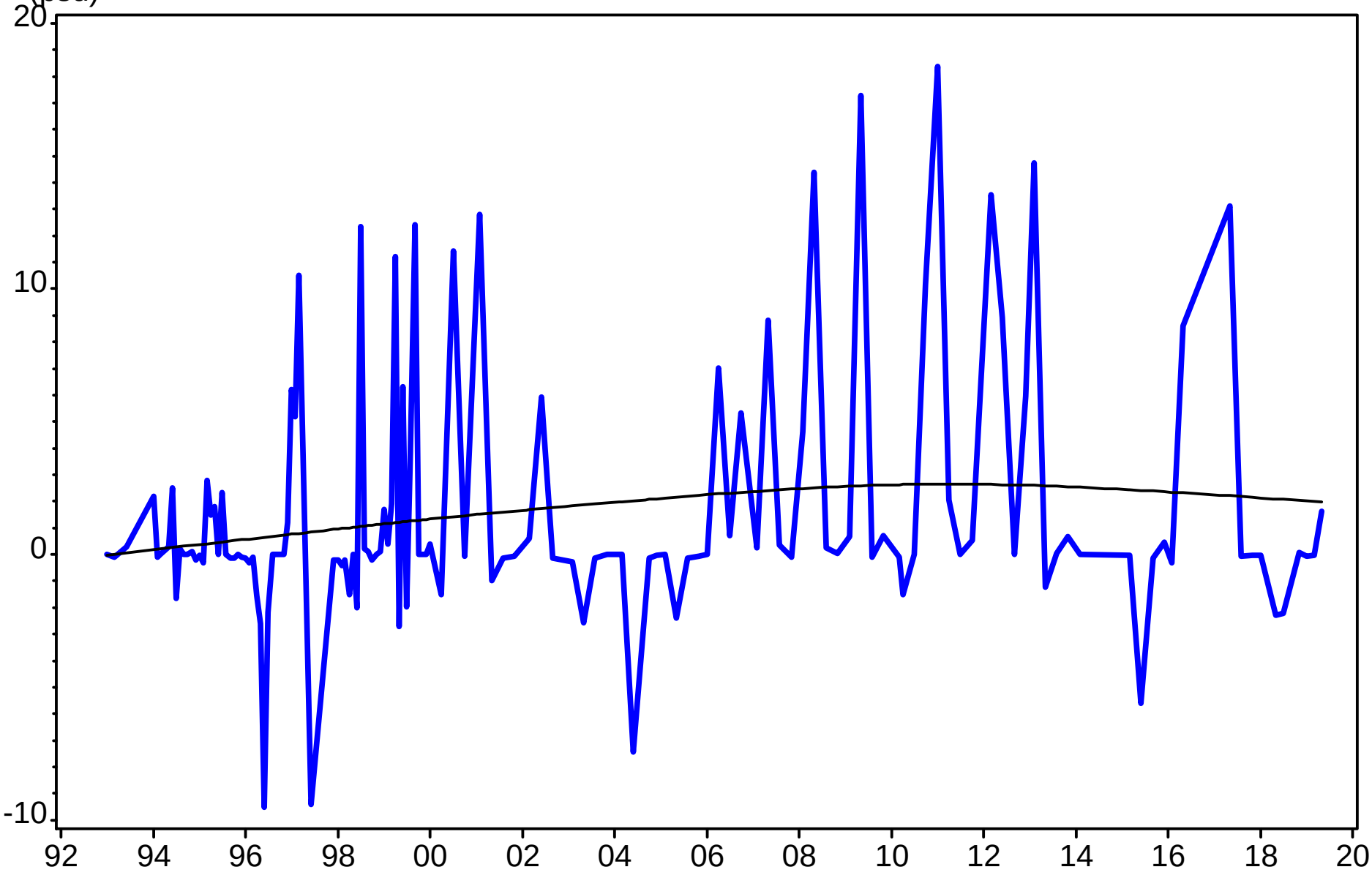
S_21FLVEMDTR03 Trends

S_21FLVEMDTR03 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



S_21FLVEMDTR03 Trends

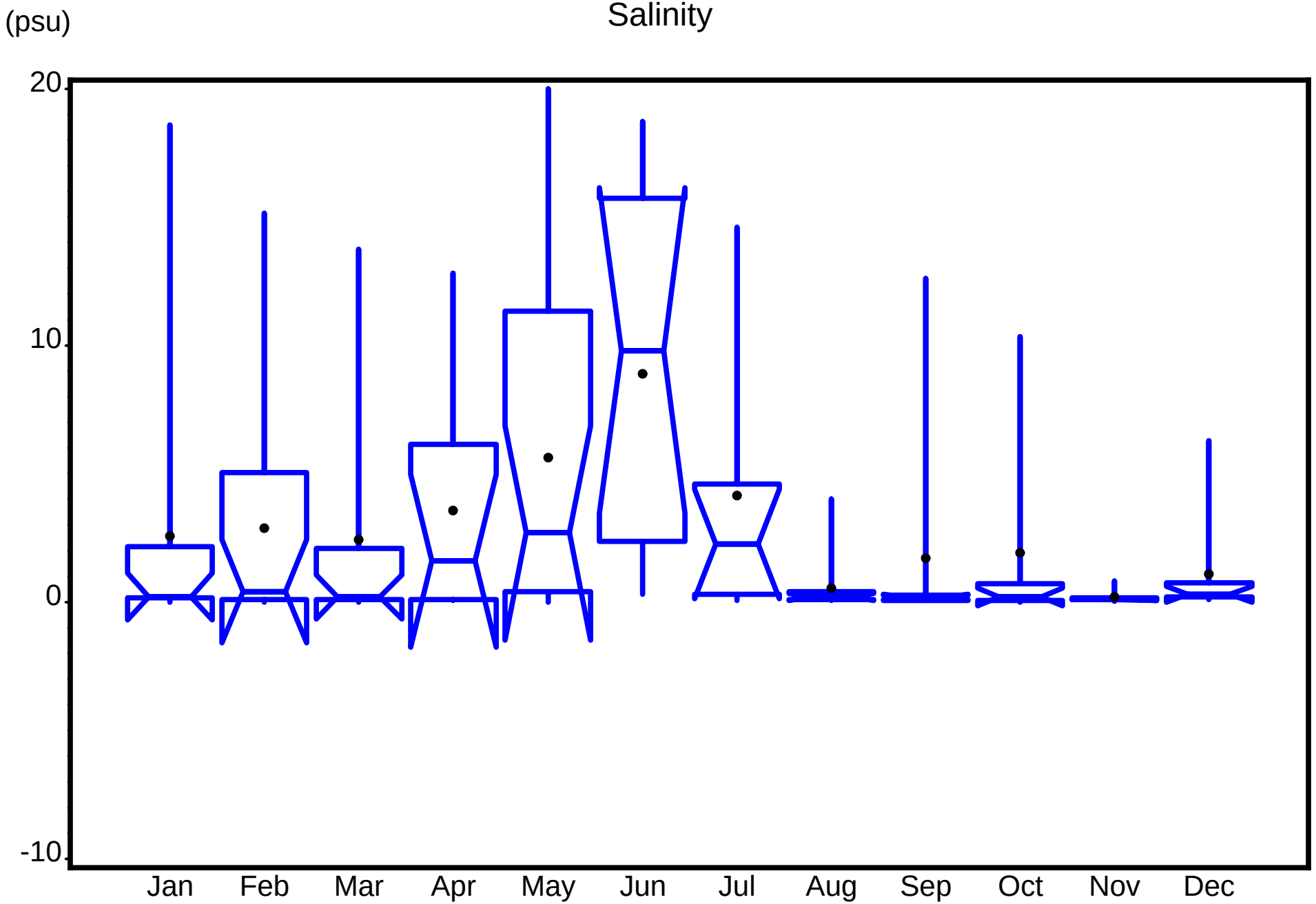
S_21FLVEMDTR03 Time Series
for Salinity
Adjusted for Seasonal Medians



S_21FLVEMDTR03 Trends Appendix

Seasonal Univariate Statistics

Salinity



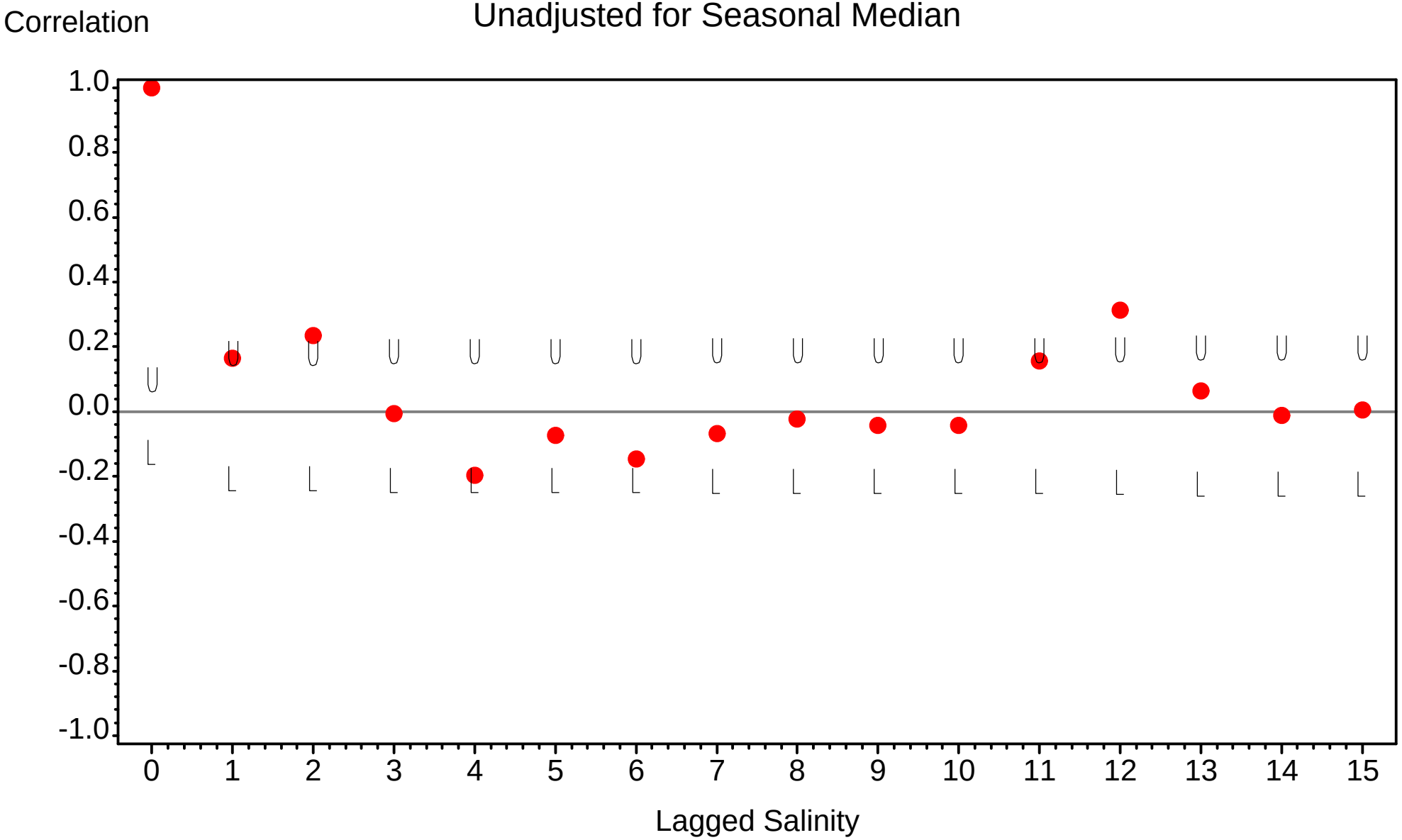
S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.166	0.096	0.192	-0.192
2	0.234	0.097	0.194	-0.194
3	-0.005	0.099	0.198	-0.198
4	-0.196	0.099	0.198	-0.198
5	-0.073	0.100	0.200	-0.200
6	-0.147	0.100	0.200	-0.200
7	-0.067	0.101	0.202	-0.202
8	-0.022	0.101	0.202	-0.202
9	-0.043	0.101	0.202	-0.202
10	-0.043	0.101	0.202	-0.202
11	0.157	0.101	0.202	-0.202
12	0.314	0.102	0.204	-0.204
13	0.064	0.105	0.210	-0.210
14	-0.013	0.105	0.210	-0.210
15	0.004	0.105	0.210	-0.210

S_21FLVEMDTR03 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

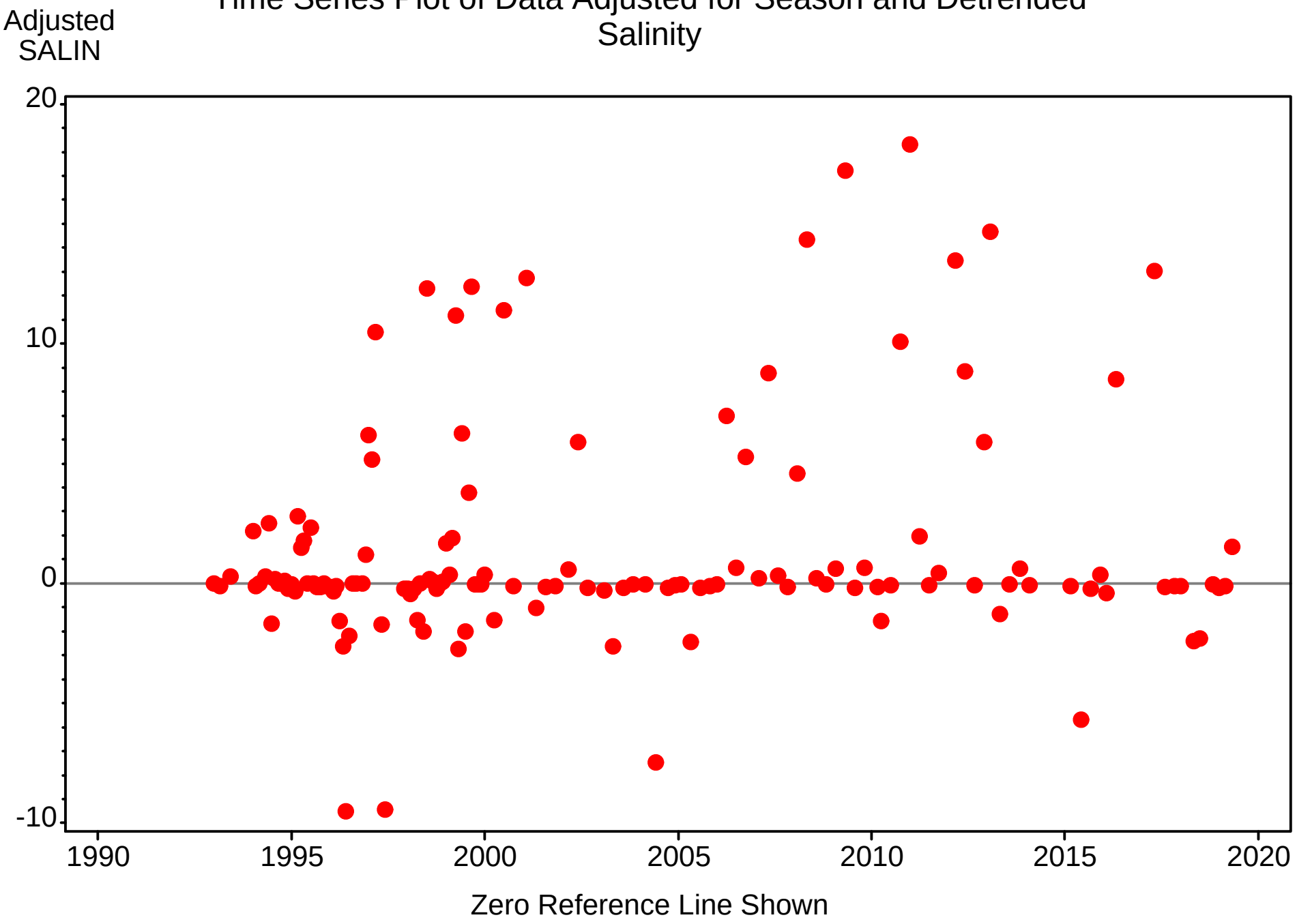
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.092	0.169	0.29	.004

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.092072	0.16857	0.29012	.00359211

S_21FLVEMDTR03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



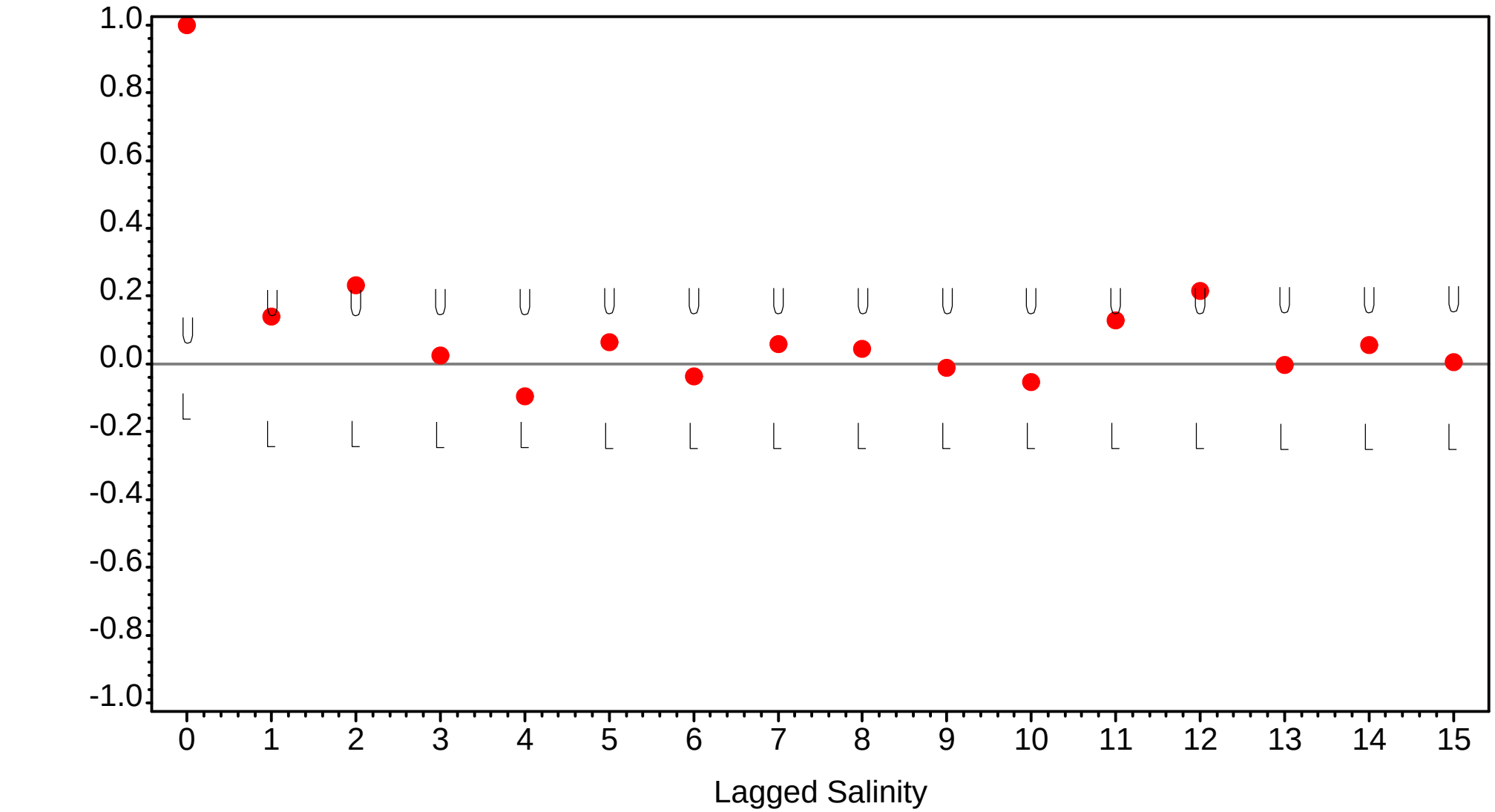
S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.139	0.096	0.192	-0.192
2	0.231	0.097	0.194	-0.194
3	0.026	0.099	0.197	-0.197
4	-0.097	0.099	0.197	-0.197
5	0.065	0.099	0.198	-0.198
6	-0.038	0.099	0.198	-0.198
7	0.059	0.099	0.198	-0.198
8	0.045	0.099	0.198	-0.198
9	-0.013	0.099	0.198	-0.198
10	-0.053	0.099	0.198	-0.198
11	0.128	0.099	0.199	-0.199
12	0.216	0.100	0.200	-0.200
13	-0.004	0.101	0.202	-0.202
14	0.055	0.101	0.202	-0.202
15	0.006	0.101	0.203	-0.203

S_21FLVEMDTR03 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

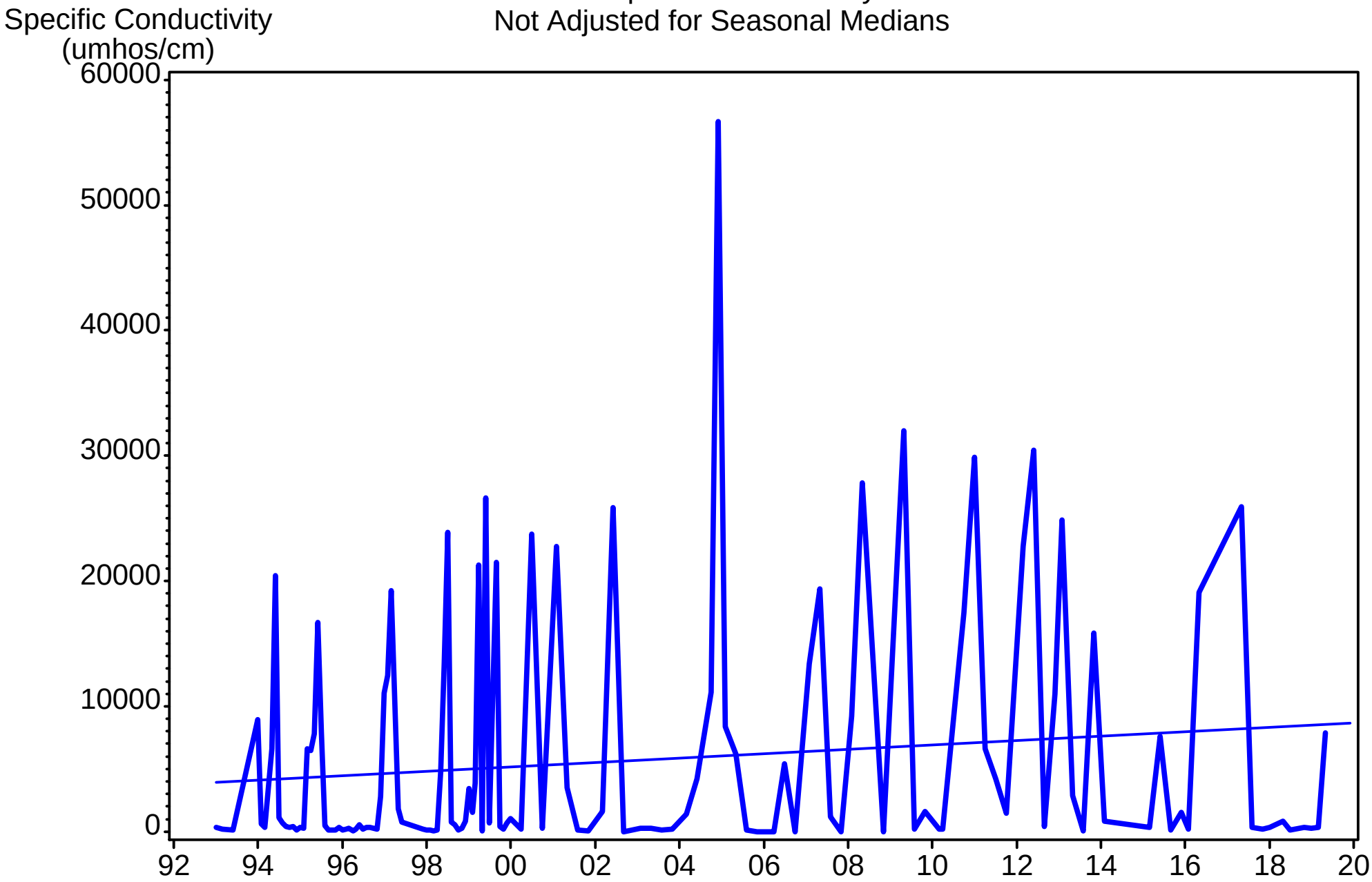


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

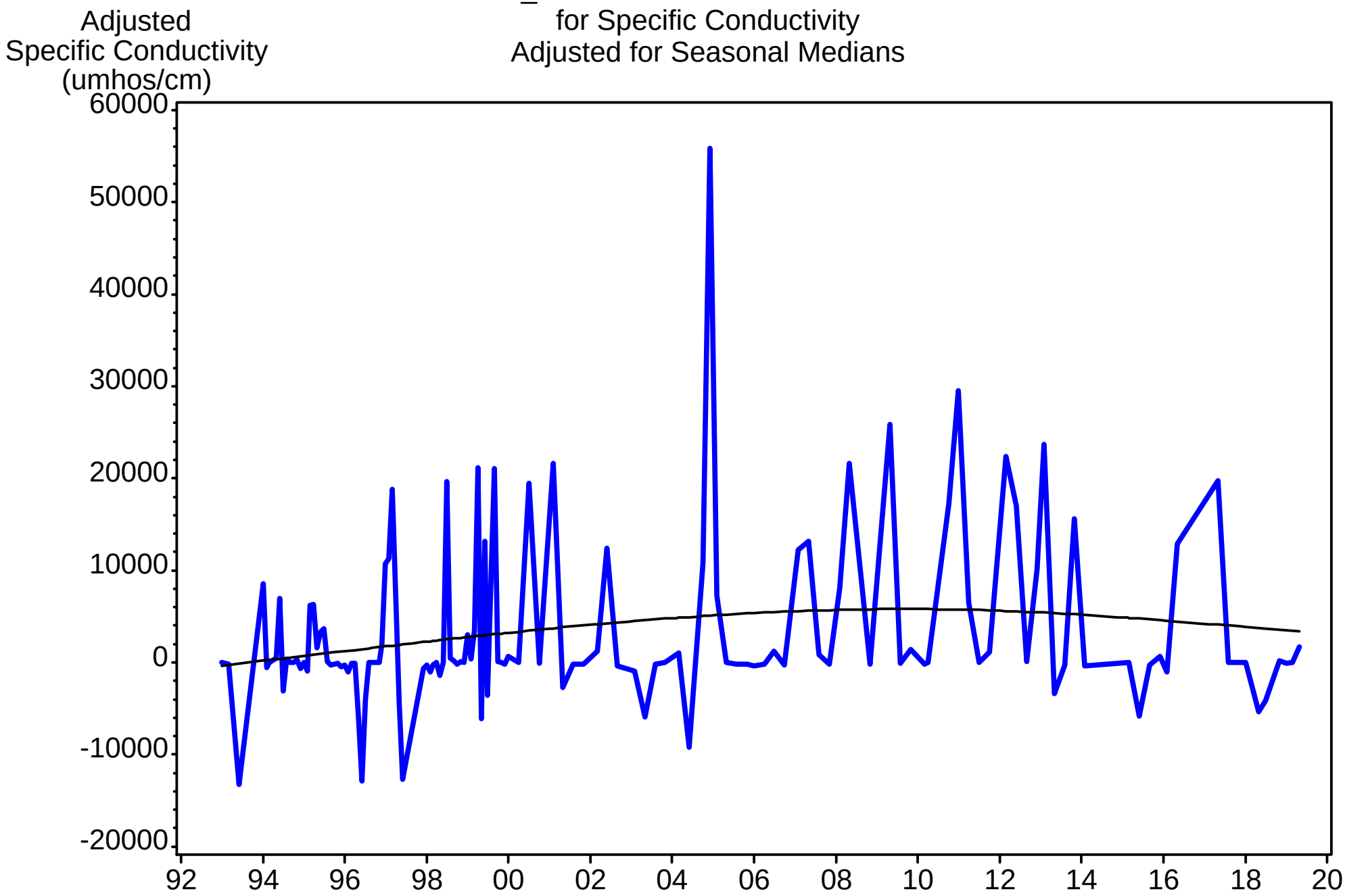
Zero Reference Line Shown

S_21FLVEMDTR03 Trends

S_21FLVEMDTR03 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



S_21FLVEMDTR03 Trends

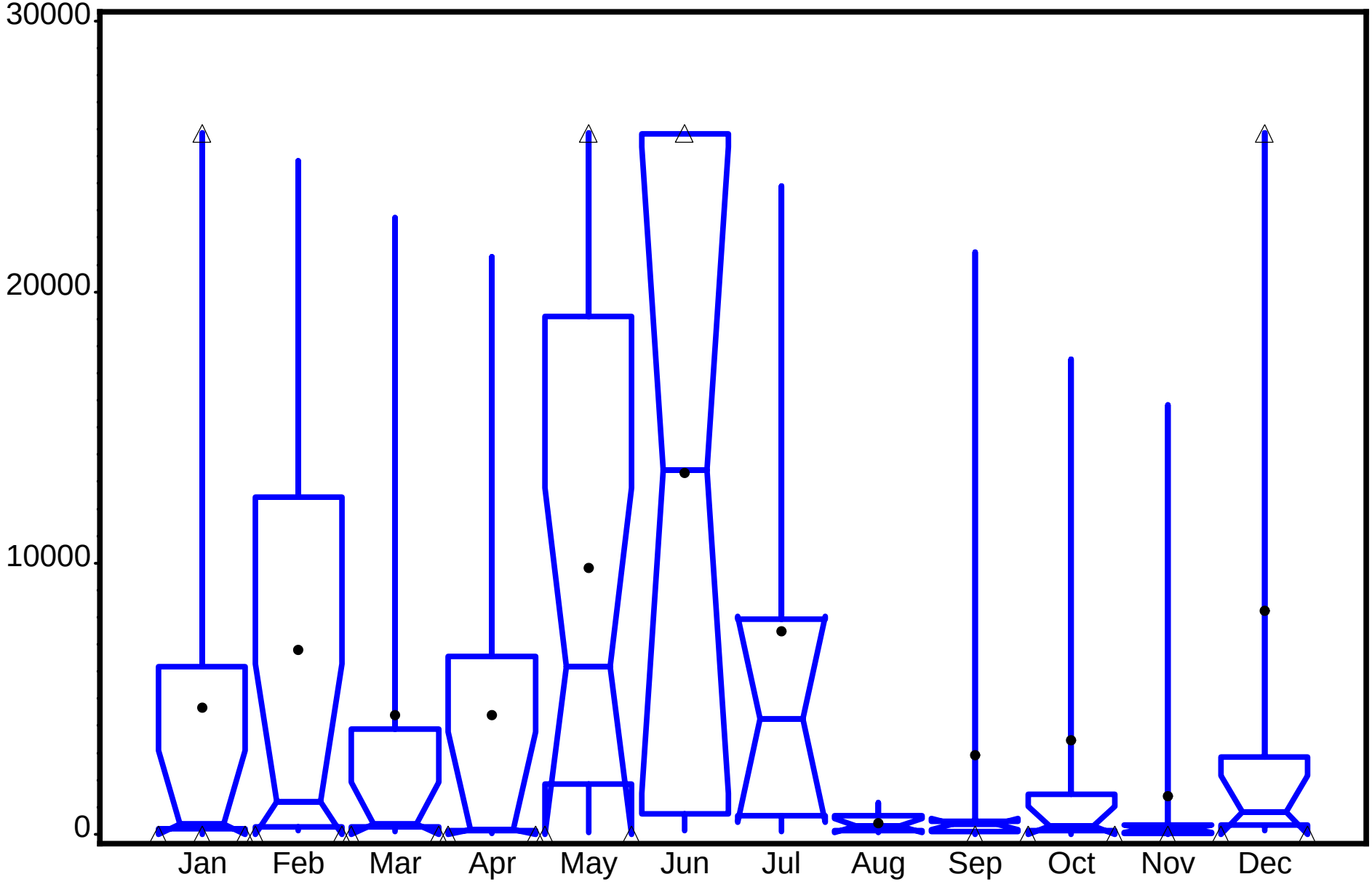


S_21FLVEMDTR03 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



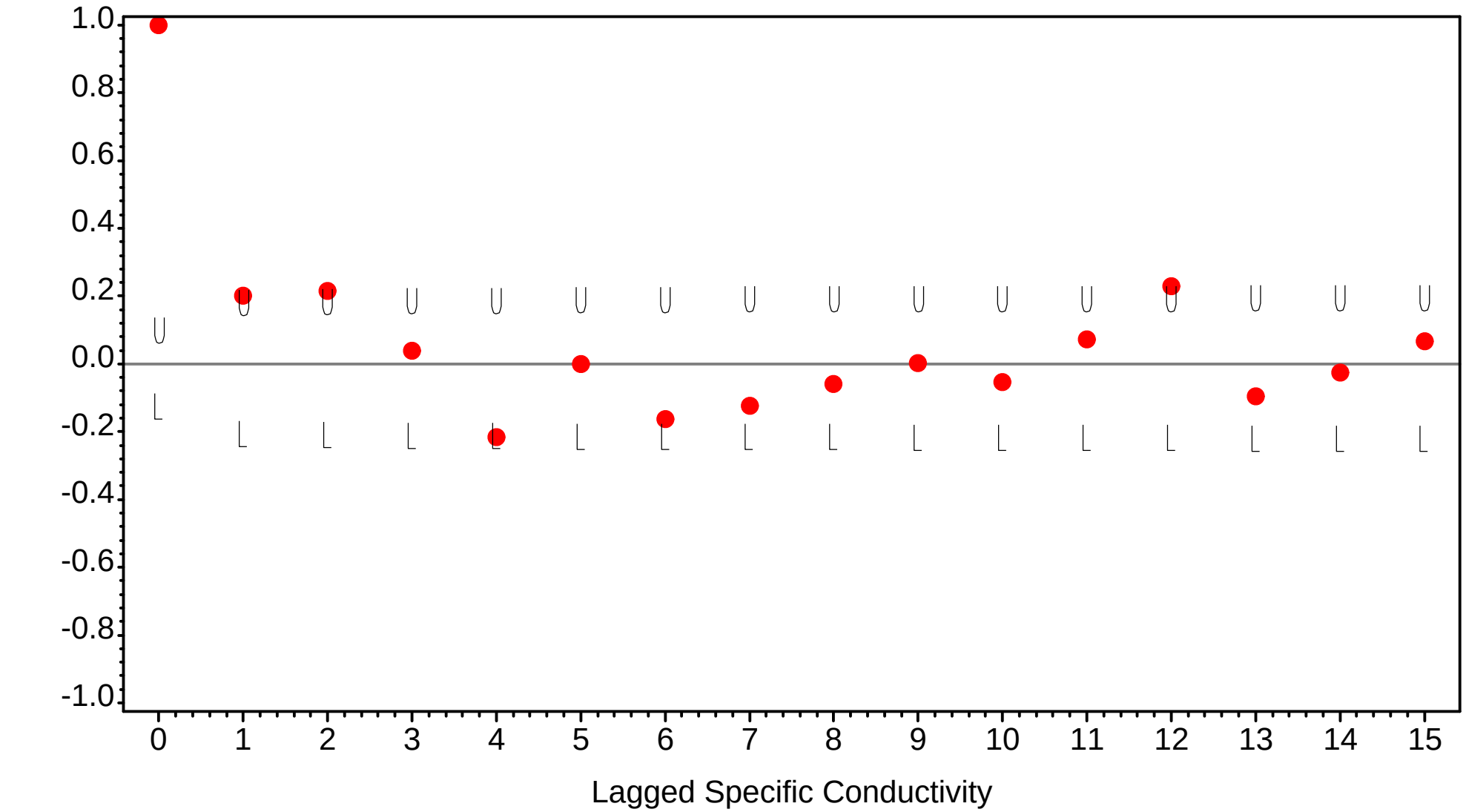
S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.200	0.096	0.192	-0.192
2	0.215	0.098	0.195	-0.195
3	0.038	0.099	0.198	-0.198
4	-0.217	0.099	0.198	-0.198
5	0.000	0.100	0.201	-0.201
6	-0.164	0.100	0.201	-0.201
7	-0.123	0.101	0.203	-0.203
8	-0.060	0.102	0.203	-0.203
9	0.003	0.102	0.204	-0.204
10	-0.054	0.102	0.204	-0.204
11	0.072	0.102	0.204	-0.204
12	0.228	0.102	0.204	-0.204
13	-0.097	0.104	0.207	-0.207
14	-0.025	0.104	0.208	-0.208
15	0.067	0.104	0.208	-0.208

S_21FLVEMDTR03 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

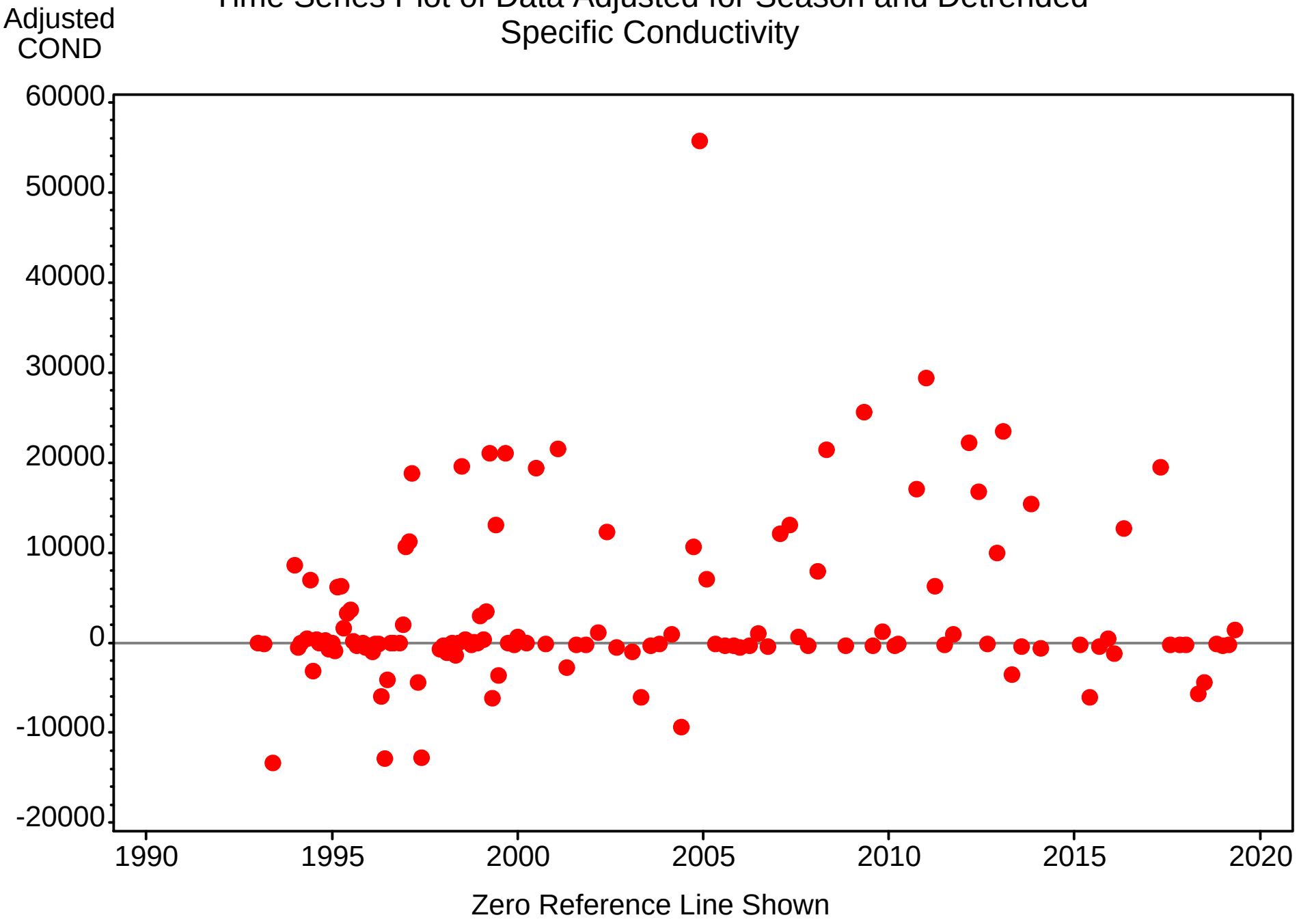
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.106	0.122	0.158	10.031

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.10598	0.12166	0.15796	10.0313

S_21FLVEMDTR03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

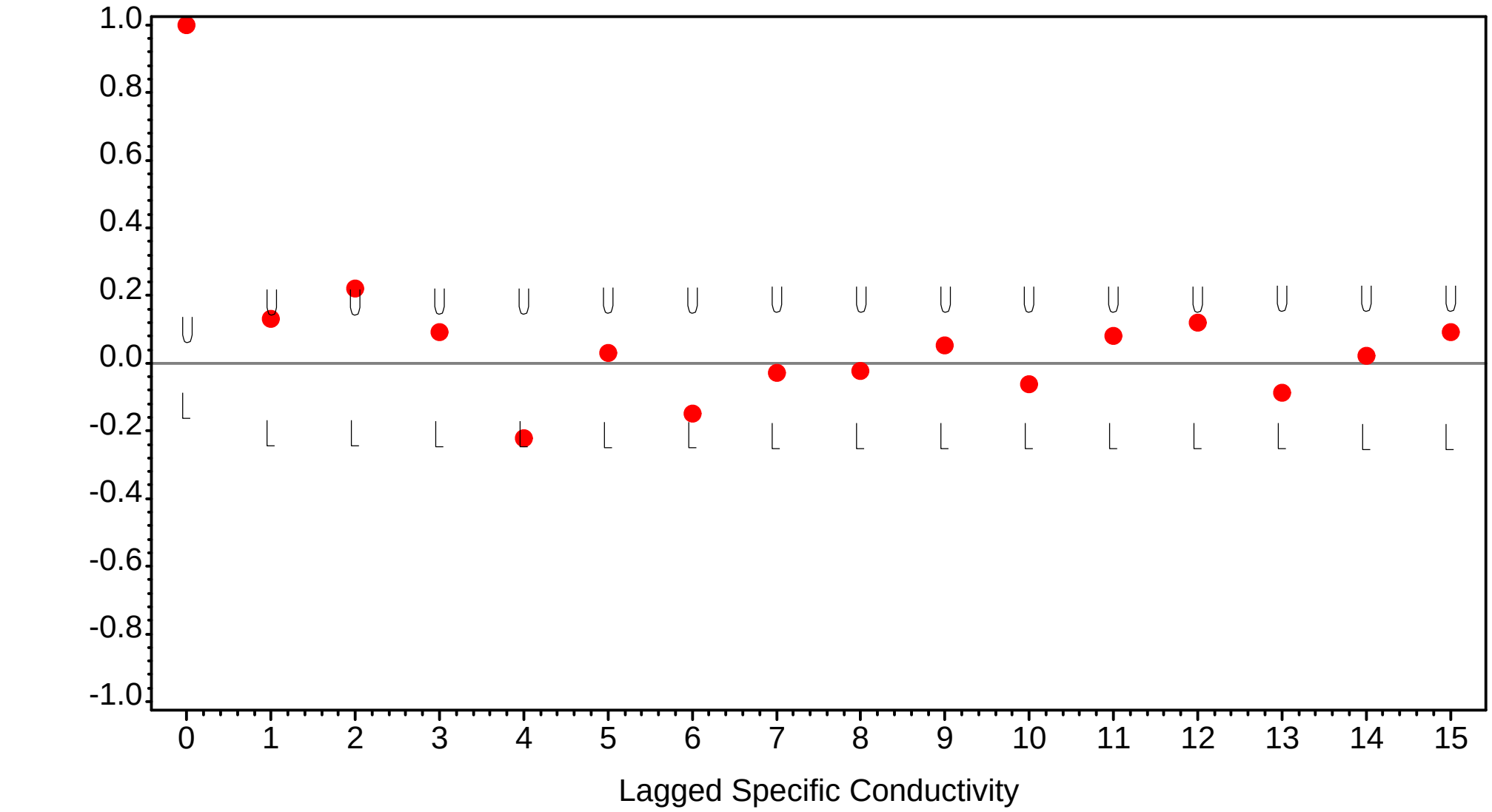


S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.131	0.096	0.192	-0.192
2	0.220	0.097	0.194	-0.194
3	0.091	0.098	0.197	-0.197
4	-0.221	0.099	0.197	-0.197
5	0.031	0.100	0.200	-0.200
6	-0.148	0.100	0.200	-0.200
7	-0.028	0.101	0.202	-0.202
8	-0.023	0.101	0.202	-0.202
9	0.054	0.101	0.202	-0.202
10	-0.061	0.101	0.202	-0.202
11	0.081	0.101	0.202	-0.202
12	0.120	0.101	0.202	-0.202
13	-0.086	0.102	0.203	-0.203
14	0.021	0.102	0.204	-0.204
15	0.091	0.102	0.204	-0.204

S_21FLVEMDTR03 Trends Appendix

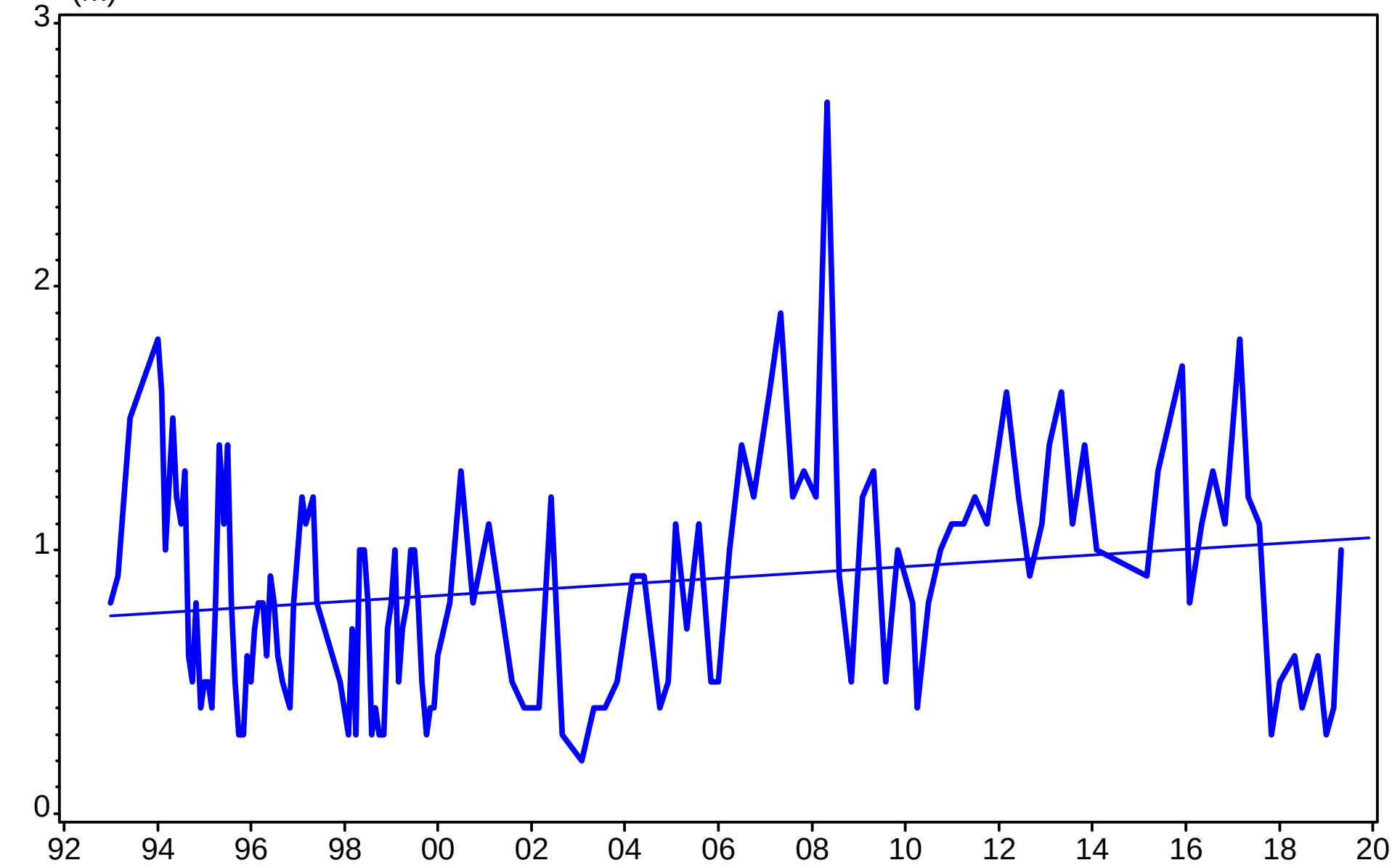
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



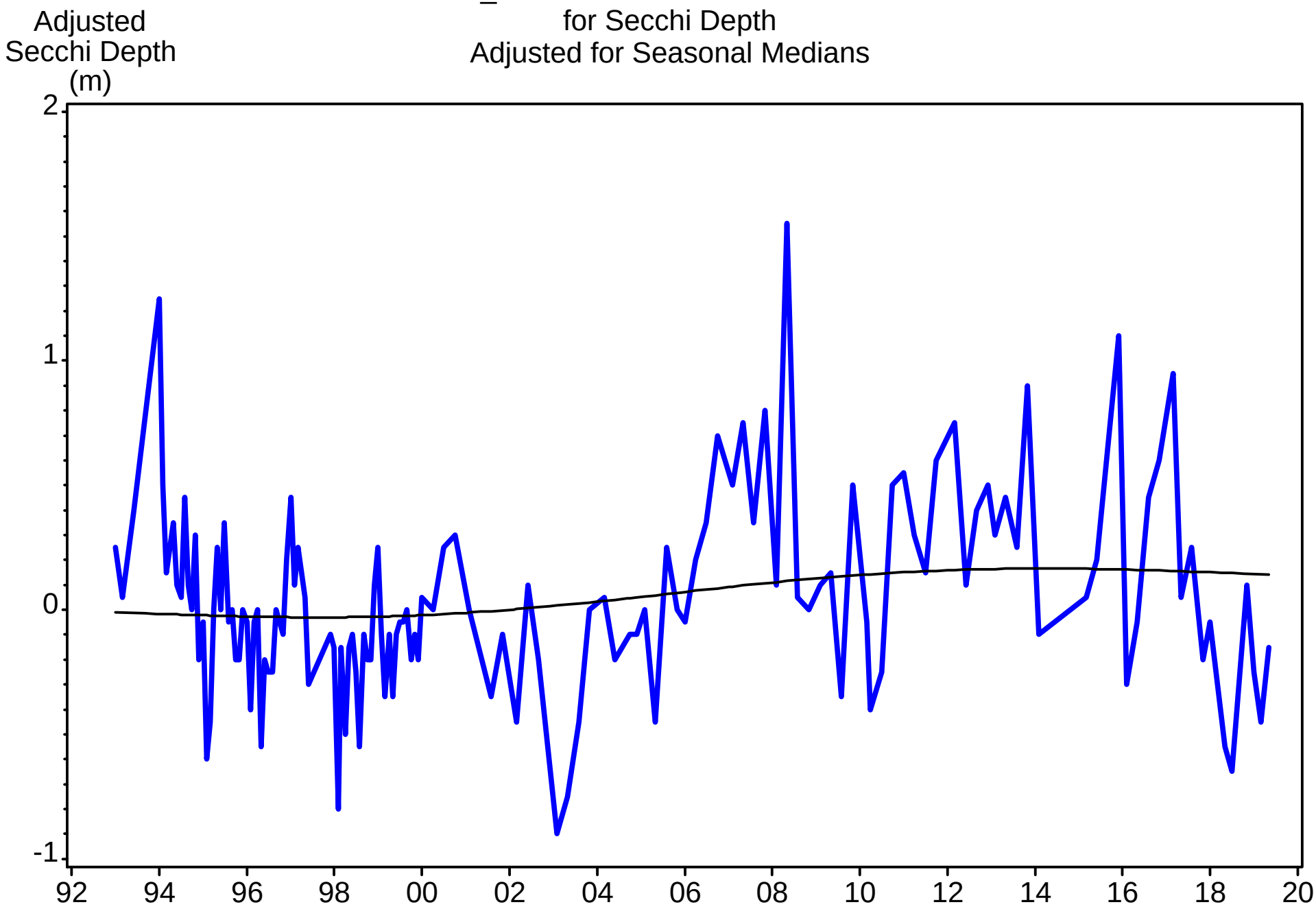
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR03 Trends

S_21FLVEMDTR03 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



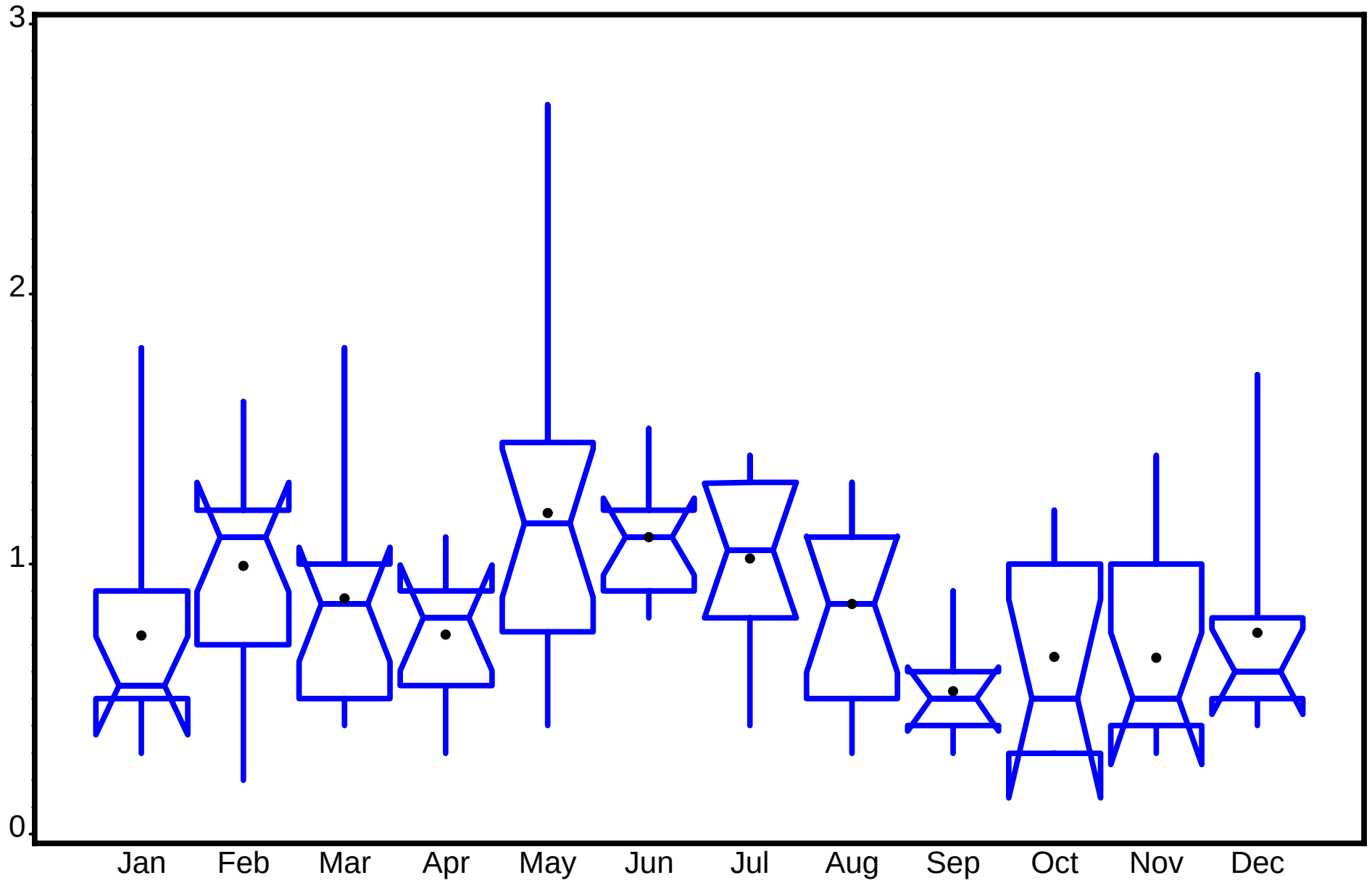
S_21FLVEMDTR03 Trends



S_21FLVEMDTR03 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth

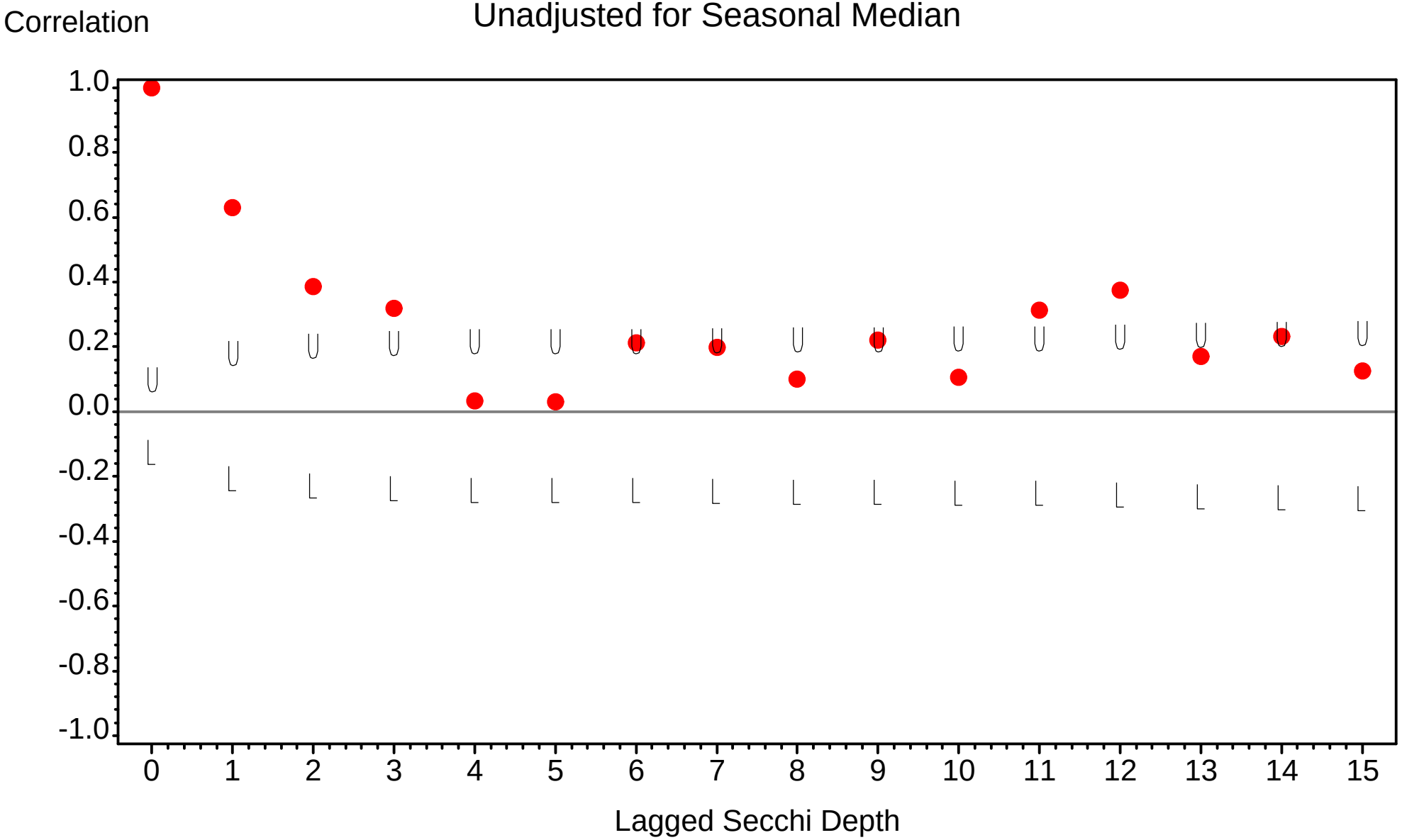


S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.630	0.096	0.192	-0.192
2	0.385	0.108	0.216	-0.216
3	0.318	0.112	0.225	-0.225
4	0.034	0.115	0.230	-0.230
5	0.029	0.115	0.230	-0.230
6	0.211	0.115	0.230	-0.230
7	0.197	0.116	0.233	-0.233
8	0.100	0.117	0.235	-0.235
9	0.221	0.118	0.235	-0.235
10	0.105	0.119	0.238	-0.238
11	0.313	0.119	0.238	-0.238
12	0.374	0.122	0.243	-0.243
13	0.169	0.125	0.250	-0.250
14	0.233	0.126	0.252	-0.252
15	0.126	0.127	0.254	-0.254

S_21FLVEMDTR03 Trends Appendix

Correlogram for Secchi Depth
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

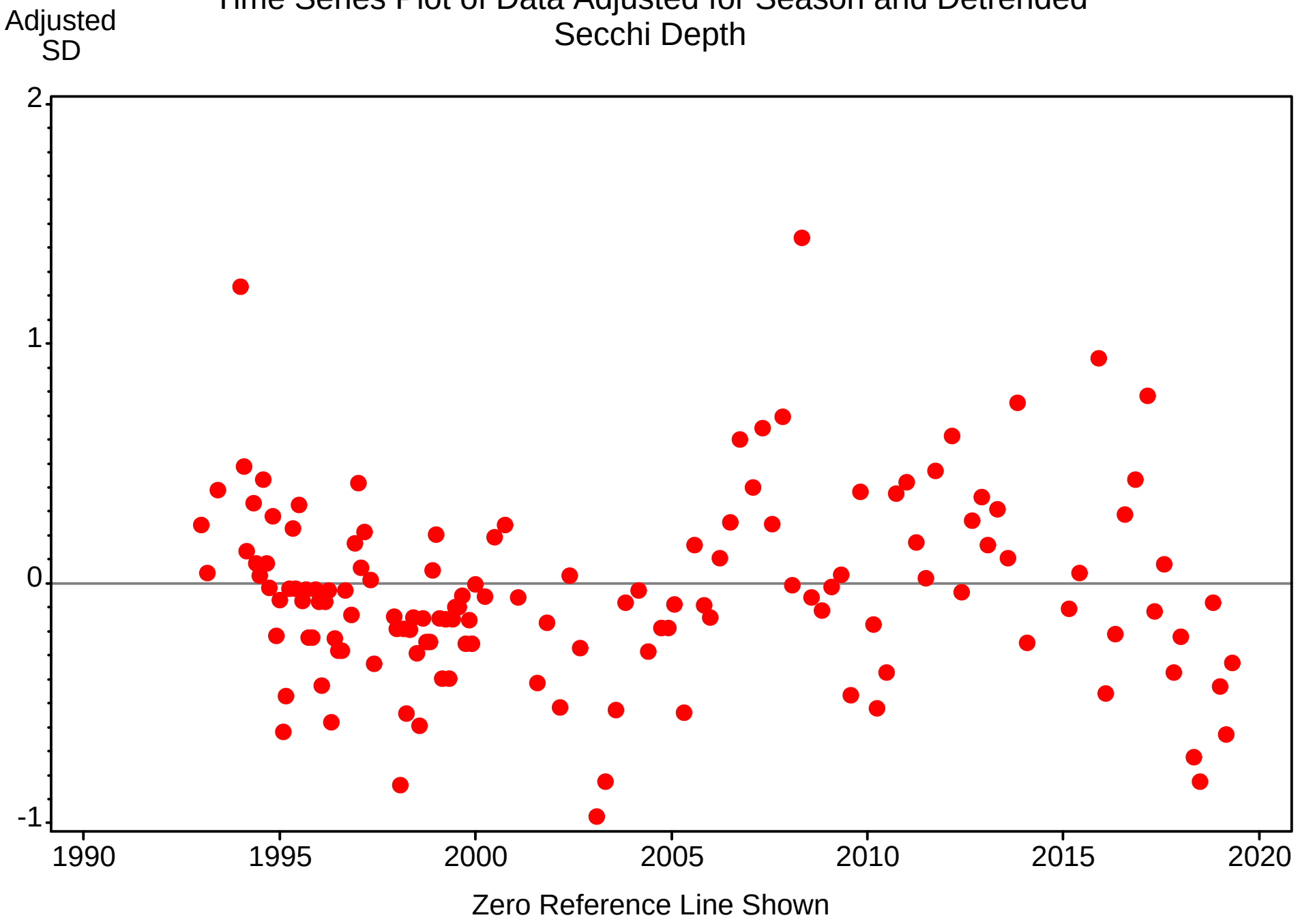
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.094	0.155	0.427	.007

S_21FLVEMDTR03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.093867	0.15479	0.42738	.00666667

S_21FLVEMDTR03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth



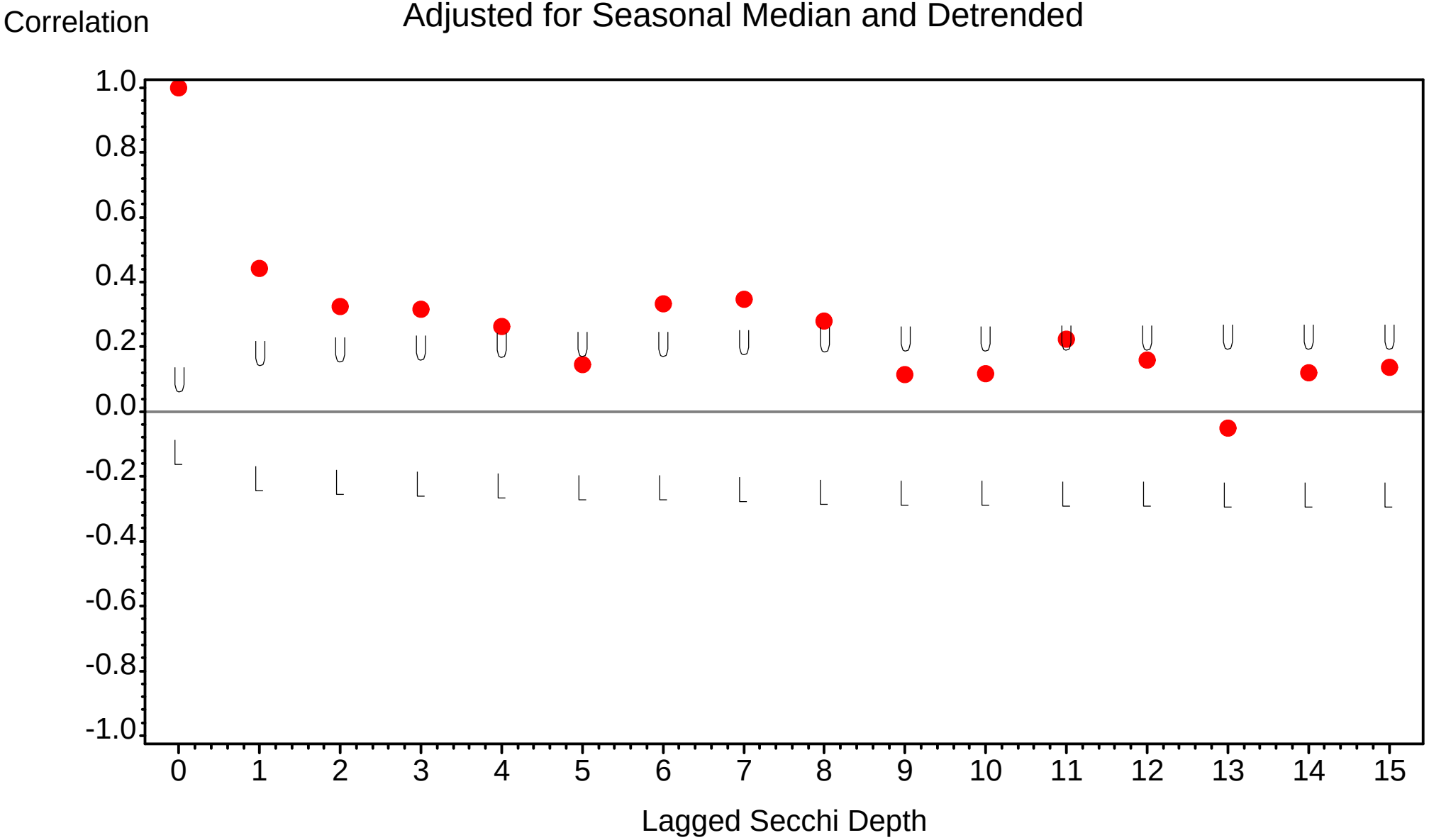
S_21FLVEMDTR03 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.443	0.096	0.192	-0.192
2	0.324	0.102	0.205	-0.205
3	0.316	0.105	0.211	-0.211
4	0.264	0.108	0.217	-0.217
5	0.145	0.110	0.221	-0.221
6	0.334	0.111	0.222	-0.222
7	0.346	0.114	0.228	-0.228
8	0.280	0.117	0.234	-0.234
9	0.113	0.119	0.238	-0.238
10	0.118	0.119	0.239	-0.239
11	0.223	0.120	0.240	-0.240
12	0.158	0.121	0.242	-0.242
13	-0.052	0.122	0.244	-0.244
14	0.120	0.122	0.244	-0.244
15	0.136	0.122	0.244	-0.244

S_21FLVEMDTR03 Trends Appendix

Correlogram for Secchi Depth

Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
2	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
4	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
5	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
6	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
7	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
2	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
3	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
4	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
5	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
6	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
7	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	0.18508	0.00006	0.00900	0.0189	0.18508	0.00006	0.0189
2	0.14122	0.00202	0.11766	3.6333	0.14122	0.11766	3.6333
3	-0.07989	0.08217	0.21224	-0.0197	-0.07989	0.08217	-0.0197
4	-0.03270	0.71735	0.77620	-0.0360	-0.03270	0.71735	-0.0360
5	0.17949	0.00008	0.04429	0.0025	0.17900	0.00000	0.0030
6	0.10197	0.09551	0.18499	0.0012	0.10200	0.18500	0.0010
7	-0.00915	0.85080	0.91313	-0.0007	-0.00900	0.91300	-0.0010

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
9	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
10	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82
11	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25
12	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00
13	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73
14	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
9	-9999.00	N	Y	N	N	0.078	0.299	0.360	0.020
10	1.12	Y	N	Y	N	0.106	0.122	0.158	10.031
11	0.82	Y	Y	N	N	-0.170	0.012	0.092	-0.059
12	0.70	Y	Y	N	N	-0.175	0.011	0.082	-0.515
13	1.54	Y	N	Y	N	0.092	0.169	0.290	0.004
14	1.54	Y	Y	Y	Y	0.094	0.155	0.427	0.007

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.13971	0.00275	0.01624	0.0003	0.14100	0.00300	0.0000
9	0.07599	0.31036	0.36979	0.0200	0.07800	0.29900	0.0200
10	0.10598	0.12166	0.15796	10.0313	0.10598	0.12166	10.0313
11	-0.16974	0.01188	0.09239	-0.0587	-0.16974	0.01188	-0.0587
12	-0.17479	0.01113	0.08250	-0.5148	-0.17479	0.01113	-0.5148
13	0.09207	0.16857	0.29012	0.0036	0.09207	0.16857	0.0036
14	0.09387	0.15479	0.42738	0.0067	0.09387	0.42738	0.0067

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
16	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
17	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
18	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19
19	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42
20	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81
21	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	1.48	Y	Y	N	N	-0.031	0.706	0.812	-0.002
16	-9999.00	N	N	N	N	-0.023	0.786	0.871	0.000
17	0.44	N	Y	N	N	-0.142	0.074	0.219	-0.011
18	-9999.00	N	N	Y	N	0.085	0.243	0.291	2.029
19	2.33	Y	Y	N	N	-0.040	0.591	0.737	-0.008
20	1.77	Y	Y	N	N	0.027	0.725	0.823	0.034
21	-9999.00	N	Y	Y	Y	0.123	0.076	0.159	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	-0.03145	0.70576	0.81201	-0.0021	-0.03145	0.70576	-0.0021
16	-0.02254	0.78614	0.87138	0.0000	-0.02300	0.78600	0.0000
17	-0.14223	0.07413	0.21912	-0.0108	-0.14200	0.07400	-0.0110
18	0.08500	0.24287	0.29095	2.0294	0.08500	0.24300	2.0290
19	-0.03968	0.59098	0.73685	-0.0075	-0.03968	0.59098	-0.0075
20	0.02716	0.72528	0.82342	0.0335	0.02716	0.72528	0.0335
21	0.12322	0.07617	0.15857	0.0008	0.12300	0.15900	0.0010

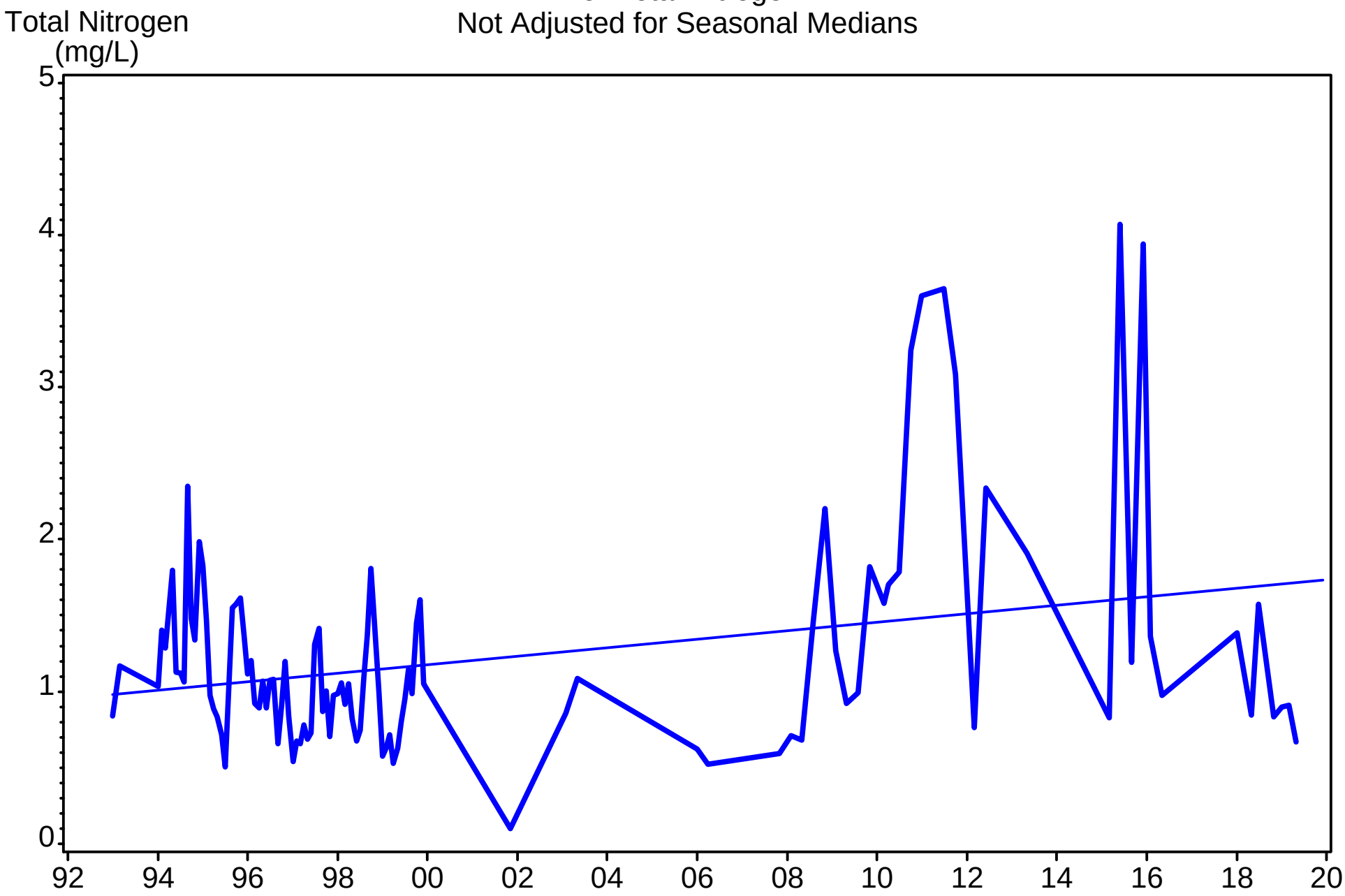
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
22	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00
23	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
24	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
22	0.68	Y	Y	N	N	0.194	0.005	0.046	0.009
23	0.31	N	Y	N	N	-0.241	0.003	0.076	-0.016
24	-9999.00	N	N	N	N	0.040	0.632	0.786	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.19383	0.00462	0.04647	0.0091	0.19383	0.00462	0.0091
23	-0.24070	0.00315	0.07596	-0.0162	-0.24100	0.00300	-0.0160
24	0.04009	0.63152	0.78567	0.0000	0.04000	0.63200	0.0000

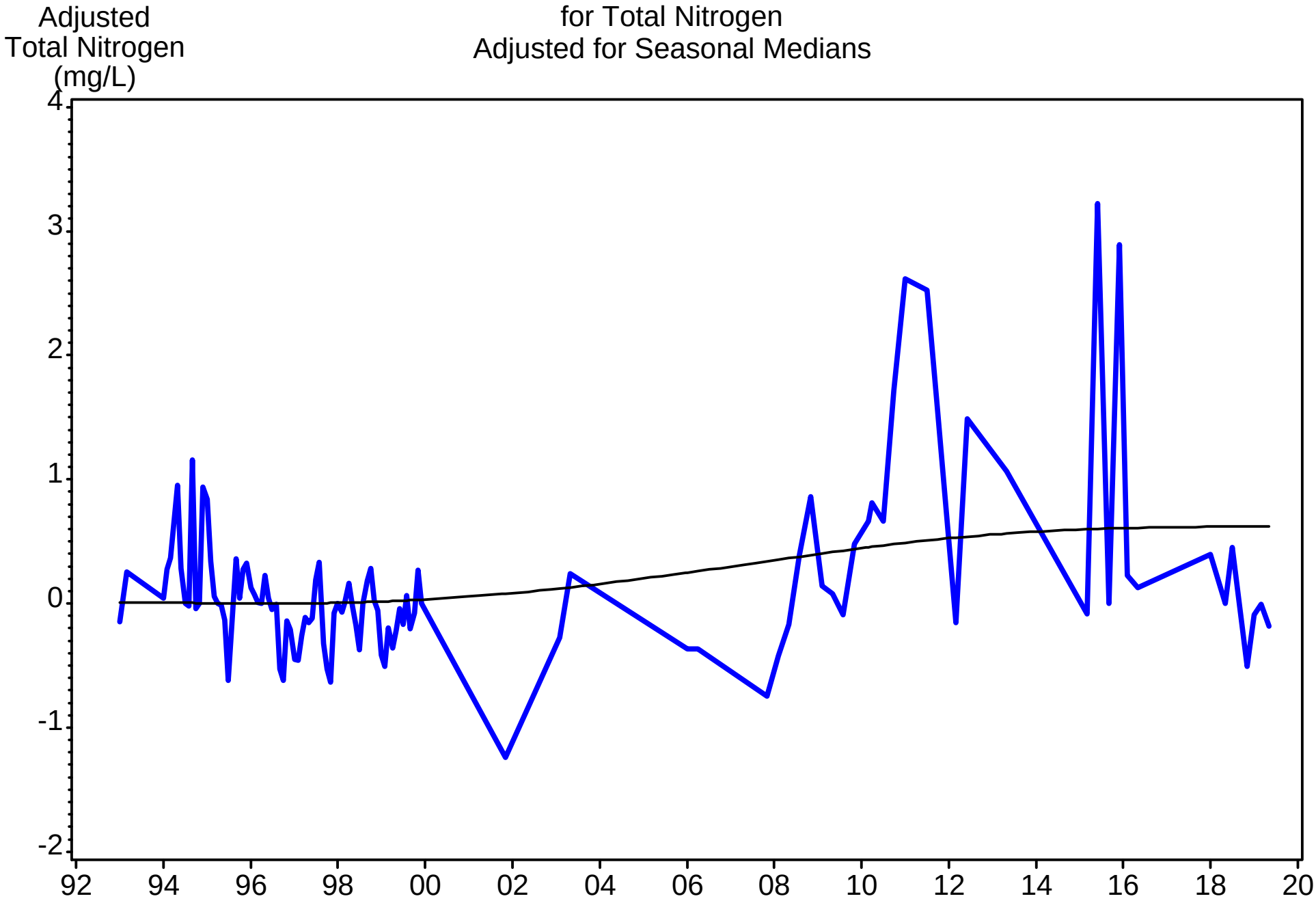
S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Time Series for Total Nitrogen Adjusted for Seasonal Medians

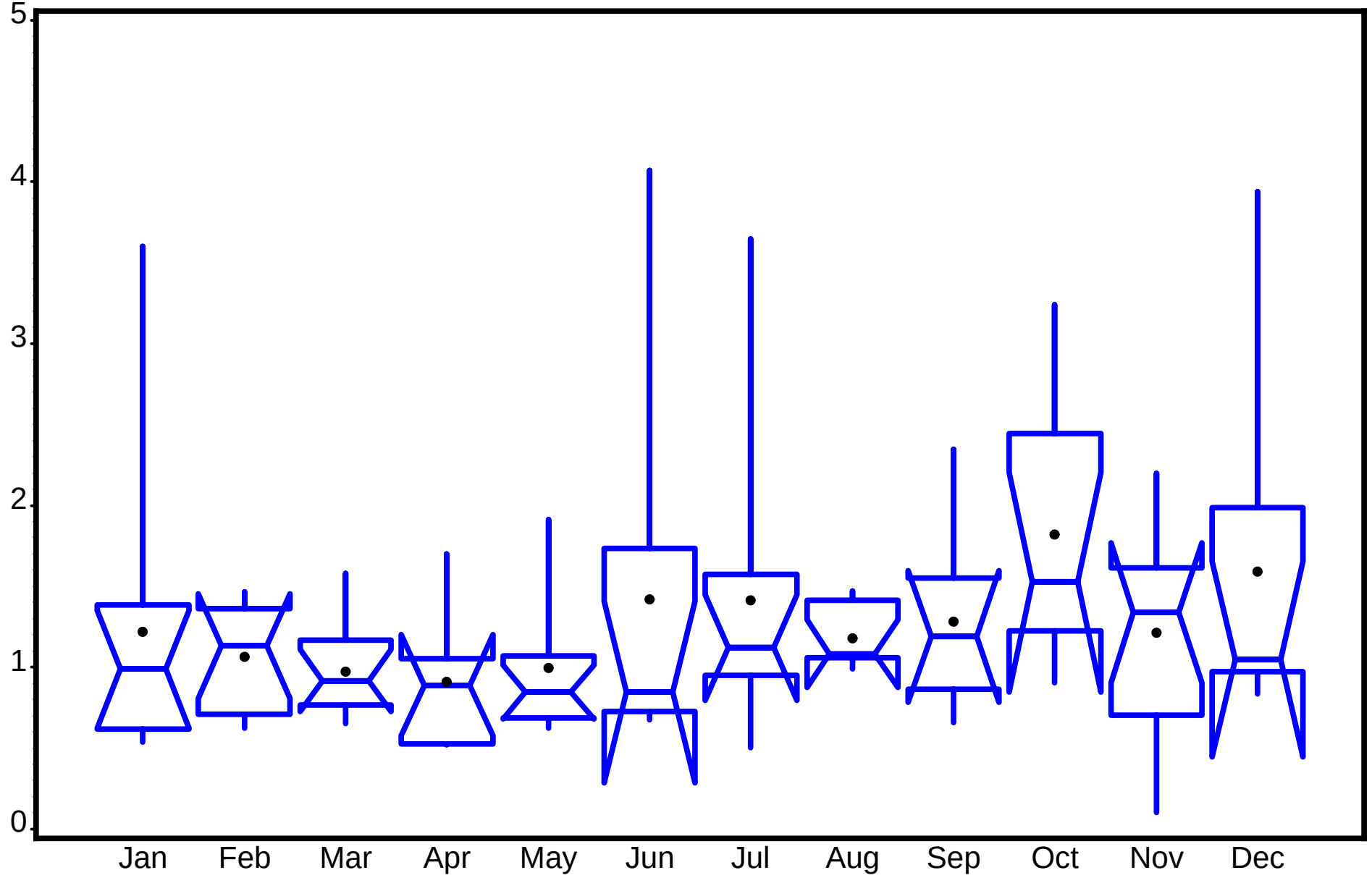


S_21FLVEMDTR02 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



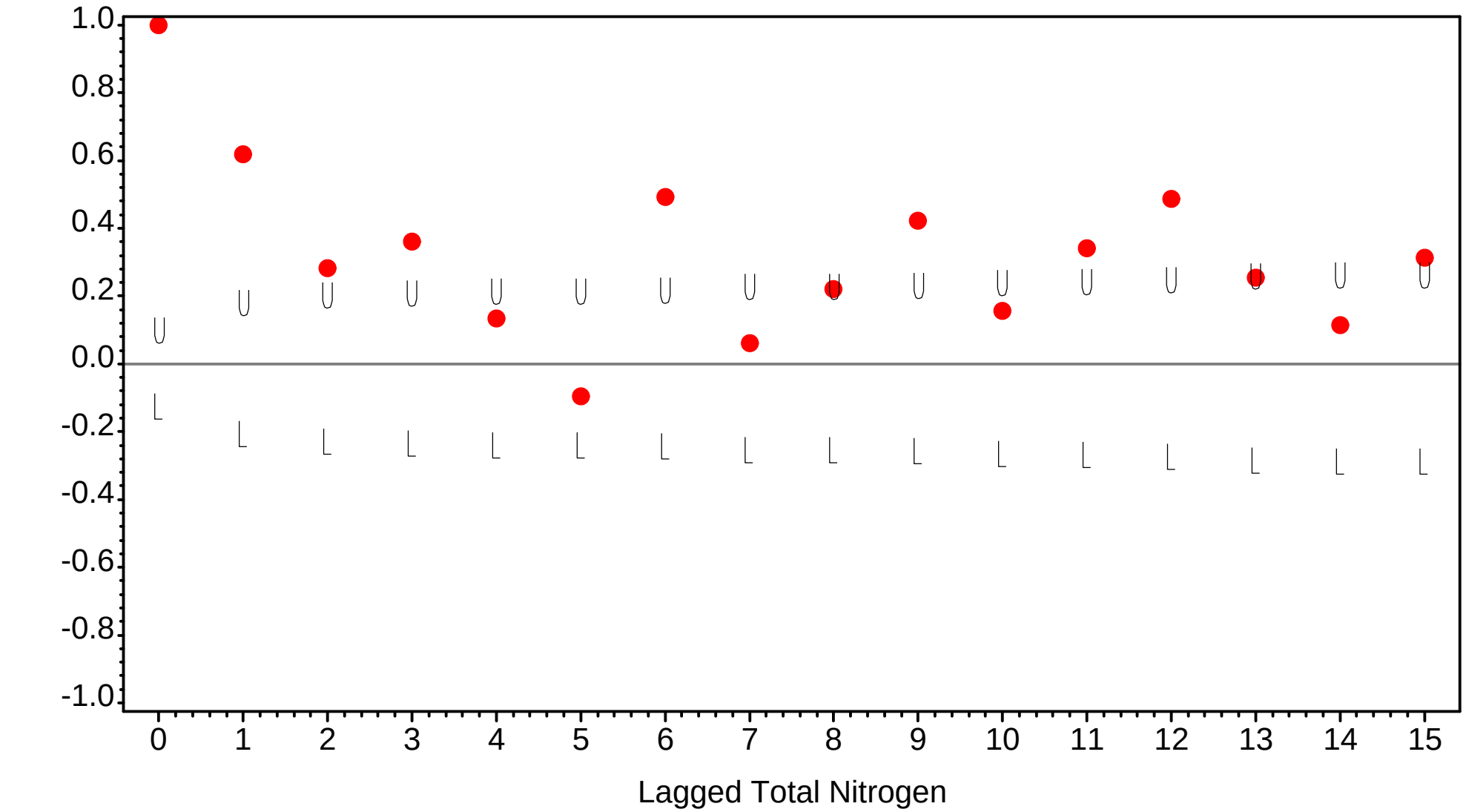
S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.618	0.096	0.192	-0.192
2	0.282	0.108	0.216	-0.216
3	0.361	0.110	0.220	-0.220
4	0.133	0.114	0.227	-0.227
5	-0.095	0.114	0.228	-0.228
6	0.491	0.114	0.229	-0.229
7	0.061	0.121	0.241	-0.241
8	0.220	0.121	0.242	-0.242
9	0.422	0.122	0.244	-0.244
10	0.157	0.126	0.253	-0.253
11	0.340	0.127	0.254	-0.254
12	0.488	0.130	0.260	-0.260
13	0.253	0.135	0.271	-0.271
14	0.113	0.137	0.274	-0.274
15	0.313	0.137	0.274	-0.274

S_21FLVEMDTR02 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

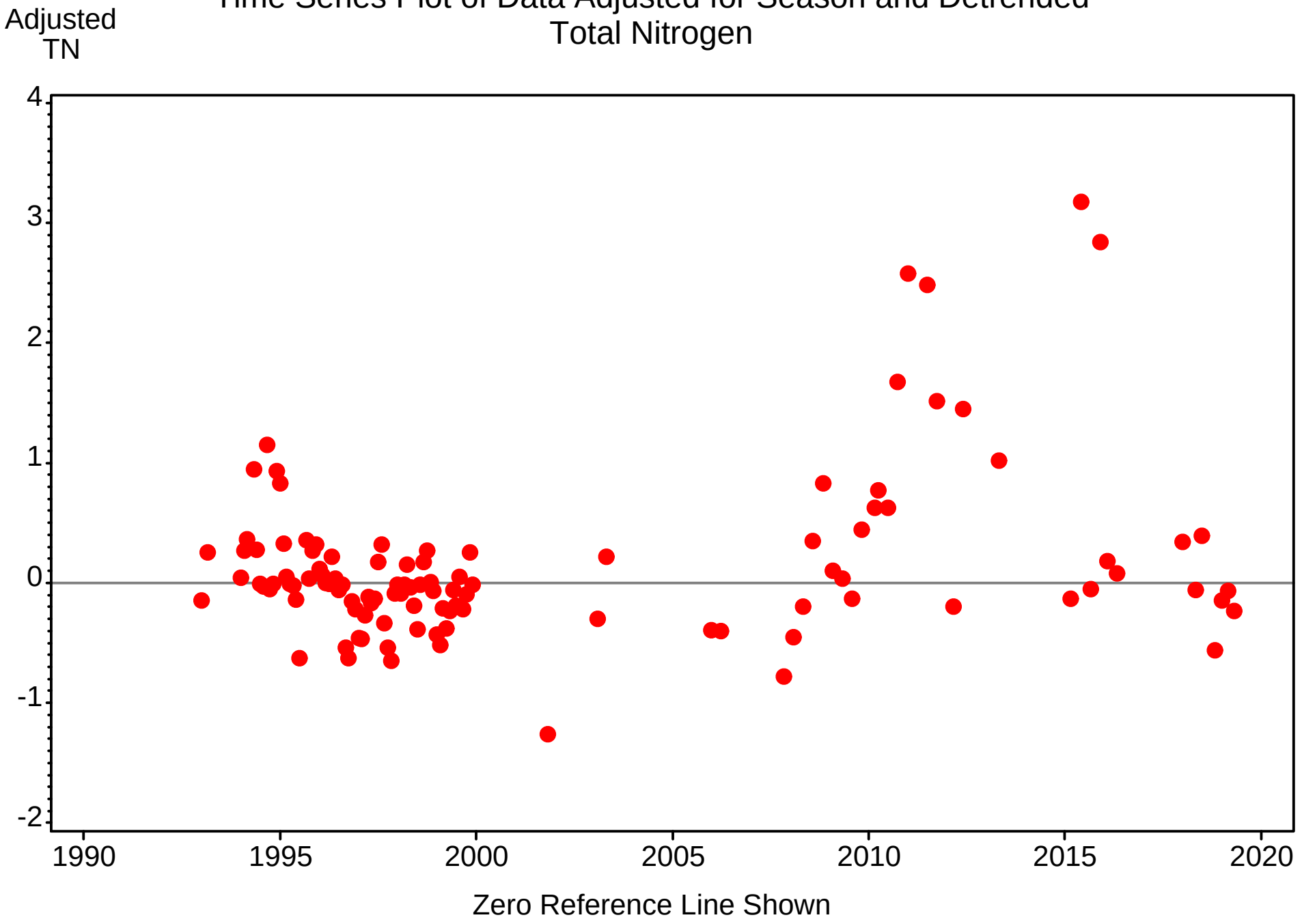
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.017	0.845	0.901	.002

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.017241	0.84540	0.90084	.00212115

S_21FLVEMDTR02 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



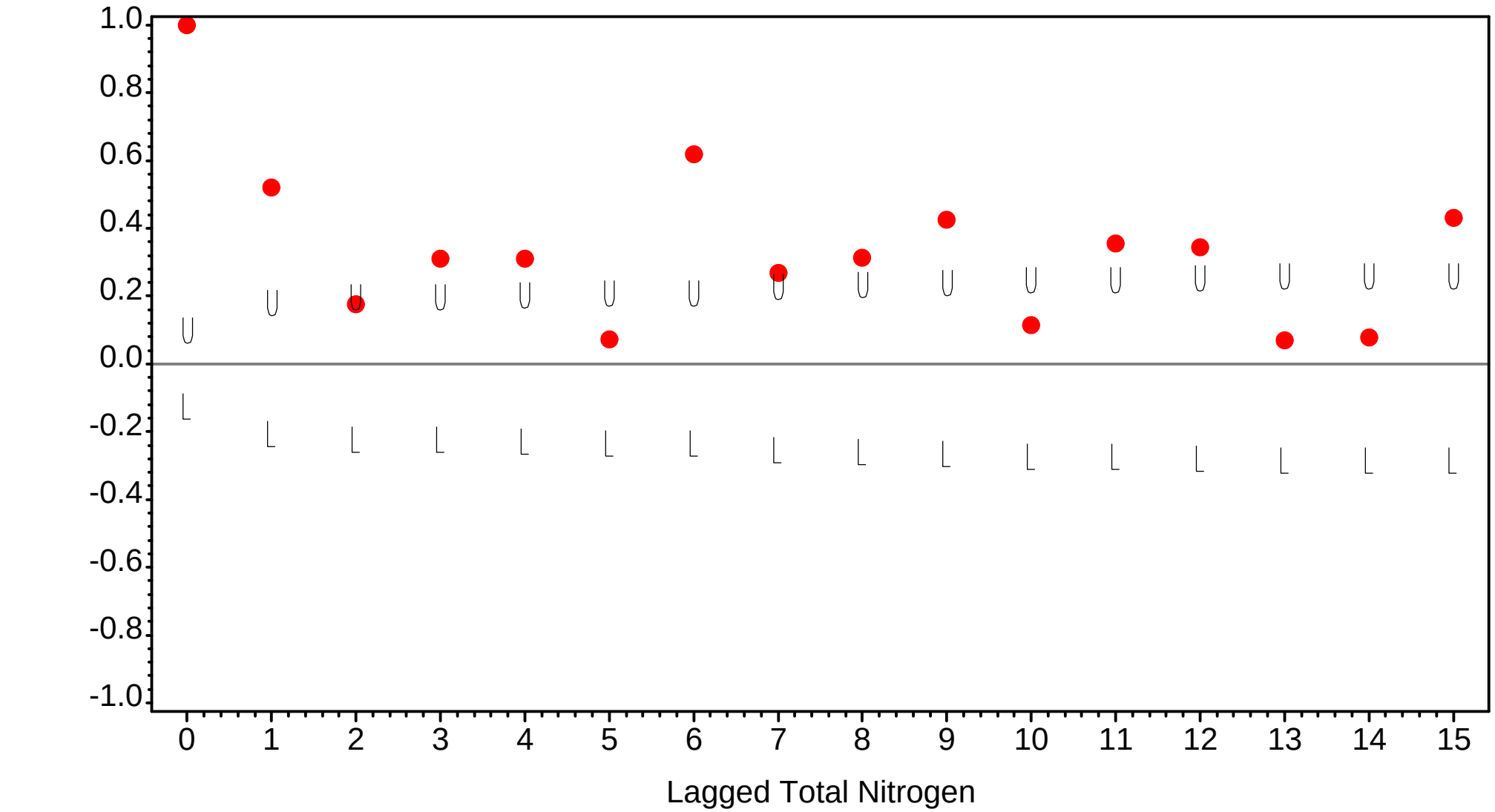
S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.520	0.096	0.192	-0.192
2	0.175	0.105	0.209	-0.209
3	0.311	0.105	0.211	-0.211
4	0.309	0.108	0.216	-0.216
5	0.071	0.111	0.222	-0.222
6	0.618	0.111	0.222	-0.222
7	0.267	0.121	0.242	-0.242
8	0.312	0.123	0.246	-0.246
9	0.424	0.125	0.251	-0.251
10	0.114	0.130	0.260	-0.260
11	0.356	0.130	0.260	-0.260
12	0.345	0.133	0.266	-0.266
13	0.070	0.136	0.272	-0.272
14	0.079	0.136	0.272	-0.272
15	0.432	0.136	0.272	-0.272

S_21FLVEMDTR02 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

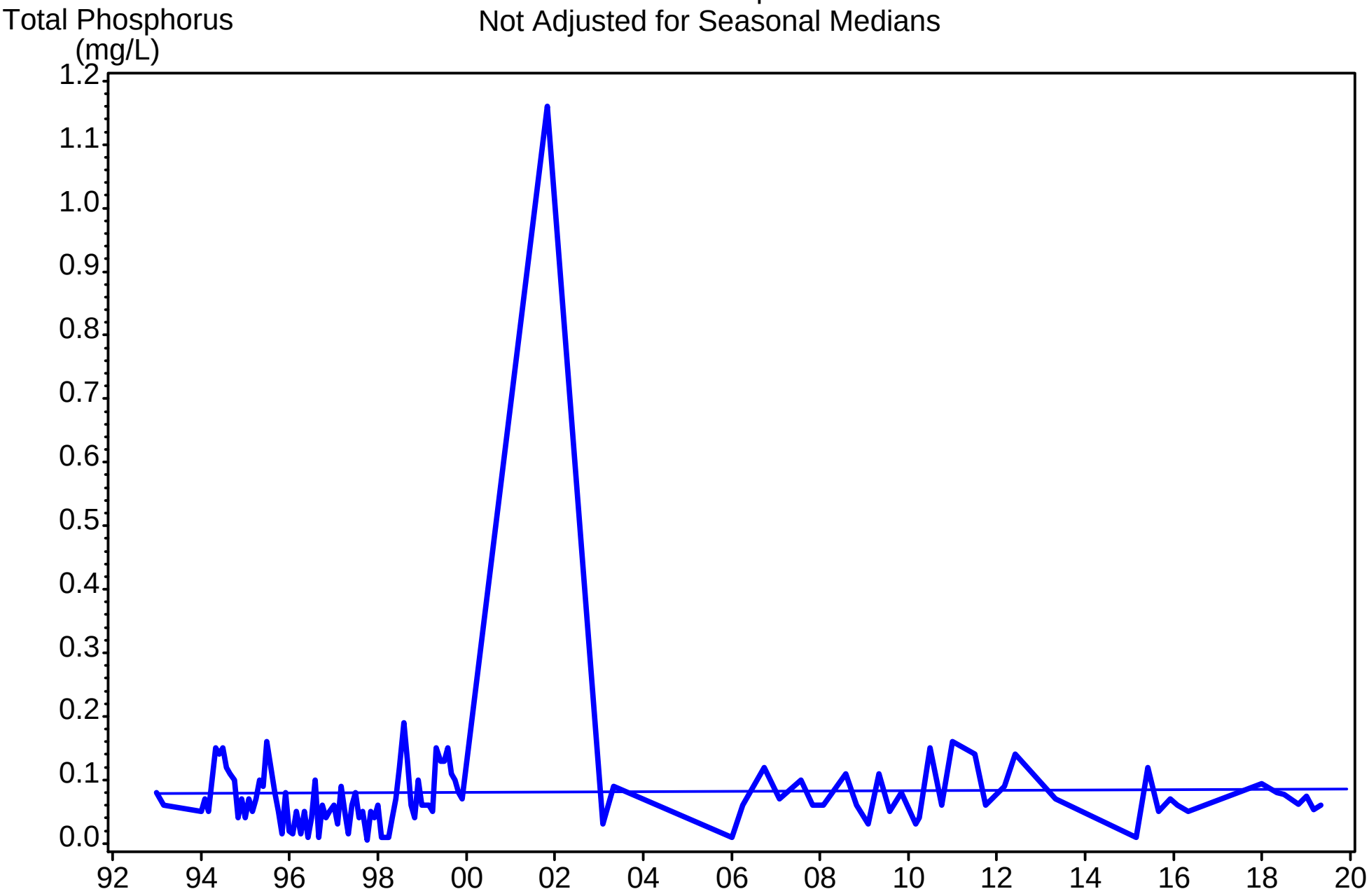


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

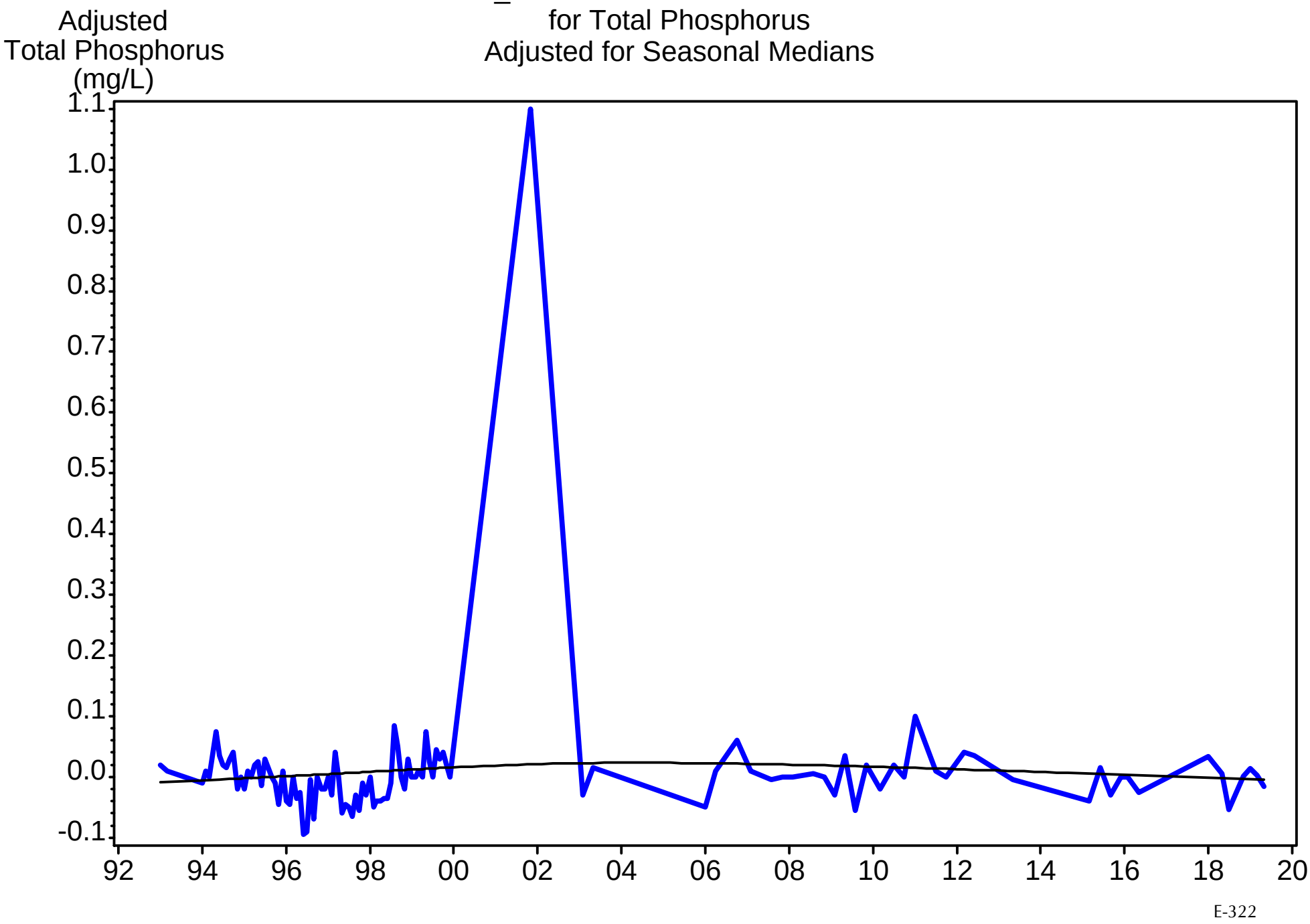
Zero Reference Line Shown

S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



S_21FLVEMDTR02 Trends

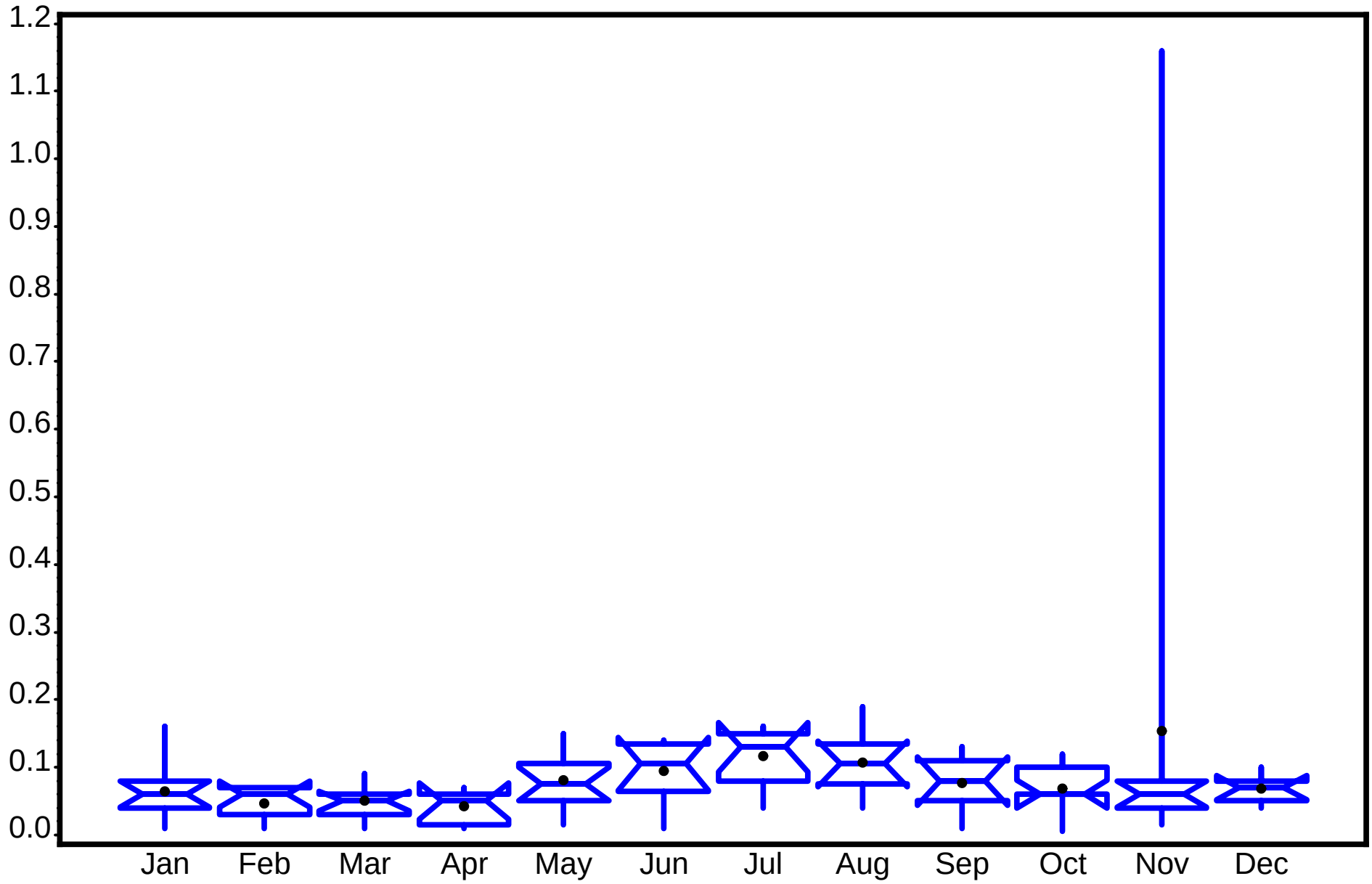


S_21FLVEMDTR02 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)

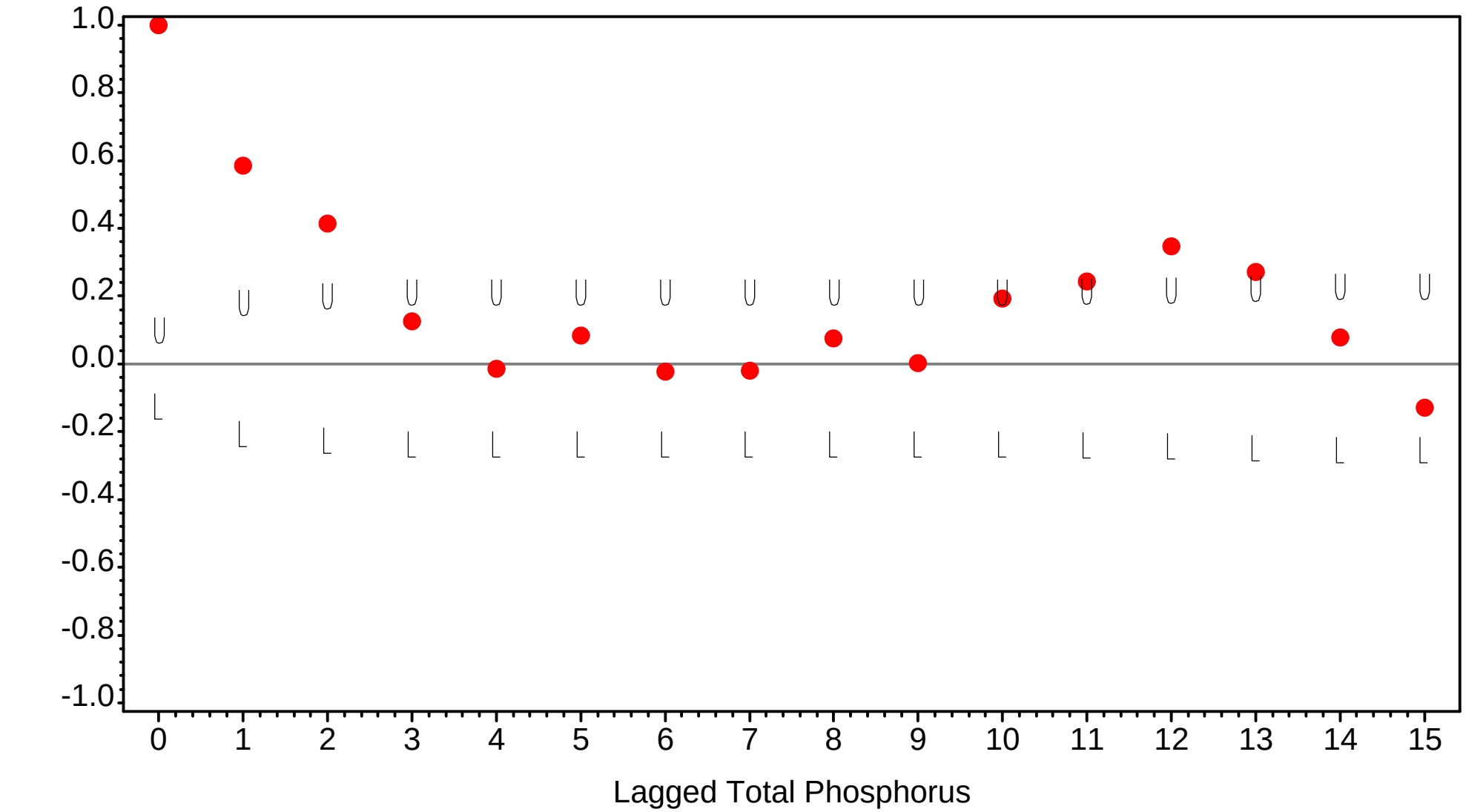


S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.585	0.096	0.192	-0.192
2	0.414	0.107	0.213	-0.213
3	0.126	0.111	0.223	-0.223
4	-0.014	0.112	0.224	-0.224
5	0.084	0.112	0.224	-0.224
6	-0.022	0.112	0.224	-0.224
7	-0.021	0.112	0.224	-0.224
8	0.076	0.112	0.224	-0.224
9	0.001	0.112	0.225	-0.225
10	0.192	0.112	0.225	-0.225
11	0.244	0.113	0.227	-0.227
12	0.348	0.115	0.230	-0.230
13	0.272	0.118	0.236	-0.236
14	0.077	0.120	0.240	-0.240
15	-0.130	0.120	0.240	-0.240

S_21FLVEMDTR02 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

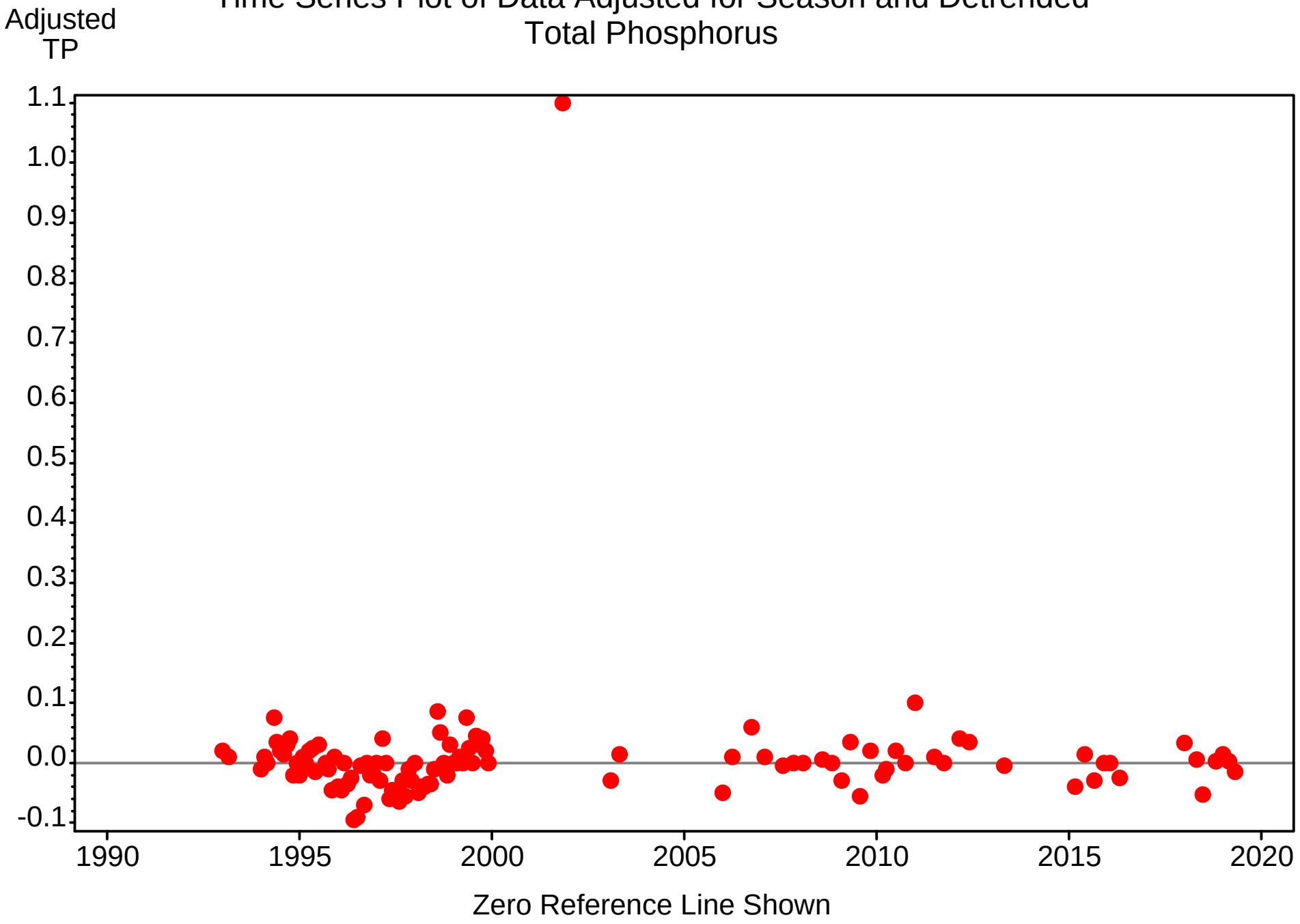
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.05	0.519	0.695	0

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.050315	0.519	0.69540	0

S_21FLVEMDTR02 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

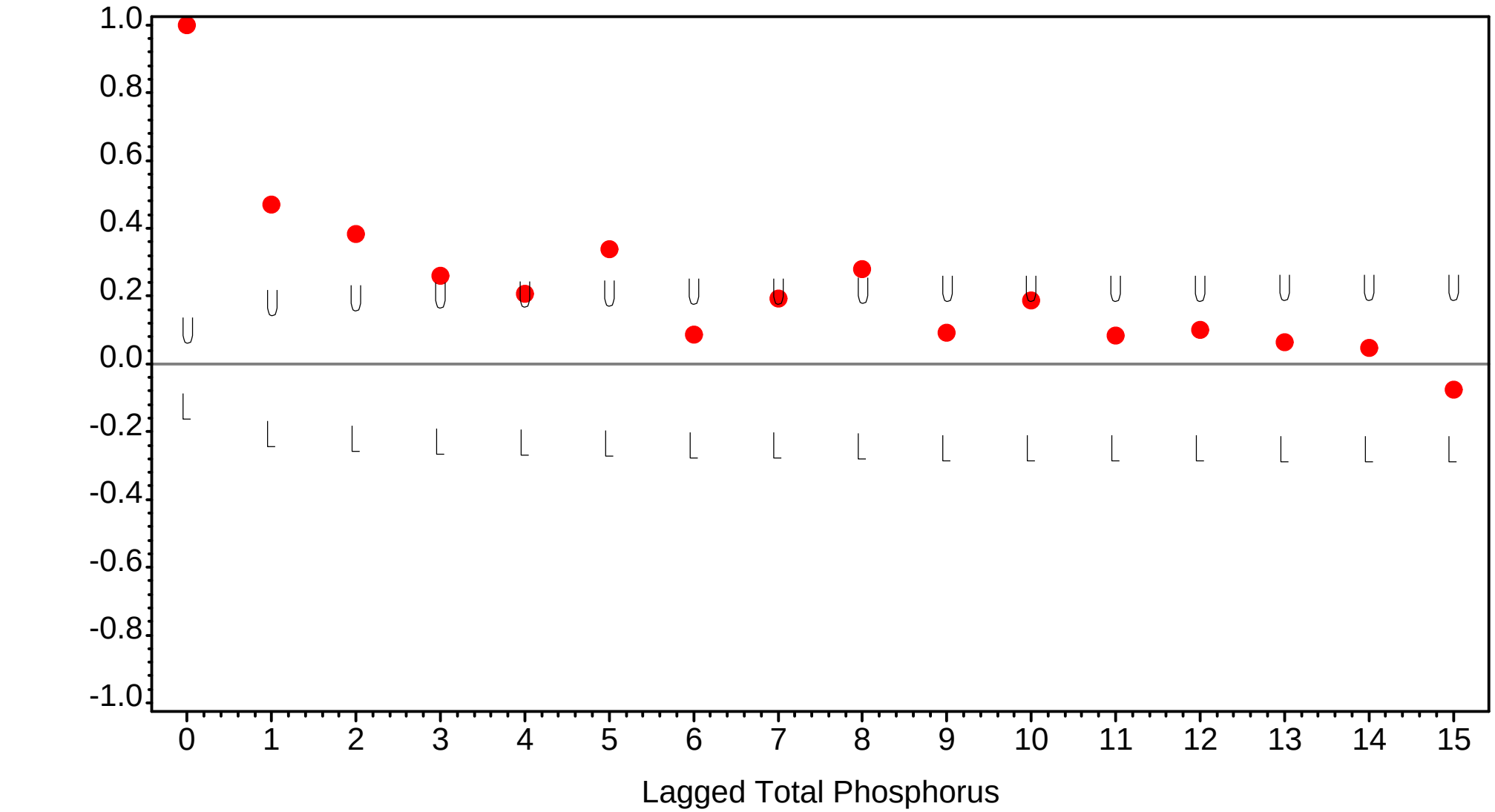


S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.471	0.096	0.192	-0.192
2	0.383	0.103	0.206	-0.206
3	0.261	0.107	0.215	-0.215
4	0.206	0.109	0.219	-0.219
5	0.337	0.111	0.221	-0.221
6	0.086	0.114	0.227	-0.227
7	0.192	0.114	0.228	-0.228
8	0.279	0.115	0.230	-0.230
9	0.093	0.117	0.234	-0.234
10	0.188	0.117	0.234	-0.234
11	0.083	0.118	0.236	-0.236
12	0.100	0.118	0.236	-0.236
13	0.065	0.119	0.237	-0.237
14	0.047	0.119	0.237	-0.237
15	-0.077	0.119	0.237	-0.237

S_21FLVEMDTR02 Trends Appendix

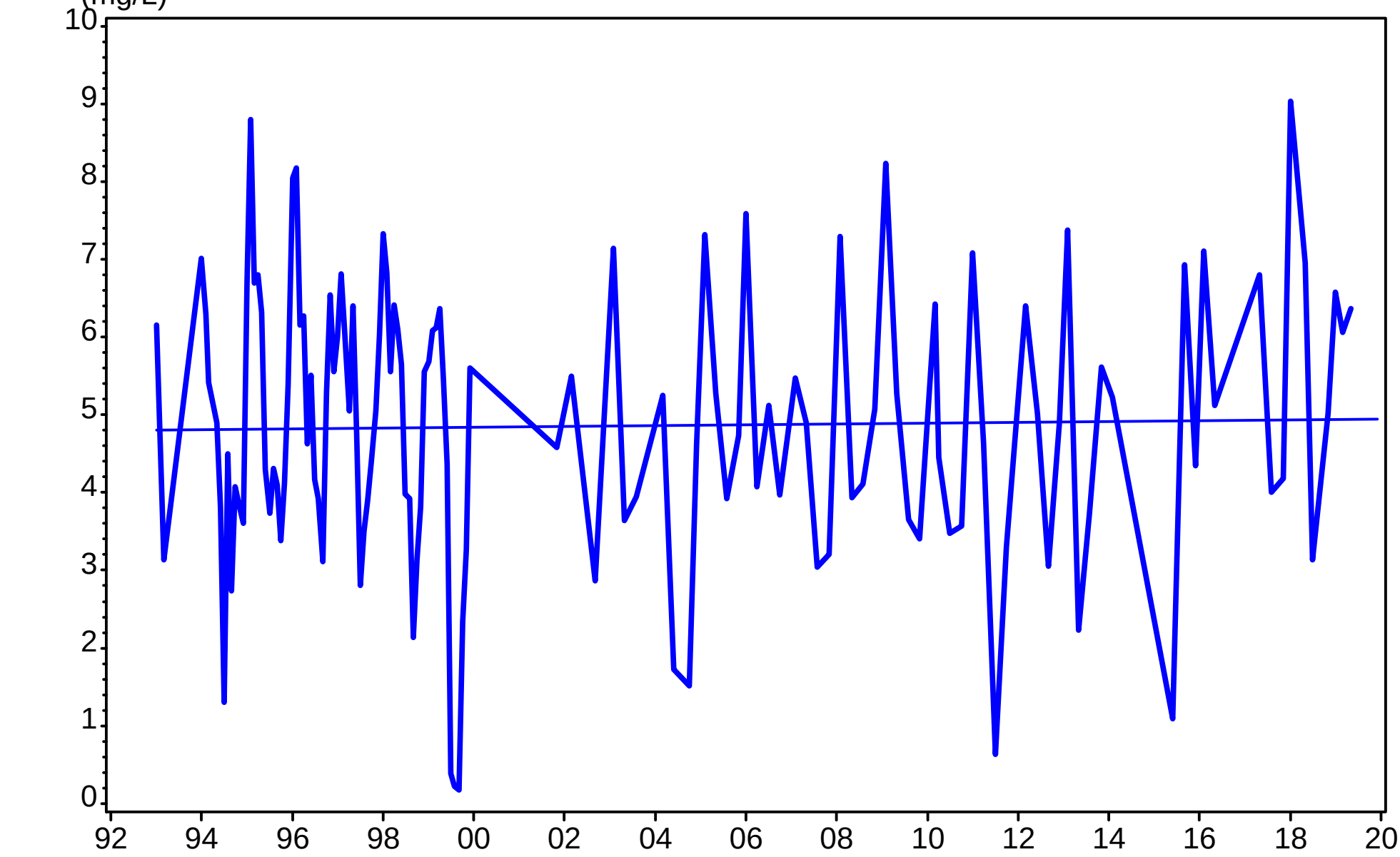
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



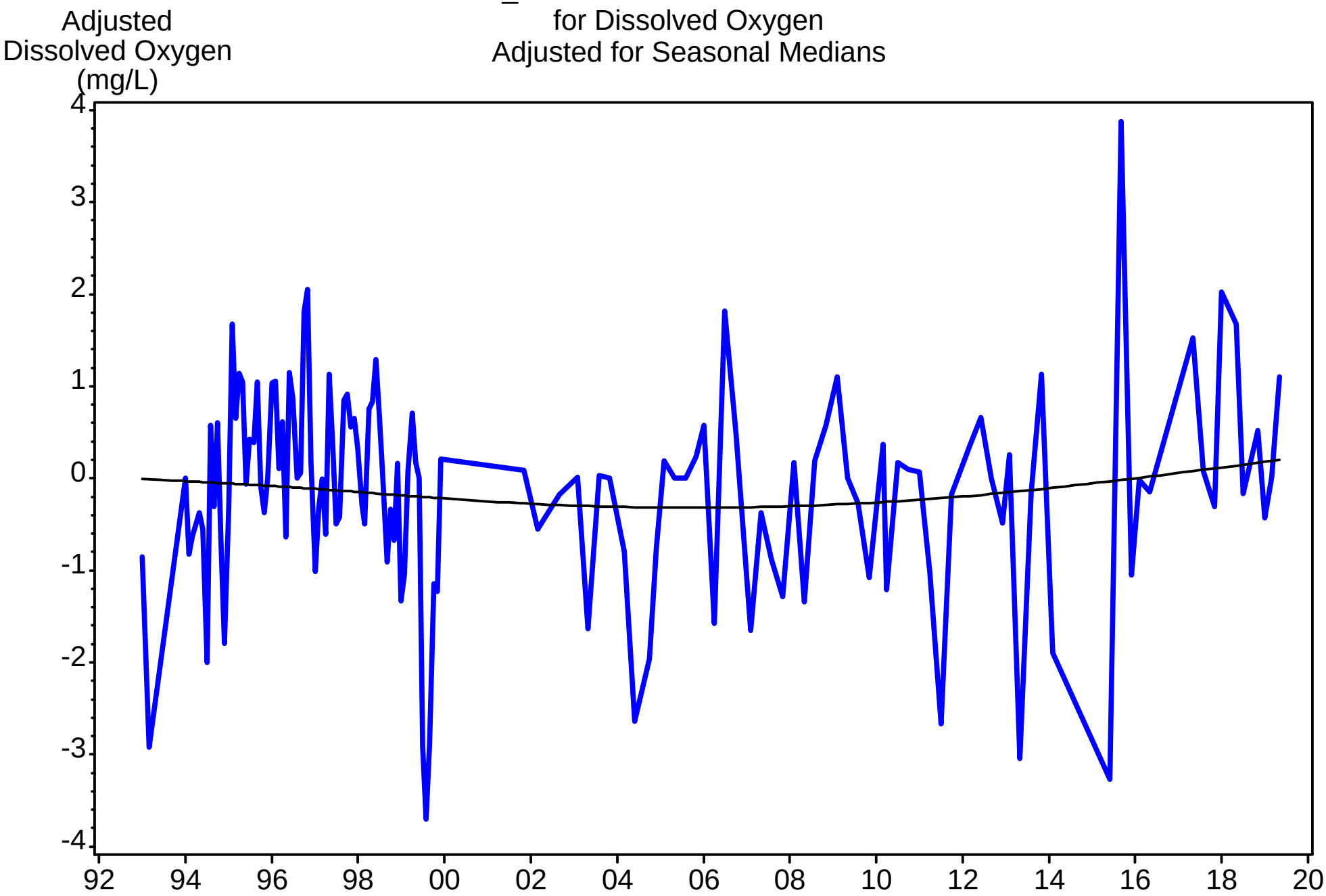
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLVEMDTR02 Trends

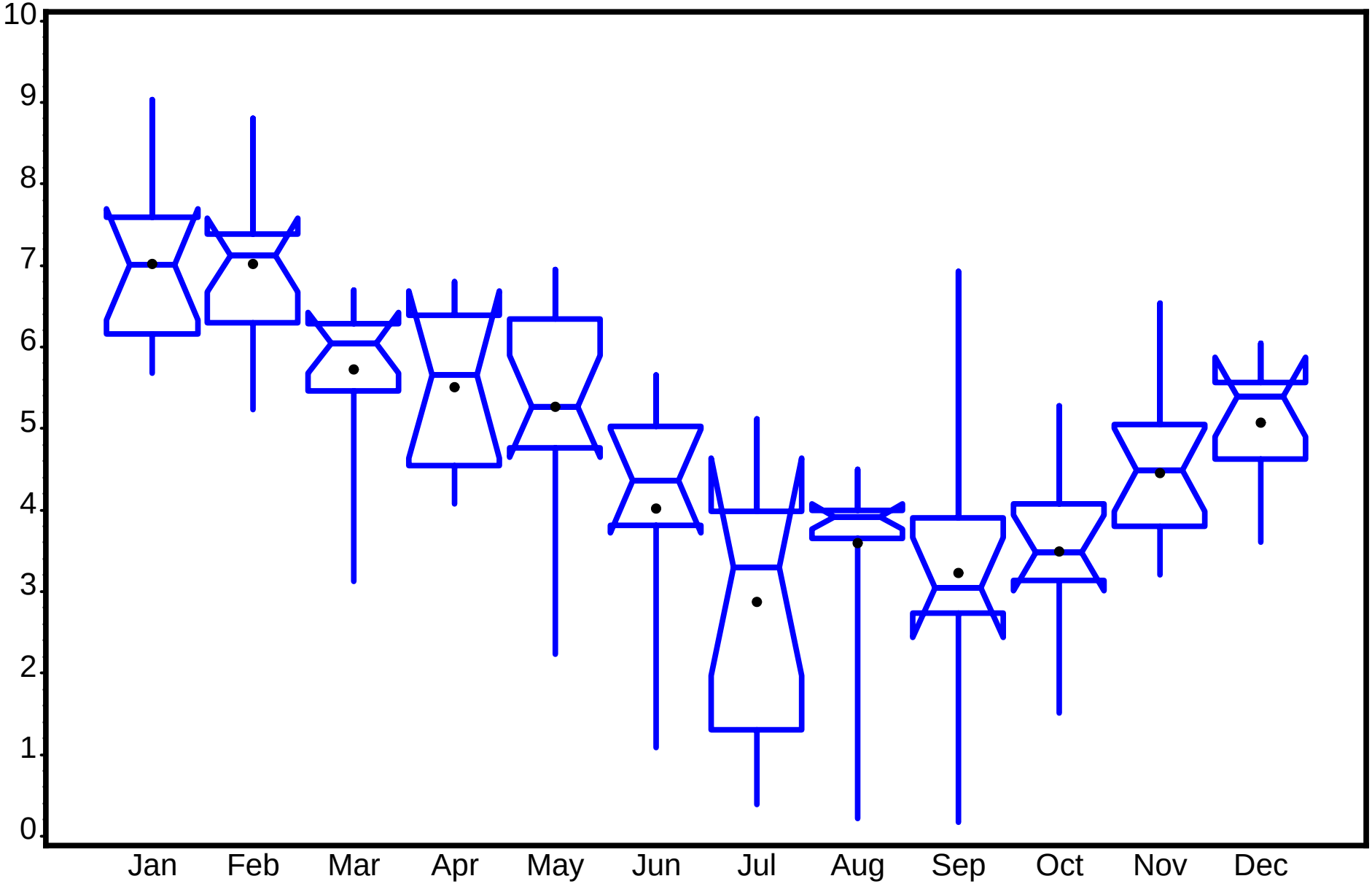


S_21FLVEMDTR02 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



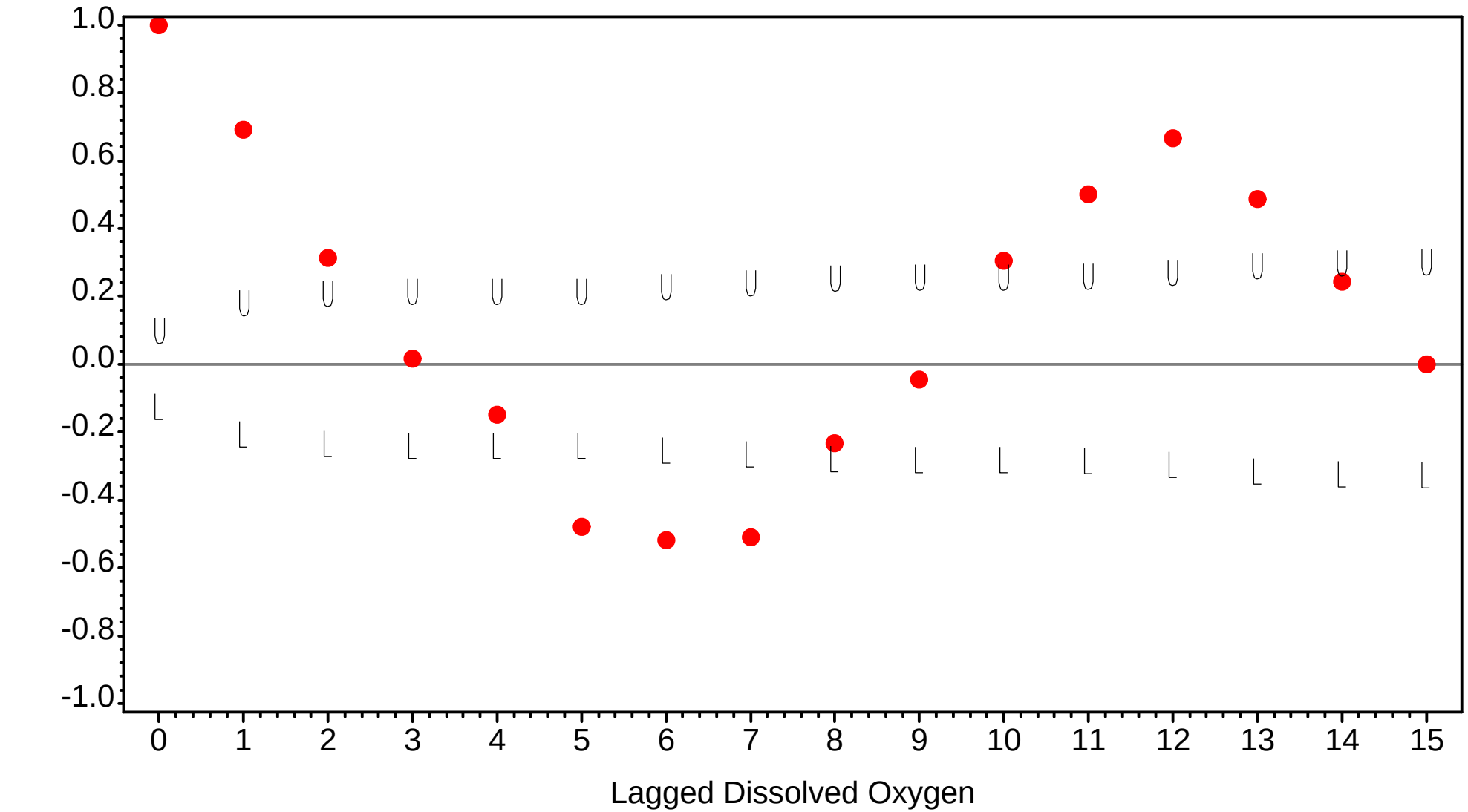
S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.692	0.096	0.192	-0.192
2	0.312	0.111	0.221	-0.221
3	0.016	0.113	0.226	-0.226
4	-0.148	0.113	0.226	-0.226
5	-0.478	0.114	0.228	-0.228
6	-0.518	0.120	0.240	-0.240
7	-0.511	0.127	0.253	-0.253
8	-0.233	0.133	0.266	-0.266
9	-0.045	0.134	0.268	-0.268
10	0.305	0.134	0.268	-0.268
11	0.501	0.136	0.272	-0.272
12	0.666	0.142	0.284	-0.284
13	0.488	0.151	0.302	-0.302
14	0.244	0.156	0.312	-0.312
15	0.000	0.157	0.314	-0.314

S_21FLVEMDTR02 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

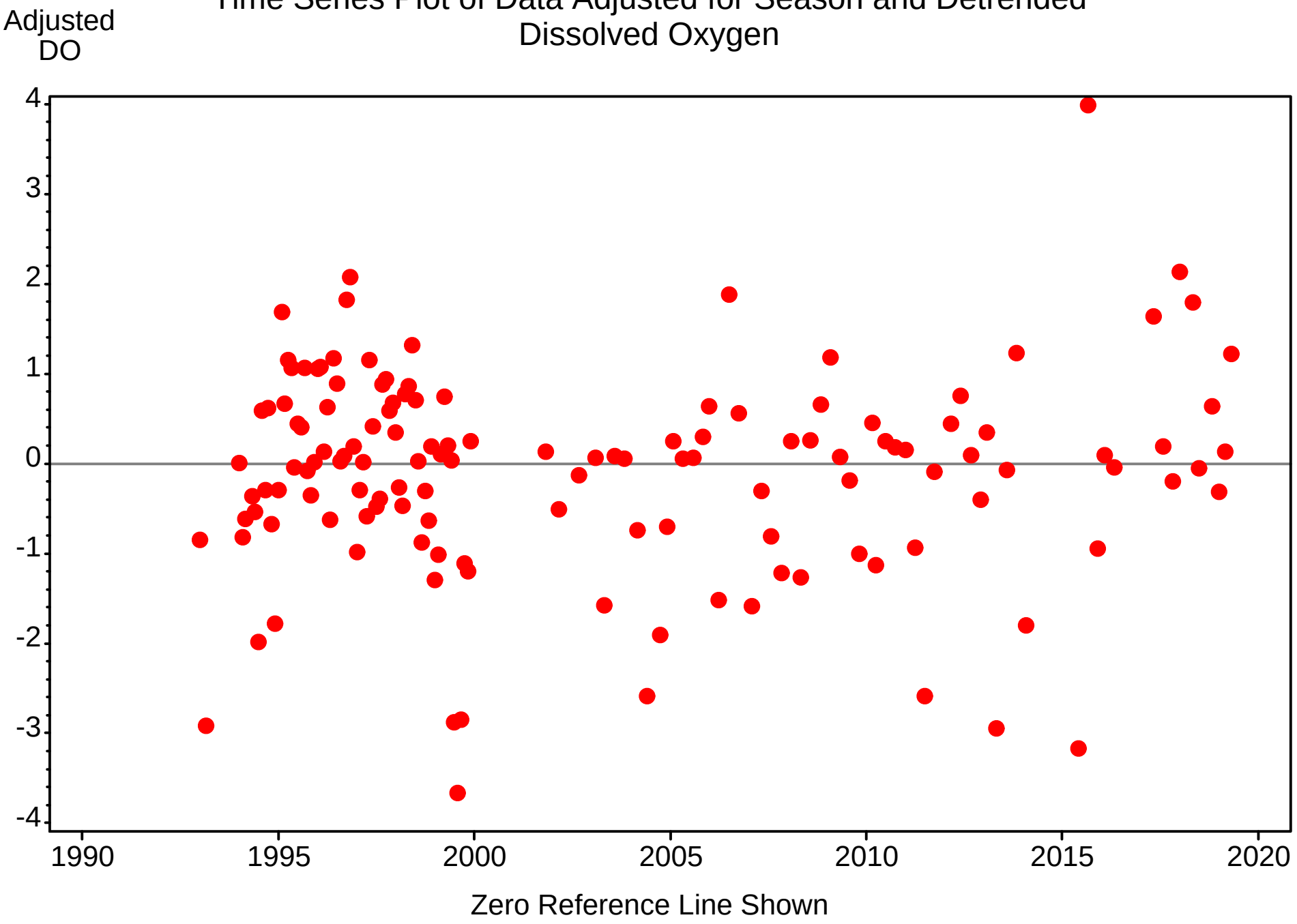
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.022	0.763	0.834	-.004

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.021592	0.76267	0.83430	-.00434783

S_21FLVEMDTR02 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

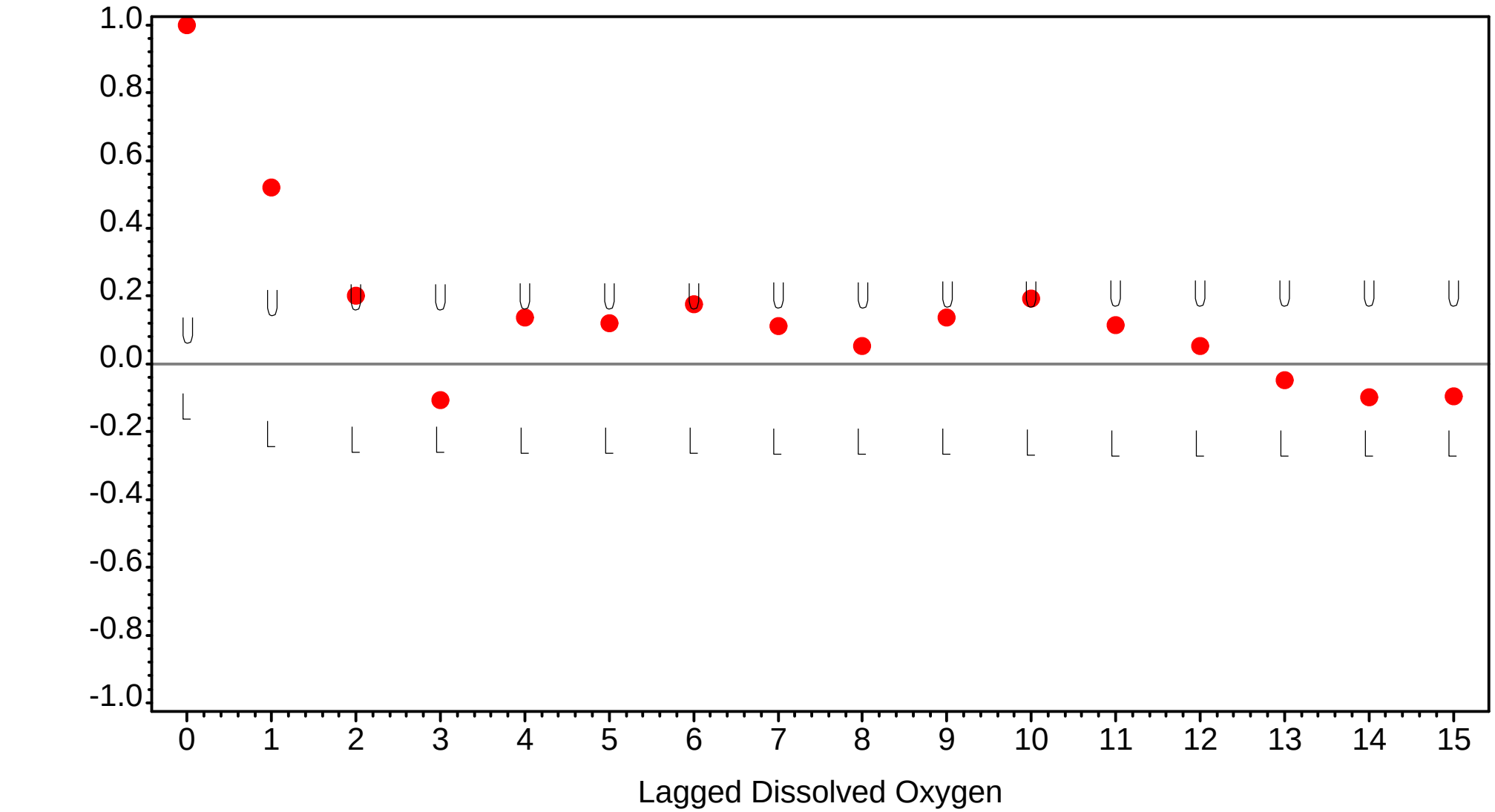


S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.520	0.096	0.192	-0.192
2	0.202	0.105	0.209	-0.209
3	-0.107	0.106	0.211	-0.211
4	0.136	0.106	0.212	-0.212
5	0.120	0.107	0.213	-0.213
6	0.175	0.107	0.214	-0.214
7	0.111	0.108	0.216	-0.216
8	0.054	0.108	0.216	-0.216
9	0.138	0.108	0.217	-0.217
10	0.194	0.109	0.218	-0.218
11	0.113	0.110	0.220	-0.220
12	0.054	0.110	0.221	-0.221
13	-0.048	0.110	0.221	-0.221
14	-0.098	0.110	0.221	-0.221
15	-0.095	0.111	0.221	-0.221

S_21FLVEMDTR02 Trends Appendix

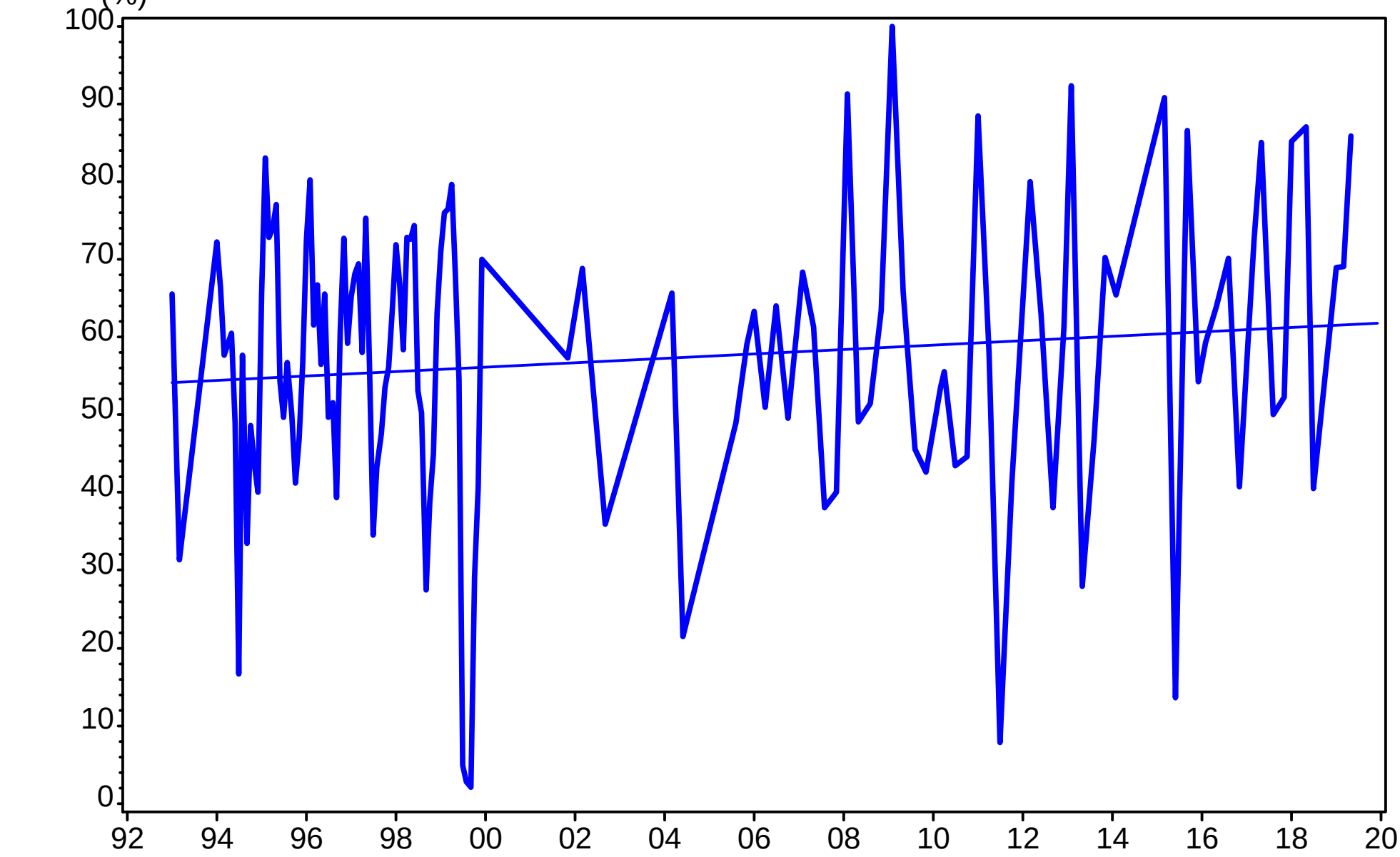
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

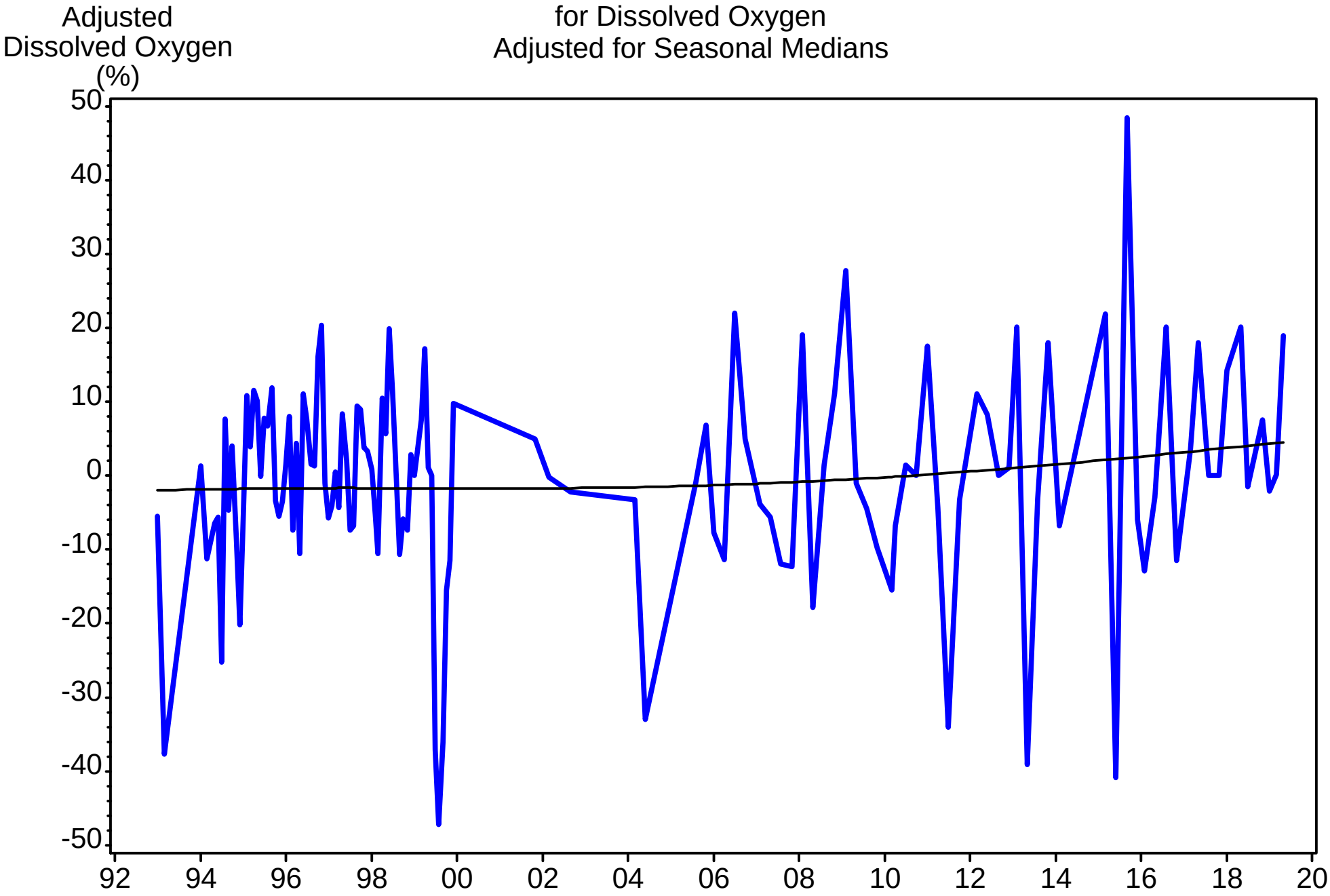
S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLVEMDTR02 Trends

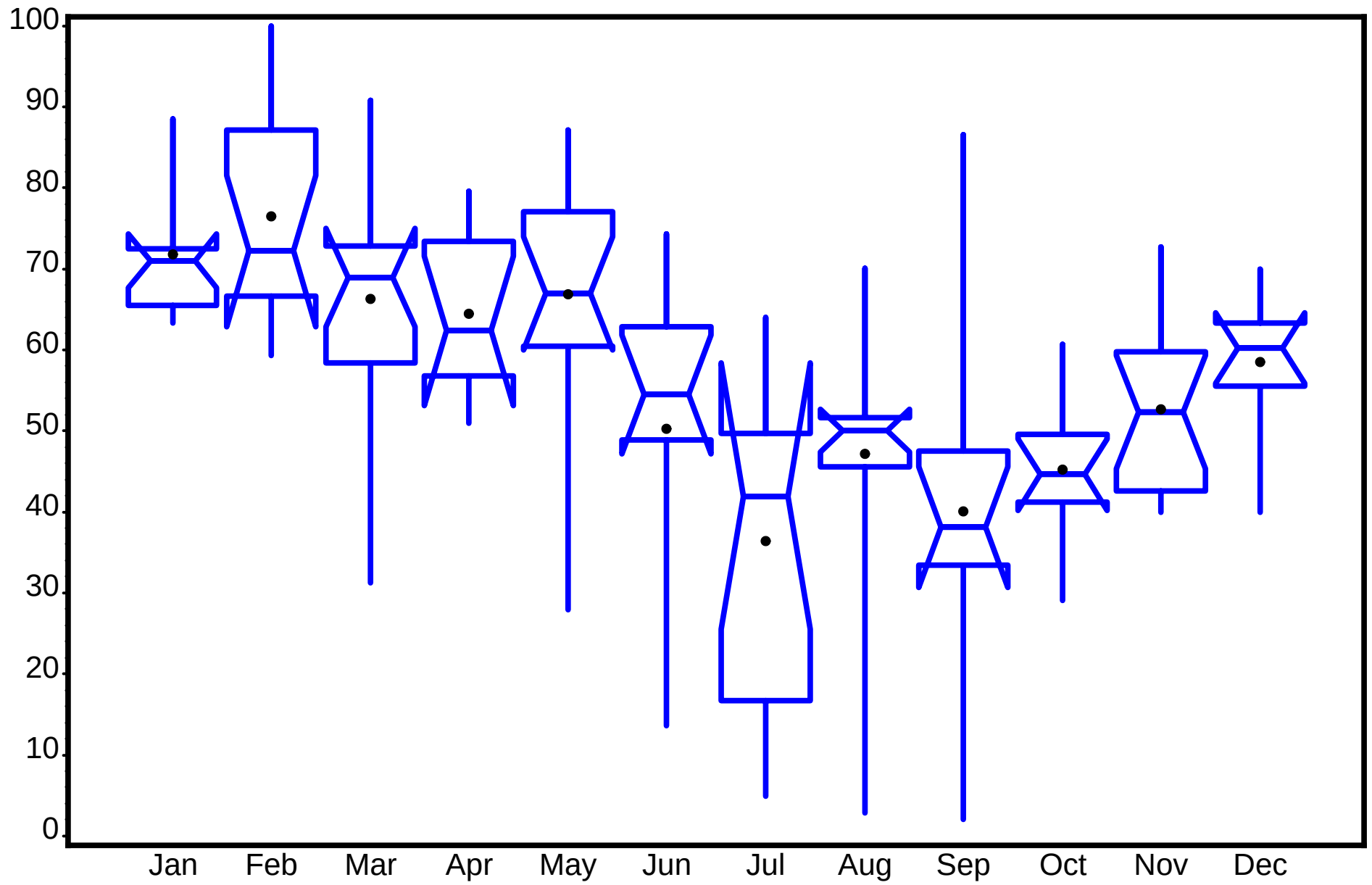
S_21FLVEMDTR02 Time Series
for Dissolved Oxygen
Adjusted for Seasonal Medians



S_21FLVEMDTR02 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



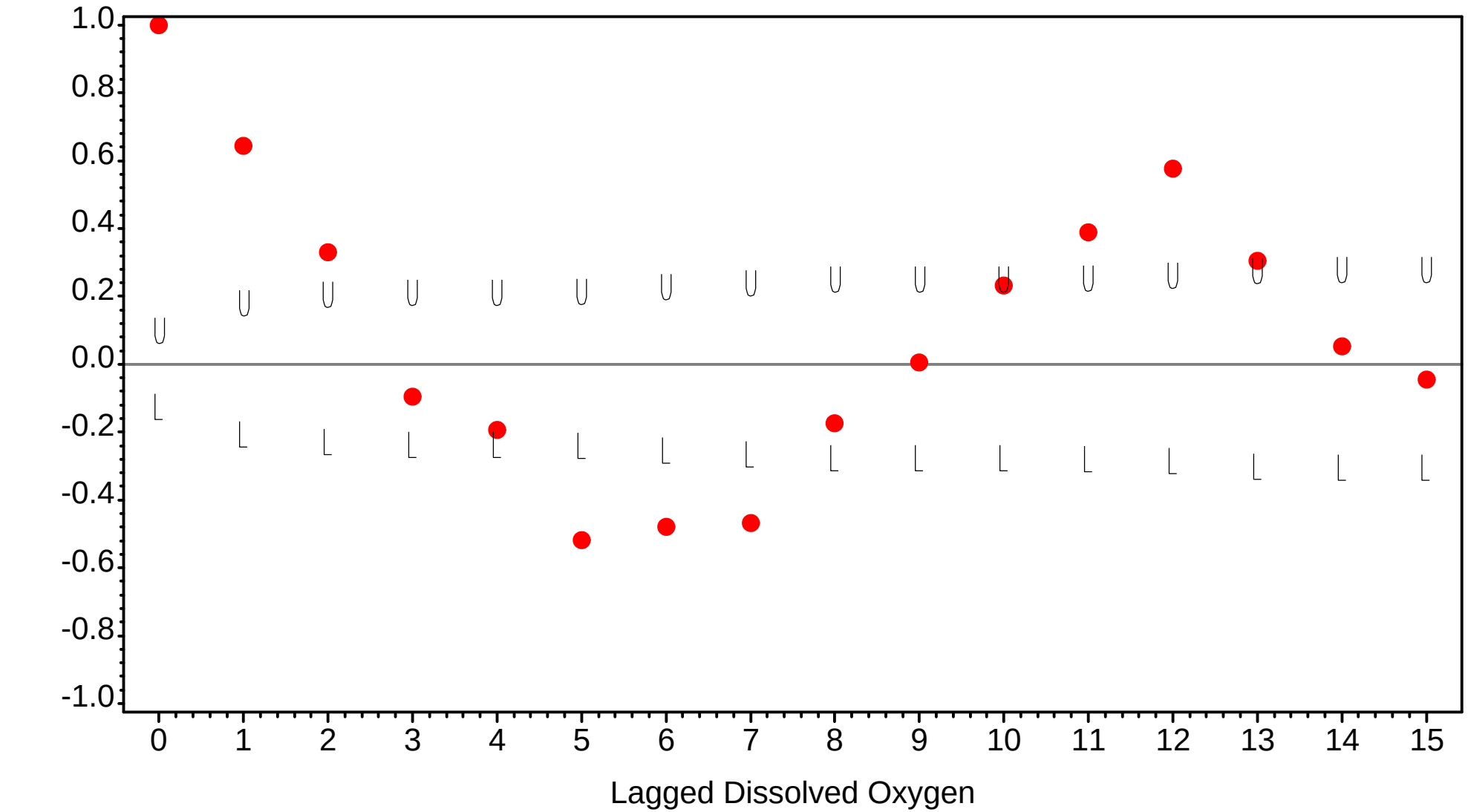
S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.644	0.096	0.192	-0.192
2	0.329	0.109	0.217	-0.217
3	-0.095	0.112	0.223	-0.223
4	-0.193	0.112	0.224	-0.224
5	-0.518	0.113	0.226	-0.226
6	-0.479	0.120	0.240	-0.240
7	-0.468	0.126	0.252	-0.252
8	-0.175	0.131	0.262	-0.262
9	0.006	0.132	0.264	-0.264
10	0.232	0.132	0.264	-0.264
11	0.390	0.133	0.266	-0.266
12	0.575	0.137	0.273	-0.273
13	0.305	0.144	0.288	-0.288
14	0.052	0.146	0.292	-0.292
15	-0.044	0.146	0.292	-0.292

S_21FLVEMDTR02 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

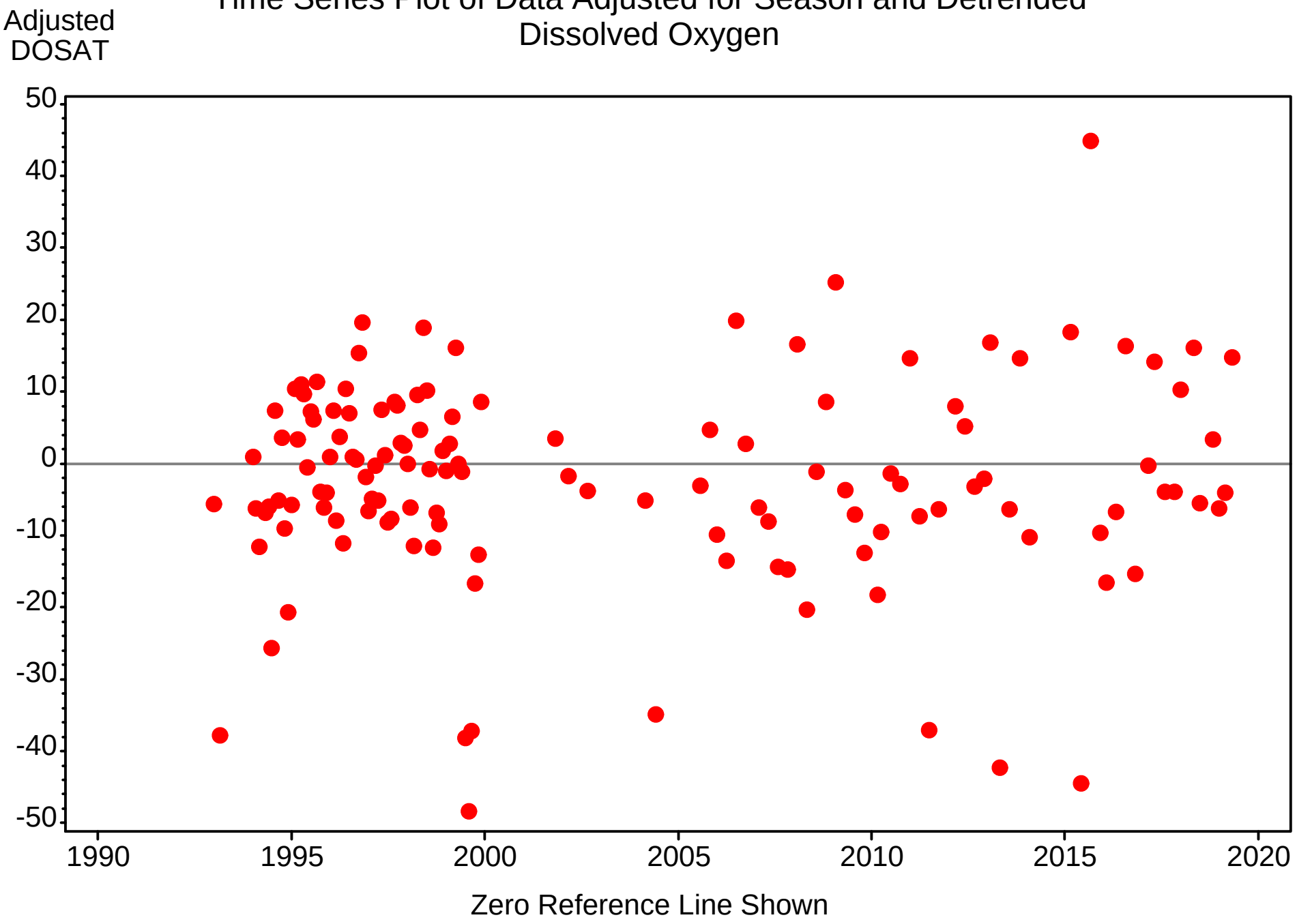
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.049	0.487	0.514	0.154

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.048921	0.48687	0.51426	0.15375

S_21FLVEMDTR02 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

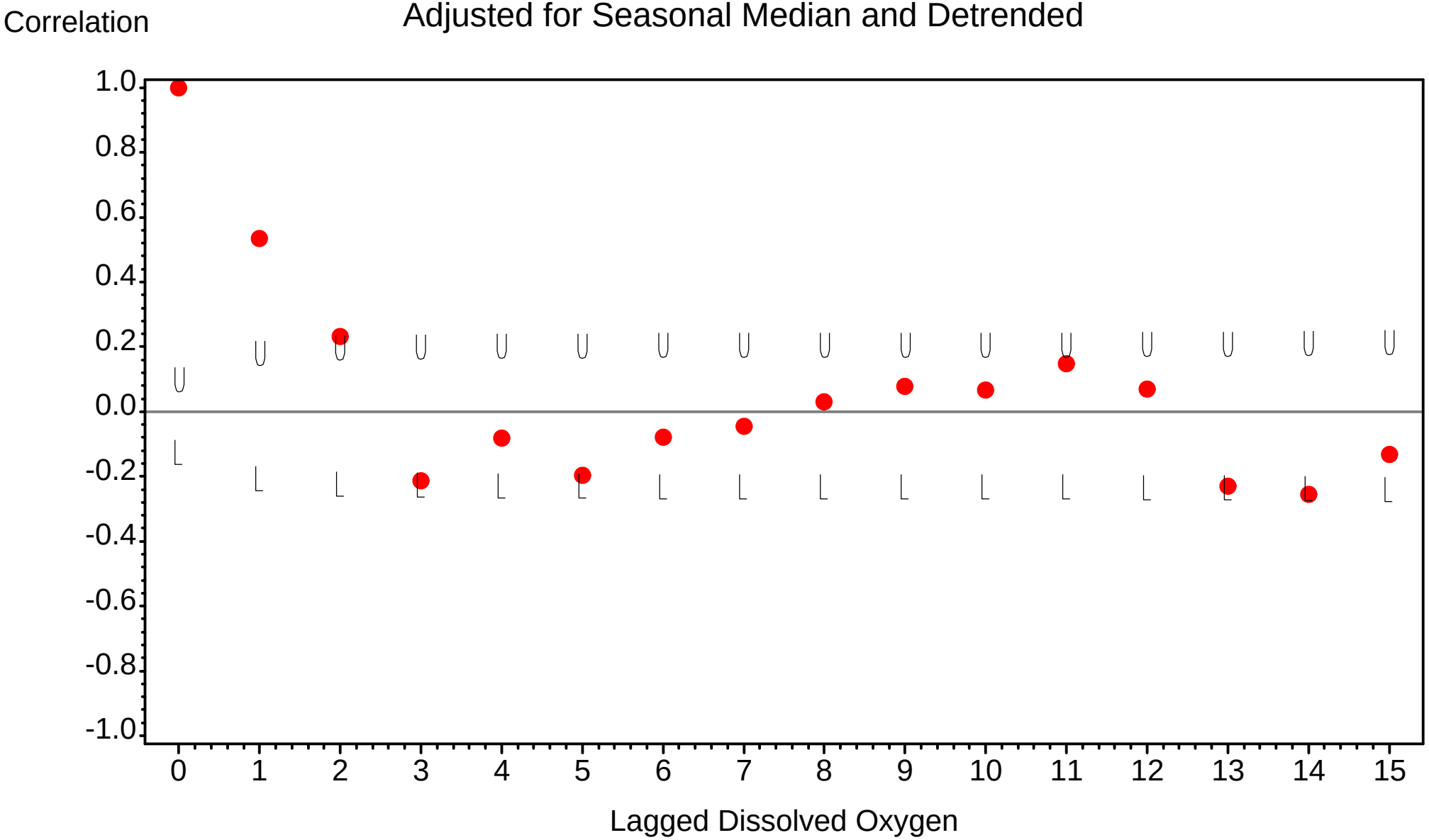


S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.535	0.096	0.192	-0.192
2	0.233	0.105	0.210	-0.210
3	-0.212	0.107	0.213	-0.213
4	-0.081	0.108	0.216	-0.216
5	-0.197	0.108	0.216	-0.216
6	-0.078	0.109	0.218	-0.218
7	-0.045	0.109	0.219	-0.219
8	0.031	0.109	0.219	-0.219
9	0.078	0.109	0.219	-0.219
10	0.067	0.110	0.219	-0.219
11	0.149	0.110	0.219	-0.219
12	0.070	0.110	0.221	-0.221
13	-0.230	0.110	0.221	-0.221
14	-0.256	0.112	0.224	-0.224
15	-0.131	0.114	0.227	-0.227

S_21FLVEMDTR02 Trends Appendix

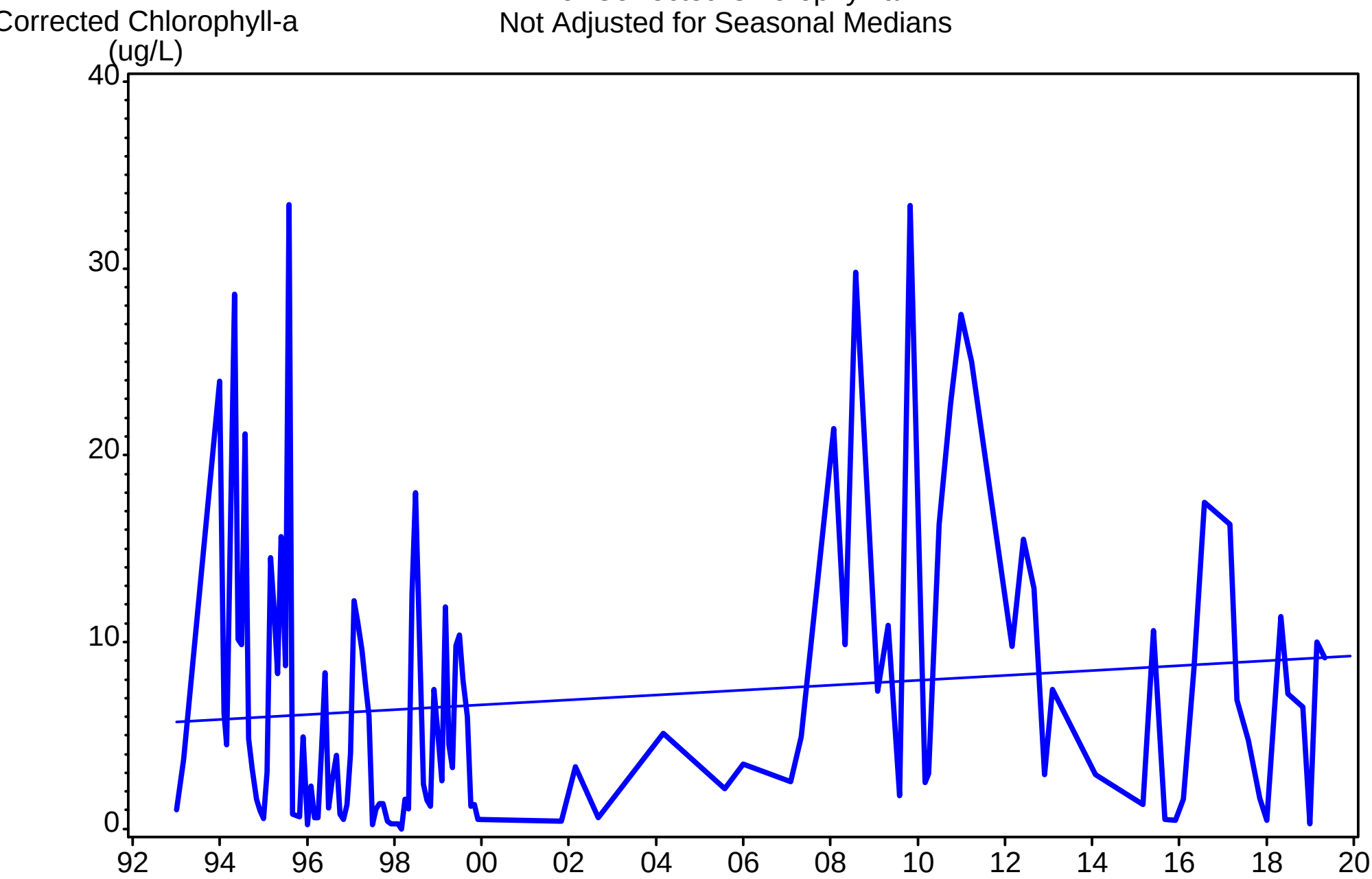
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

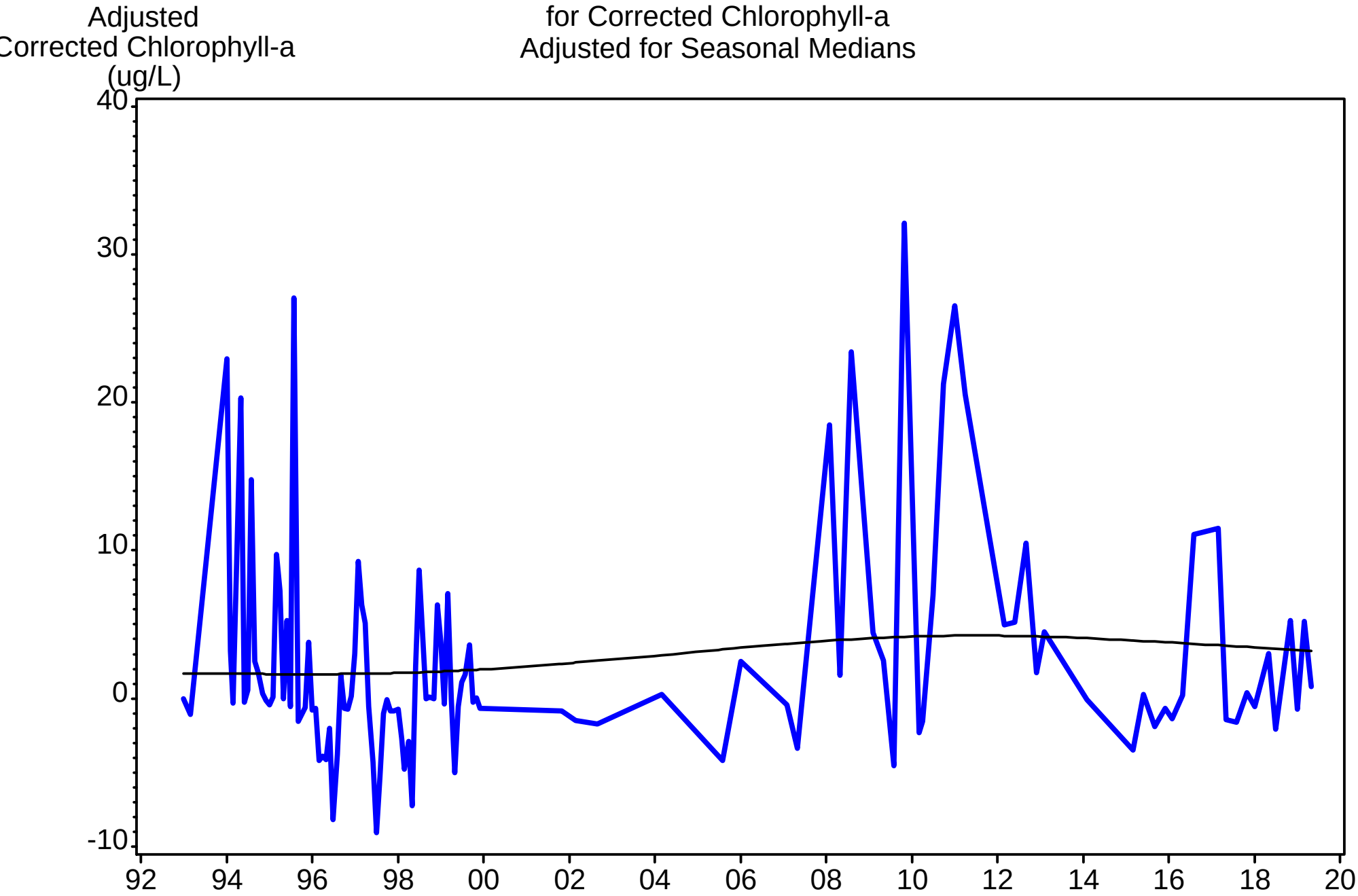
S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Time Series
for Corrected Chlorophyll-a
Adjusted for Seasonal Medians

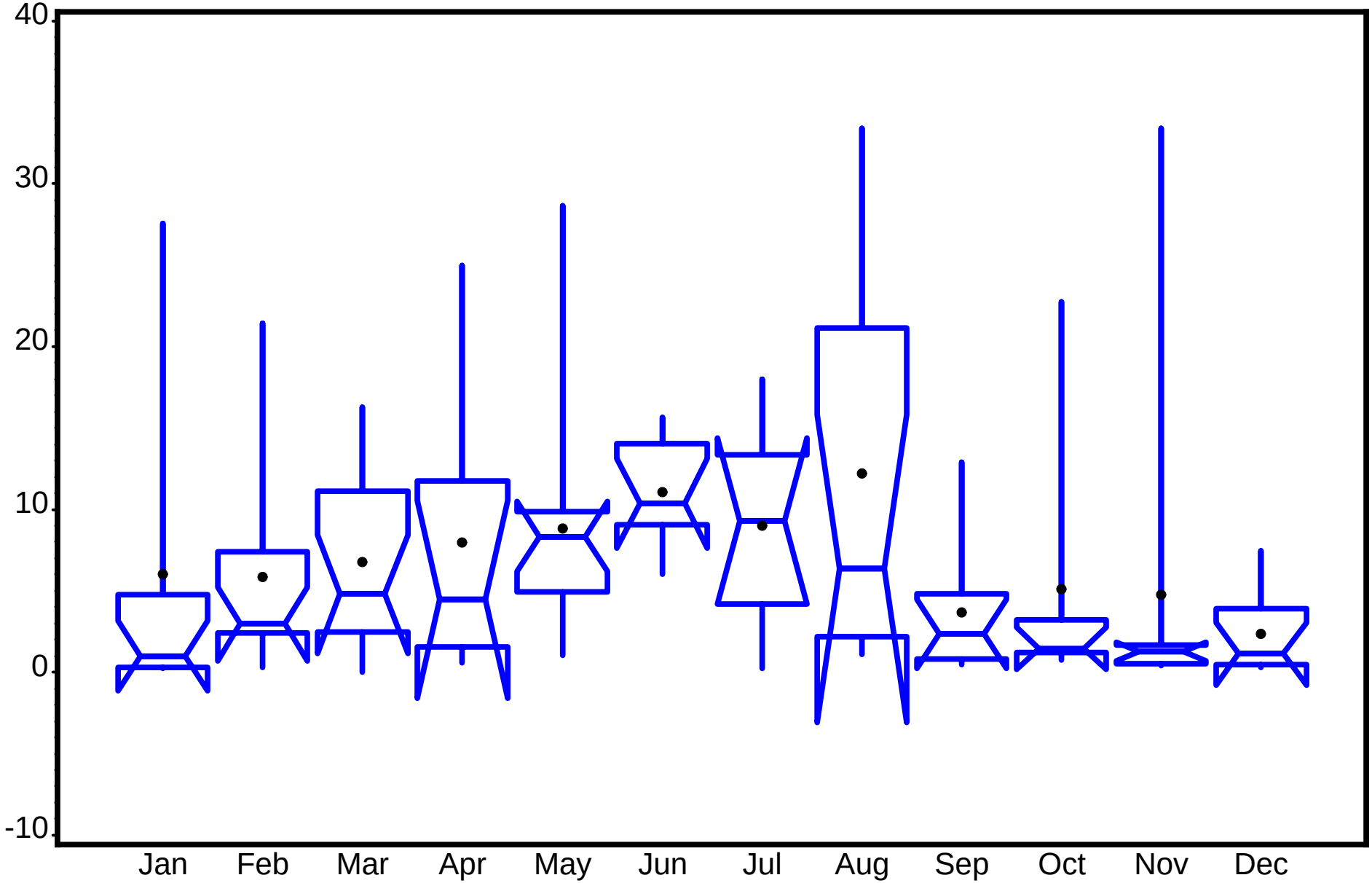


S_21FLVEMDTR02 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a

(ug/L)

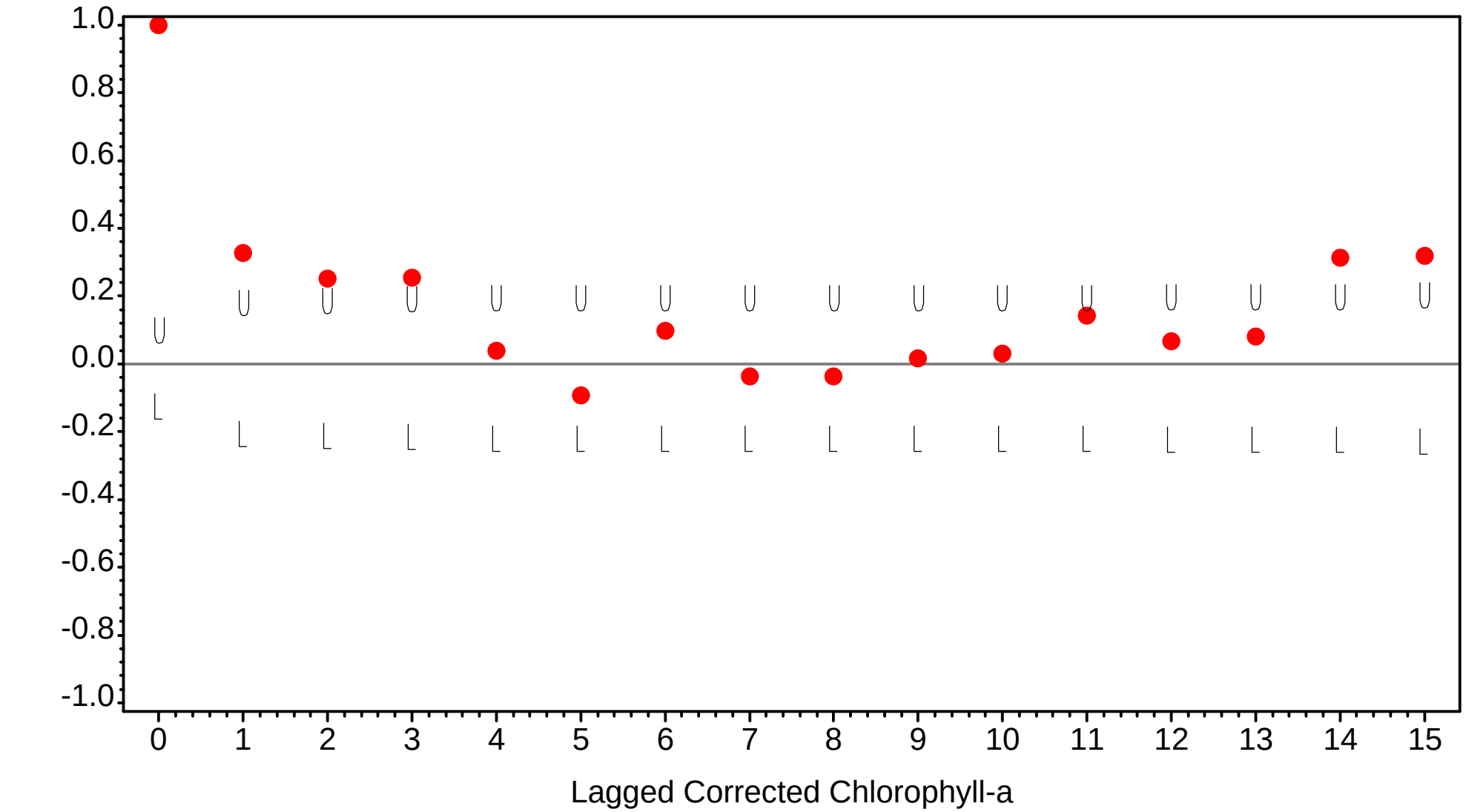


S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.326	0.096	0.192	-0.192
2	0.251	0.100	0.199	-0.199
3	0.253	0.102	0.203	-0.203
4	0.039	0.103	0.207	-0.207
5	-0.094	0.103	0.207	-0.207
6	0.098	0.104	0.207	-0.207
7	-0.037	0.104	0.208	-0.208
8	-0.038	0.104	0.208	-0.208
9	0.015	0.104	0.208	-0.208
10	0.031	0.104	0.208	-0.208
11	0.143	0.104	0.208	-0.208
12	0.068	0.105	0.209	-0.209
13	0.080	0.105	0.210	-0.210
14	0.312	0.105	0.210	-0.210
15	0.319	0.108	0.216	-0.216

S_21FLVEMDTR02 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

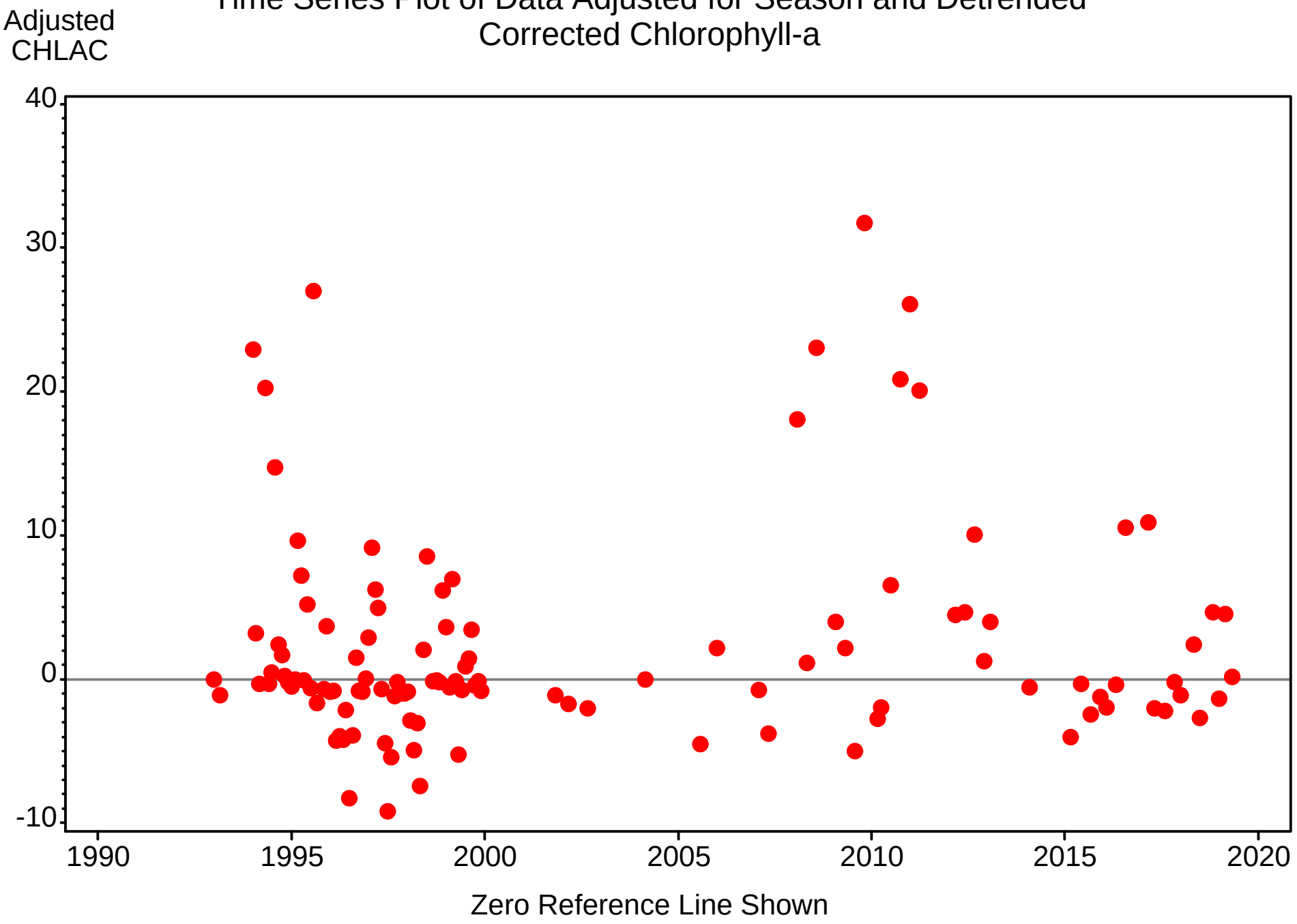
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.049	0.531	0.675	0.023

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.048508	0.53077	0.67536	0.023318

S_21FLVEMDTR02 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a

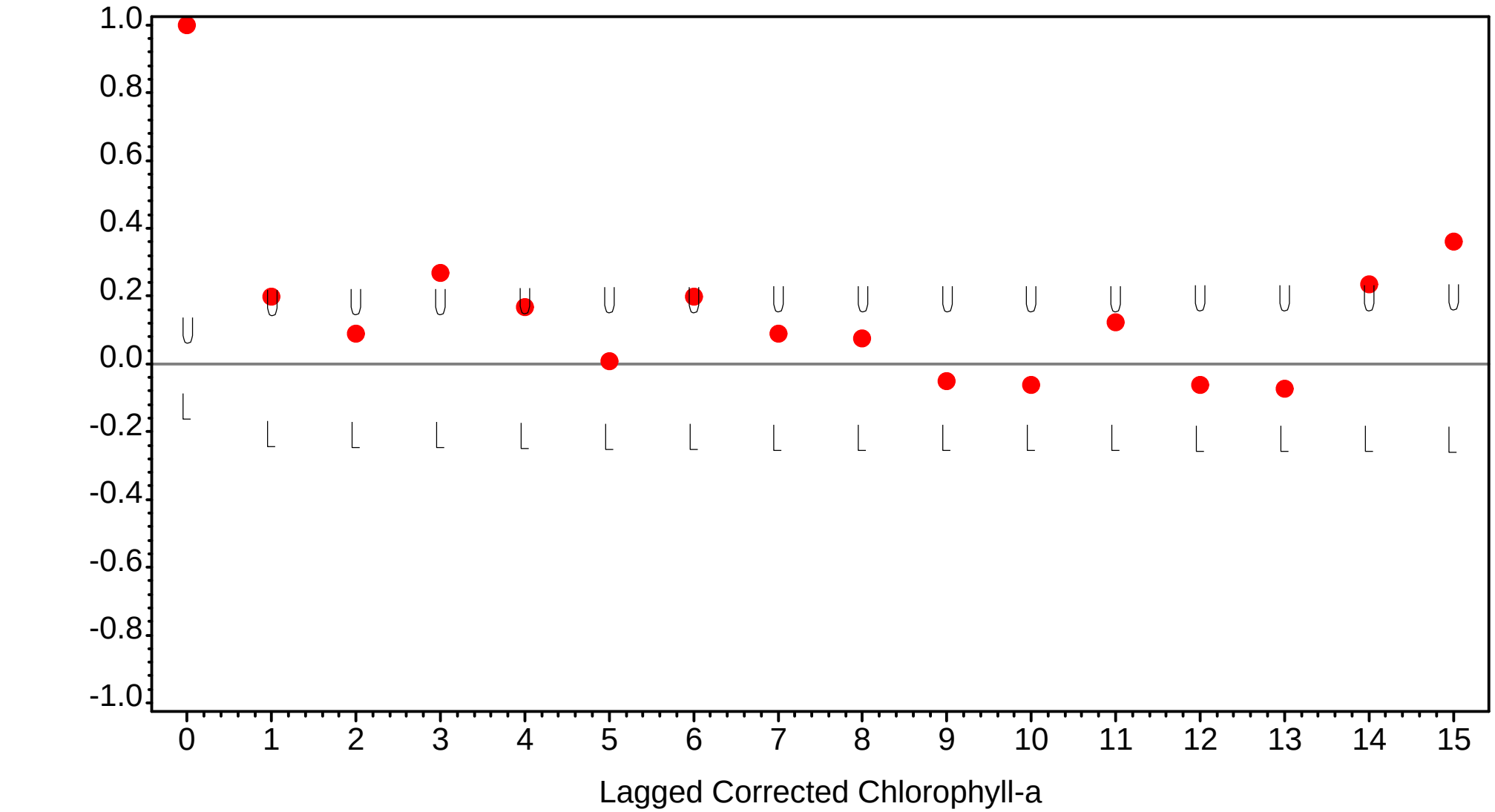


S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.197	0.096	0.192	-0.192
2	0.089	0.097	0.195	-0.195
3	0.267	0.098	0.195	-0.195
4	0.168	0.100	0.200	-0.200
5	0.009	0.101	0.202	-0.202
6	0.197	0.101	0.202	-0.202
7	0.088	0.102	0.204	-0.204
8	0.075	0.102	0.204	-0.204
9	-0.050	0.102	0.205	-0.205
10	-0.062	0.102	0.205	-0.205
11	0.123	0.103	0.205	-0.205
12	-0.063	0.103	0.206	-0.206
13	-0.074	0.103	0.206	-0.206
14	0.236	0.103	0.207	-0.207
15	0.360	0.105	0.210	-0.210

S_21FLVEMDTR02 Trends Appendix

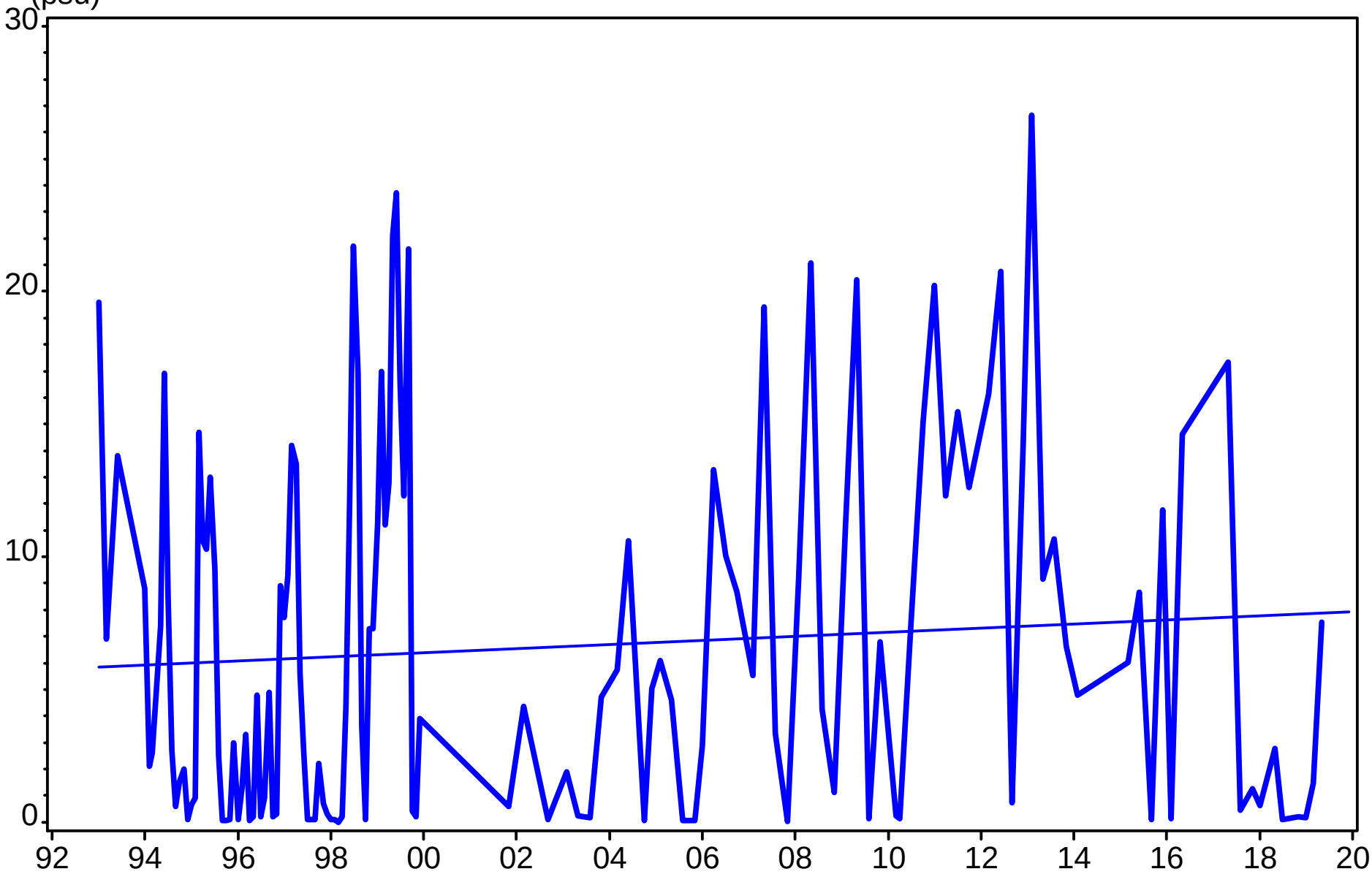
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



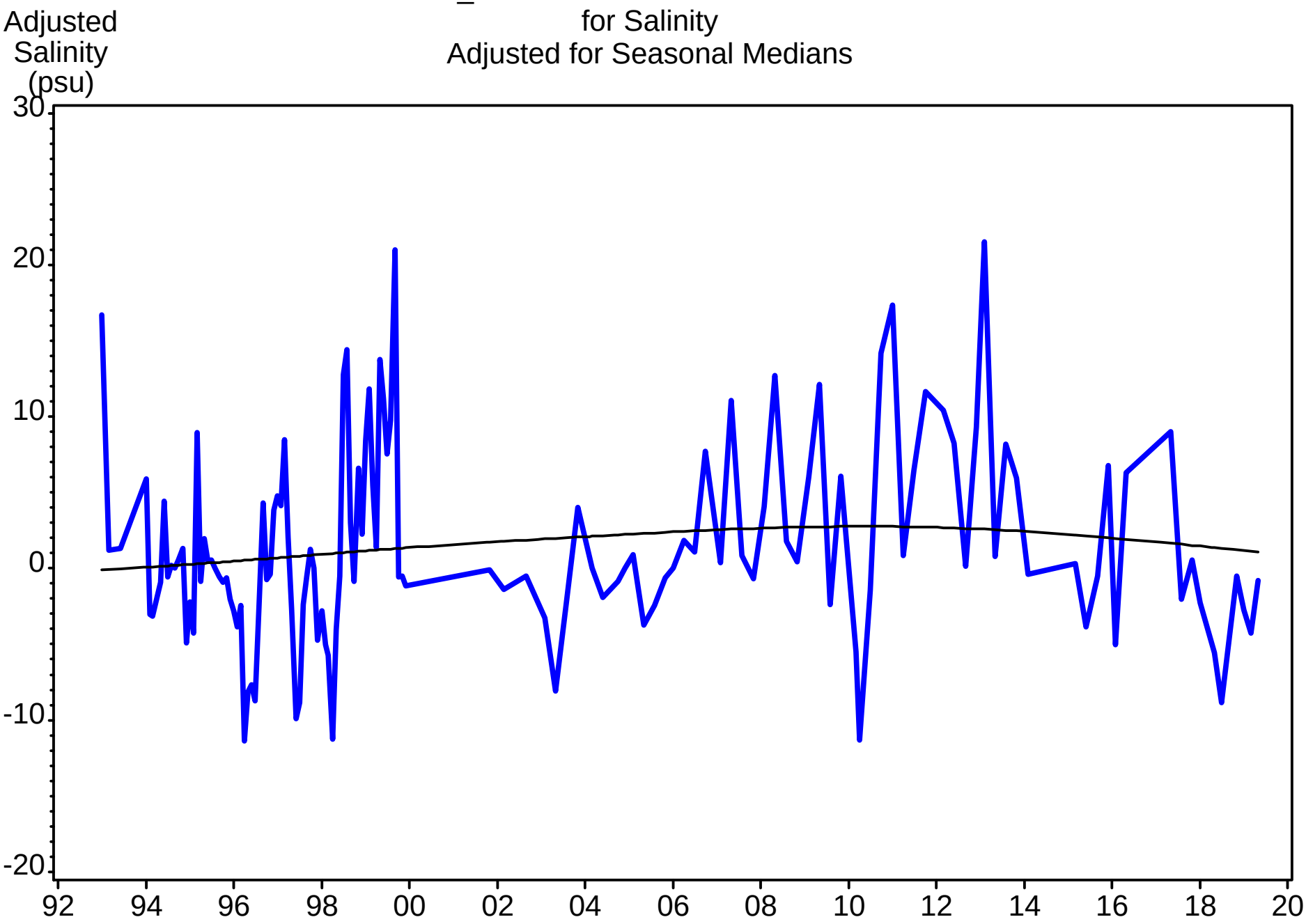
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



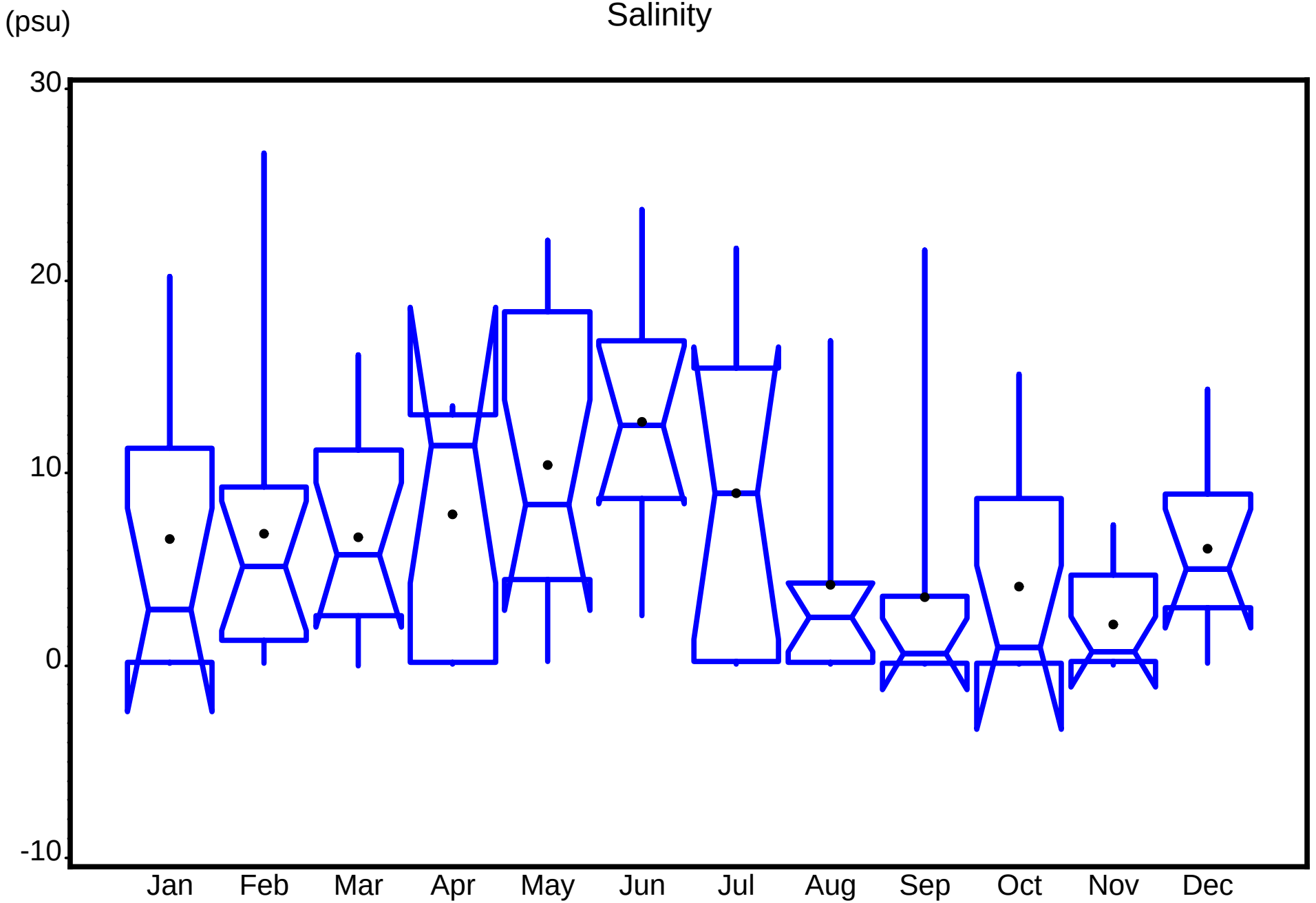
S_21FLVEMDTR02 Trends



S_21FLVEMDTR02 Trends Appendix

Seasonal Univariate Statistics

Salinity



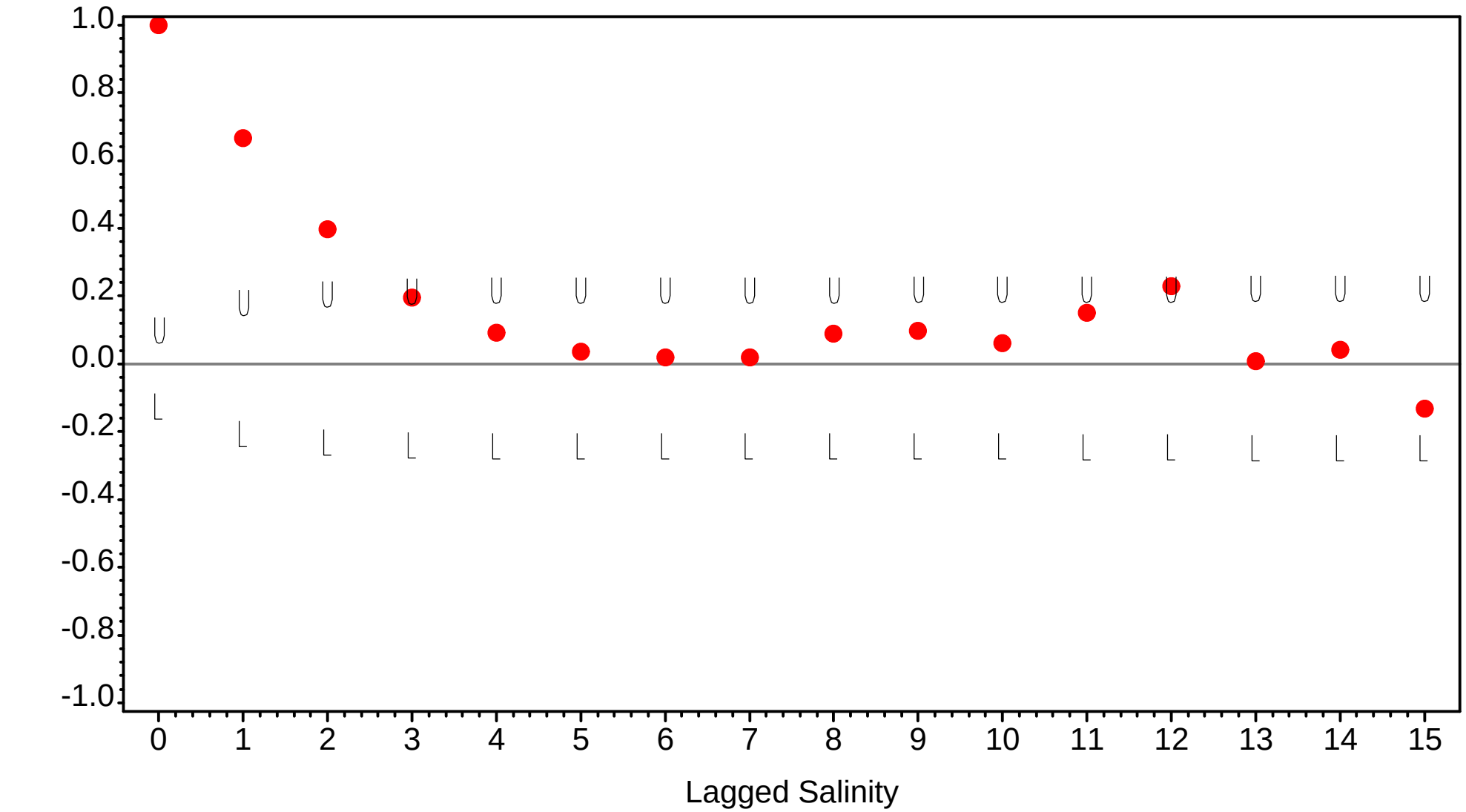
S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.667	0.096	0.192	-0.192
2	0.396	0.110	0.219	-0.219
3	0.196	0.114	0.228	-0.228
4	0.092	0.115	0.230	-0.230
5	0.036	0.115	0.230	-0.230
6	0.018	0.115	0.230	-0.230
7	0.020	0.115	0.230	-0.230
8	0.089	0.115	0.230	-0.230
9	0.097	0.115	0.231	-0.231
10	0.062	0.116	0.231	-0.231
11	0.150	0.116	0.232	-0.232
12	0.229	0.116	0.233	-0.233
13	0.009	0.118	0.236	-0.236
14	0.041	0.118	0.236	-0.236
15	-0.133	0.118	0.236	-0.236

S_21FLVEMDTR02 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.07	0.304	0.474	0.025

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.069554	0.30398	0.47368	0.02525

S_21FLVEMDTR02 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



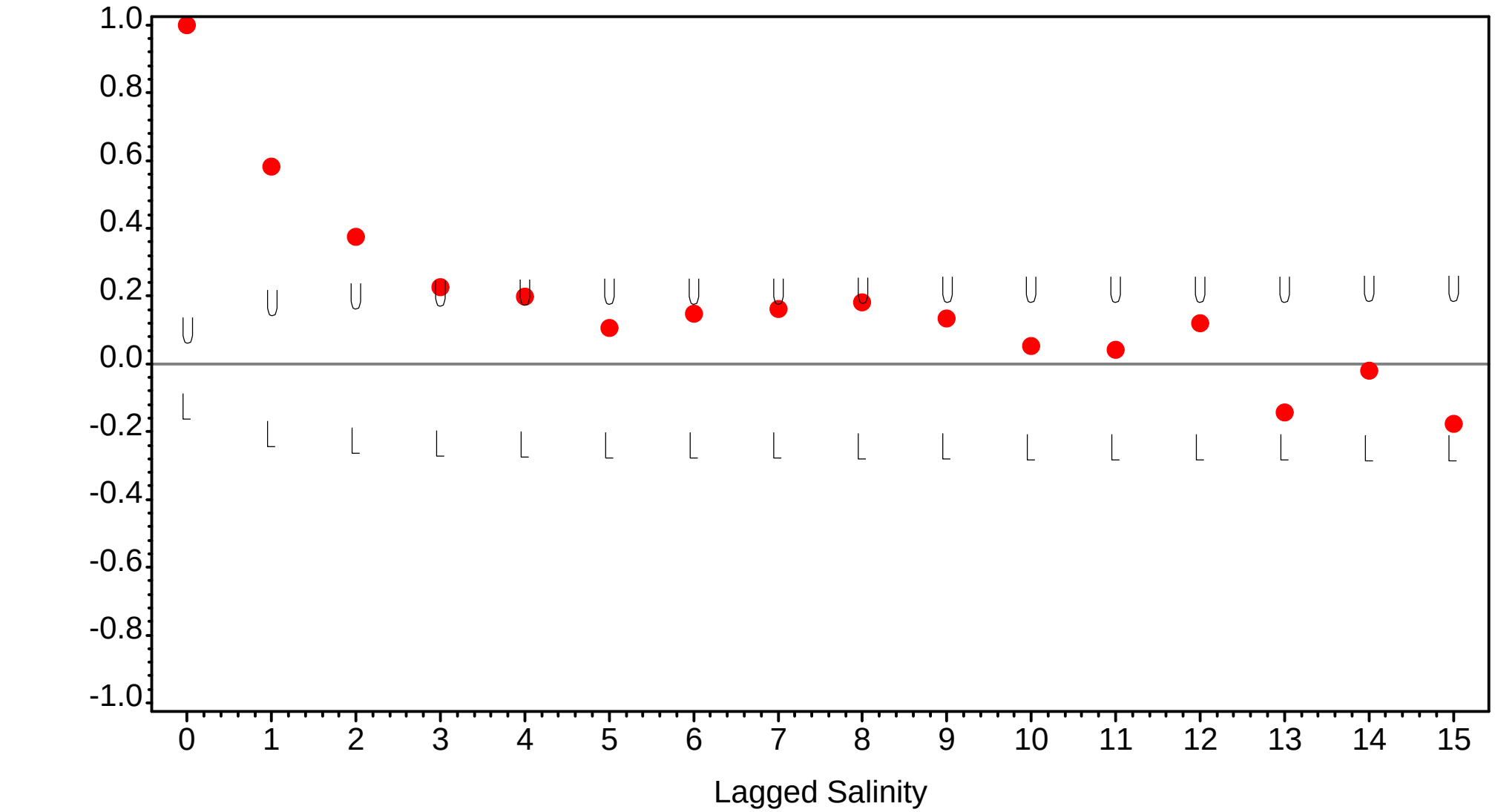
S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.581	0.096	0.192	-0.192
2	0.375	0.107	0.213	-0.213
3	0.227	0.111	0.221	-0.221
4	0.199	0.112	0.224	-0.224
5	0.107	0.113	0.226	-0.226
6	0.149	0.113	0.227	-0.227
7	0.162	0.114	0.228	-0.228
8	0.181	0.115	0.229	-0.229
9	0.133	0.116	0.231	-0.231
10	0.054	0.116	0.232	-0.232
11	0.041	0.116	0.232	-0.232
12	0.121	0.116	0.232	-0.232
13	-0.143	0.117	0.233	-0.233
14	-0.019	0.117	0.234	-0.234
15	-0.178	0.117	0.234	-0.234

S_21FLVEMDTR02 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

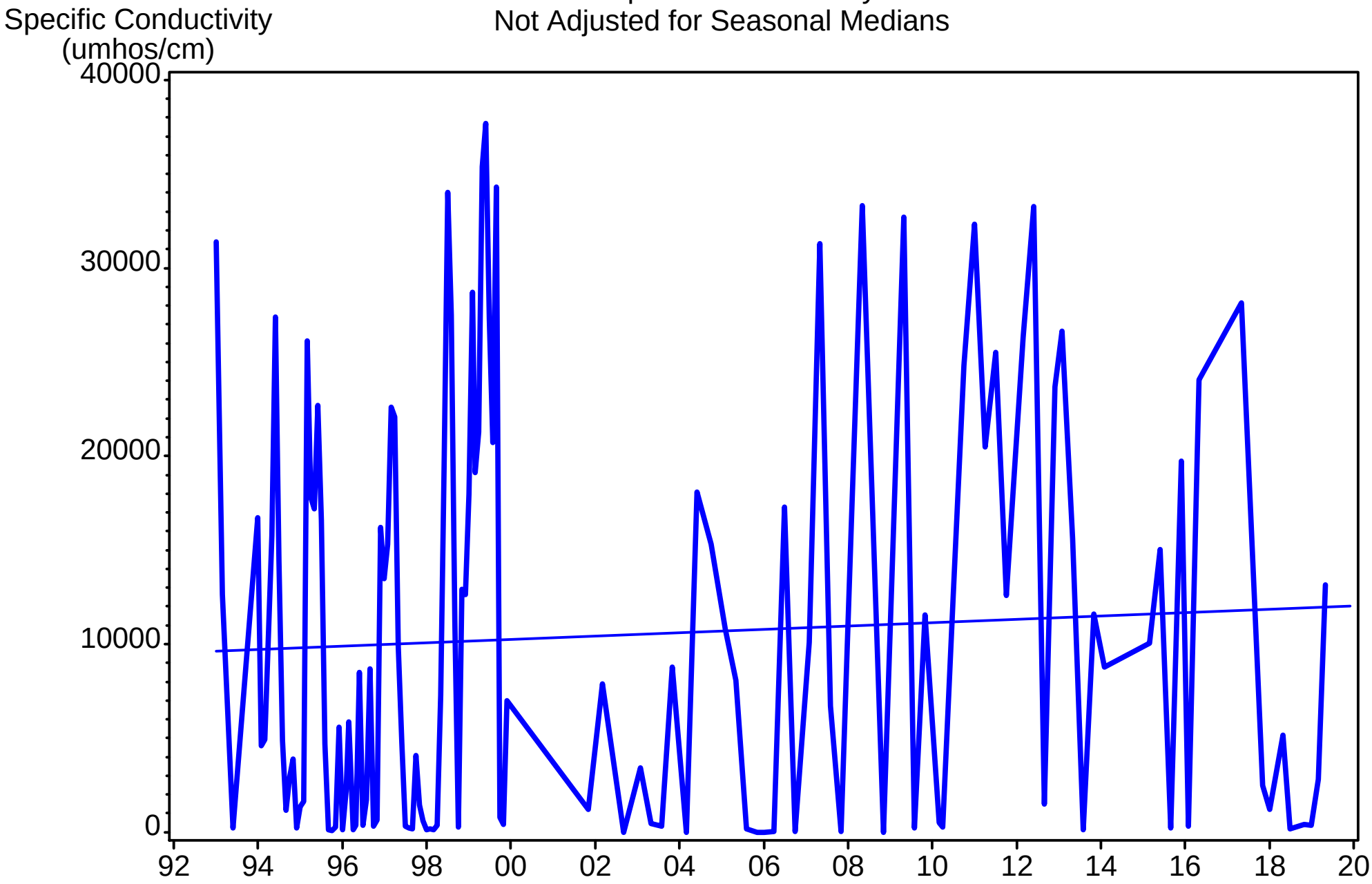


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

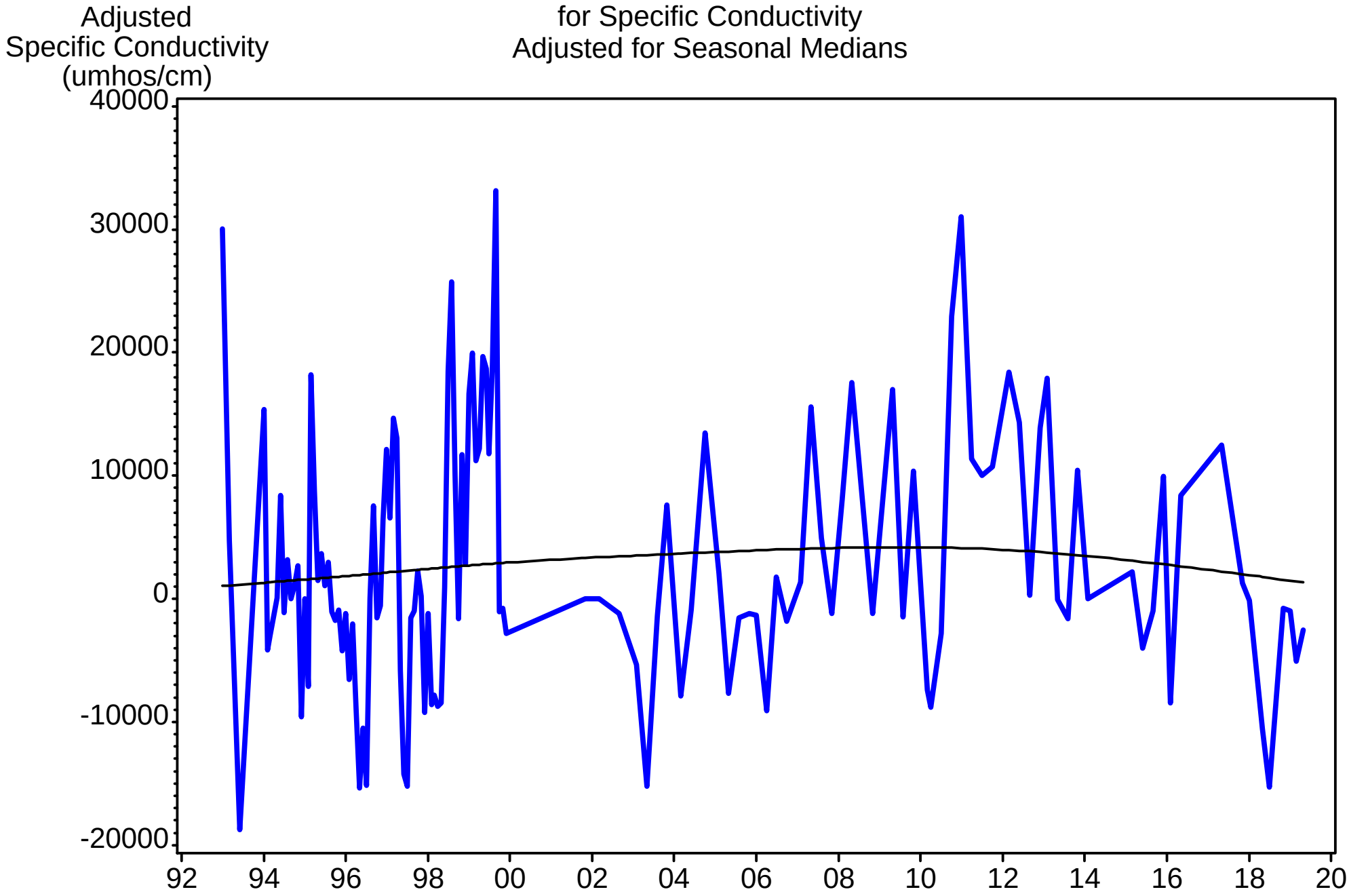
S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Time Series
for Specific Conductivity
Adjusted for Seasonal Medians

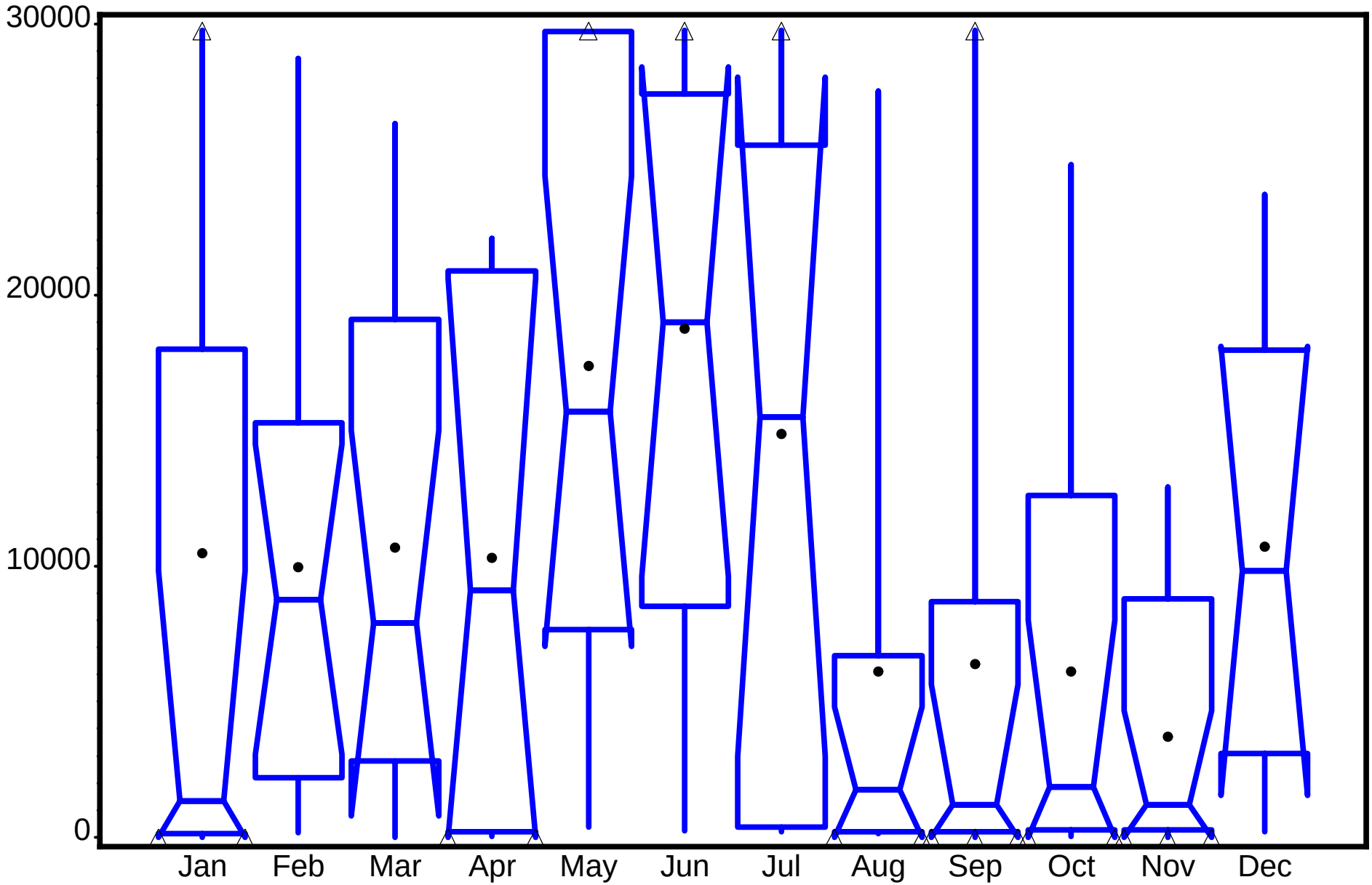


S_21FLVEMDTR02 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



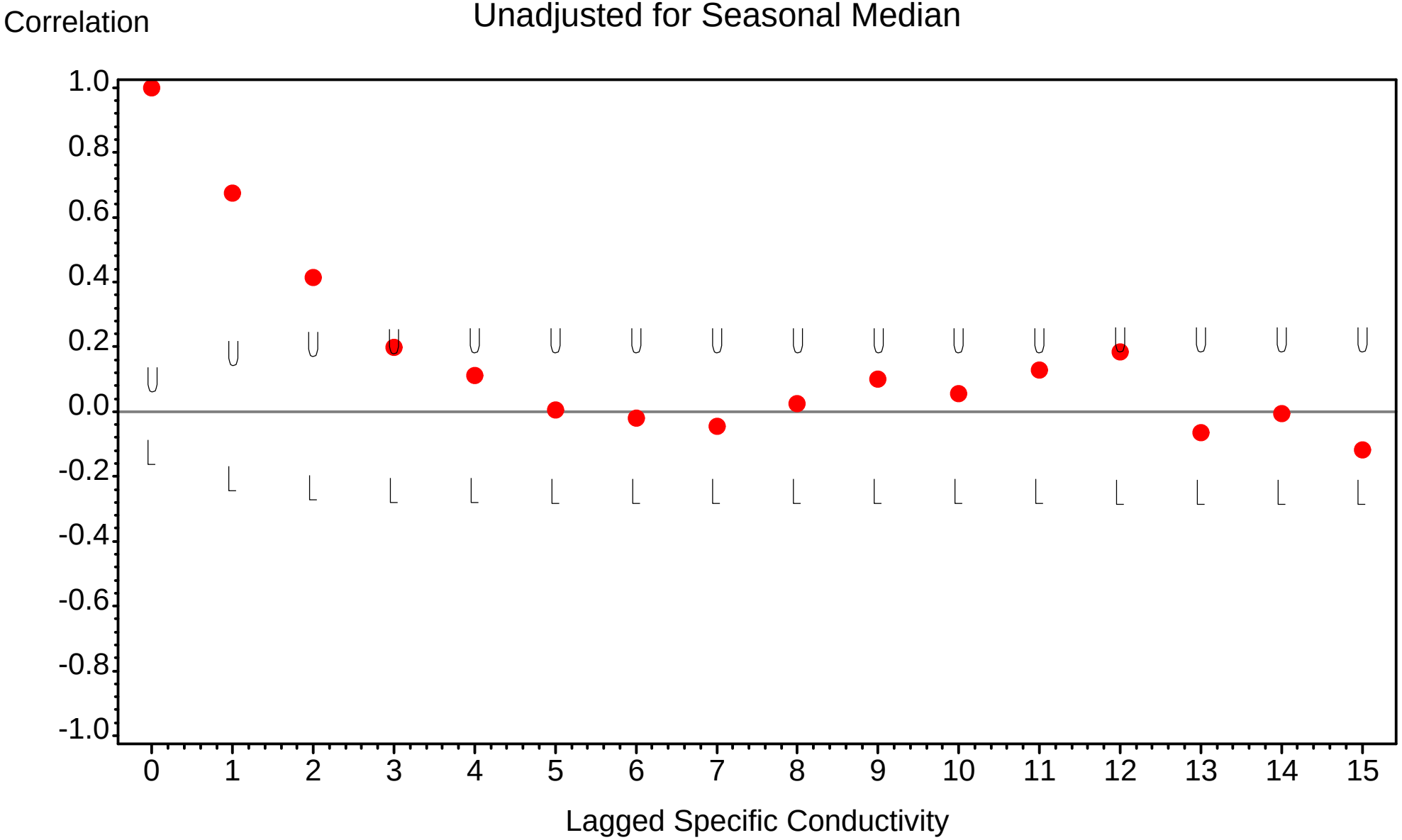
S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.675	0.096	0.192	-0.192
2	0.413	0.110	0.220	-0.220
3	0.199	0.115	0.229	-0.229
4	0.111	0.116	0.231	-0.231
5	0.006	0.116	0.232	-0.232
6	-0.020	0.116	0.232	-0.232
7	-0.046	0.116	0.232	-0.232
8	0.026	0.116	0.232	-0.232
9	0.100	0.116	0.232	-0.232
10	0.055	0.116	0.233	-0.233
11	0.128	0.116	0.233	-0.233
12	0.185	0.117	0.234	-0.234
13	-0.066	0.118	0.235	-0.235
14	-0.005	0.118	0.236	-0.236
15	-0.119	0.118	0.236	-0.236

S_21FLVEMDTR02 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

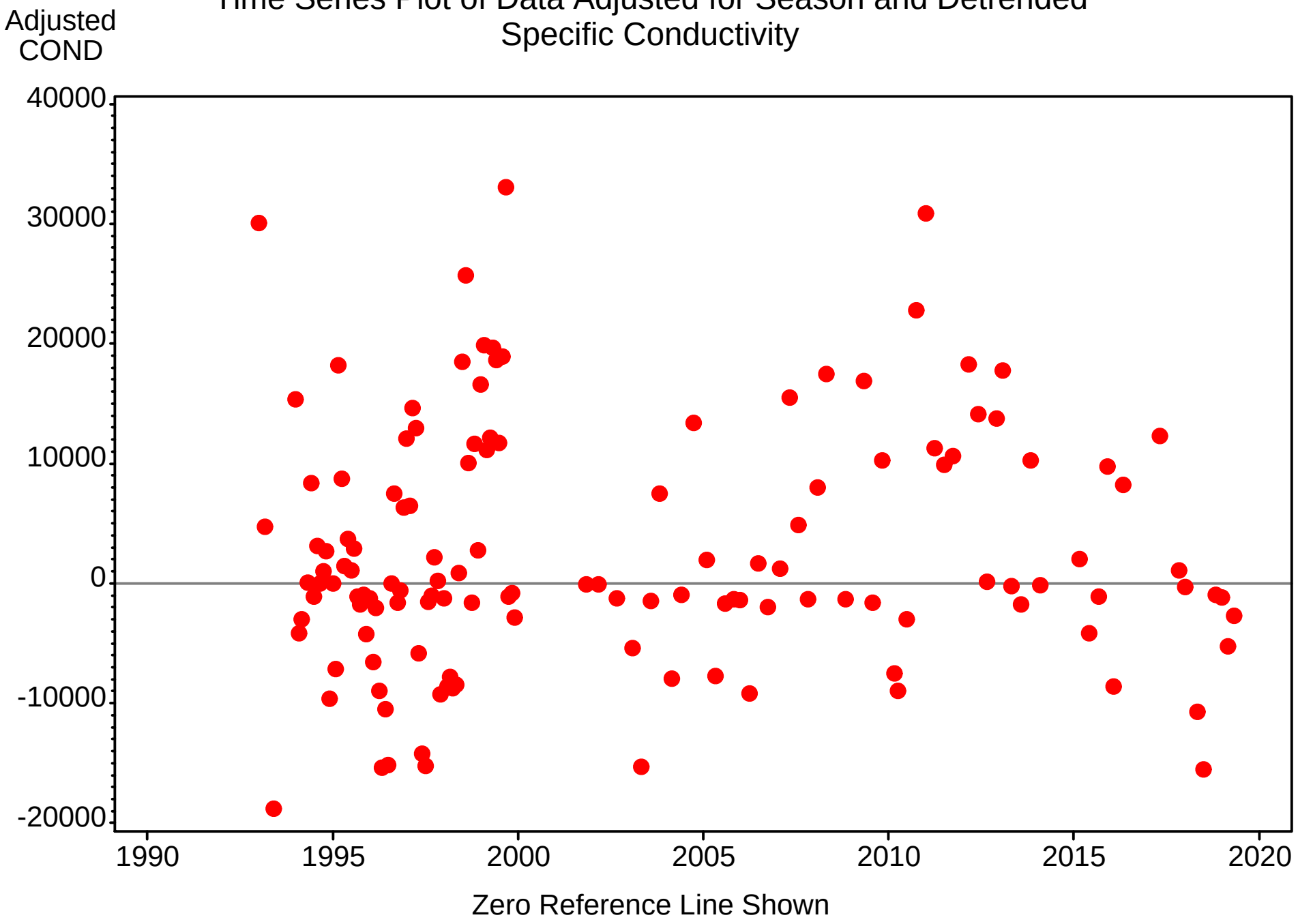
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.017	0.821	0.864	6.873

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.016713	0.82111	0.86399	6.87351

S_21FLVEMDTR02 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

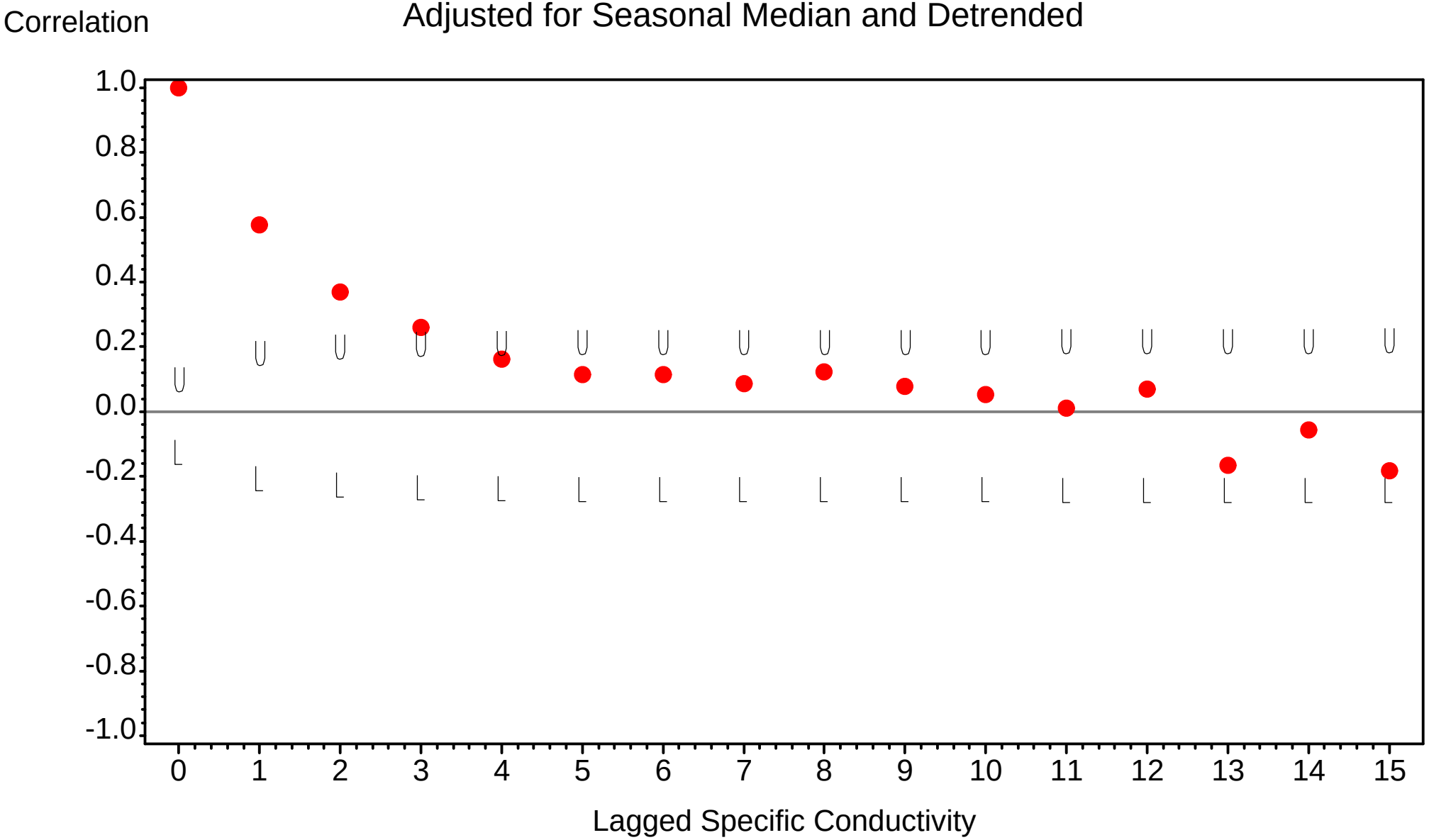


S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Specific Conductivity Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.575	0.096	0.192	-0.192
2	0.368	0.106	0.213	-0.213
3	0.260	0.110	0.220	-0.220
4	0.161	0.112	0.224	-0.224
5	0.114	0.113	0.226	-0.226
6	0.113	0.113	0.226	-0.226
7	0.087	0.113	0.227	-0.227
8	0.123	0.114	0.227	-0.227
9	0.077	0.114	0.228	-0.228
10	0.053	0.114	0.228	-0.228
11	0.012	0.114	0.229	-0.229
12	0.069	0.114	0.229	-0.229
13	-0.166	0.114	0.229	-0.229
14	-0.057	0.115	0.230	-0.230
15	-0.182	0.115	0.231	-0.231

S_21FLVEMDTR02 Trends Appendix

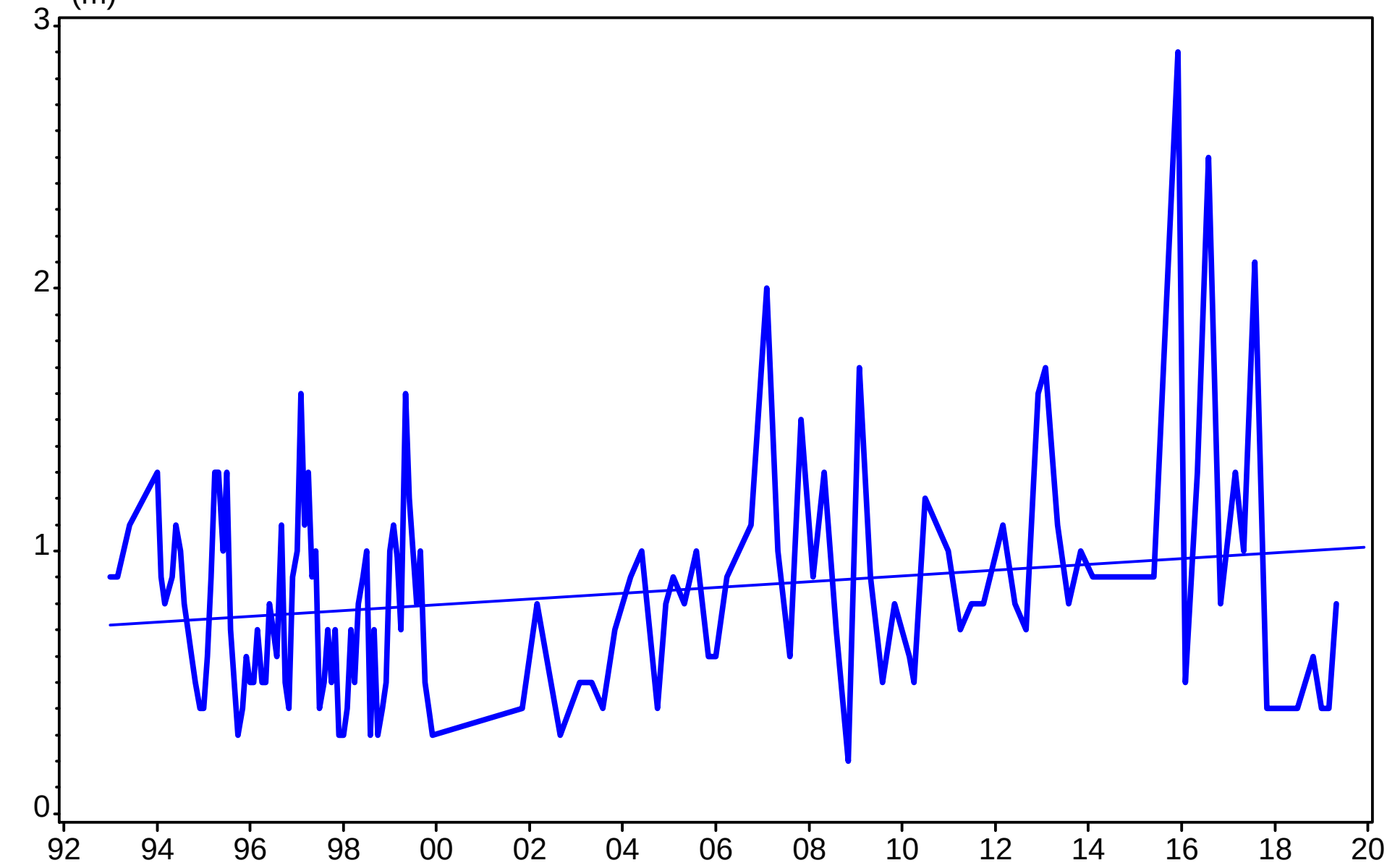
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

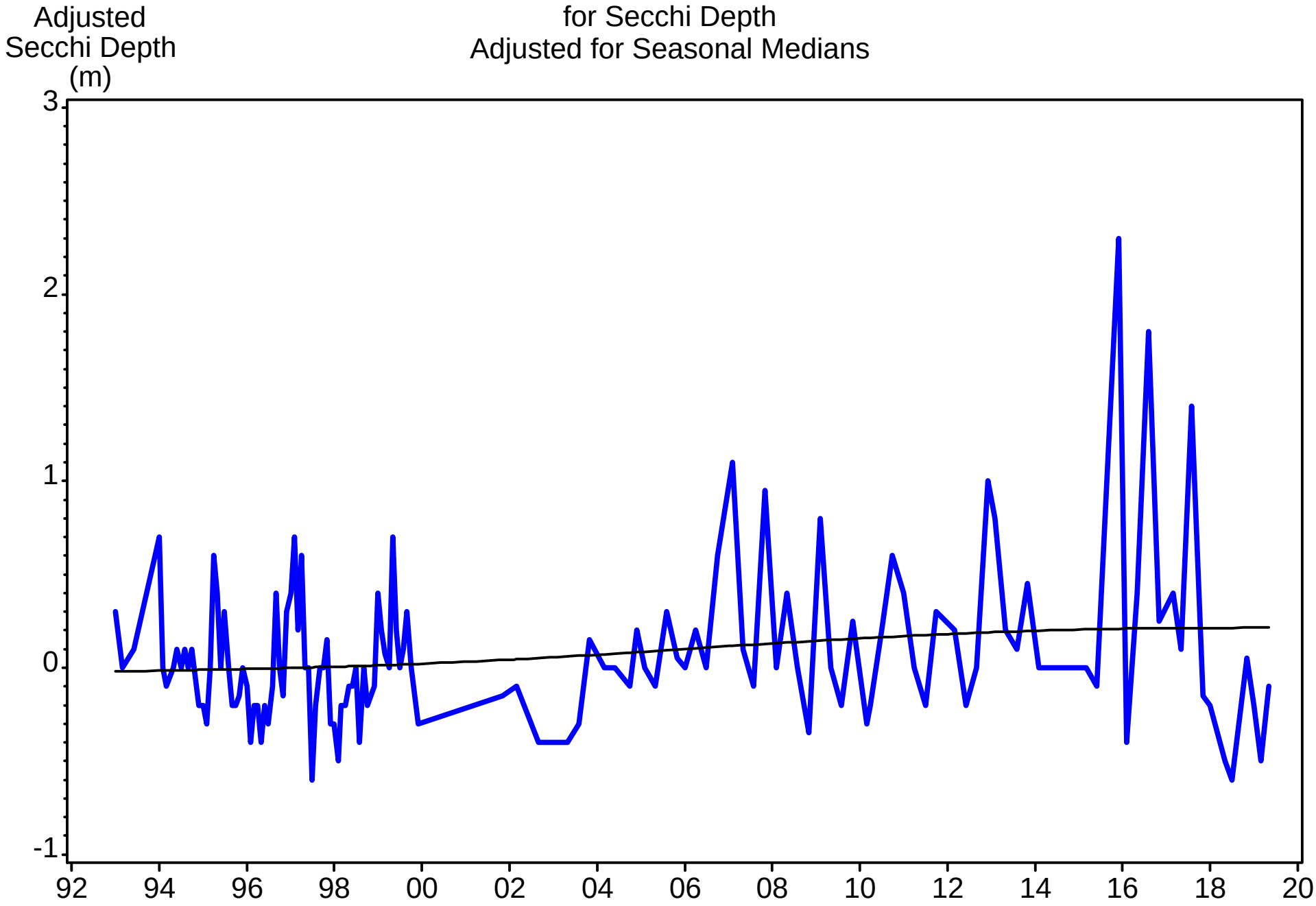
S_21FLVEMDTR02 Trends

S_21FLVEMDTR02 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



S_21FLVEMDTR02 Trends

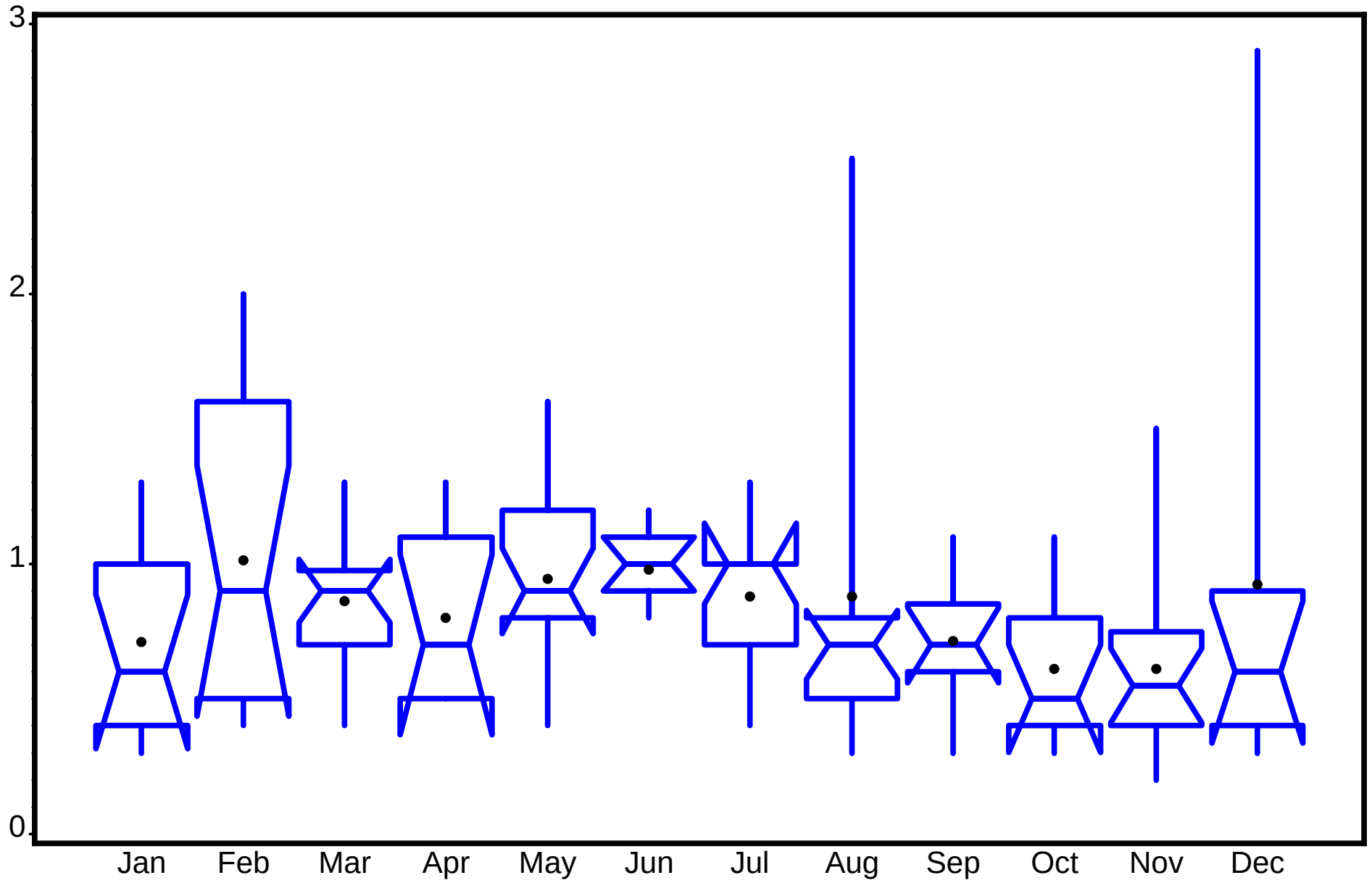
S_21FLVEMDTR02 Time Series for Secchi Depth Adjusted for Seasonal Medians



S_21FLVEMDTR02 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



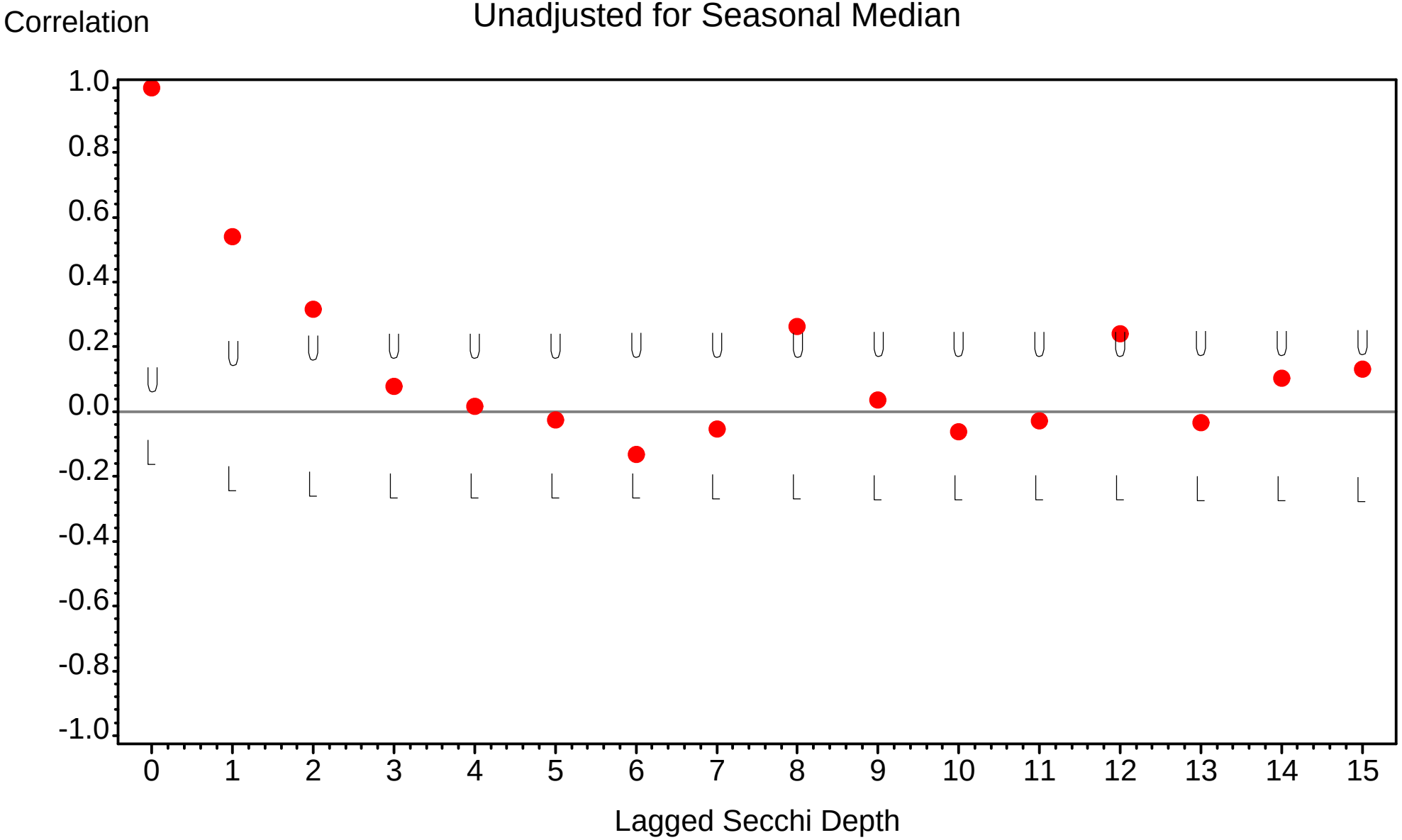
S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.541	0.096	0.192	-0.192
2	0.315	0.105	0.210	-0.210
3	0.078	0.108	0.216	-0.216
4	0.015	0.108	0.216	-0.216
5	-0.025	0.108	0.216	-0.216
6	-0.133	0.108	0.217	-0.217
7	-0.055	0.109	0.218	-0.218
8	0.262	0.109	0.218	-0.218
9	0.037	0.111	0.222	-0.222
10	-0.062	0.111	0.222	-0.222
11	-0.028	0.111	0.222	-0.222
12	0.240	0.111	0.222	-0.222
13	-0.034	0.113	0.225	-0.225
14	0.103	0.113	0.225	-0.225
15	0.130	0.113	0.226	-0.226

S_21FLVEMDTR02 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

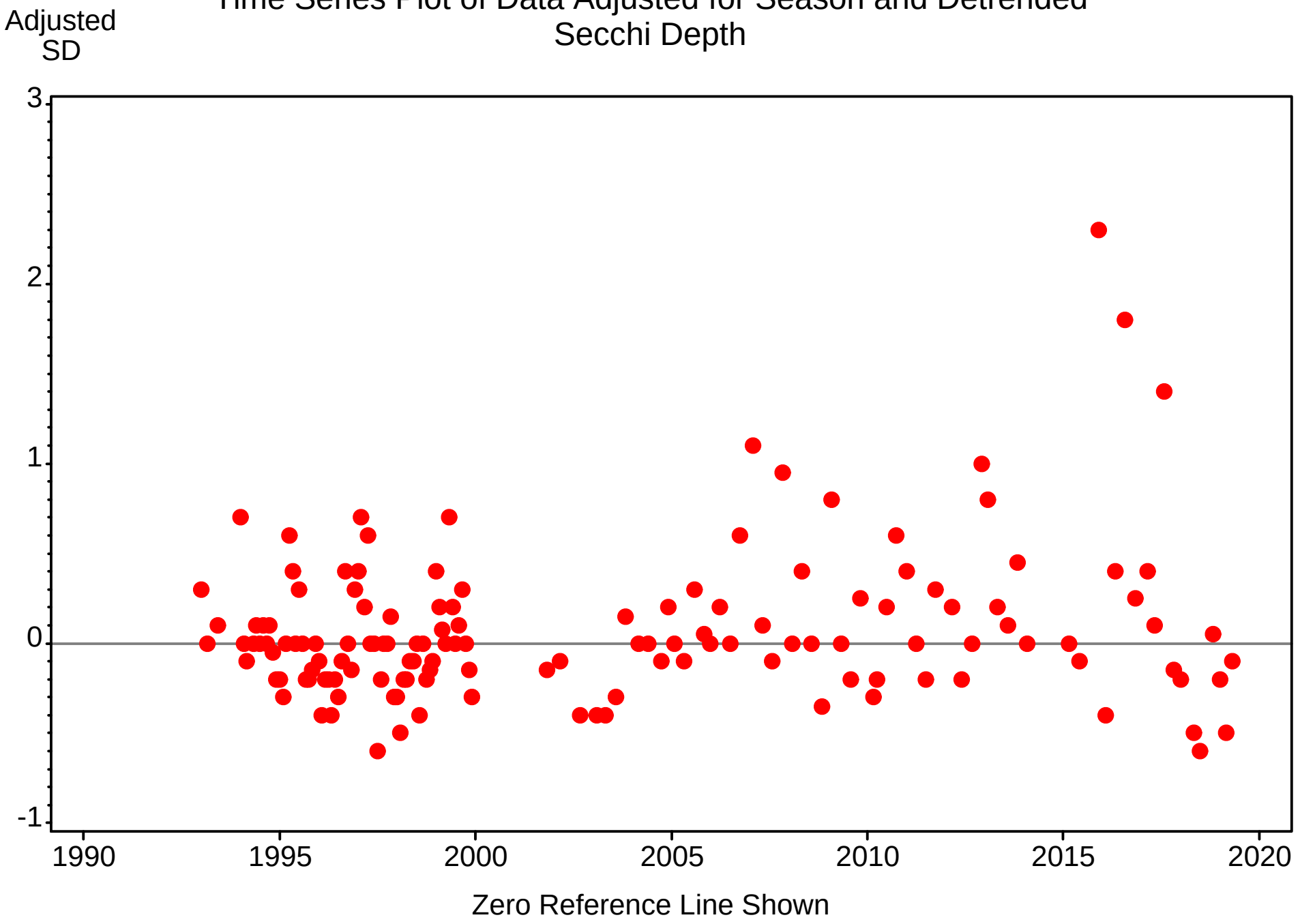
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.064	0.33	0.509	0

S_21FLVEMDTR02 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.064151	0.32954	0.50893	0

S_21FLVEMDTR02 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth

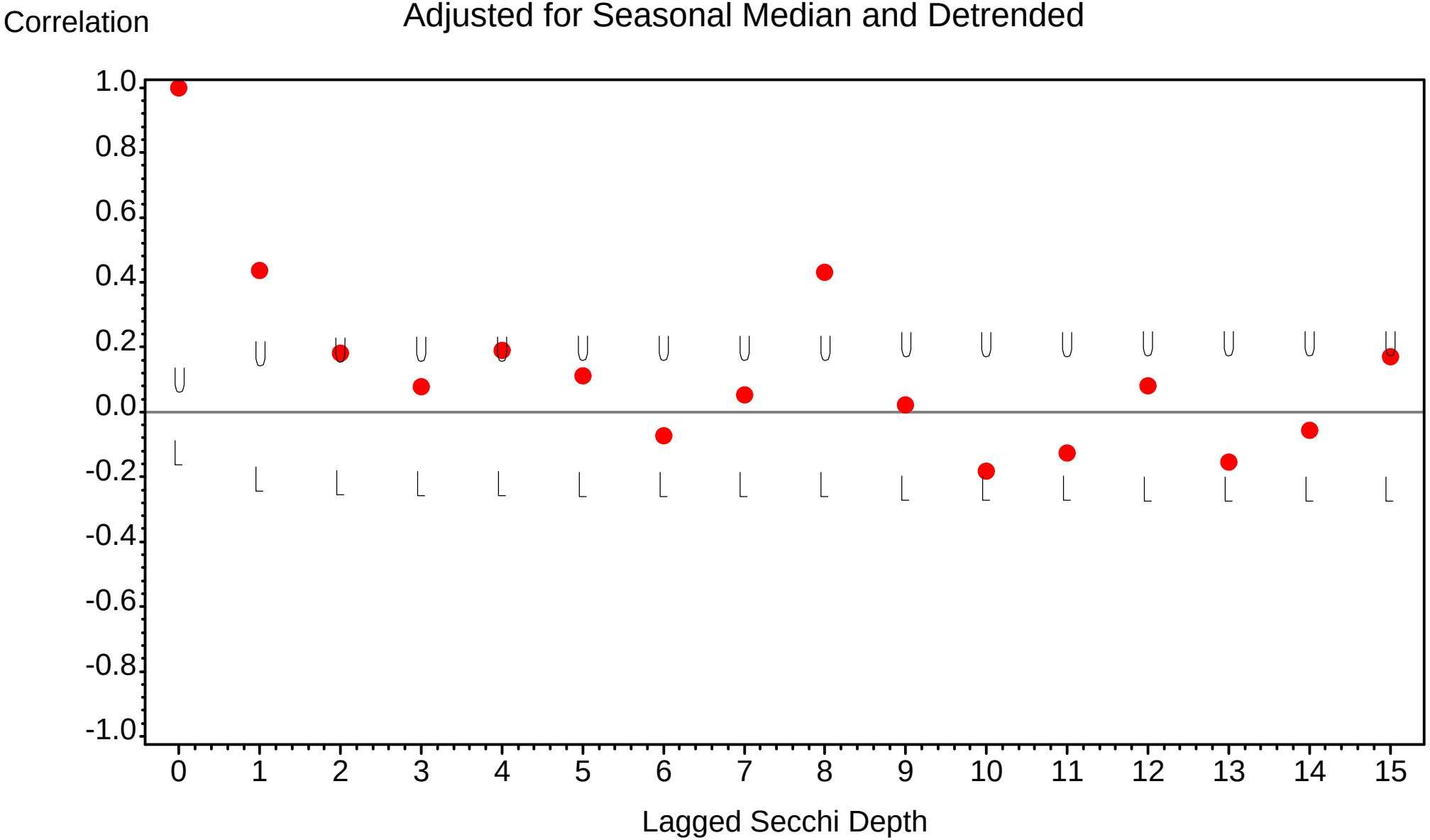


S_21FLVEMDTR02 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.436	0.096	0.192	-0.192
2	0.182	0.102	0.204	-0.204
3	0.077	0.103	0.206	-0.206
4	0.191	0.103	0.207	-0.207
5	0.111	0.104	0.209	-0.209
6	-0.072	0.105	0.210	-0.210
7	0.053	0.105	0.210	-0.210
8	0.430	0.105	0.210	-0.210
9	0.023	0.110	0.221	-0.221
10	-0.183	0.110	0.221	-0.221
11	-0.126	0.111	0.222	-0.222
12	0.081	0.112	0.223	-0.223
13	-0.154	0.112	0.224	-0.224
14	-0.057	0.113	0.225	-0.225
15	0.169	0.113	0.225	-0.225

S_21FLVEMDTR02 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
2	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
4	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
5	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
6	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
7	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
2	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
3	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
4	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
5	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
6	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
7	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	0.18508	0.00006	0.00900	0.0189	0.18508	0.00006	0.0189
2	0.14122	0.00202	0.11766	3.6333	0.14122	0.11766	3.6333
3	-0.07989	0.08217	0.21224	-0.0197	-0.07989	0.08217	-0.0197
4	-0.03270	0.71735	0.77620	-0.0360	-0.03270	0.71735	-0.0360
5	0.17949	0.00008	0.04429	0.0025	0.17900	0.00000	0.0030
6	0.10197	0.09551	0.18499	0.0012	0.10200	0.18500	0.0010
7	-0.00915	0.85080	0.91313	-0.0007	-0.00900	0.91300	-0.0010

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
9	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
10	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09
11	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
12	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00
13	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00
14	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
9	0.33	N	Y	N	N	0.049	0.531	0.675	0.023
10	0.79	Y	Y	Y	Y	0.017	0.821	0.864	6.873
11	2.35	Y	Y	N	N	-0.022	0.763	0.834	-0.004
12	2.11	Y	Y	Y	Y	0.049	0.487	0.514	0.154
13	0.98	Y	Y	Y	Y	0.070	0.304	0.474	0.025
14	1.08	Y	Y	N	N	0.064	0.330	0.509	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.13971	0.00275	0.01624	0.0003	0.14100	0.00300	0.0000
9	0.04851	0.53077	0.67536	0.0233	0.04900	0.53100	0.0230
10	0.01671	0.82111	0.86399	6.8735	0.01671	0.86399	6.8735
11	-0.02159	0.76267	0.83430	-0.0043	-0.02159	0.76267	-0.0043
12	0.04892	0.48687	0.51426	0.1538	0.04892	0.51426	0.1538
13	0.06955	0.30398	0.47368	0.0253	0.06955	0.47368	0.0253
14	0.06415	0.32954	0.50893	0.0000	0.06415	0.32954	0.0000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
16	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10
17	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
18	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82
19	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25
20	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00
21	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	1.88	Y	Y	N	N	0.017	0.845	0.901	0.002
16	1.51	Y	Y	Y	Y	0.050	0.519	0.695	0.000
17	-9999.00	N	Y	N	N	0.078	0.299	0.360	0.020
18	1.12	Y	N	Y	N	0.106	0.122	0.158	10.031
19	0.82	Y	Y	N	N	-0.170	0.012	0.092	-0.059
20	0.70	Y	Y	N	N	-0.175	0.011	0.082	-0.515
21	1.54	Y	N	Y	N	0.092	0.169	0.290	0.004

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.01724	0.84540	0.90084	0.0021	0.01724	0.84540	0.0021
16	0.05031	0.51900	0.69540	0.0000	0.05031	0.69540	0.0000
17	0.07599	0.31036	0.36979	0.0200	0.07800	0.29900	0.0200
18	0.10598	0.12166	0.15796	10.0313	0.10598	0.12166	10.0313
19	-0.16974	0.01188	0.09239	-0.0587	-0.16974	0.01188	-0.0587
20	-0.17479	0.01113	0.08250	-0.5148	-0.17479	0.01113	-0.5148
21	0.09207	0.16857	0.29012	0.0036	0.09207	0.16857	0.0036

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
22	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00
23	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
24	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
25	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
26	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19
27	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42
28	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
22	1.54	Y	Y	Y	Y	0.094	0.155	0.427	0.007
23	1.48	Y	Y	N	N	-0.031	0.706	0.812	-0.002
24	-9999.00	N	N	N	N	-0.023	0.786	0.871	0.000
25	0.44	N	Y	N	N	-0.142	0.074	0.219	-0.011
26	-9999.00	N	N	Y	N	0.085	0.243	0.291	2.029
27	2.33	Y	Y	N	N	-0.040	0.591	0.737	-0.008
28	1.77	Y	Y	N	N	0.027	0.725	0.823	0.034

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.09387	0.15479	0.42738	0.0067	0.09387	0.42738	0.0067
23	-0.03145	0.70576	0.81201	-0.0021	-0.03145	0.70576	-0.0021
24	-0.02254	0.78614	0.87138	0.0000	-0.02300	0.78600	0.0000
25	-0.14223	0.07413	0.21912	-0.0108	-0.14200	0.07400	-0.0110
26	0.08500	0.24287	0.29095	2.0294	0.08500	0.24300	2.0290
27	-0.03968	0.59098	0.73685	-0.0075	-0.03968	0.59098	-0.0075
28	0.02716	0.72528	0.82342	0.0335	0.02716	0.72528	0.0335

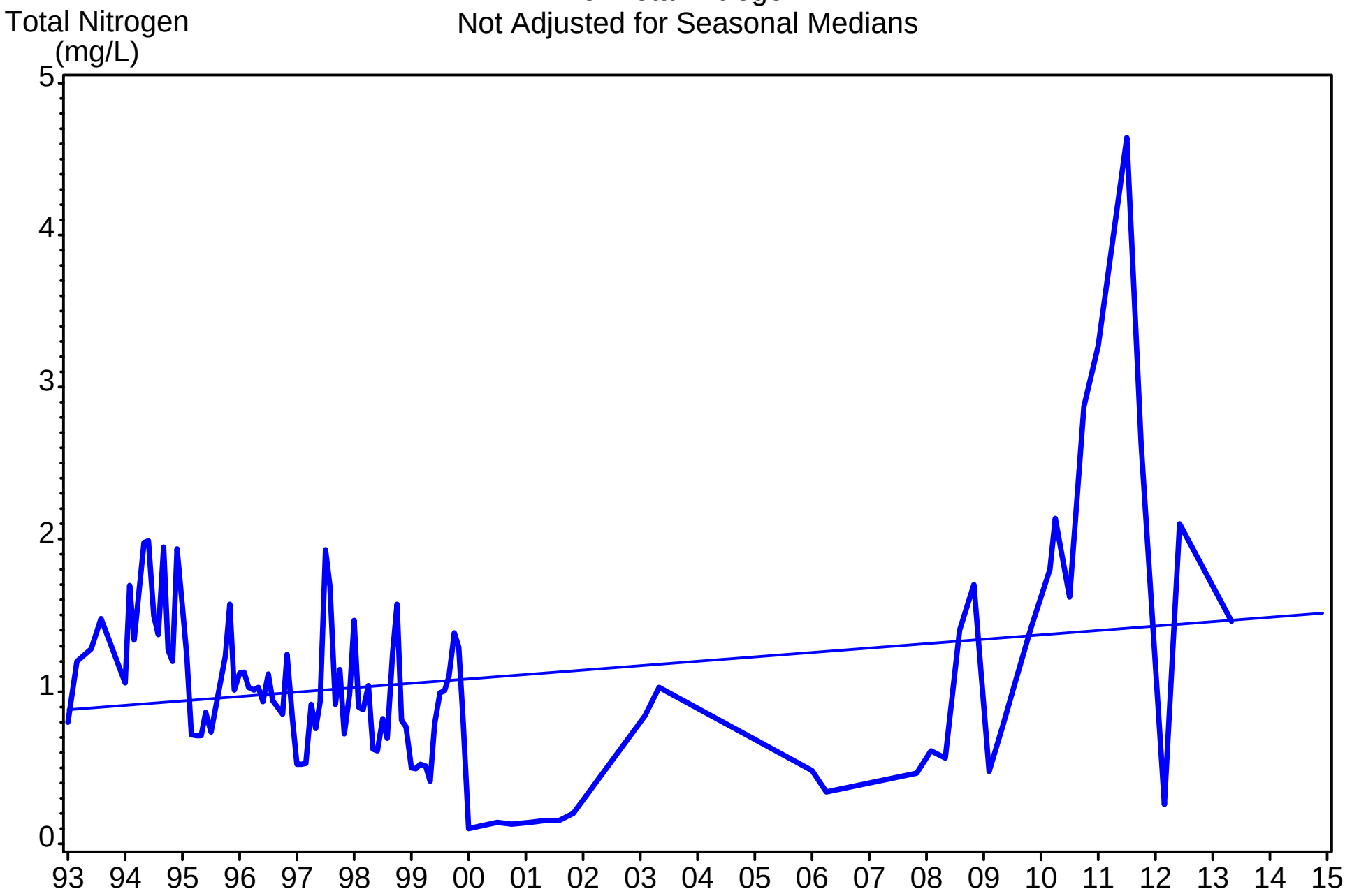
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
29	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00
30	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00
31	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
32	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
29	-9999.00	N	Y	Y	Y	0.123	0.076	0.159	0.001
30	0.68	Y	Y	N	N	0.194	0.005	0.046	0.009
31	0.31	N	Y	N	N	-0.241	0.003	0.076	-0.016
32	-9999.00	N	N	N	N	0.040	0.632	0.786	0.000

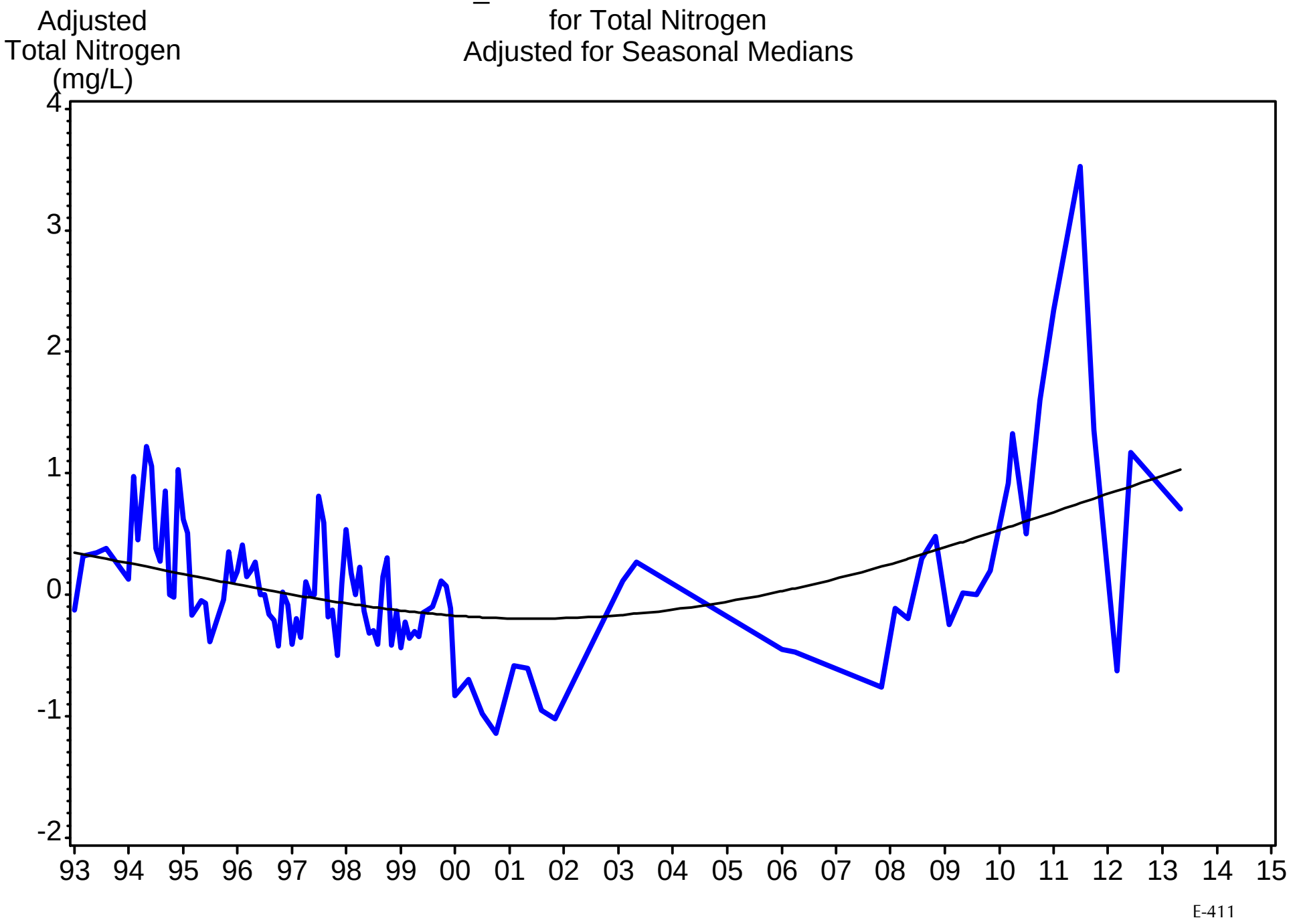
Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
29	0.12322	0.07617	0.15857	0.0008	0.12300	0.15900	0.0010
30	0.19383	0.00462	0.04647	0.0091	0.19383	0.00462	0.0091
31	-0.24070	0.00315	0.07596	-0.0162	-0.24100	0.00300	-0.0160
32	0.04009	0.63152	0.78567	0.0000	0.04000	0.63200	0.0000

S_21FLVEMDTR01 Trends

S_21FLVEMDTR01 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLVEMDTR01 Trends

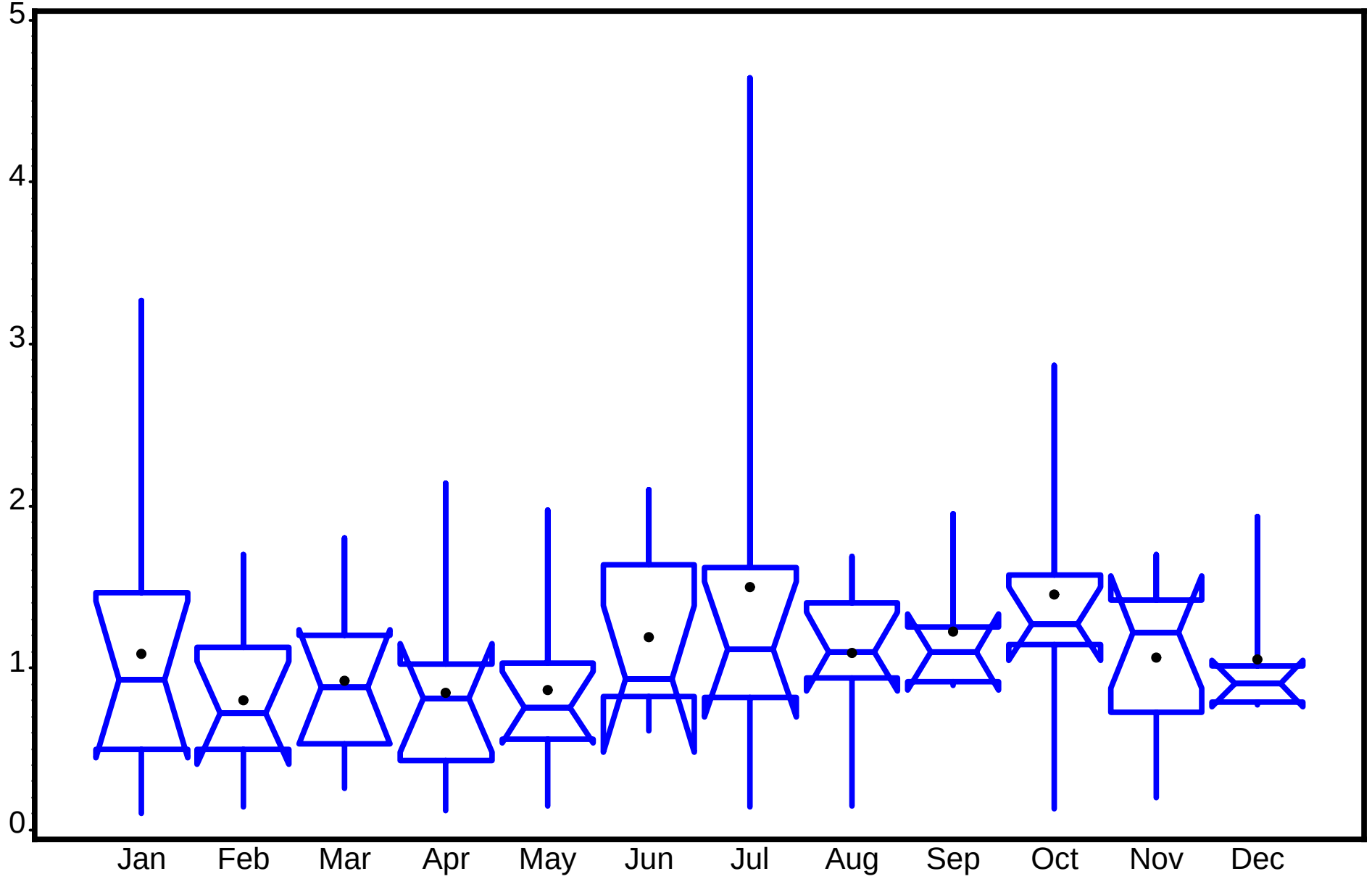


S_21FLVEMDTR01 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



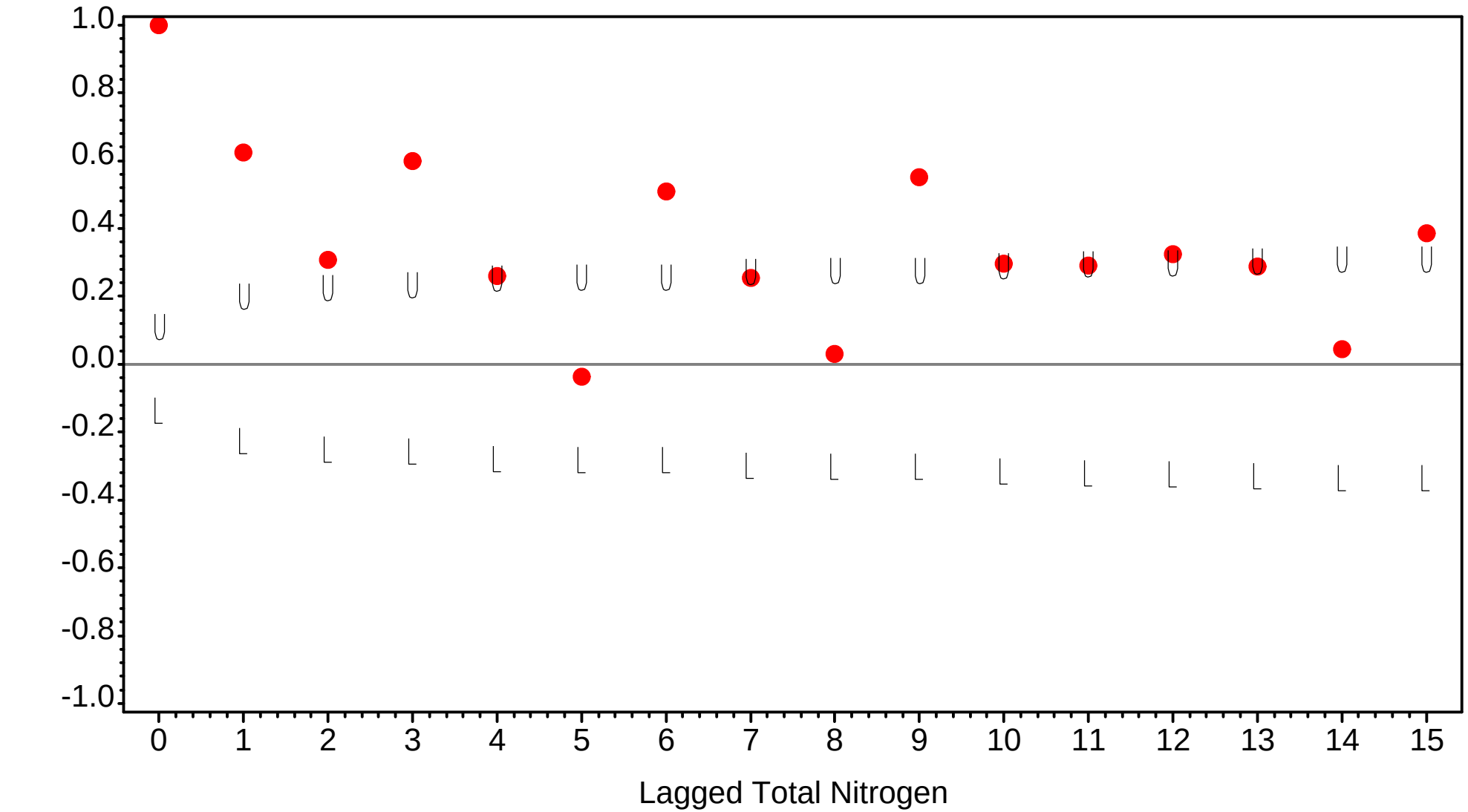
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.623	0.107	0.213	-0.213
2	0.308	0.120	0.239	-0.239
3	0.598	0.123	0.245	-0.245
4	0.261	0.133	0.266	-0.266
5	-0.036	0.135	0.270	-0.270
6	0.510	0.135	0.270	-0.270
7	0.253	0.142	0.285	-0.285
8	0.031	0.144	0.288	-0.288
9	0.551	0.144	0.288	-0.288
10	0.295	0.152	0.303	-0.303
11	0.292	0.154	0.308	-0.308
12	0.324	0.156	0.312	-0.312
13	0.287	0.159	0.317	-0.317
14	0.044	0.160	0.321	-0.321
15	0.385	0.161	0.321	-0.321

S_21FLVEMDTR01 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

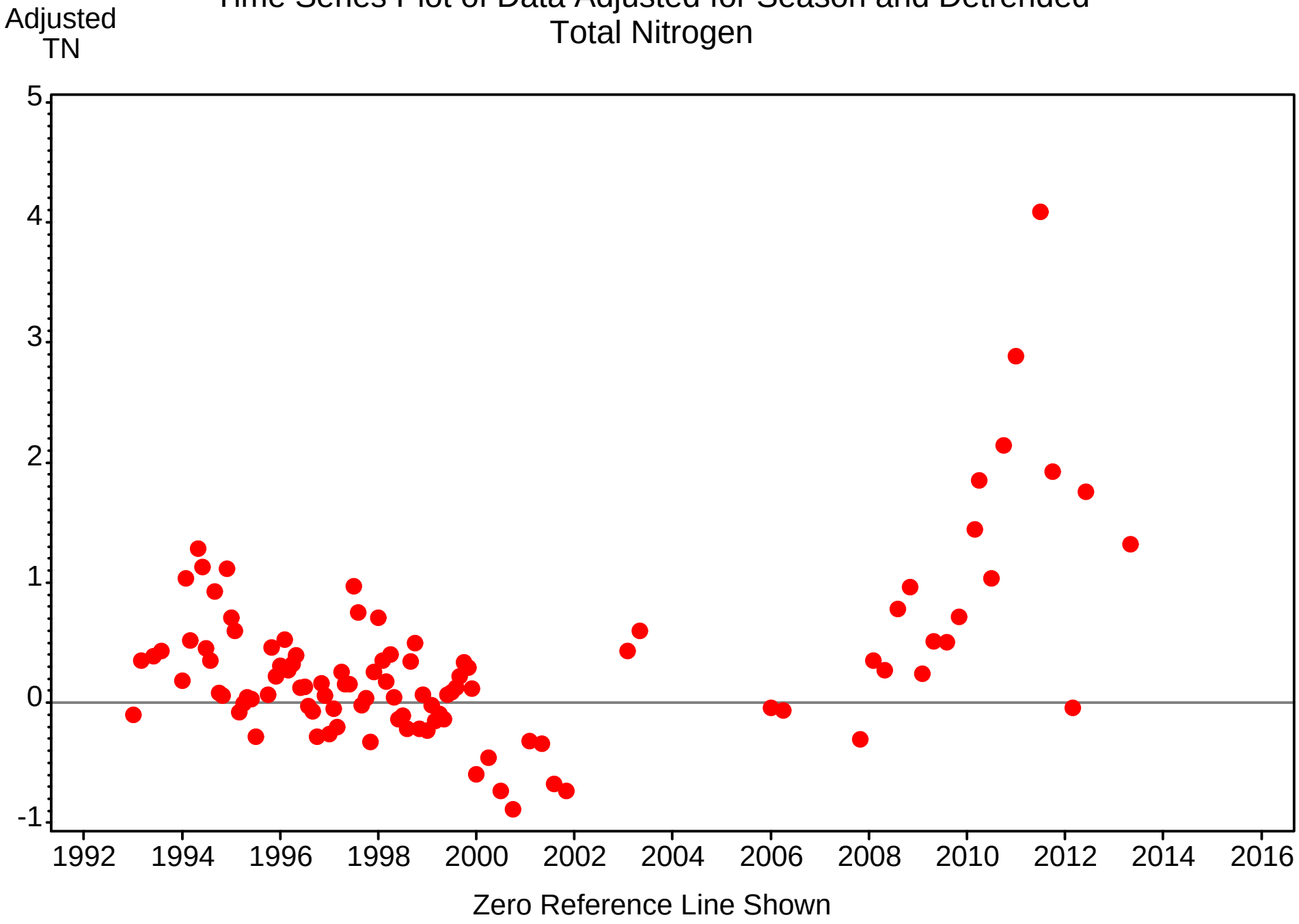
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.161	0.045	0.205	-0.029

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.16145	0.044972	0.205	-0.0288

S_21FLVEMDTR01 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



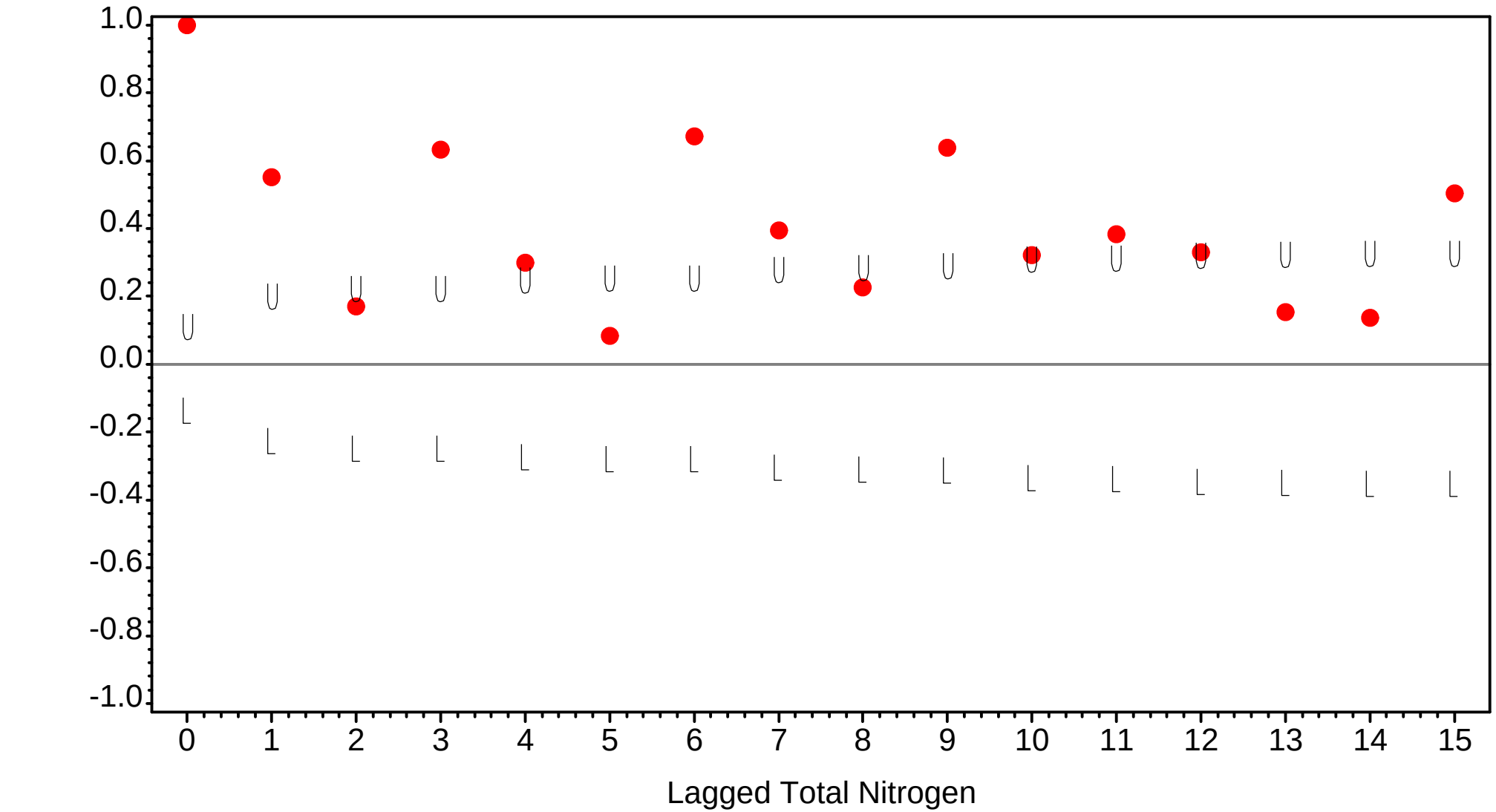
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.552	0.107	0.213	-0.213
2	0.170	0.117	0.234	-0.234
3	0.631	0.118	0.236	-0.236
4	0.298	0.130	0.260	-0.260
5	0.084	0.133	0.265	-0.265
6	0.671	0.133	0.266	-0.266
7	0.394	0.145	0.290	-0.290
8	0.226	0.149	0.298	-0.298
9	0.638	0.150	0.301	-0.301
10	0.322	0.160	0.321	-0.321
11	0.384	0.163	0.325	-0.325
12	0.331	0.166	0.332	-0.332
13	0.153	0.169	0.337	-0.337
14	0.136	0.169	0.338	-0.338
15	0.503	0.170	0.339	-0.339

S_21FLVEMDTR01 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

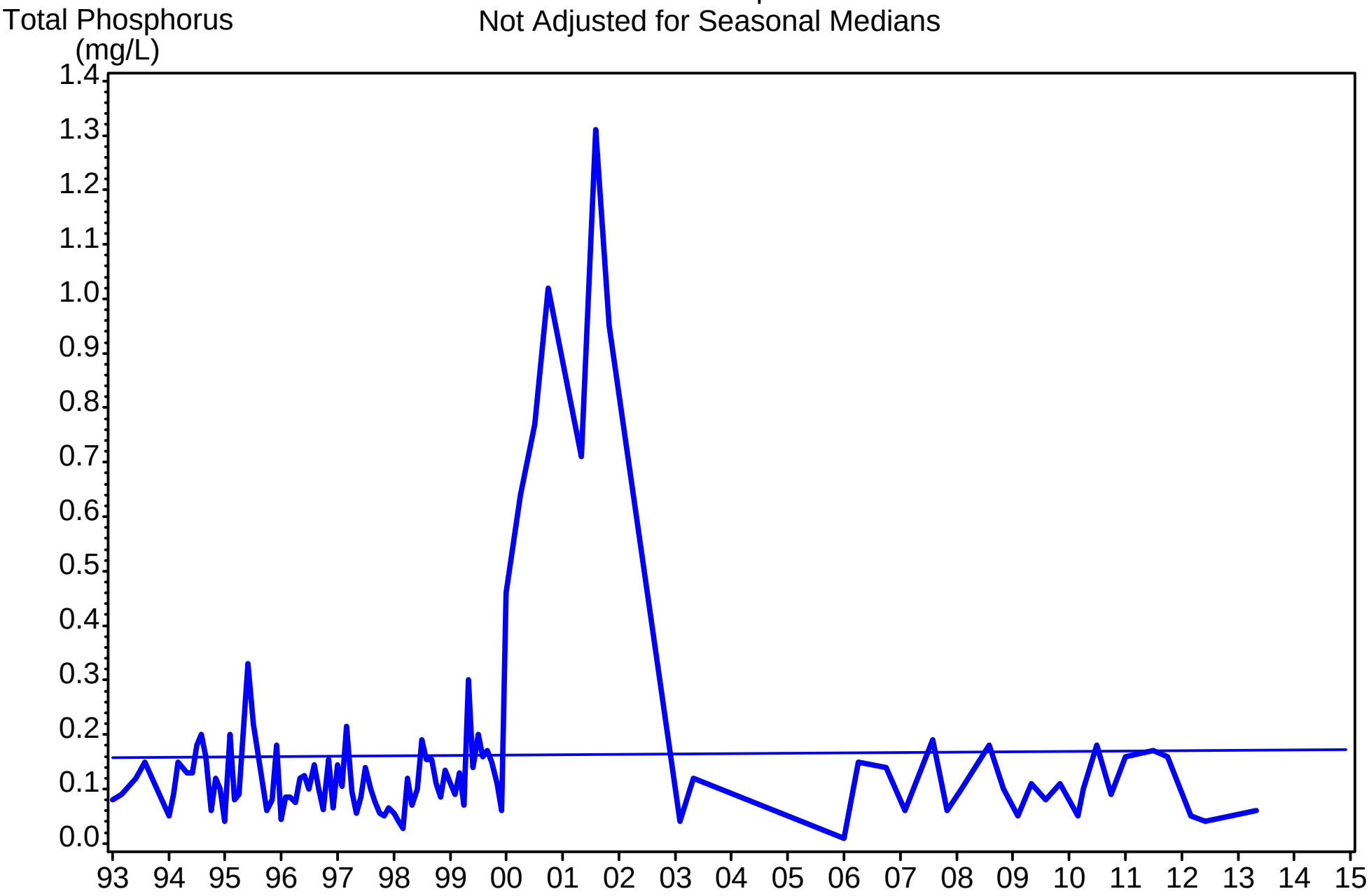


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

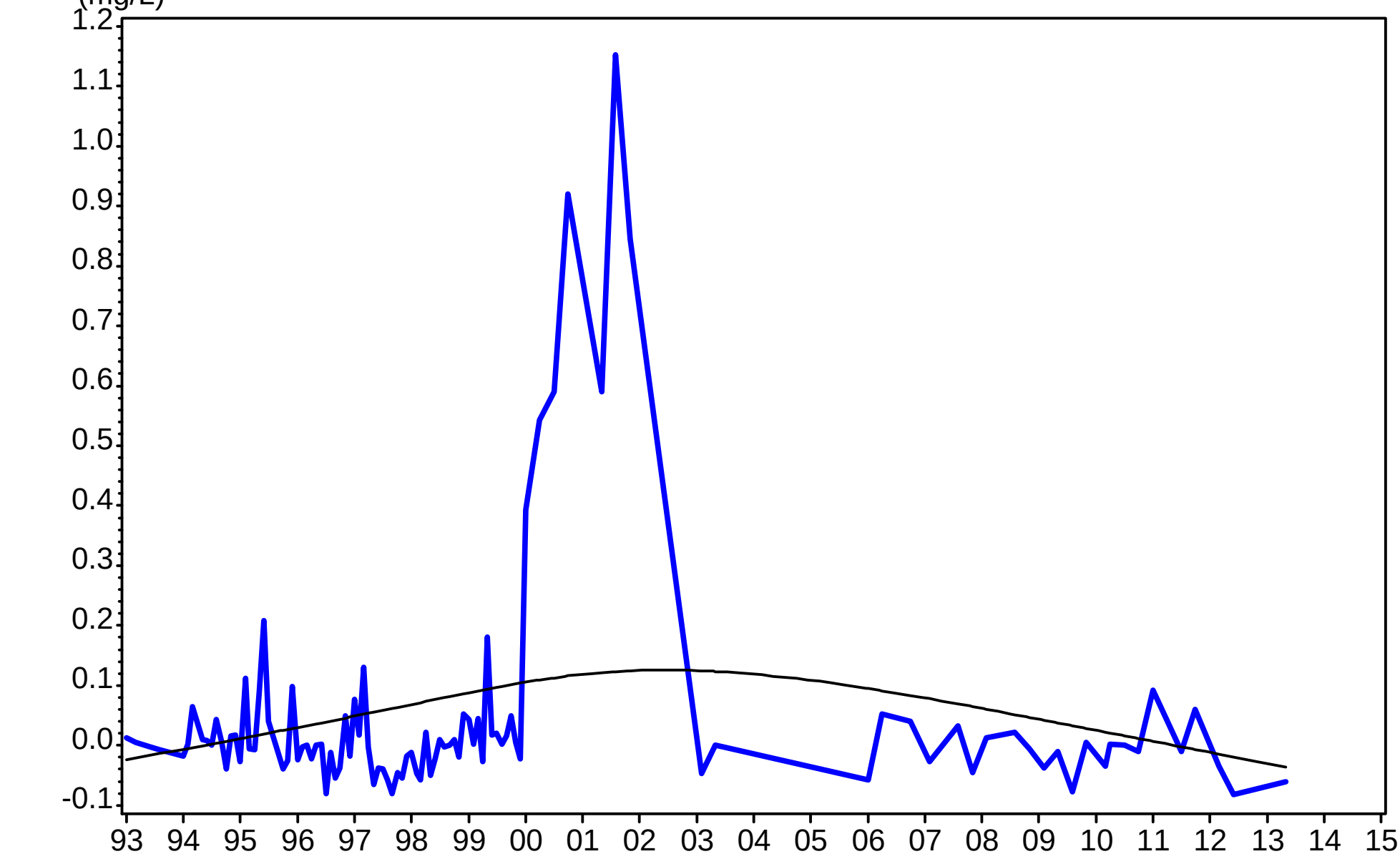
S_21FLVEMDTR01 Trends

S_21FLVEMDTR01 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



S_21FLVEMDTR01 Trends

S_21FLVEMDTR01 Time Series for Total Phosphorus Adjusted for Seasonal Medians

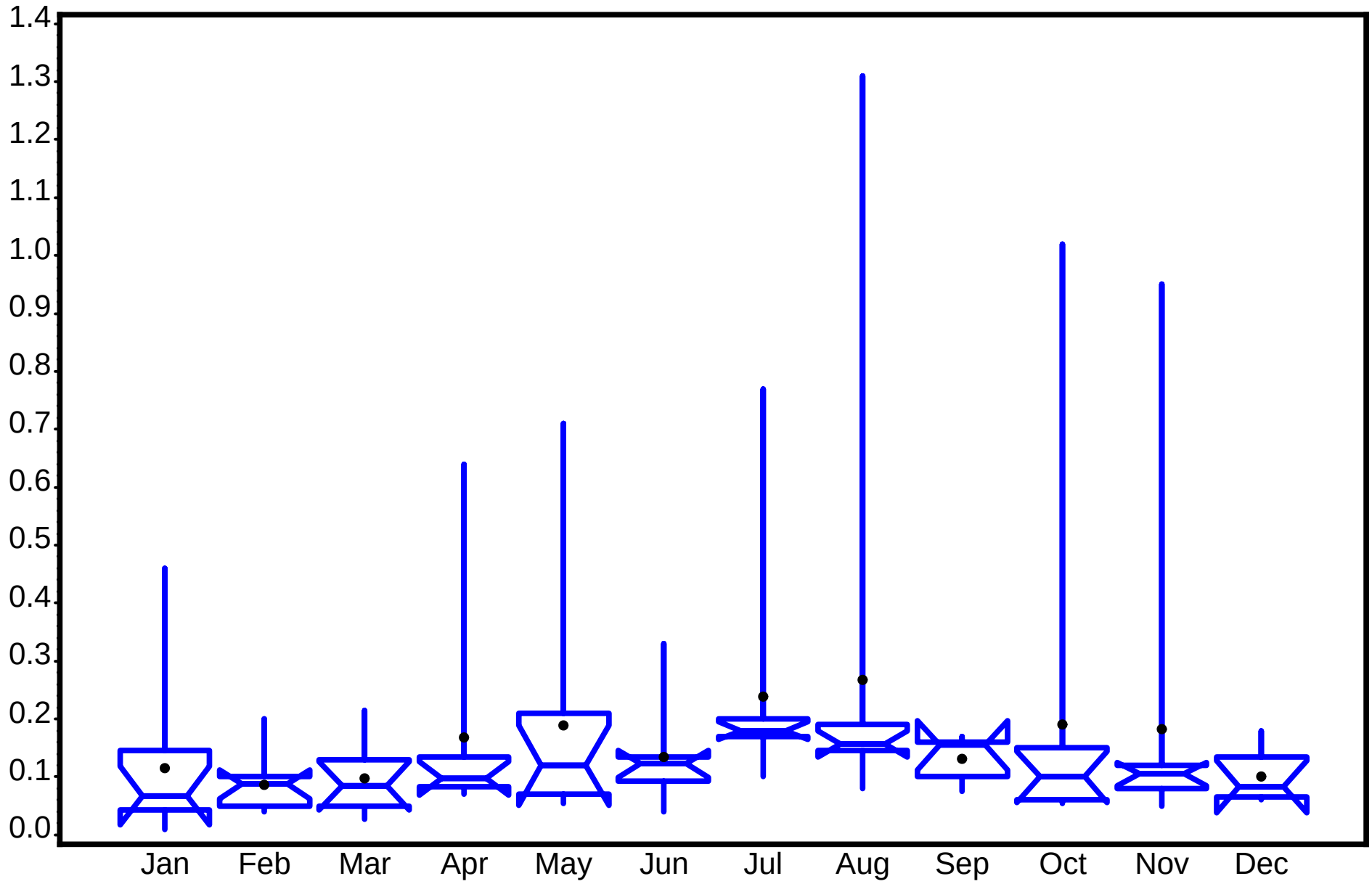


S_21FLVEMDTR01 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)

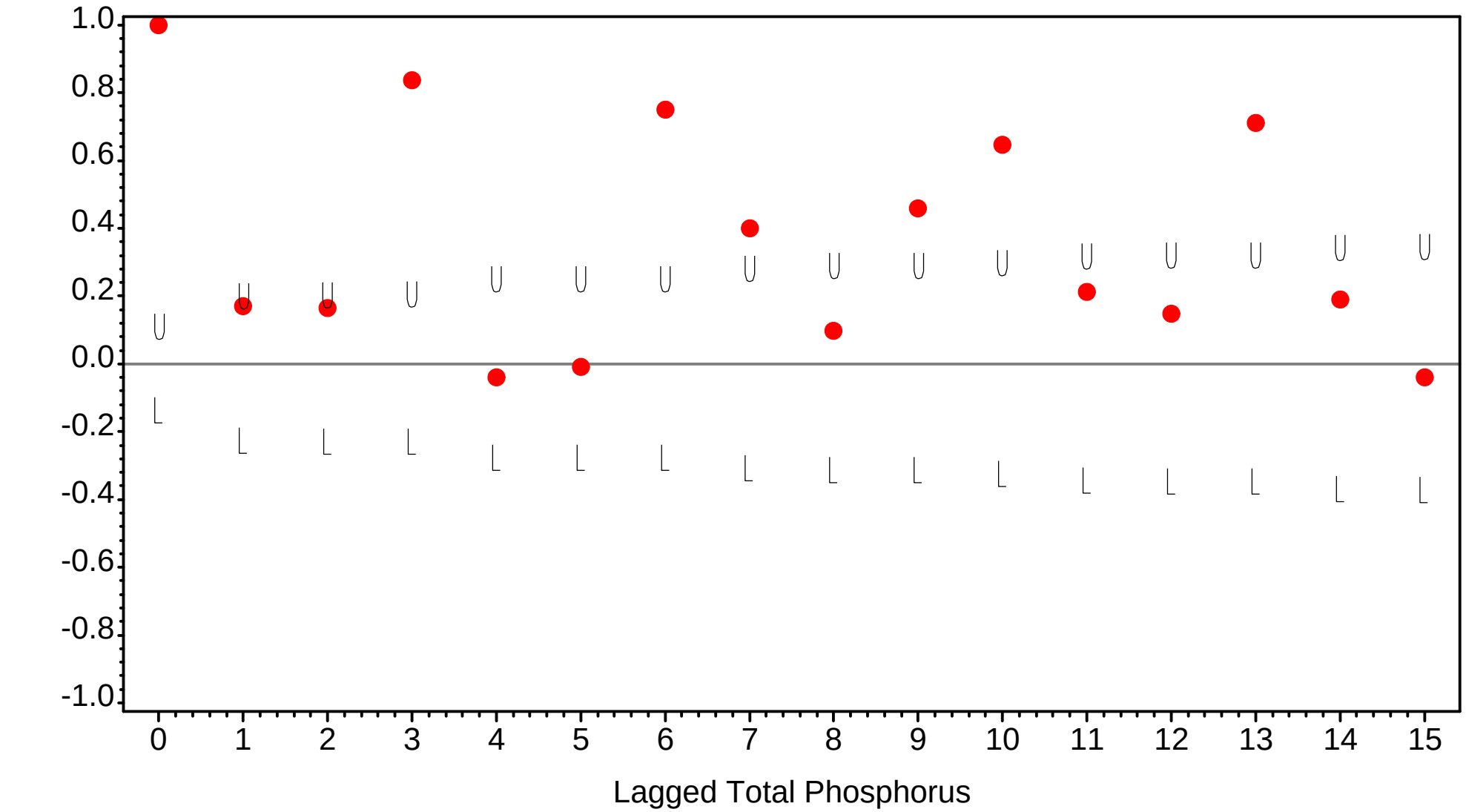


S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.170	0.107	0.213	-0.213
2	0.166	0.108	0.215	-0.215
3	0.838	0.109	0.217	-0.217
4	-0.040	0.131	0.262	-0.262
5	-0.008	0.131	0.262	-0.262
6	0.751	0.131	0.262	-0.262
7	0.400	0.146	0.293	-0.293
8	0.097	0.150	0.301	-0.301
9	0.459	0.151	0.301	-0.301
10	0.645	0.156	0.312	-0.312
11	0.213	0.166	0.331	-0.331
12	0.149	0.167	0.333	-0.333
13	0.710	0.167	0.334	-0.334
14	0.190	0.178	0.356	-0.356
15	-0.041	0.179	0.358	-0.358

S_21FLVEMDTR01 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

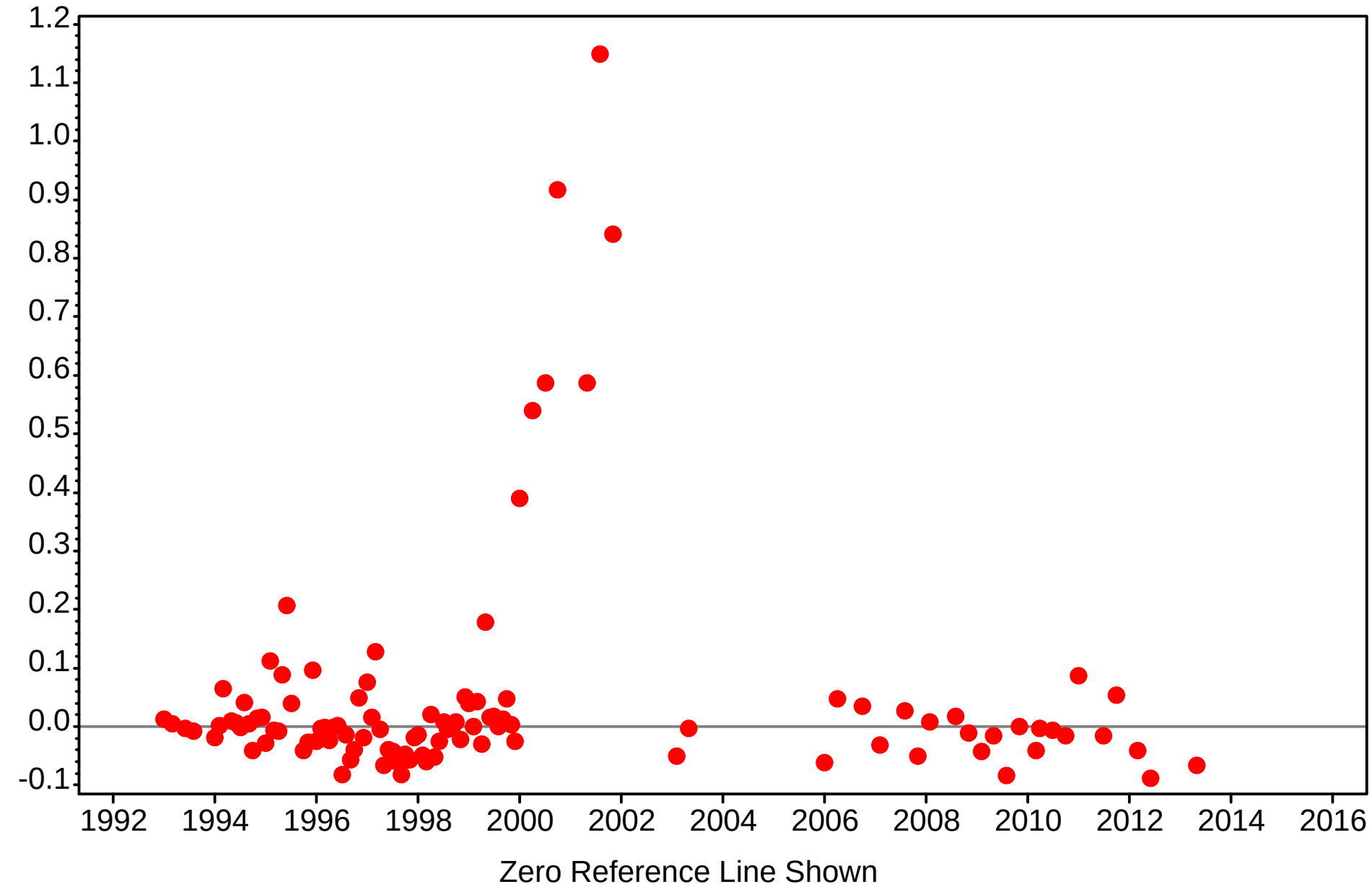
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.021	0.81	0.86	0

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.021277	0.80954	0.86021	.0003125

S_21FLVEMDTR01 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

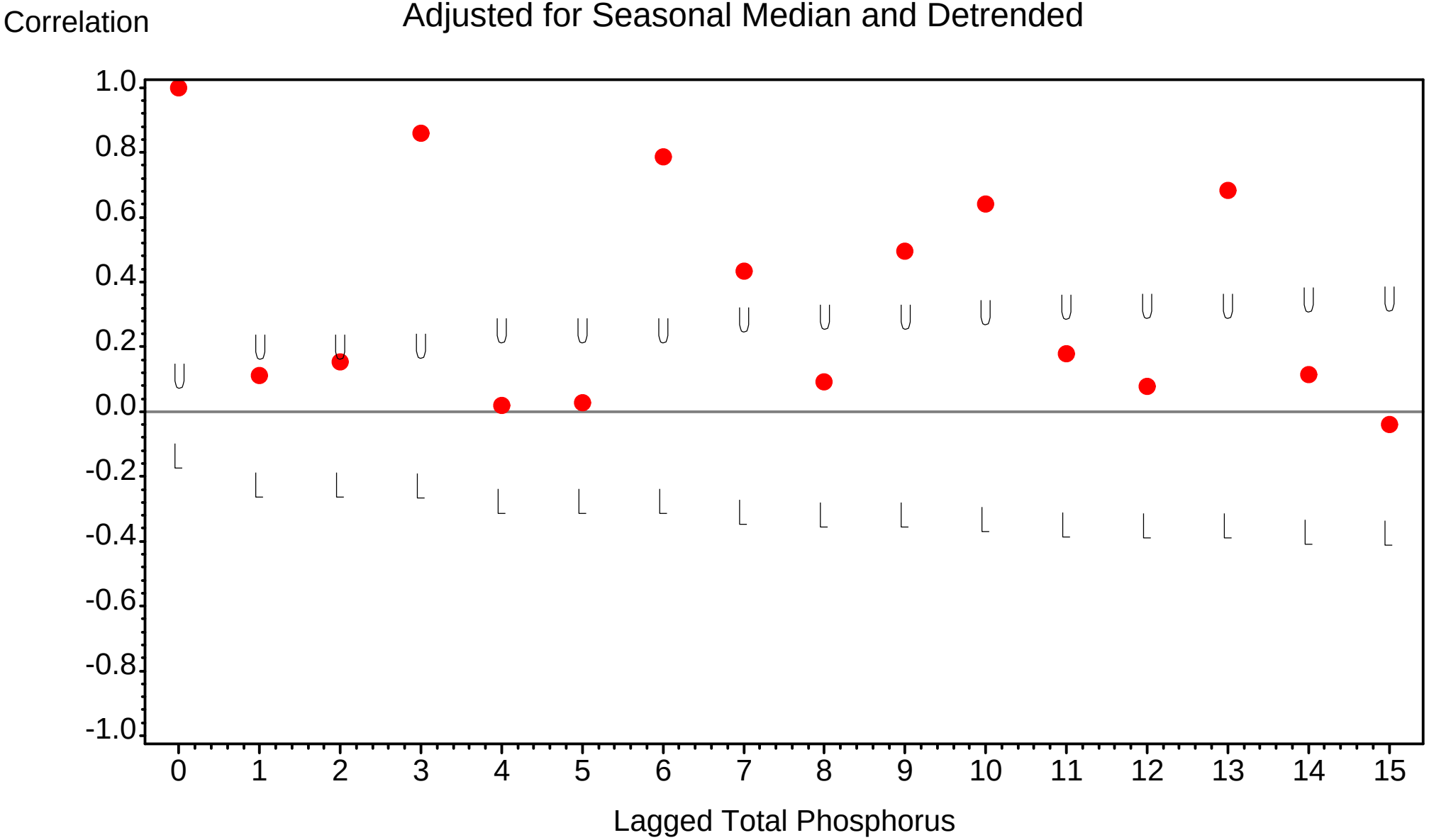


S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.111	0.107	0.213	-0.213
2	0.153	0.107	0.214	-0.214
3	0.859	0.108	0.216	-0.216
4	0.019	0.131	0.263	-0.263
5	0.028	0.131	0.263	-0.263
6	0.787	0.131	0.263	-0.263
7	0.434	0.148	0.296	-0.296
8	0.092	0.153	0.306	-0.306
9	0.496	0.153	0.306	-0.306
10	0.641	0.159	0.318	-0.318
11	0.179	0.169	0.337	-0.337
12	0.077	0.169	0.338	-0.338
13	0.684	0.169	0.339	-0.339
14	0.113	0.180	0.359	-0.359
15	-0.039	0.180	0.360	-0.360

S_21FLVEMDTR01 Trends Appendix

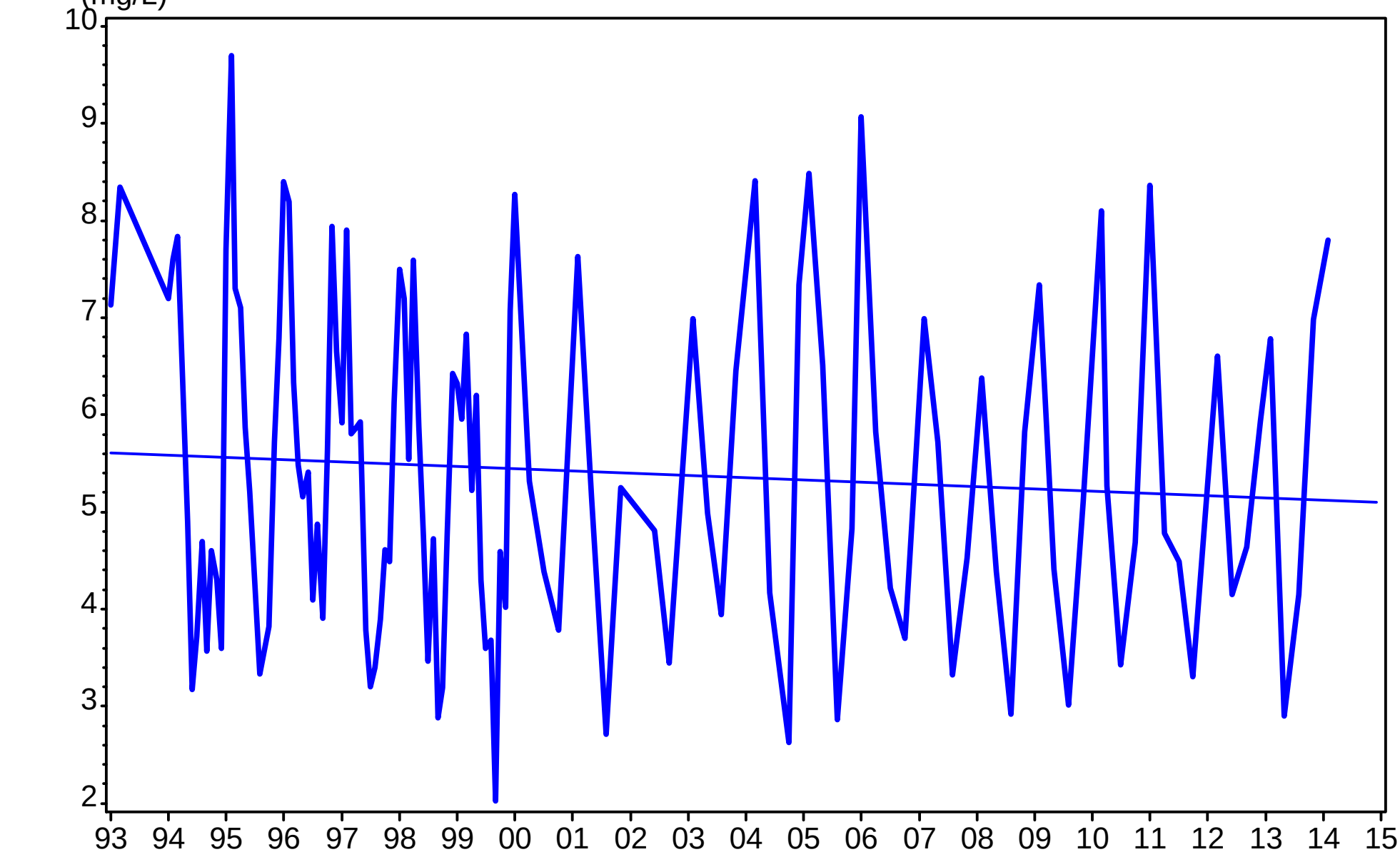
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



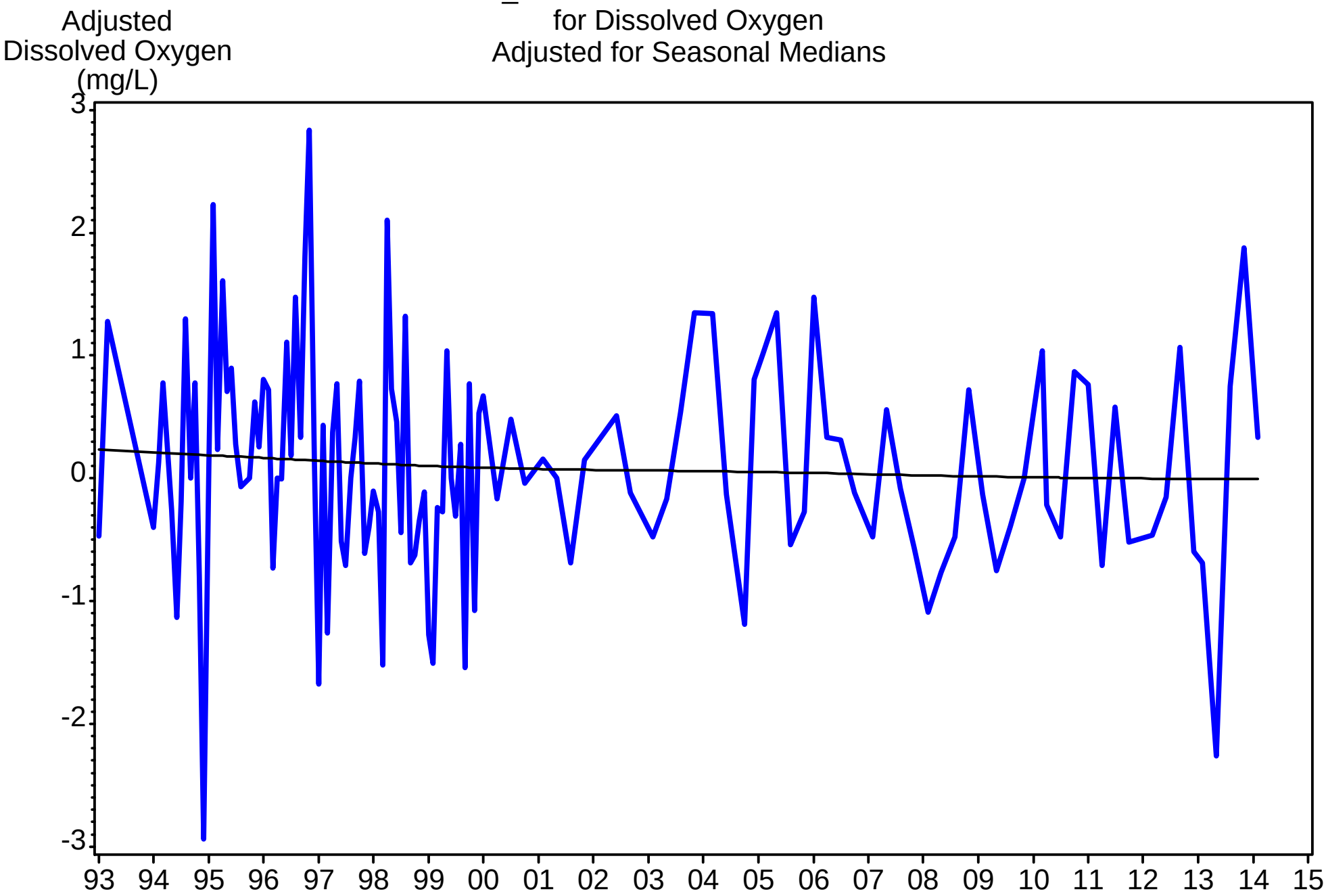
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR01 Trends

S_21FLVEMDTR01 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLVEMDTR01 Trends

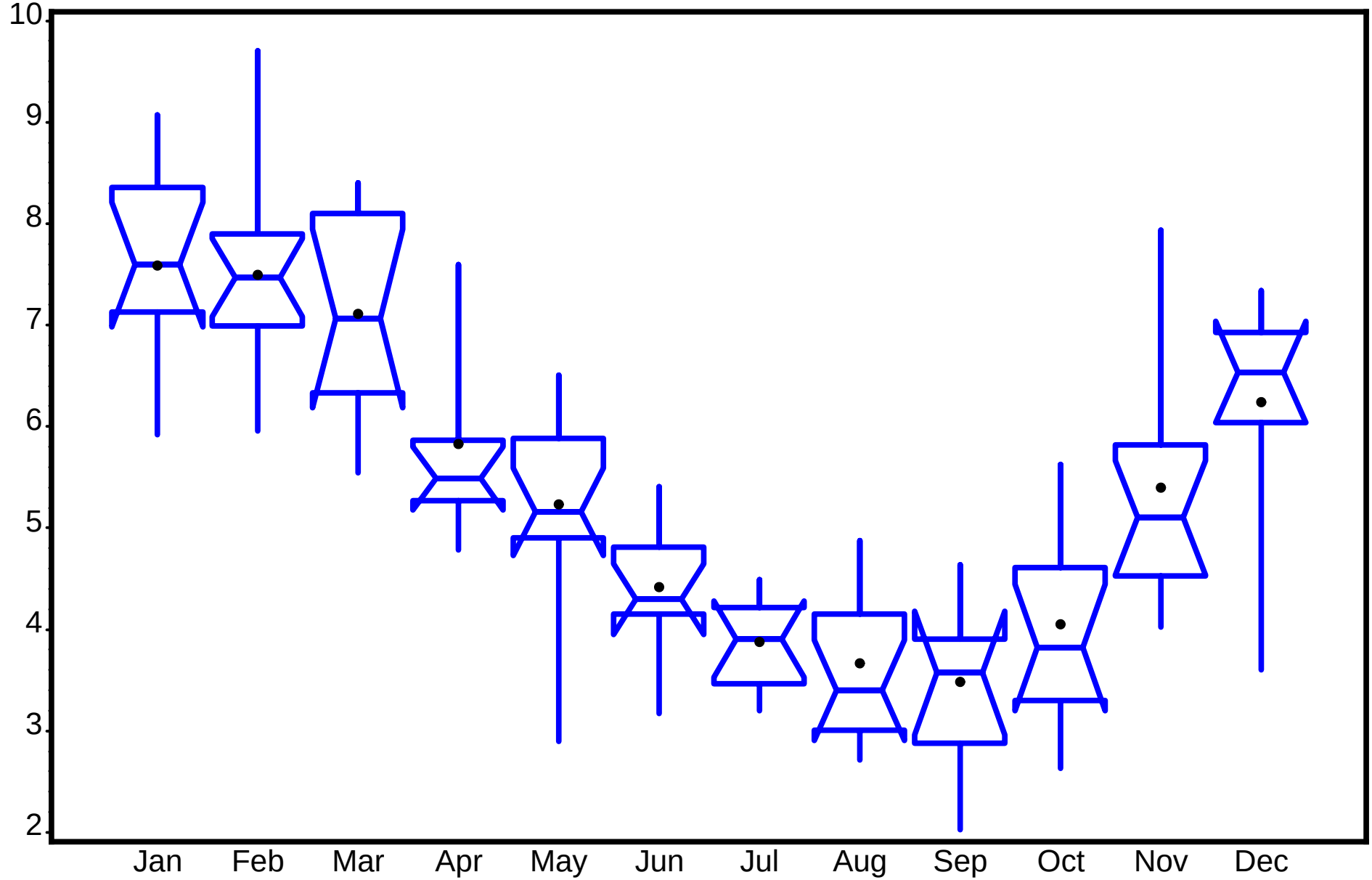


S_21FLVEMDTR01 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



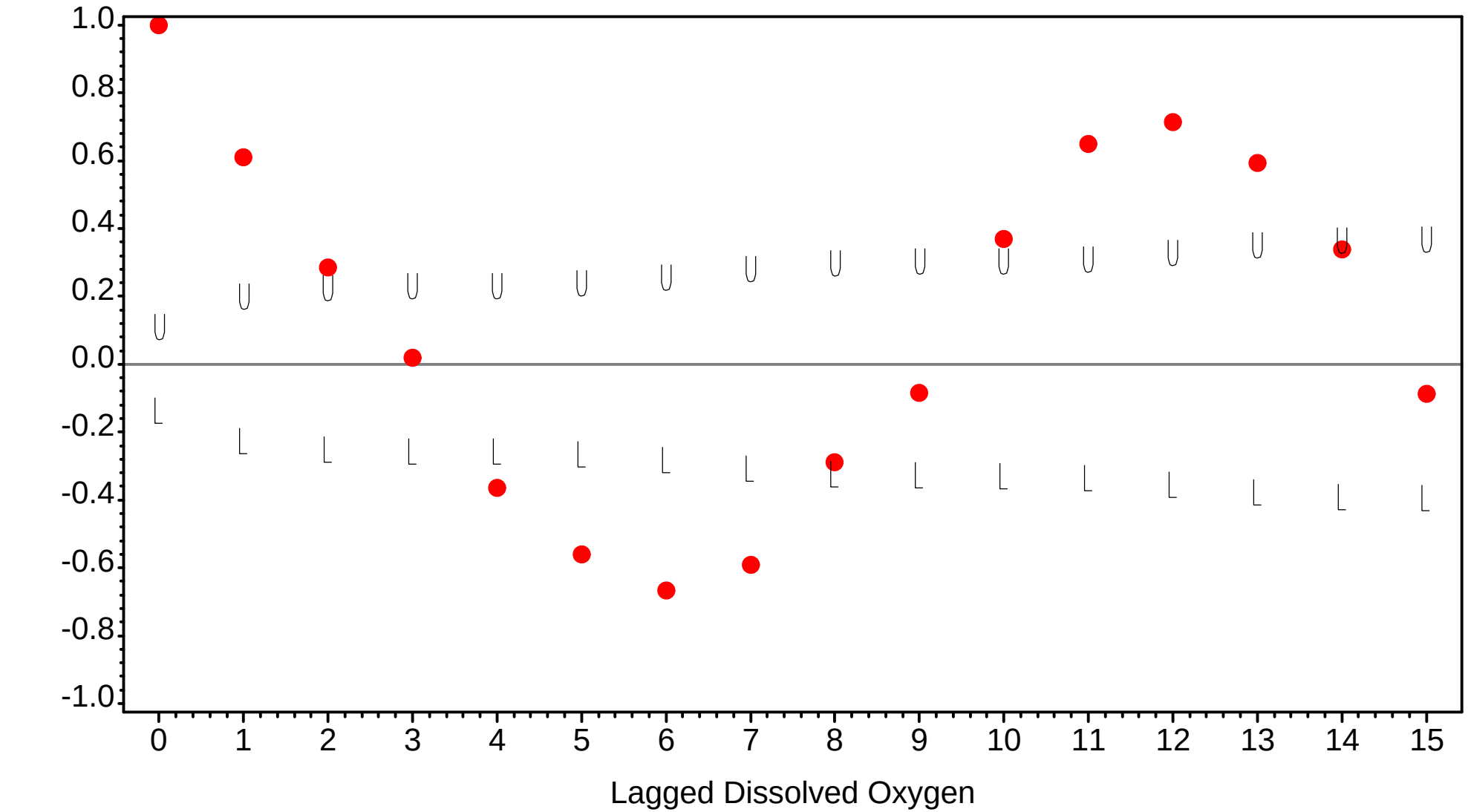
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.611	0.107	0.213	-0.213
2	0.284	0.119	0.238	-0.238
3	0.020	0.122	0.243	-0.243
4	-0.364	0.122	0.243	-0.243
5	-0.561	0.126	0.251	-0.251
6	-0.666	0.135	0.270	-0.270
7	-0.591	0.147	0.294	-0.294
8	-0.290	0.156	0.311	-0.311
9	-0.085	0.158	0.315	-0.315
10	0.369	0.158	0.316	-0.316
11	0.648	0.161	0.322	-0.322
12	0.714	0.171	0.341	-0.341
13	0.593	0.182	0.363	-0.363
14	0.338	0.189	0.378	-0.378
15	-0.088	0.191	0.382	-0.382

S_21FLVEMDTR01 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

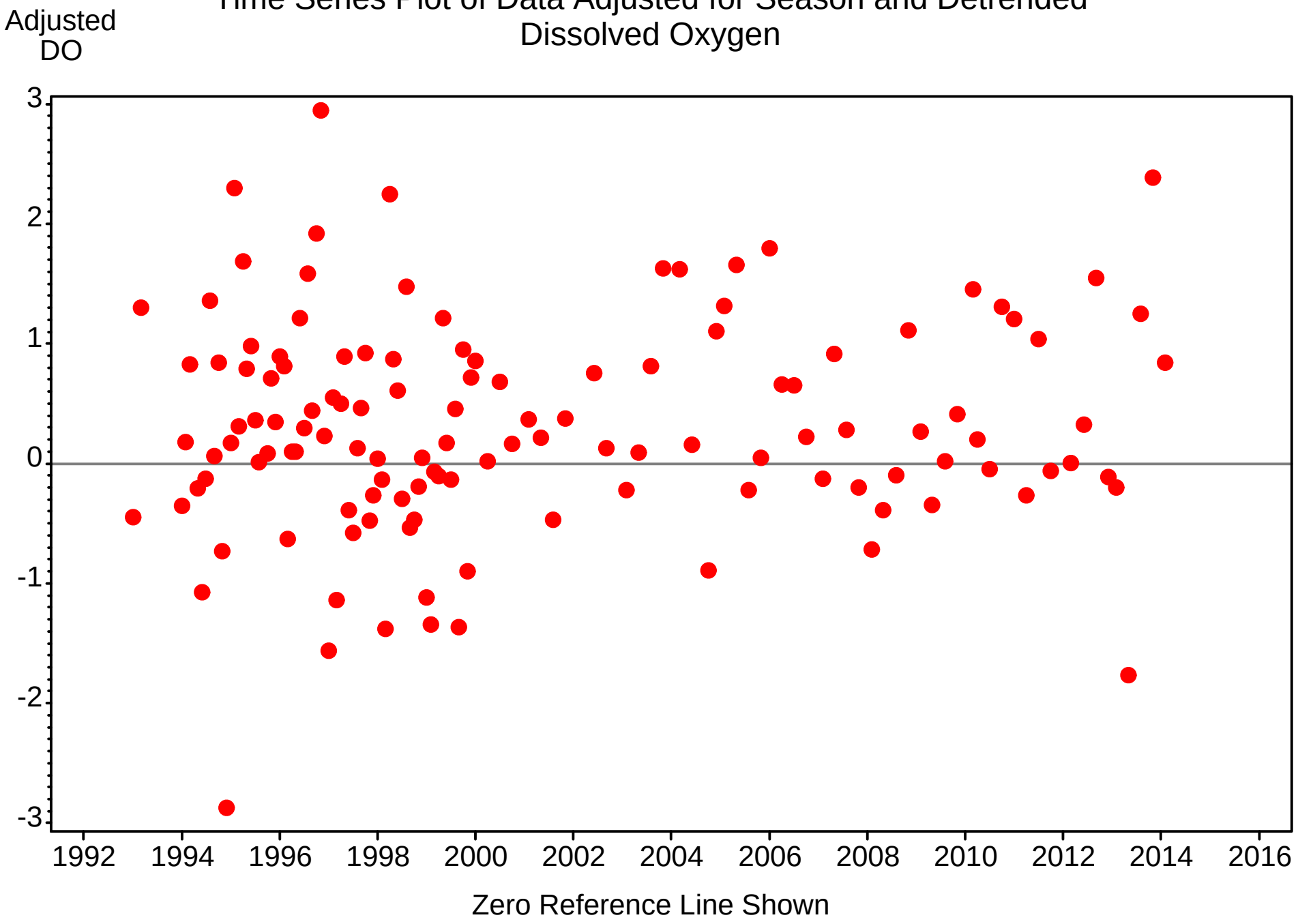
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.099	0.163	0.243	-0.023

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.099057	0.16270	0.24297	-0.023214

S_21FLVEMDTR01 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



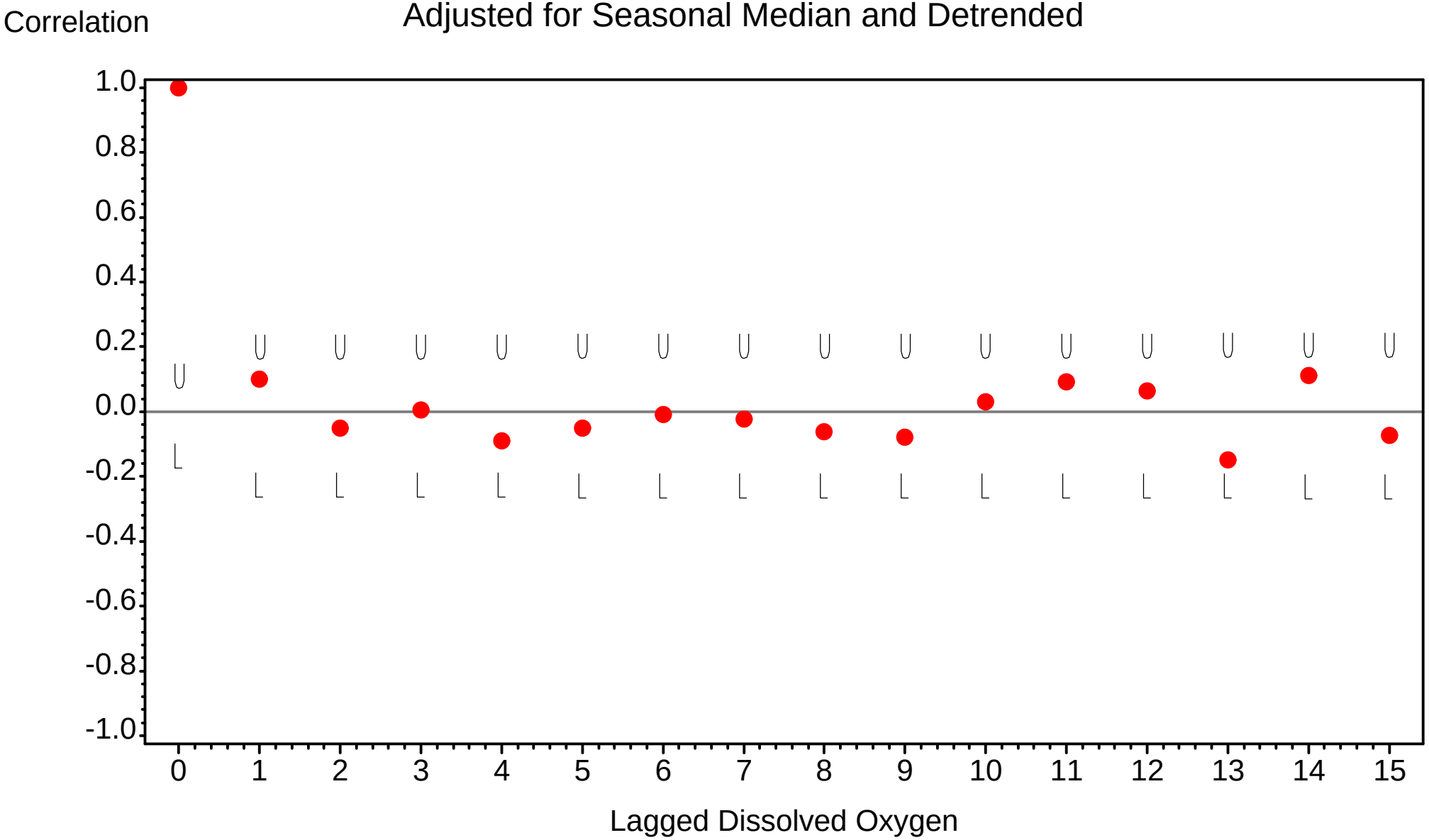
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.101	0.107	0.213	-0.213
2	-0.052	0.107	0.214	-0.214
3	0.006	0.107	0.214	-0.214
4	-0.089	0.107	0.214	-0.214
5	-0.052	0.107	0.215	-0.215
6	-0.008	0.107	0.215	-0.215
7	-0.023	0.107	0.215	-0.215
8	-0.062	0.107	0.215	-0.215
9	-0.078	0.108	0.215	-0.215
10	0.030	0.108	0.216	-0.216
11	0.092	0.108	0.216	-0.216
12	0.064	0.108	0.216	-0.216
13	-0.148	0.108	0.217	-0.217
14	0.111	0.109	0.218	-0.218
15	-0.072	0.109	0.219	-0.219

S_21FLVEMDTR01 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended

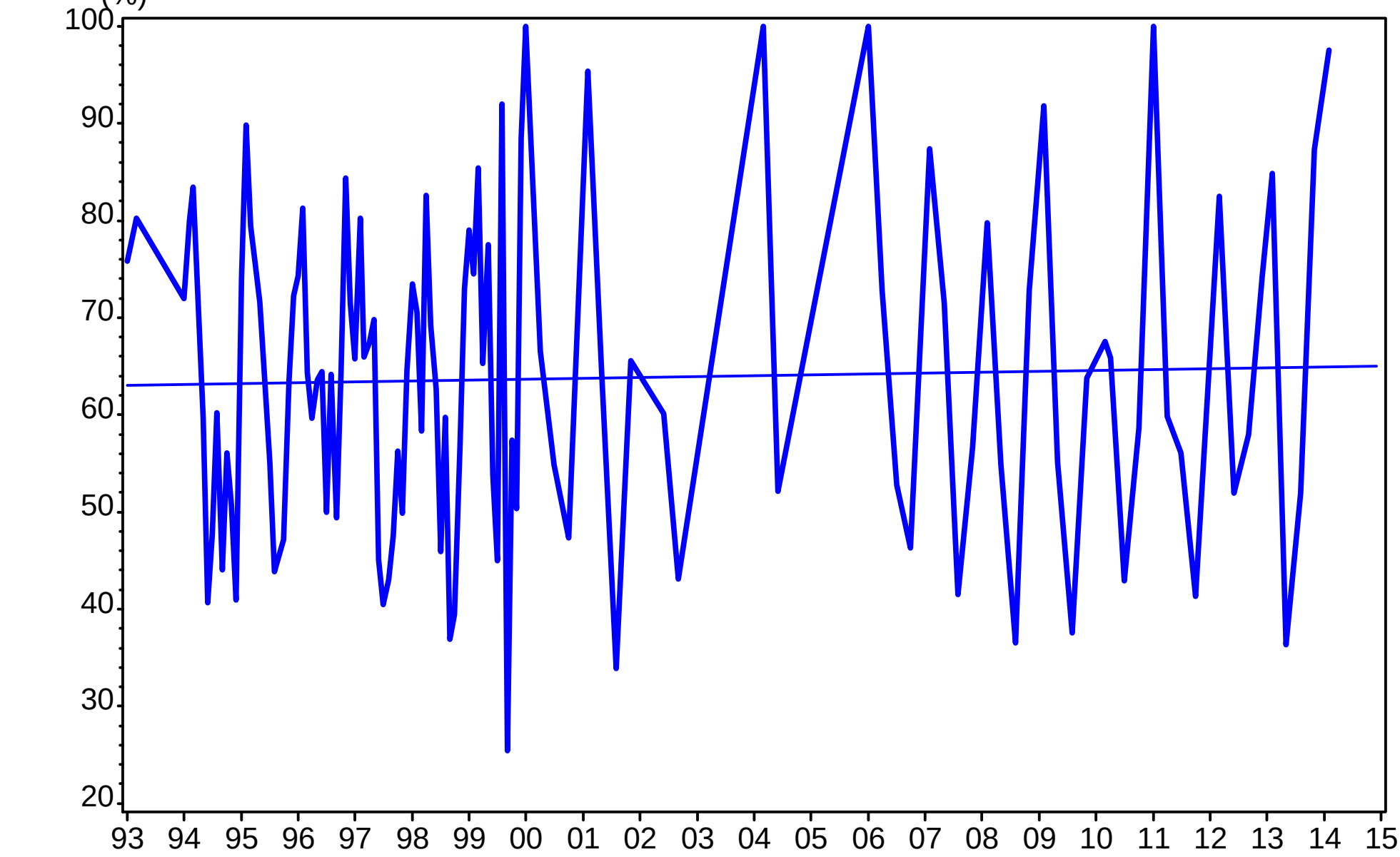


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

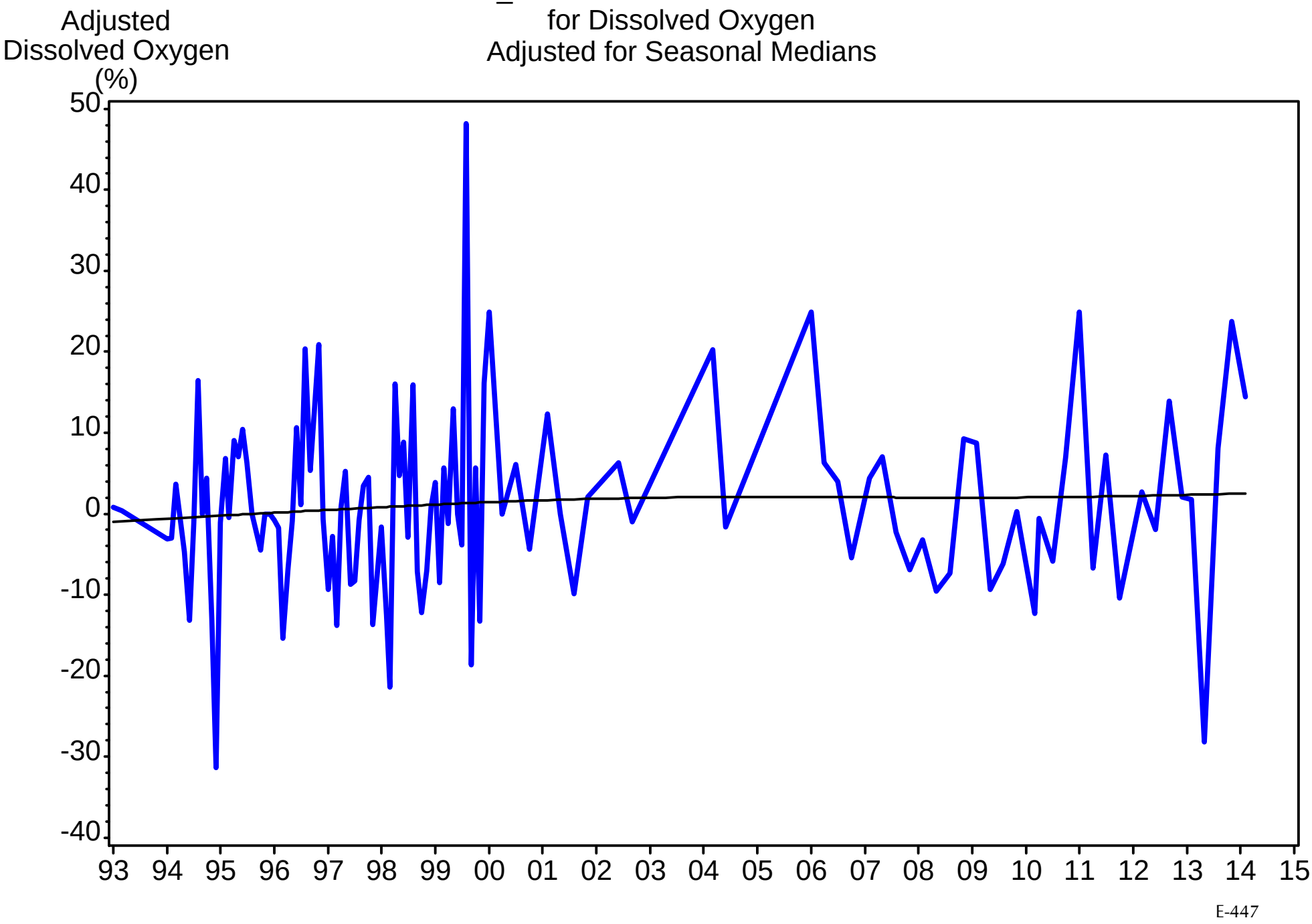
Zero Reference Line Shown

S_21FLVEMDTR01 Trends

S_21FLVEMDTR01 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



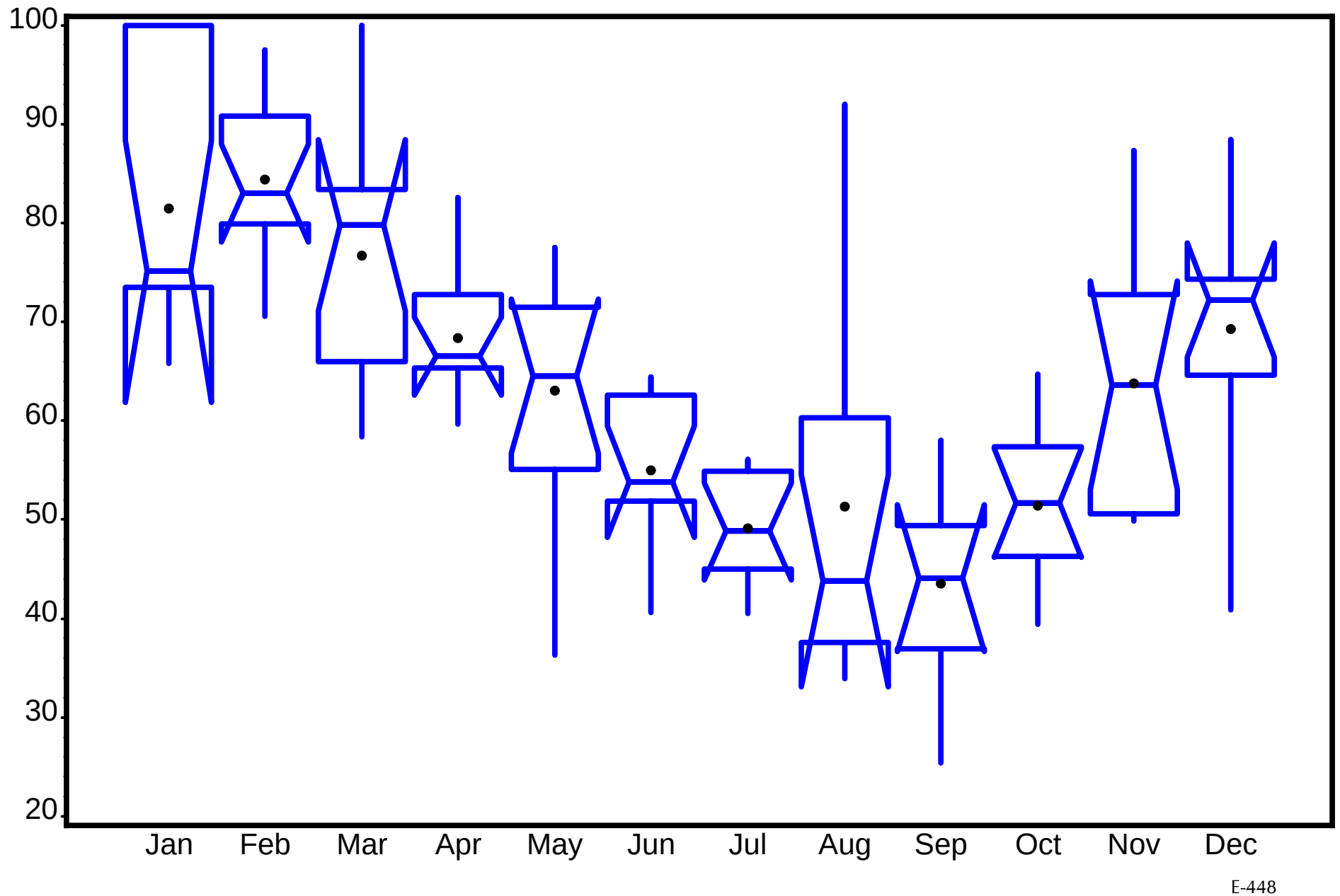
S_21FLVEMDTR01 Trends



S_21FLVEMDTR01 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



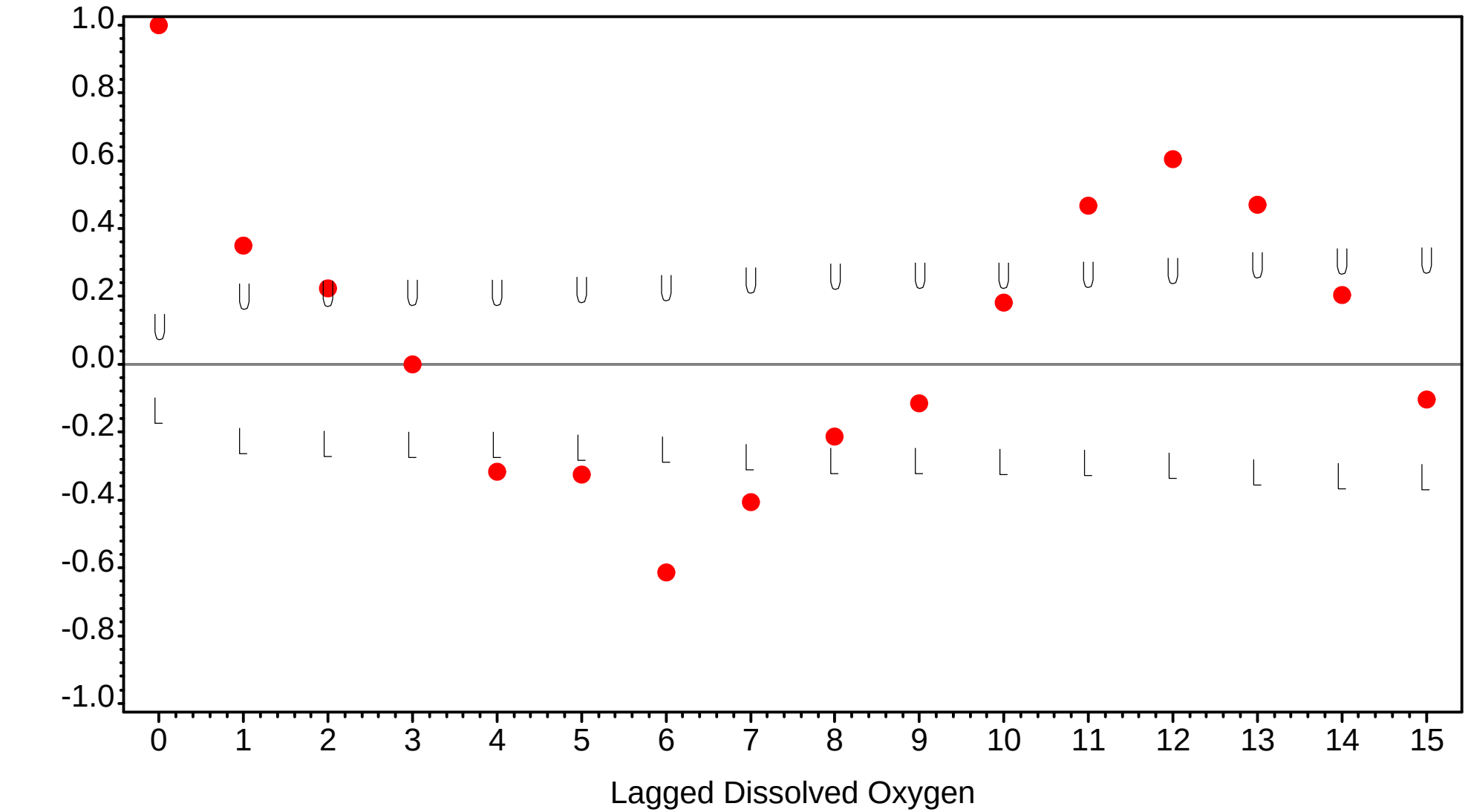
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.349	0.107	0.213	-0.213
2	0.223	0.111	0.222	-0.222
3	0.000	0.113	0.225	-0.225
4	-0.318	0.113	0.225	-0.225
5	-0.325	0.116	0.232	-0.232
6	-0.613	0.119	0.239	-0.239
7	-0.406	0.131	0.261	-0.261
8	-0.212	0.135	0.271	-0.271
9	-0.115	0.137	0.273	-0.273
10	0.181	0.137	0.274	-0.274
11	0.466	0.138	0.276	-0.276
12	0.605	0.144	0.287	-0.287
13	0.469	0.153	0.306	-0.306
14	0.203	0.158	0.317	-0.317
15	-0.105	0.159	0.319	-0.319

S_21FLVEMDTR01 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

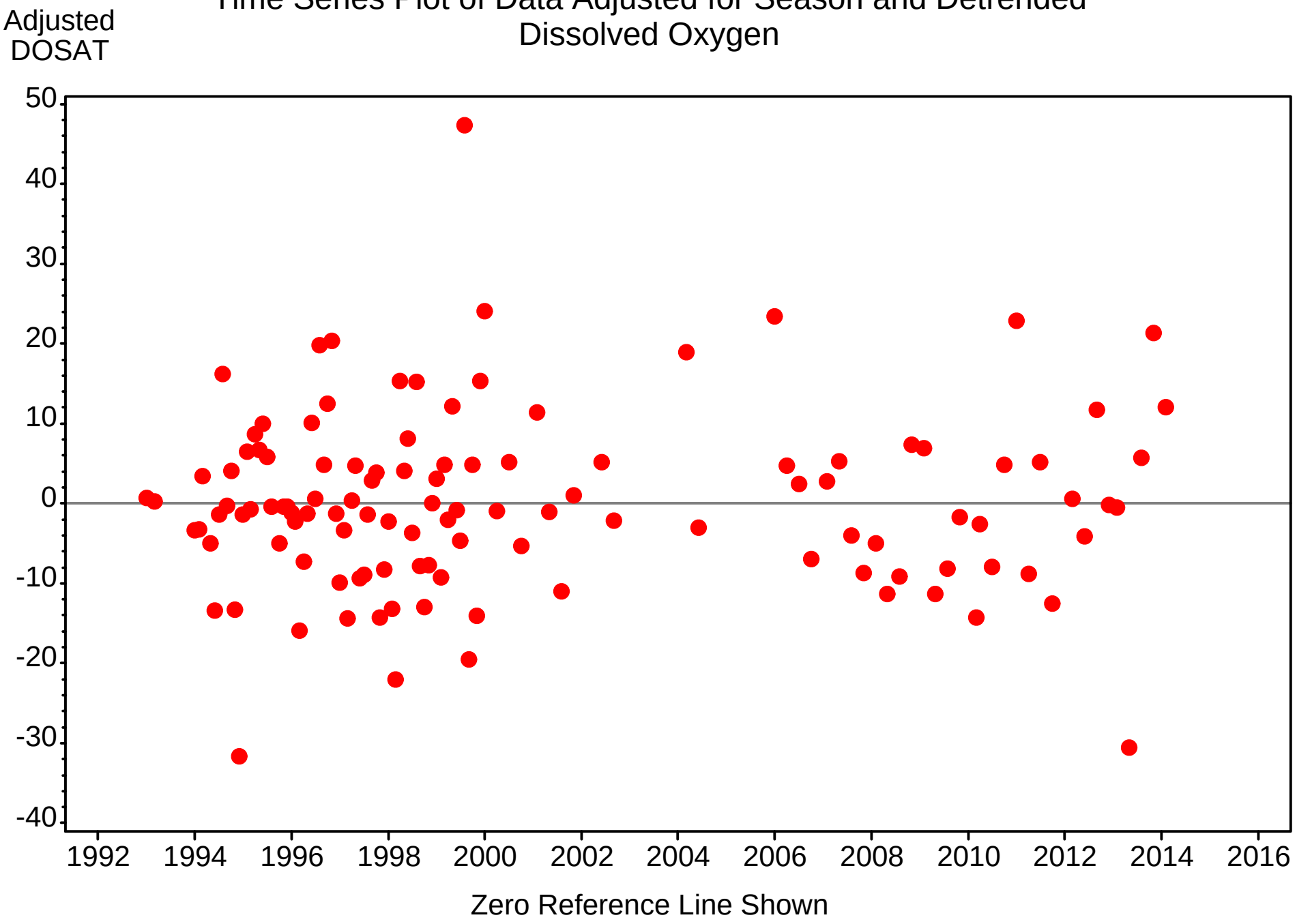
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.046	0.549	0.573	0.109

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.045714	0.54949	0.57310	0.10909

S_21FLVEMDTR01 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

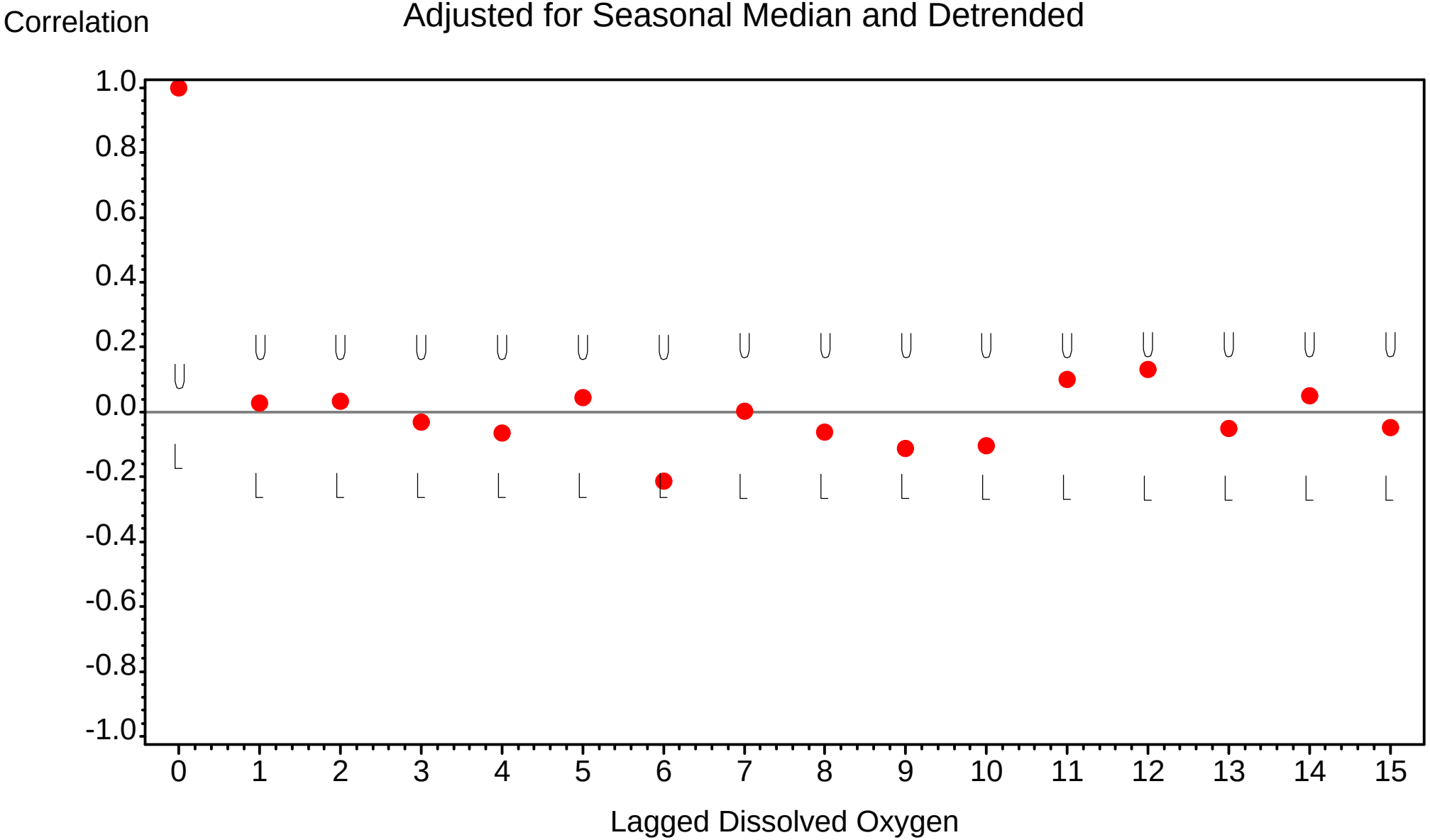


S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.028	0.107	0.213	-0.213
2	0.032	0.107	0.213	-0.213
3	-0.031	0.107	0.213	-0.213
4	-0.066	0.107	0.213	-0.213
5	0.044	0.107	0.214	-0.214
6	-0.213	0.107	0.214	-0.214
7	0.001	0.109	0.217	-0.217
8	-0.061	0.109	0.217	-0.217
9	-0.113	0.109	0.217	-0.217
10	-0.104	0.109	0.218	-0.218
11	0.101	0.109	0.219	-0.219
12	0.130	0.110	0.220	-0.220
13	-0.051	0.110	0.221	-0.221
14	0.050	0.110	0.221	-0.221
15	-0.049	0.111	0.221	-0.221

S_21FLVEMDTR01 Trends Appendix

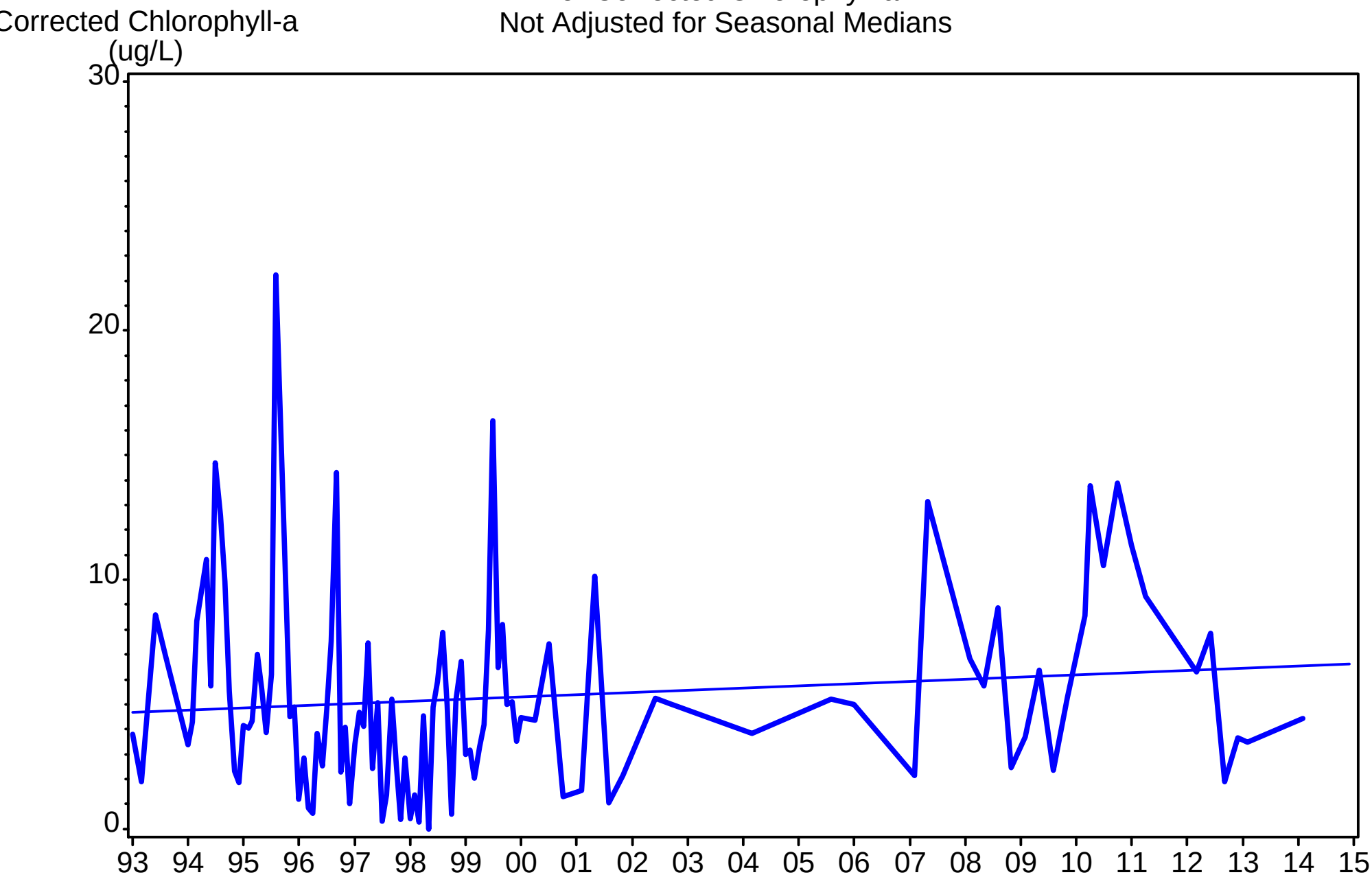
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



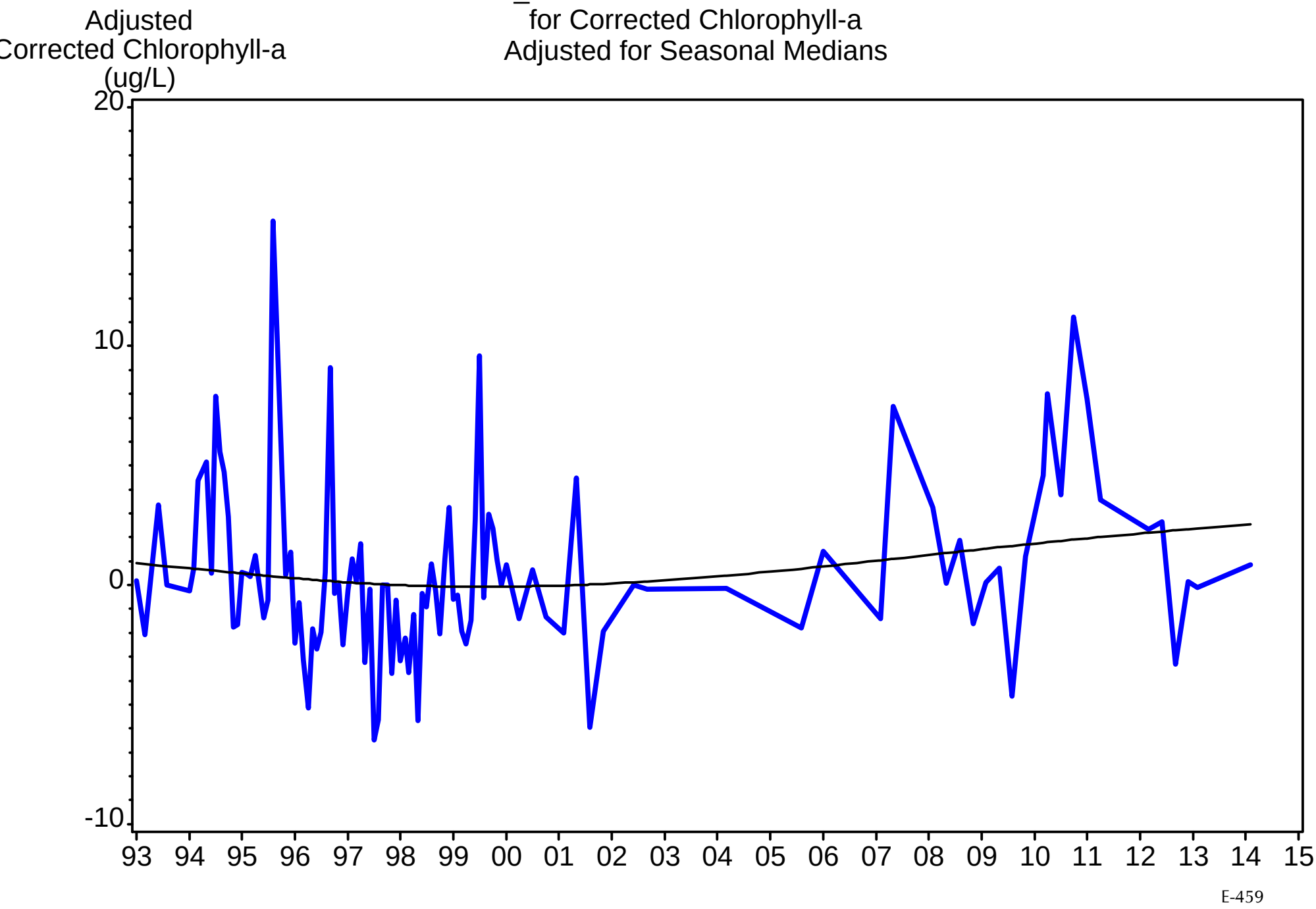
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR01 Trends

S_21FLVEMDTR01 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



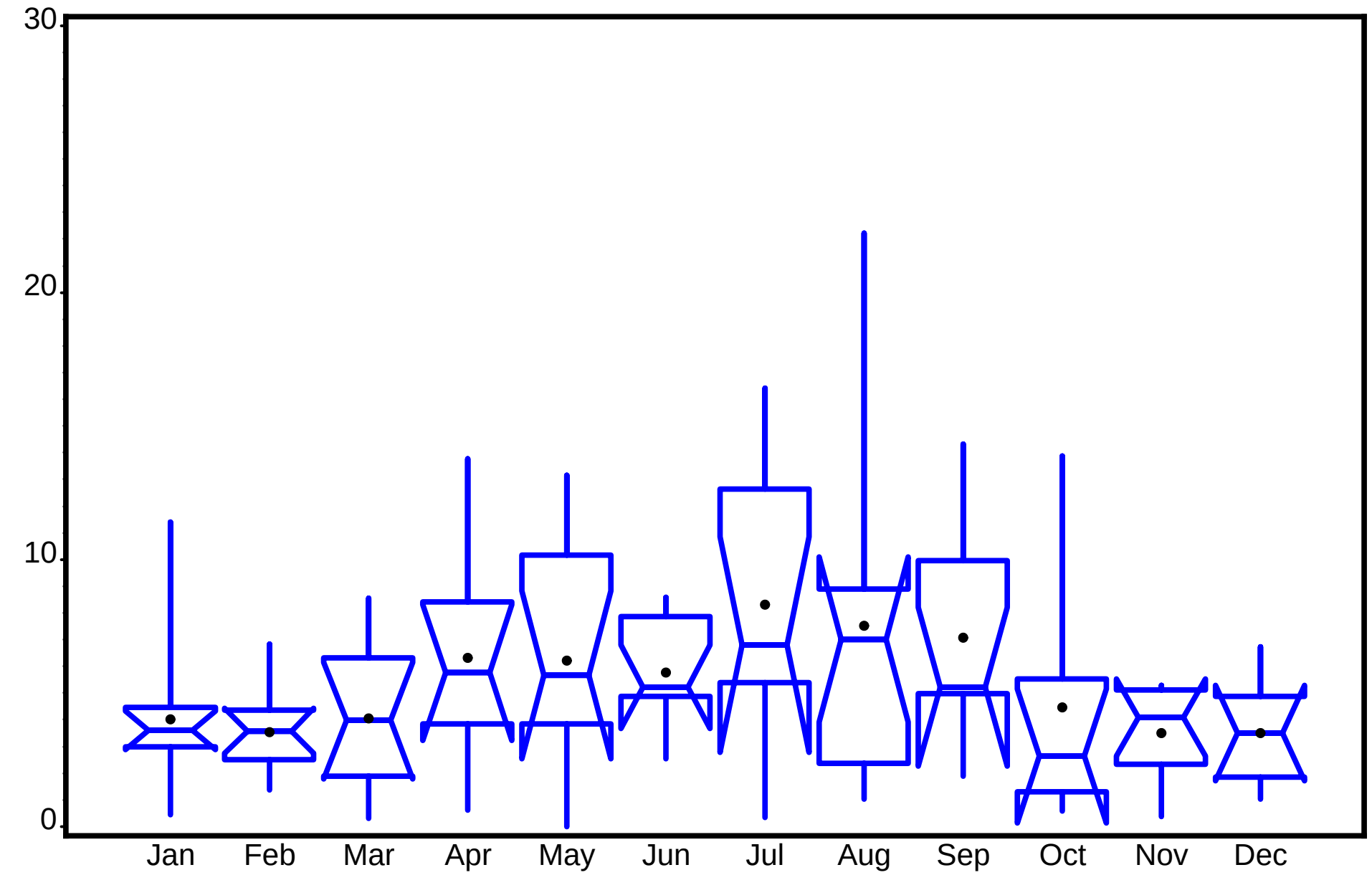
S_21FLVEMDTR01 Trends



S_21FLVEMDTR01 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a



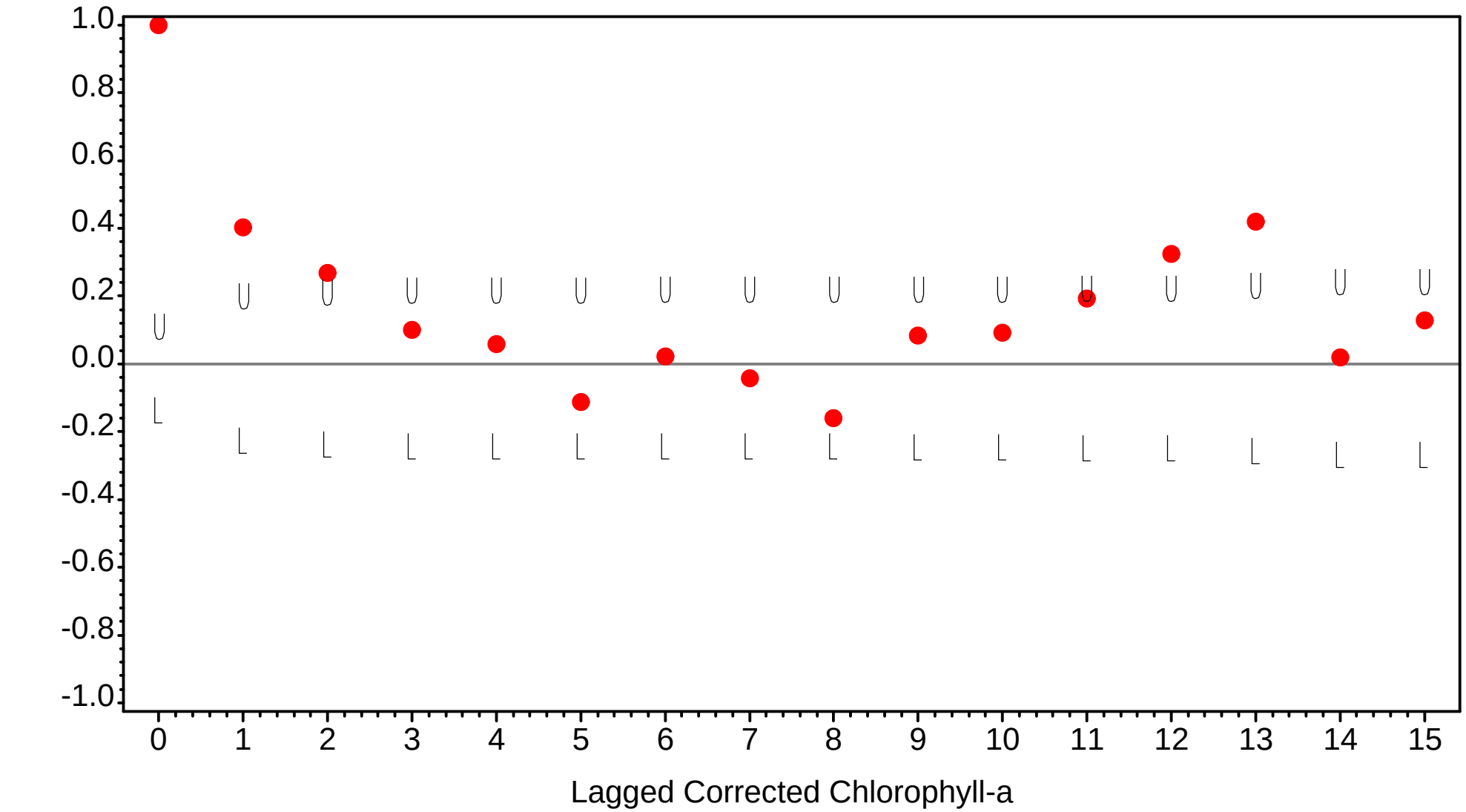
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.404	0.107	0.213	-0.213
2	0.267	0.112	0.224	-0.224
3	0.099	0.115	0.229	-0.229
4	0.059	0.115	0.230	-0.230
5	-0.113	0.115	0.230	-0.230
6	0.023	0.115	0.231	-0.231
7	-0.042	0.116	0.231	-0.231
8	-0.159	0.116	0.231	-0.231
9	0.083	0.116	0.233	-0.233
10	0.093	0.117	0.233	-0.233
11	0.193	0.117	0.234	-0.234
12	0.325	0.118	0.236	-0.236
13	0.420	0.121	0.243	-0.243
14	0.019	0.127	0.254	-0.254
15	0.127	0.127	0.254	-0.254

S_21FLVEMDTR01 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

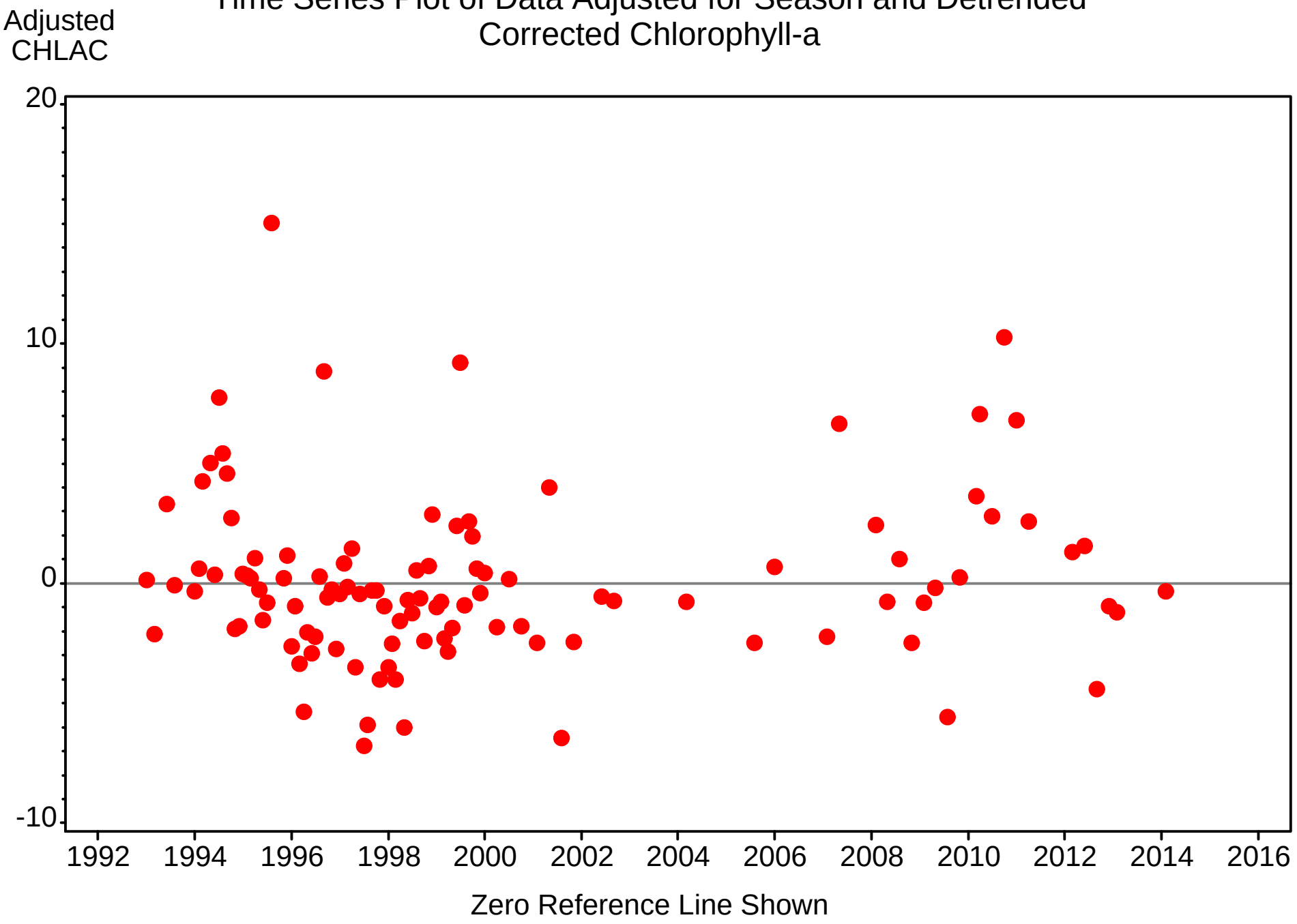
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.074	0.356	0.527	0.052

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.073826	0.35568	0.52706	0.052333

S_21FLVEMDTR01 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a

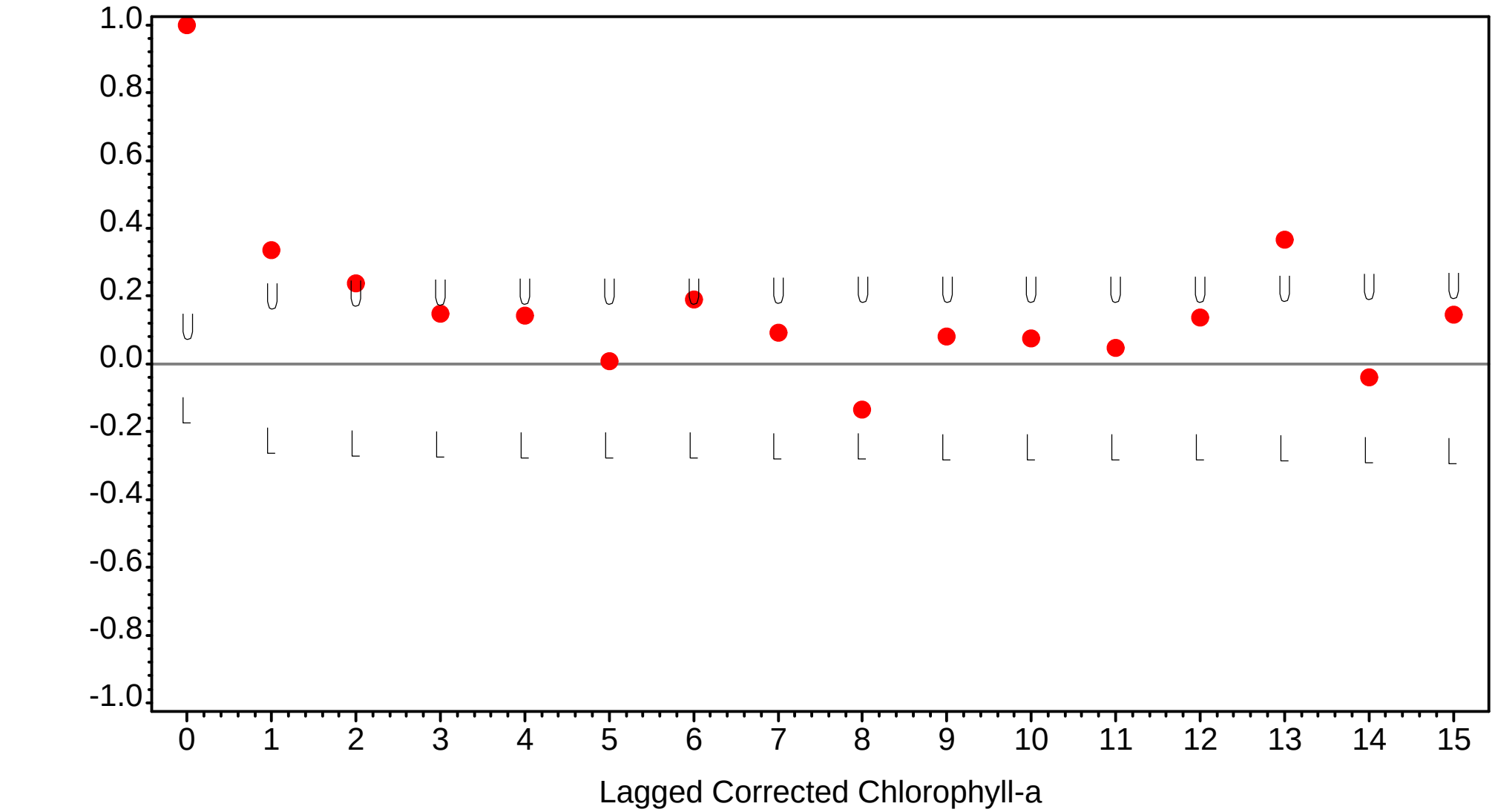


S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.336	0.107	0.213	-0.213
2	0.237	0.111	0.221	-0.221
3	0.147	0.112	0.225	-0.225
4	0.142	0.113	0.226	-0.226
5	0.008	0.114	0.228	-0.228
6	0.189	0.114	0.228	-0.228
7	0.092	0.115	0.230	-0.230
8	-0.134	0.115	0.231	-0.231
9	0.082	0.116	0.232	-0.232
10	0.074	0.116	0.232	-0.232
11	0.047	0.116	0.233	-0.233
12	0.137	0.116	0.233	-0.233
13	0.366	0.117	0.234	-0.234
14	-0.039	0.121	0.242	-0.242
15	0.144	0.121	0.243	-0.243

S_21FLVEMDTR01 Trends Appendix

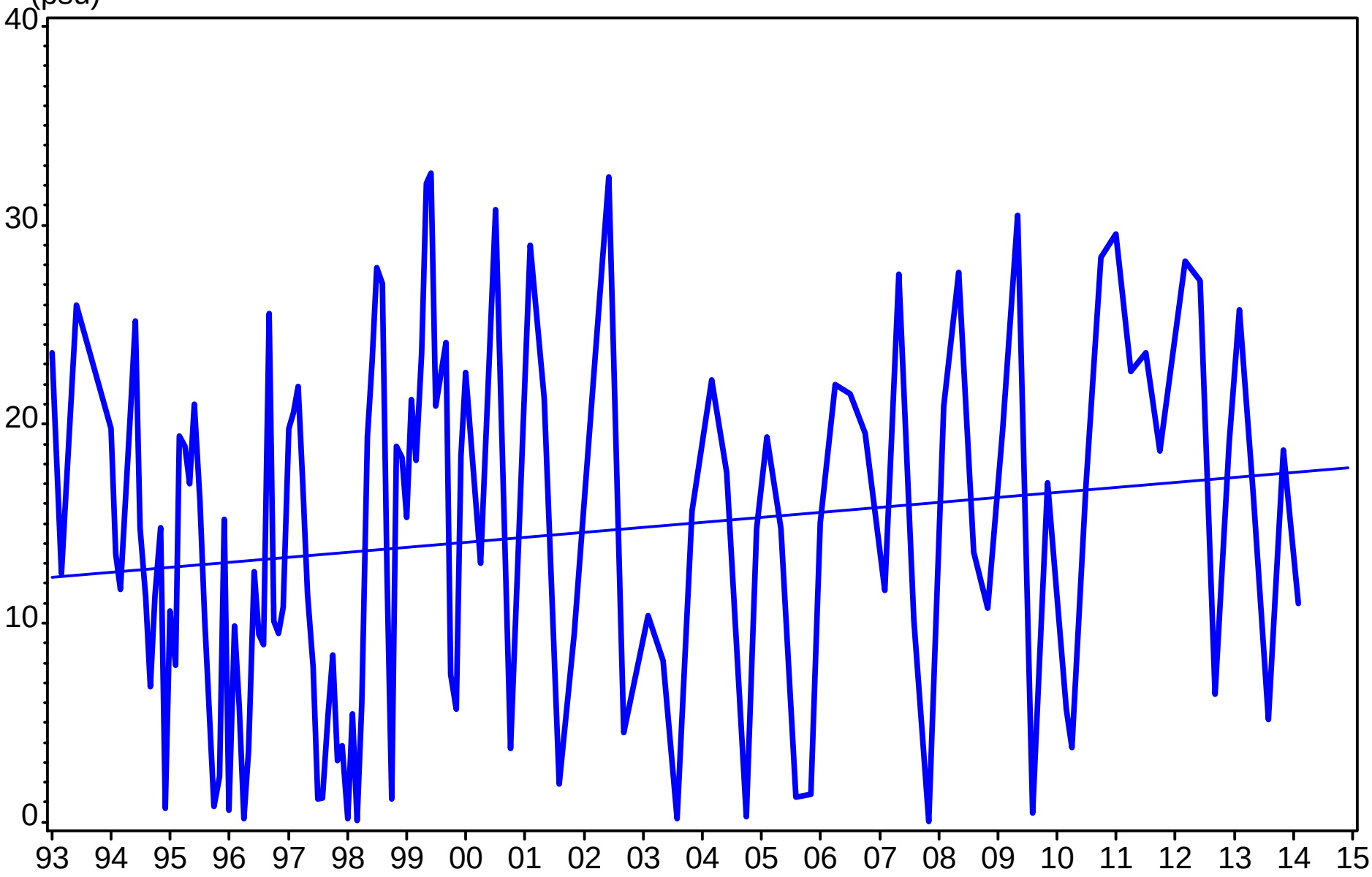
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



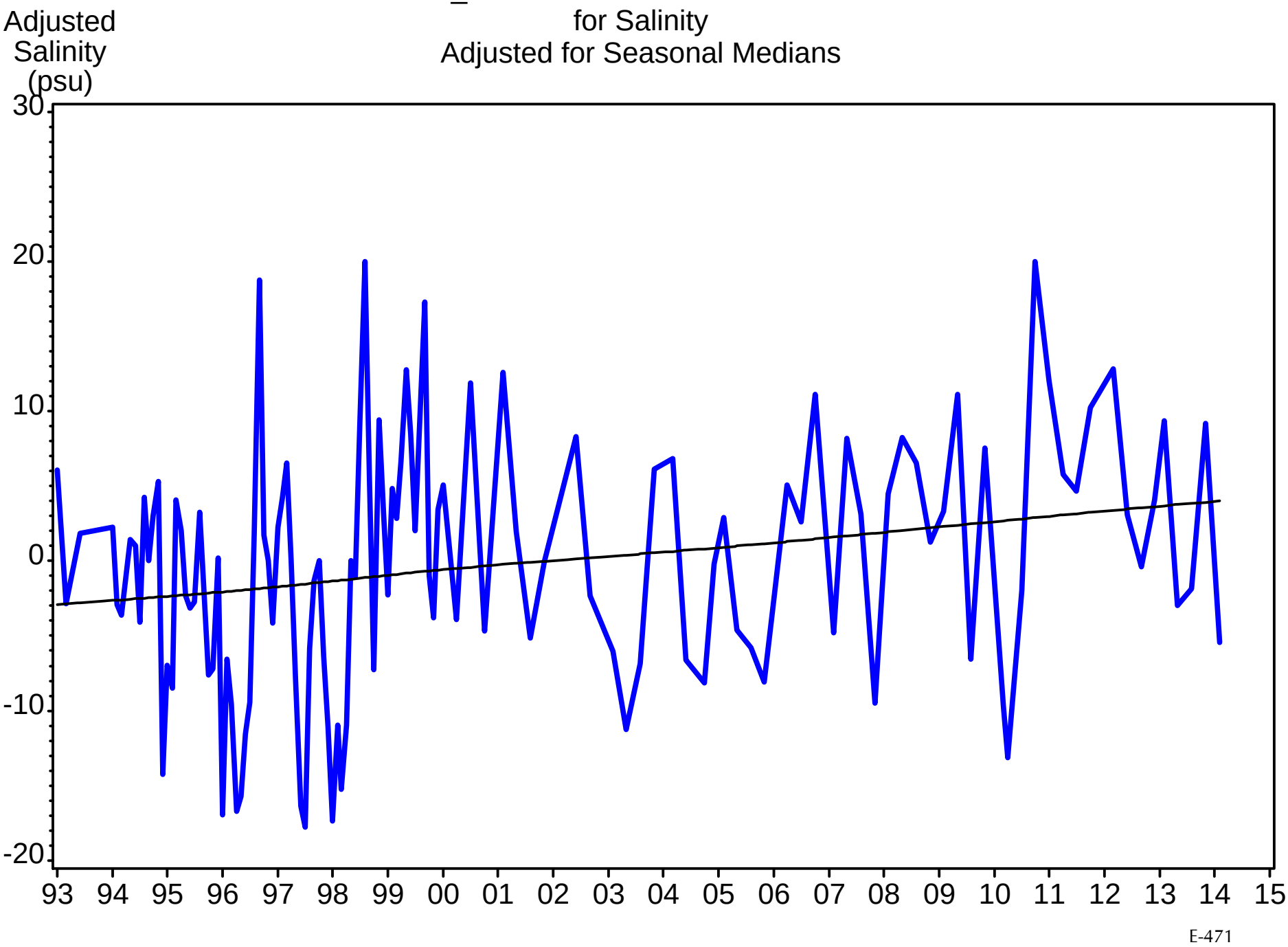
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR01 Trends

S_21FLVEMDTR01 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



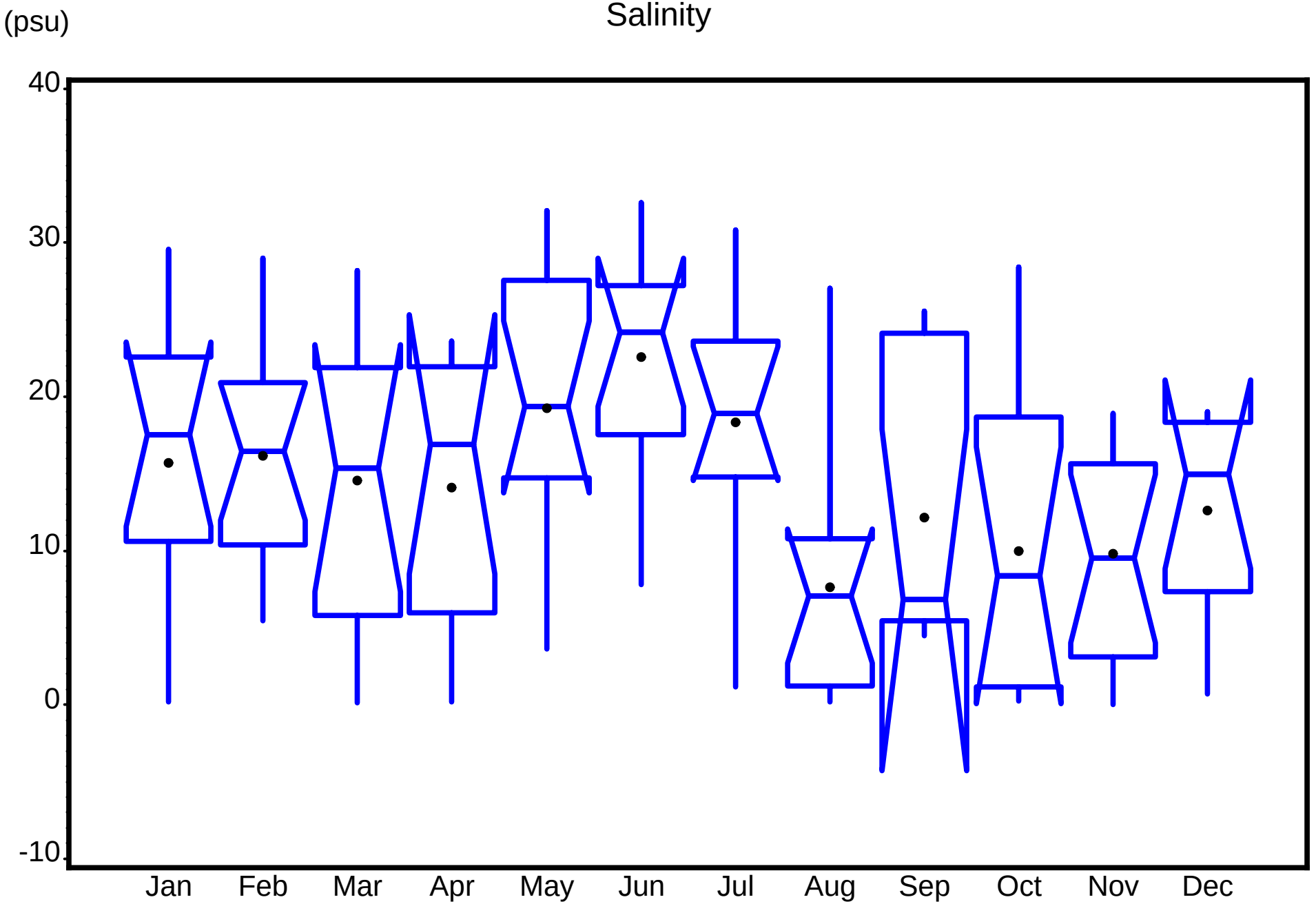
S_21FLVEMDTR01 Trends



S_21FLVEMDTR01 Trends Appendix

Seasonal Univariate Statistics

Salinity



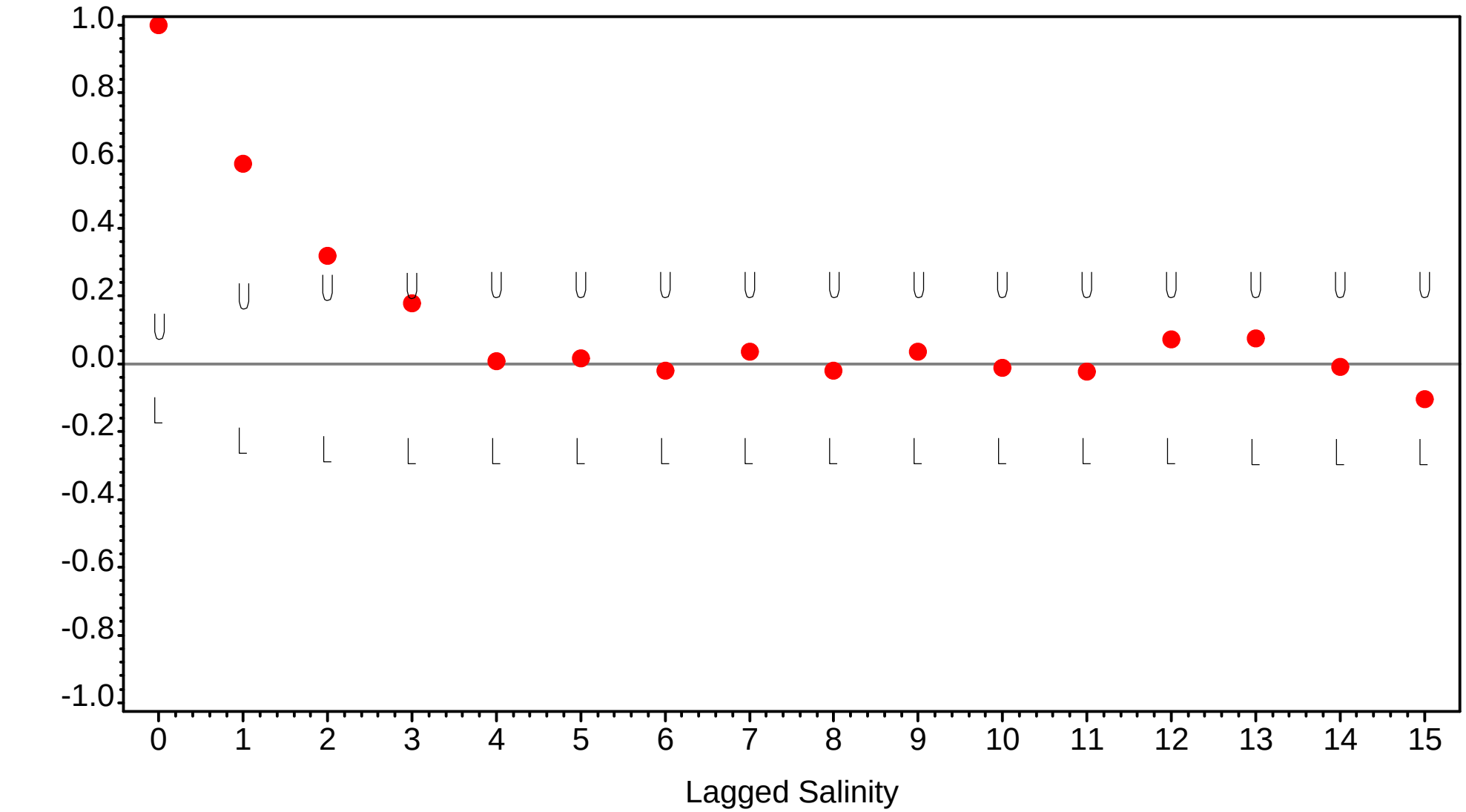
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.591	0.107	0.213	-0.213
2	0.318	0.118	0.237	-0.237
3	0.179	0.122	0.243	-0.243
4	0.007	0.123	0.245	-0.245
5	0.017	0.123	0.245	-0.245
6	-0.021	0.123	0.245	-0.245
7	0.035	0.123	0.245	-0.245
8	-0.020	0.123	0.245	-0.245
9	0.036	0.123	0.245	-0.245
10	-0.011	0.123	0.245	-0.245
11	-0.024	0.123	0.245	-0.245
12	0.072	0.123	0.245	-0.245
13	0.074	0.123	0.246	-0.246
14	-0.009	0.123	0.246	-0.246
15	-0.104	0.123	0.246	-0.246

S_21FLVEMDTR01 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.155	0.028	0.107	0.318

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.15482	0.028021	0.10656	0.3175

S_21FLVEMDTR01 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



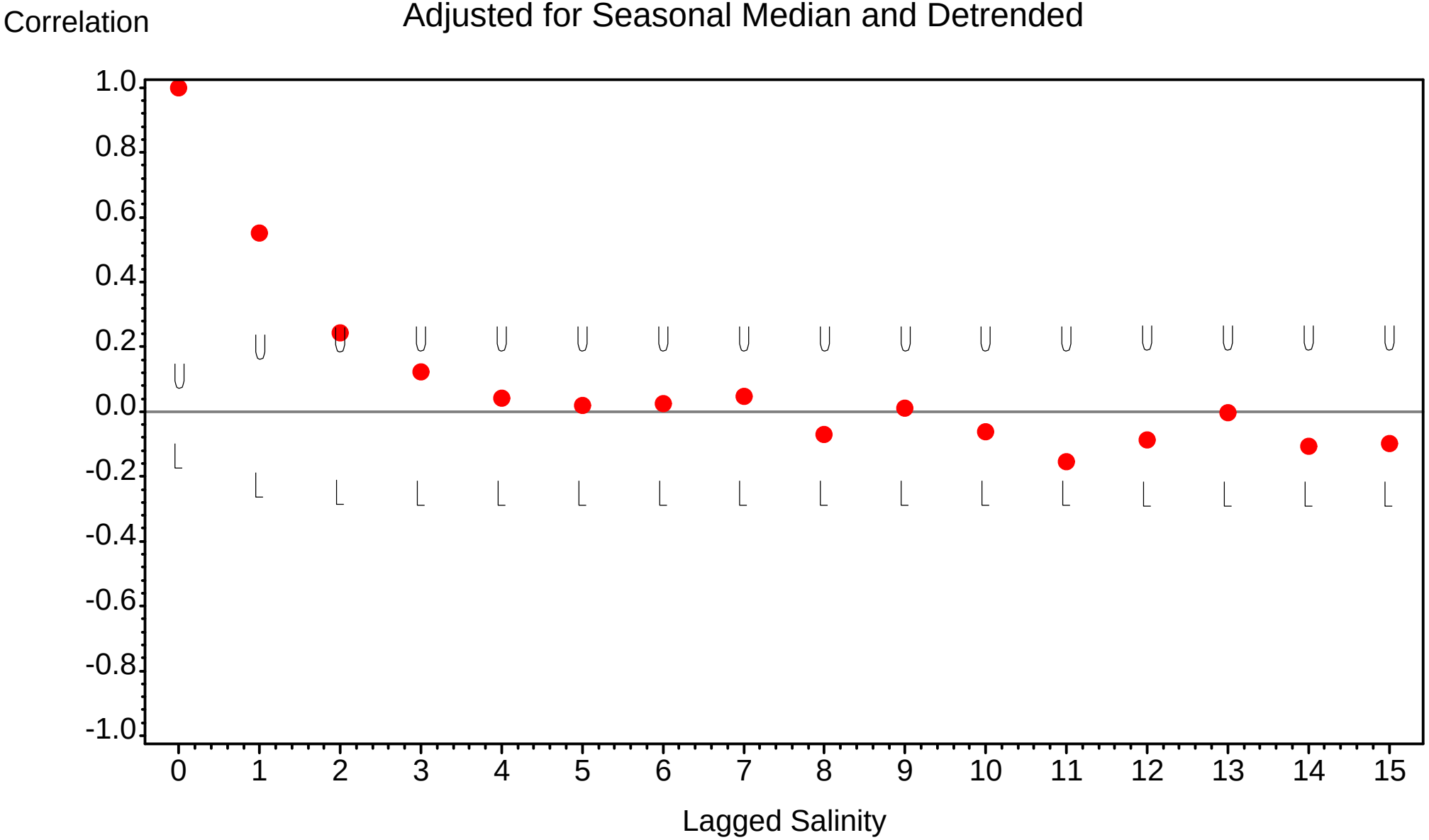
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.552	0.107	0.213	-0.213
2	0.244	0.117	0.234	-0.234
3	0.122	0.119	0.238	-0.238
4	0.042	0.119	0.239	-0.239
5	0.020	0.119	0.239	-0.239
6	0.026	0.119	0.239	-0.239
7	0.047	0.119	0.239	-0.239
8	-0.071	0.119	0.239	-0.239
9	0.010	0.120	0.239	-0.239
10	-0.061	0.120	0.239	-0.239
11	-0.155	0.120	0.239	-0.239
12	-0.088	0.120	0.241	-0.241
13	-0.004	0.121	0.241	-0.241
14	-0.106	0.121	0.241	-0.241
15	-0.099	0.121	0.242	-0.242

S_21FLVEMDTR01 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

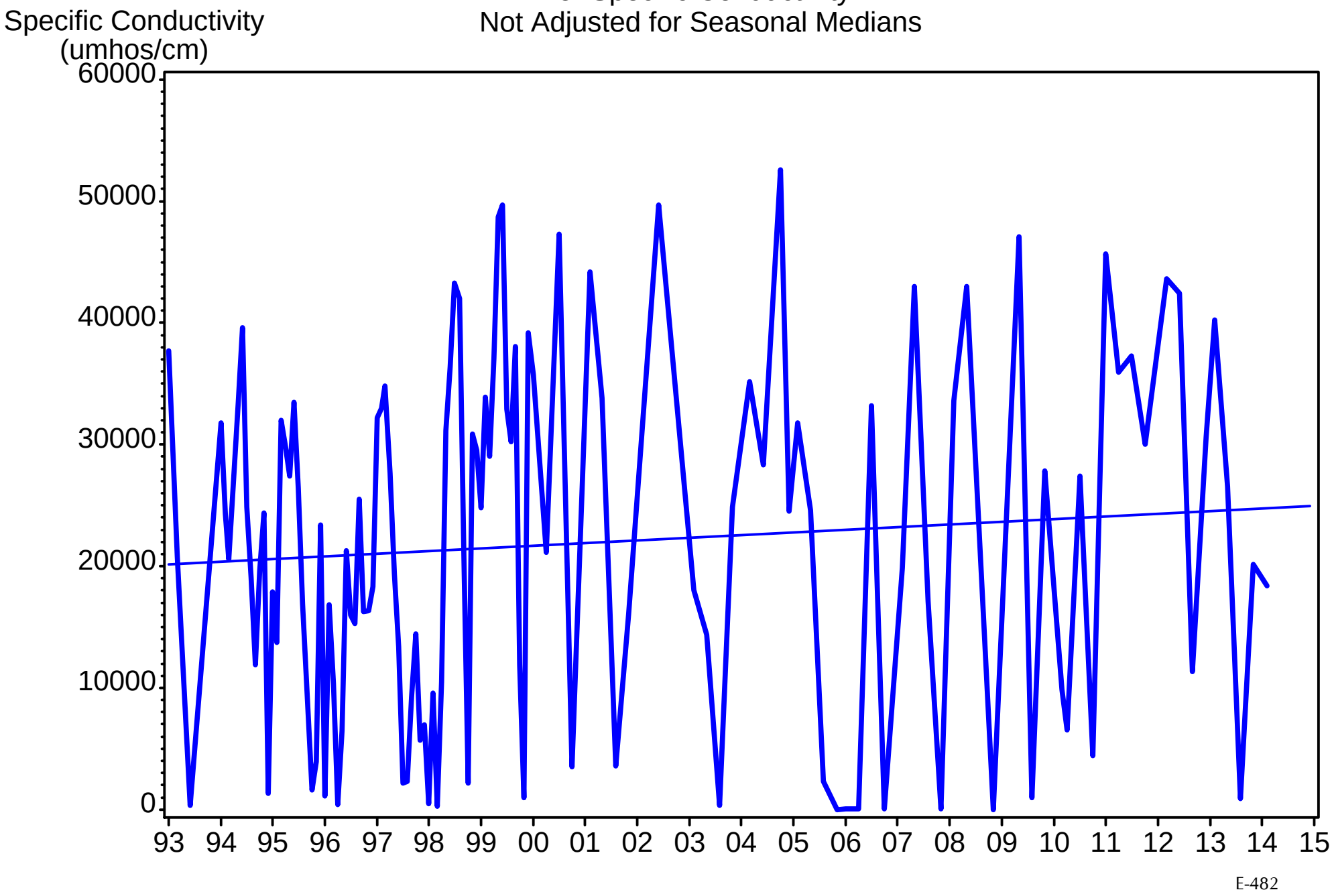


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

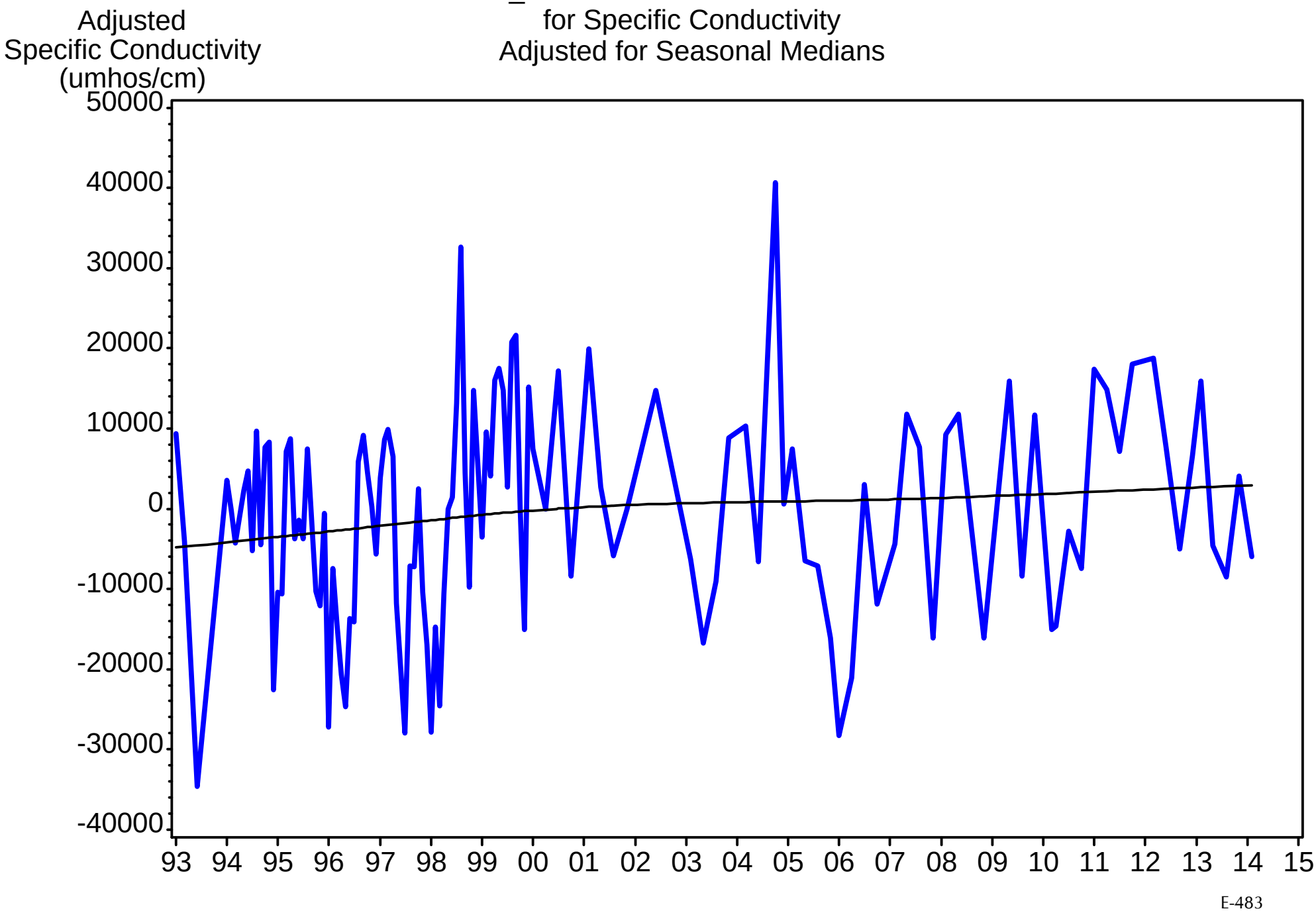
Zero Reference Line Shown

S_21FLVEMDTR01 Trends

S_21FLVEMDTR01 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



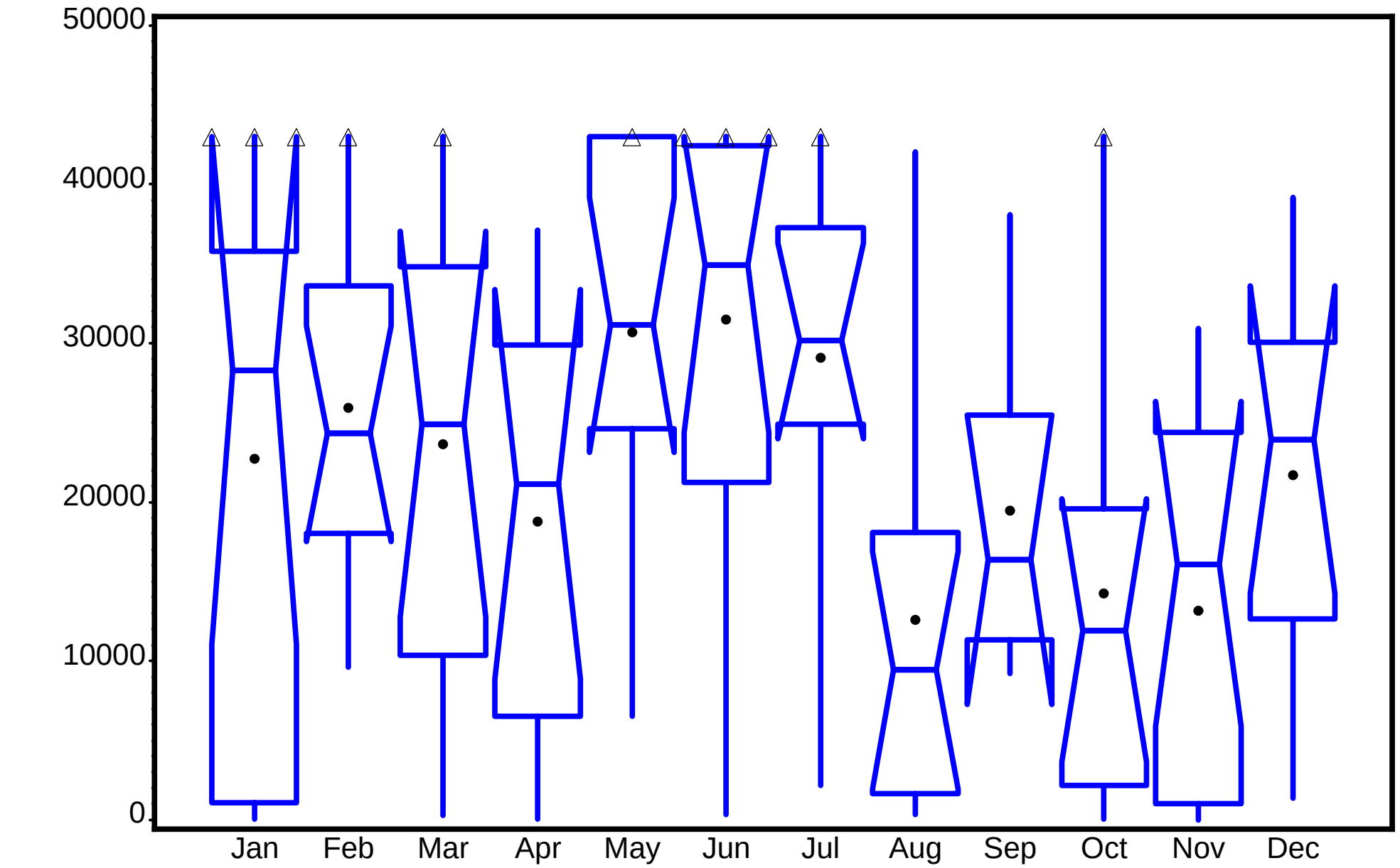
S_21FLVEMDTR01 Trends



S_21FLVEMDTR01 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity



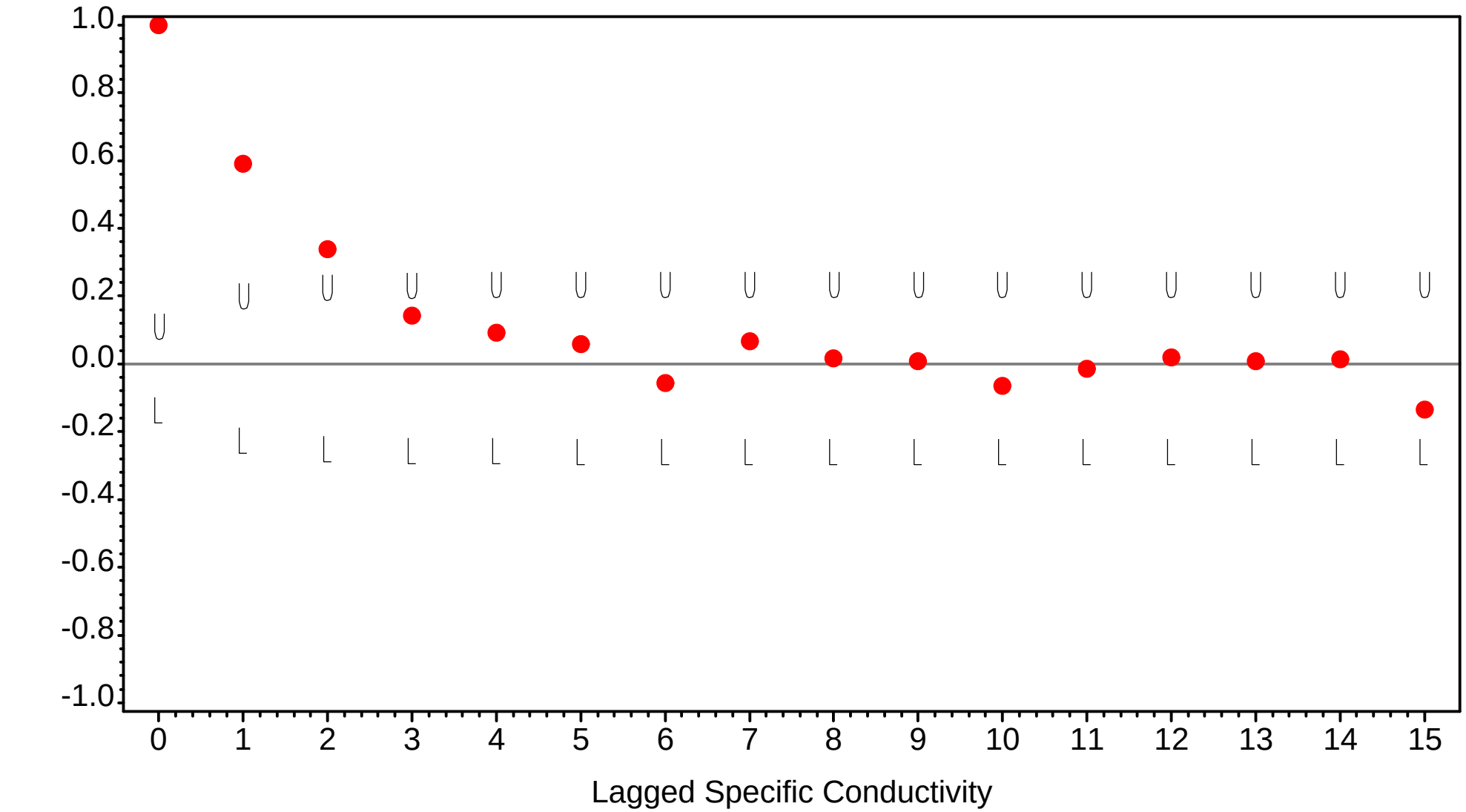
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.590	0.107	0.213	-0.213
2	0.338	0.118	0.237	-0.237
3	0.142	0.122	0.244	-0.244
4	0.092	0.123	0.245	-0.245
5	0.057	0.123	0.246	-0.246
6	-0.056	0.123	0.246	-0.246
7	0.066	0.123	0.246	-0.246
8	0.016	0.123	0.246	-0.246
9	0.008	0.123	0.246	-0.246
10	-0.064	0.123	0.246	-0.246
11	-0.014	0.123	0.247	-0.247
12	0.019	0.123	0.247	-0.247
13	0.009	0.123	0.247	-0.247
14	0.013	0.123	0.247	-0.247
15	-0.134	0.123	0.247	-0.247

S_21FLVEMDTR01 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

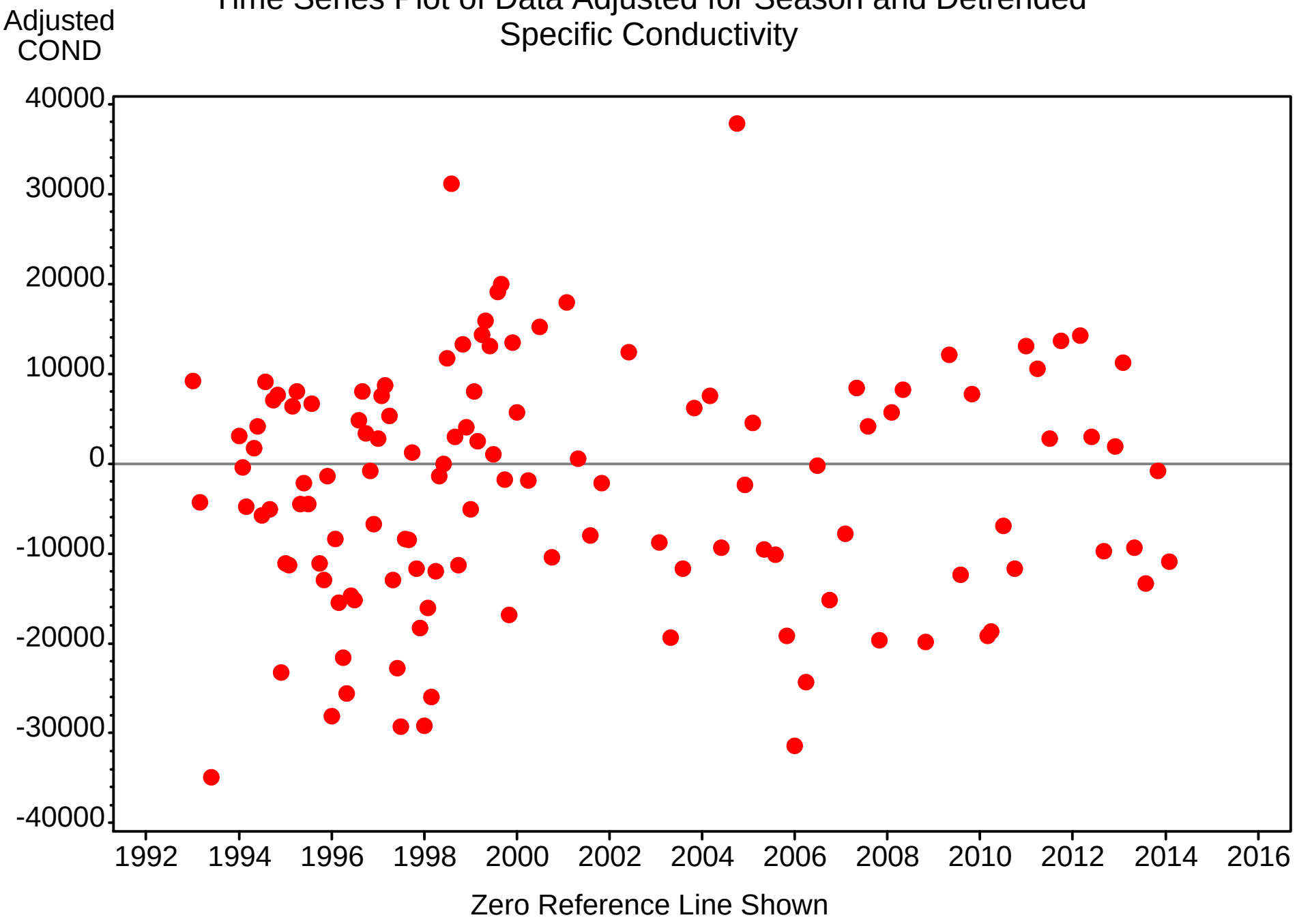
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.09	0.212	0.347	225.098

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.089577	0.21156	0.34660	225.098

S_21FLVEMDTR01 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

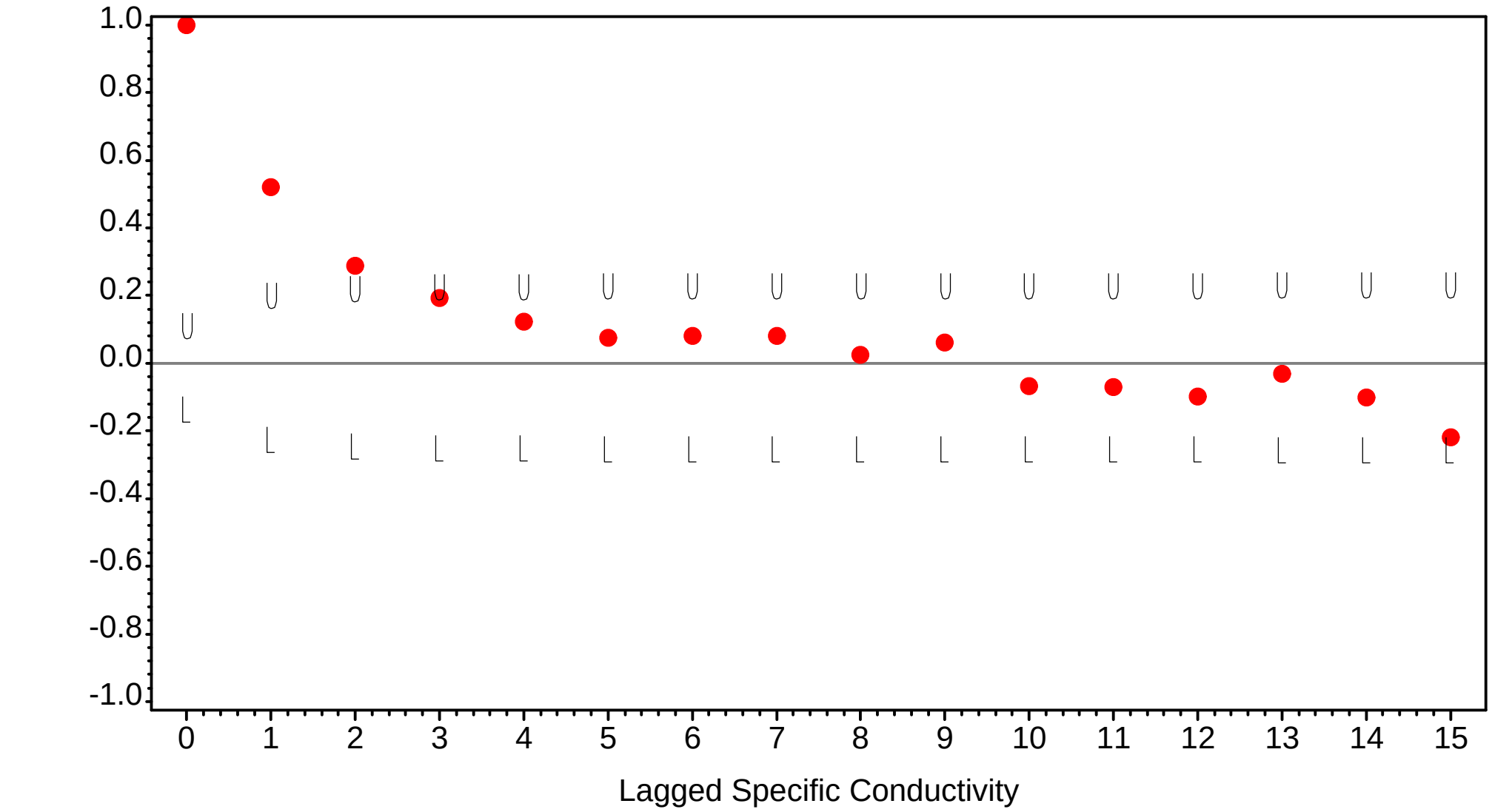


S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Specific Conductivity Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.520	0.107	0.213	-0.213
2	0.288	0.116	0.232	-0.232
3	0.192	0.118	0.237	-0.237
4	0.122	0.120	0.239	-0.239
5	0.076	0.120	0.240	-0.240
6	0.082	0.120	0.241	-0.241
7	0.082	0.121	0.241	-0.241
8	0.024	0.121	0.241	-0.241
9	0.061	0.121	0.242	-0.242
10	-0.067	0.121	0.242	-0.242
11	-0.070	0.121	0.242	-0.242
12	-0.099	0.121	0.242	-0.242
13	-0.030	0.121	0.243	-0.243
14	-0.100	0.122	0.243	-0.243
15	-0.218	0.122	0.244	-0.244

S_21FLVEMDTR01 Trends Appendix

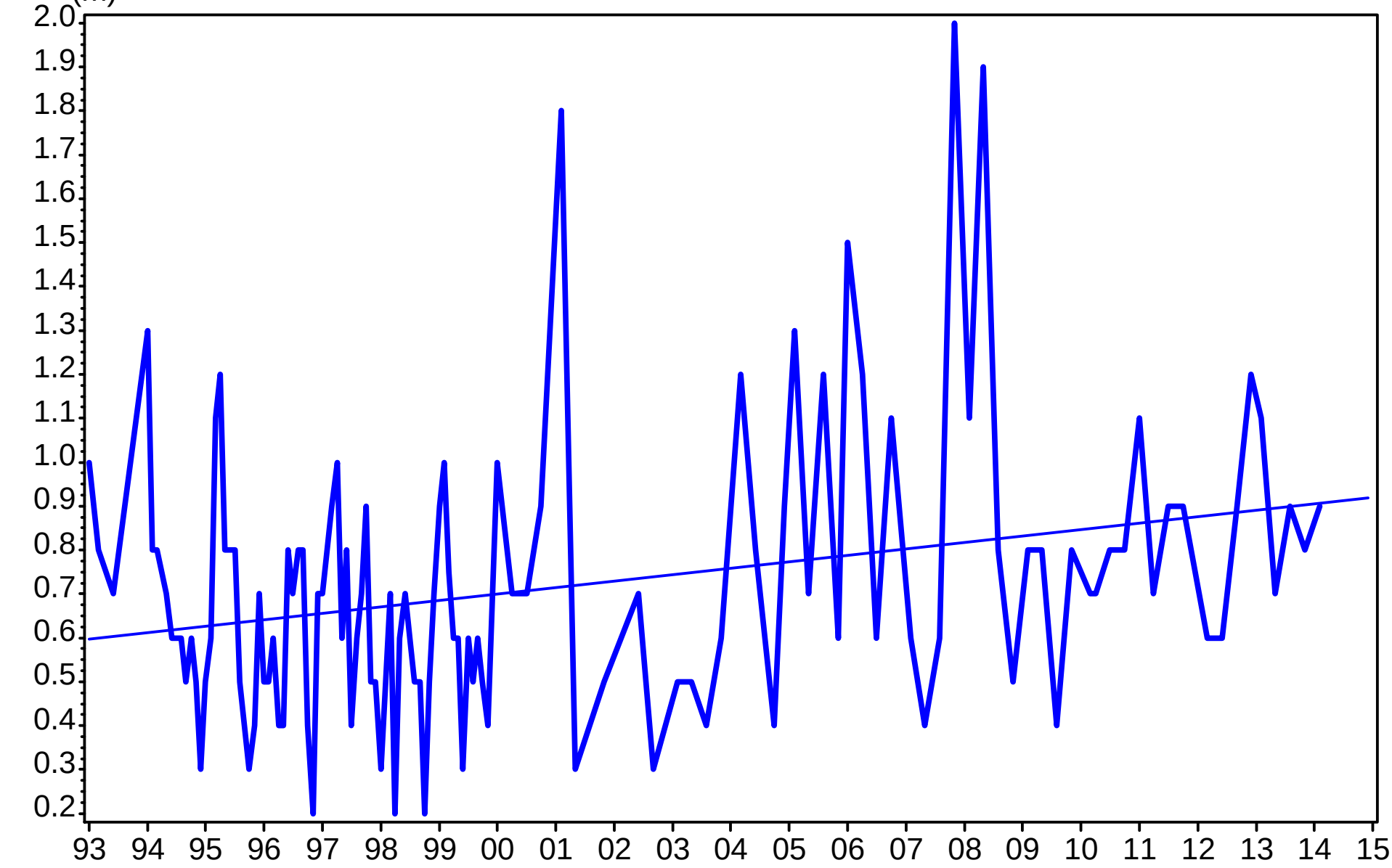
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



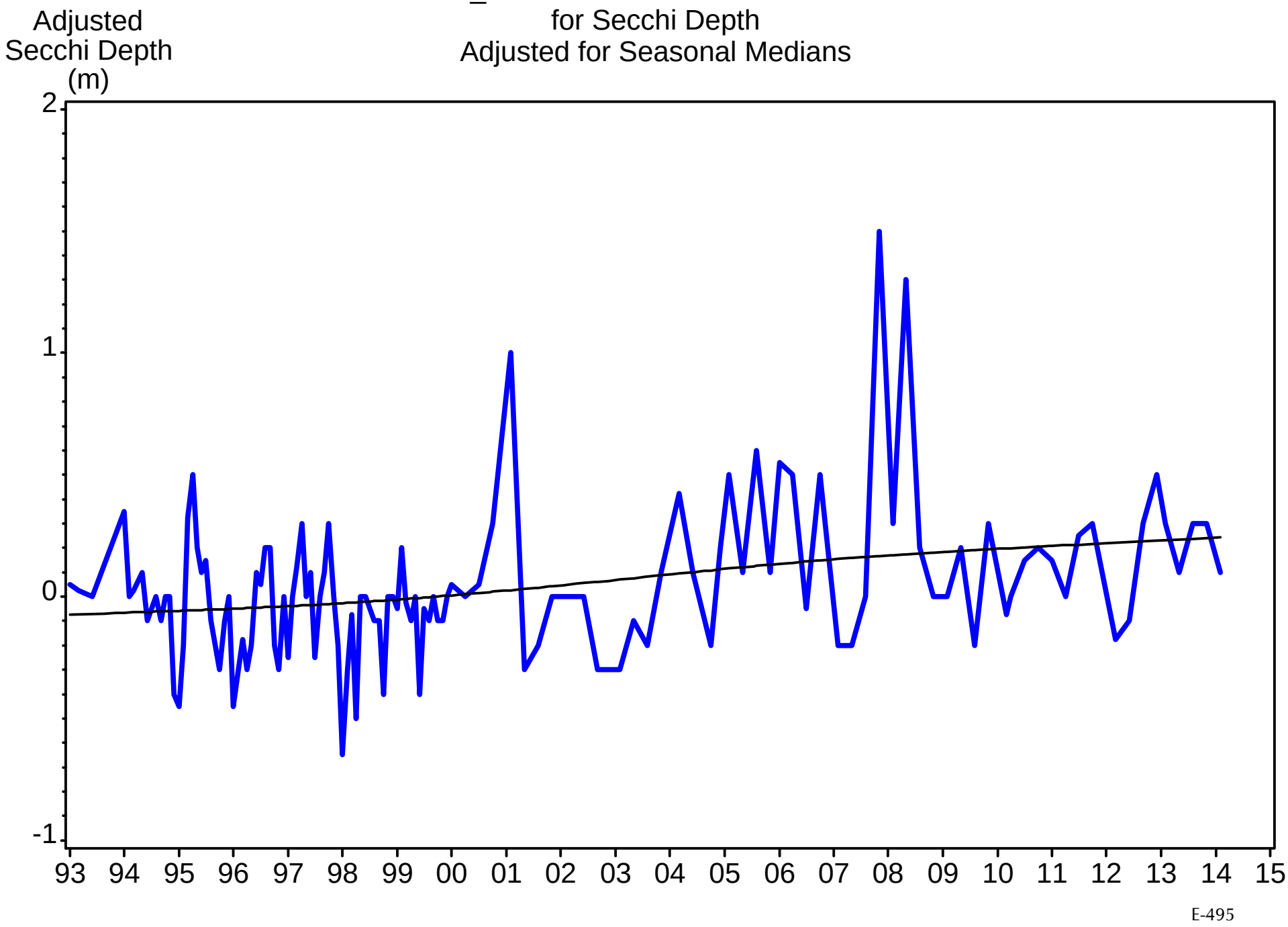
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDTR01 Trends

S_21FLVEMDTR01 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



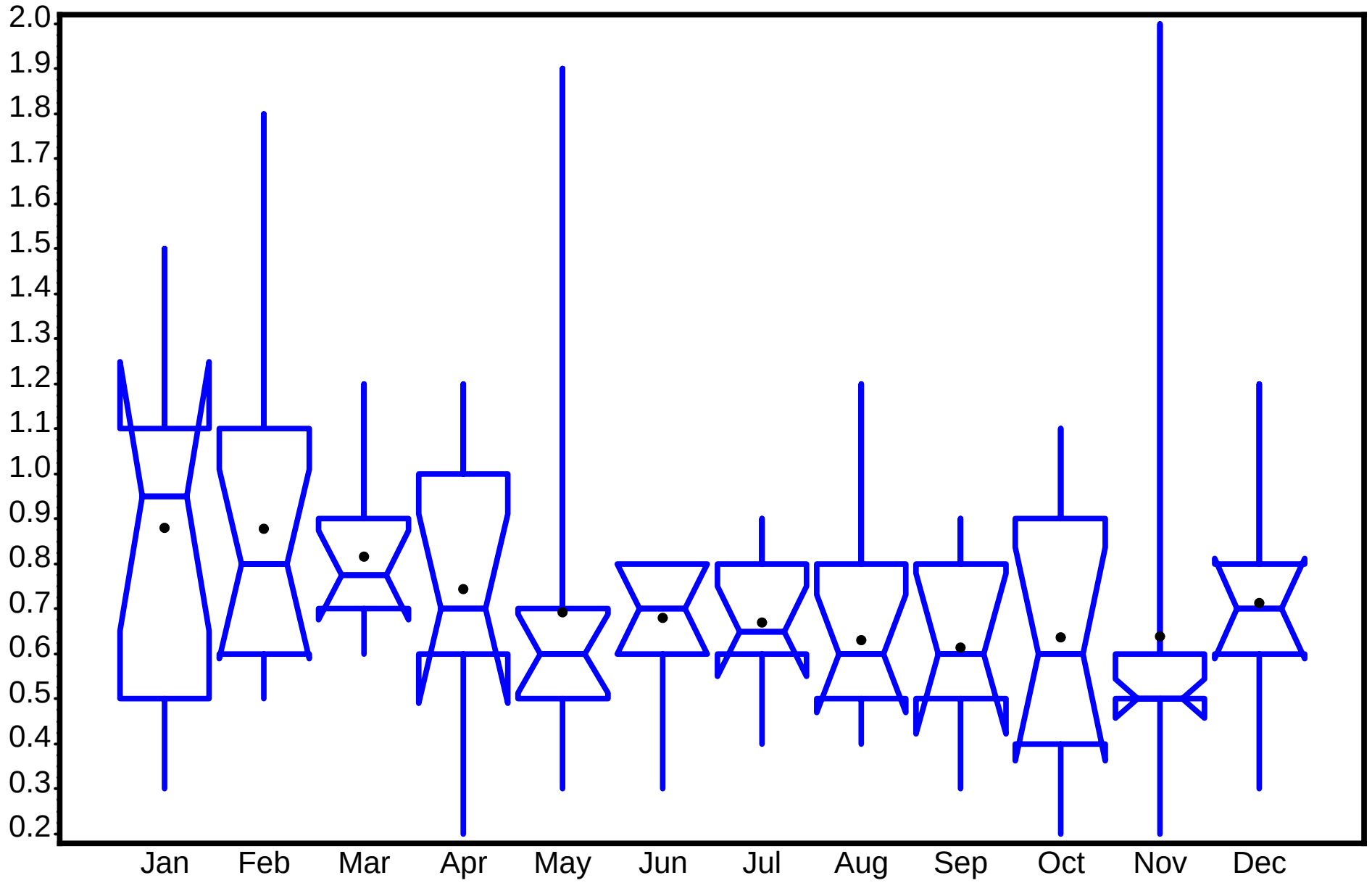
S_21FLVEMDTR01 Trends



S_21FLVEMDTR01 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



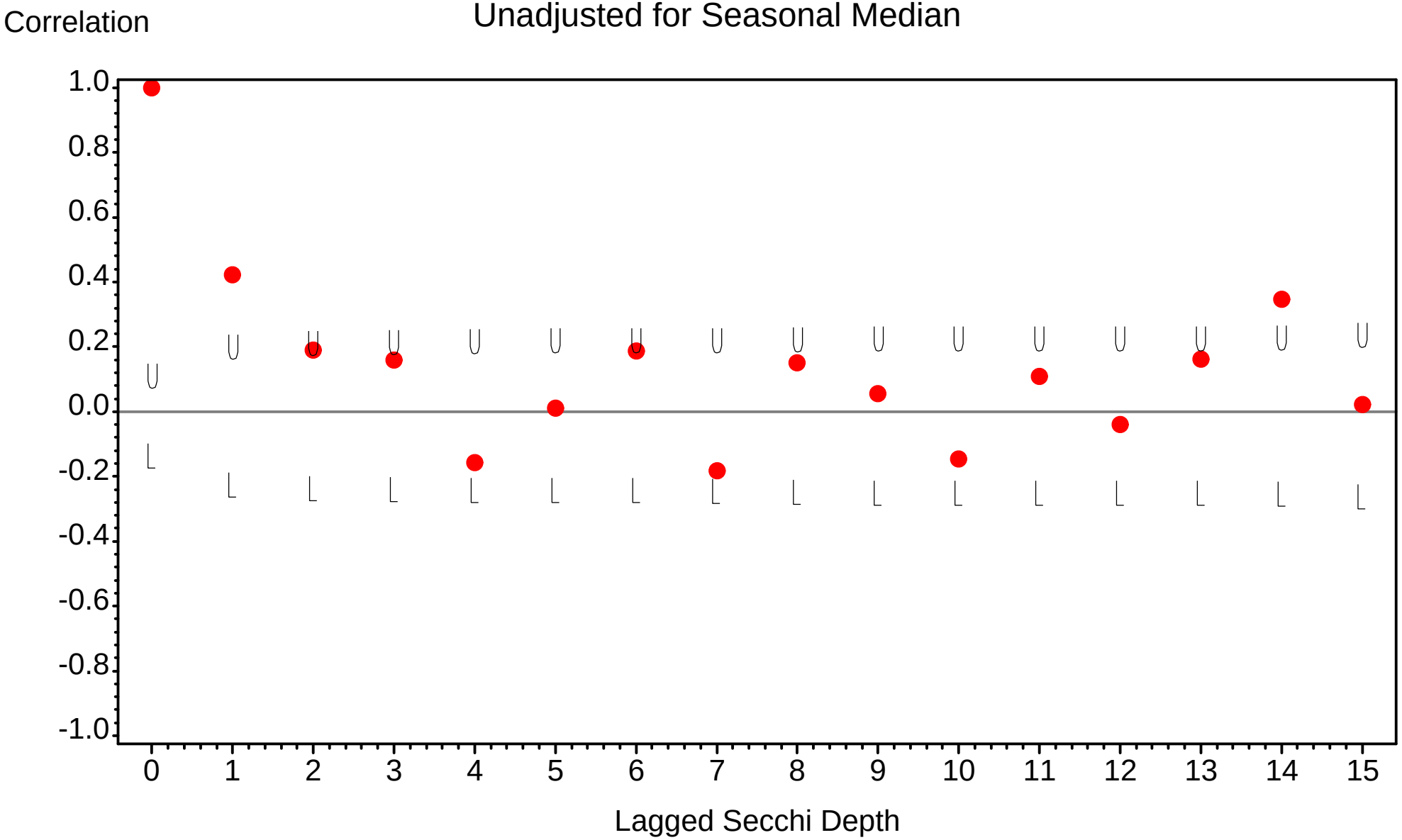
S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.421	0.107	0.213	-0.213
2	0.189	0.113	0.225	-0.225
3	0.159	0.114	0.228	-0.228
4	-0.157	0.115	0.230	-0.230
5	0.011	0.116	0.231	-0.231
6	0.187	0.116	0.231	-0.231
7	-0.182	0.117	0.233	-0.233
8	0.151	0.118	0.236	-0.236
9	0.055	0.119	0.237	-0.237
10	-0.146	0.119	0.237	-0.237
11	0.109	0.119	0.239	-0.239
12	-0.039	0.120	0.239	-0.239
13	0.163	0.120	0.239	-0.239
14	0.347	0.121	0.241	-0.241
15	0.021	0.124	0.249	-0.249

S_21FLVEMDTR01 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

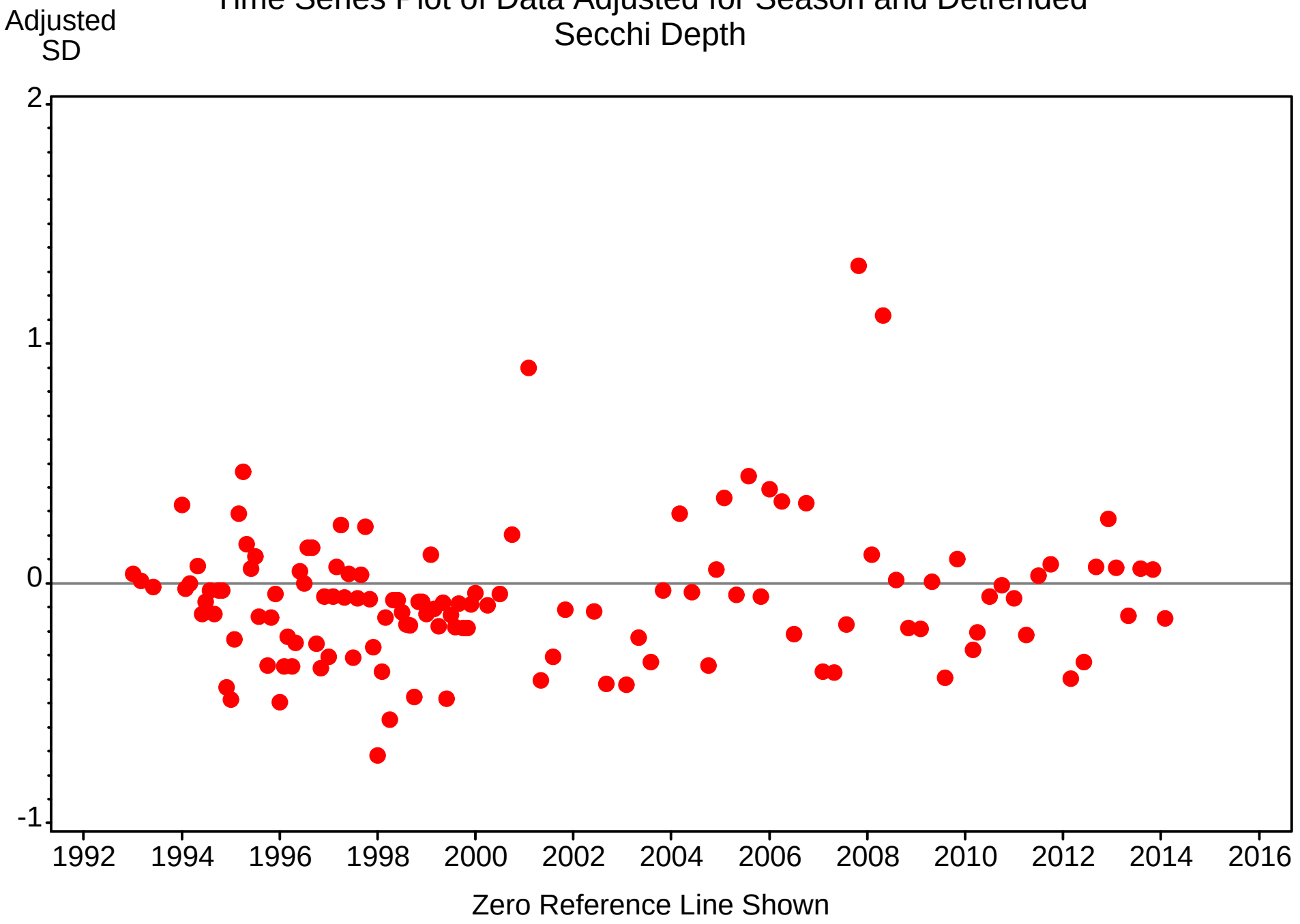
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.192	.005	0.044	0.011

S_21FLVEMDTR01 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.19225	.00486398	0.044487	0.011111

S_21FLVEMDTR01 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth

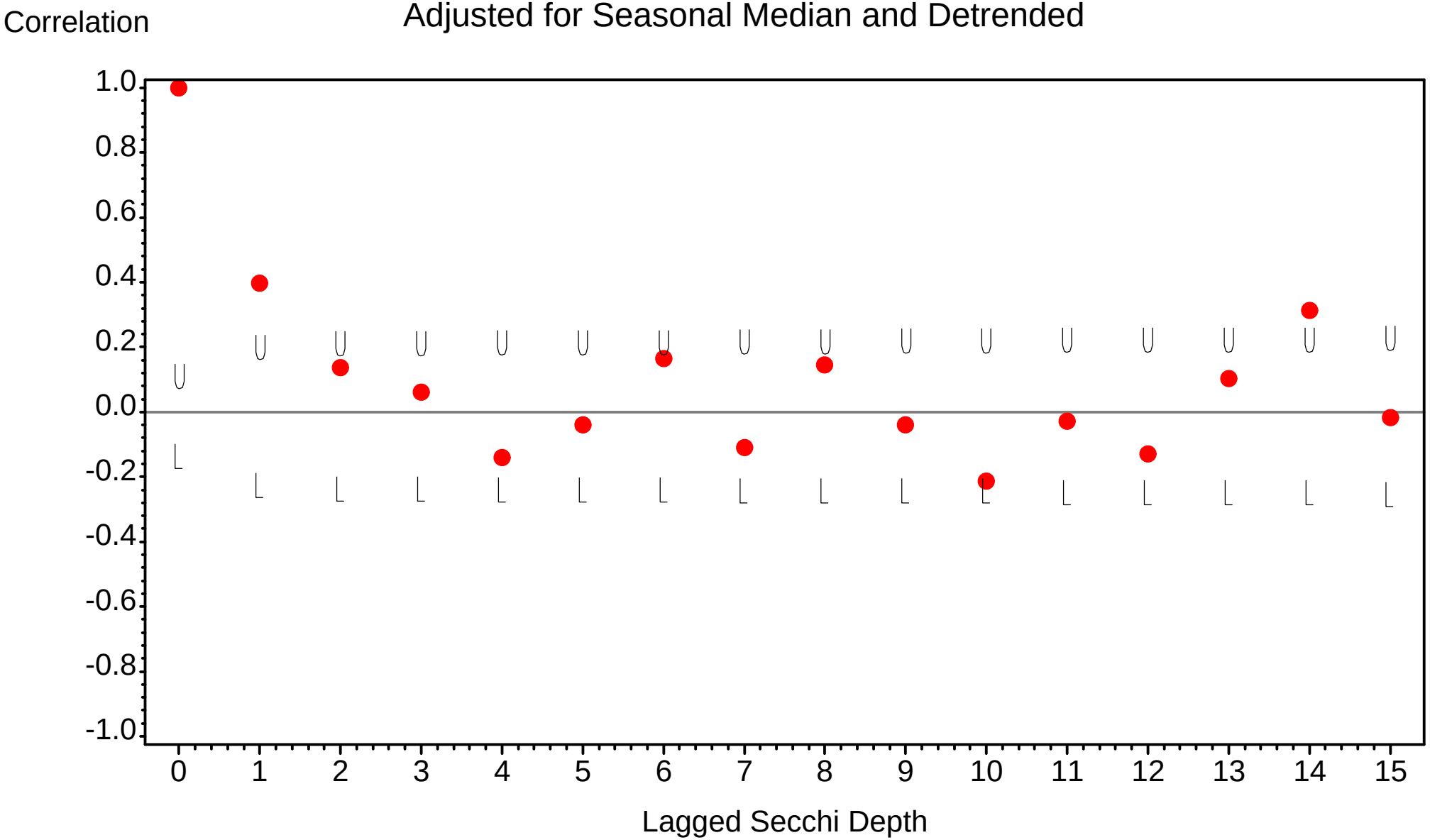


S_21FLVEMDTR01 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.062	0.123	-0.123
1	0.396	0.107	0.213	-0.213
2	0.138	0.112	0.224	-0.224
3	0.060	0.113	0.225	-0.225
4	-0.141	0.113	0.226	-0.226
5	-0.040	0.113	0.227	-0.227
6	0.166	0.114	0.227	-0.227
7	-0.111	0.114	0.229	-0.229
8	0.145	0.115	0.230	-0.230
9	-0.041	0.116	0.231	-0.231
10	-0.212	0.116	0.231	-0.231
11	-0.029	0.117	0.234	-0.234
12	-0.128	0.117	0.234	-0.234
13	0.104	0.118	0.235	-0.235
14	0.313	0.118	0.236	-0.236
15	-0.018	0.121	0.242	-0.242

S_21FLVEMDTR01 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
2	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
4	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
5	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
6	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
7	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
2	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
3	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
4	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
5	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
6	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
7	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
2	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
3	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
4	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
5	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
6	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
7	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
9	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
10	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23
11	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47
12	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56
13	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09
14	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
9	1.38	Y	Y	Y	Y	0.074	0.356	0.527	0.052
10	0.08	N	Y	Y	Y	0.090	0.212	0.347	225.098
11	2.09	Y	N	N	N	-0.099	0.163	0.243	-0.023
12	2.11	Y	N	N	N	0.046	0.549	0.573	0.109
13	0.29	N	Y	Y	Y	0.155	0.028	0.107	0.318
14	-9999.00	N	Y	N	N	0.192	0.005	0.044	0.011

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
9	0.07383	0.35568	0.52706	0.052	0.07383	0.52706	0.052
10	0.08958	0.21156	0.34660	225.098	0.09000	0.34700	225.098
11	-0.09906	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
12	0.04571	0.54949	0.57310	0.109	0.04571	0.54949	0.109
13	0.15482	0.02802	0.10656	0.318	0.15500	0.10700	0.318
14	0.19225	0.00486	0.04449	0.011	0.19200	0.00500	0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
16	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
17	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
18	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09
19	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
20	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00
21	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	1.04	Y	Y	N	N	-0.161	0.045	0.205	-0.029
16	0.45	N	N	N	N	0.021	0.810	0.860	0.000
17	0.33	N	Y	N	N	0.049	0.531	0.675	0.023
18	0.79	Y	Y	Y	Y	0.017	0.821	0.864	6.873
19	2.35	Y	Y	N	N	-0.022	0.763	0.834	-0.004
20	2.11	Y	Y	Y	Y	0.049	0.487	0.514	0.154
21	0.98	Y	Y	Y	Y	0.070	0.304	0.474	0.025

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	-0.16145	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
16	0.02128	0.80954	0.86021	0.000	0.02100	0.81000	0.000
17	0.04851	0.53077	0.67536	0.023	0.04900	0.53100	0.023
18	0.01671	0.82111	0.86399	6.874	0.01671	0.86399	6.874
19	-0.02159	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
20	0.04892	0.48687	0.51426	0.154	0.04892	0.51426	0.154
21	0.06955	0.30398	0.47368	0.025	0.06955	0.47368	0.025

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
22	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61
23	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
24	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10
25	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
26	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82
27	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25
28	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
22	1.08	Y	Y	N	N	0.064	0.330	0.509	0.000
23	1.88	Y	Y	N	N	0.017	0.845	0.901	0.002
24	1.51	Y	Y	Y	Y	0.050	0.519	0.695	0.000
25	-9999.00	N	Y	N	N	0.078	0.299	0.360	0.020
26	1.12	Y	N	Y	N	0.106	0.122	0.158	10.031
27	0.82	Y	Y	N	N	-0.170	0.012	0.092	-0.059
28	0.70	Y	Y	N	N	-0.175	0.011	0.082	-0.515

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.06415	0.32954	0.50893	0.000	0.06415	0.32954	0.000
23	0.01724	0.84540	0.90084	0.002	0.01724	0.84540	0.002
24	0.05031	0.51900	0.69540	0.000	0.05031	0.69540	0.000
25	0.07599	0.31036	0.36979	0.020	0.07800	0.29900	0.020
26	0.10598	0.12166	0.15796	10.031	0.10598	0.12166	10.031
27	-0.16974	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059
28	-0.17479	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
29	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73
30	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00
31	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
32	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
33	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
34	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19
35	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
29	1.54	Y	N	Y	N	0.092	0.169	0.290	0.004
30	1.54	Y	Y	Y	Y	0.094	0.155	0.427	0.007
31	1.48	Y	Y	N	N	-0.031	0.706	0.812	-0.002
32	-9999.00	N	N	N	N	-0.023	0.786	0.871	0.000
33	0.44	N	Y	N	N	-0.142	0.074	0.219	-0.011
34	-9999.00	N	N	Y	N	0.085	0.243	0.291	2.029
35	2.33	Y	Y	N	N	-0.040	0.591	0.737	-0.008

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
29	0.09207	0.16857	0.29012	0.004	0.09207	0.16857	0.004
30	0.09387	0.15479	0.42738	0.007	0.09387	0.42738	0.007
31	-0.03145	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
32	-0.02254	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
33	-0.14223	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011
34	0.08500	0.24287	0.29095	2.029	0.08500	0.24300	2.029
35	-0.03968	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008

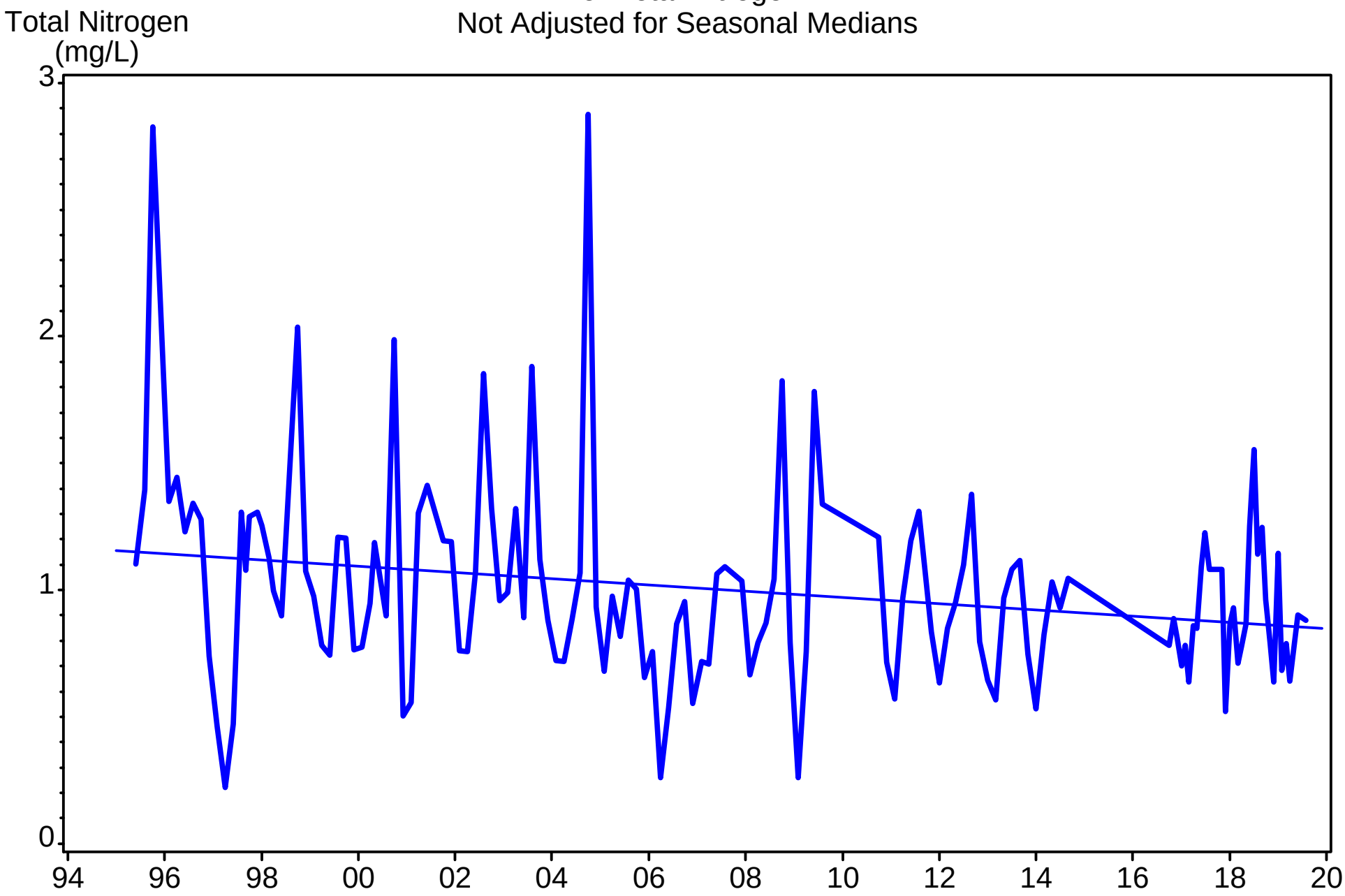
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
36	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81
37	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00
38	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00
39	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
40	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
36	1.77	Y	Y	N	N	0.027	0.725	0.823	0.034
37	-9999.00	N	Y	Y	Y	0.123	0.076	0.159	0.001
38	0.68	Y	Y	N	N	0.194	0.005	0.046	0.009
39	0.31	N	Y	N	N	-0.241	0.003	0.076	-0.016
40	-9999.00	N	N	N	N	0.040	0.632	0.786	0.000

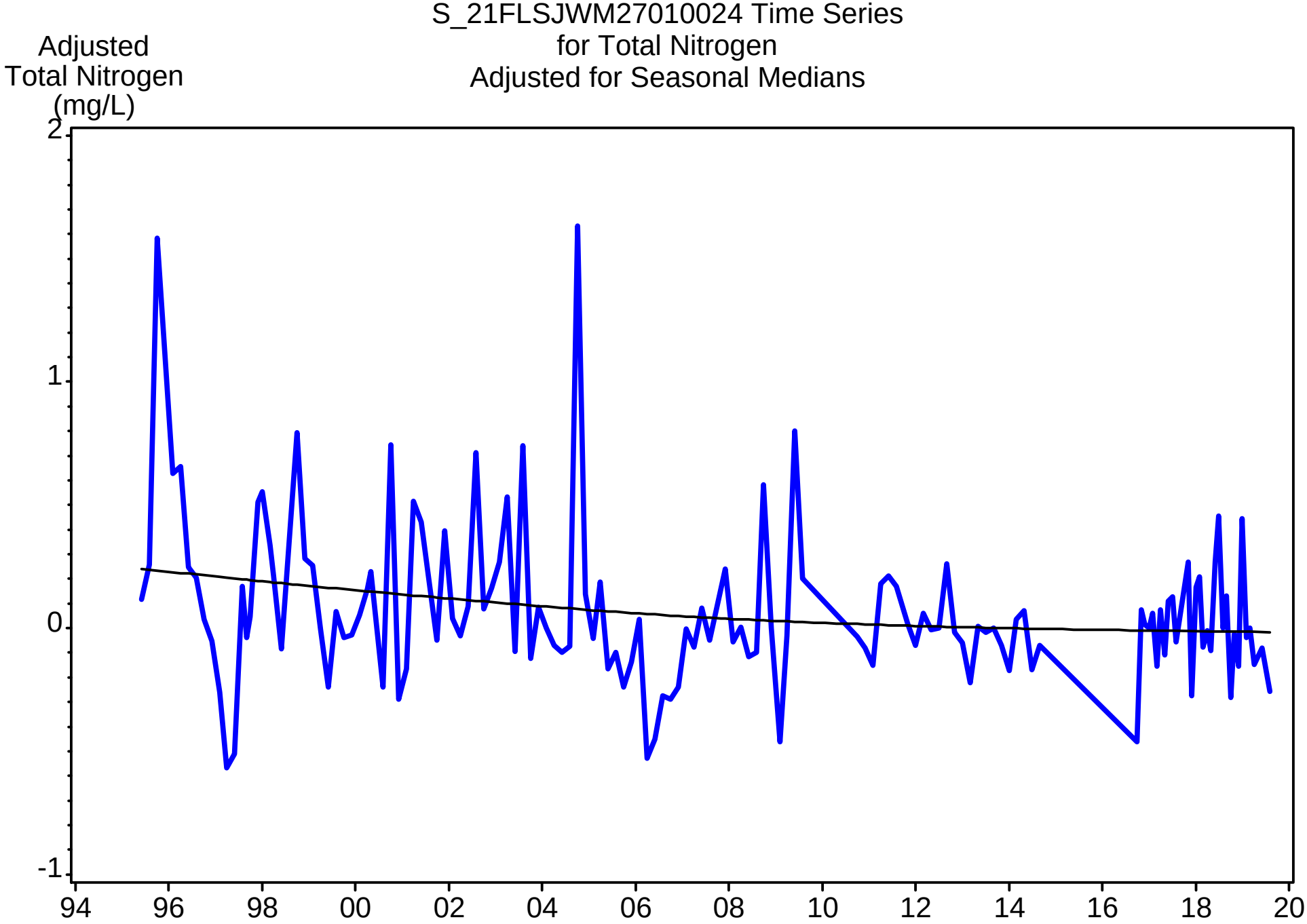
Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
36	0.02716	0.72528	0.82342	0.034	0.02716	0.72528	0.034
37	0.12322	0.07617	0.15857	0.001	0.12300	0.15900	0.001
38	0.19383	0.00462	0.04647	0.009	0.19383	0.00462	0.009
39	-0.24070	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
40	0.04009	0.63152	0.78567	0.000	0.04000	0.63200	0.000

S_21FLSJWM27010024 Trends

S_21FLSJWM27010024 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLSJWM27010024 Trends

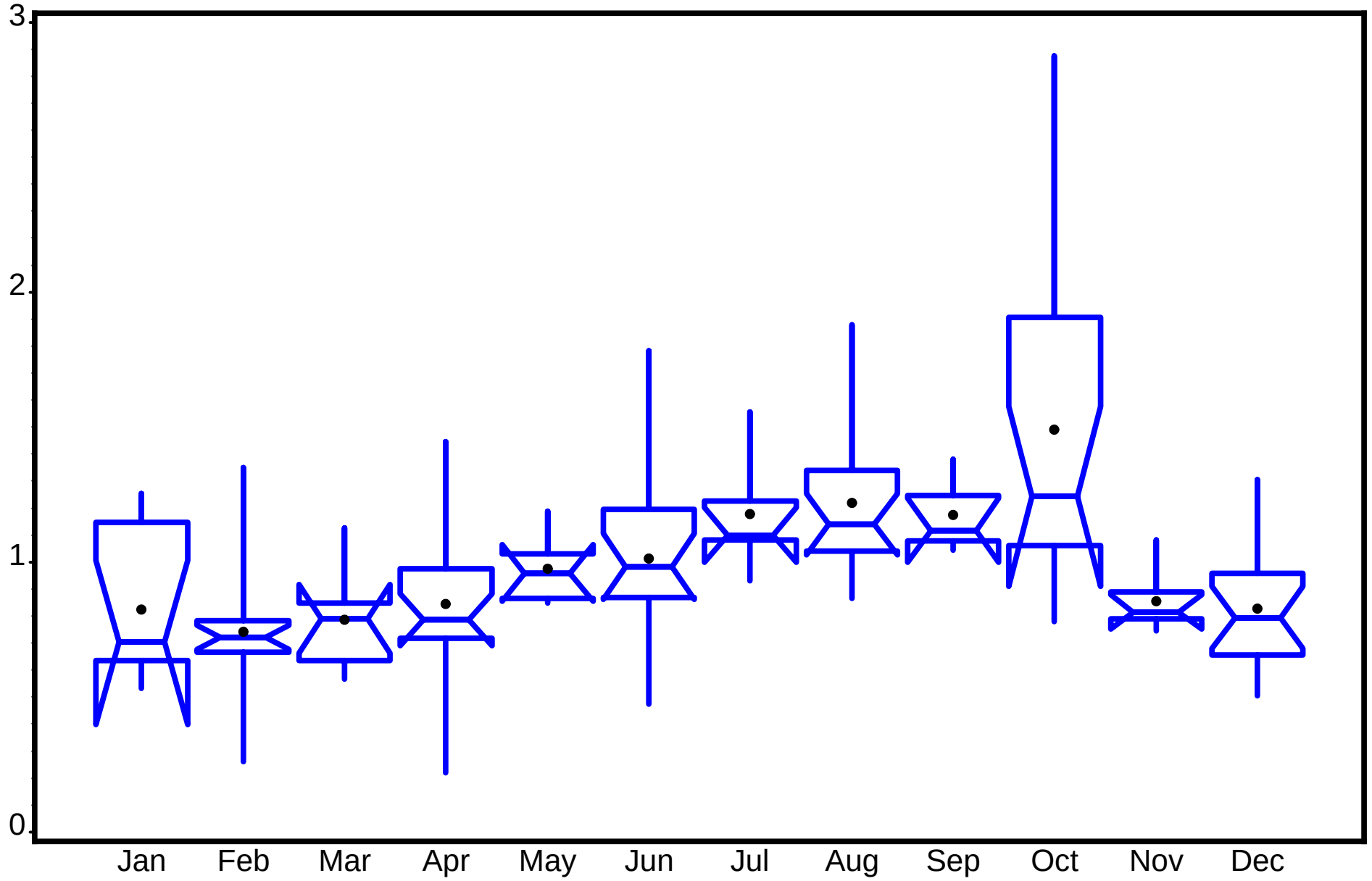


S_21FLSJWM27010024 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



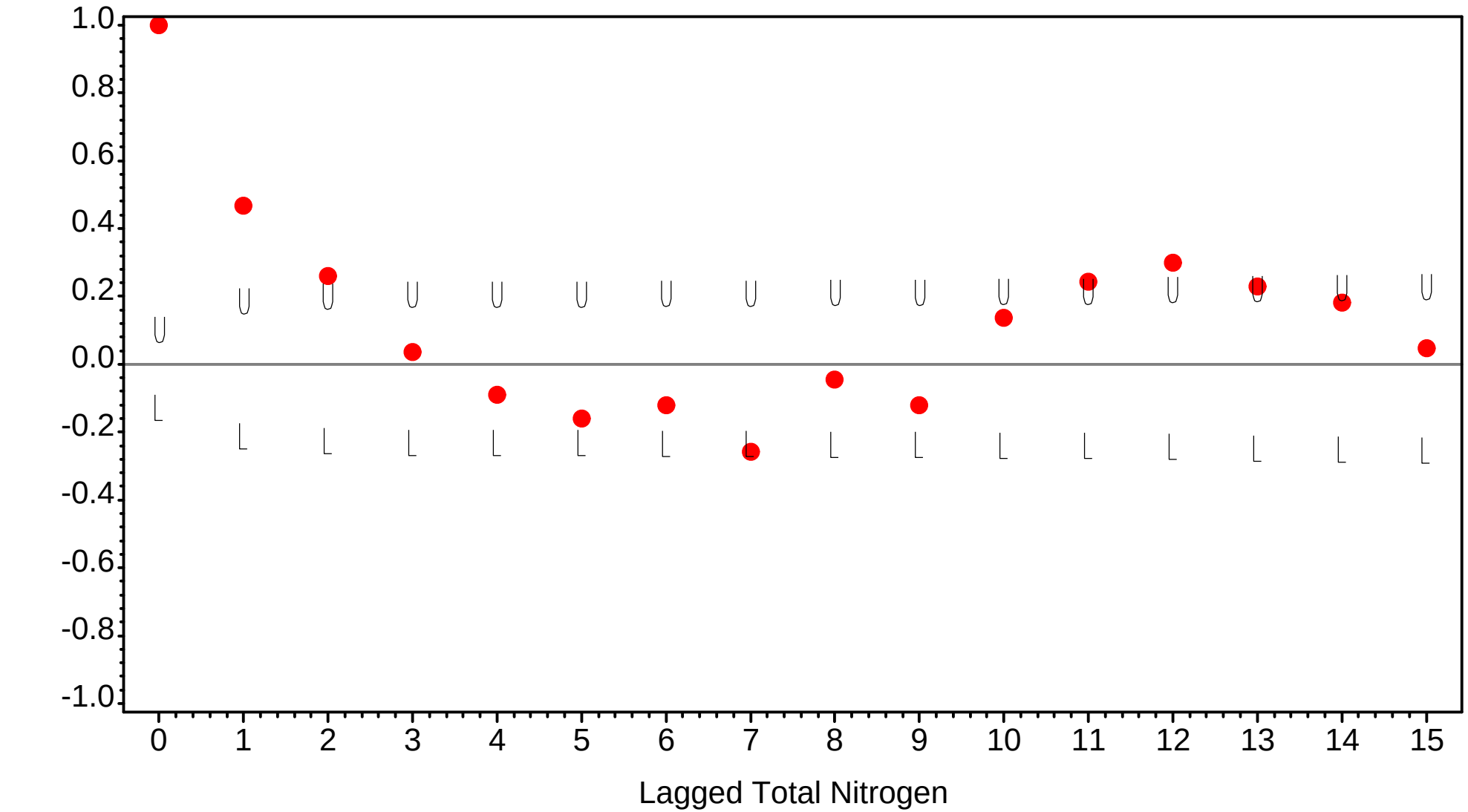
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.468	0.100	0.200	-0.200
2	0.259	0.107	0.214	-0.214
3	0.036	0.109	0.218	-0.218
4	-0.091	0.109	0.218	-0.218
5	-0.160	0.109	0.219	-0.219
6	-0.121	0.110	0.220	-0.220
7	-0.258	0.111	0.221	-0.221
8	-0.045	0.113	0.225	-0.225
9	-0.120	0.113	0.225	-0.225
10	0.138	0.113	0.226	-0.226
11	0.244	0.114	0.227	-0.227
12	0.298	0.115	0.231	-0.231
13	0.228	0.118	0.236	-0.236
14	0.182	0.119	0.239	-0.239
15	0.046	0.120	0.241	-0.241

S_21FLSJWM27010024 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

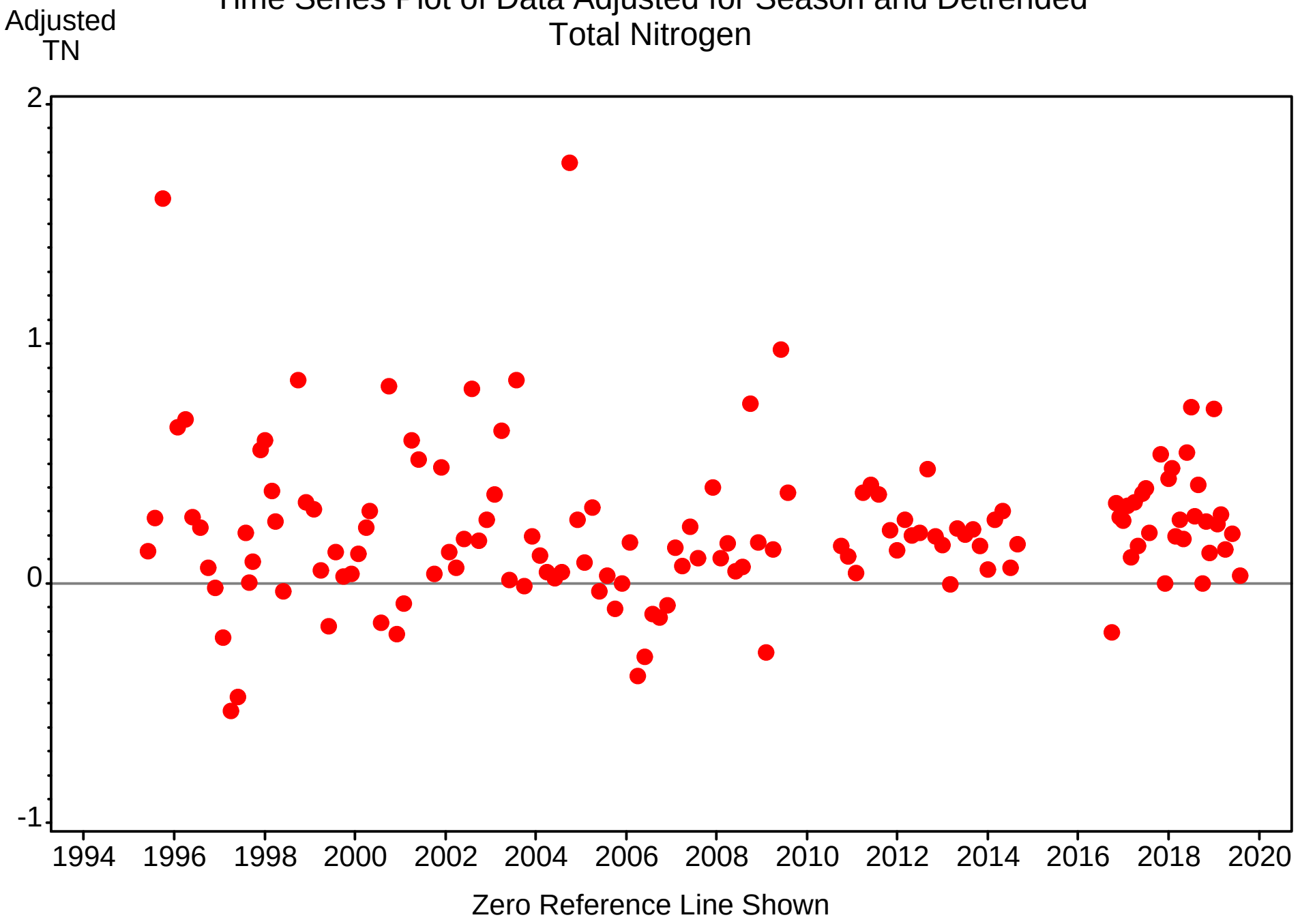
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.197	.003	0.02	-0.011

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.19654	.00346477	0.019631	-0.011393

S_21FLSJWM27010024 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



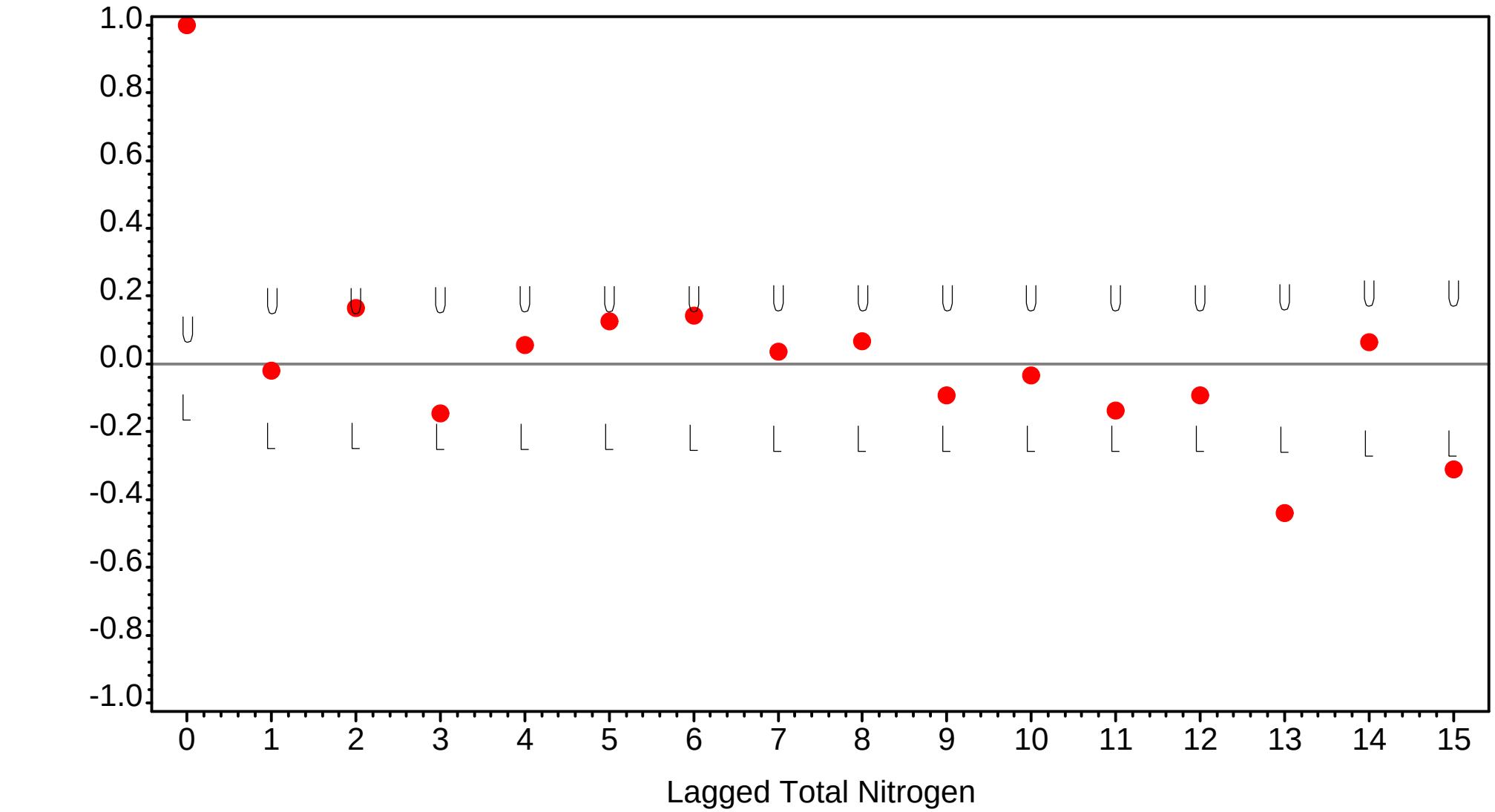
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	-0.021	0.100	0.200	-0.200
2	0.166	0.100	0.200	-0.200
3	-0.145	0.101	0.202	-0.202
4	0.056	0.102	0.203	-0.203
5	0.126	0.102	0.203	-0.203
6	0.142	0.102	0.204	-0.204
7	0.037	0.103	0.206	-0.206
8	0.066	0.103	0.206	-0.206
9	-0.094	0.103	0.206	-0.206
10	-0.033	0.103	0.207	-0.207
11	-0.137	0.103	0.207	-0.207
12	-0.093	0.104	0.208	-0.208
13	-0.441	0.104	0.209	-0.209
14	0.063	0.110	0.221	-0.221
15	-0.311	0.110	0.221	-0.221

S_21FLSJWM27010024 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

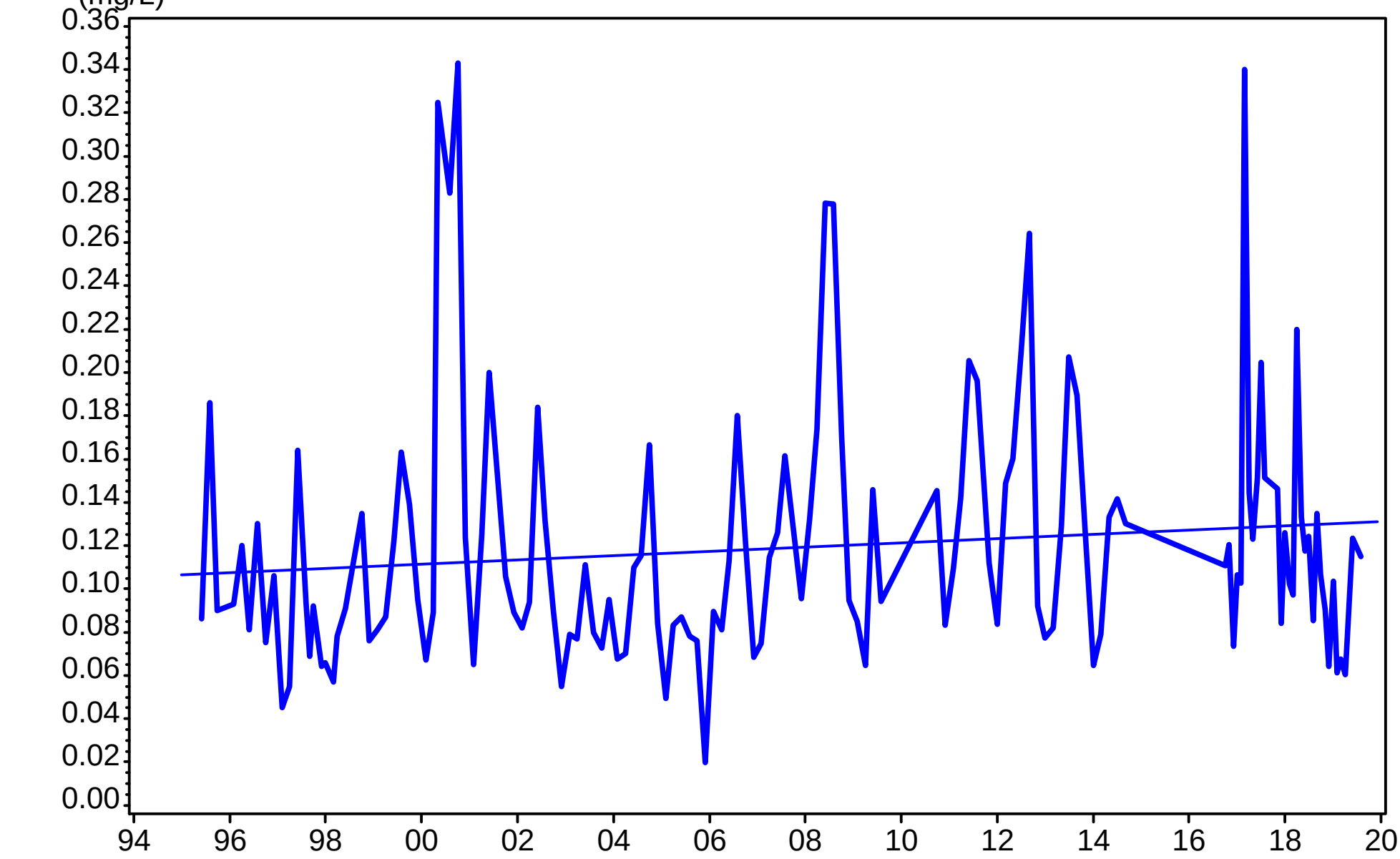


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

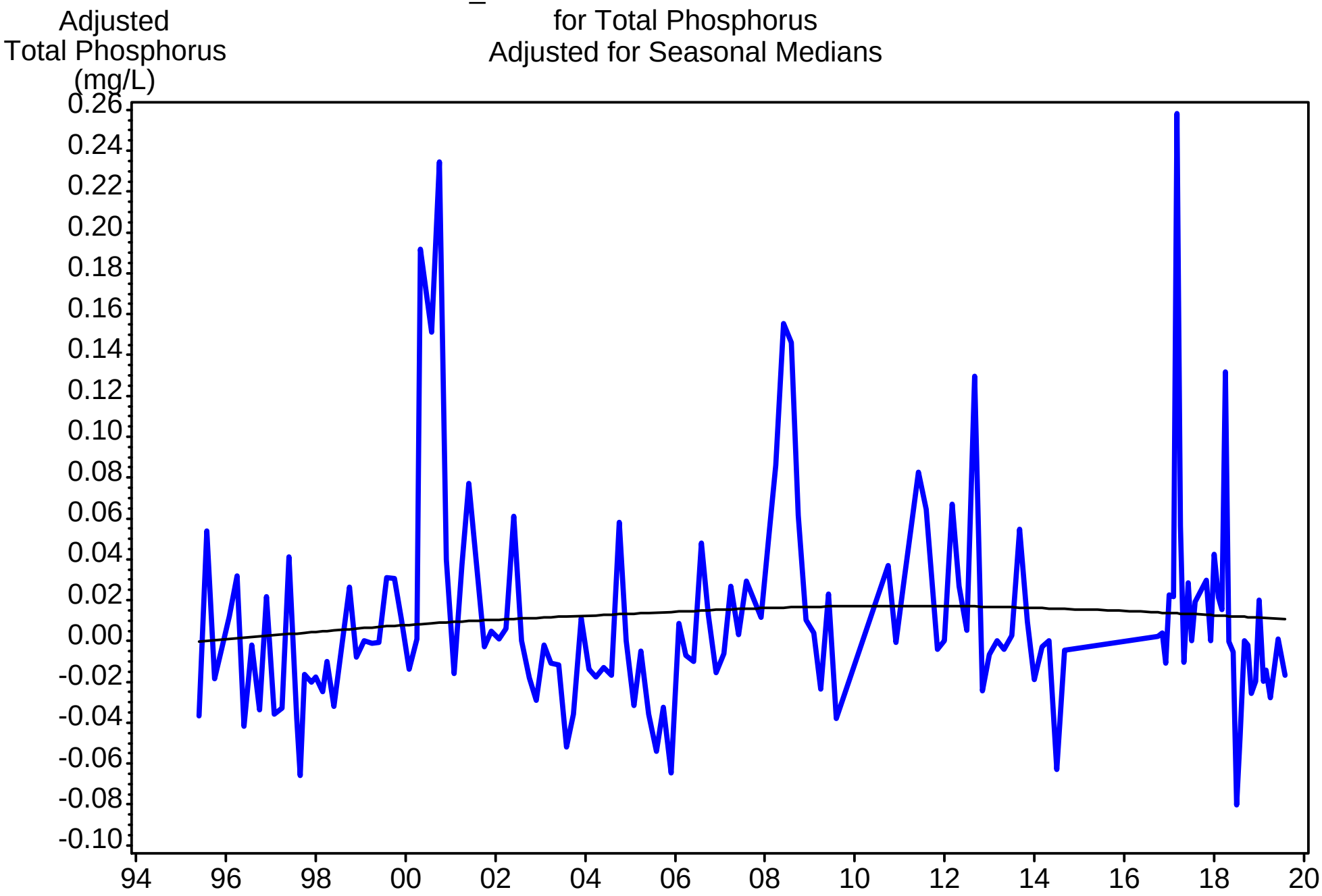
Zero Reference Line Shown

S_21FLSJWM27010024 Trends

S_21FLSJWM27010024 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



S_21FLSJWM27010024 Trends

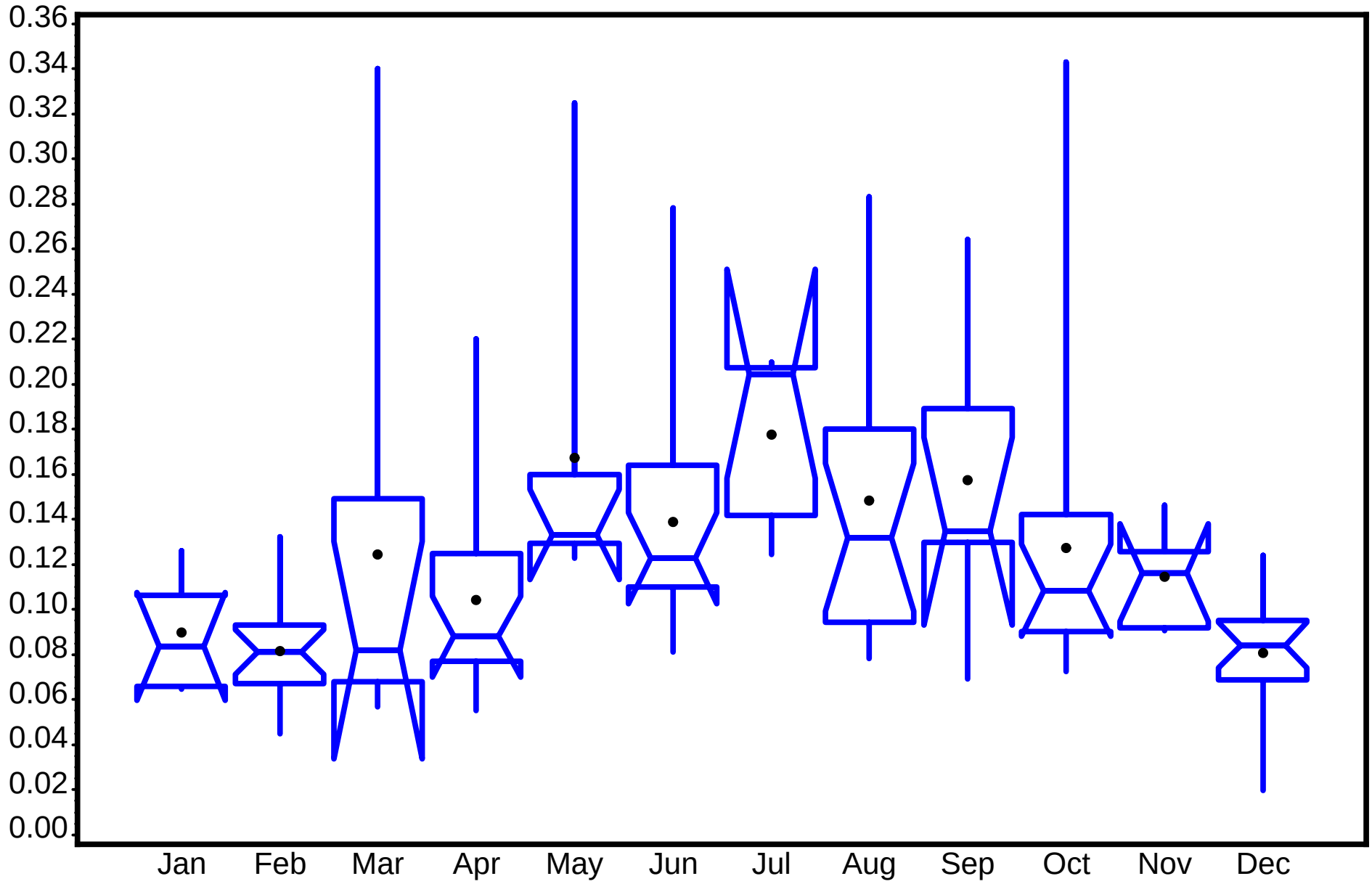


S_21FLSJWM27010024 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



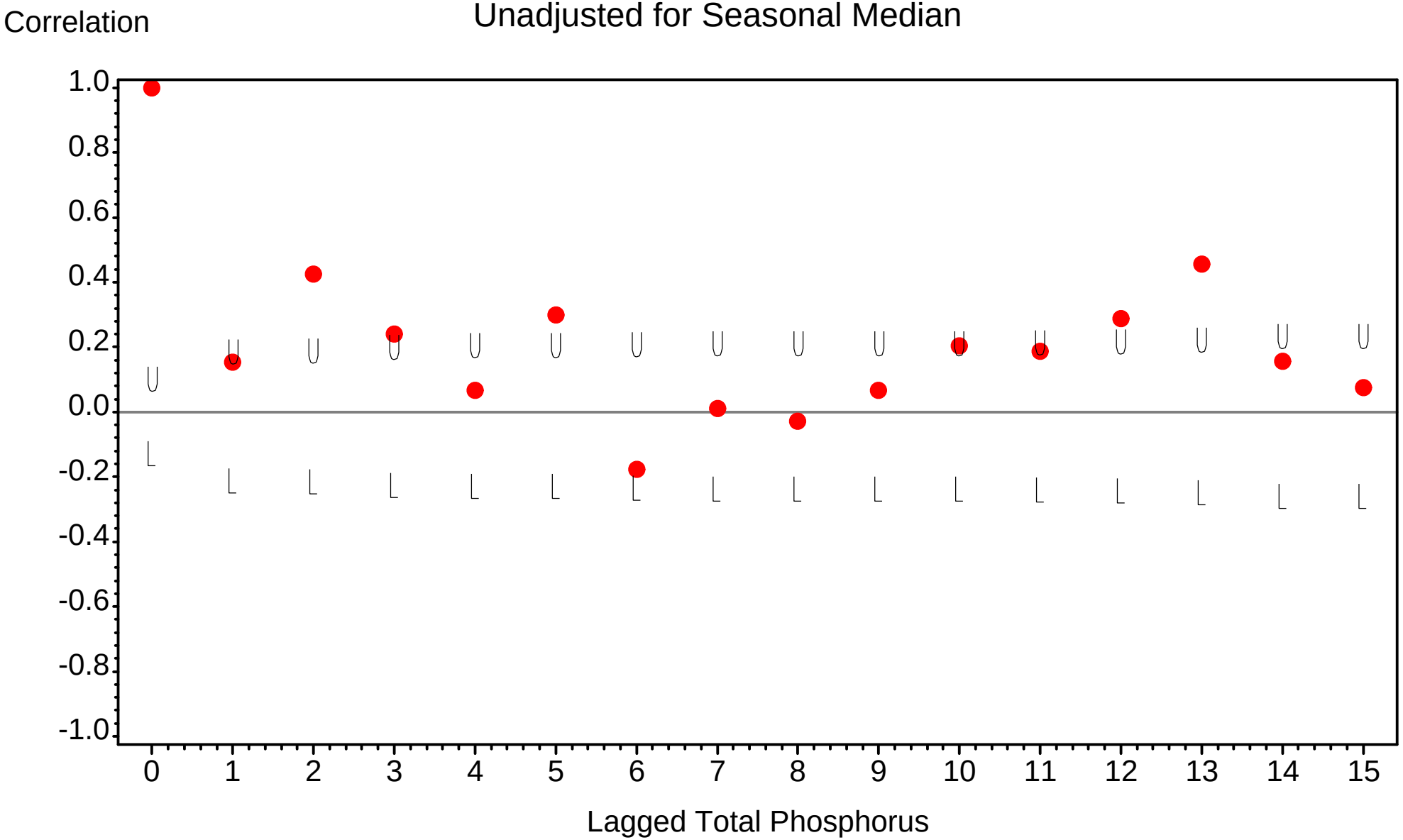
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.154	0.100	0.200	-0.200
2	0.425	0.101	0.202	-0.202
3	0.240	0.107	0.213	-0.213
4	0.066	0.108	0.217	-0.217
5	0.298	0.109	0.217	-0.217
6	-0.178	0.111	0.222	-0.222
7	0.010	0.112	0.224	-0.224
8	-0.028	0.112	0.224	-0.224
9	0.068	0.112	0.224	-0.224
10	0.203	0.112	0.225	-0.225
11	0.187	0.114	0.227	-0.227
12	0.288	0.115	0.229	-0.229
13	0.457	0.117	0.234	-0.234
14	0.157	0.123	0.246	-0.246
15	0.076	0.123	0.247	-0.247

S_21FLSJWM27010024 Trends Appendix

Correlogram for Total Phosphorus

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

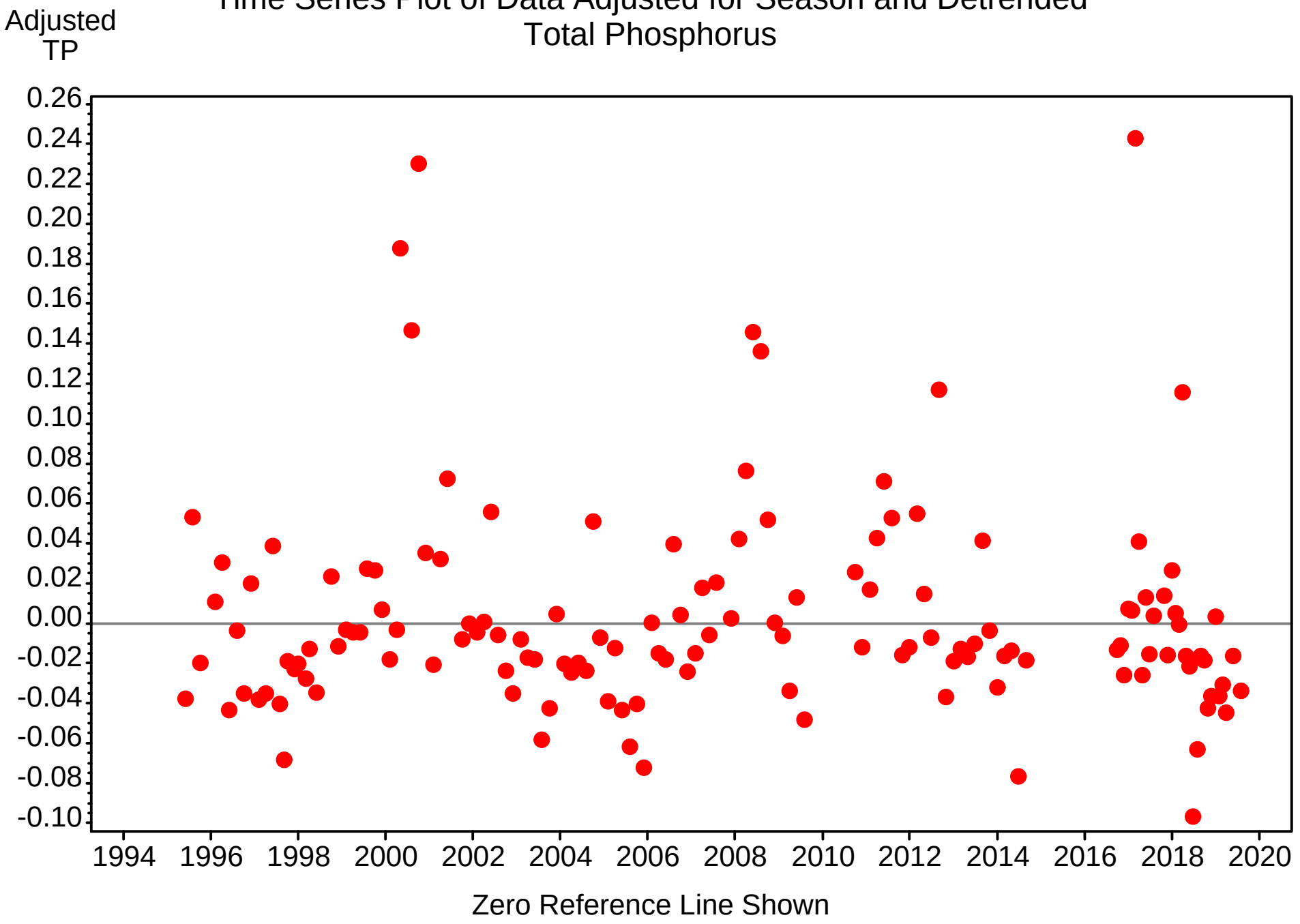
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.091	0.179	0.398	.001

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.088553	0.19036	0.40631	.000666667

S_21FLSJWM27010024 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

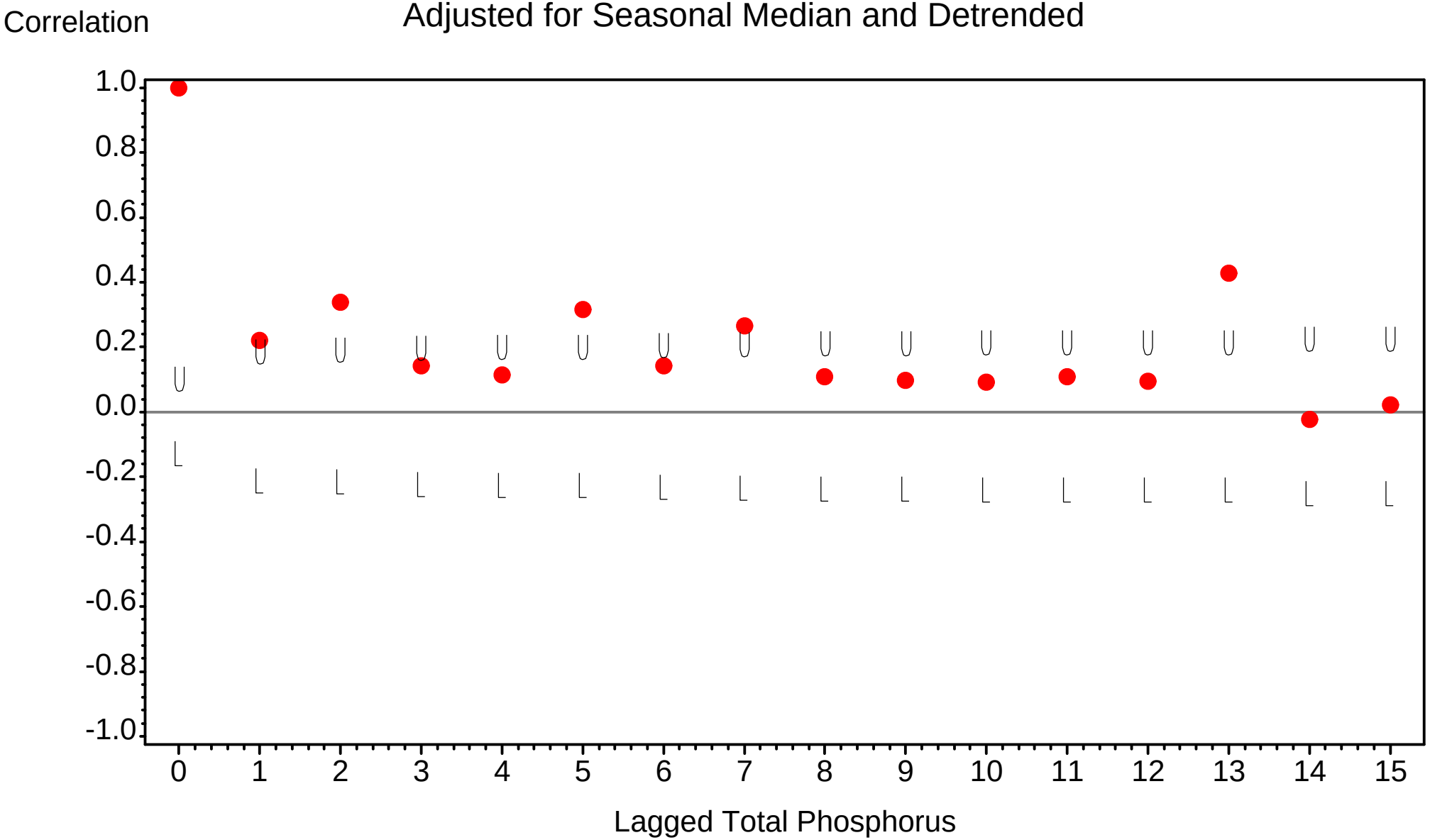


S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.220	0.100	0.200	-0.200
2	0.338	0.102	0.203	-0.203
3	0.141	0.105	0.211	-0.211
4	0.115	0.106	0.212	-0.212
5	0.317	0.106	0.213	-0.213
6	0.142	0.109	0.219	-0.219
7	0.266	0.110	0.220	-0.220
8	0.110	0.112	0.224	-0.224
9	0.097	0.113	0.225	-0.225
10	0.091	0.113	0.226	-0.226
11	0.108	0.113	0.226	-0.226
12	0.095	0.113	0.227	-0.227
13	0.429	0.114	0.227	-0.227
14	-0.024	0.119	0.238	-0.238
15	0.021	0.119	0.238	-0.238

S_21FLSJWM27010024 Trends Appendix

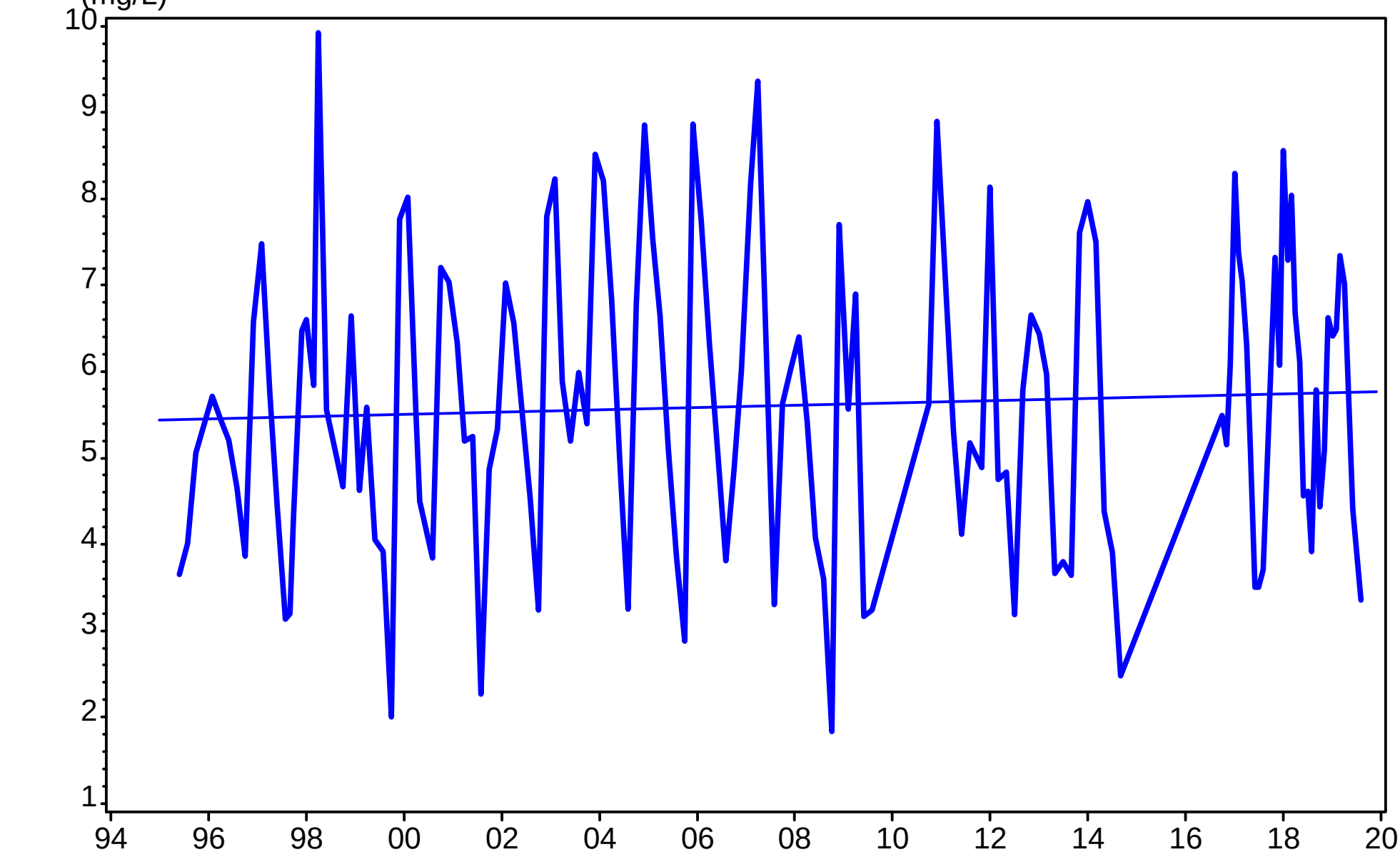
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



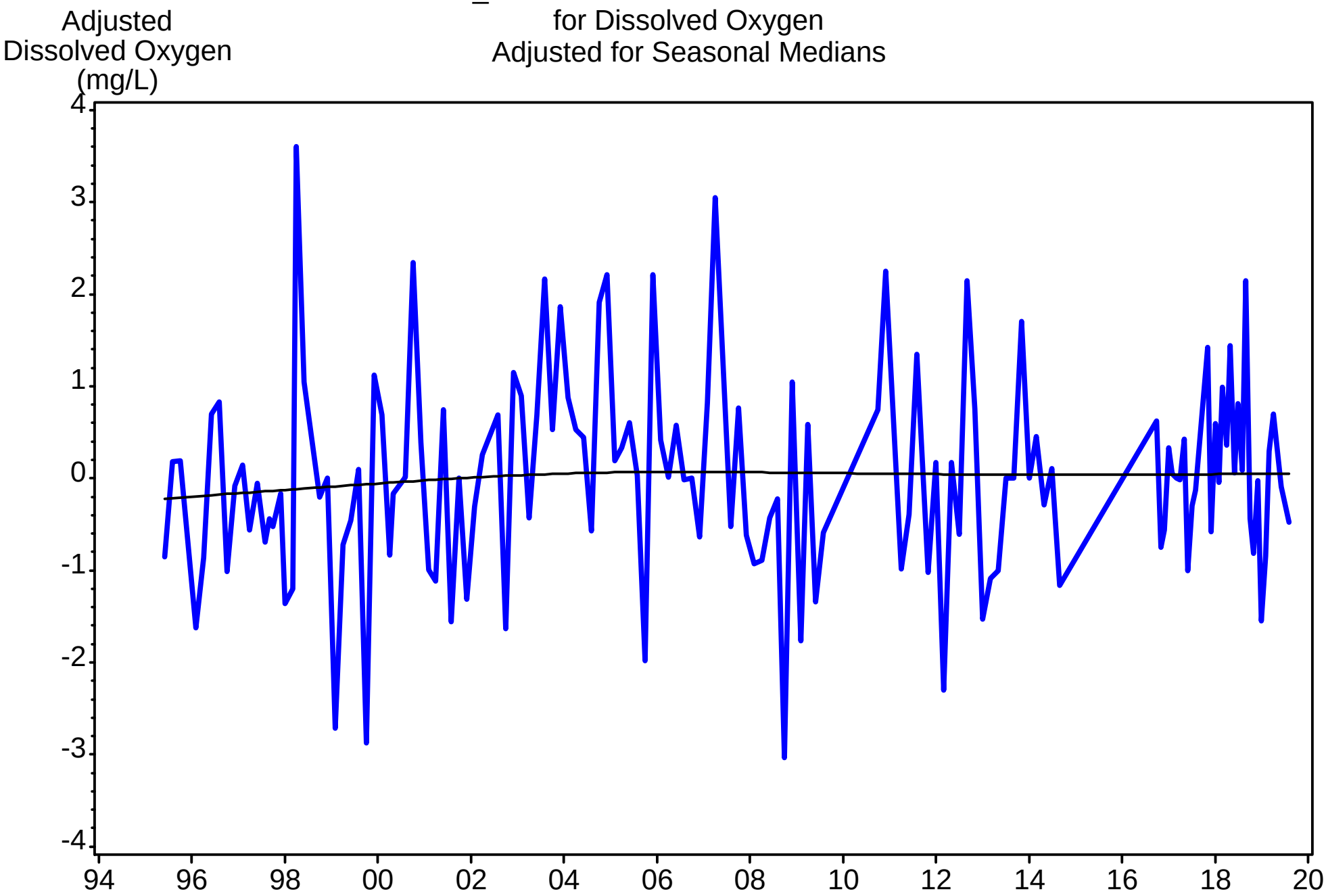
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLSJWM27010024 Trends

S_21FLSJWM27010024 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLSJWM27010024 Trends

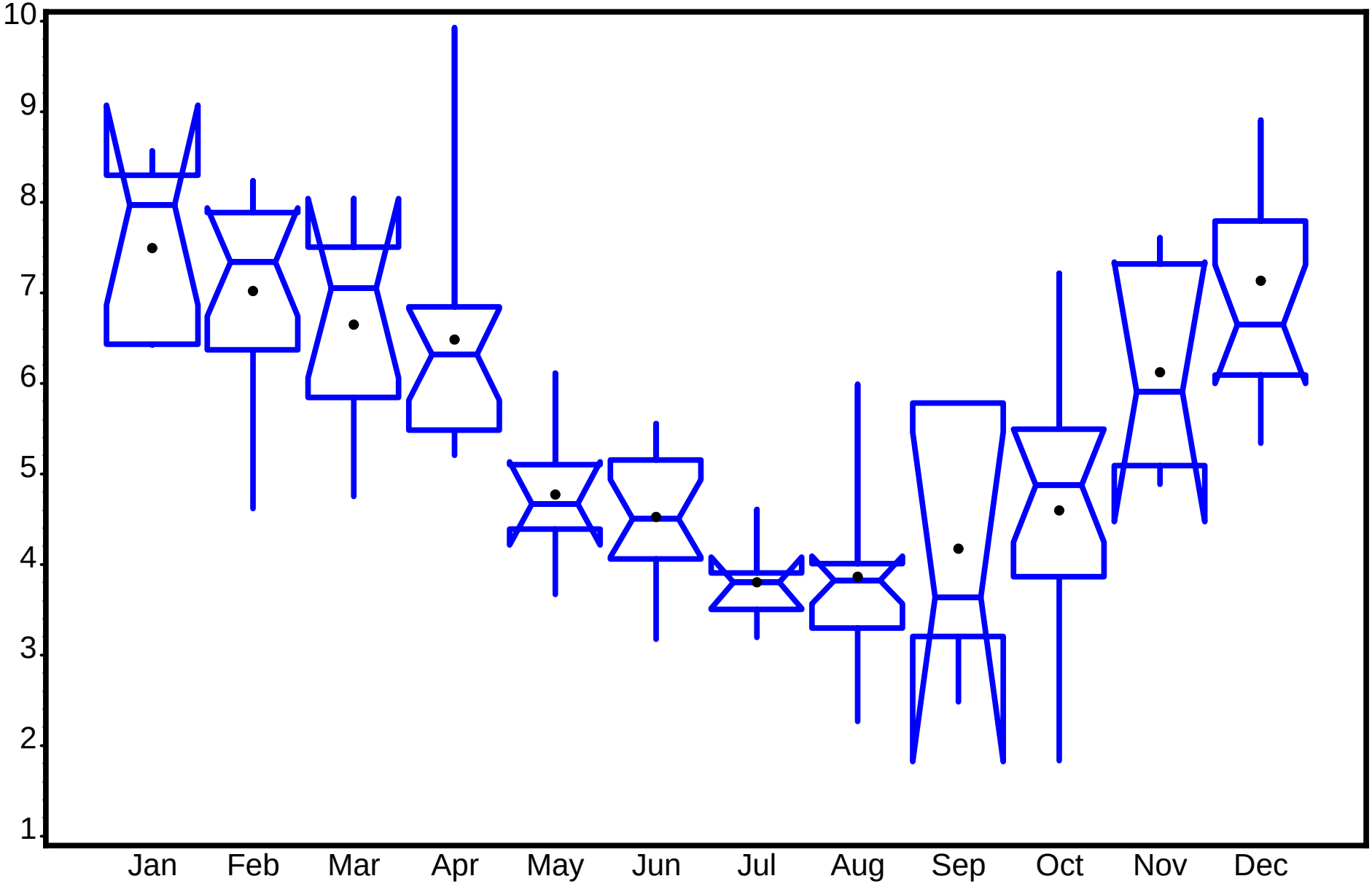


S_21FLSJWM27010024 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



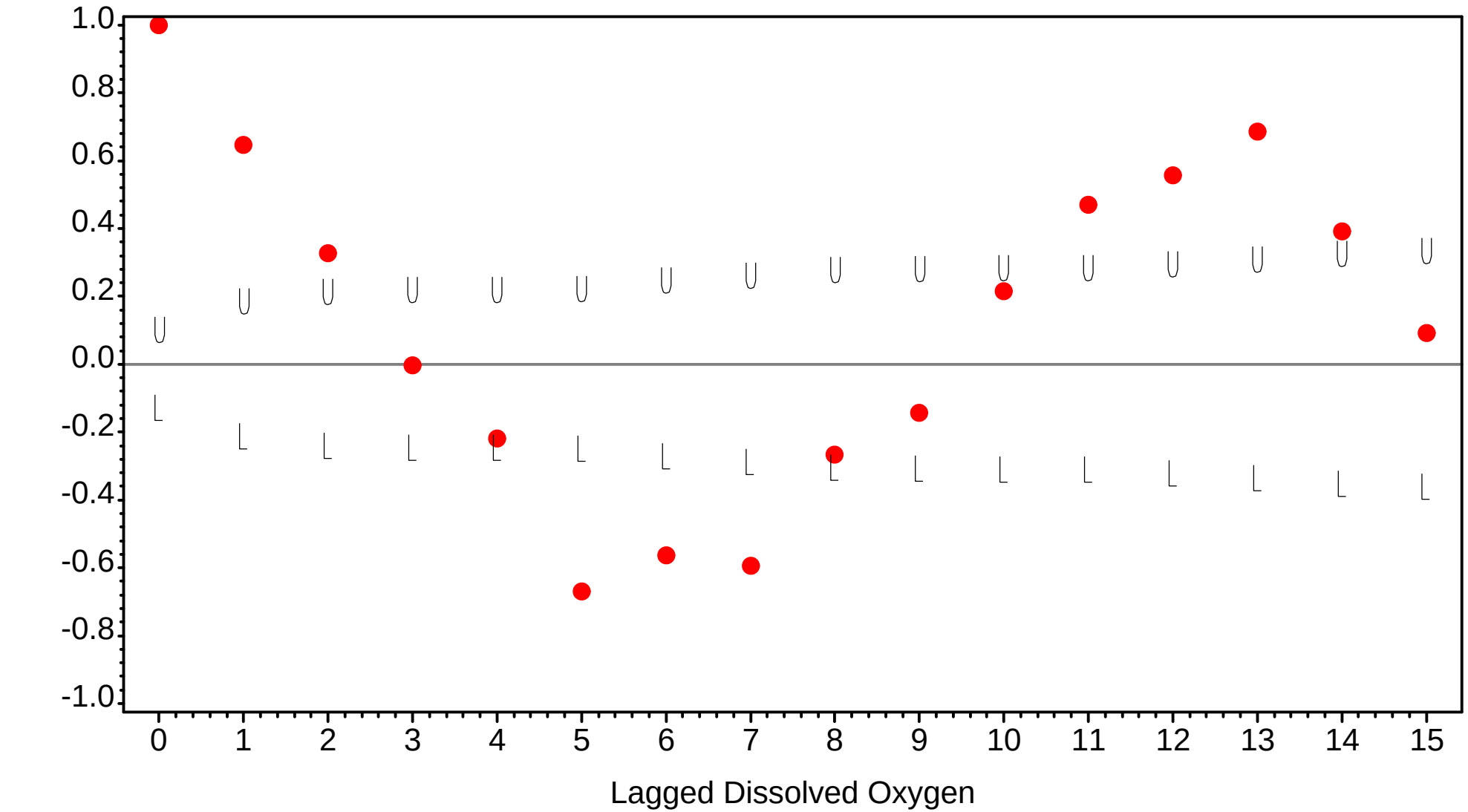
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.647	0.100	0.200	-0.200
2	0.328	0.113	0.226	-0.226
3	-0.002	0.116	0.232	-0.232
4	-0.219	0.116	0.232	-0.232
5	-0.669	0.118	0.235	-0.235
6	-0.562	0.130	0.259	-0.259
7	-0.594	0.138	0.275	-0.275
8	-0.267	0.146	0.292	-0.292
9	-0.142	0.147	0.295	-0.295
10	0.216	0.148	0.296	-0.296
11	0.471	0.149	0.298	-0.298
12	0.558	0.154	0.308	-0.308
13	0.686	0.160	0.321	-0.321
14	0.391	0.170	0.340	-0.340
15	0.093	0.173	0.346	-0.346

S_21FLSJWM27010024 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

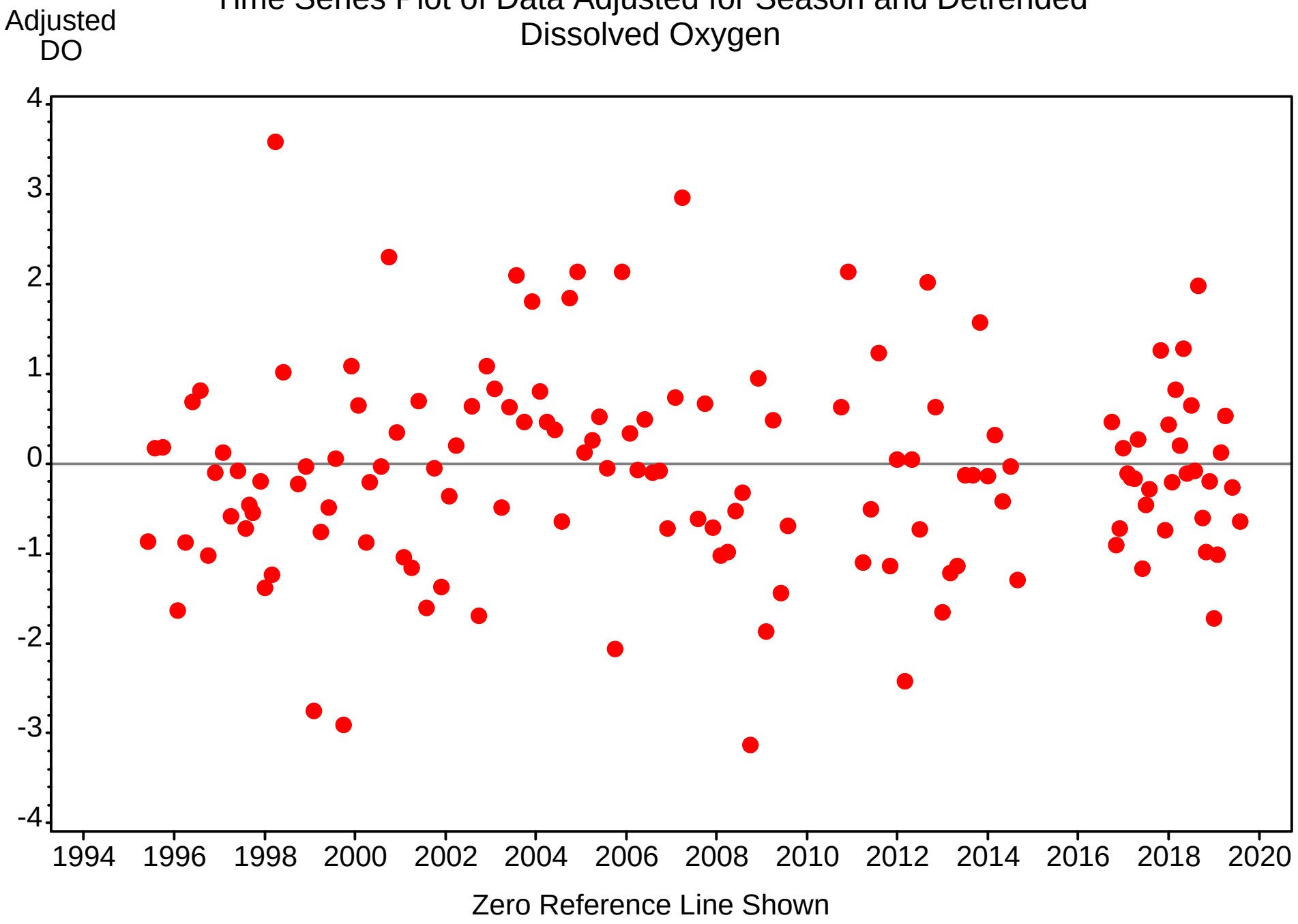
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.042	0.545	0.617	.007

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.041758	0.54495	0.61673	.00680208

S_21FLSJWM27010024 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



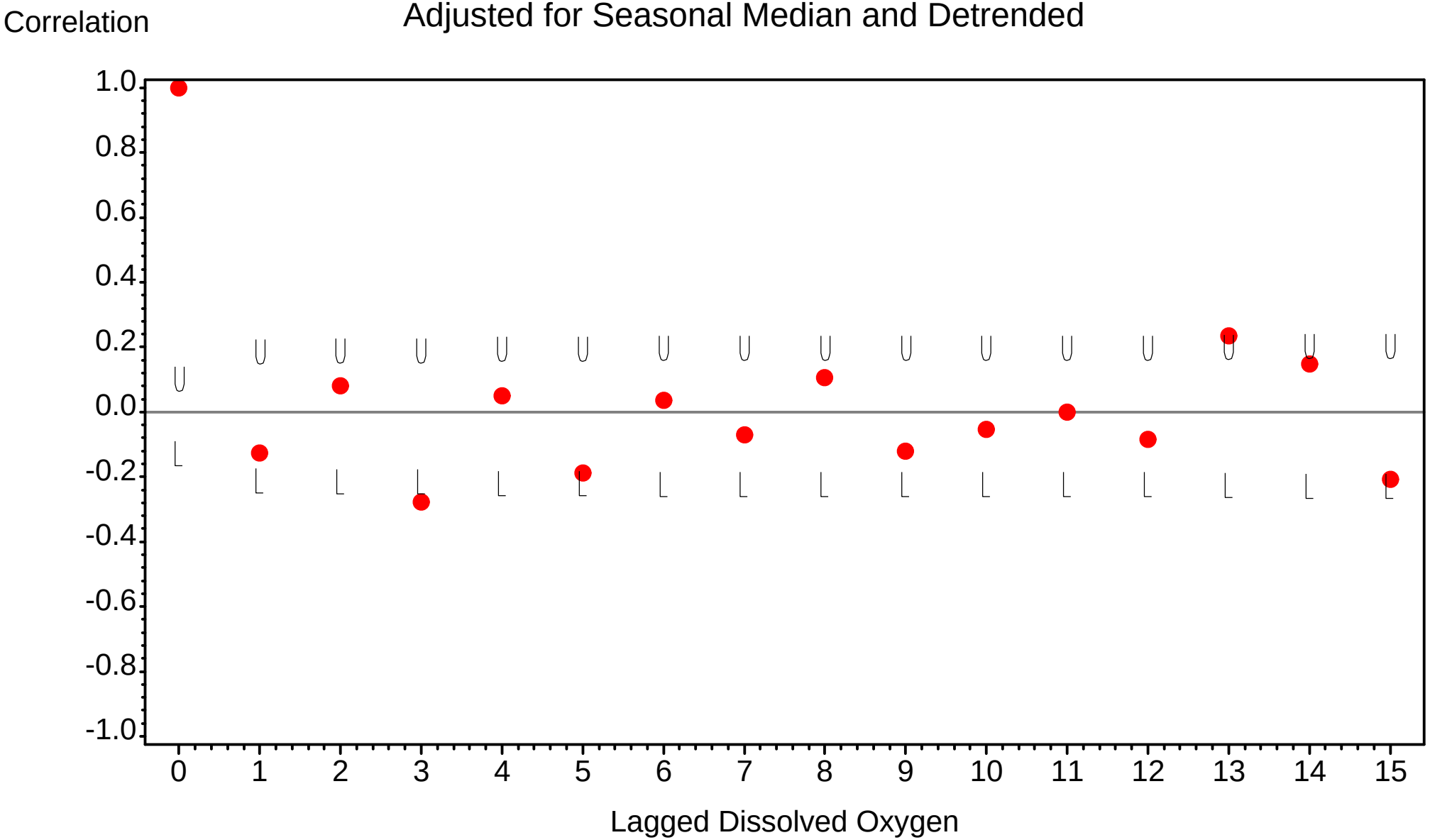
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	-0.127	0.100	0.200	-0.200
2	0.081	0.101	0.201	-0.201
3	-0.278	0.101	0.202	-0.202
4	0.049	0.103	0.207	-0.207
5	-0.189	0.103	0.207	-0.207
6	0.037	0.105	0.209	-0.209
7	-0.070	0.105	0.209	-0.209
8	0.106	0.105	0.209	-0.209
9	-0.121	0.105	0.210	-0.210
10	-0.053	0.106	0.211	-0.211
11	0.000	0.106	0.211	-0.211
12	-0.084	0.106	0.211	-0.211
13	0.235	0.106	0.212	-0.212
14	0.147	0.108	0.215	-0.215
15	-0.208	0.108	0.216	-0.216

S_21FLSJWM27010024 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended

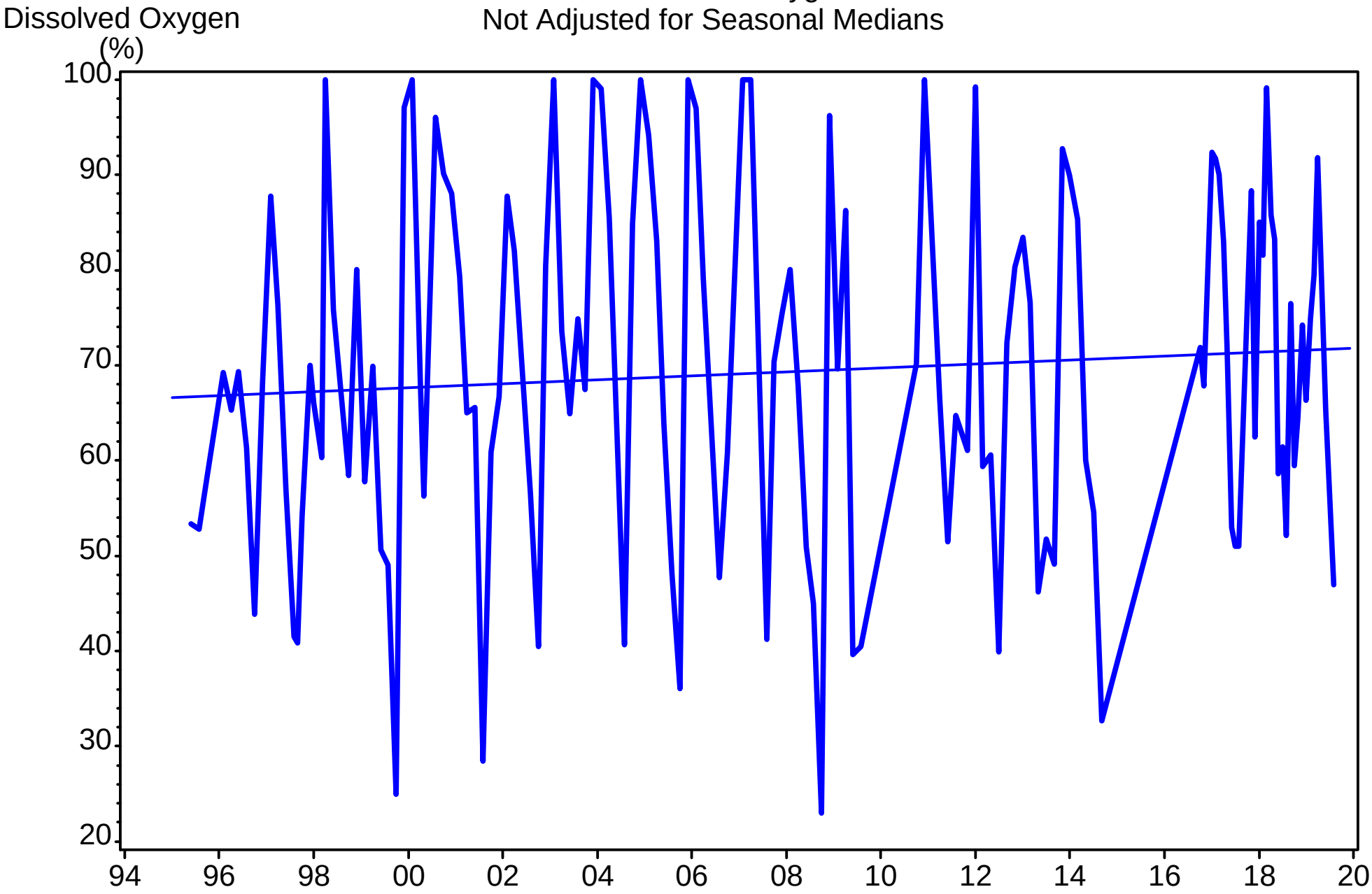


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

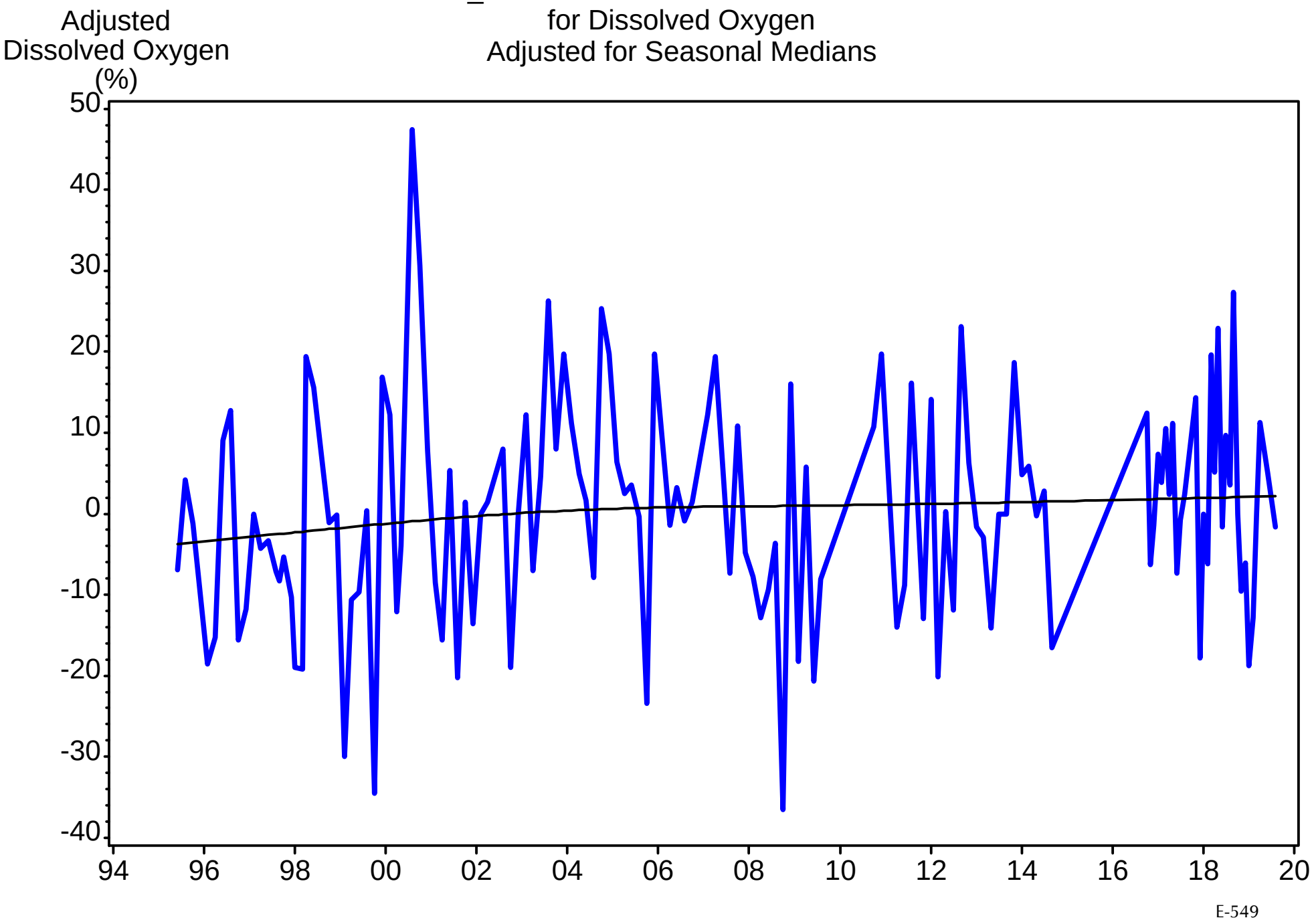
Zero Reference Line Shown

S_21FLSJWM27010024 Trends

S_21FLSJWM27010024 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



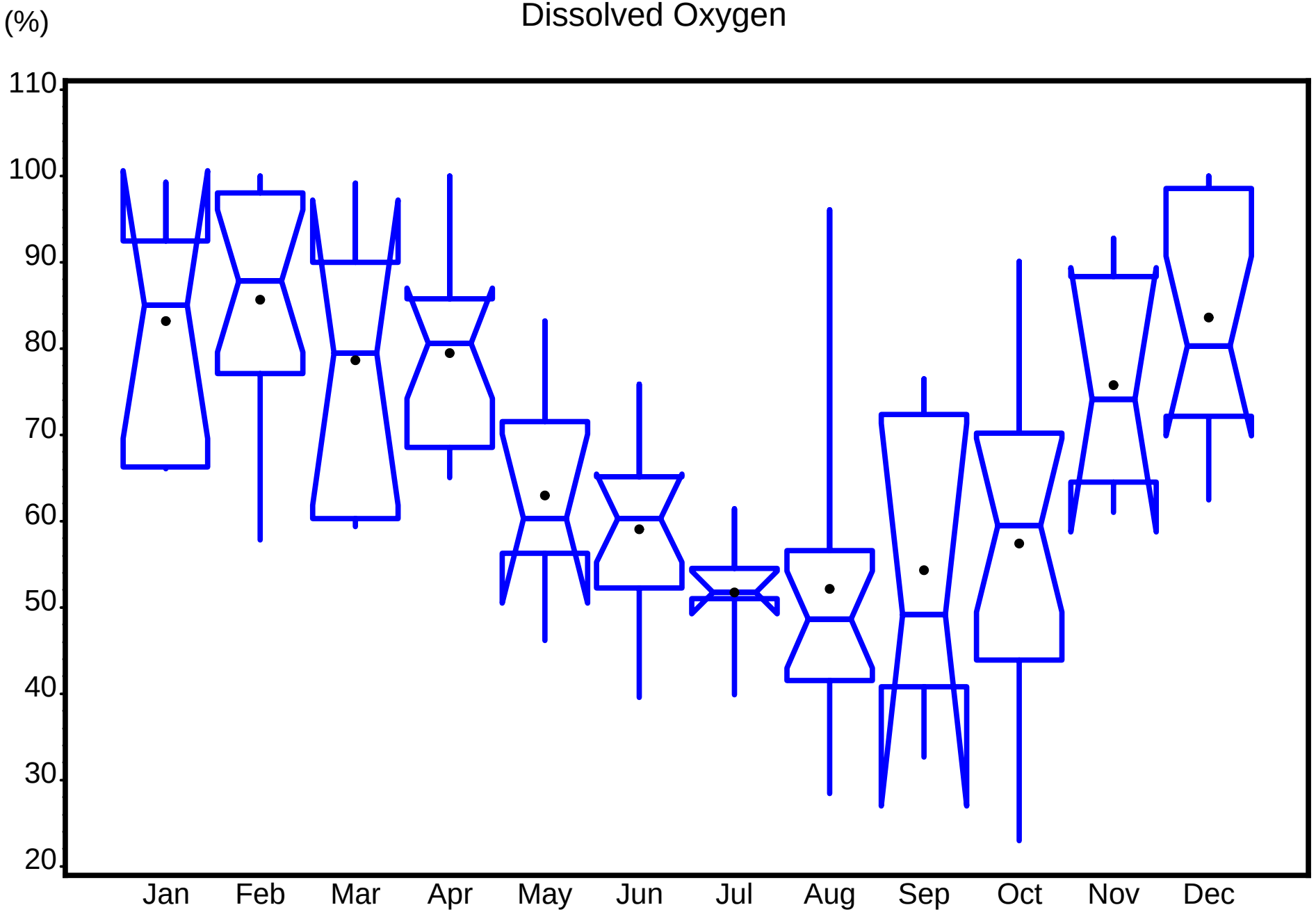
S_21FLSJWM27010024 Trends



S_21FLSJWM27010024 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



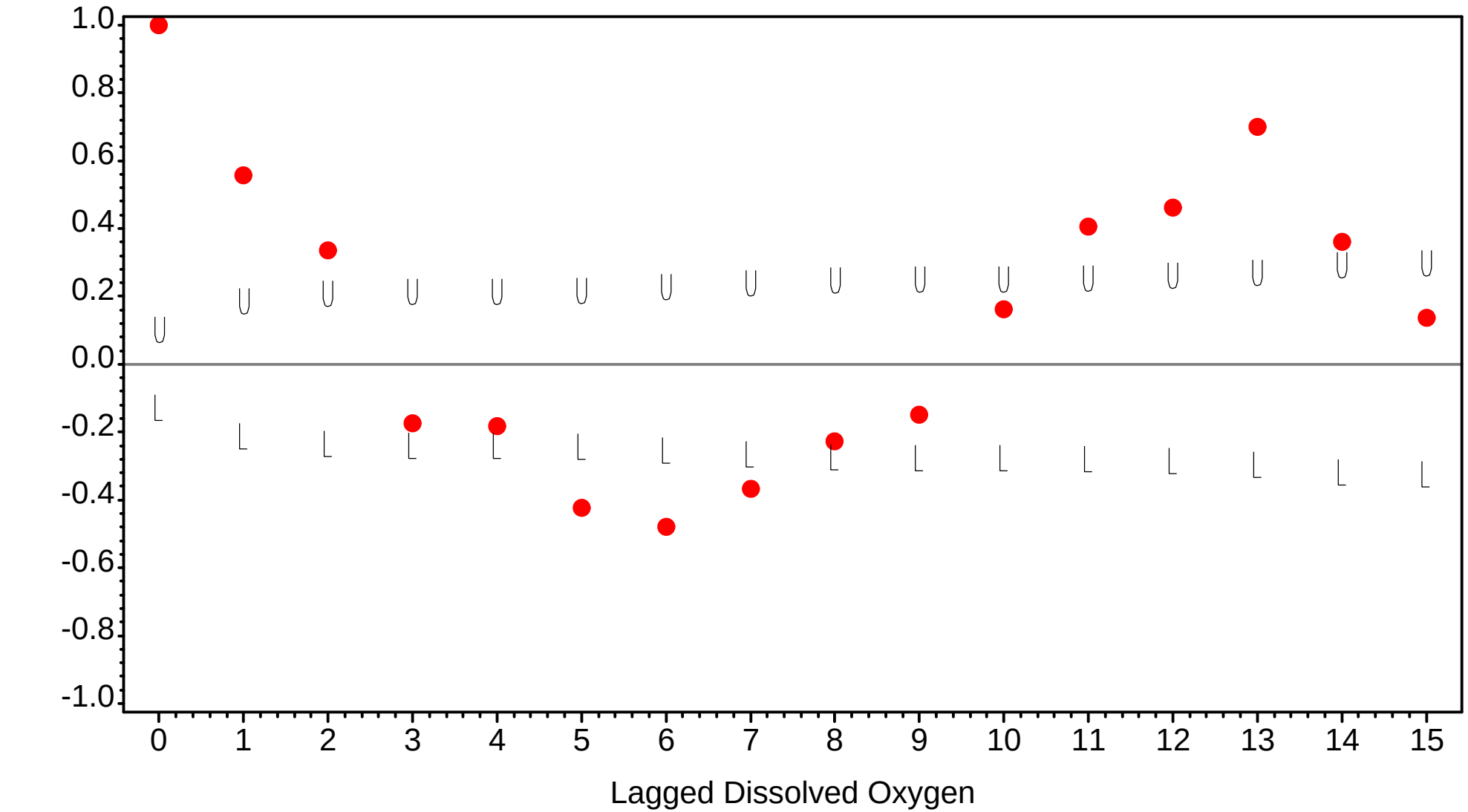
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.558	0.100	0.200	-0.200
2	0.335	0.110	0.220	-0.220
3	-0.175	0.113	0.227	-0.227
4	-0.182	0.114	0.228	-0.228
5	-0.422	0.115	0.230	-0.230
6	-0.478	0.120	0.240	-0.240
7	-0.367	0.126	0.253	-0.253
8	-0.227	0.130	0.260	-0.260
9	-0.150	0.131	0.262	-0.262
10	0.163	0.132	0.264	-0.264
11	0.406	0.132	0.265	-0.265
12	0.461	0.137	0.273	-0.273
13	0.699	0.142	0.283	-0.283
14	0.362	0.153	0.305	-0.305
15	0.137	0.155	0.311	-0.311

S_21FLSJWM27010024 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

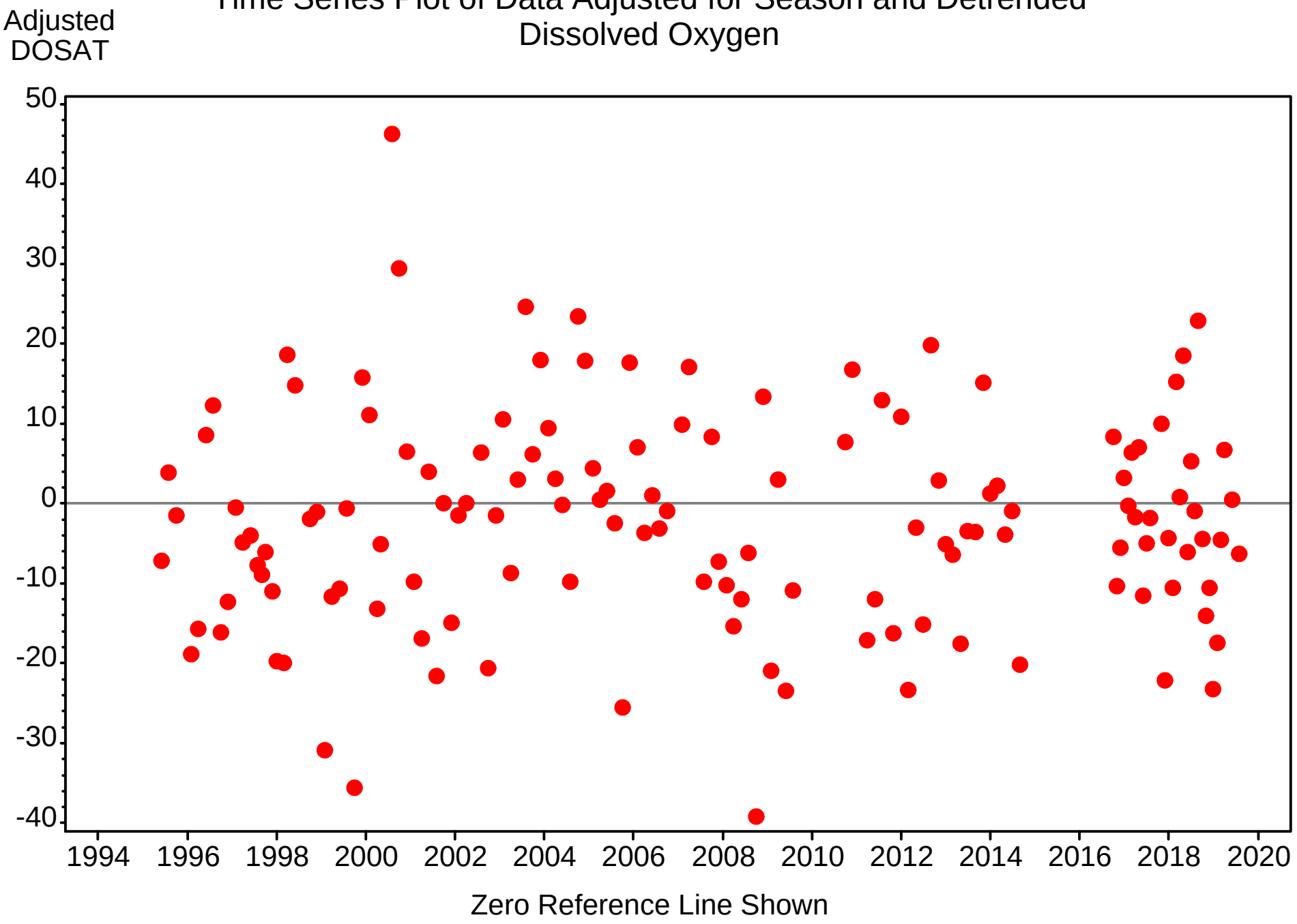
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.073	0.288	0.376	0.18

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.072707	0.28797	0.37646	0.18030

S_21FLSJWM27010024 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



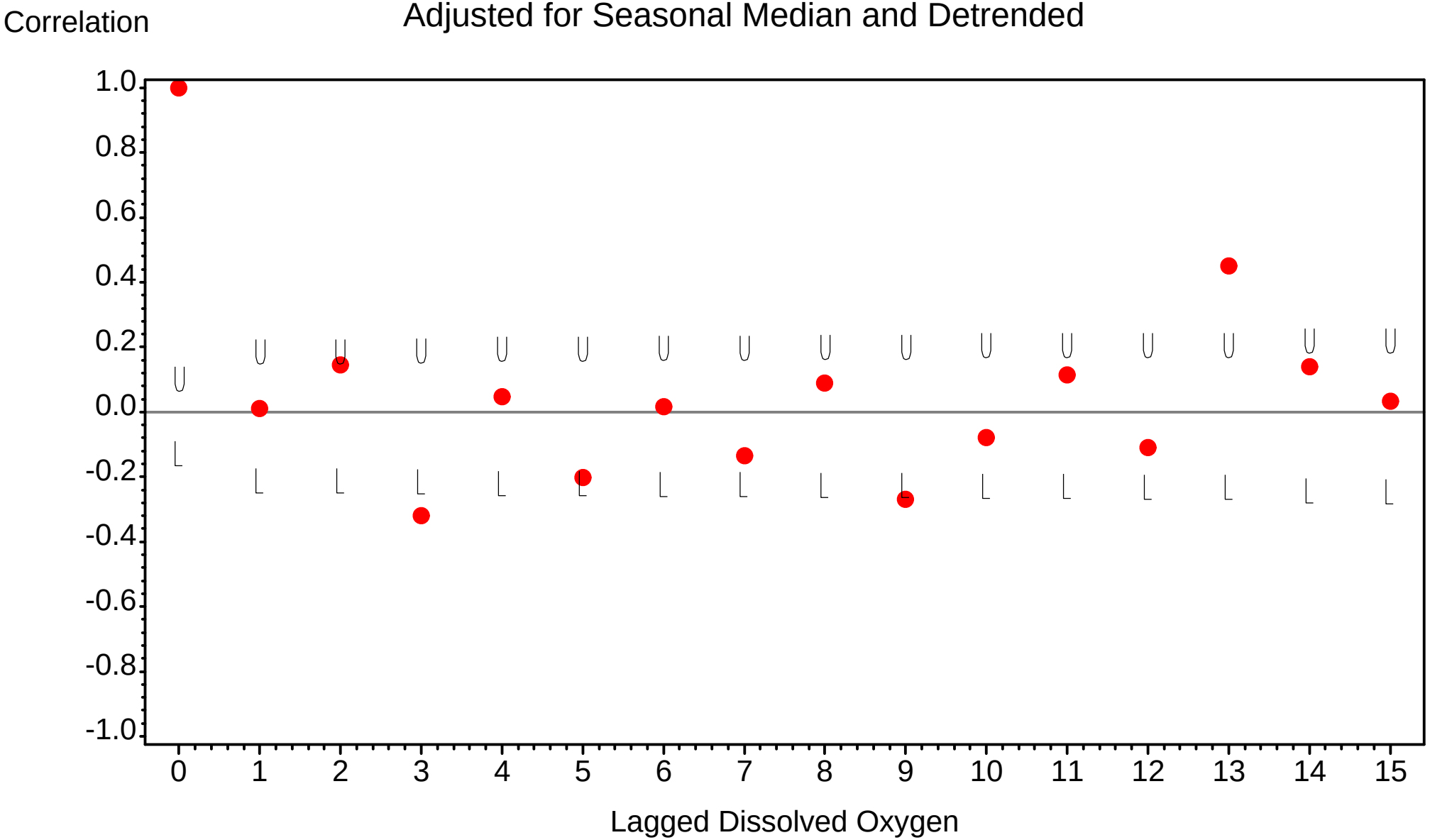
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.012	0.100	0.200	-0.200
2	0.146	0.100	0.200	-0.200
3	-0.321	0.101	0.201	-0.201
4	0.048	0.104	0.208	-0.208
5	-0.201	0.104	0.208	-0.208
6	0.016	0.105	0.211	-0.211
7	-0.136	0.105	0.211	-0.211
8	0.089	0.106	0.212	-0.212
9	-0.268	0.106	0.213	-0.213
10	-0.079	0.108	0.217	-0.217
11	0.115	0.109	0.217	-0.217
12	-0.109	0.109	0.218	-0.218
13	0.451	0.109	0.219	-0.219
14	0.140	0.115	0.231	-0.231
15	0.032	0.116	0.232	-0.232

S_21FLSJWM27010024 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended

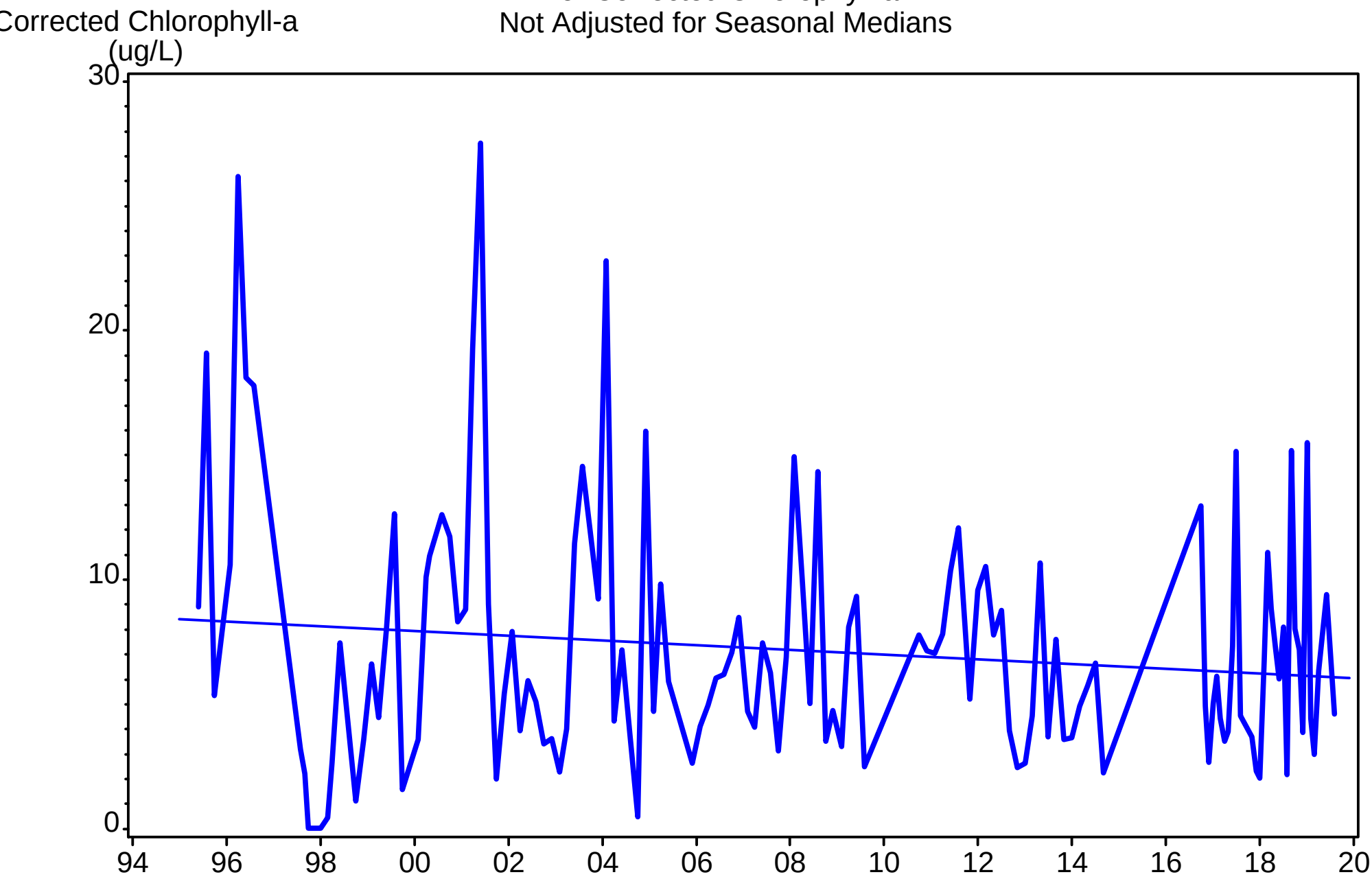


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

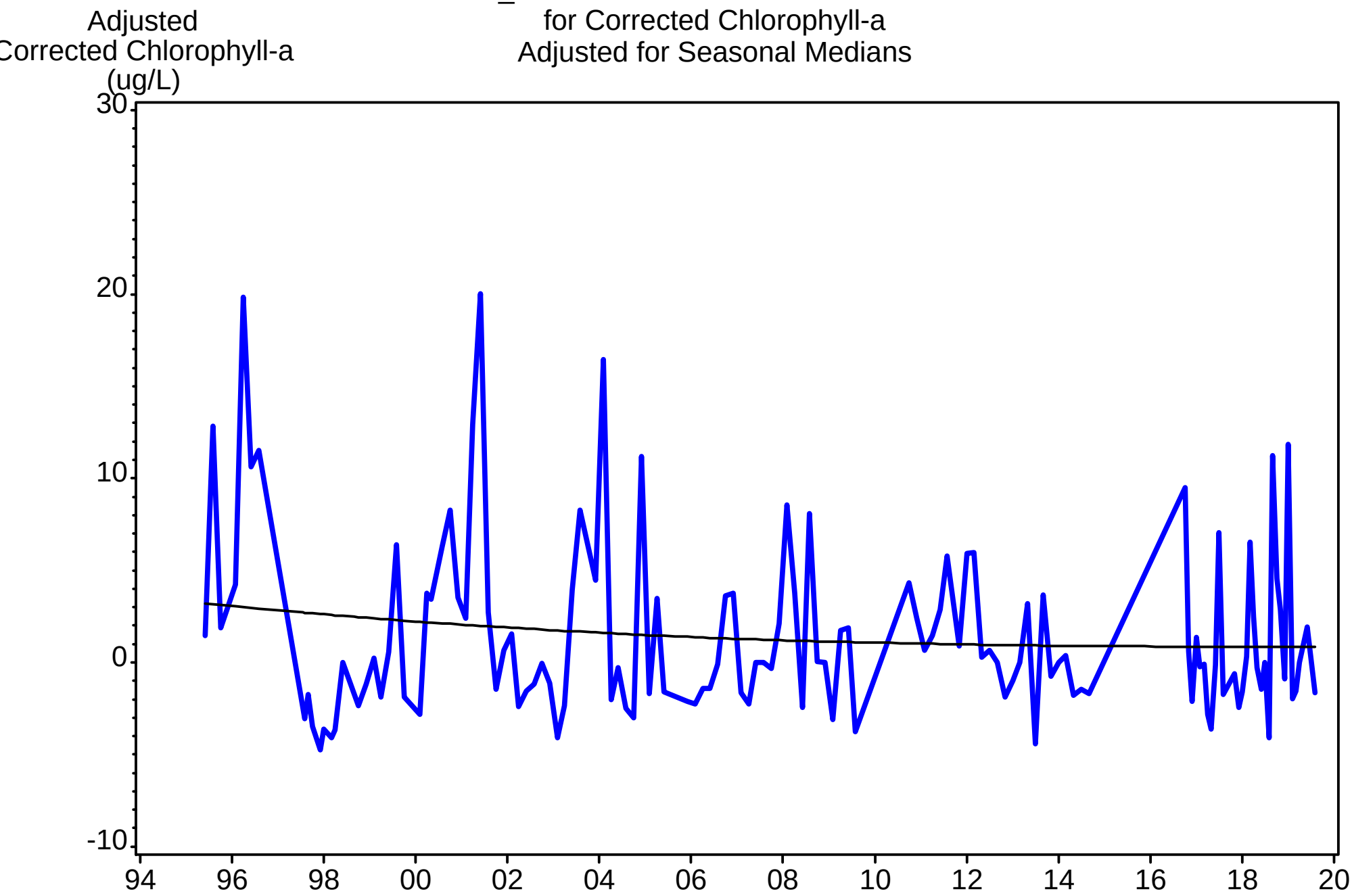
Zero Reference Line Shown

S_21FLSJWM27010024 Trends

S_21FLSJWM27010024 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



S_21FLSJWM27010024 Trends

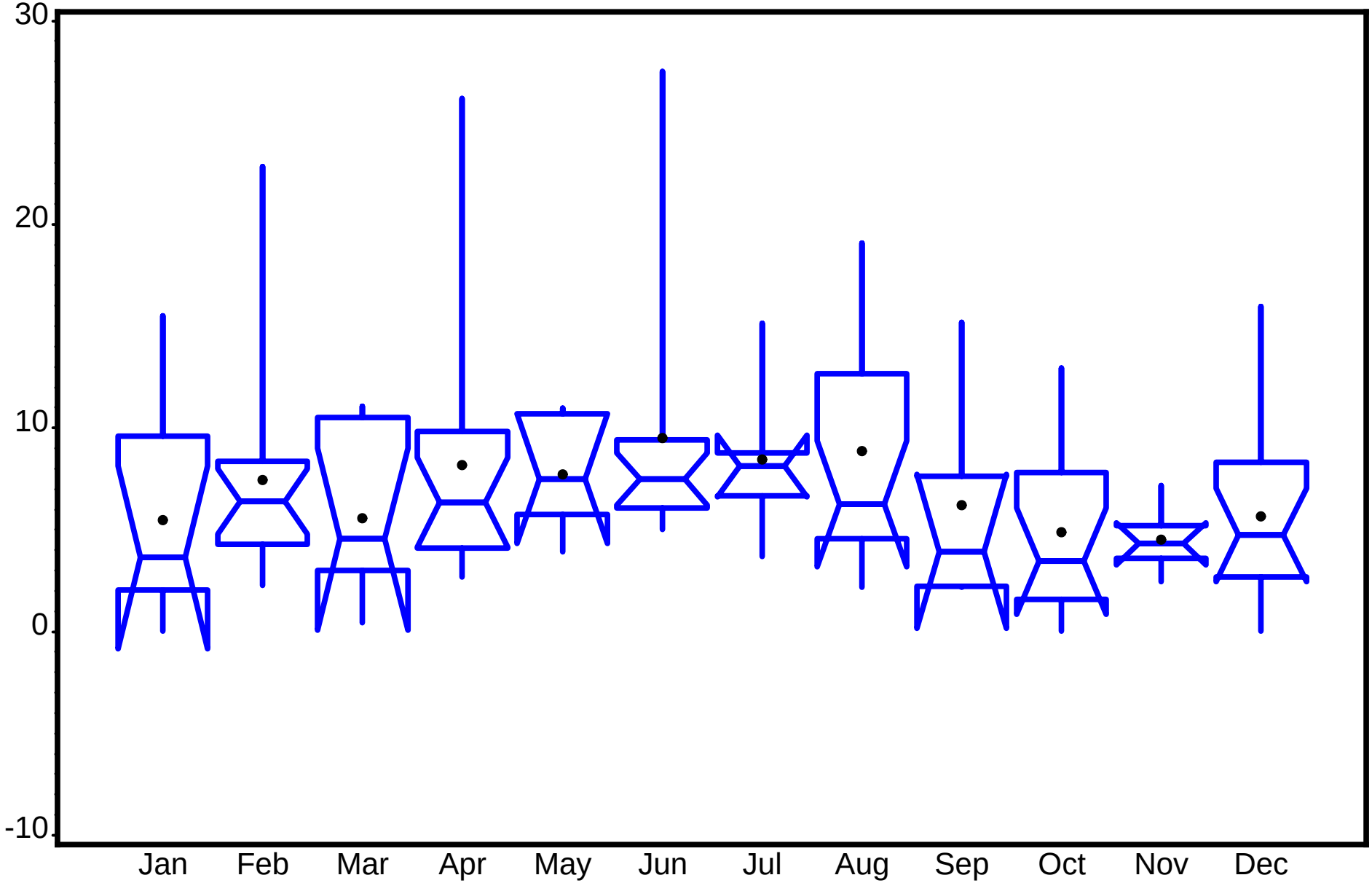


S_21FLSJWM27010024 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a

(ug/L)



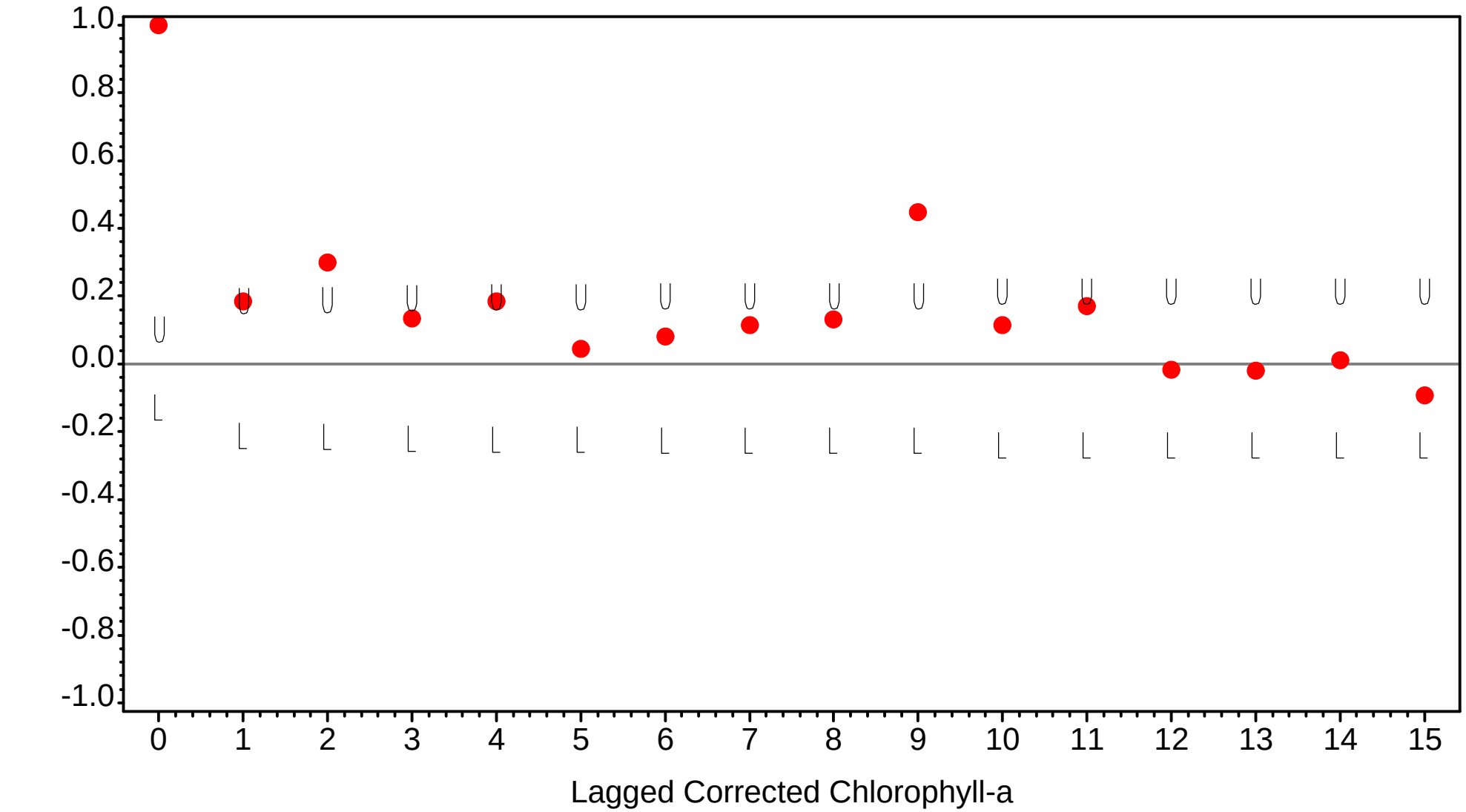
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.184	0.100	0.200	-0.200
2	0.299	0.101	0.202	-0.202
3	0.135	0.104	0.208	-0.208
4	0.185	0.105	0.209	-0.209
5	0.044	0.106	0.211	-0.211
6	0.081	0.106	0.212	-0.212
7	0.114	0.106	0.212	-0.212
8	0.132	0.106	0.213	-0.213
9	0.447	0.107	0.214	-0.214
10	0.115	0.113	0.226	-0.226
11	0.170	0.113	0.227	-0.227
12	-0.016	0.114	0.228	-0.228
13	-0.020	0.114	0.228	-0.228
14	0.011	0.114	0.228	-0.228
15	-0.094	0.114	0.228	-0.228

S_21FLSJWM27010024 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

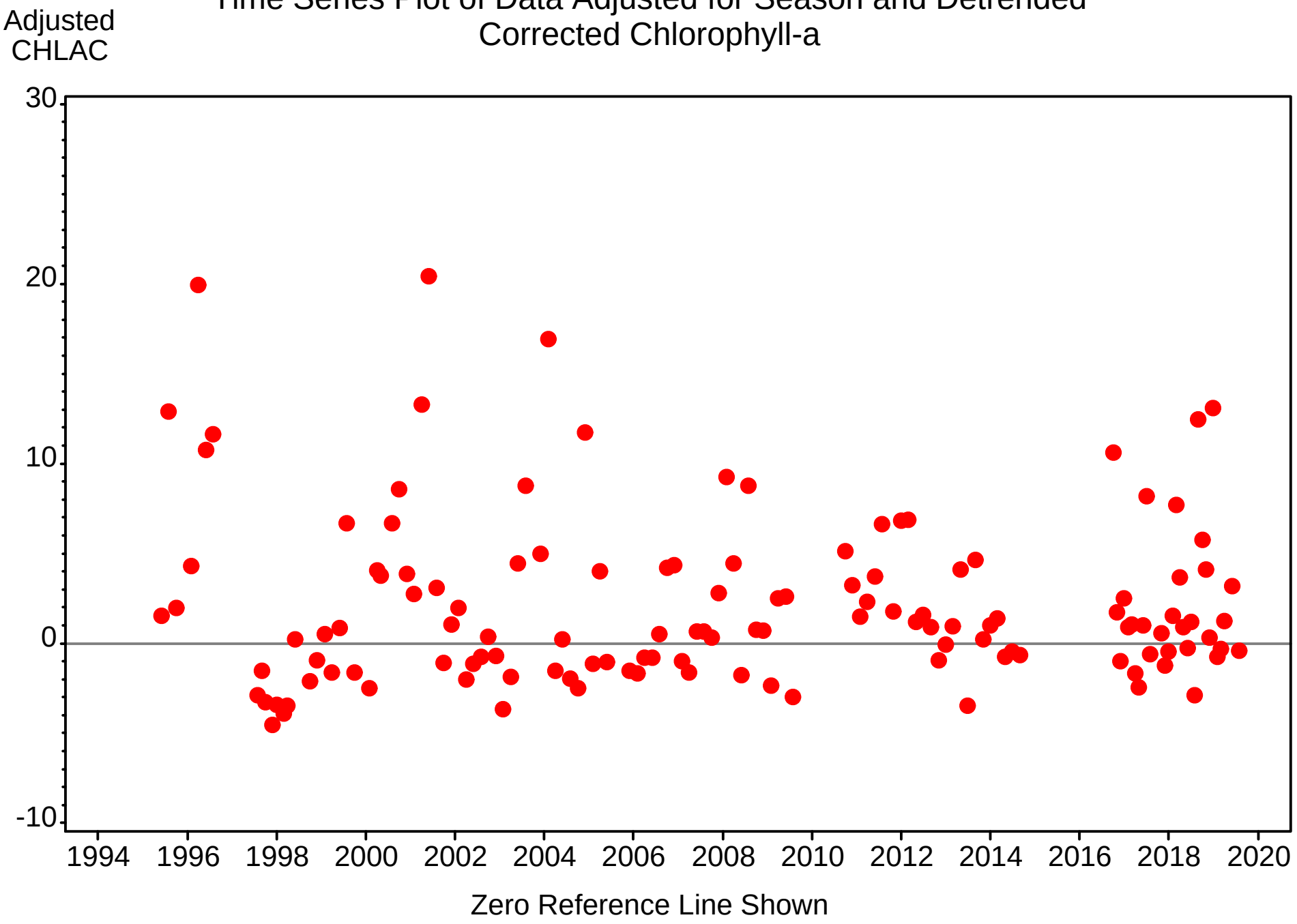
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.059	0.405	0.51	-0.049

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.058824	0.40473	0.51040	-0.048639

S_21FLSJWM27010024 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a

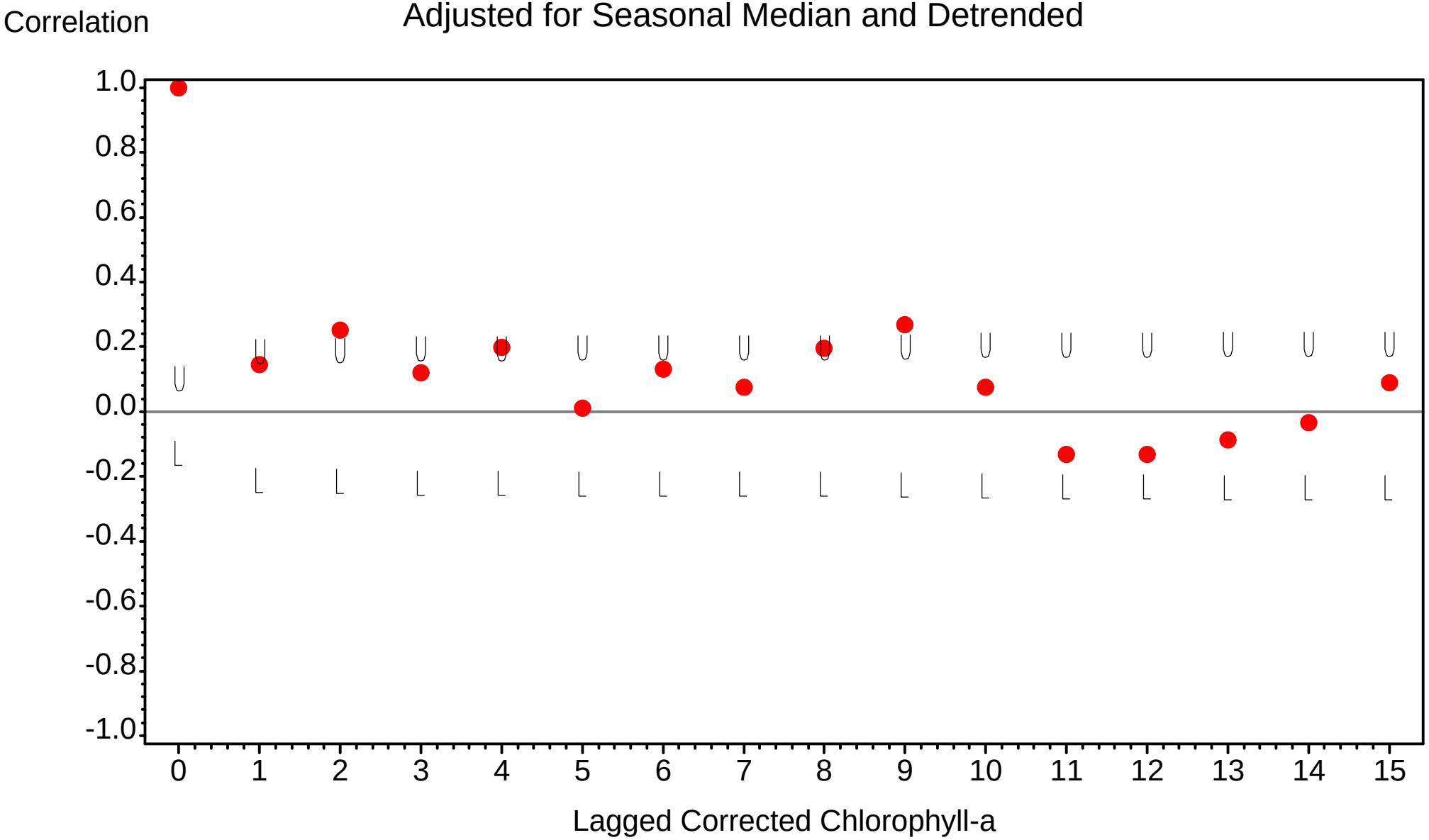


S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.144	0.100	0.200	-0.200
2	0.252	0.101	0.201	-0.201
3	0.119	0.103	0.206	-0.206
4	0.199	0.103	0.206	-0.206
5	0.012	0.104	0.209	-0.209
6	0.131	0.105	0.209	-0.209
7	0.074	0.105	0.210	-0.210
8	0.195	0.105	0.210	-0.210
9	0.267	0.106	0.213	-0.213
10	0.074	0.109	0.217	-0.217
11	-0.133	0.109	0.218	-0.218
12	-0.133	0.109	0.219	-0.219
13	-0.087	0.110	0.220	-0.220
14	-0.035	0.110	0.220	-0.220
15	0.090	0.110	0.220	-0.220

S_21FLSJWM27010024 Trends Appendix

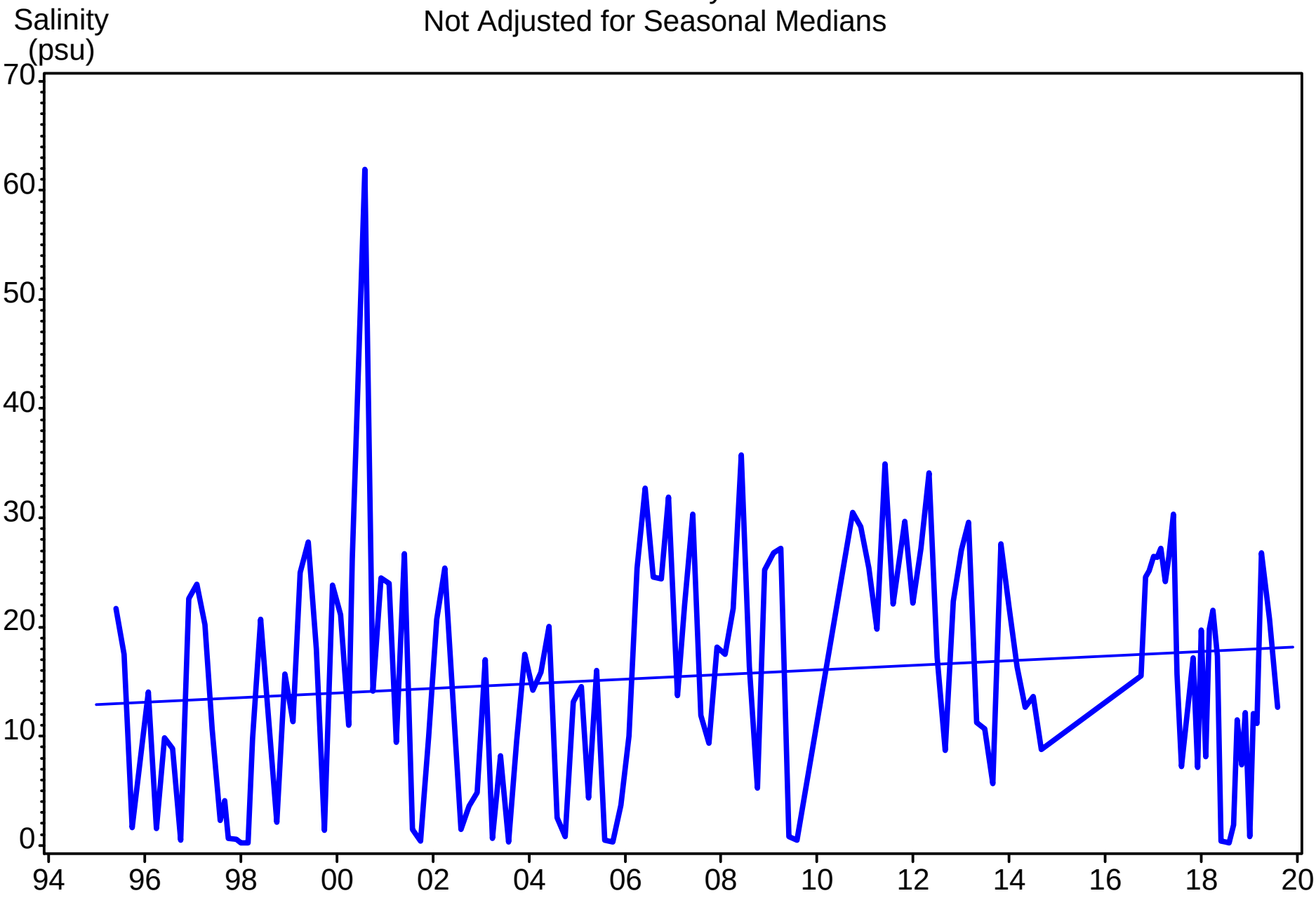
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

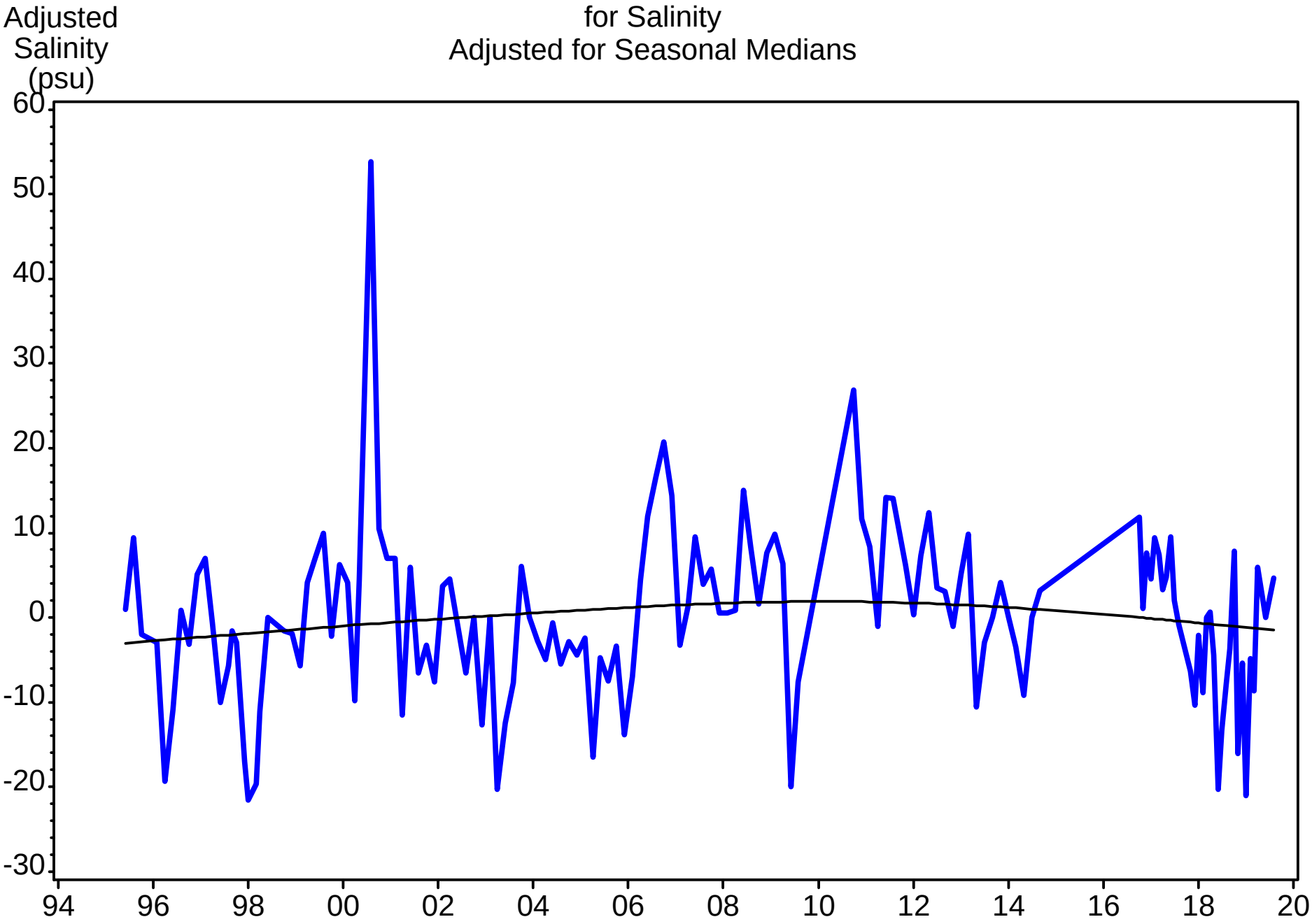
S_21FLSJWM27010024 Trends

S_21FLSJWM27010024 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



S_21FLSJWM27010024 Trends

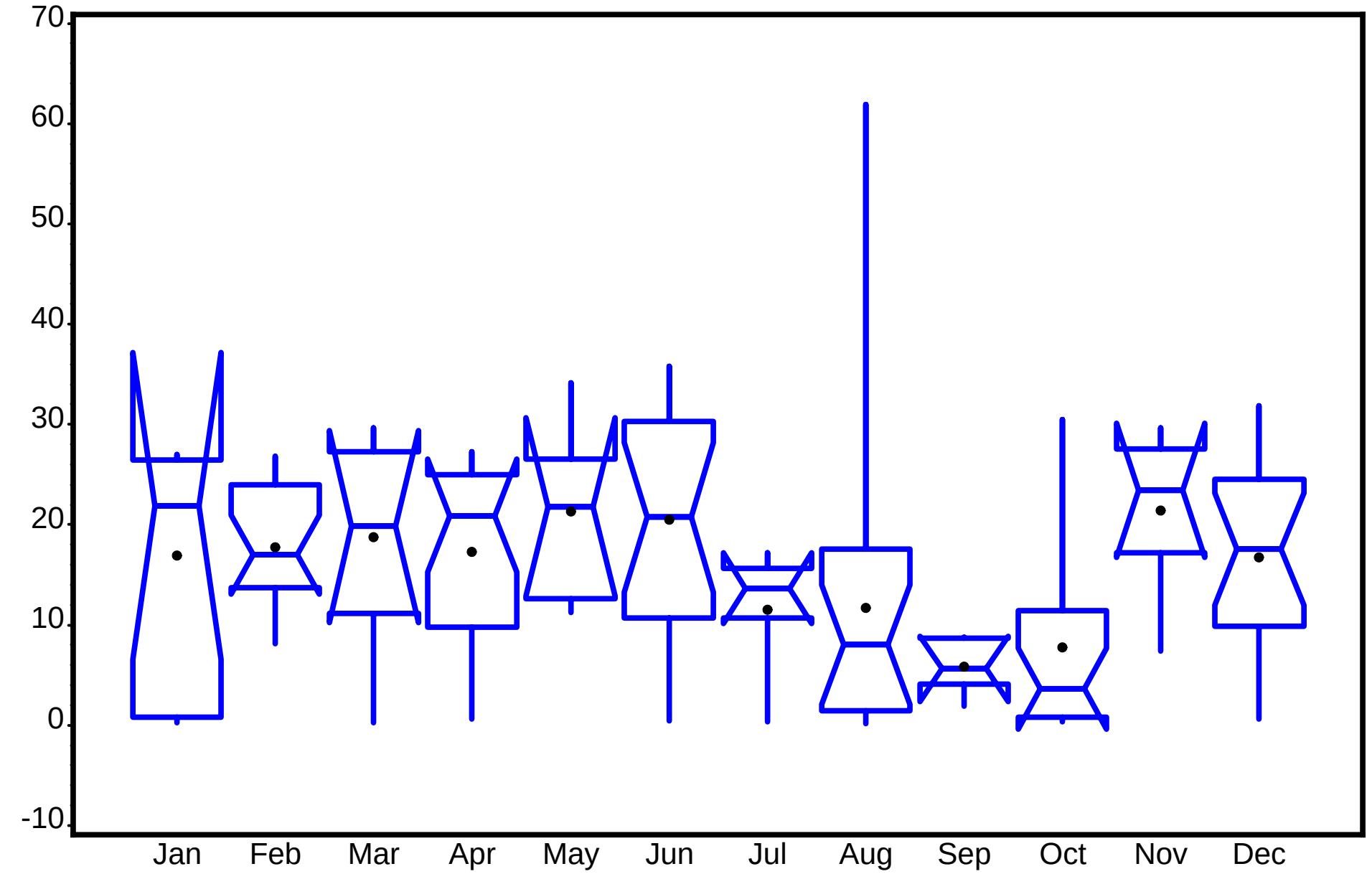
S_21FLSJWM27010024 Time Series for Salinity Adjusted for Seasonal Medians



S_21FLSJWM27010024 Trends Appendix

Seasonal Univariate Statistics

Salinity



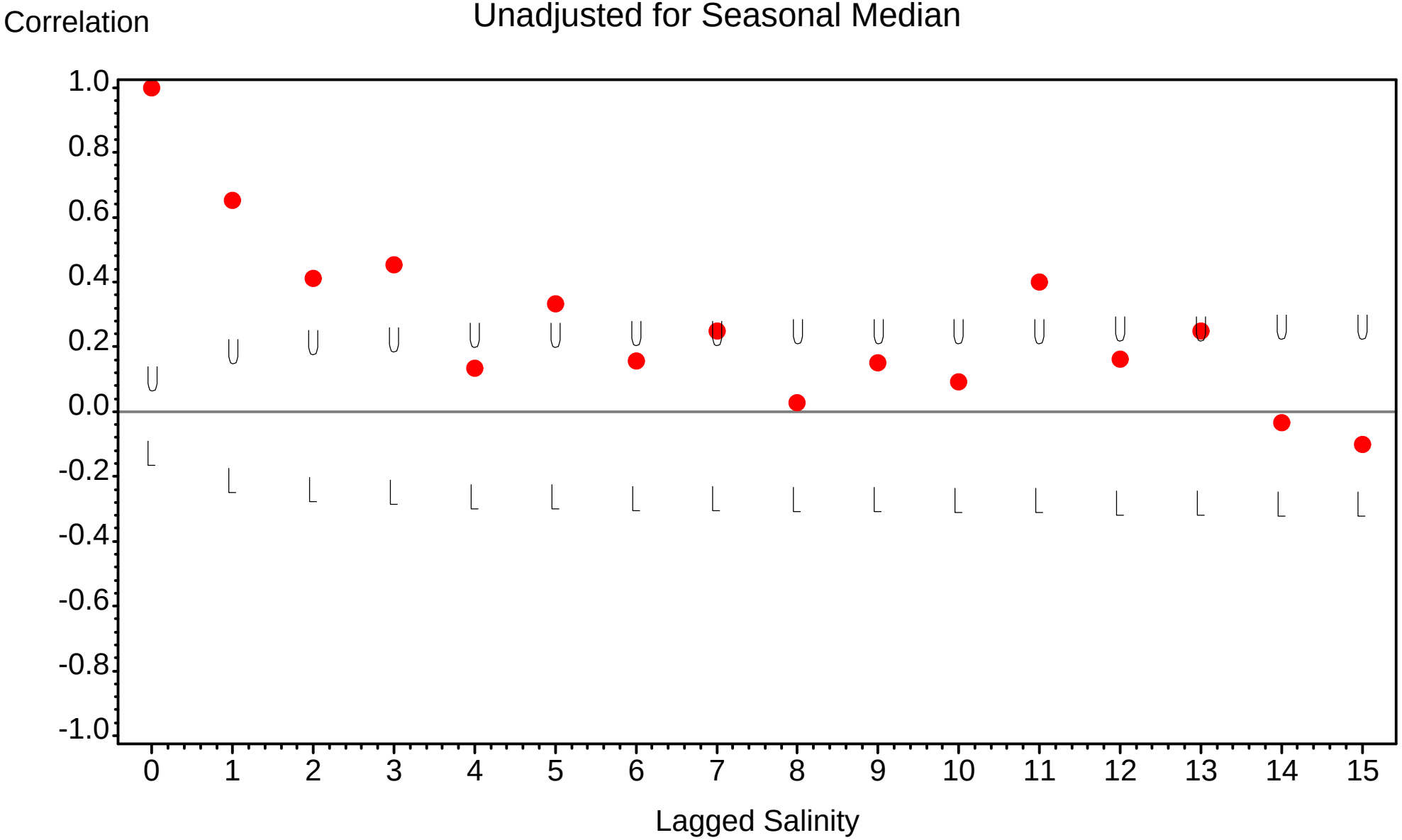
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.651	0.100	0.200	-0.200
2	0.411	0.113	0.227	-0.227
3	0.453	0.118	0.236	-0.236
4	0.135	0.124	0.248	-0.248
5	0.334	0.124	0.249	-0.249
6	0.156	0.127	0.254	-0.254
7	0.249	0.128	0.256	-0.256
8	0.028	0.129	0.259	-0.259
9	0.151	0.129	0.259	-0.259
10	0.093	0.130	0.260	-0.260
11	0.399	0.130	0.261	-0.261
12	0.161	0.134	0.269	-0.269
13	0.249	0.135	0.270	-0.270
14	-0.034	0.136	0.273	-0.273
15	-0.102	0.137	0.273	-0.273

S_21FLSJWM27010024 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

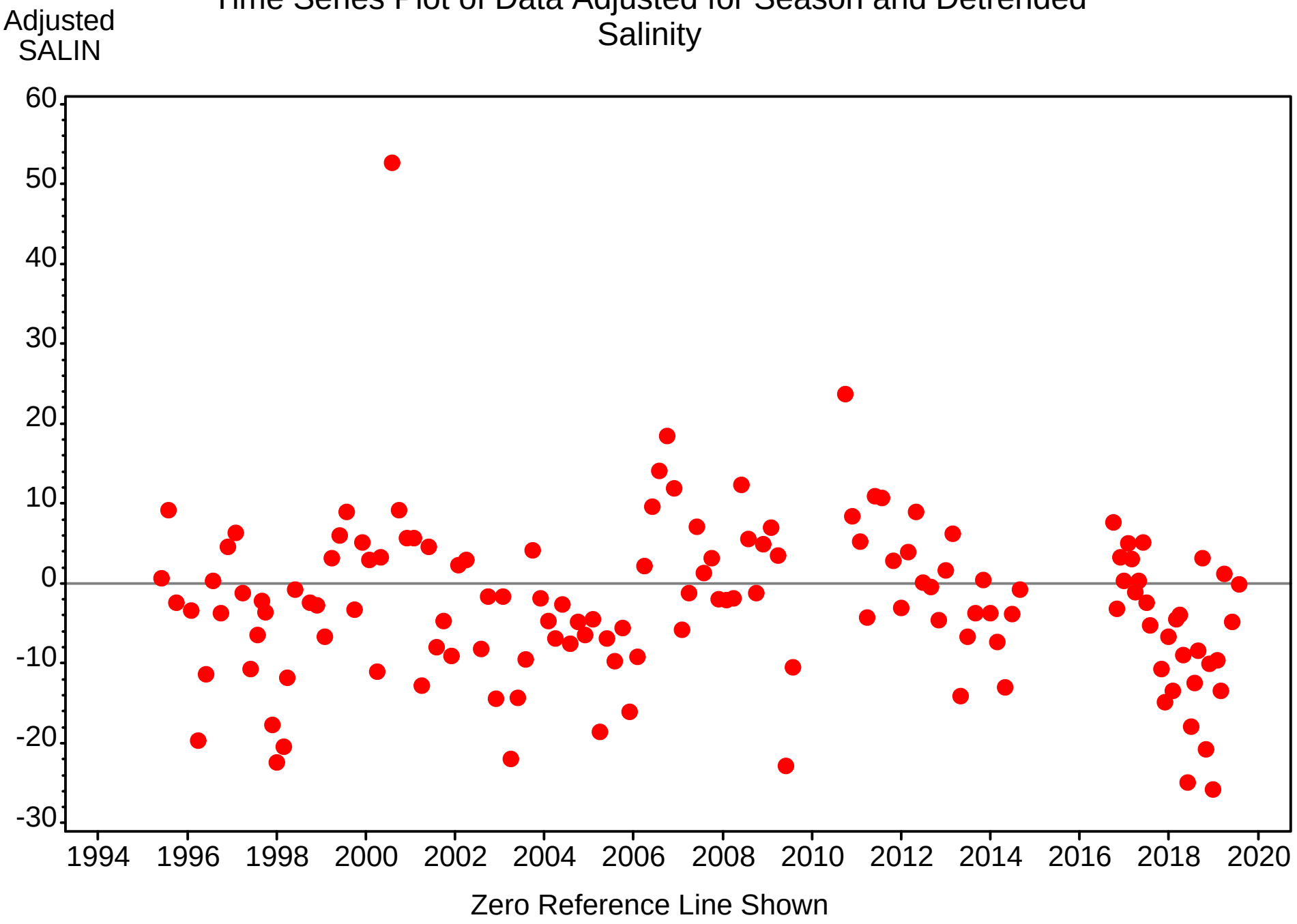
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.098	0.147	0.328	0.188

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.097665	0.14661	0.32812	0.18807

S_21FLSJWM27010024 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



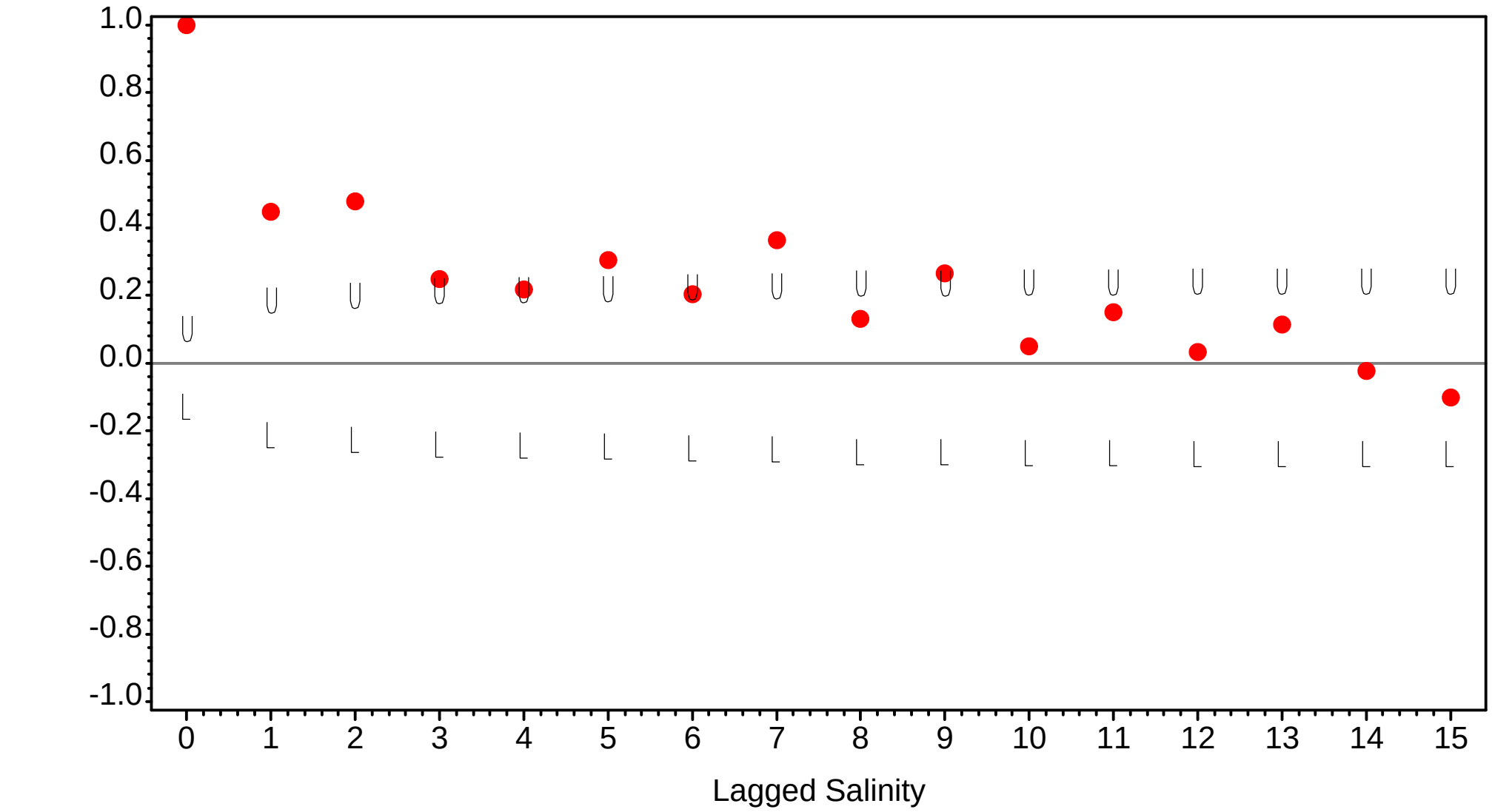
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.447	0.100	0.200	-0.200
2	0.479	0.106	0.213	-0.213
3	0.249	0.113	0.227	-0.227
4	0.217	0.115	0.230	-0.230
5	0.304	0.117	0.233	-0.233
6	0.203	0.119	0.238	-0.238
7	0.364	0.120	0.241	-0.241
8	0.132	0.124	0.248	-0.248
9	0.265	0.124	0.249	-0.249
10	0.050	0.126	0.253	-0.253
11	0.151	0.126	0.253	-0.253
12	0.032	0.127	0.254	-0.254
13	0.113	0.127	0.254	-0.254
14	-0.022	0.127	0.255	-0.255
15	-0.101	0.127	0.255	-0.255

S_21FLSJWM27010024 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

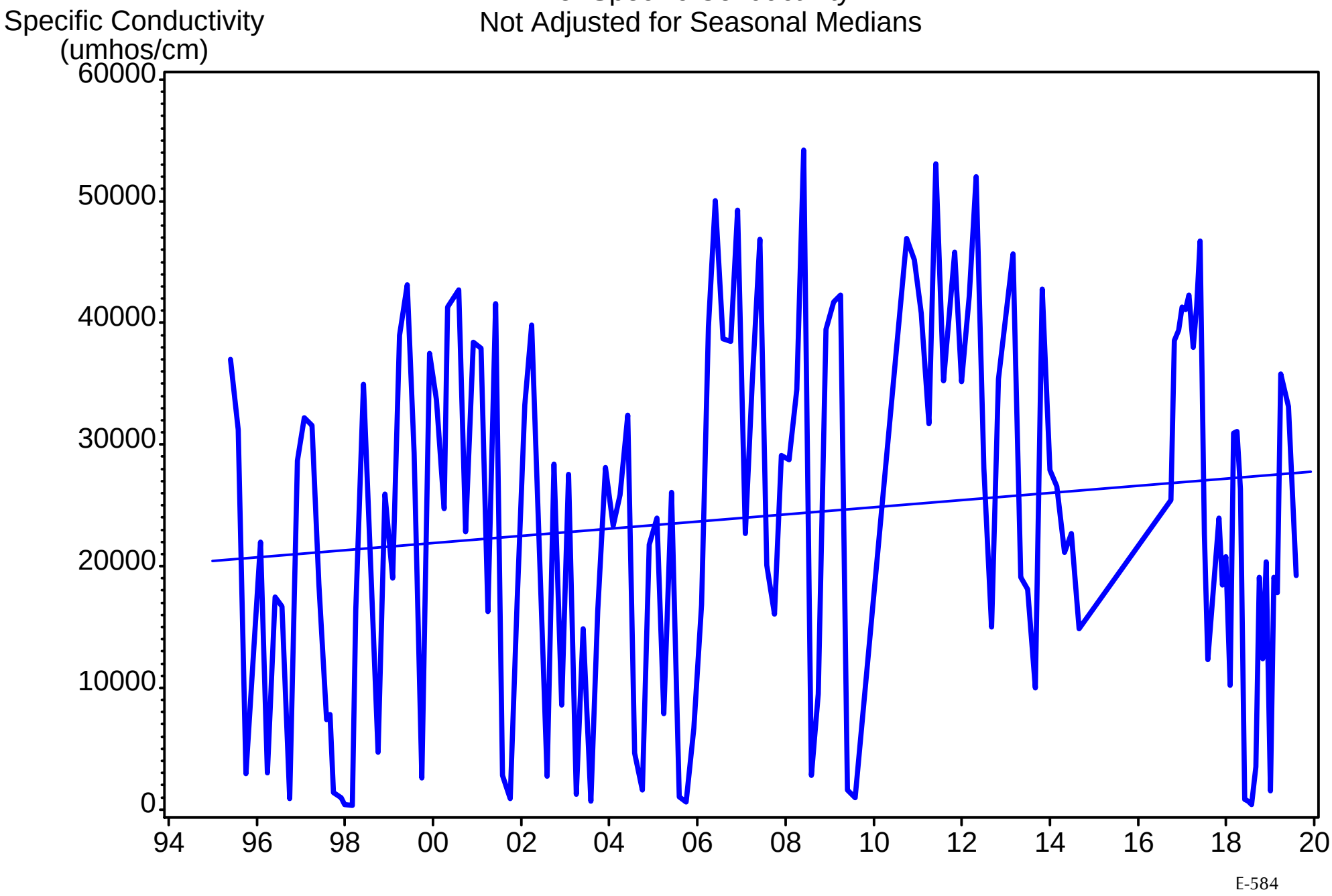


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

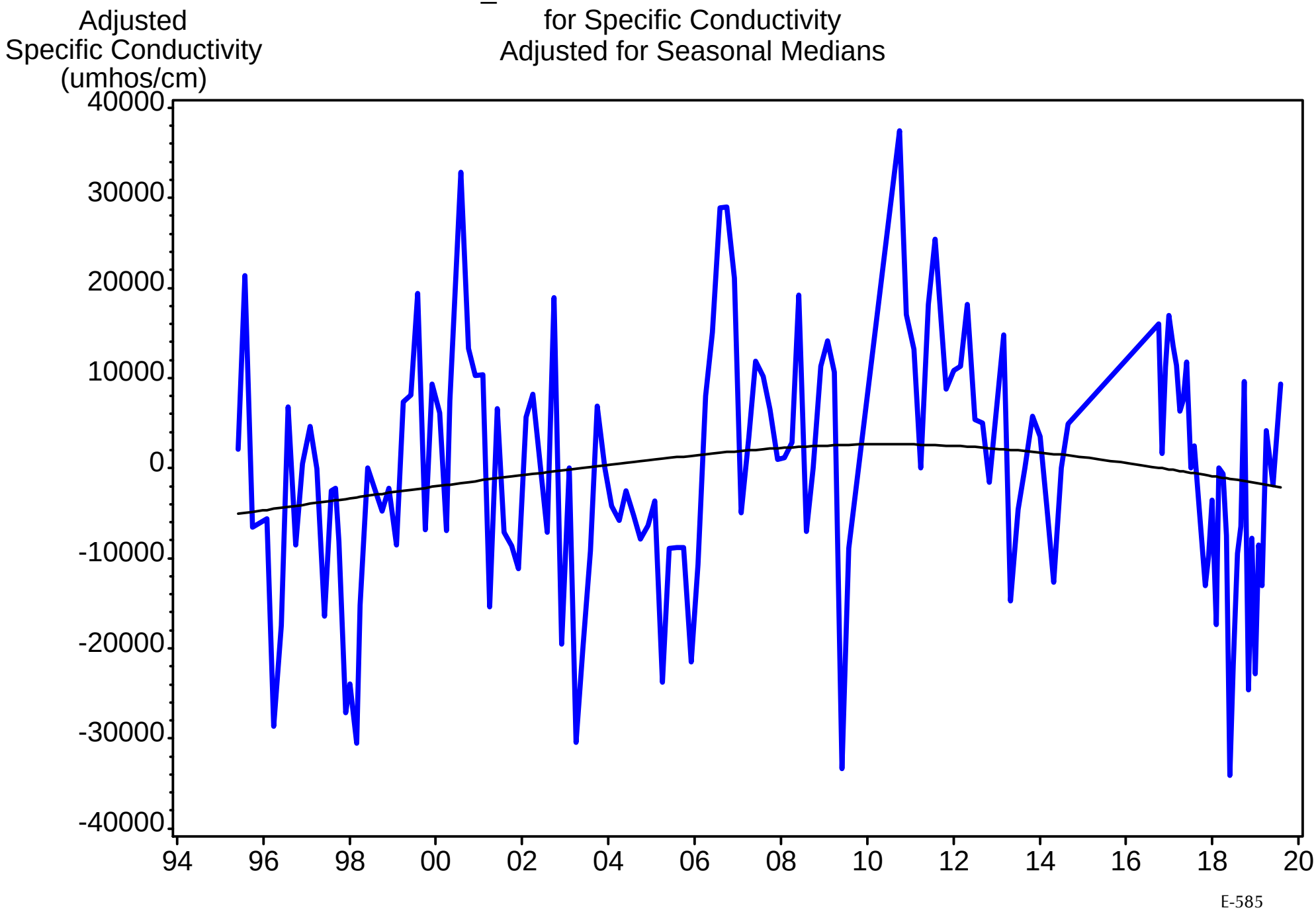
Zero Reference Line Shown

S_21FLSJWM27010024 Trends

S_21FLSJWM27010024 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



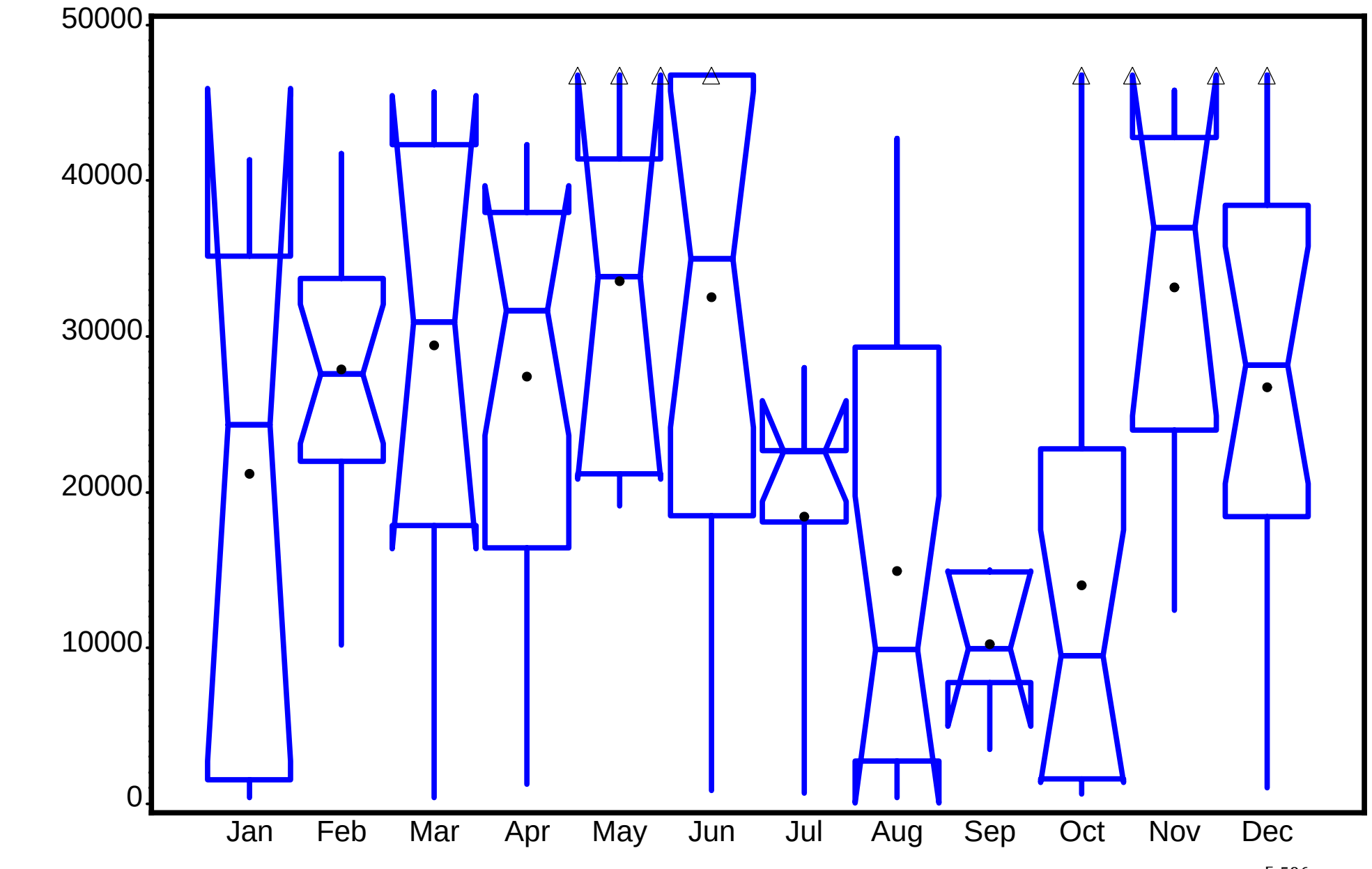
S_21FLSJWM27010024 Trends



S_21FLSJWM27010024 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity



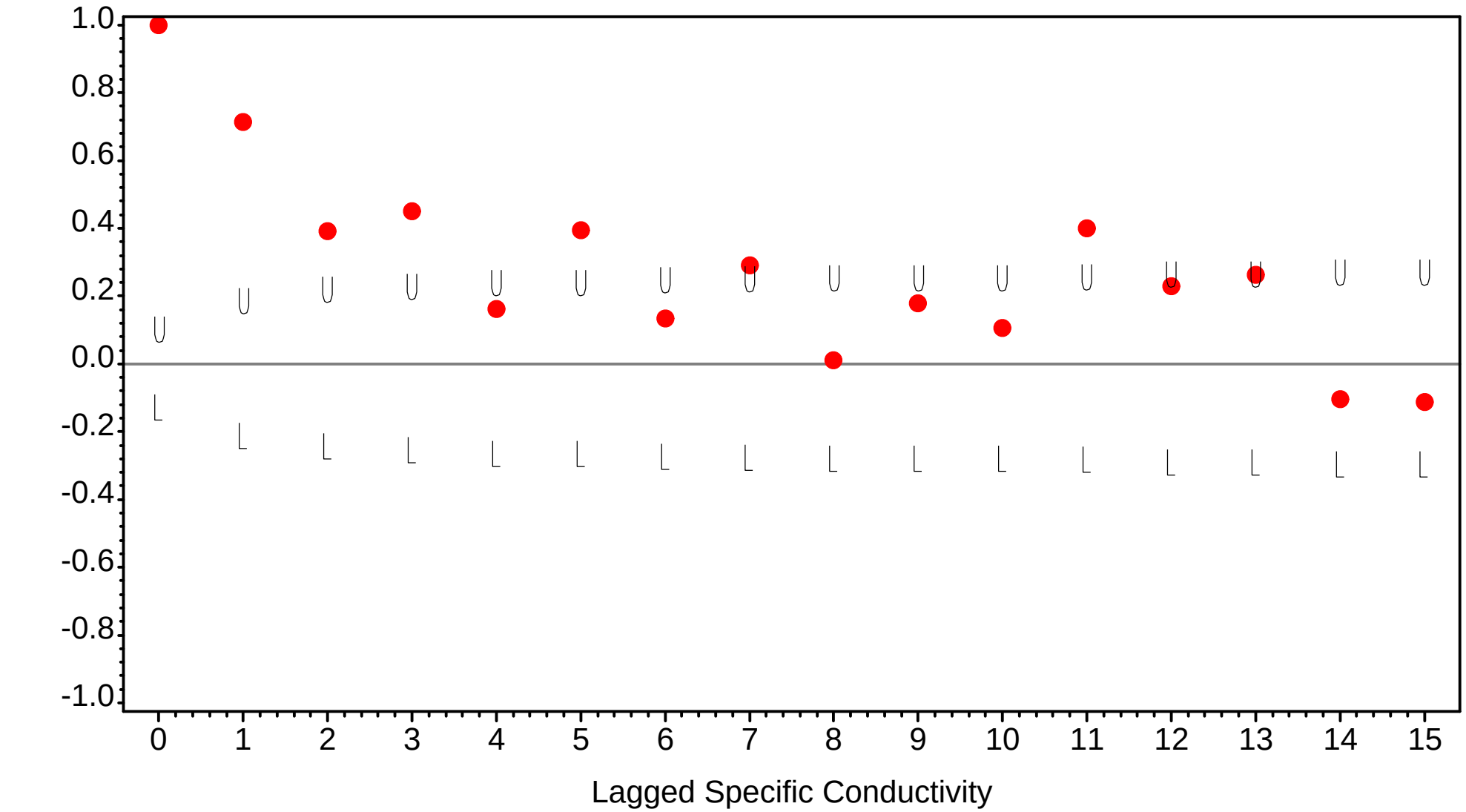
S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.714	0.100	0.200	-0.200
2	0.391	0.116	0.231	-0.231
3	0.450	0.120	0.240	-0.240
4	0.162	0.126	0.251	-0.251
5	0.394	0.126	0.253	-0.253
6	0.135	0.130	0.261	-0.261
7	0.290	0.131	0.262	-0.262
8	0.011	0.133	0.266	-0.266
9	0.179	0.133	0.266	-0.266
10	0.106	0.134	0.267	-0.267
11	0.400	0.134	0.268	-0.268
12	0.229	0.138	0.276	-0.276
13	0.262	0.139	0.278	-0.278
14	-0.103	0.141	0.282	-0.282
15	-0.112	0.141	0.282	-0.282

S_21FLSJWM27010024 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

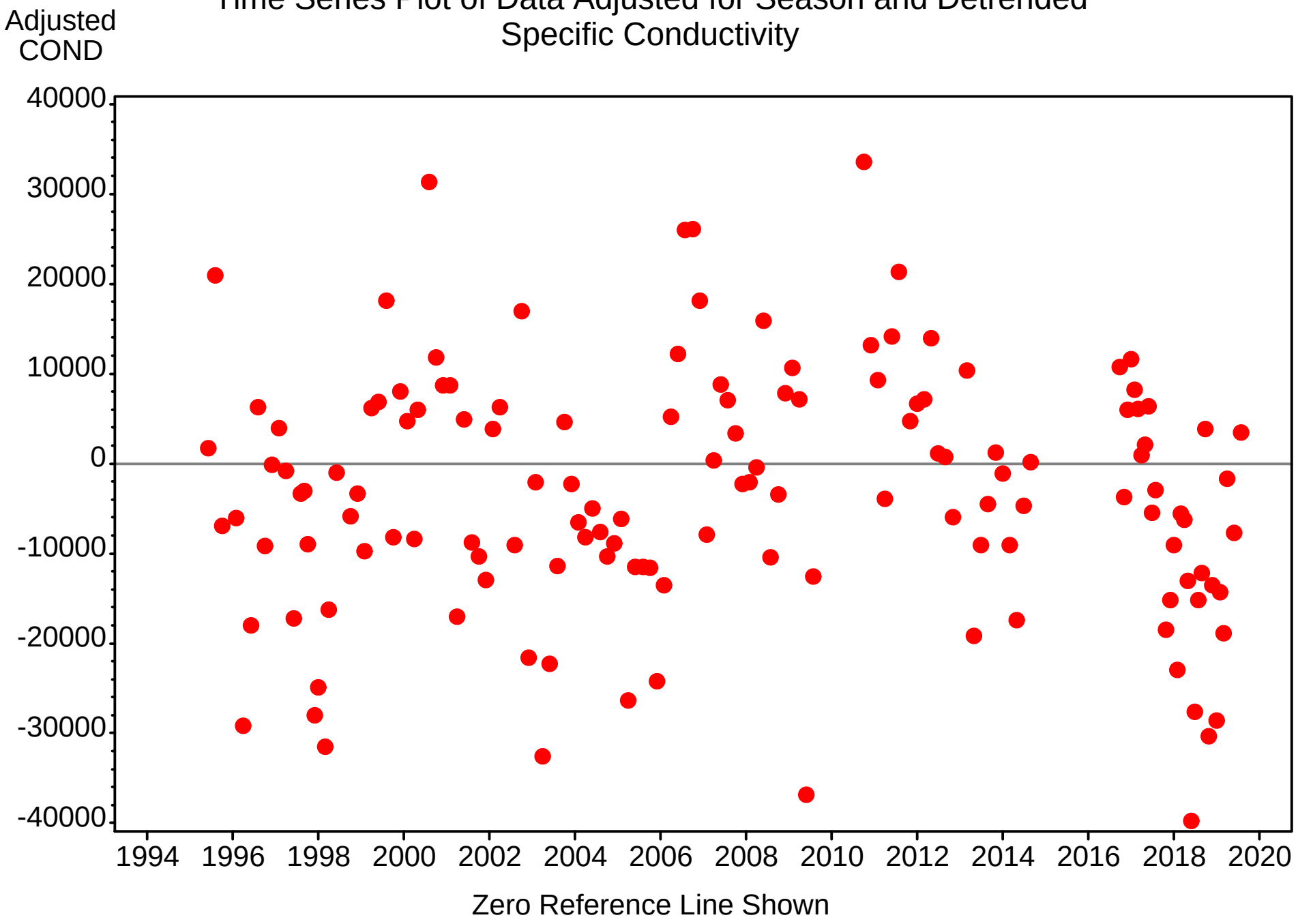
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.077	0.256	0.457	231.5

S_21FLSJWM27010024 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.076923	0.25643	0.45689	231.5

S_21FLSJWM27010024 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity



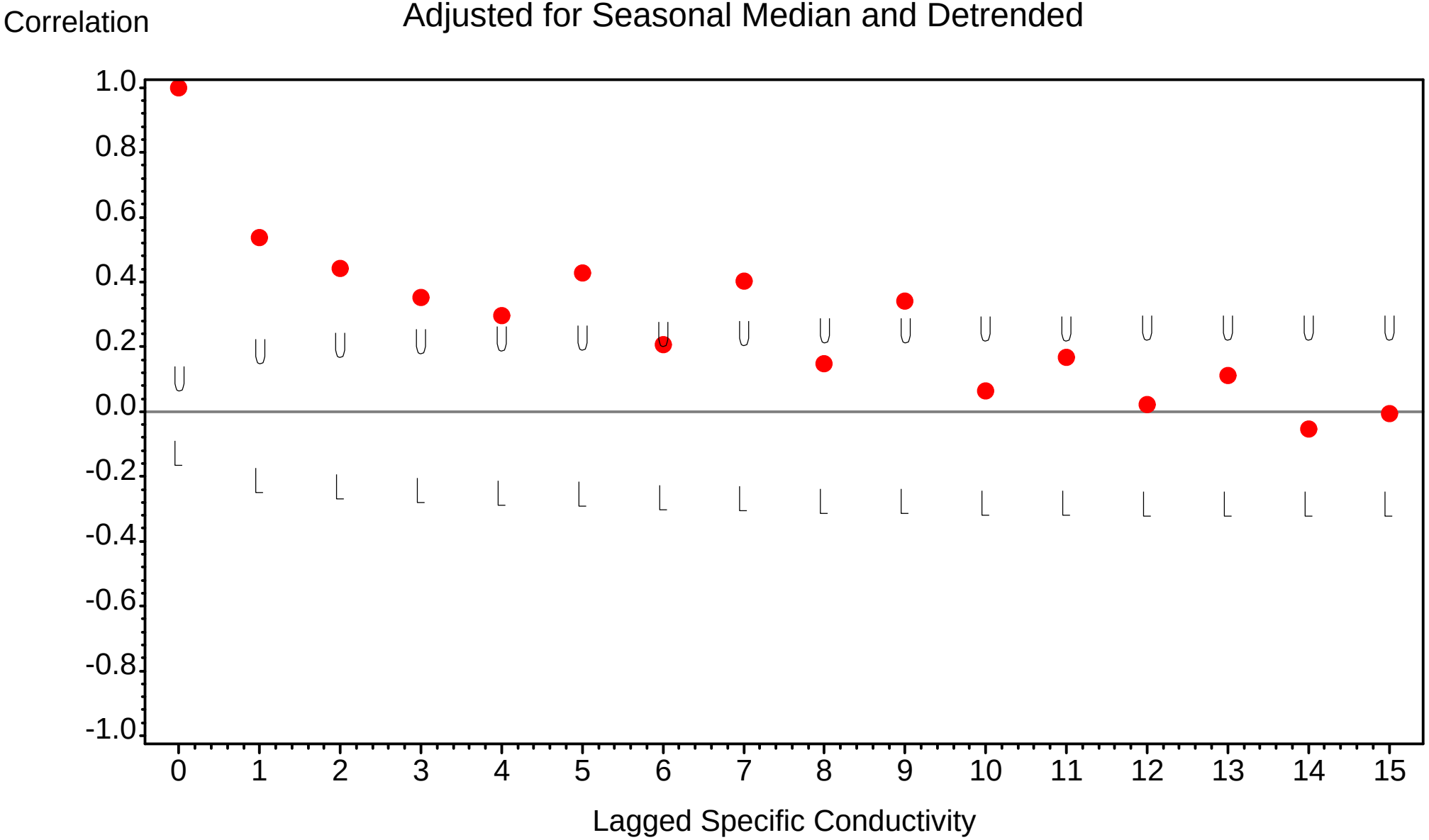
Zero Reference Line Shown

S_21FLSJWM27010024 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.537	0.100	0.200	-0.200
2	0.443	0.109	0.218	-0.218
3	0.352	0.115	0.230	-0.230
4	0.296	0.119	0.237	-0.237
5	0.429	0.121	0.242	-0.242
6	0.208	0.126	0.252	-0.252
7	0.404	0.127	0.254	-0.254
8	0.147	0.131	0.263	-0.263
9	0.341	0.132	0.264	-0.264
10	0.063	0.135	0.269	-0.269
11	0.167	0.135	0.270	-0.270
12	0.022	0.136	0.271	-0.271
13	0.111	0.136	0.271	-0.271
14	-0.054	0.136	0.272	-0.272
15	-0.005	0.136	0.272	-0.272

S_21FLSJWM27010024 Trends Appendix

Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
17	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23
18	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47
19	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56
20	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09
21	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	1.38	Y	Y	Y	Y	0.074	0.356	0.527	0.052
17	0.08	N	Y	Y	Y	0.090	0.212	0.347	225.098
18	2.09	Y	N	N	N	-0.099	0.163	0.243	-0.023
19	2.11	Y	N	N	N	0.046	0.549	0.573	0.109
20	0.29	N	Y	Y	Y	0.155	0.028	0.107	0.318
21	-9999.00	N	Y	N	N	0.192	0.005	0.044	0.011

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.07383	0.35568	0.52706	0.052	0.07383	0.52706	0.052
17	0.08958	0.21156	0.34660	225.098	0.09000	0.34700	225.098
18	-0.09906	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
19	0.04571	0.54949	0.57310	0.109	0.04571	0.54949	0.109
20	0.15482	0.02802	0.10656	0.318	0.15500	0.10700	0.318
21	0.19225	0.00486	0.04449	0.011	0.19200	0.00500	0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
22	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
23	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
24	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
25	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09
26	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
27	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00
28	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
22	1.04	Y	Y	N	N	-0.161	0.045	0.205	-0.029
23	0.45	N	N	N	N	0.021	0.810	0.860	0.000
24	0.33	N	Y	N	N	0.049	0.531	0.675	0.023
25	0.79	Y	Y	Y	Y	0.017	0.821	0.864	6.873
26	2.35	Y	Y	N	N	-0.022	0.763	0.834	-0.004
27	2.11	Y	Y	Y	Y	0.049	0.487	0.514	0.154
28	0.98	Y	Y	Y	Y	0.070	0.304	0.474	0.025

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	-0.16145	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
23	0.02128	0.80954	0.86021	0.000	0.02100	0.81000	0.000
24	0.04851	0.53077	0.67536	0.023	0.04900	0.53100	0.023
25	0.01671	0.82111	0.86399	6.874	0.01671	0.86399	6.874
26	-0.02159	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
27	0.04892	0.48687	0.51426	0.154	0.04892	0.51426	0.154
28	0.06955	0.30398	0.47368	0.025	0.06955	0.47368	0.025

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
29	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61
30	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
31	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10
32	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
33	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82
34	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25
35	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
29	1.08	Y	Y	N	N	0.064	0.330	0.509	0.000
30	1.88	Y	Y	N	N	0.017	0.845	0.901	0.002
31	1.51	Y	Y	Y	Y	0.050	0.519	0.695	0.000
32	-9999.00	N	Y	N	N	0.078	0.299	0.360	0.020
33	1.12	Y	N	Y	N	0.106	0.122	0.158	10.031
34	0.82	Y	Y	N	N	-0.170	0.012	0.092	-0.059
35	0.70	Y	Y	N	N	-0.175	0.011	0.082	-0.515

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
29	0.06415	0.32954	0.50893	0.000	0.06415	0.32954	0.000
30	0.01724	0.84540	0.90084	0.002	0.01724	0.84540	0.002
31	0.05031	0.51900	0.69540	0.000	0.05031	0.69540	0.000
32	0.07599	0.31036	0.36979	0.020	0.07800	0.29900	0.020
33	0.10598	0.12166	0.15796	10.031	0.10598	0.12166	10.031
34	-0.16974	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059
35	-0.17479	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
36	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73
37	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00
38	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
39	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
40	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
41	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19
42	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
36	1.54	Y	N	Y	N	0.092	0.169	0.290	0.004
37	1.54	Y	Y	Y	Y	0.094	0.155	0.427	0.007
38	1.48	Y	Y	N	N	-0.031	0.706	0.812	-0.002
39	-9999.00	N	N	N	N	-0.023	0.786	0.871	0.000
40	0.44	N	Y	N	N	-0.142	0.074	0.219	-0.011
41	-9999.00	N	N	Y	N	0.085	0.243	0.291	2.029
42	2.33	Y	Y	N	N	-0.040	0.591	0.737	-0.008

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
36	0.09207	0.16857	0.29012	0.004	0.09207	0.16857	0.004
37	0.09387	0.15479	0.42738	0.007	0.09387	0.42738	0.007
38	-0.03145	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
39	-0.02254	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
40	-0.14223	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011
41	0.08500	0.24287	0.29095	2.029	0.08500	0.24300	2.029
42	-0.03968	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008

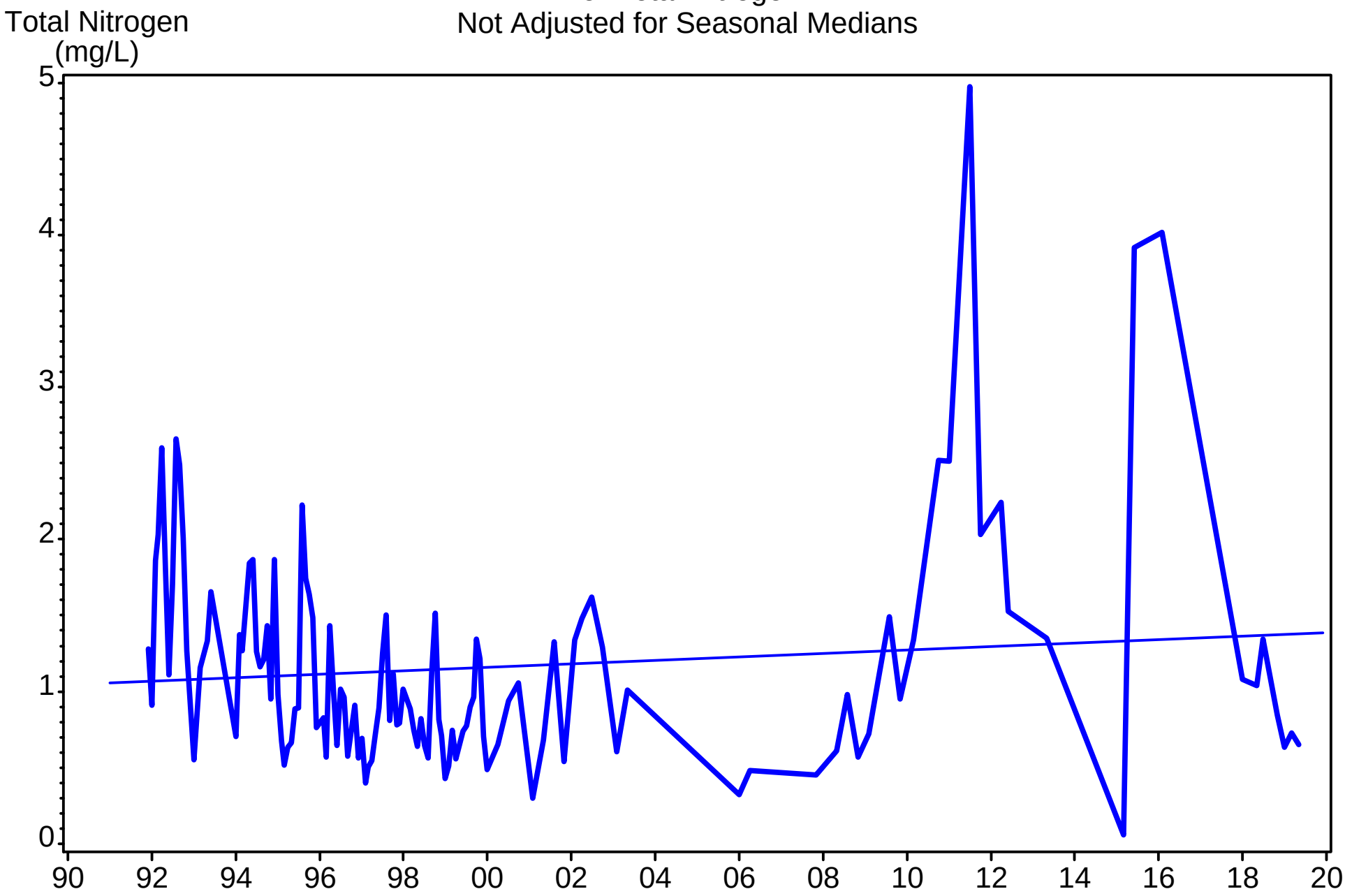
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
43	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81
44	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00
45	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00
46	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
47	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
43	1.77	Y	Y	N	N	0.027	0.725	0.823	0.034
44	-9999.00	N	Y	Y	Y	0.123	0.076	0.159	0.001
45	0.68	Y	Y	N	N	0.194	0.005	0.046	0.009
46	0.31	N	Y	N	N	-0.241	0.003	0.076	-0.016
47	-9999.00	N	N	N	N	0.040	0.632	0.786	0.000

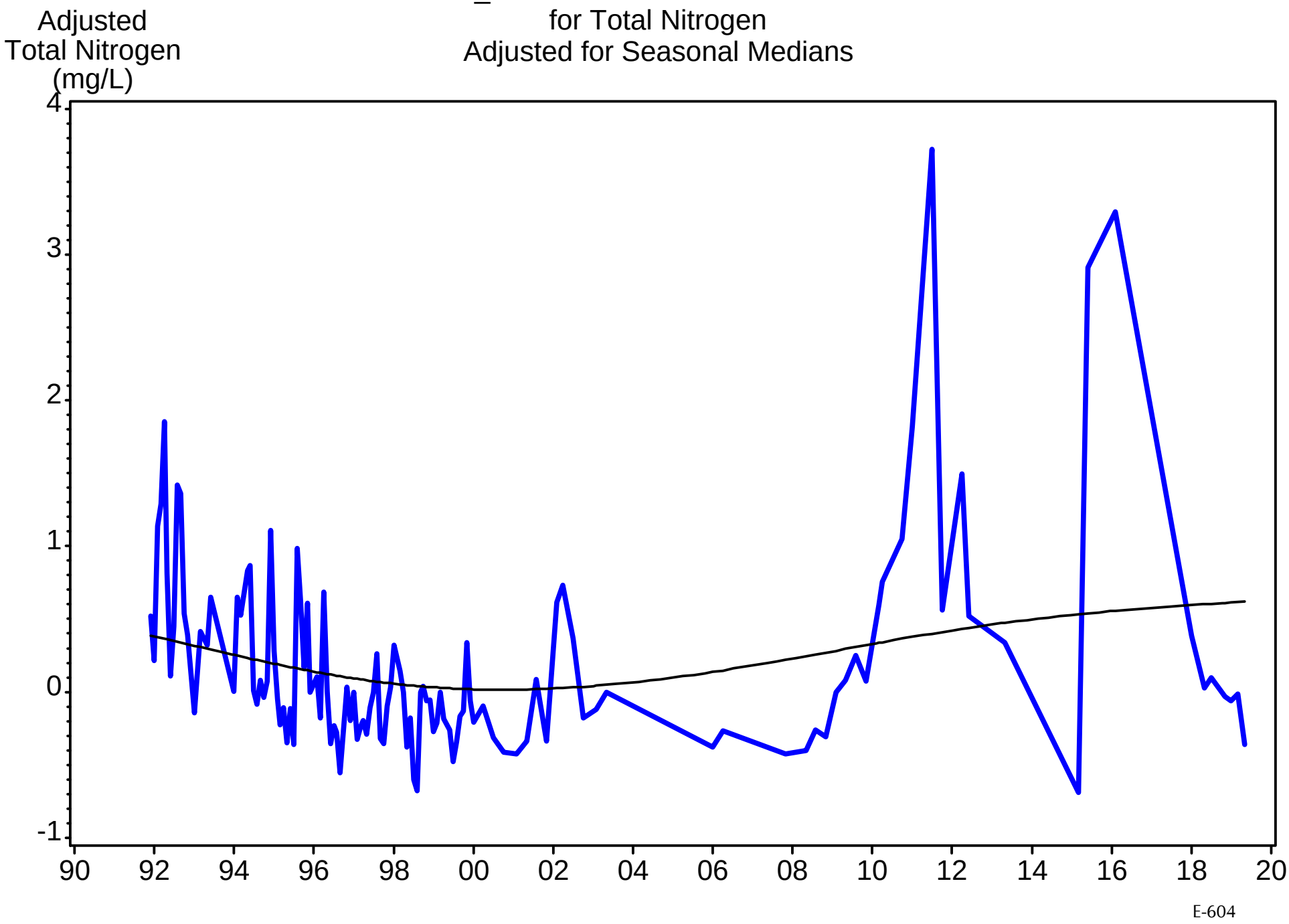
Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
43	0.02716	0.72528	0.82342	0.034	0.02716	0.72528	0.034
44	0.12322	0.07617	0.15857	0.001	0.12300	0.15900	0.001
45	0.19383	0.00462	0.04647	0.009	0.19383	0.00462	0.009
46	-0.24070	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
47	0.04009	0.63152	0.78567	0.000	0.04000	0.63200	0.000

S_21FLVEMDHL03 Trends

S_21FLVEMDHL03 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLVEMDHL03 Trends

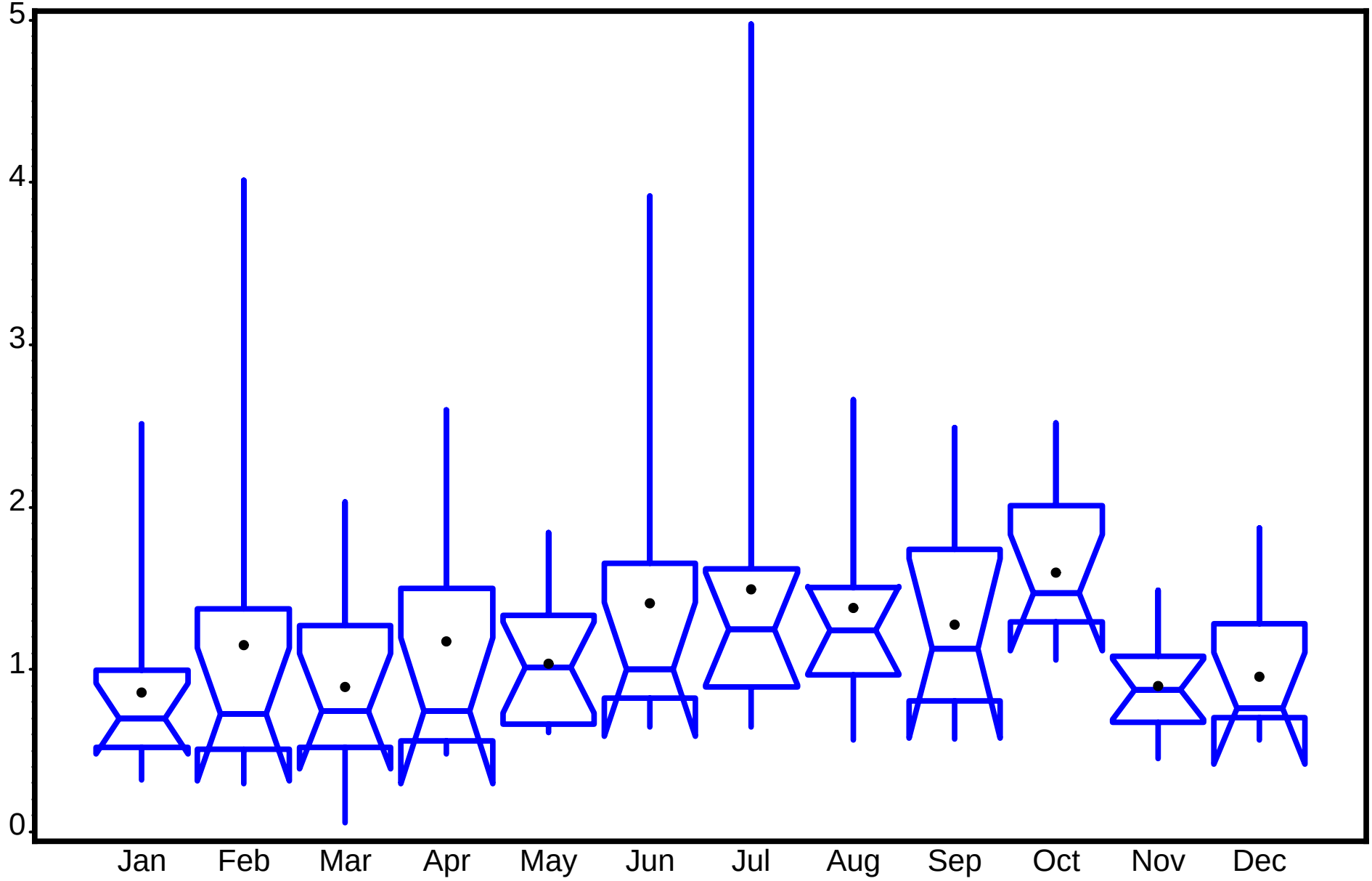


S_21FLVEMDHL03 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



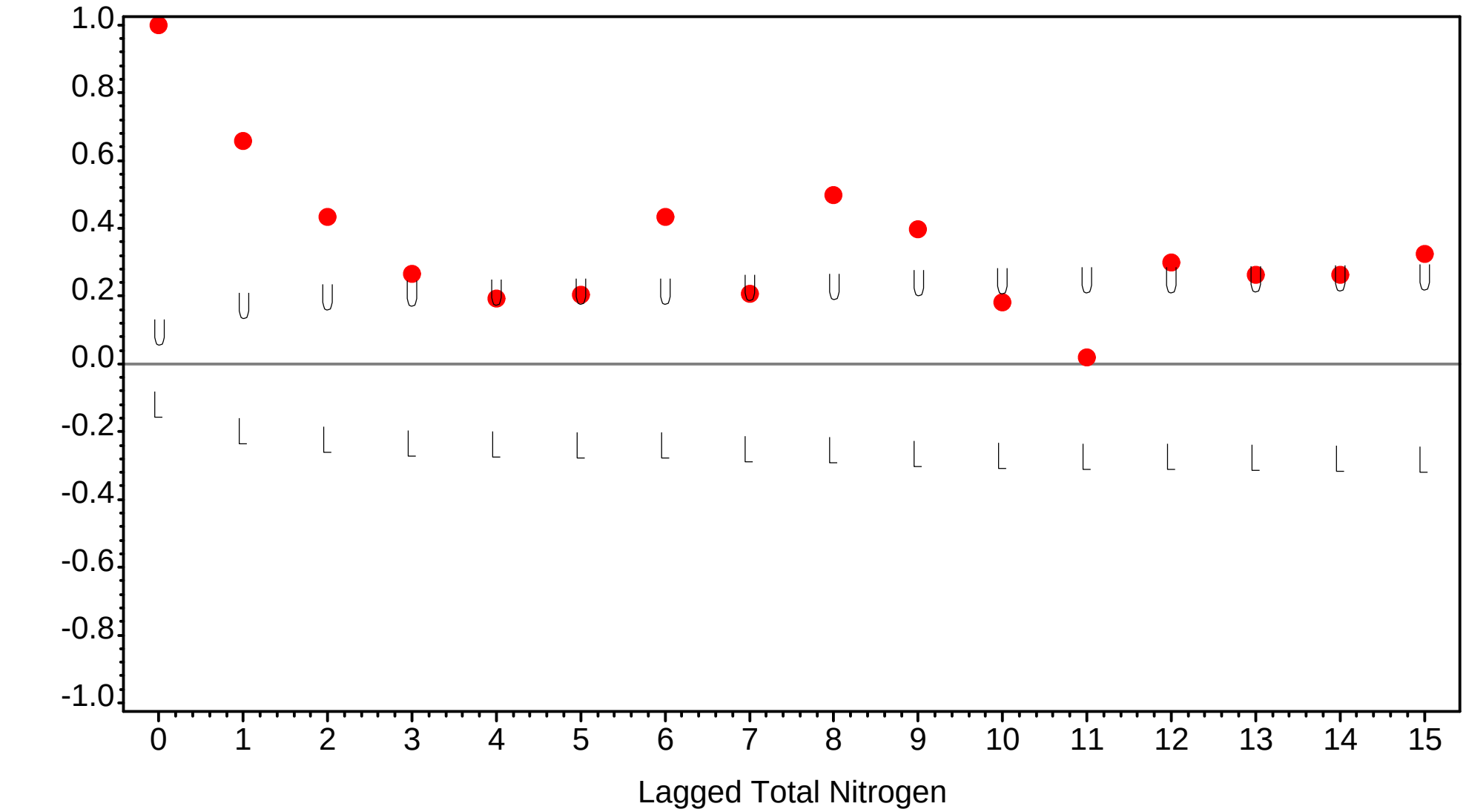
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.657	0.093	0.186	-0.186
2	0.434	0.105	0.211	-0.211
3	0.265	0.110	0.221	-0.221
4	0.193	0.112	0.224	-0.224
5	0.205	0.113	0.226	-0.226
6	0.433	0.114	0.228	-0.228
7	0.206	0.119	0.238	-0.238
8	0.497	0.120	0.240	-0.240
9	0.398	0.126	0.251	-0.251
10	0.181	0.129	0.258	-0.258
11	0.018	0.130	0.260	-0.260
12	0.298	0.130	0.260	-0.260
13	0.262	0.132	0.264	-0.264
14	0.264	0.133	0.267	-0.267
15	0.323	0.135	0.270	-0.270

S_21FLVEMDHL03 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

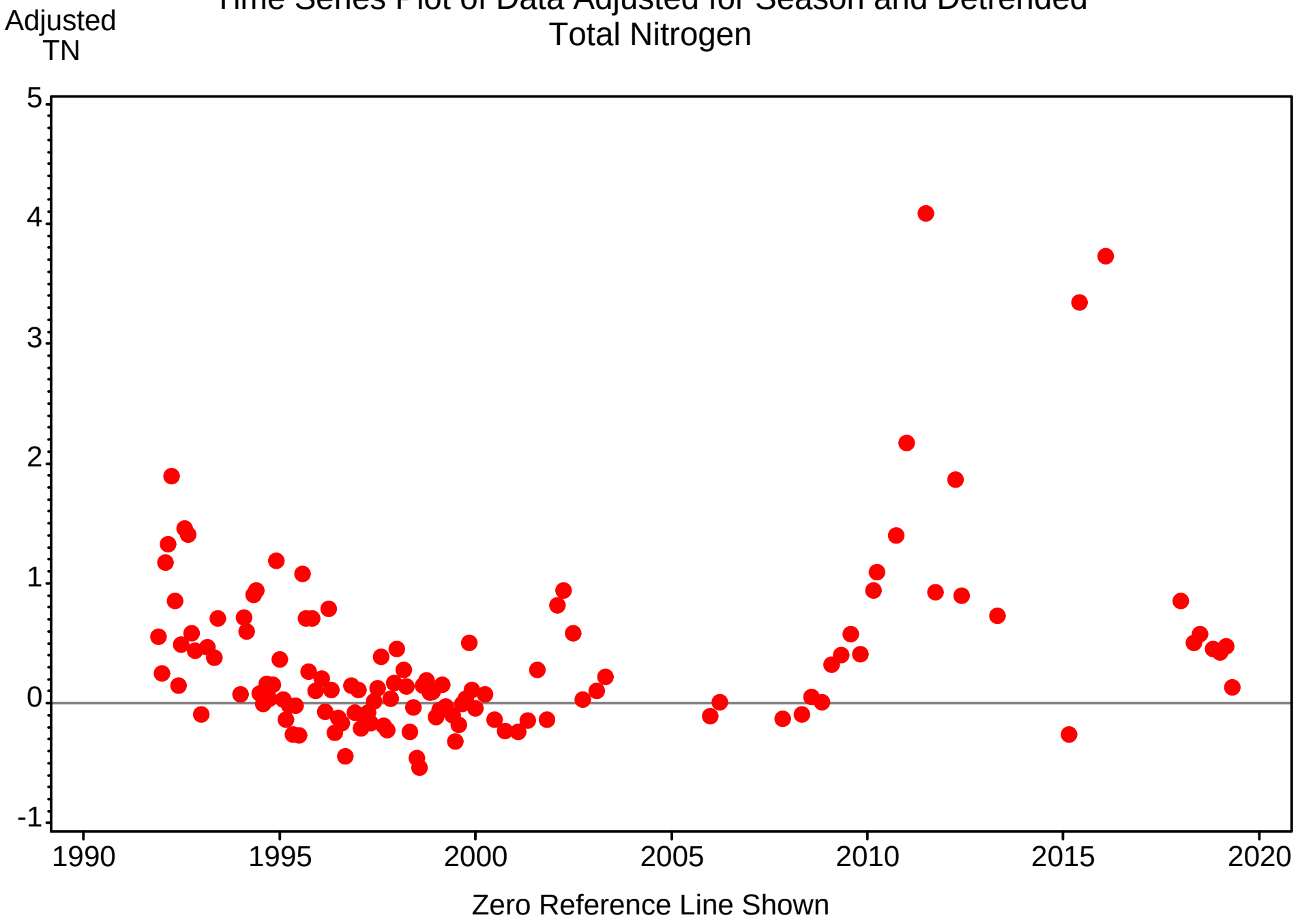
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.148	0.036	0.26	-0.017

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.14839	0.035970	0.26002	-0.016817

S_21FLVEMDHL03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



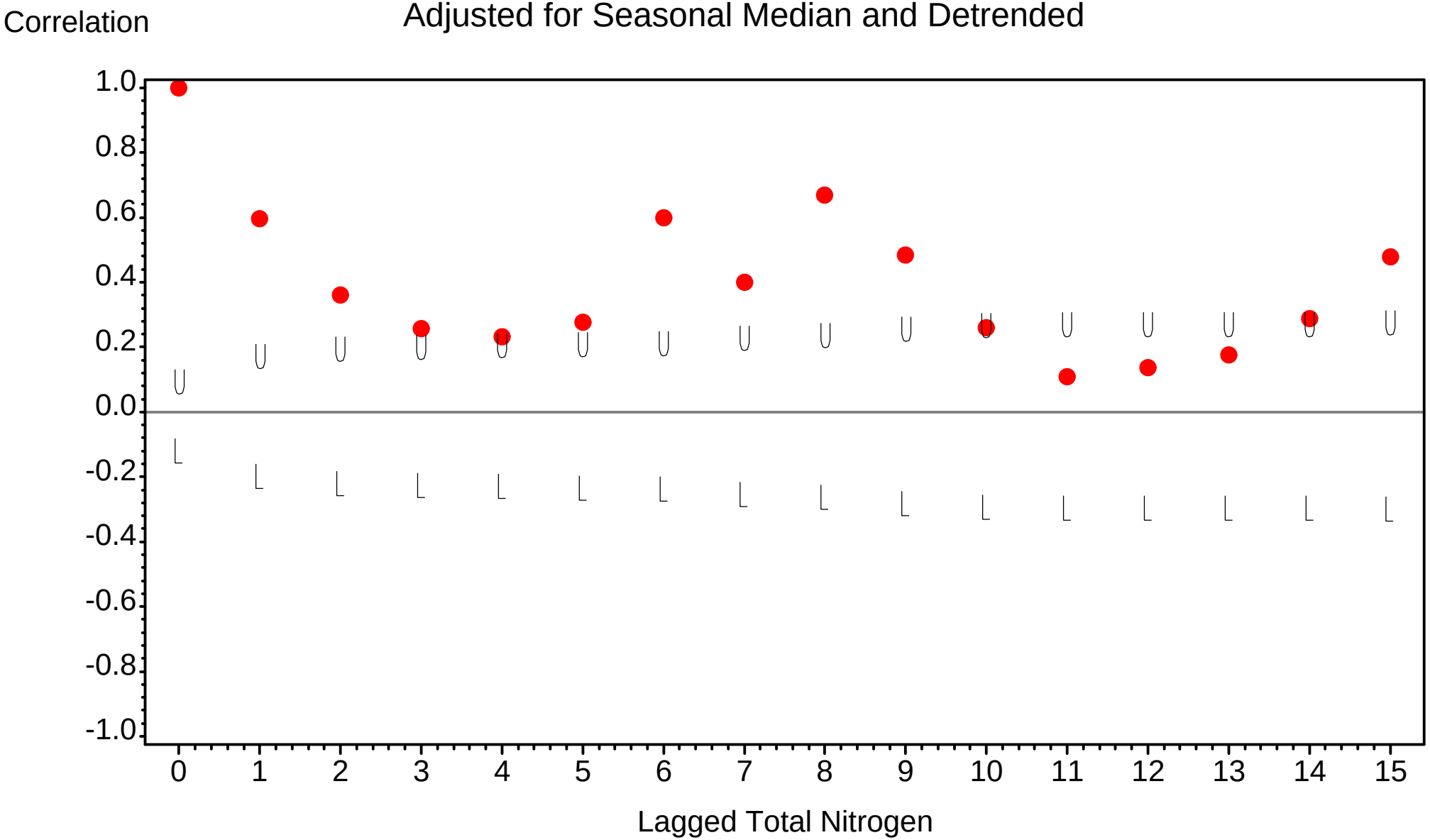
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.595	0.093	0.186	-0.186
2	0.360	0.103	0.206	-0.206
3	0.256	0.107	0.214	-0.214
4	0.232	0.109	0.217	-0.217
5	0.277	0.110	0.220	-0.220
6	0.599	0.112	0.224	-0.224
7	0.401	0.121	0.242	-0.242
8	0.670	0.125	0.249	-0.249
9	0.485	0.135	0.269	-0.269
10	0.259	0.139	0.279	-0.279
11	0.110	0.141	0.282	-0.282
12	0.138	0.141	0.282	-0.282
13	0.175	0.141	0.283	-0.283
14	0.289	0.142	0.284	-0.284
15	0.477	0.144	0.287	-0.287

S_21FLVEMDHL03 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

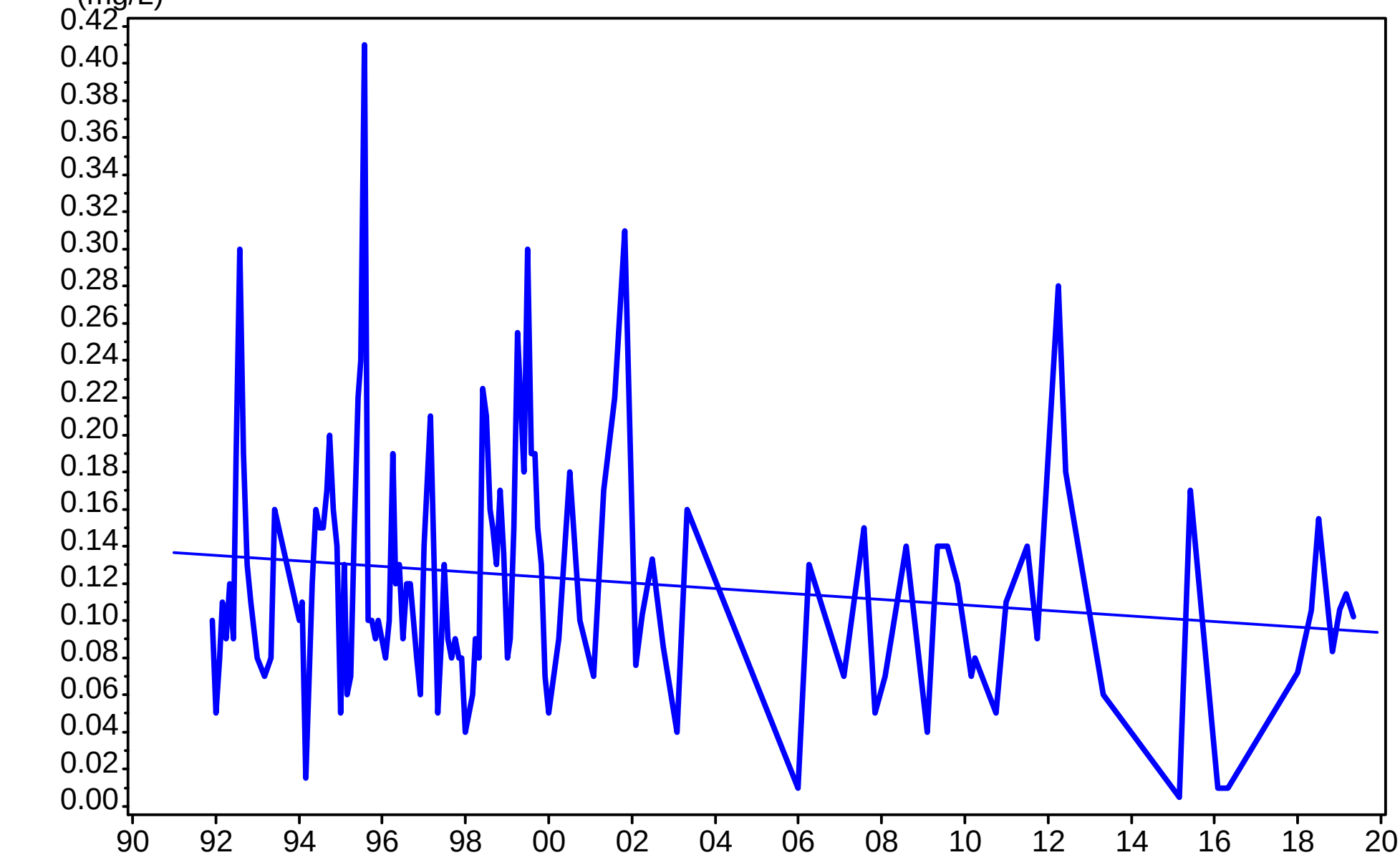


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

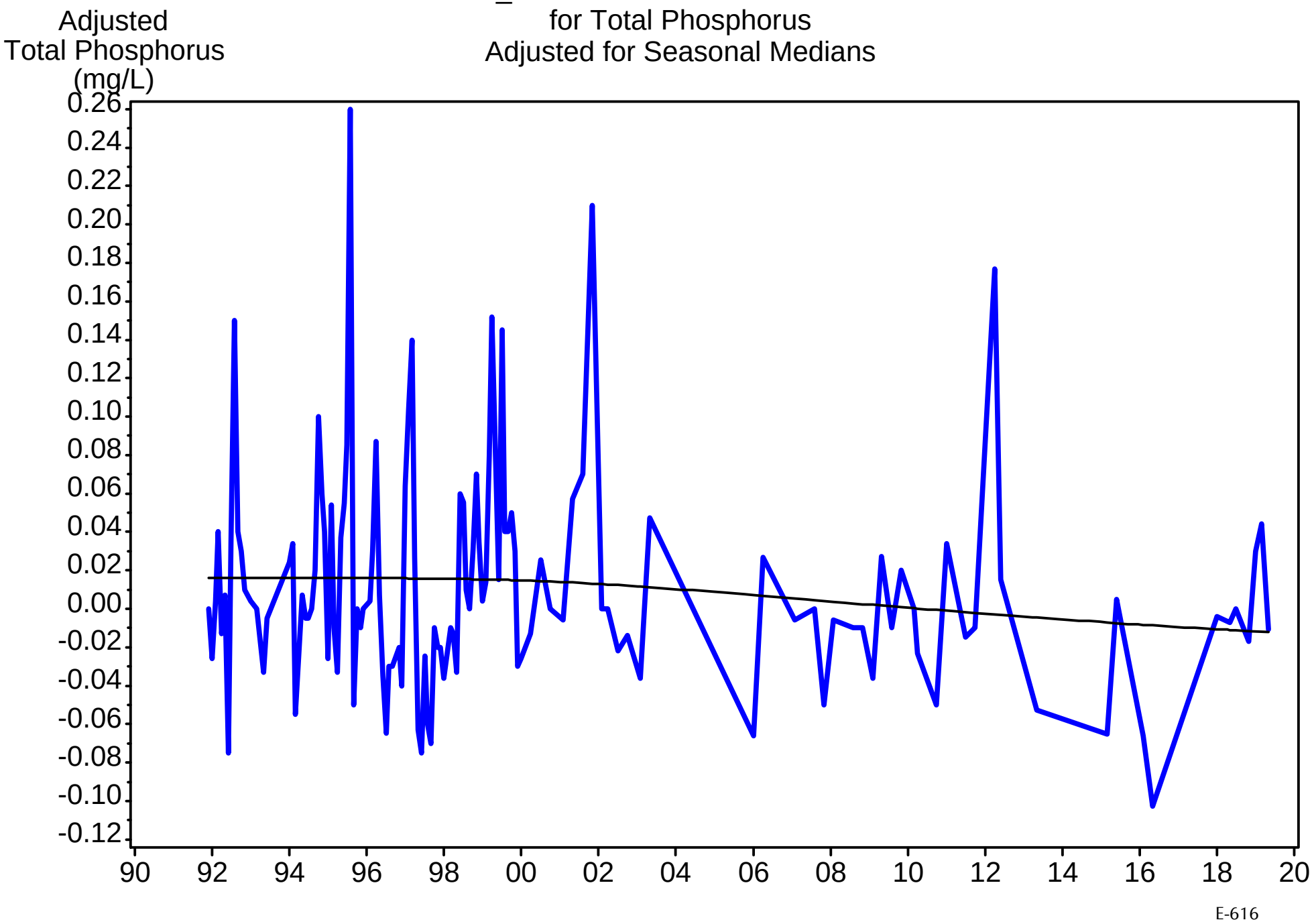
Zero Reference Line Shown

S_21FLVEMDHL03 Trends

S_21FLVEMDHL03 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



S_21FLVEMDHL03 Trends

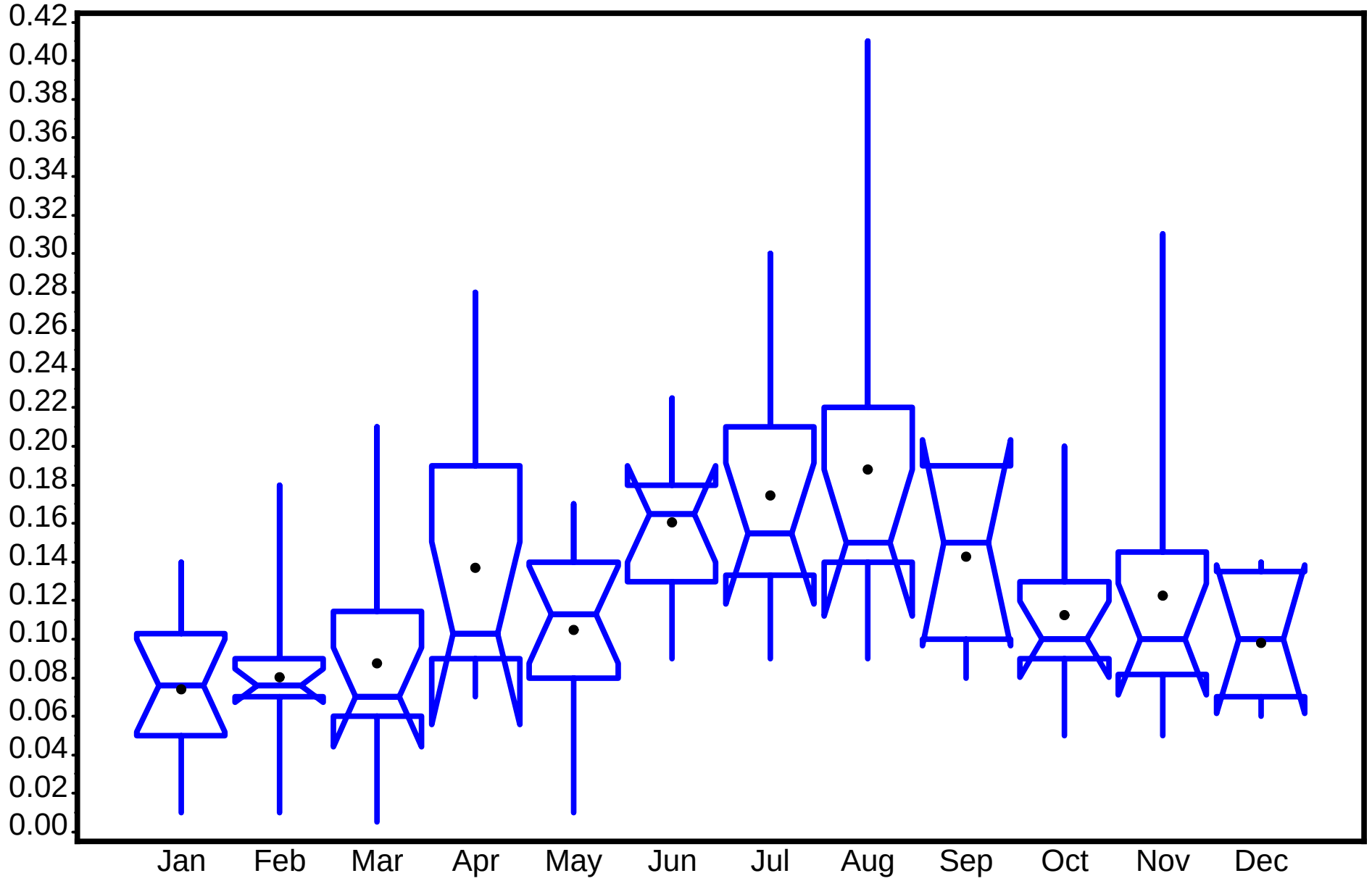


S_21FLVEMDHL03 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)

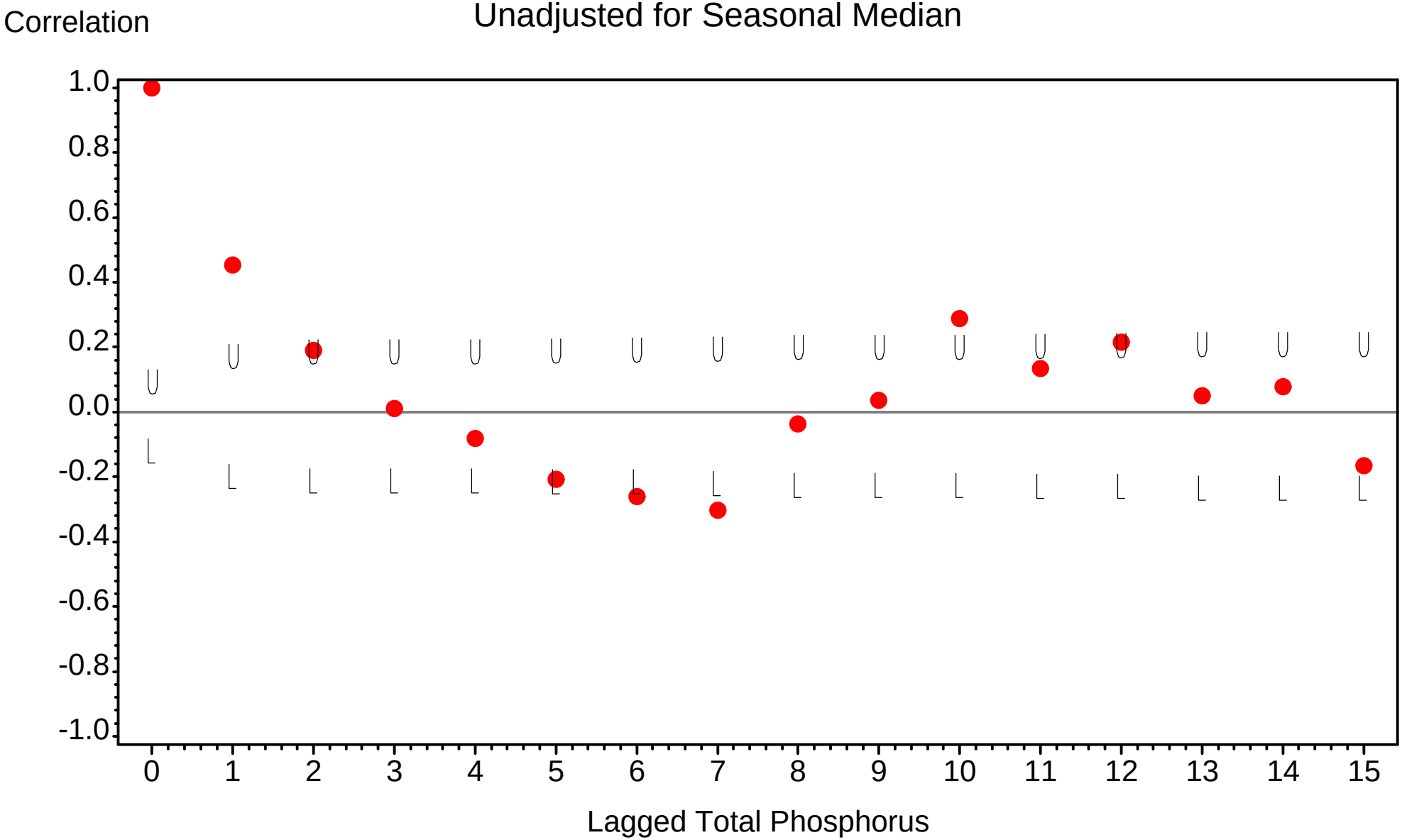


S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.453	0.093	0.186	-0.186
2	0.191	0.099	0.198	-0.198
3	0.010	0.100	0.200	-0.200
4	-0.083	0.100	0.200	-0.200
5	-0.207	0.100	0.201	-0.201
6	-0.260	0.101	0.203	-0.203
7	-0.303	0.103	0.207	-0.207
8	-0.038	0.106	0.212	-0.212
9	0.036	0.106	0.212	-0.212
10	0.287	0.106	0.212	-0.212
11	0.133	0.108	0.216	-0.216
12	0.214	0.109	0.217	-0.217
13	0.051	0.110	0.220	-0.220
14	0.078	0.110	0.220	-0.220
15	-0.165	0.110	0.220	-0.220

S_21FLVEMDHL03 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

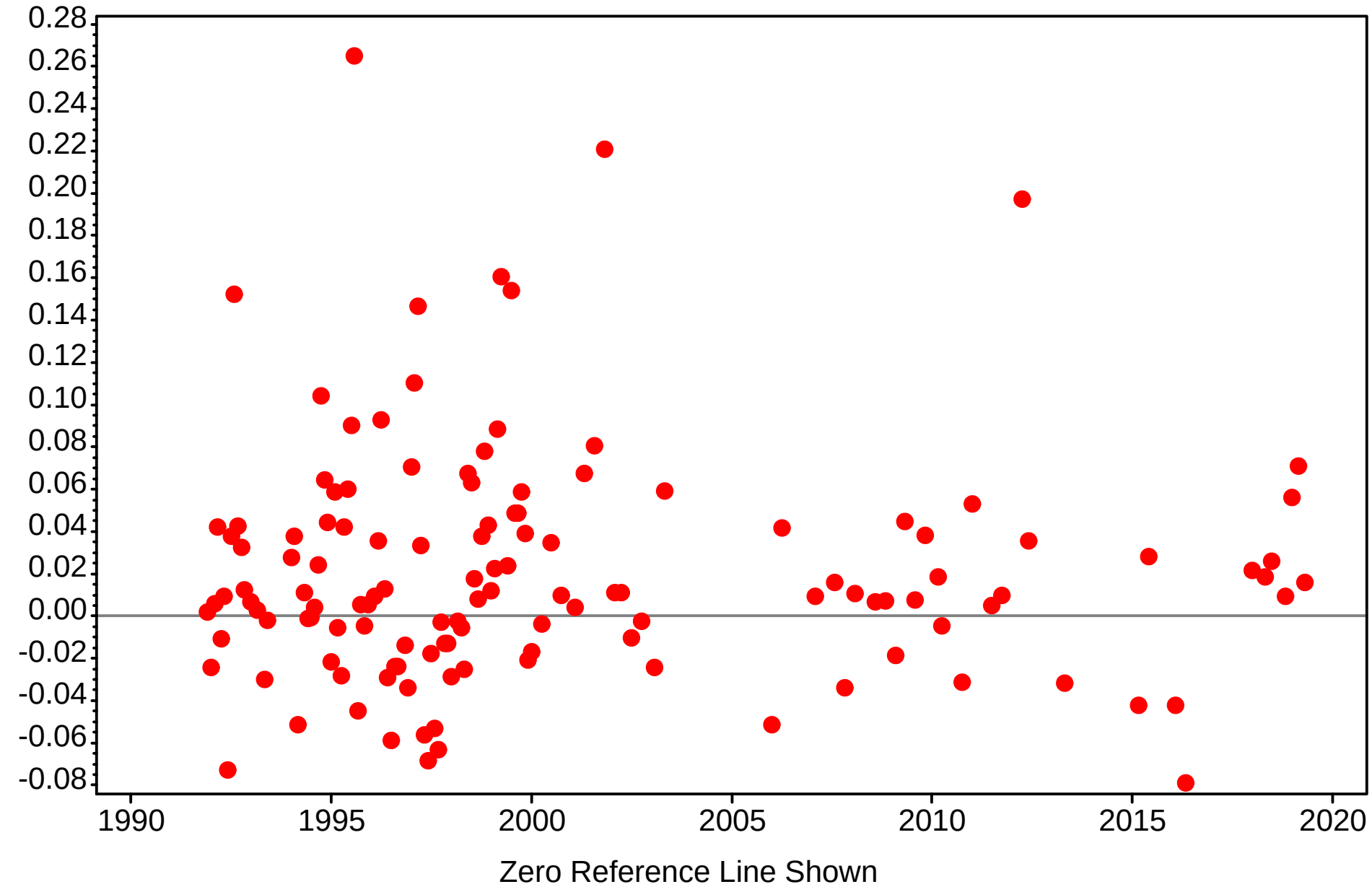
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.132	0.057	0.124	-.001

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.1317	0.056891	0.12361	-.000909091

S_21FLVEMDHL03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

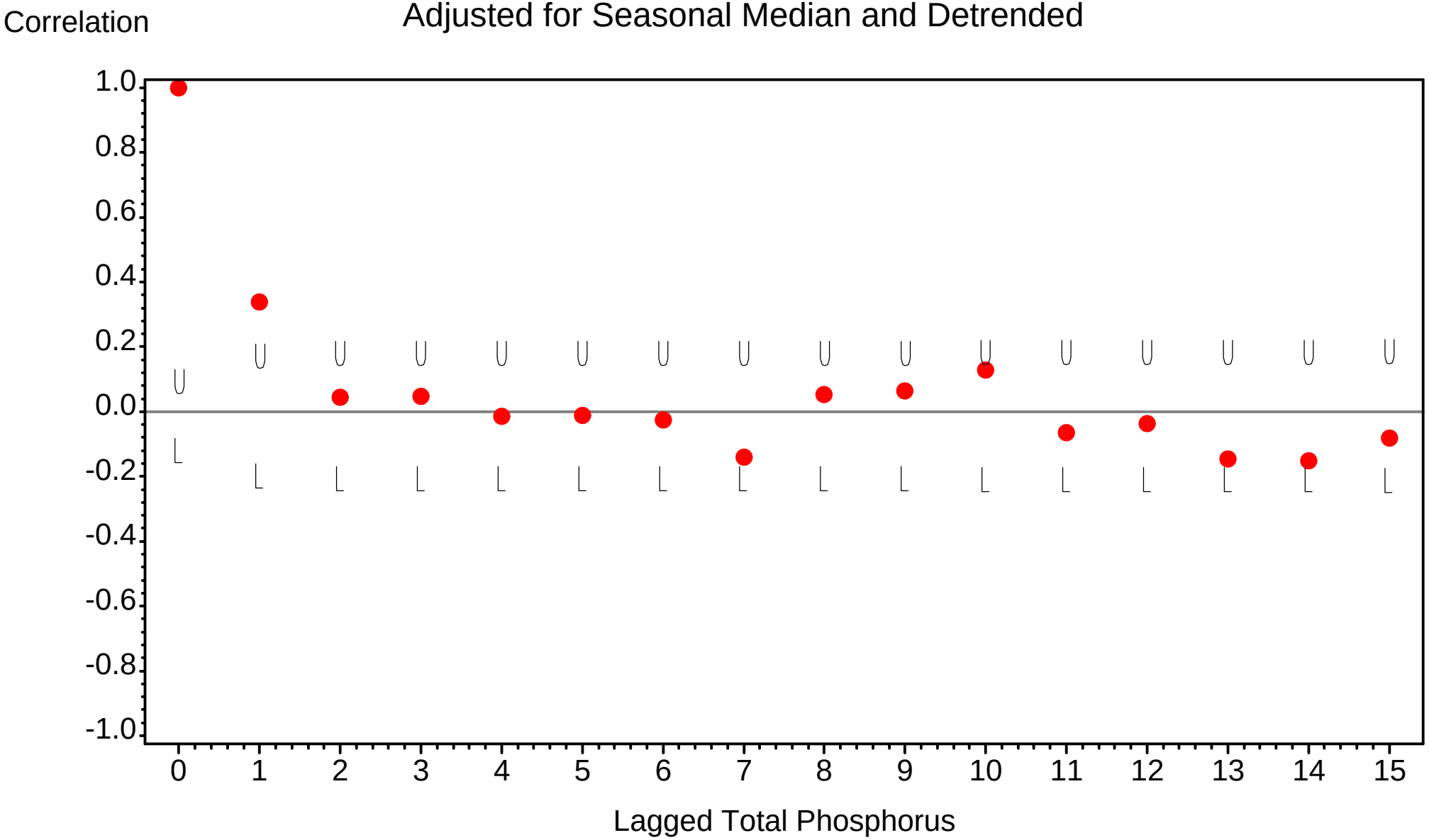


S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.338	0.093	0.186	-0.186
2	0.044	0.096	0.193	-0.193
3	0.046	0.096	0.193	-0.193
4	-0.015	0.096	0.193	-0.193
5	-0.013	0.096	0.193	-0.193
6	-0.027	0.096	0.193	-0.193
7	-0.141	0.096	0.193	-0.193
8	0.054	0.097	0.194	-0.194
9	0.064	0.097	0.194	-0.194
10	0.128	0.097	0.195	-0.195
11	-0.064	0.098	0.195	-0.195
12	-0.038	0.098	0.196	-0.196
13	-0.147	0.098	0.196	-0.196
14	-0.153	0.099	0.197	-0.197
15	-0.082	0.099	0.198	-0.198

S_21FLVEMDHL03 Trends Appendix

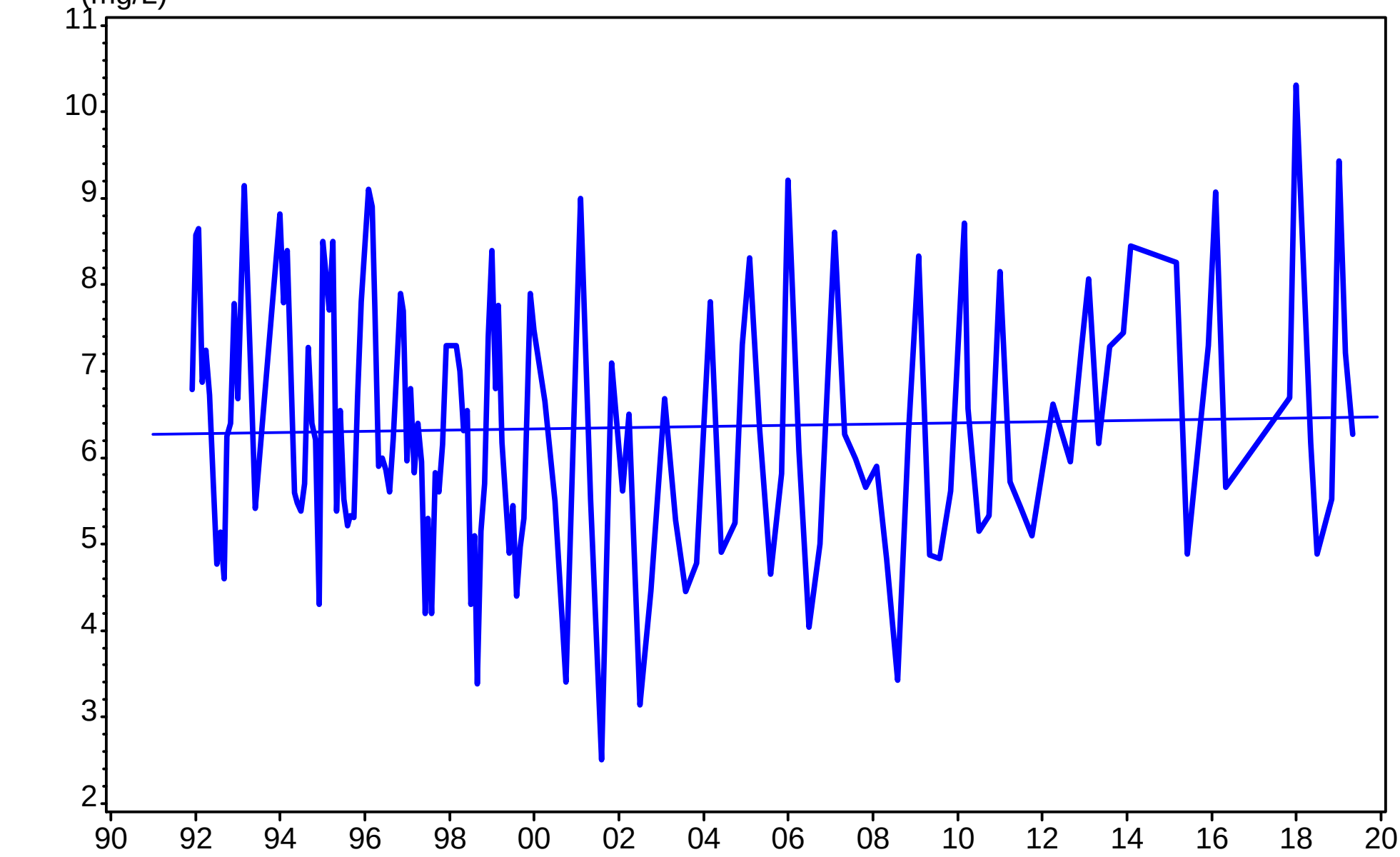
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



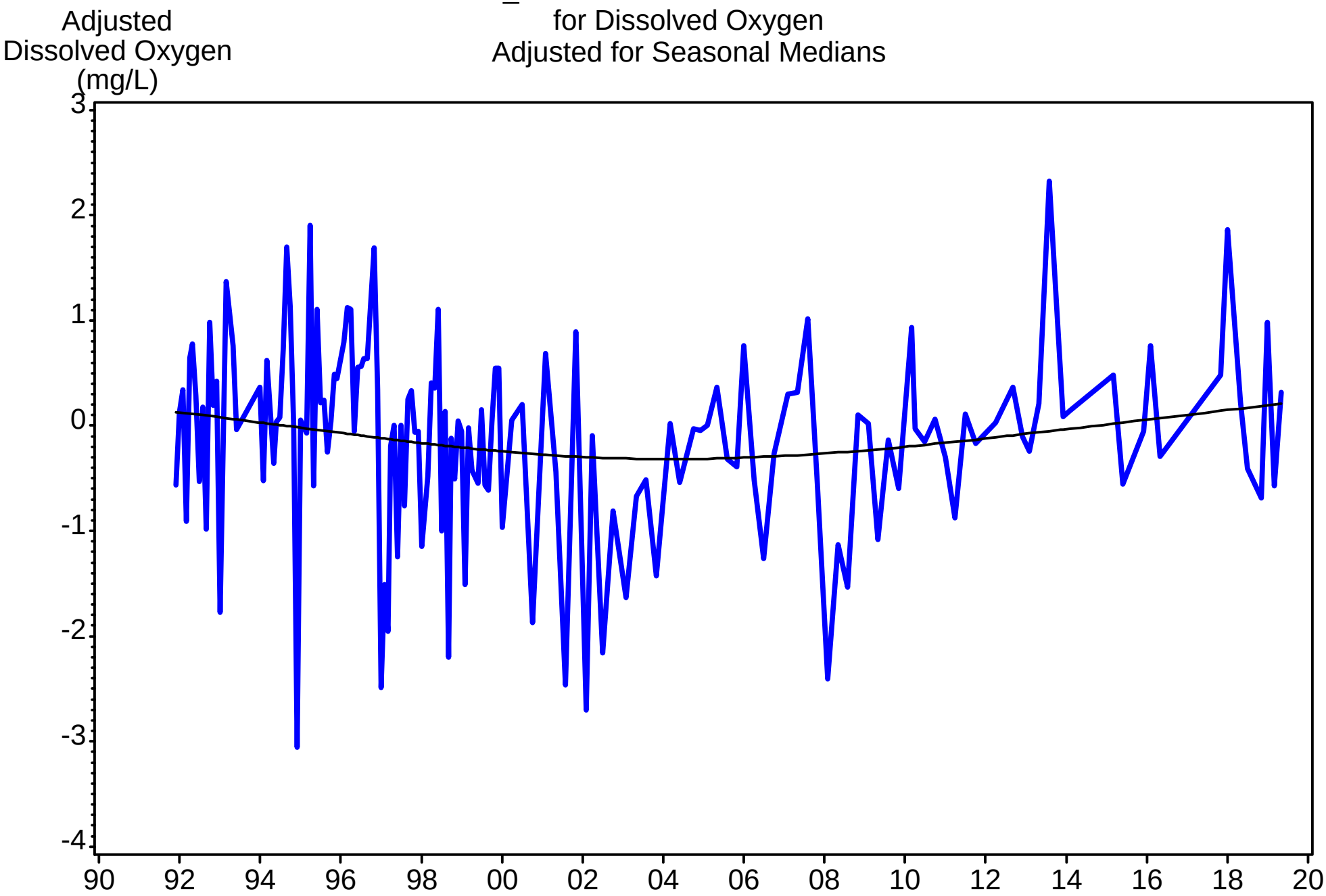
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL03 Trends

S_21FLVEMDHL03 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLVEMDHL03 Trends

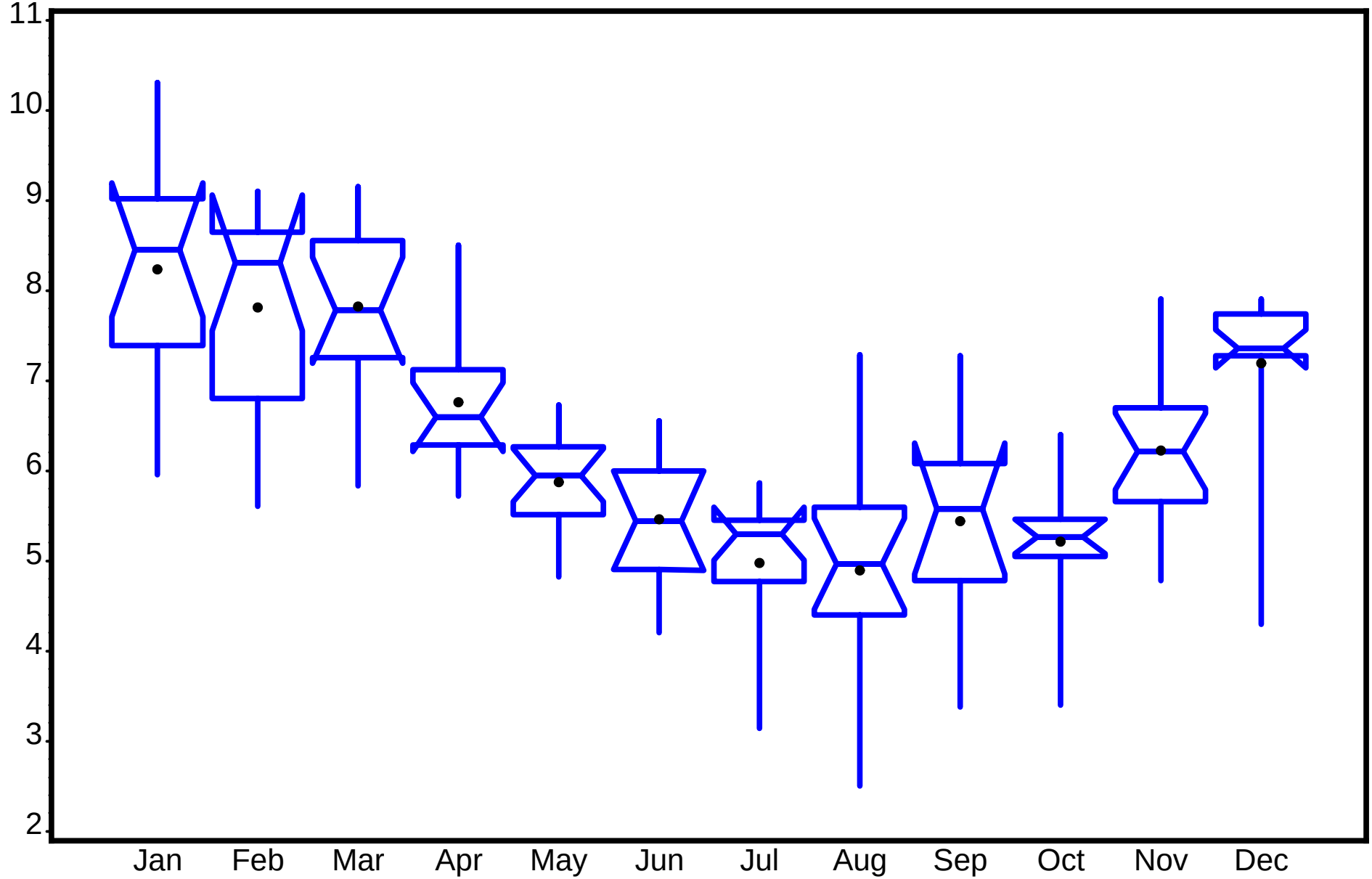


S_21FLVEMDHL03 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



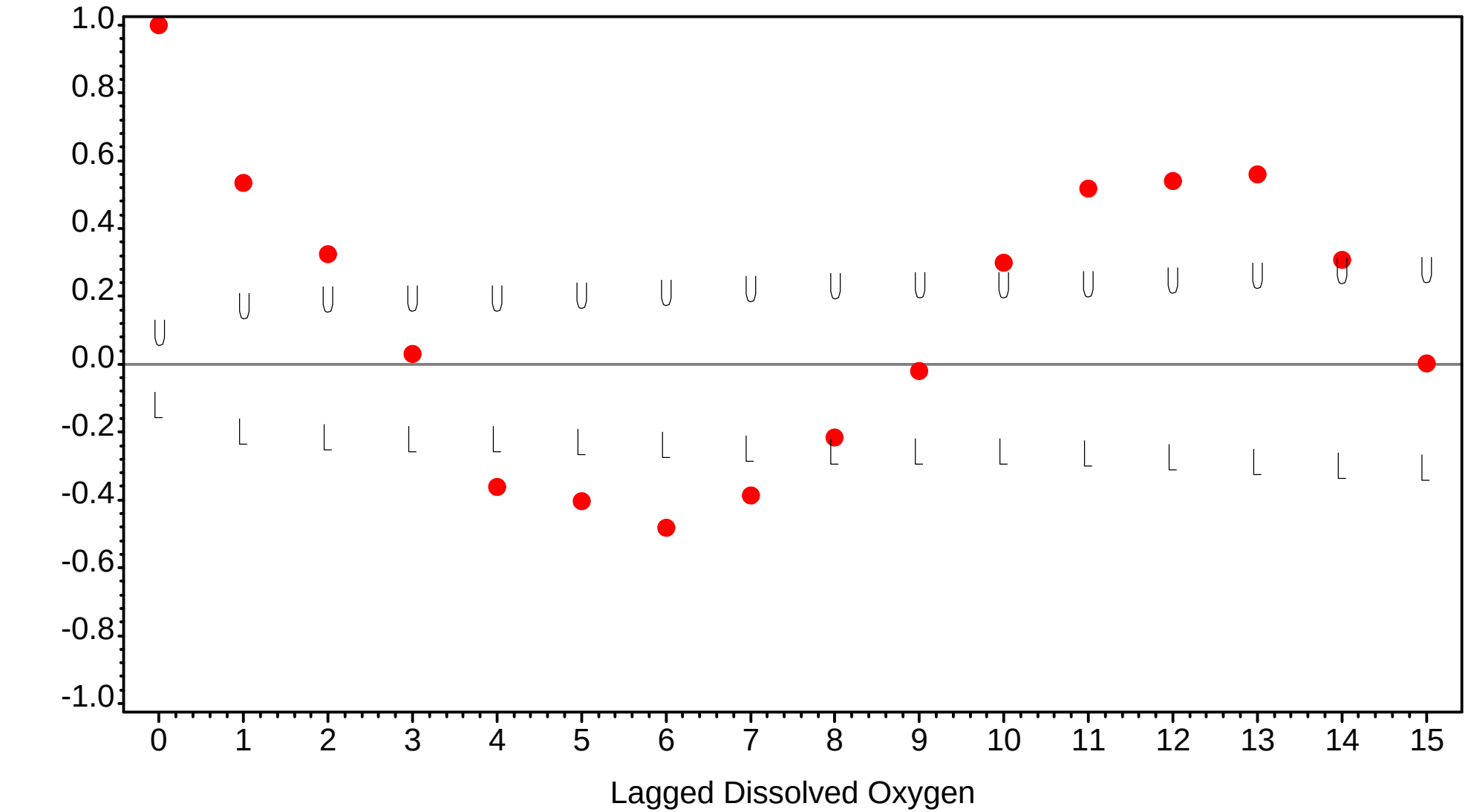
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.534	0.093	0.186	-0.186
2	0.323	0.101	0.203	-0.203
3	0.031	0.104	0.208	-0.208
4	-0.363	0.104	0.208	-0.208
5	-0.403	0.108	0.216	-0.216
6	-0.483	0.112	0.224	-0.224
7	-0.388	0.118	0.236	-0.236
8	-0.216	0.121	0.243	-0.243
9	-0.019	0.123	0.245	-0.245
10	0.298	0.123	0.245	-0.245
11	0.518	0.125	0.249	-0.249
12	0.539	0.131	0.261	-0.261
13	0.559	0.137	0.274	-0.274
14	0.308	0.143	0.287	-0.287
15	0.003	0.145	0.290	-0.290

S_21FLVEMDHL03 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

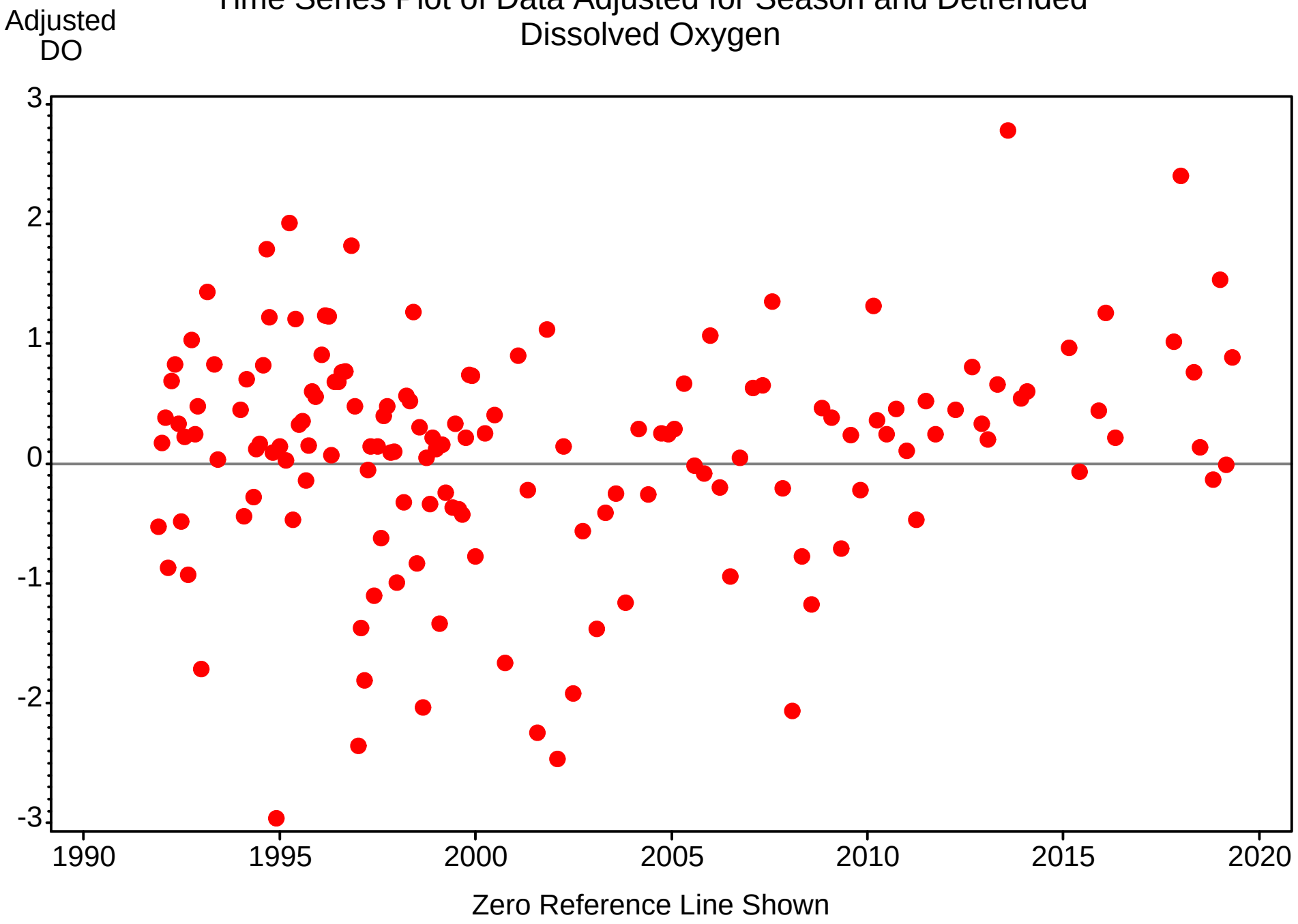
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.133	0.034	0.144	-0.019

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.13290	0.034017	0.14429	-0.019174

S_21FLVEMDHL03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



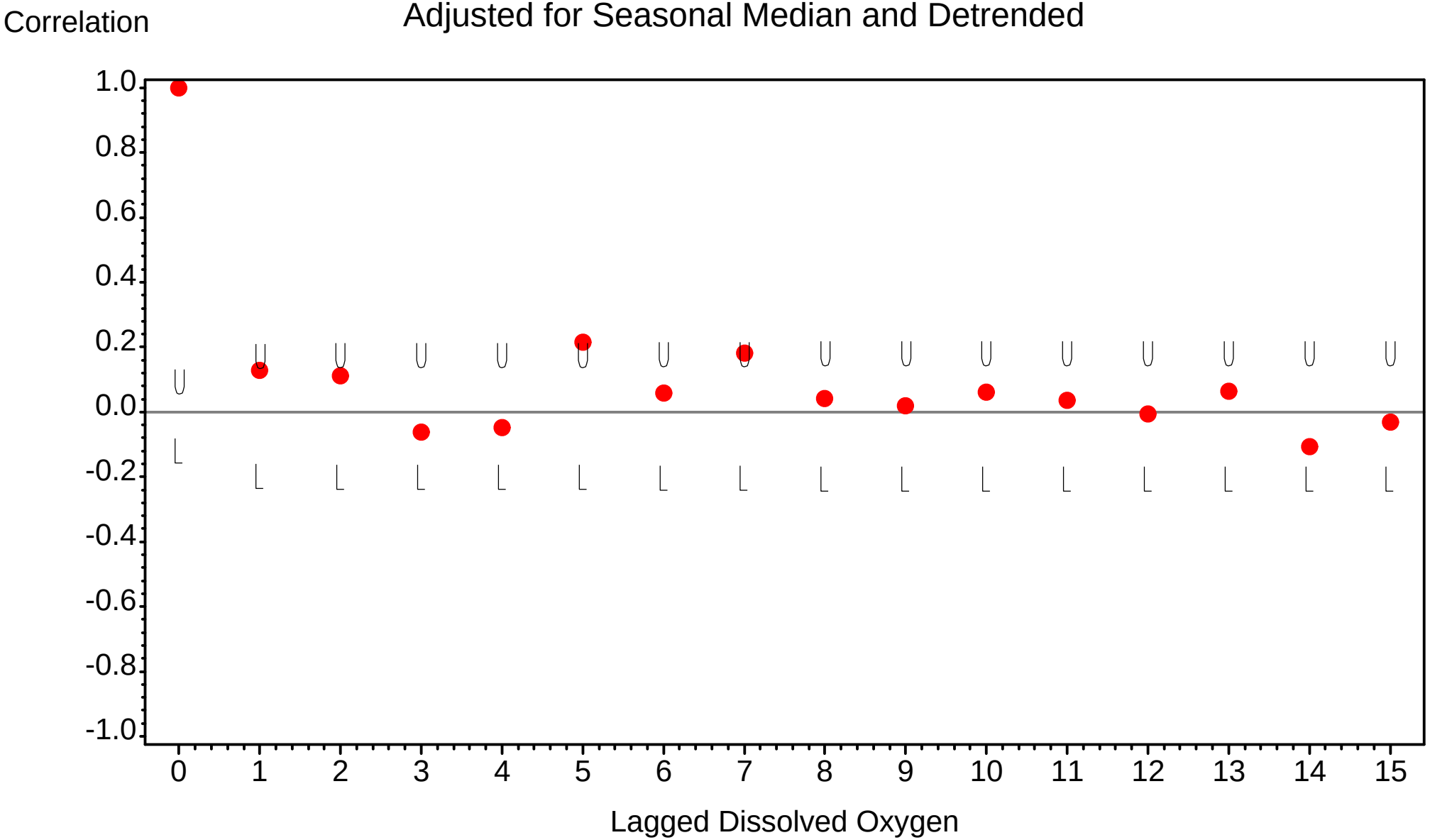
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.128	0.093	0.186	-0.186
2	0.112	0.093	0.187	-0.187
3	-0.062	0.094	0.187	-0.187
4	-0.047	0.094	0.188	-0.188
5	0.216	0.094	0.188	-0.188
6	0.058	0.095	0.191	-0.191
7	0.181	0.095	0.191	-0.191
8	0.041	0.096	0.193	-0.193
9	0.020	0.096	0.193	-0.193
10	0.061	0.096	0.193	-0.193
11	0.035	0.097	0.193	-0.193
12	-0.006	0.097	0.193	-0.193
13	0.064	0.097	0.193	-0.193
14	-0.108	0.097	0.194	-0.194
15	-0.031	0.097	0.194	-0.194

S_21FLVEMDHL03 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended

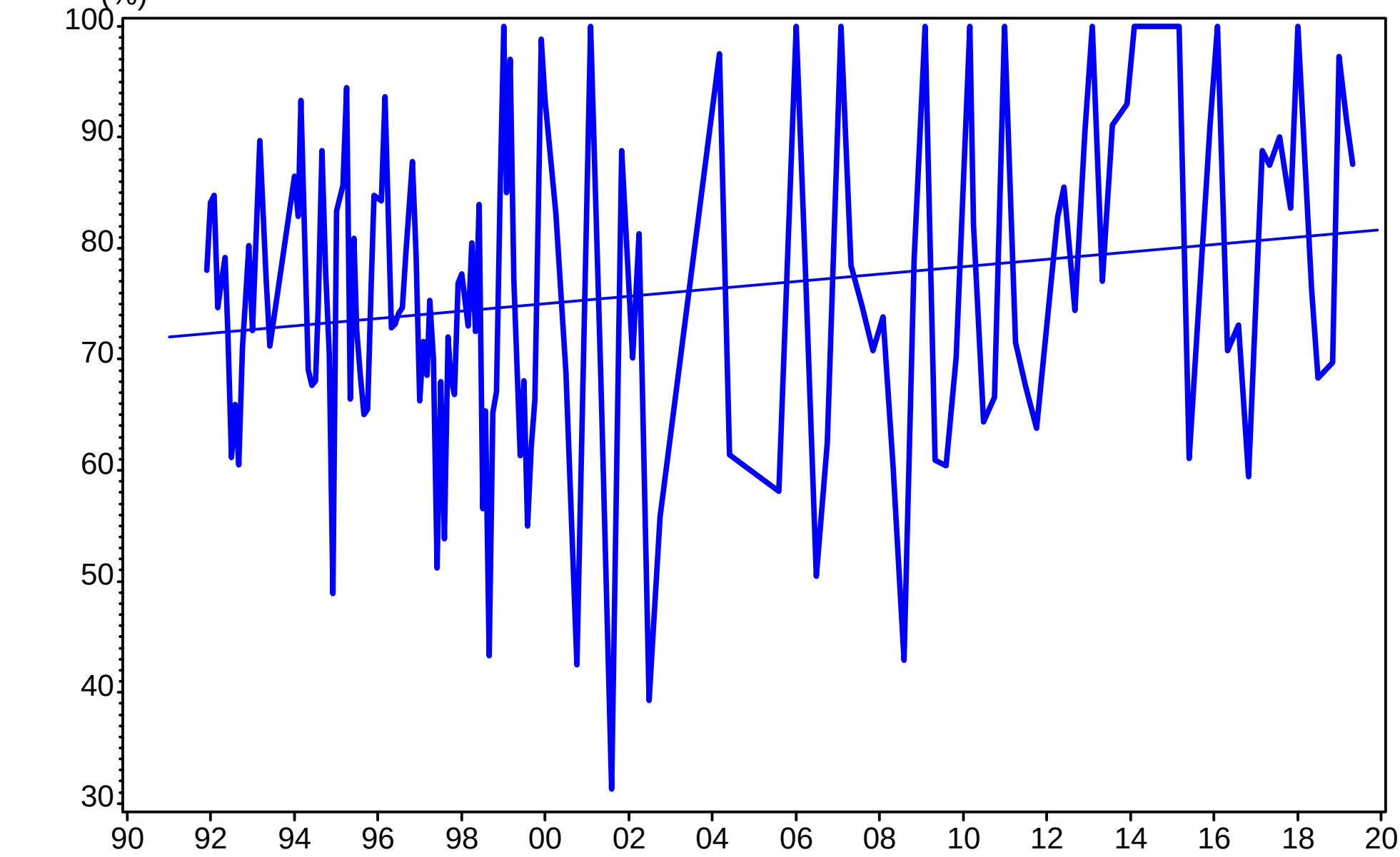


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

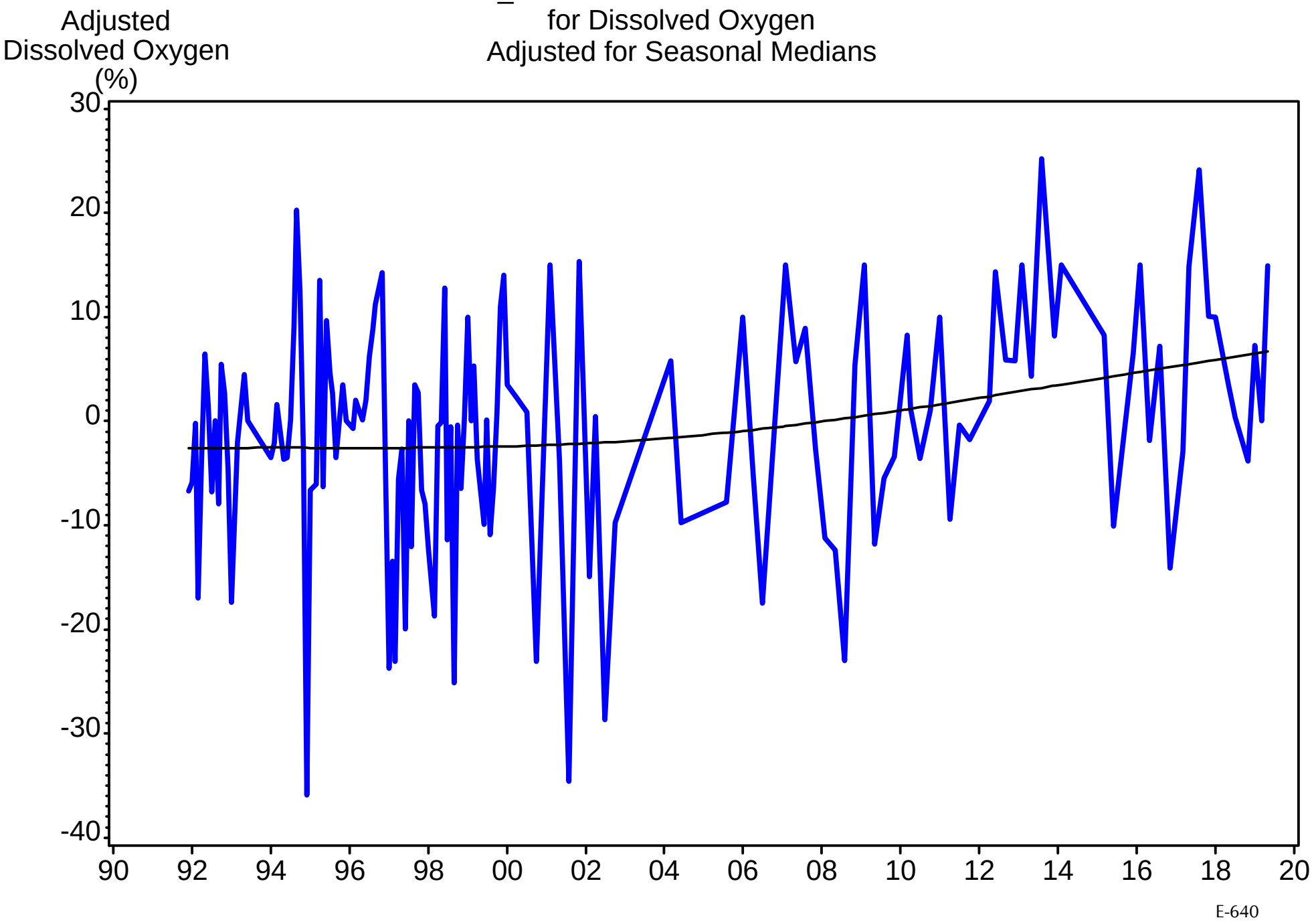
Zero Reference Line Shown

S_21FLVEMDHL03 Trends

S_21FLVEMDHL03 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



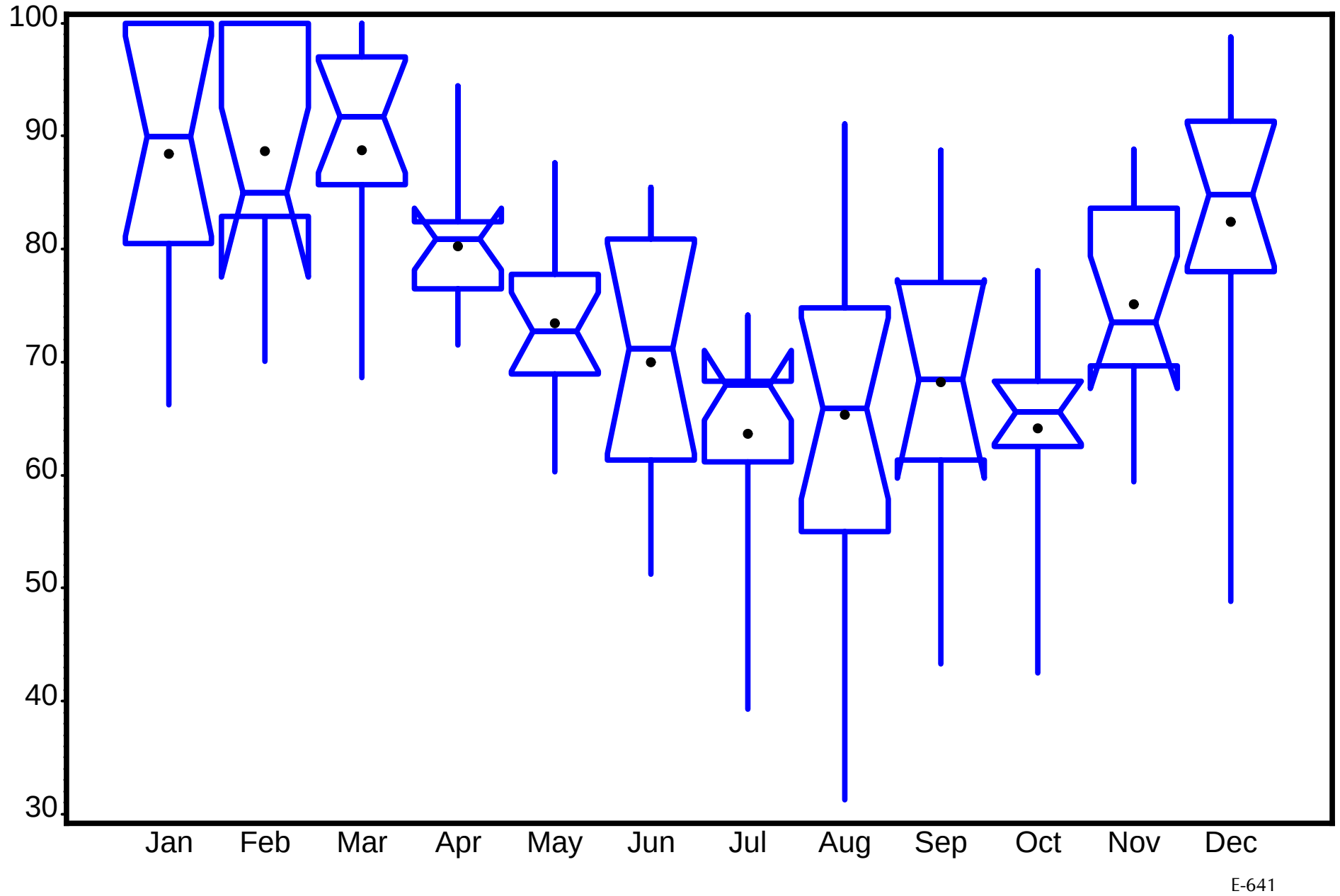
S_21FLVEMDHL03 Trends



S_21FLVEMDHL03 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



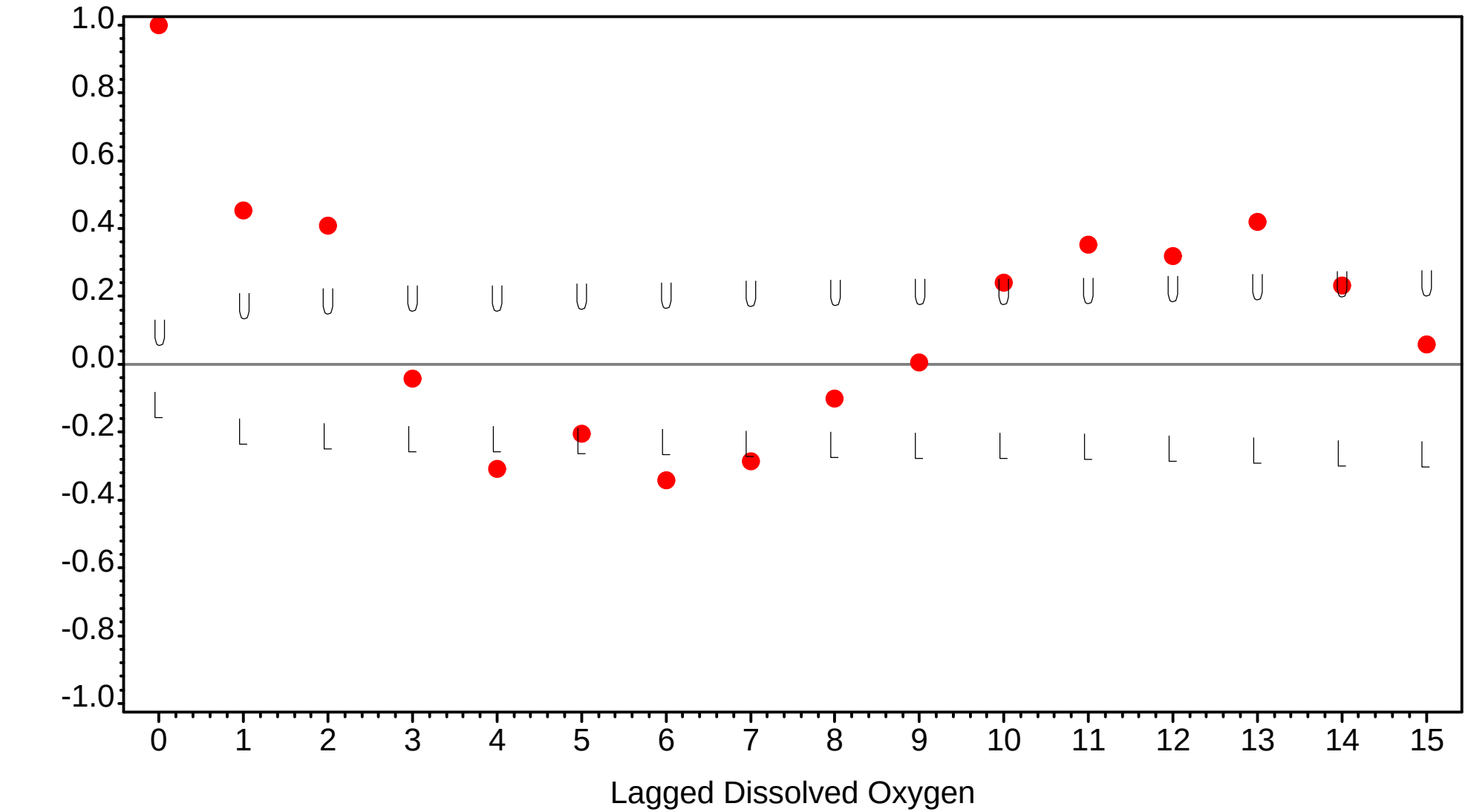
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.454	0.093	0.186	-0.186
2	0.407	0.099	0.198	-0.198
3	-0.043	0.104	0.207	-0.207
4	-0.308	0.104	0.208	-0.208
5	-0.205	0.106	0.213	-0.213
6	-0.342	0.107	0.215	-0.215
7	-0.285	0.111	0.221	-0.221
8	-0.101	0.113	0.225	-0.225
9	0.006	0.113	0.226	-0.226
10	0.241	0.113	0.226	-0.226
11	0.352	0.114	0.229	-0.229
12	0.320	0.117	0.235	-0.235
13	0.420	0.120	0.240	-0.240
14	0.232	0.124	0.248	-0.248
15	0.058	0.125	0.251	-0.251

S_21FLVEMDHL03 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

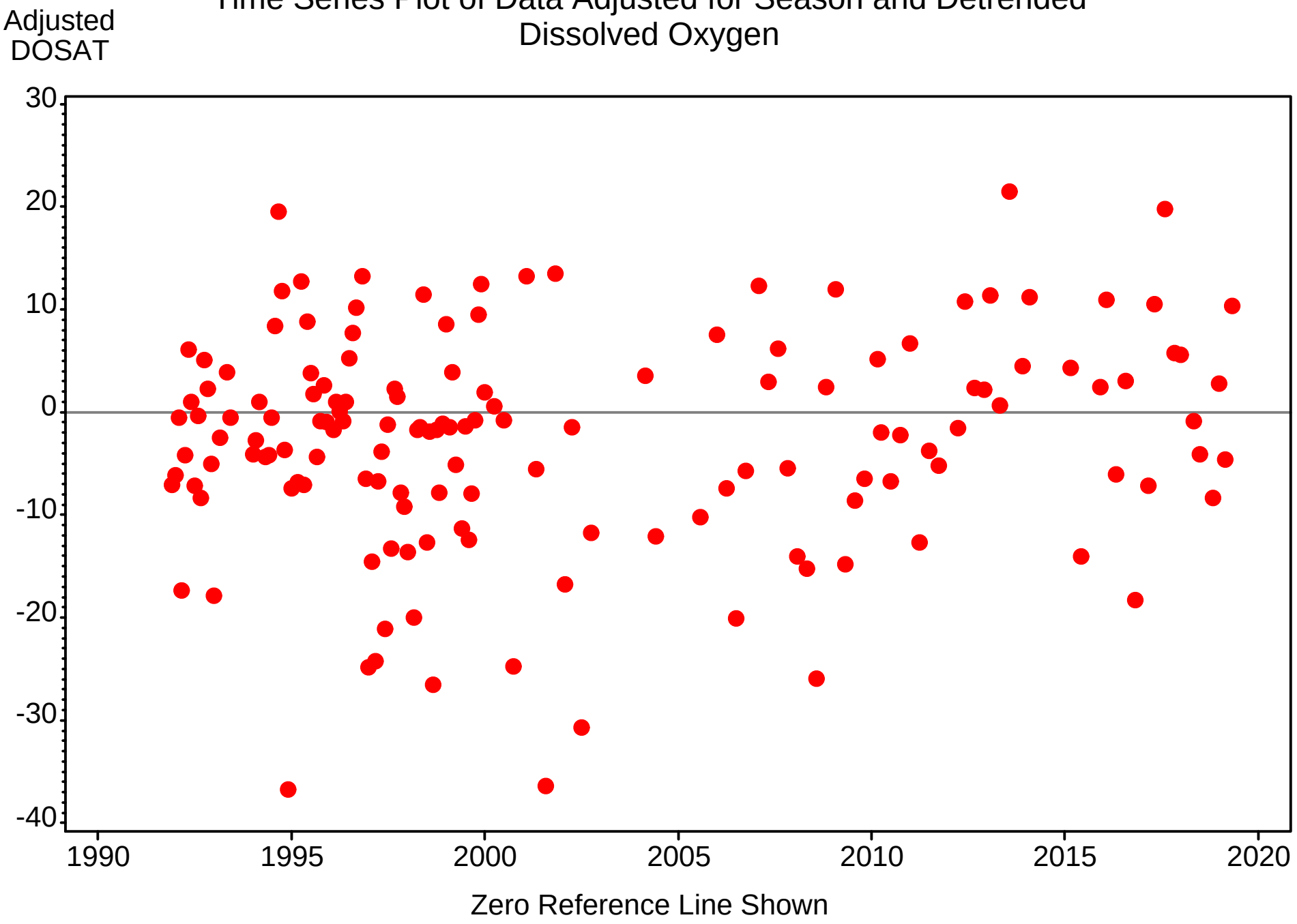
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.102	0.107	0.246	0.157

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.10171	0.10748	0.24640	0.15732

S_21FLVEMDHL03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

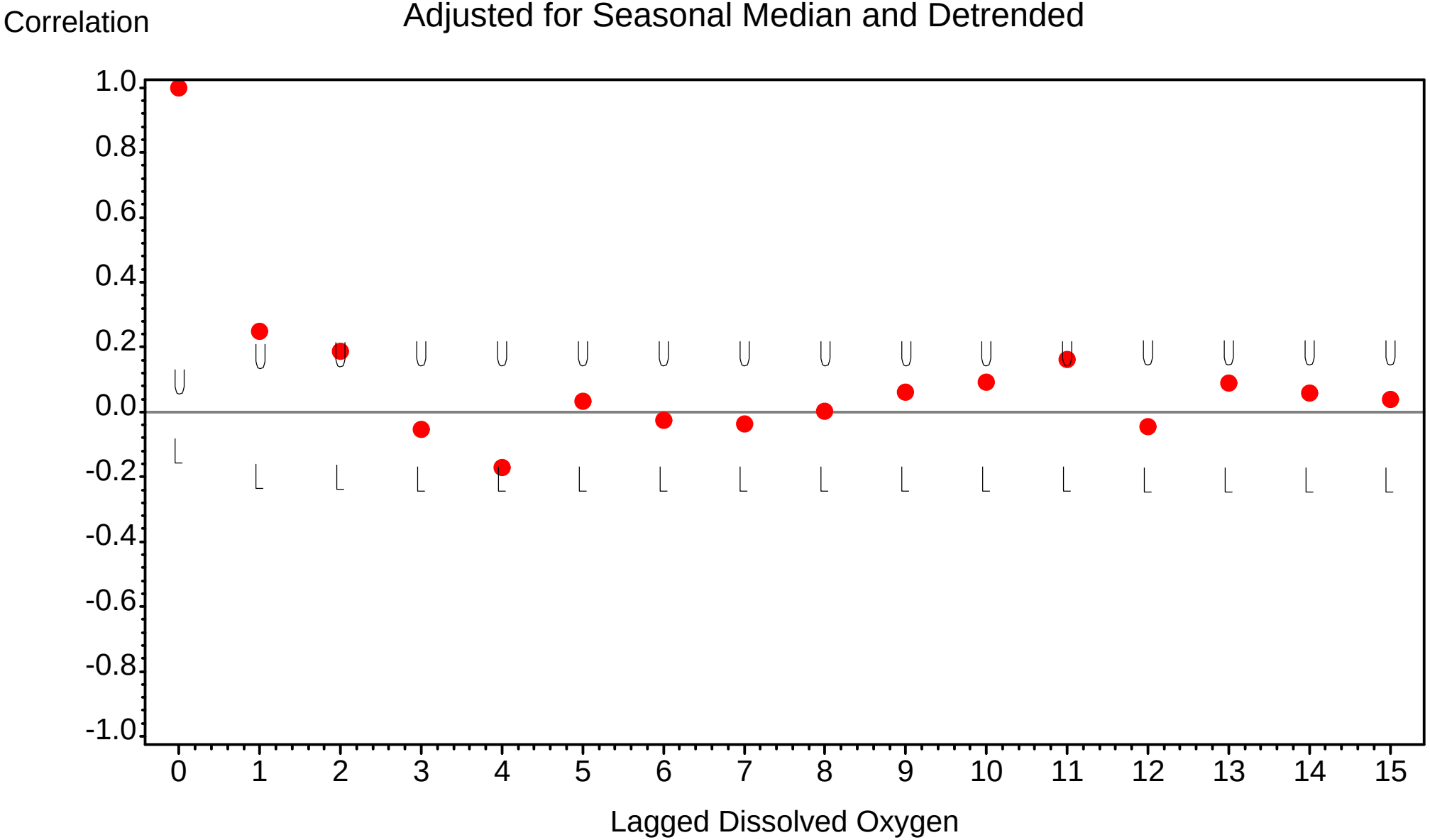


S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.248	0.093	0.186	-0.186
2	0.188	0.095	0.189	-0.189
3	-0.055	0.096	0.192	-0.192
4	-0.172	0.096	0.192	-0.192
5	0.033	0.097	0.194	-0.194
6	-0.026	0.097	0.194	-0.194
7	-0.037	0.097	0.194	-0.194
8	0.001	0.097	0.194	-0.194
9	0.060	0.097	0.194	-0.194
10	0.092	0.097	0.194	-0.194
11	0.162	0.097	0.194	-0.194
12	-0.045	0.098	0.196	-0.196
13	0.089	0.098	0.196	-0.196
14	0.058	0.098	0.197	-0.197
15	0.038	0.098	0.197	-0.197

S_21FLVEMDHL03 Trends Appendix

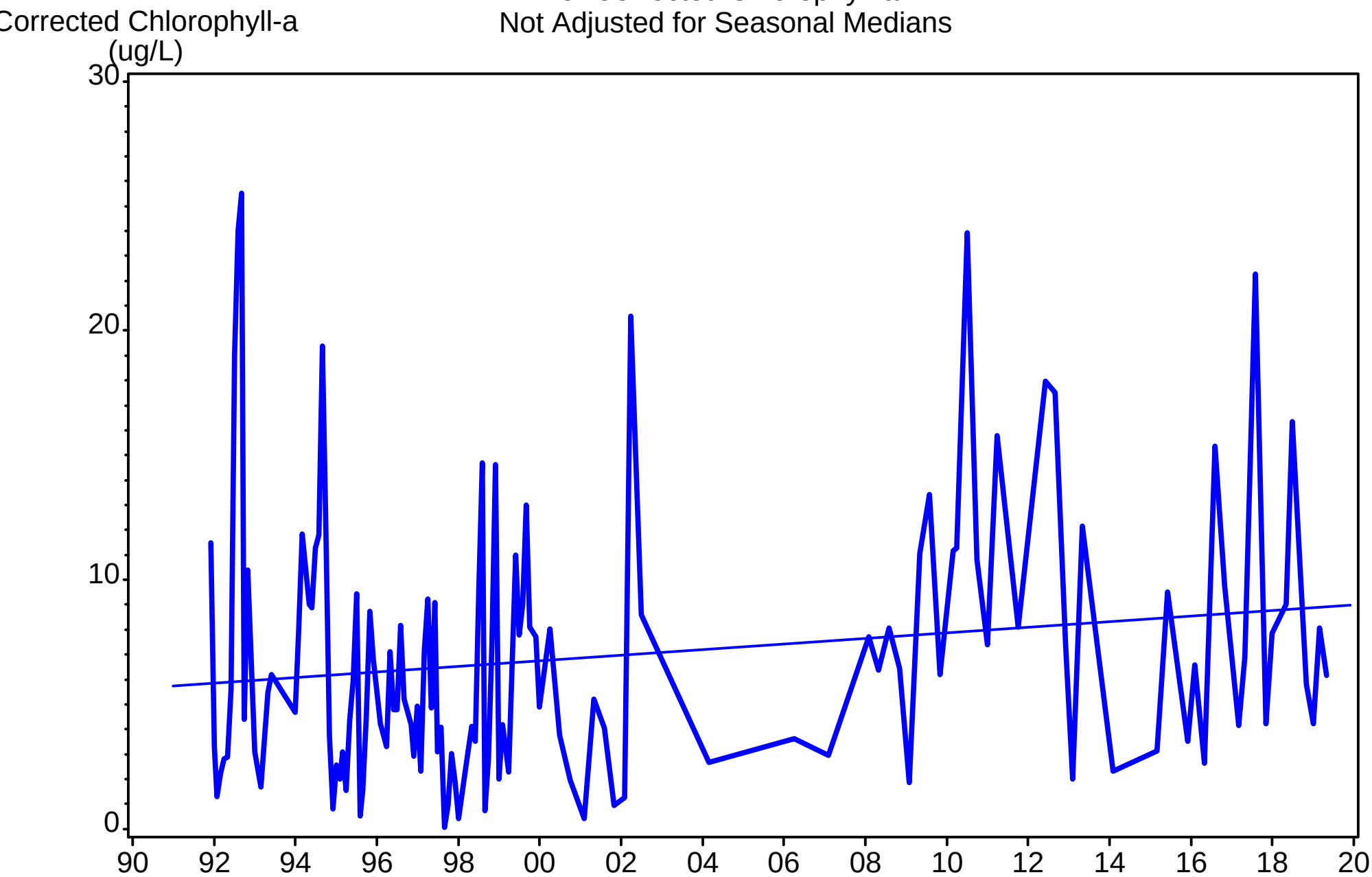
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

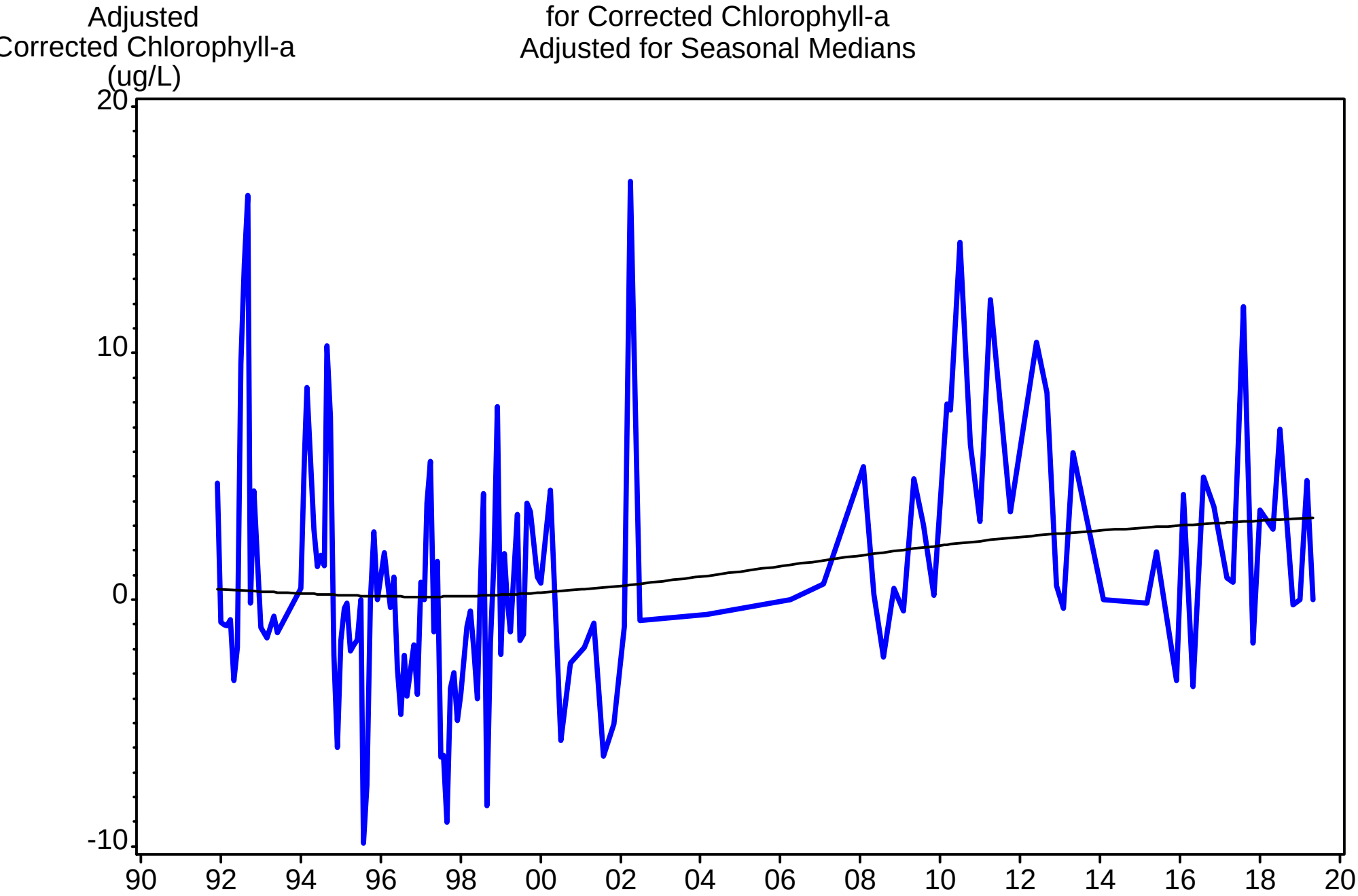
S_21FLVEMDHL03 Trends

S_21FLVEMDHL03 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



S_21FLVEMDHL03 Trends

S_21FLVEMDHL03 Time Series for Corrected Chlorophyll-a Adjusted for Seasonal Medians

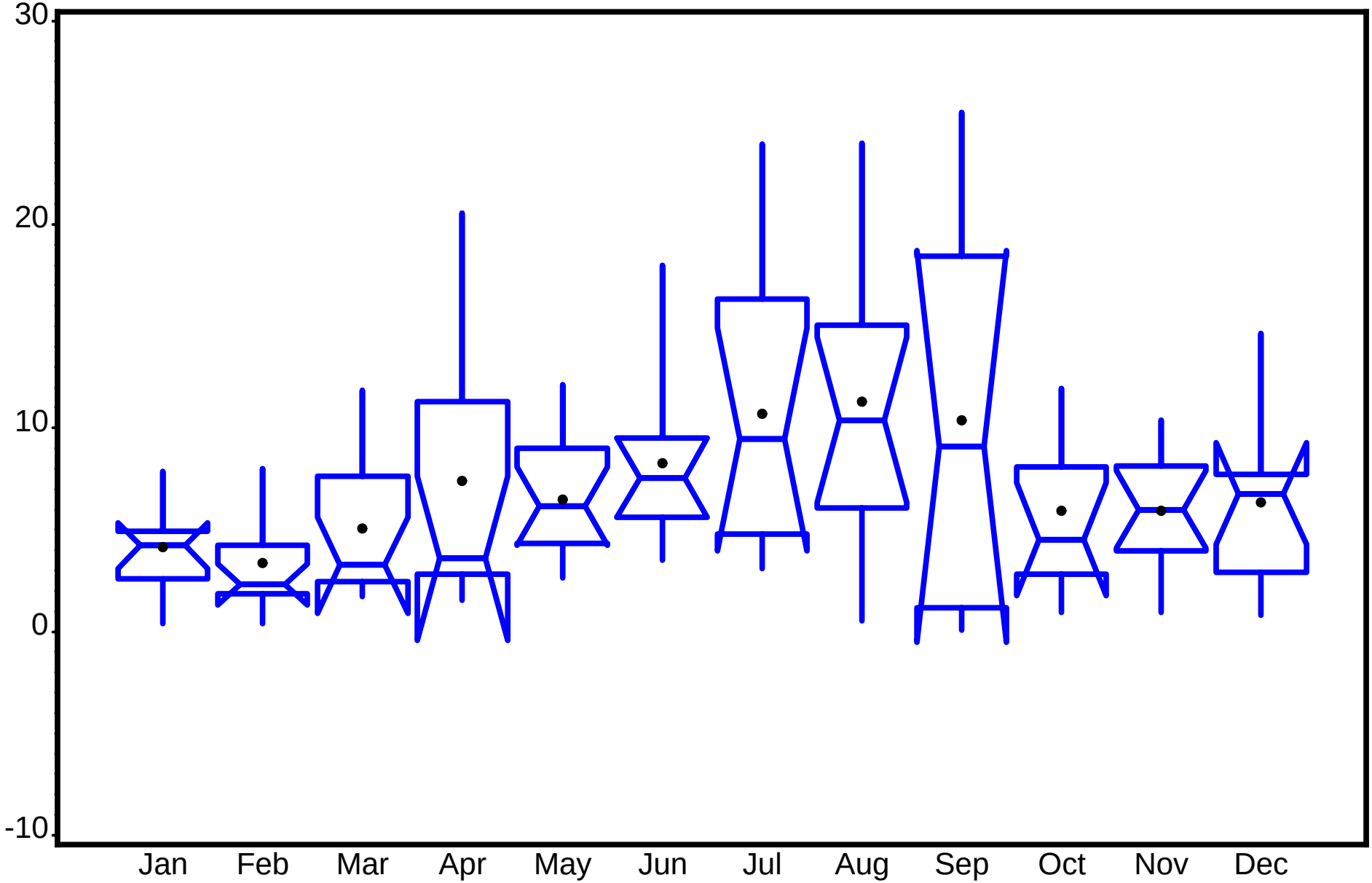


S_21FLVEMDHL03 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a

(ug/L)



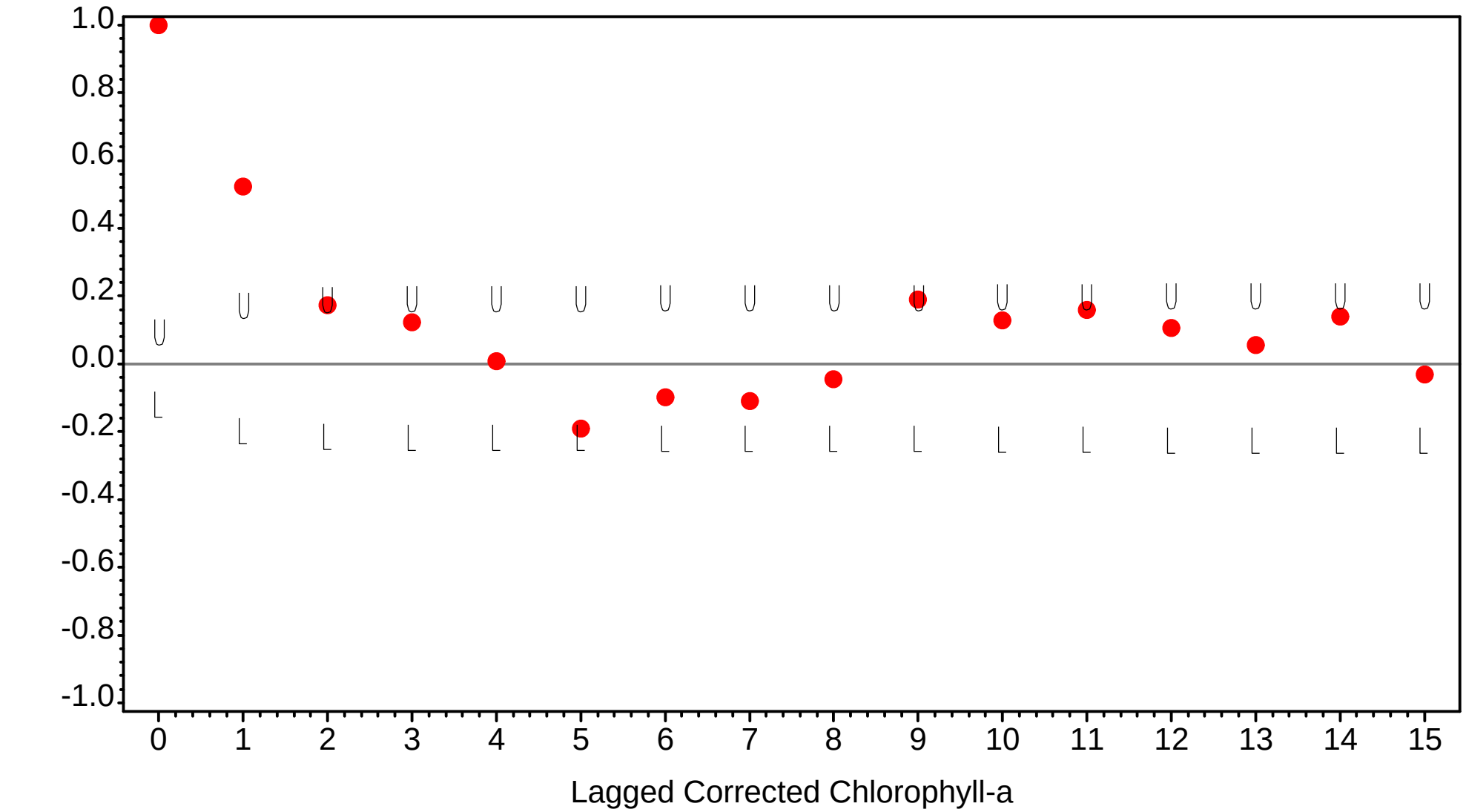
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.524	0.093	0.186	-0.186
2	0.172	0.101	0.202	-0.202
3	0.123	0.102	0.204	-0.204
4	0.009	0.102	0.204	-0.204
5	-0.192	0.102	0.204	-0.204
6	-0.099	0.103	0.207	-0.207
7	-0.109	0.104	0.207	-0.207
8	-0.046	0.104	0.208	-0.208
9	0.191	0.104	0.208	-0.208
10	0.127	0.105	0.210	-0.210
11	0.158	0.105	0.211	-0.211
12	0.107	0.106	0.212	-0.212
13	0.055	0.106	0.213	-0.213
14	0.139	0.106	0.213	-0.213
15	-0.030	0.107	0.214	-0.214

S_21FLVEMDHL03 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

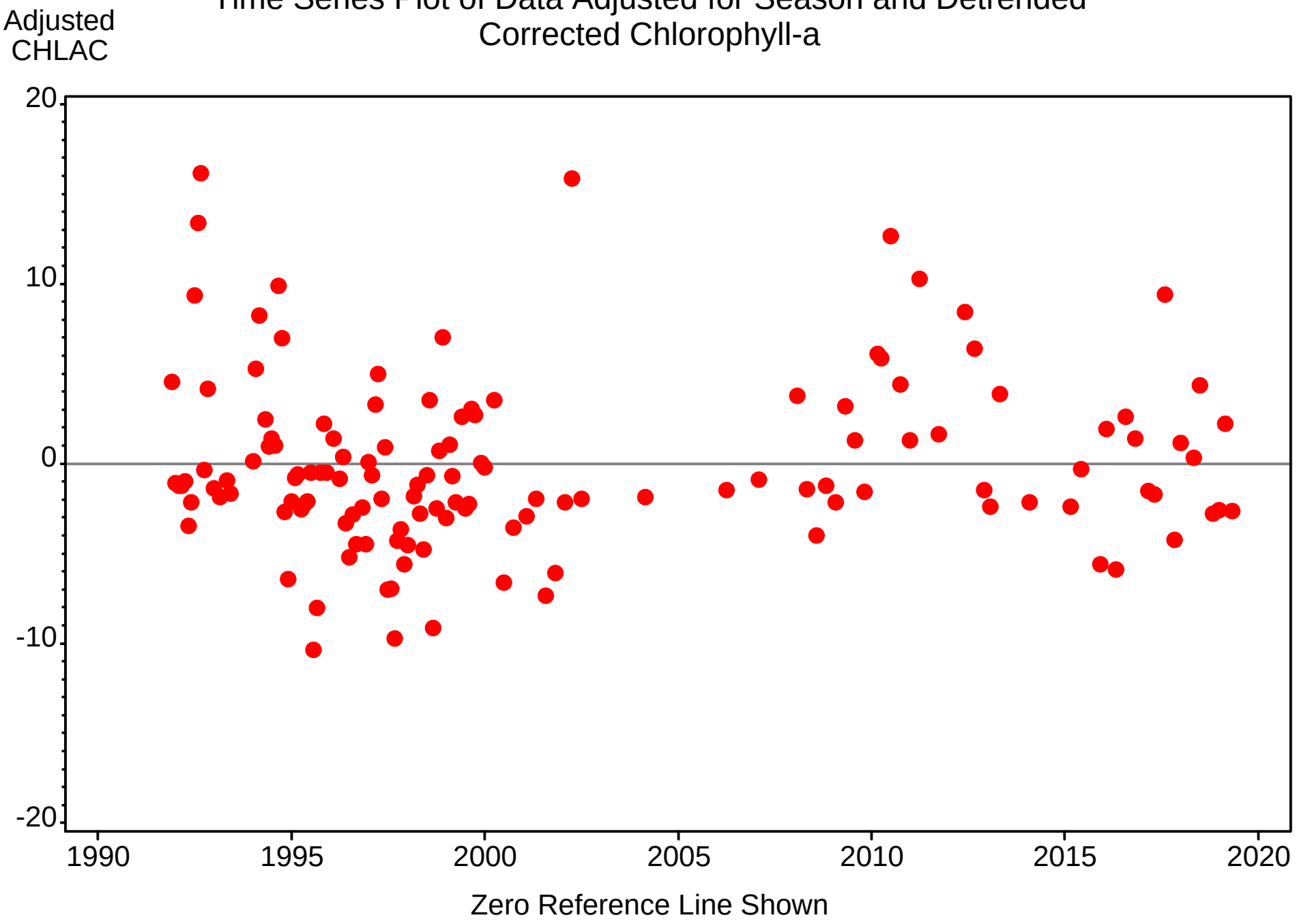
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.159	0.019	0.068	0.09

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.15909	0.019208	0.068126	0.089583

S_21FLVEMDHL03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



Zero Reference Line Shown

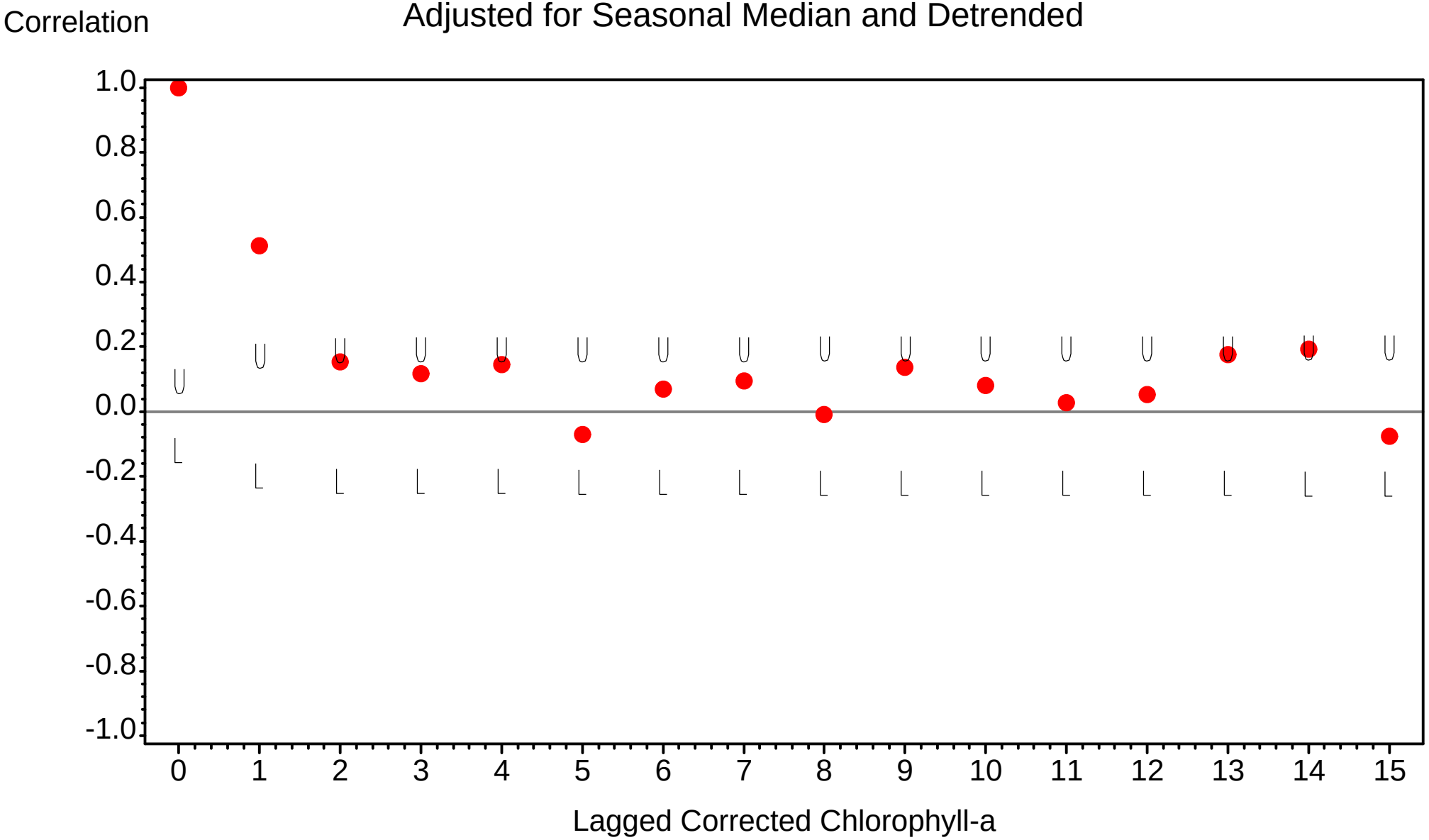
S_21FLVEMDHL03 Trends Appendix

Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.511	0.093	0.186	-0.186
2	0.154	0.101	0.201	-0.201
3	0.117	0.101	0.203	-0.203
4	0.144	0.102	0.203	-0.203
5	-0.070	0.102	0.204	-0.204
6	0.069	0.102	0.205	-0.205
7	0.094	0.103	0.205	-0.205
8	-0.010	0.103	0.206	-0.206
9	0.136	0.103	0.206	-0.206
10	0.082	0.103	0.207	-0.207
11	0.027	0.103	0.207	-0.207
12	0.052	0.103	0.207	-0.207
13	0.177	0.104	0.207	-0.207
14	0.194	0.104	0.209	-0.209
15	-0.076	0.105	0.211	-0.211

S_21FLVEMDHL03 Trends Appendix

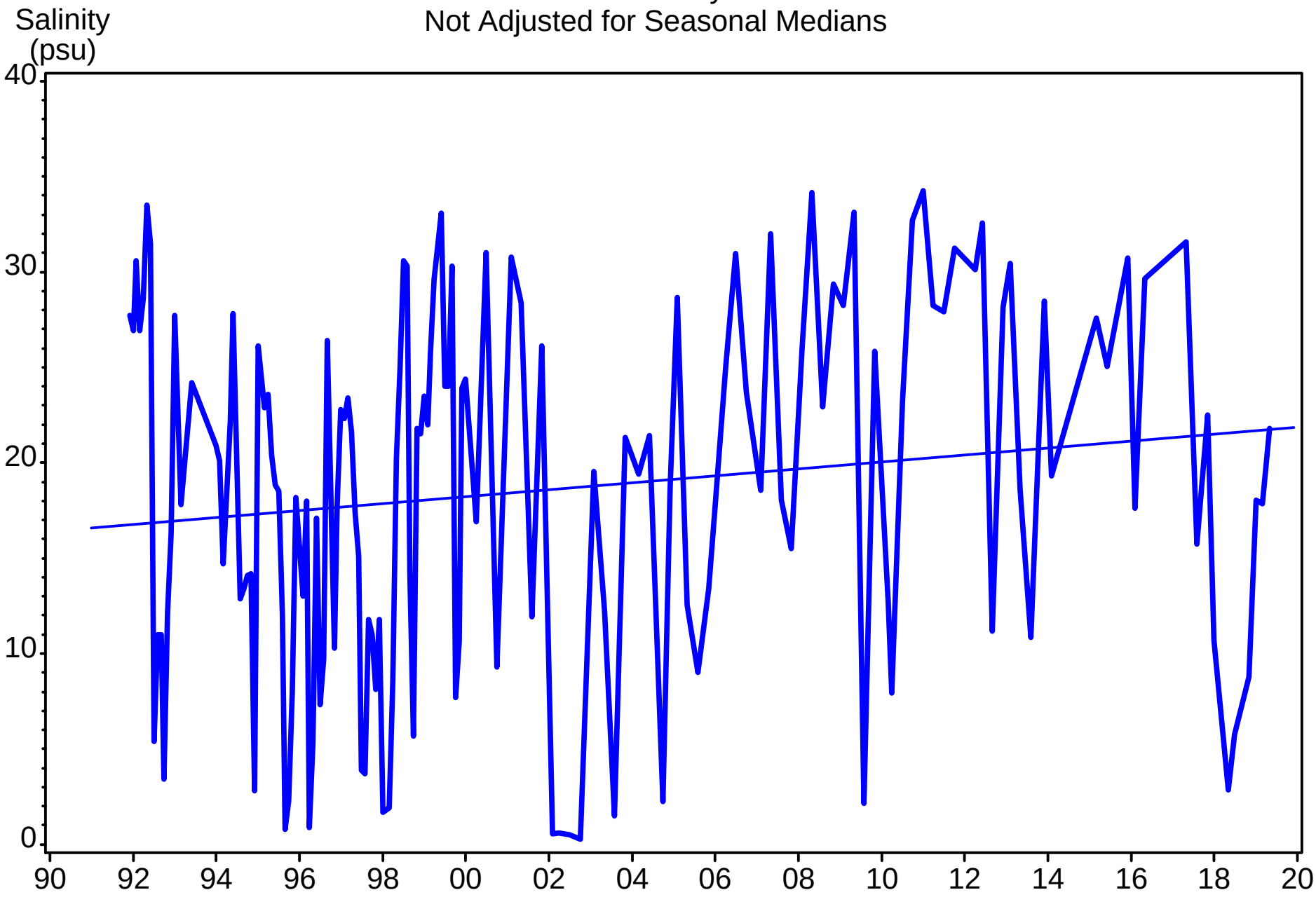
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

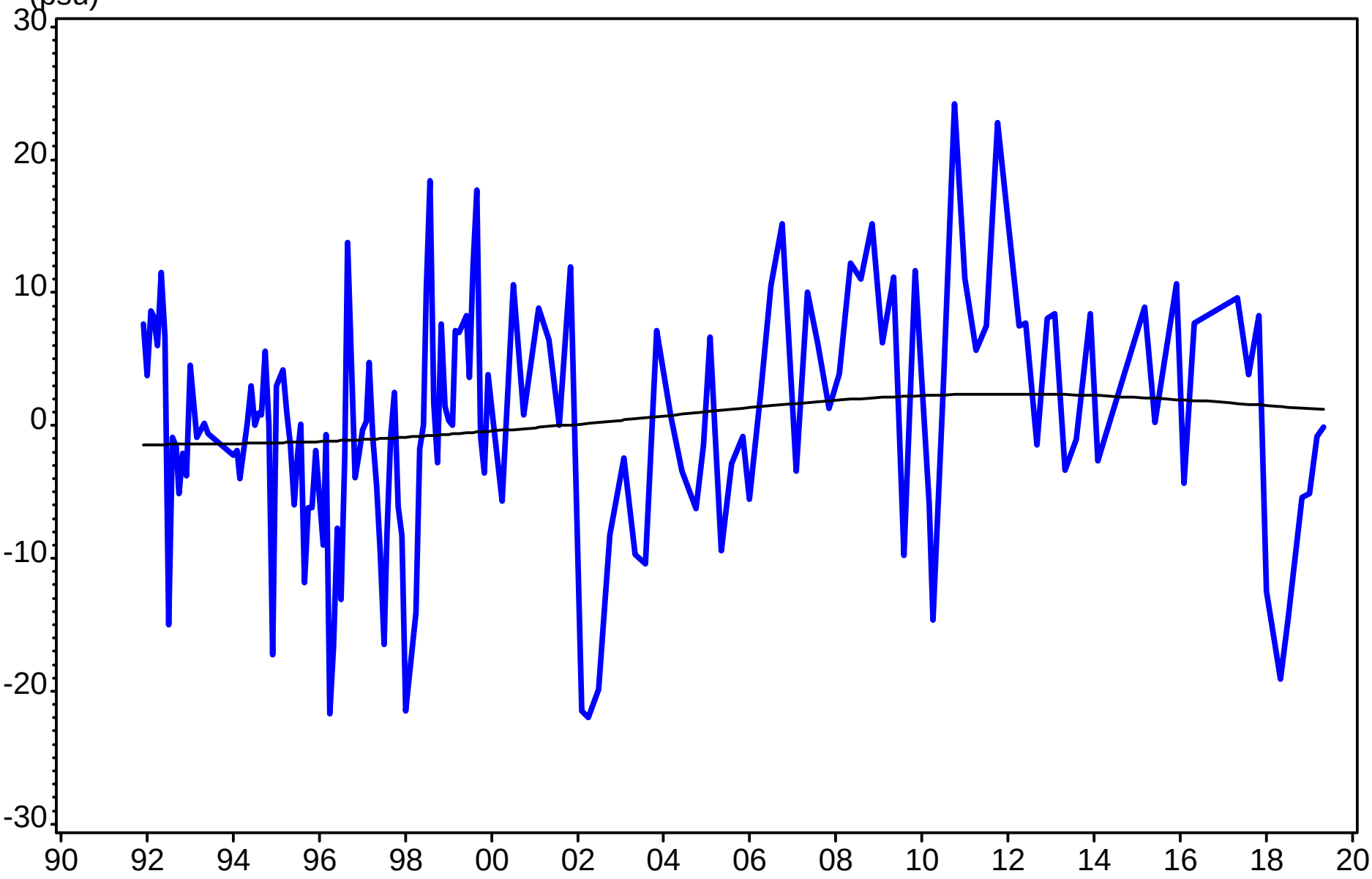
S_21FLVEMDHL03 Trends

S_21FLVEMDHL03 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



S_21FLVEMDHL03 Trends

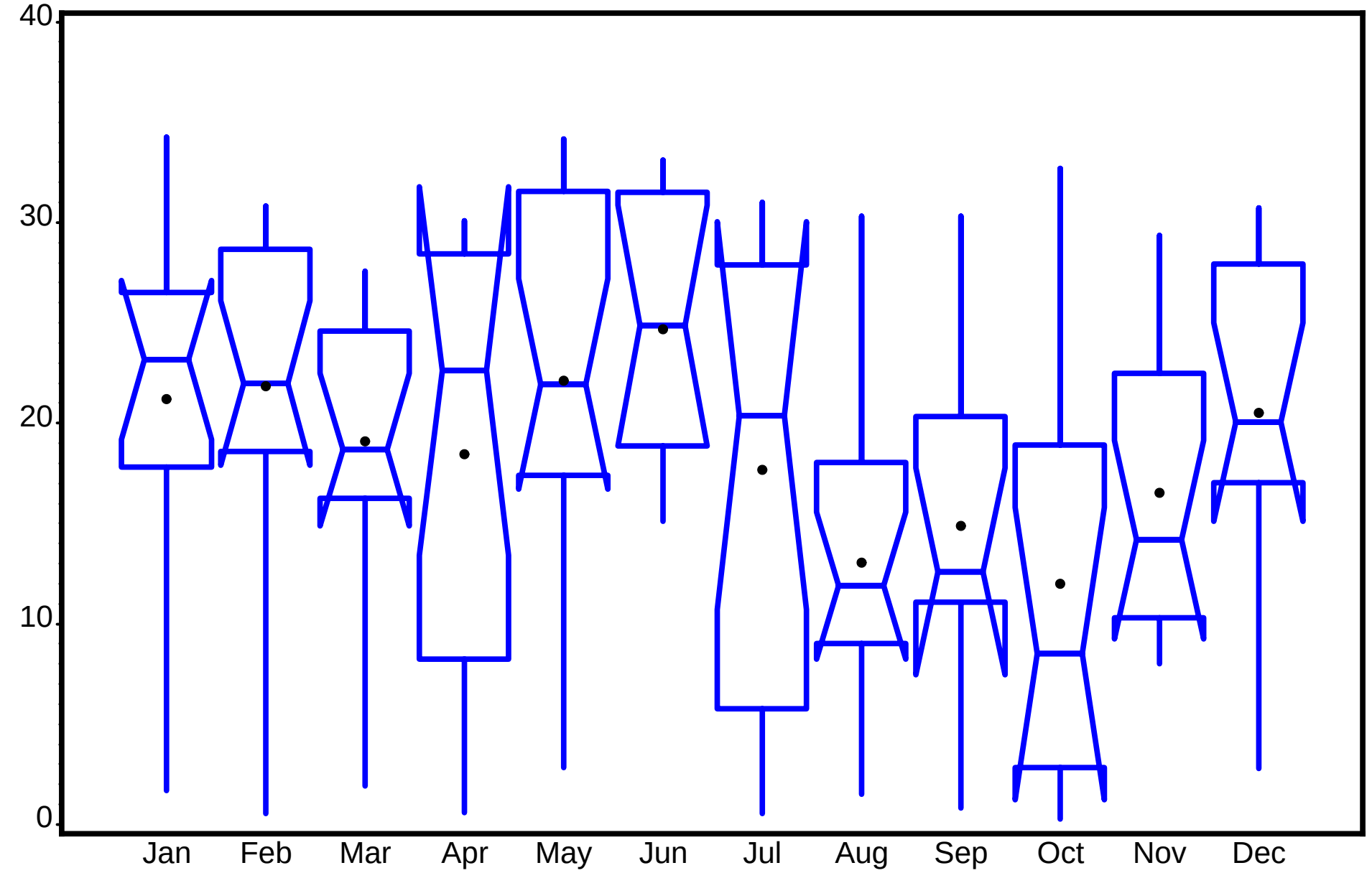
S_21FLVEMDHL03 Time Series for Salinity Adjusted for Seasonal Medians



S_21FLVEMDHL03 Trends Appendix

Seasonal Univariate Statistics

Salinity



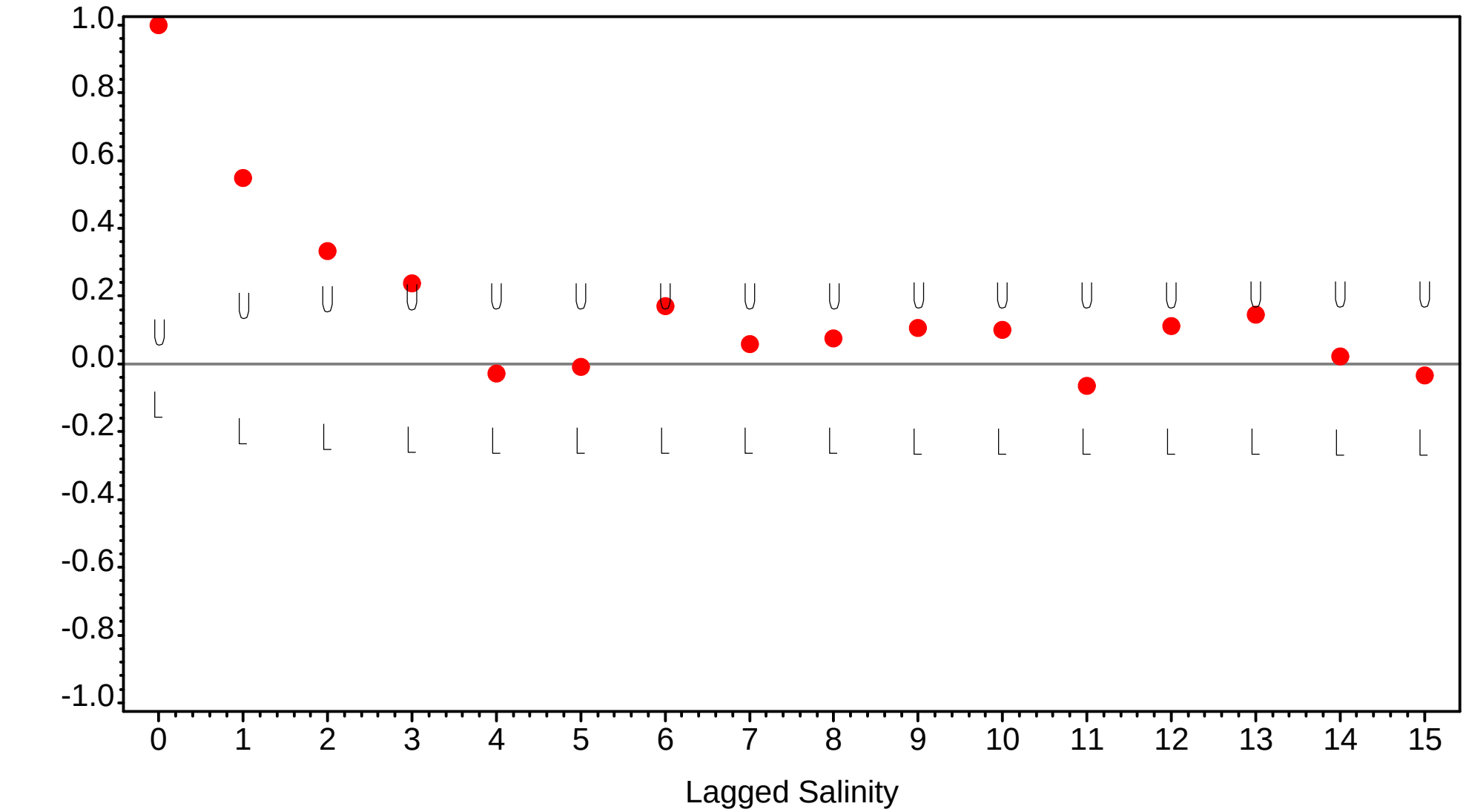
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.547	0.093	0.186	-0.186
2	0.332	0.102	0.203	-0.203
3	0.237	0.105	0.210	-0.210
4	-0.029	0.106	0.213	-0.213
5	-0.010	0.106	0.213	-0.213
6	0.169	0.106	0.213	-0.213
7	0.058	0.107	0.214	-0.214
8	0.075	0.107	0.214	-0.214
9	0.107	0.107	0.215	-0.215
10	0.099	0.108	0.215	-0.215
11	-0.064	0.108	0.216	-0.216
12	0.111	0.108	0.216	-0.216
13	0.144	0.108	0.217	-0.217
14	0.023	0.109	0.218	-0.218
15	-0.033	0.109	0.218	-0.218

S_21FLVEMDHL03 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

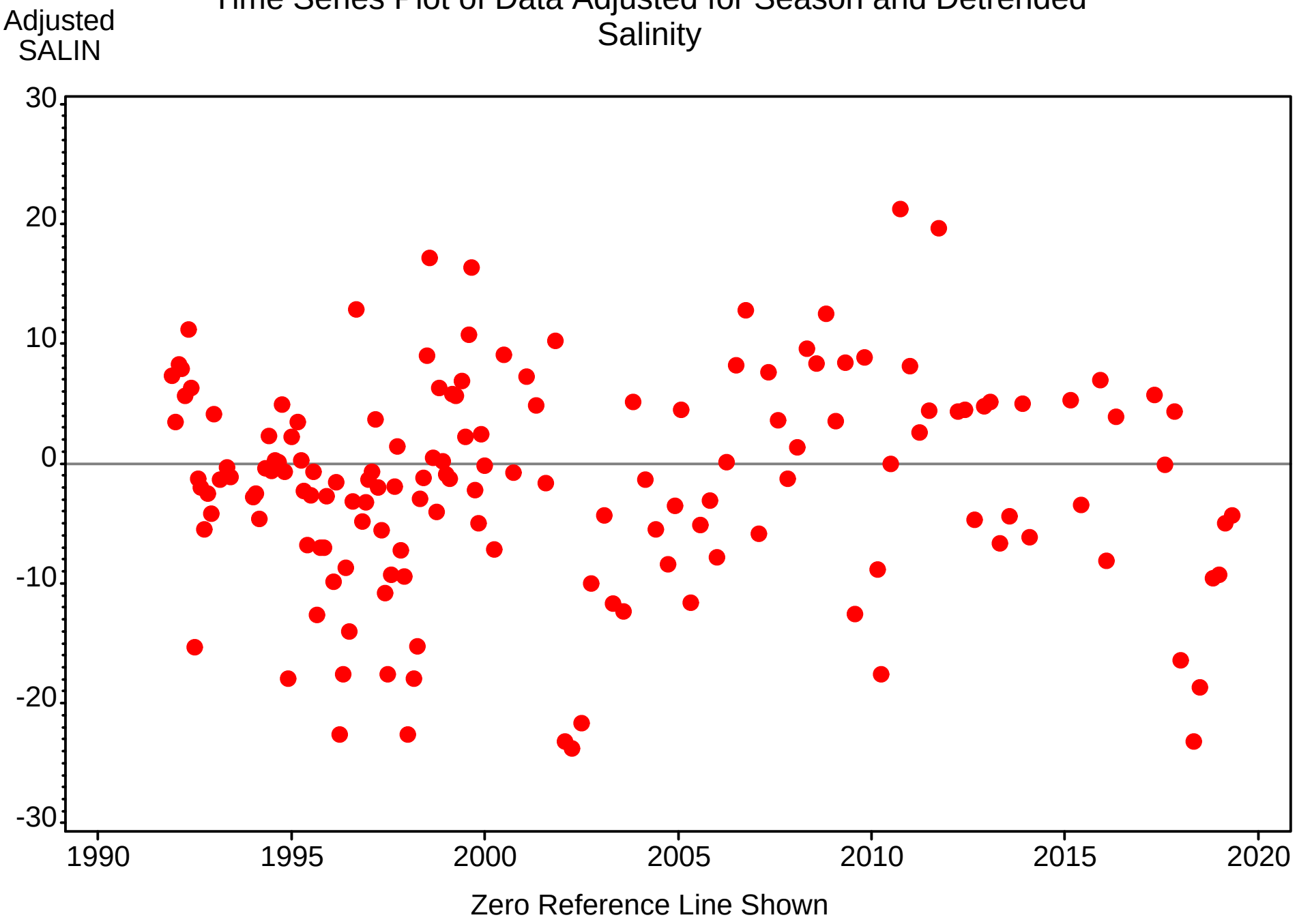
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.089	0.155	0.346	0.143

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.088634	0.15472	0.34597	0.14286

S_21FLVEMDHL03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



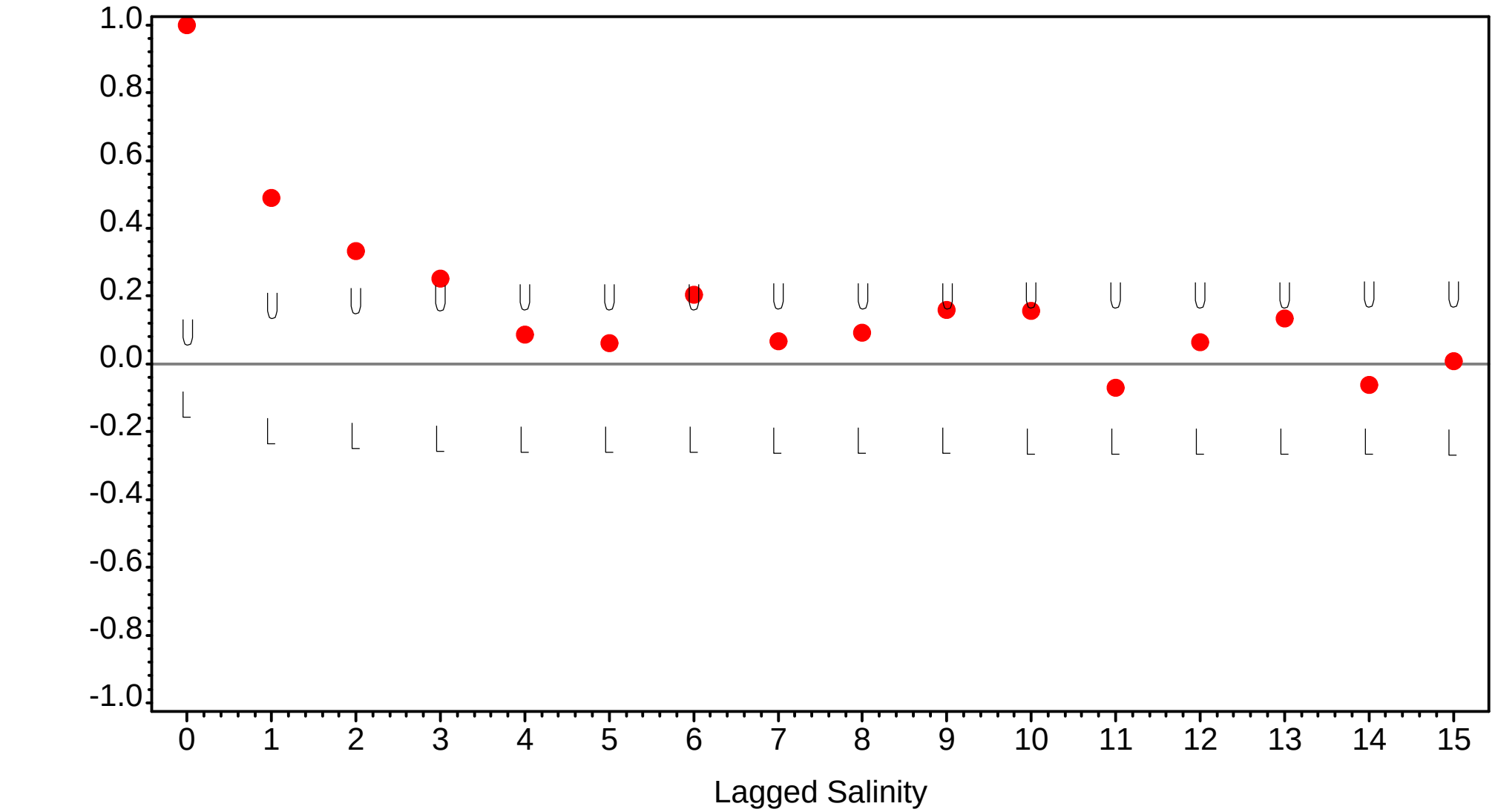
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.490	0.093	0.186	-0.186
2	0.333	0.100	0.200	-0.200
3	0.251	0.103	0.206	-0.206
4	0.087	0.105	0.210	-0.210
5	0.062	0.105	0.210	-0.210
6	0.204	0.105	0.210	-0.210
7	0.067	0.106	0.213	-0.213
8	0.091	0.106	0.213	-0.213
9	0.159	0.107	0.213	-0.213
10	0.157	0.107	0.215	-0.215
11	-0.071	0.108	0.216	-0.216
12	0.063	0.108	0.216	-0.216
13	0.134	0.108	0.216	-0.216
14	-0.062	0.109	0.217	-0.217
15	0.007	0.109	0.218	-0.218

S_21FLVEMDHL03 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

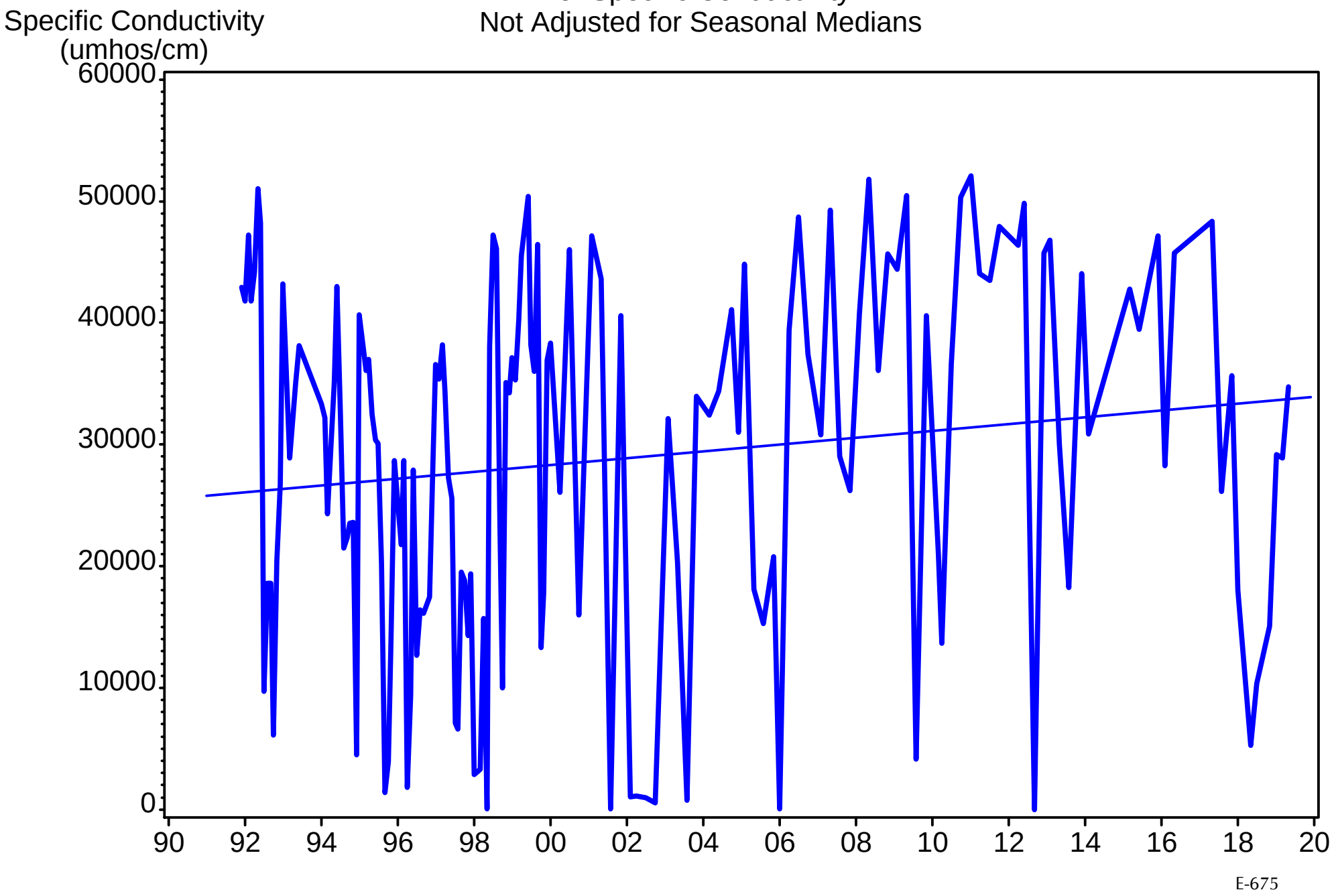


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

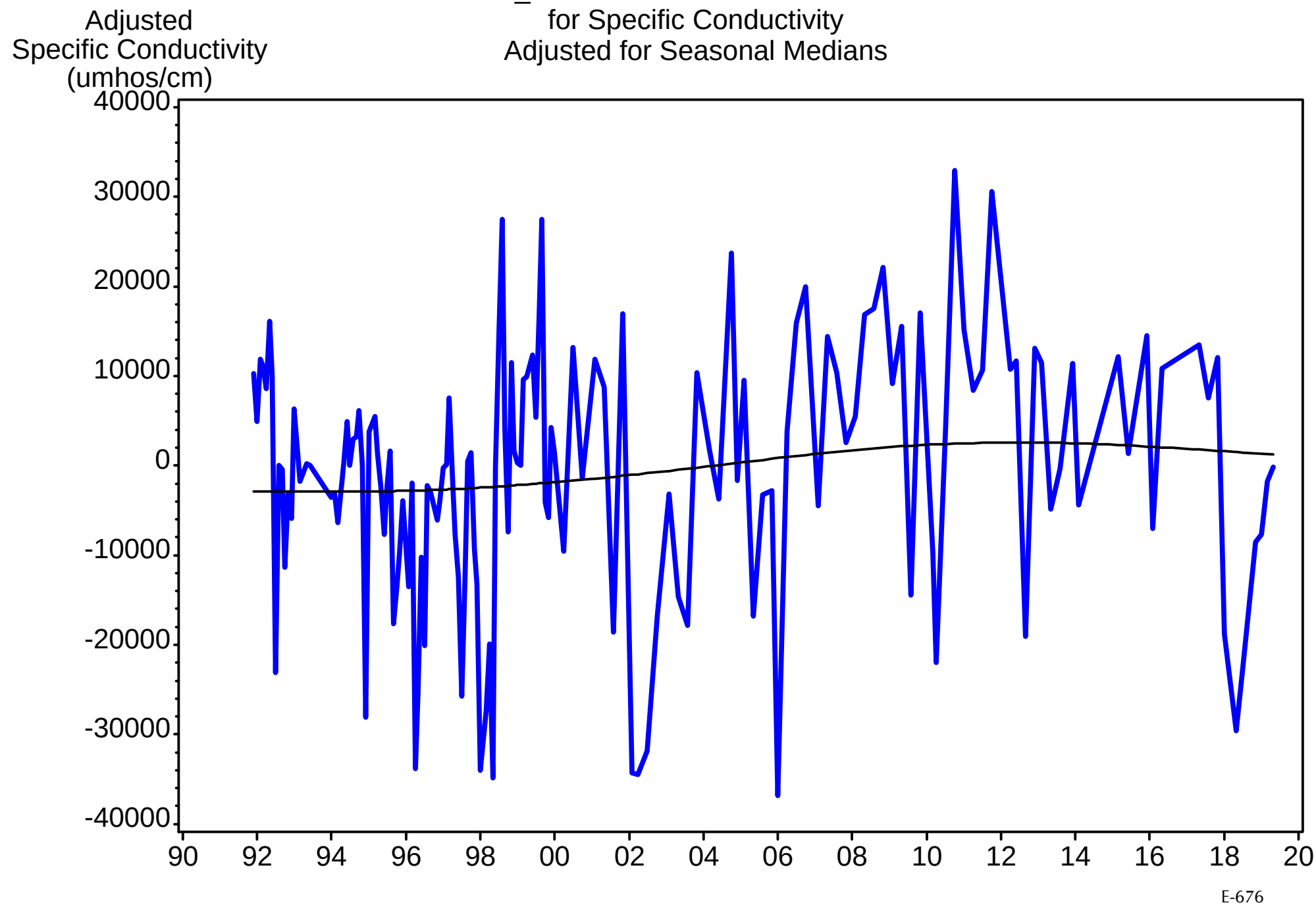
Zero Reference Line Shown

S_21FLVEMDHL03 Trends

S_21FLVEMDHL03 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



S_21FLVEMDHL03 Trends

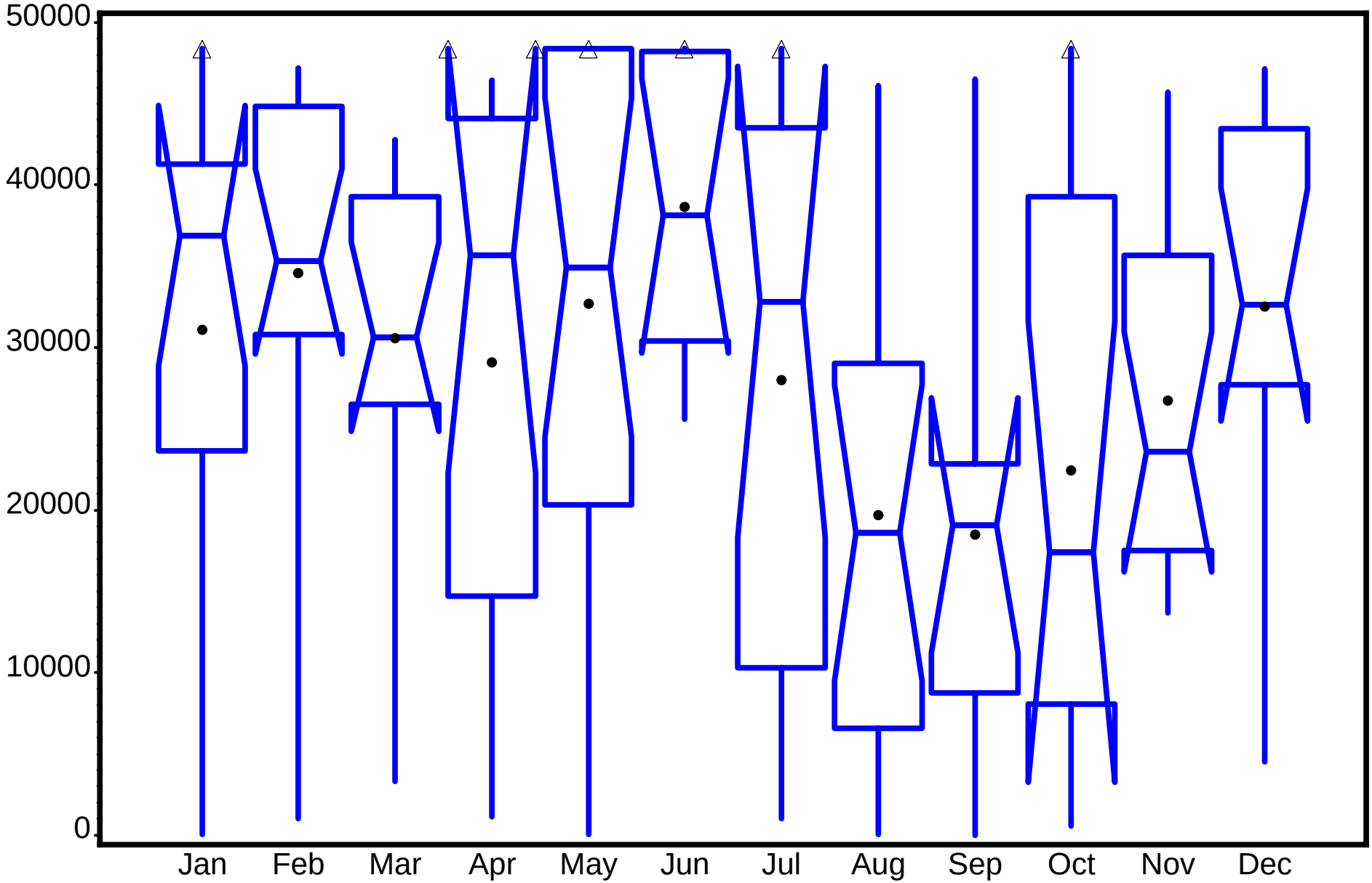


S_21FLVEMDHL03 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



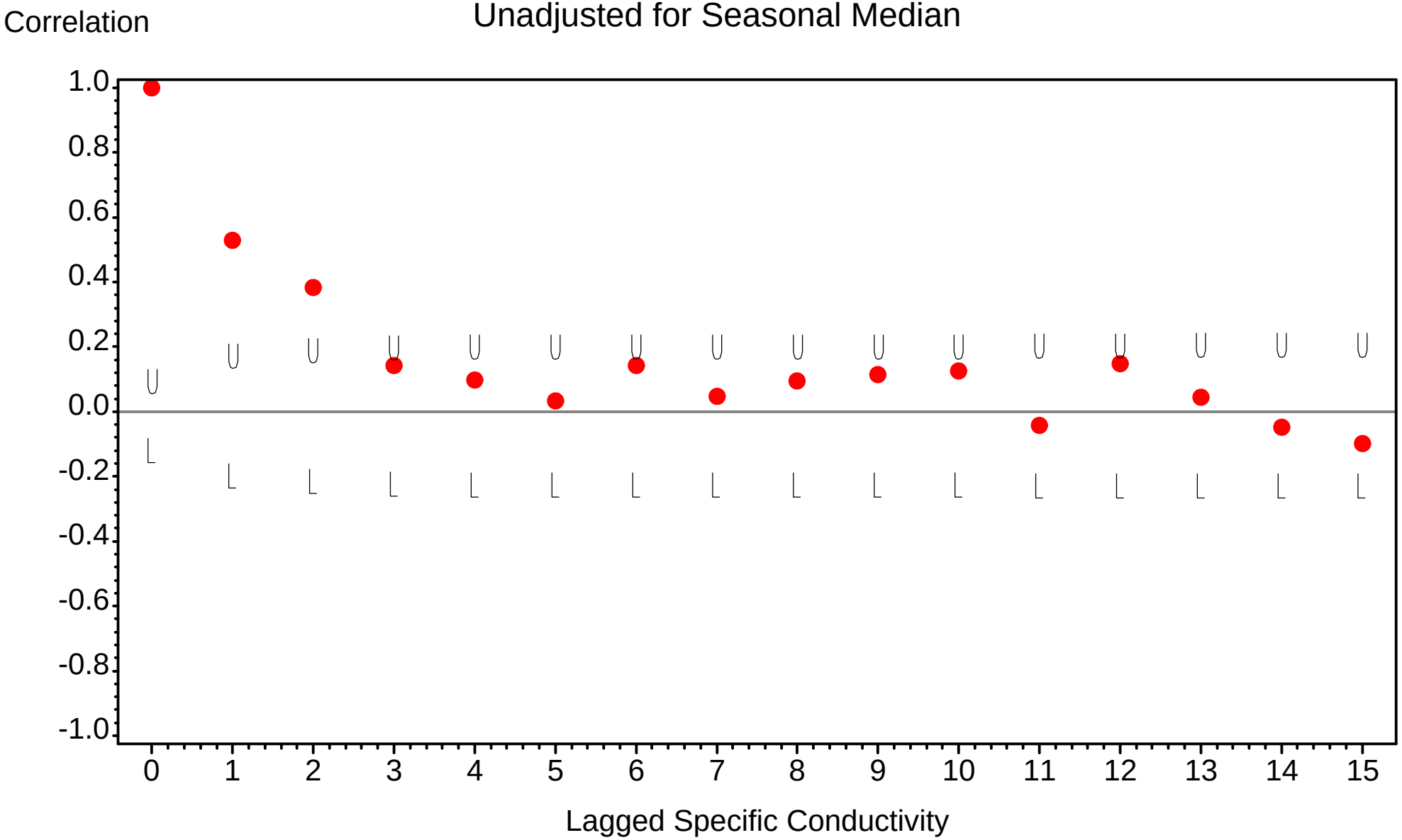
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.530	0.093	0.186	-0.186
2	0.383	0.101	0.202	-0.202
3	0.141	0.105	0.210	-0.210
4	0.097	0.106	0.212	-0.212
5	0.034	0.106	0.212	-0.212
6	0.141	0.106	0.212	-0.212
7	0.046	0.107	0.213	-0.213
8	0.095	0.107	0.213	-0.213
9	0.113	0.107	0.214	-0.214
10	0.125	0.107	0.214	-0.214
11	-0.042	0.108	0.215	-0.215
12	0.147	0.108	0.215	-0.215
13	0.044	0.108	0.217	-0.217
14	-0.047	0.108	0.217	-0.217
15	-0.099	0.108	0.217	-0.217

S_21FLVEMDHL03 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

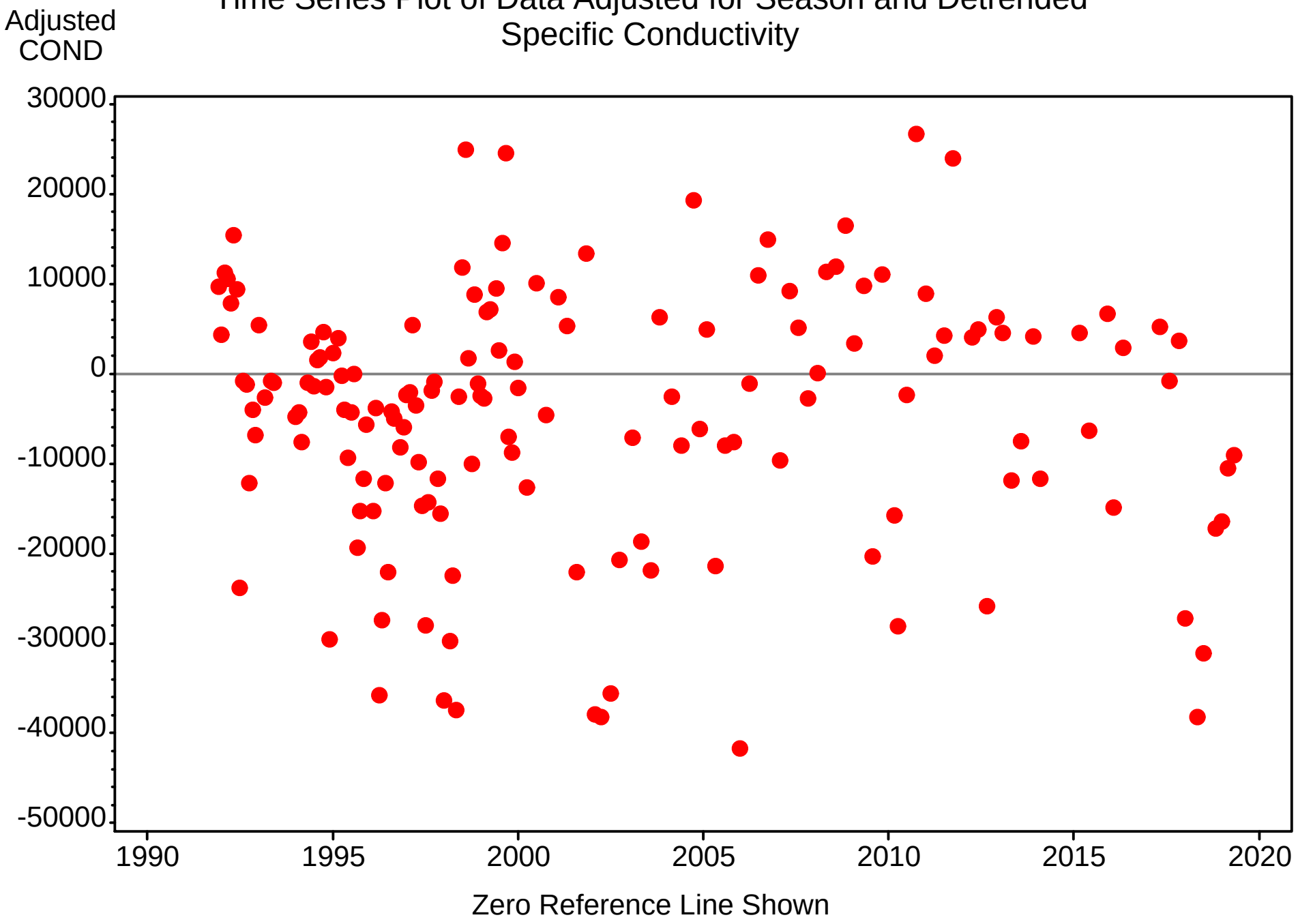
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.098	0.115	0.288	301.6

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.098019	0.11509	0.28841	301.6

S_21FLVEMDHL03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

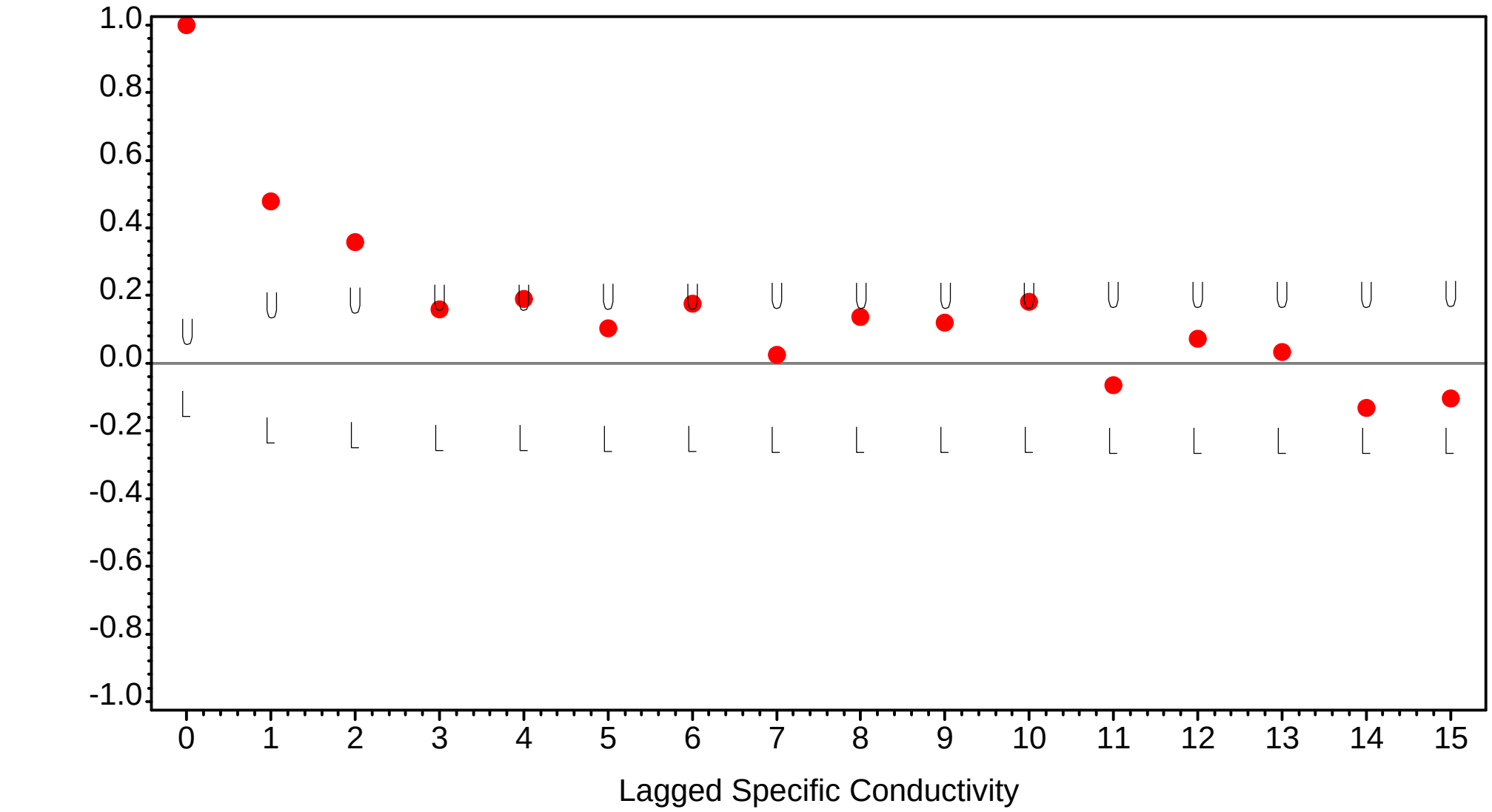


S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.479	0.093	0.186	-0.186
2	0.358	0.100	0.199	-0.199
3	0.160	0.103	0.207	-0.207
4	0.189	0.104	0.208	-0.208
5	0.104	0.105	0.210	-0.210
6	0.175	0.105	0.211	-0.211
7	0.024	0.106	0.212	-0.212
8	0.136	0.106	0.212	-0.212
9	0.121	0.107	0.213	-0.213
10	0.182	0.107	0.214	-0.214
11	-0.065	0.108	0.216	-0.216
12	0.073	0.108	0.216	-0.216
13	0.033	0.108	0.216	-0.216
14	-0.133	0.108	0.216	-0.216
15	-0.104	0.109	0.217	-0.217

S_21FLVEMDHL03 Trends Appendix

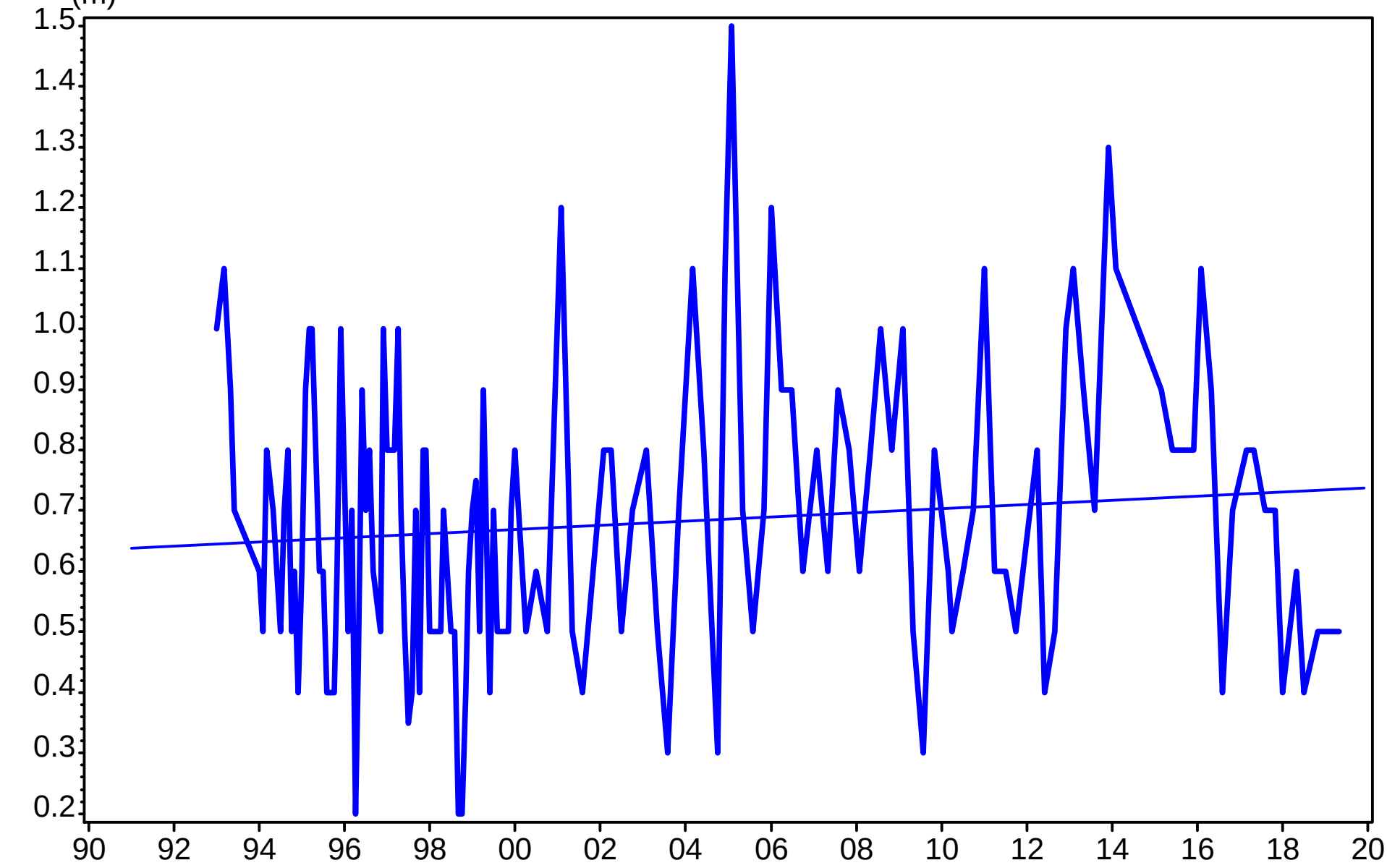
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



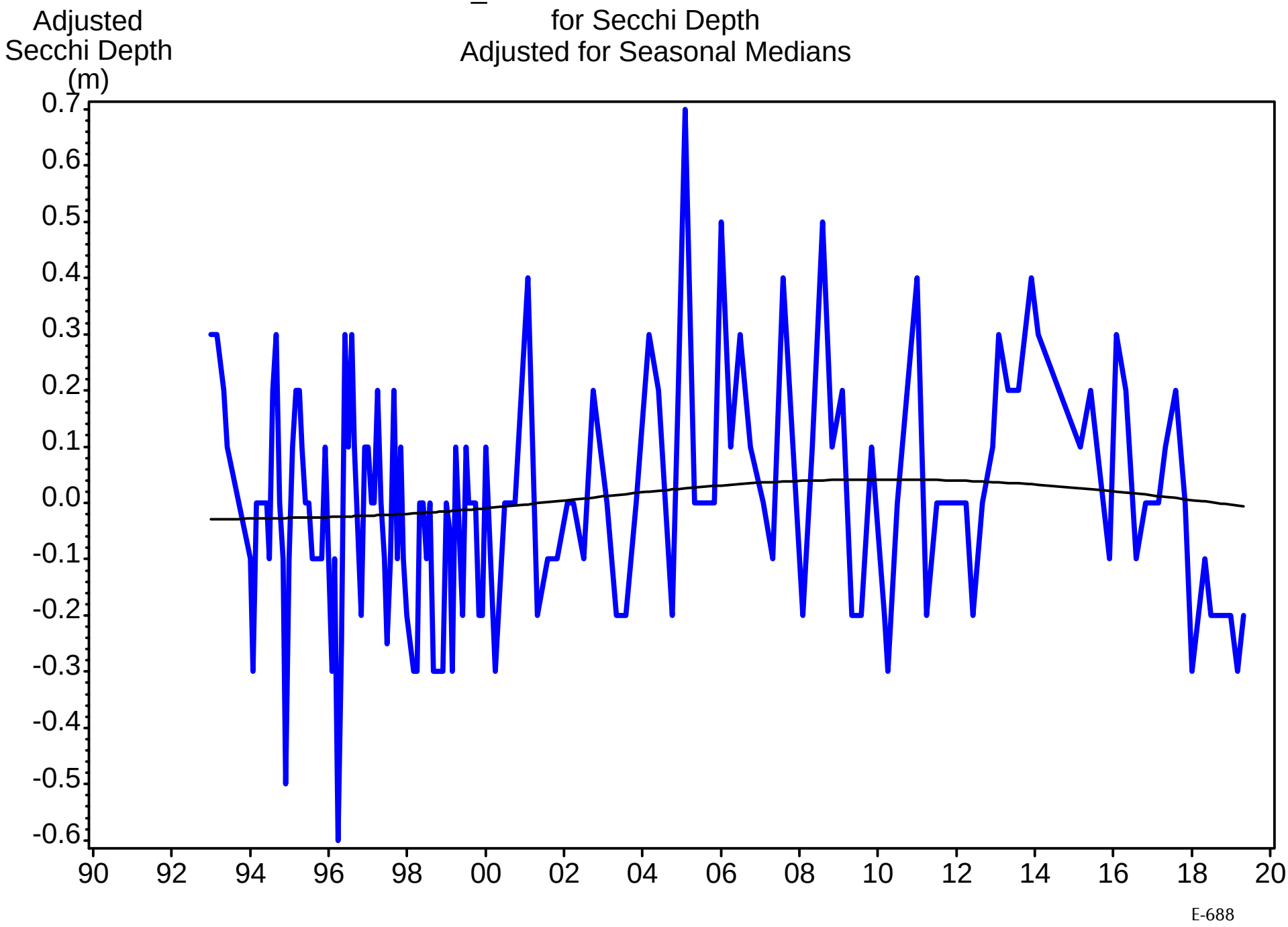
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL03 Trends

S_21FLVEMDHL03 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



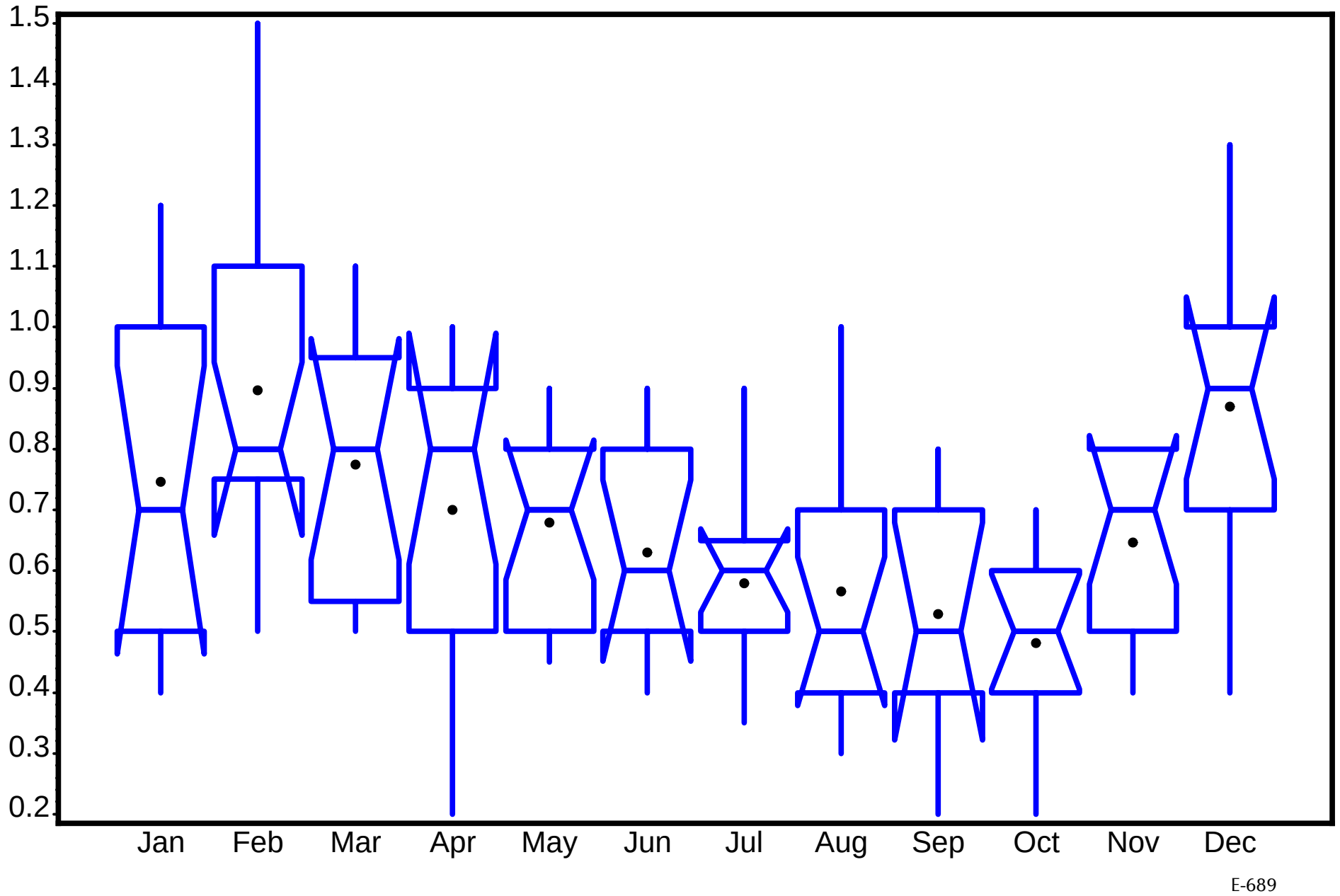
S_21FLVEMDHL03 Trends



S_21FLVEMDHL03 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth

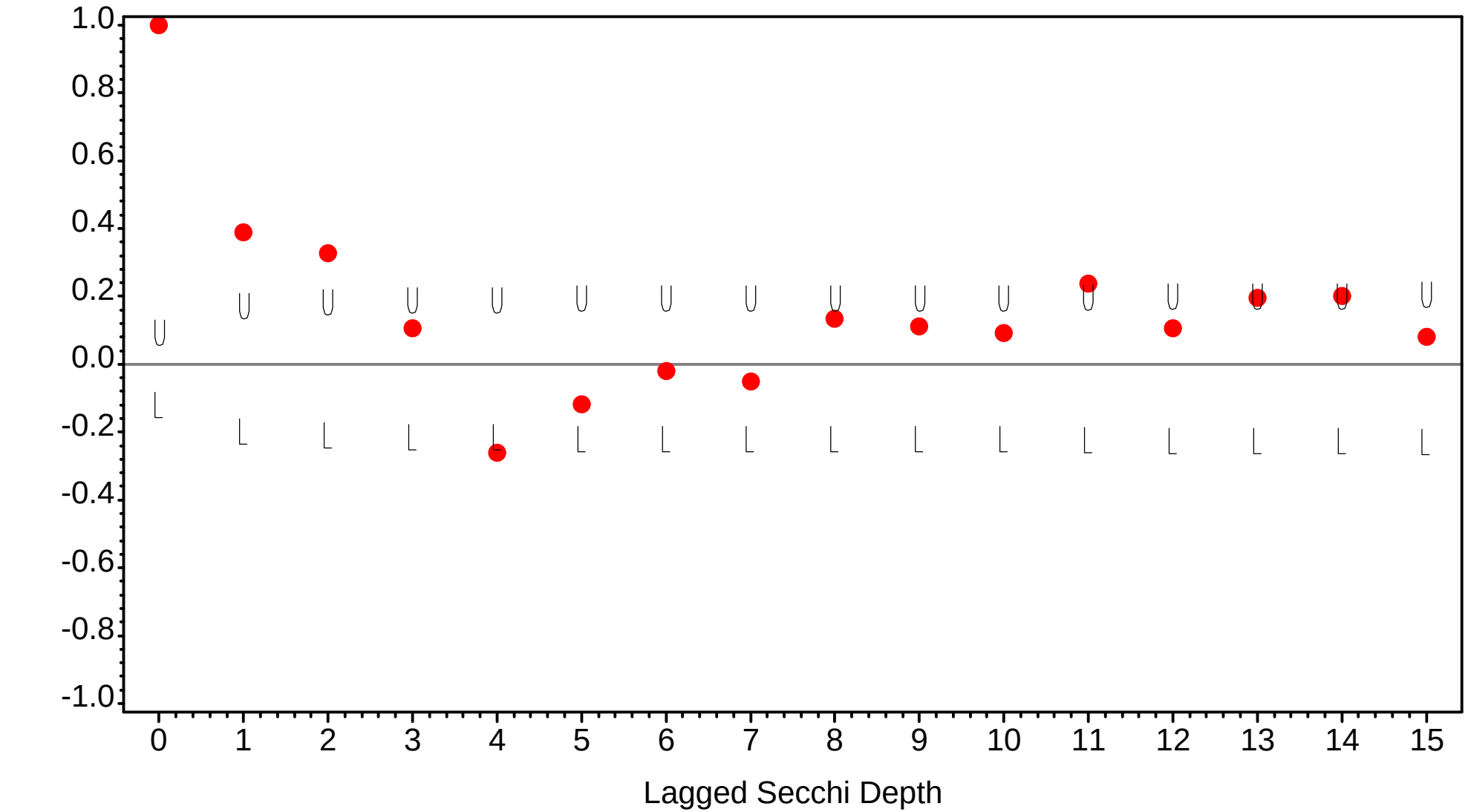


S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.389	0.093	0.186	-0.186
2	0.327	0.097	0.195	-0.195
3	0.107	0.101	0.201	-0.201
4	-0.260	0.101	0.202	-0.202
5	-0.118	0.103	0.206	-0.206
6	-0.021	0.103	0.206	-0.206
7	-0.050	0.103	0.206	-0.206
8	0.134	0.103	0.206	-0.206
9	0.111	0.104	0.207	-0.207
10	0.093	0.104	0.208	-0.208
11	0.237	0.104	0.209	-0.209
12	0.105	0.106	0.212	-0.212
13	0.196	0.106	0.212	-0.212
14	0.202	0.107	0.214	-0.214
15	0.081	0.108	0.217	-0.217

S_21FLVEMDHL03 Trends Appendix

Correlogram for Secchi Depth
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

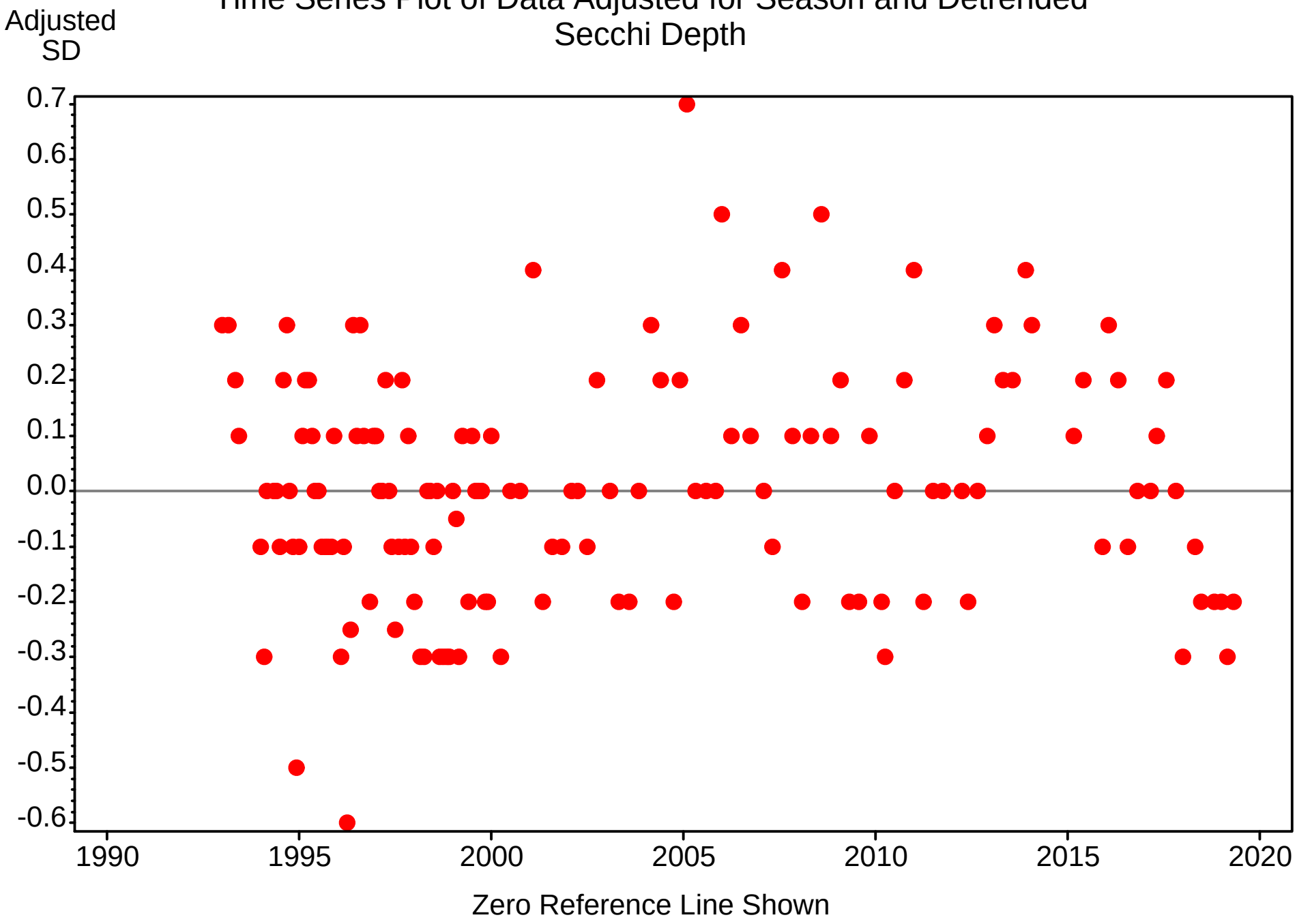
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.066	0.298	0.43	0

S_21FLVEMDHL03 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.066356	0.29797	0.42996	0

S_21FLVEMDHL03 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth



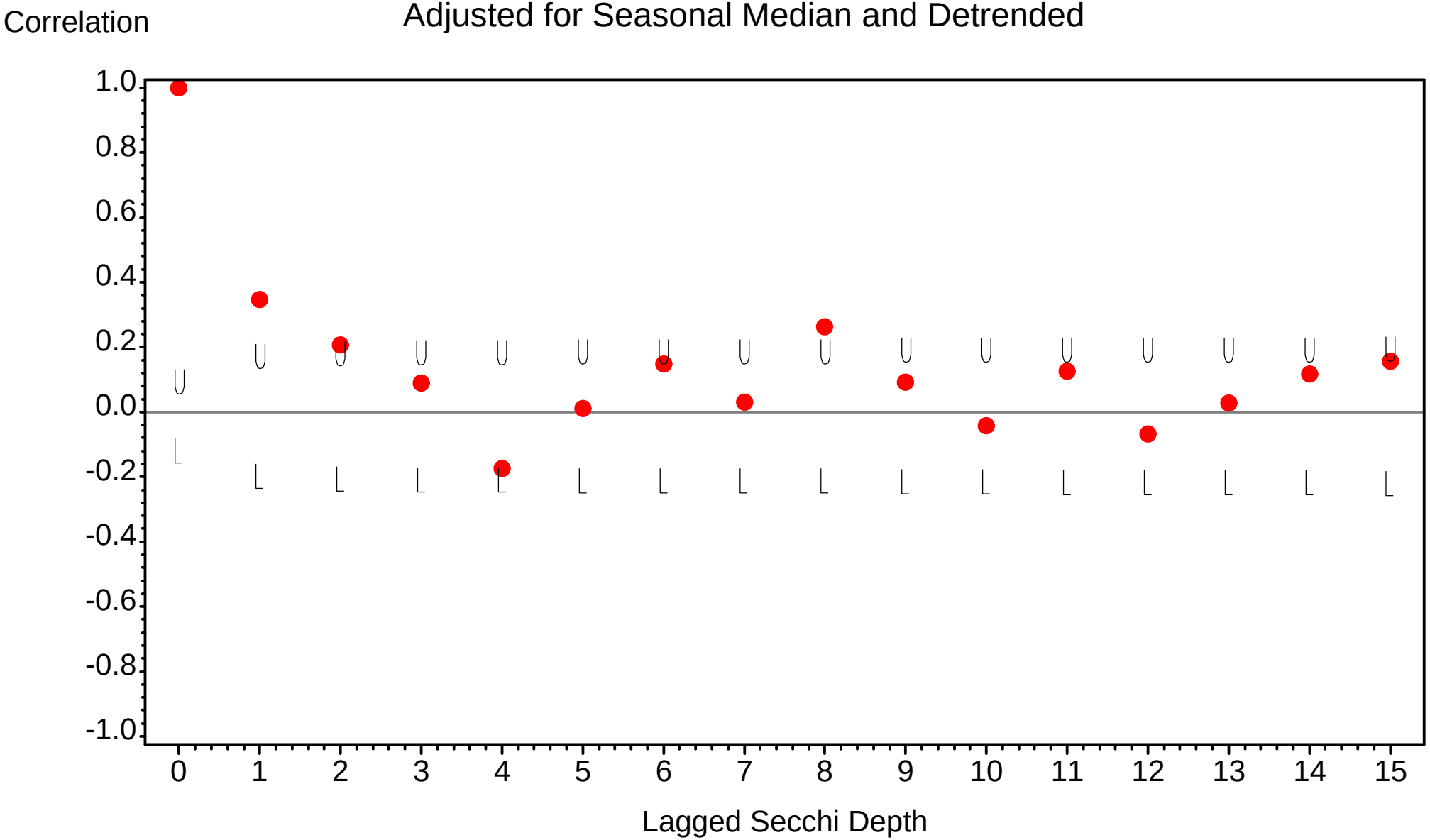
S_21FLVEMDHL03 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.348	0.093	0.186	-0.186
2	0.206	0.097	0.193	-0.193
3	0.088	0.098	0.196	-0.196
4	-0.173	0.098	0.196	-0.196
5	0.011	0.099	0.198	-0.198
6	0.147	0.099	0.198	-0.198
7	0.031	0.100	0.199	-0.199
8	0.262	0.100	0.199	-0.199
9	0.093	0.101	0.203	-0.203
10	-0.043	0.102	0.203	-0.203
11	0.125	0.102	0.204	-0.204
12	-0.069	0.102	0.204	-0.204
13	0.027	0.102	0.205	-0.205
14	0.116	0.102	0.205	-0.205
15	0.157	0.103	0.206	-0.206

S_21FLVEMDHL03 Trends Appendix

Correlogram for Secchi Depth

Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
17	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
18	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
19	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
20	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
21	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
17	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
18	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
19	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
20	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
21	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
17	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
18	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
19	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
20	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
21	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
22	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
23	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28
24	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
25	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23
26	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47
27	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56
28	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
22	1.15	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017
23	0.99	Y	Y	N	N	-0.132	0.057	0.124	-0.001
24	1.38	Y	Y	Y	Y	0.074	0.356	0.527	0.052
25	0.08	N	Y	Y	Y	0.090	0.212	0.347	225.098
26	2.09	Y	N	N	N	-0.099	0.163	0.243	-0.023
27	2.11	Y	N	N	N	0.046	0.549	0.573	0.109
28	0.29	N	Y	Y	Y	0.155	0.028	0.107	0.318

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	-0.14839	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
23	-0.13170	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
24	0.07383	0.35568	0.52706	0.052	0.07383	0.52706	0.052
25	0.08958	0.21156	0.34660	225.098	0.09000	0.34700	225.098
26	-0.09906	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
27	0.04571	0.54949	0.57310	0.109	0.04571	0.54949	0.109
28	0.15482	0.02802	0.10656	0.318	0.15500	0.10700	0.318

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
29	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00
30	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
31	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
32	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
33	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09
34	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
35	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
29	-9999.00	N	Y	N	N	0.192	0.005	0.044	0.011
30	1.04	Y	Y	N	N	-0.161	0.045	0.205	-0.029
31	0.45	N	N	N	N	0.021	0.810	0.860	0.000
32	0.33	N	Y	N	N	0.049	0.531	0.675	0.023
33	0.79	Y	Y	Y	Y	0.017	0.821	0.864	6.873
34	2.35	Y	Y	N	N	-0.022	0.763	0.834	-0.004
35	2.11	Y	Y	Y	Y	0.049	0.487	0.514	0.154

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
29	0.19225	0.00486	0.04449	0.011	0.19200	0.00500	0.011
30	-0.16145	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
31	0.02128	0.80954	0.86021	0.000	0.02100	0.81000	0.000
32	0.04851	0.53077	0.67536	0.023	0.04900	0.53100	0.023
33	0.01671	0.82111	0.86399	6.874	0.01671	0.86399	6.874
34	-0.02159	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
35	0.04892	0.48687	0.51426	0.154	0.04892	0.51426	0.154

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
36	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00
37	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61
38	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
39	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10
40	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
41	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82
42	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
36	0.98	Y	Y	Y	Y	0.070	0.304	0.474	0.025
37	1.08	Y	Y	N	N	0.064	0.330	0.509	0.000
38	1.88	Y	Y	N	N	0.017	0.845	0.901	0.002
39	1.51	Y	Y	Y	Y	0.050	0.519	0.695	0.000
40	-9999.00	N	Y	N	N	0.078	0.299	0.360	0.020
41	1.12	Y	N	Y	N	0.106	0.122	0.158	10.031
42	0.82	Y	Y	N	N	-0.170	0.012	0.092	-0.059

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
36	0.06955	0.30398	0.47368	0.025	0.06955	0.47368	0.025
37	0.06415	0.32954	0.50893	0.000	0.06415	0.32954	0.000
38	0.01724	0.84540	0.90084	0.002	0.01724	0.84540	0.002
39	0.05031	0.51900	0.69540	0.000	0.05031	0.69540	0.000
40	0.07599	0.31036	0.36979	0.020	0.07800	0.29900	0.020
41	0.10598	0.12166	0.15796	10.031	0.10598	0.12166	10.031
42	-0.16974	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
43	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00
44	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73
45	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00
46	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
47	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
48	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
49	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
43	0.70	Y	Y	N	N	-0.175	0.011	0.082	-0.515
44	1.54	Y	N	Y	N	0.092	0.169	0.290	0.004
45	1.54	Y	Y	Y	Y	0.094	0.155	0.427	0.007
46	1.48	Y	Y	N	N	-0.031	0.706	0.812	-0.002
47	-9999.00	N	N	N	N	-0.023	0.786	0.871	0.000
48	0.44	N	Y	N	N	-0.142	0.074	0.219	-0.011
49	-9999.00	N	N	Y	N	0.085	0.243	0.291	2.029

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
43	-0.17479	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
44	0.09207	0.16857	0.29012	0.004	0.09207	0.16857	0.004
45	0.09387	0.15479	0.42738	0.007	0.09387	0.42738	0.007
46	-0.03145	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
47	-0.02254	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
48	-0.14223	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011
49	0.08500	0.24287	0.29095	2.029	0.08500	0.24300	2.029

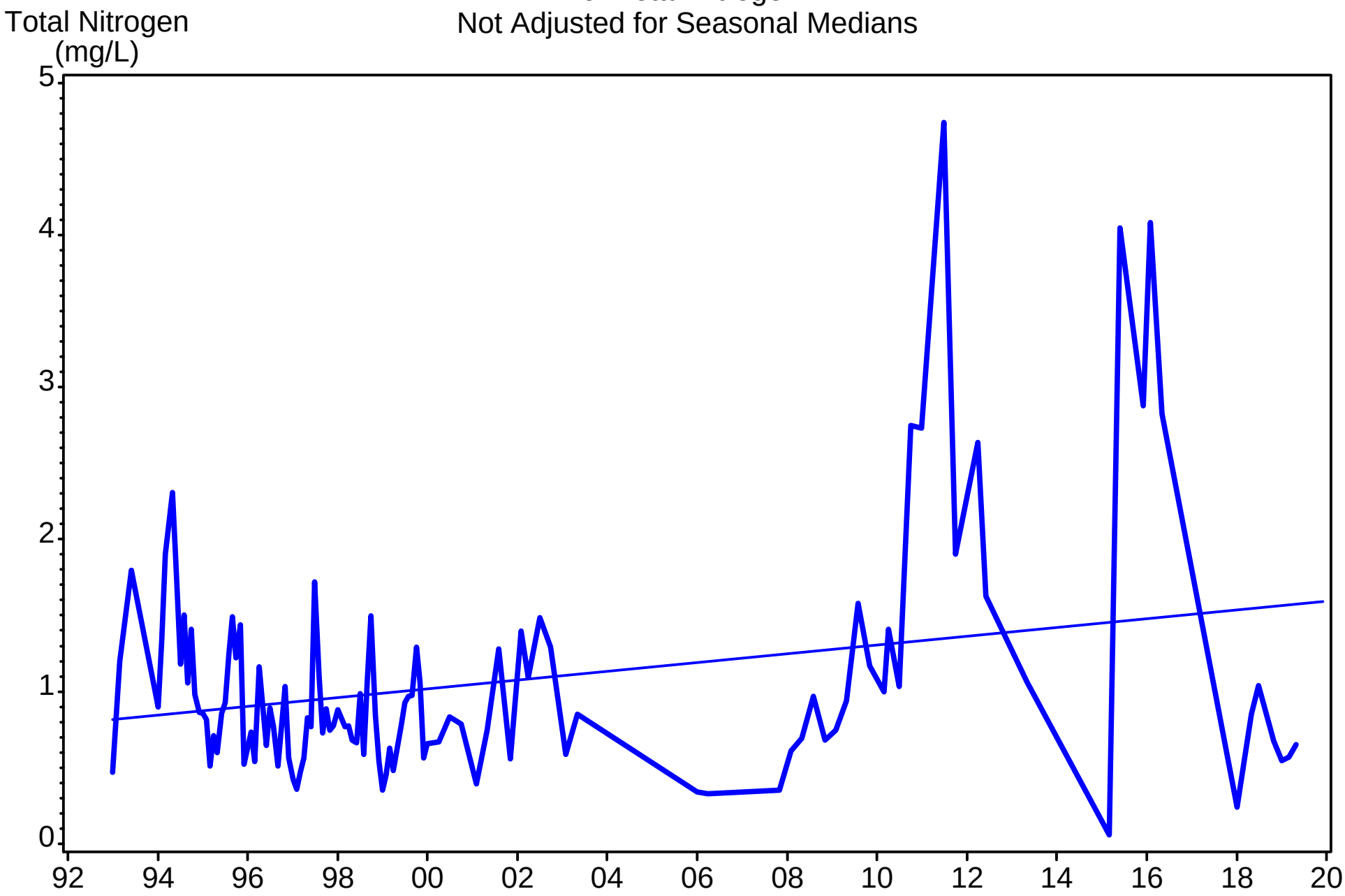
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
50	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42
51	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81
52	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00
53	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00
54	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
55	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
50	2.33	Y	Y	N	N	-0.040	0.591	0.737	-0.008
51	1.77	Y	Y	N	N	0.027	0.725	0.823	0.034
52	-9999.00	N	Y	Y	Y	0.123	0.076	0.159	0.001
53	0.68	Y	Y	N	N	0.194	0.005	0.046	0.009
54	0.31	N	Y	N	N	-0.241	0.003	0.076	-0.016
55	-9999.00	N	N	N	N	0.040	0.632	0.786	0.000

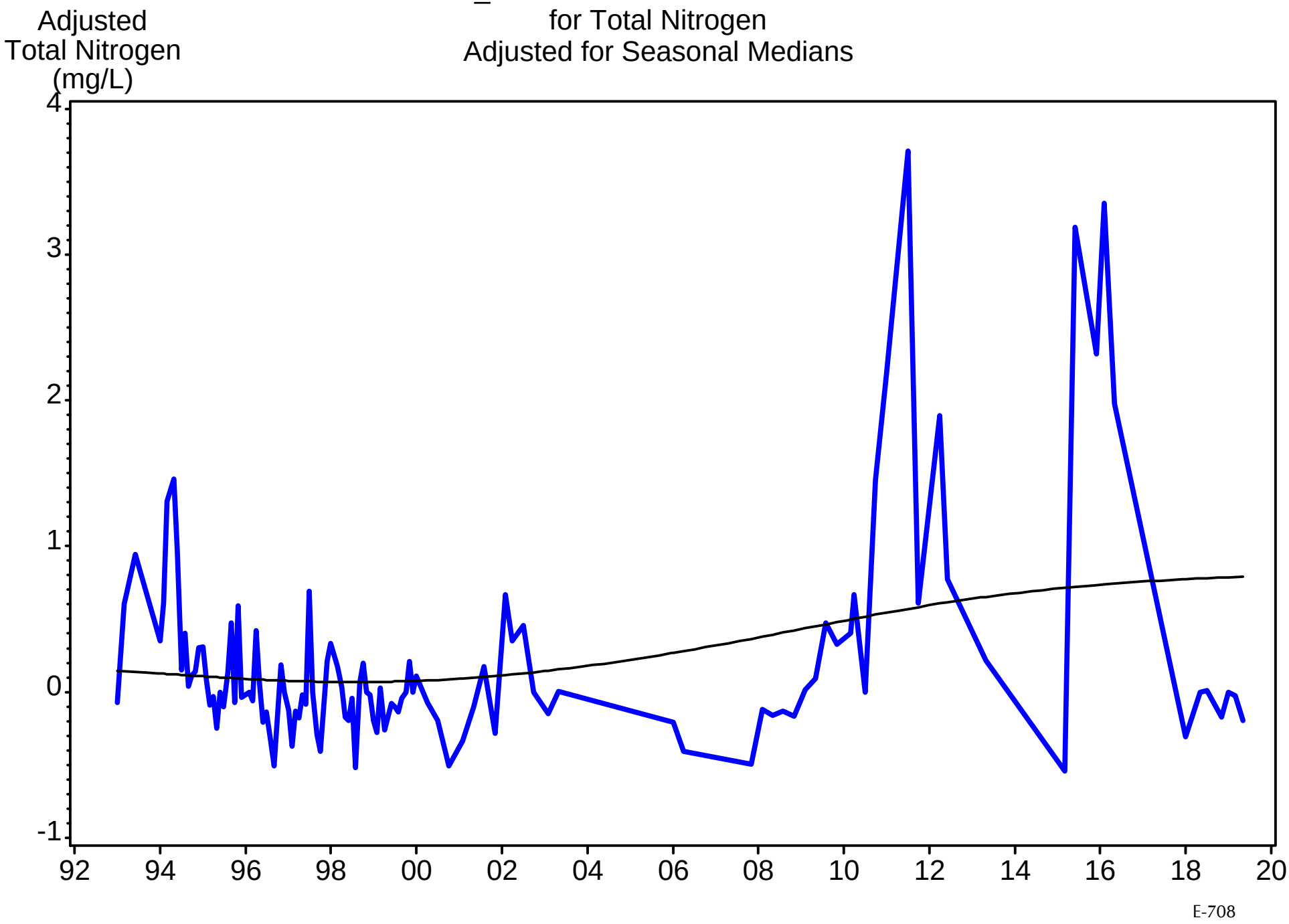
Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
50	-0.03968	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008
51	0.02716	0.72528	0.82342	0.034	0.02716	0.72528	0.034
52	0.12322	0.07617	0.15857	0.001	0.12300	0.15900	0.001
53	0.19383	0.00462	0.04647	0.009	0.19383	0.00462	0.009
54	-0.24070	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
55	0.04009	0.63152	0.78567	0.000	0.04000	0.63200	0.000

S_21FLVEMDHL04 Trends

S_21FLVEMDHL04 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLVEMDHL04 Trends

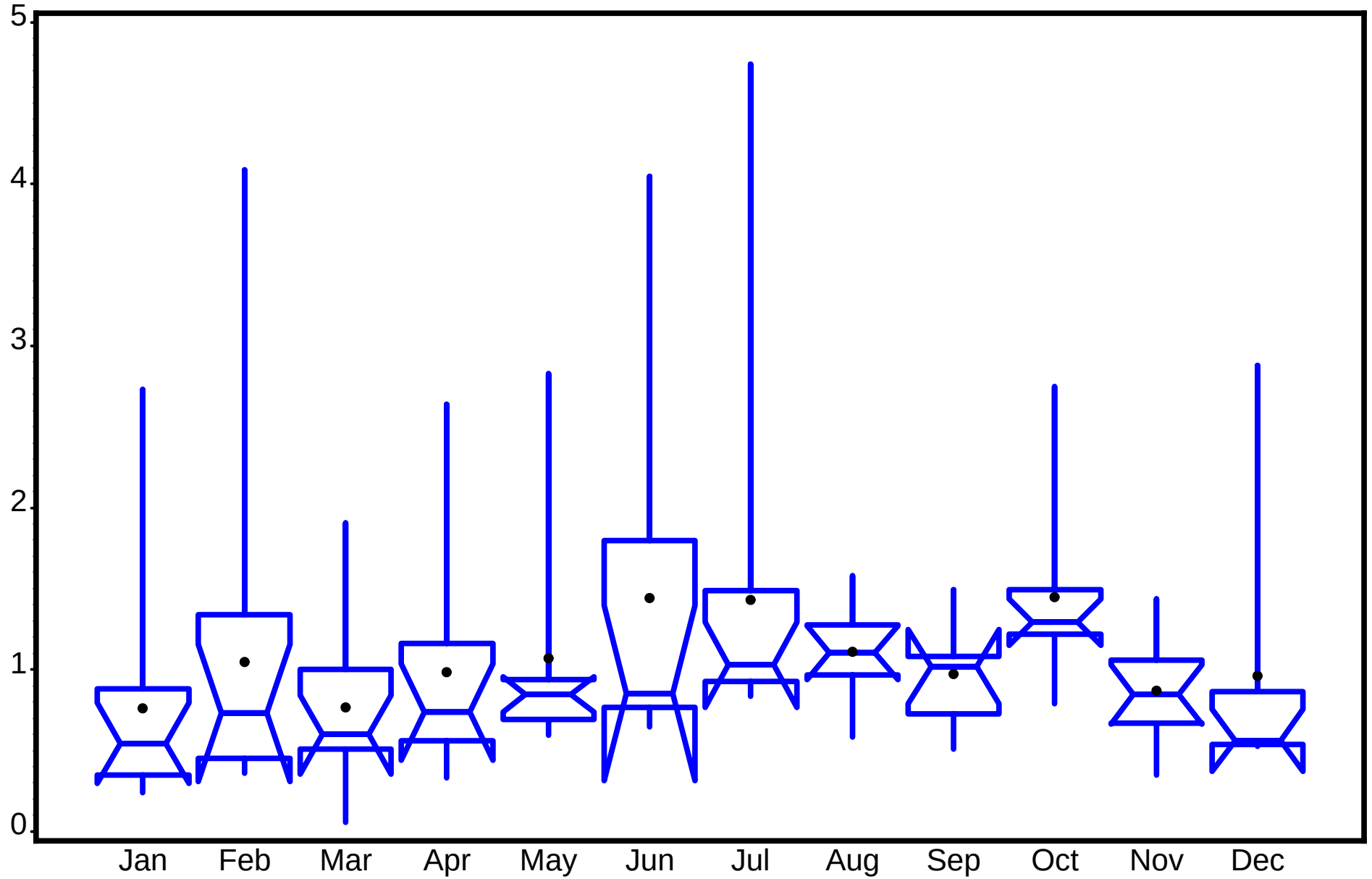


S_21FLVEMDHL04 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



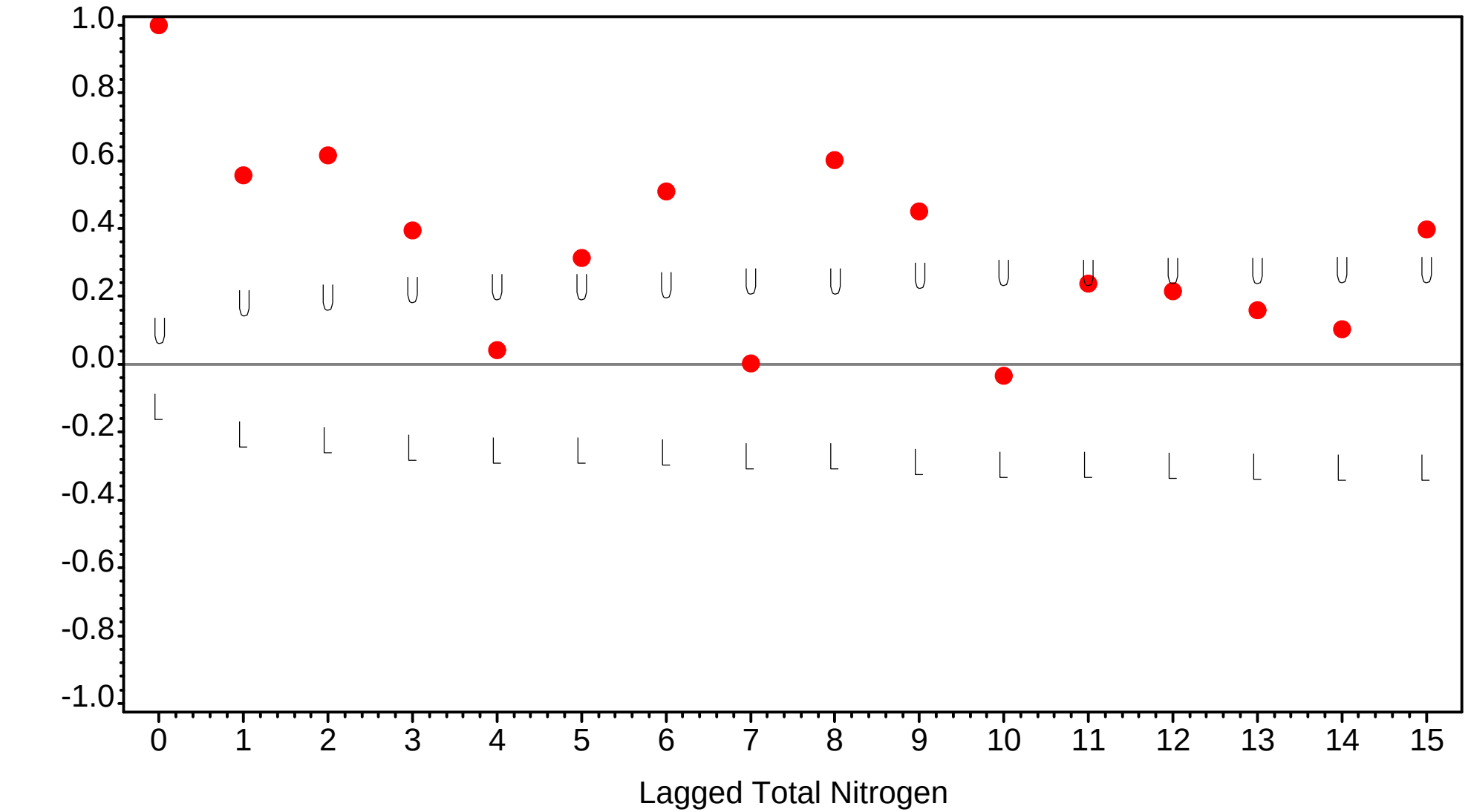
S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.557	0.096	0.192	-0.192
2	0.616	0.106	0.211	-0.211
3	0.394	0.116	0.233	-0.233
4	0.041	0.120	0.241	-0.241
5	0.312	0.120	0.241	-0.241
6	0.510	0.123	0.246	-0.246
7	0.003	0.129	0.258	-0.258
8	0.601	0.129	0.258	-0.258
9	0.451	0.138	0.275	-0.275
10	-0.035	0.142	0.284	-0.284
11	0.238	0.142	0.284	-0.284
12	0.216	0.143	0.287	-0.287
13	0.159	0.144	0.289	-0.289
14	0.102	0.145	0.290	-0.290
15	0.397	0.145	0.290	-0.290

S_21FLVEMDHL04 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

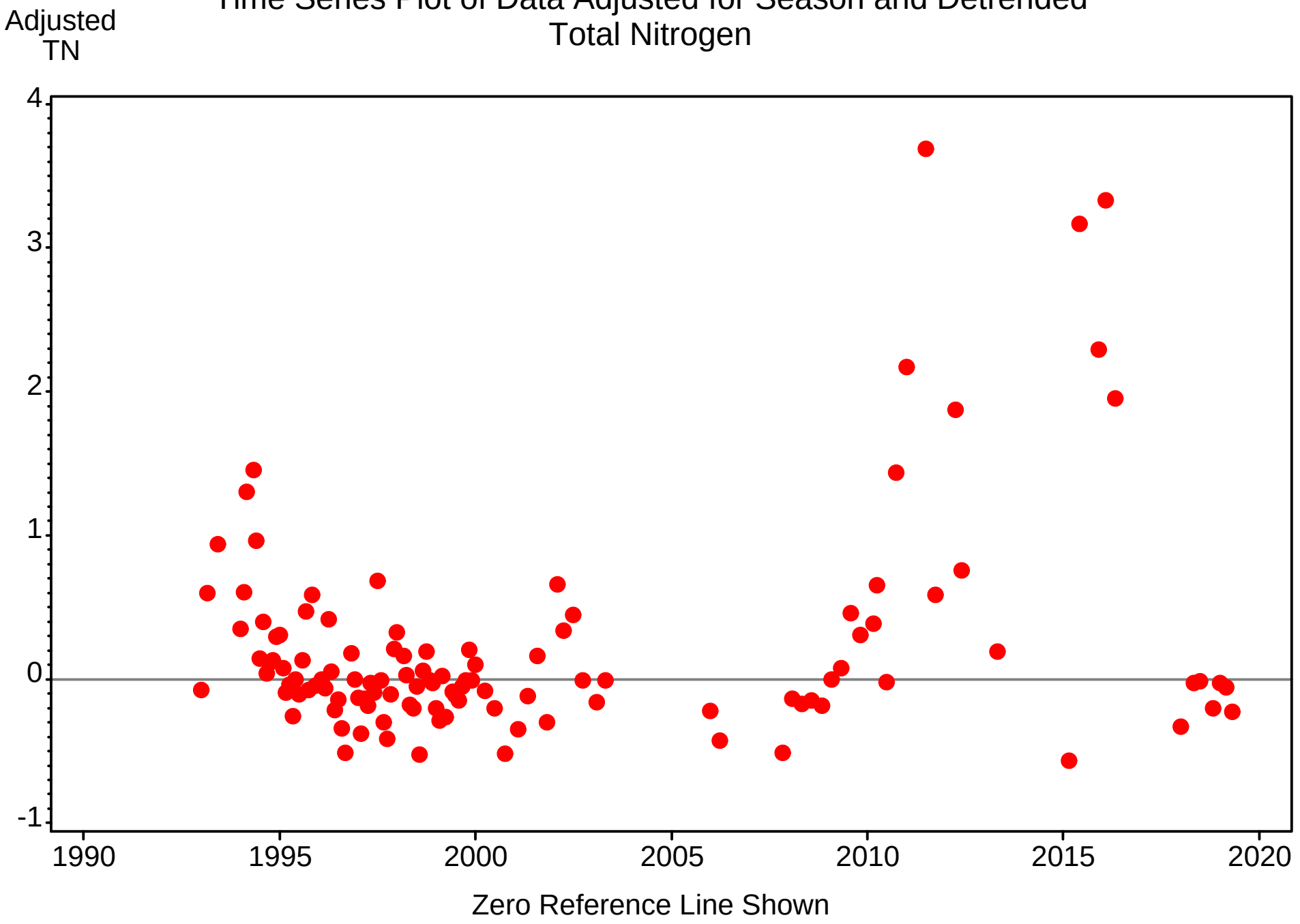
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.015	0.858	0.907	.001

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.015038	0.85776	0.90700	.000990842

S_21FLVEMDHL04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



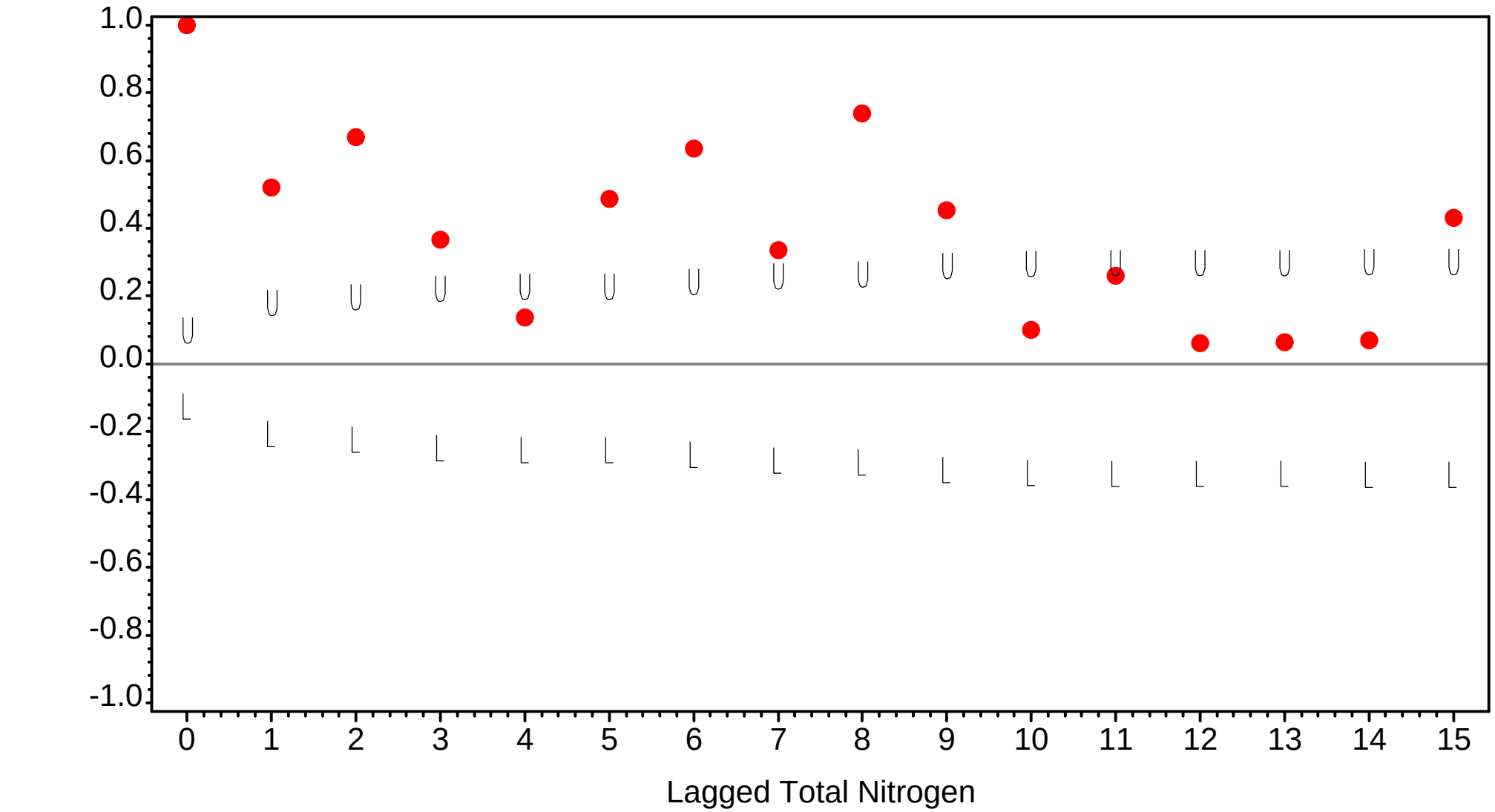
S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.521	0.096	0.192	-0.192
2	0.668	0.105	0.209	-0.209
3	0.365	0.117	0.234	-0.234
4	0.138	0.120	0.241	-0.241
5	0.486	0.121	0.242	-0.242
6	0.634	0.127	0.254	-0.254
7	0.336	0.136	0.272	-0.272
8	0.740	0.139	0.278	-0.278
9	0.452	0.150	0.301	-0.301
10	0.099	0.155	0.309	-0.309
11	0.259	0.155	0.310	-0.310
12	0.060	0.156	0.312	-0.312
13	0.064	0.156	0.312	-0.312
14	0.070	0.156	0.313	-0.313
15	0.430	0.156	0.313	-0.313

S_21FLVEMDHL04 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

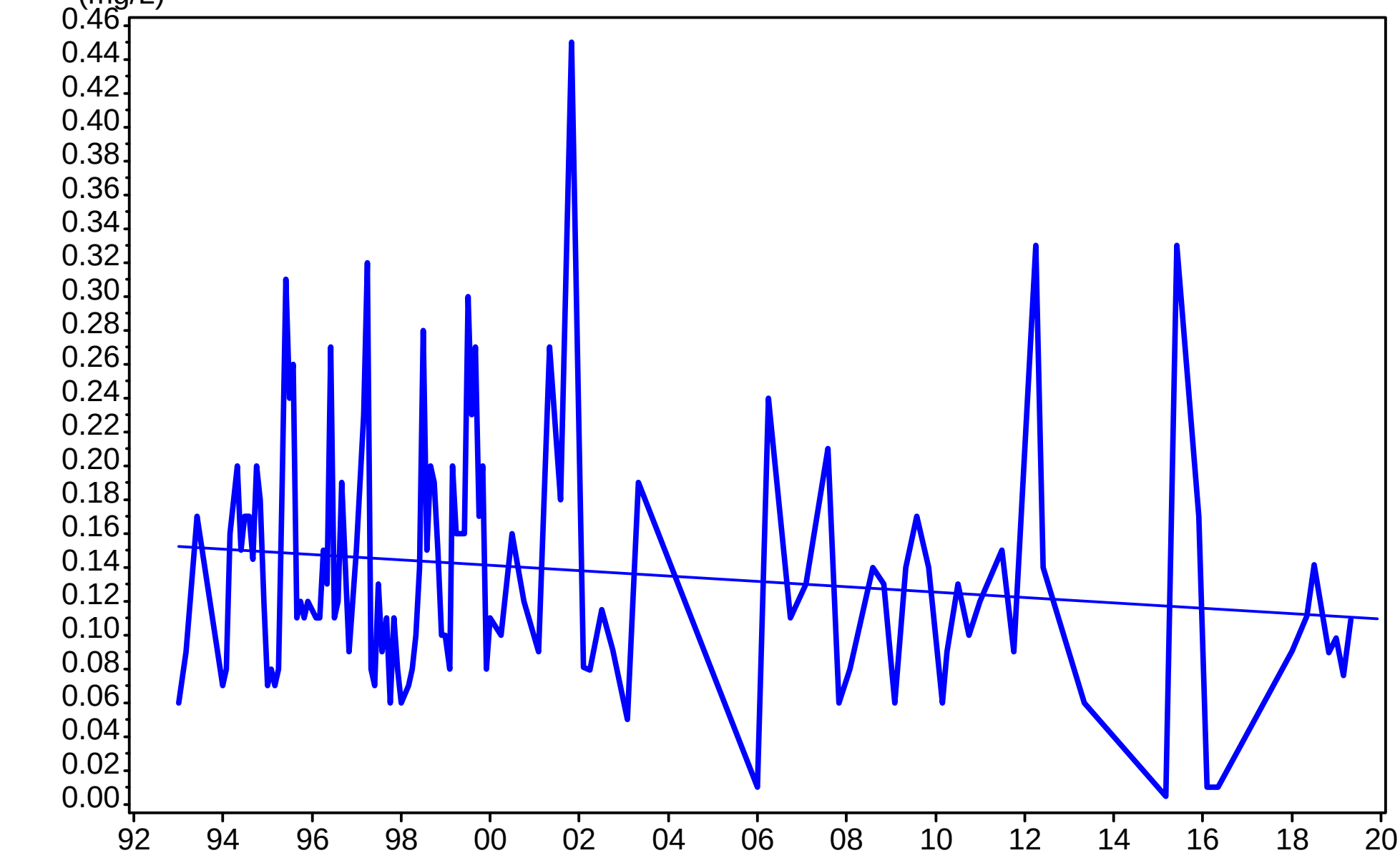


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

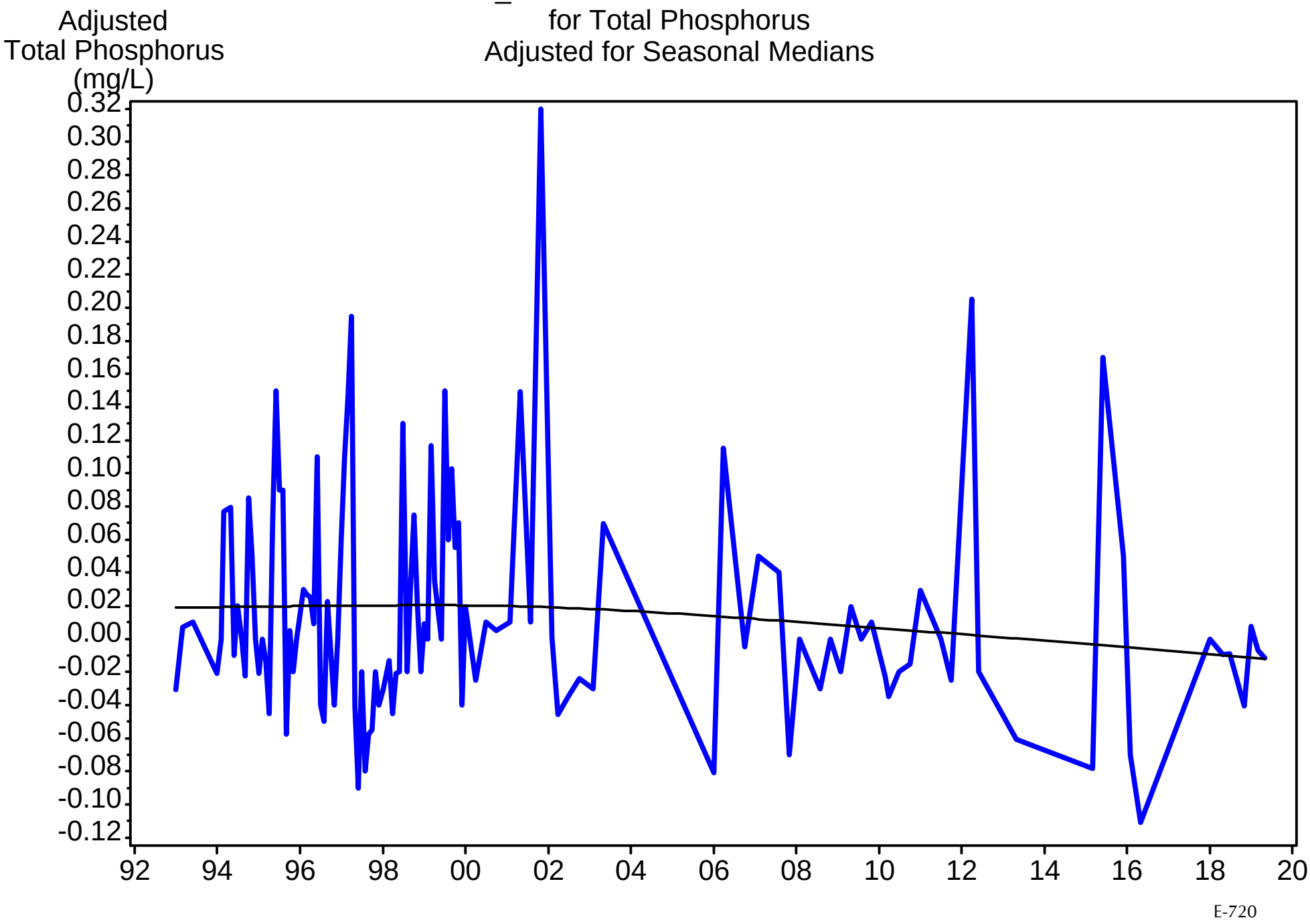
Zero Reference Line Shown

S_21FLVEMDHL04 Trends

S_21FLVEMDHL04 Monthly Data Time Series for Total Phosphorus Not Adjusted for Seasonal Medians



S_21FLVEMDHL04 Trends

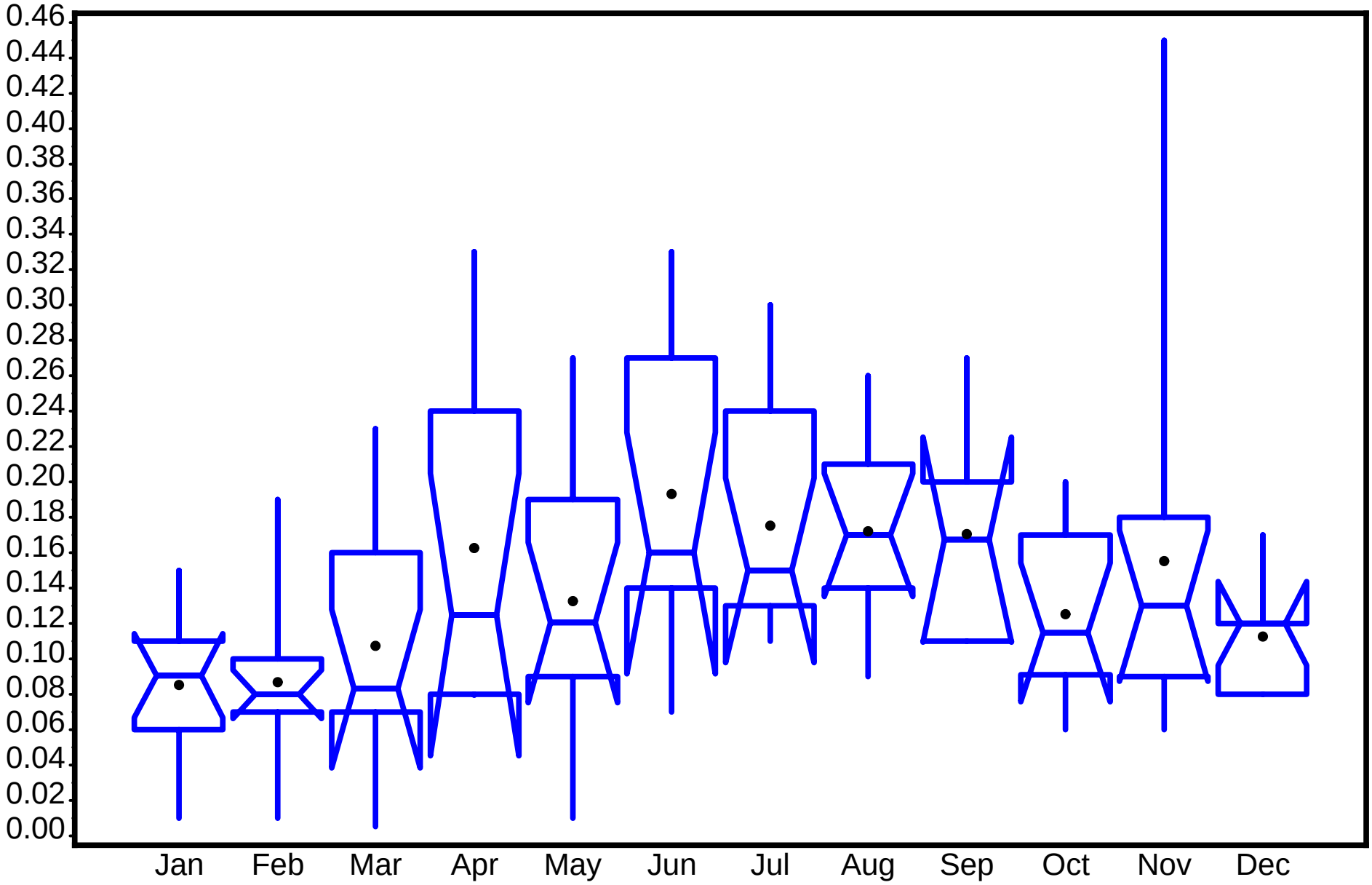


S_21FLVEMDHL04 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)

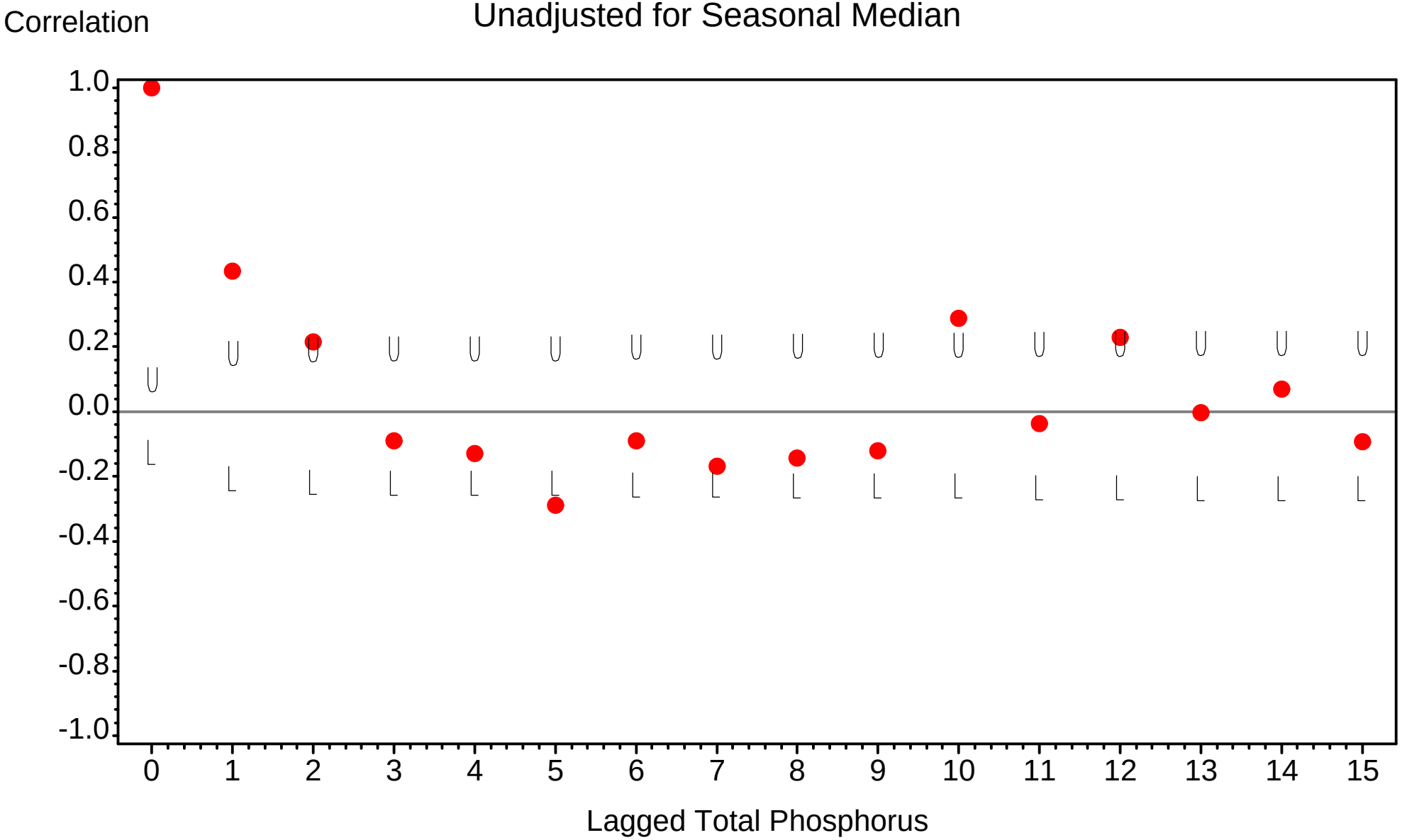


S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.434	0.096	0.192	-0.192
2	0.216	0.102	0.204	-0.204
3	-0.091	0.103	0.207	-0.207
4	-0.130	0.104	0.207	-0.207
5	-0.288	0.104	0.208	-0.208
6	-0.091	0.107	0.213	-0.213
7	-0.168	0.107	0.214	-0.214
8	-0.143	0.108	0.215	-0.215
9	-0.121	0.108	0.217	-0.217
10	0.287	0.109	0.217	-0.217
11	-0.036	0.111	0.222	-0.222
12	0.229	0.111	0.222	-0.222
13	-0.002	0.113	0.225	-0.225
14	0.070	0.113	0.225	-0.225
15	-0.094	0.113	0.225	-0.225

S_21FLVEMDHL04 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

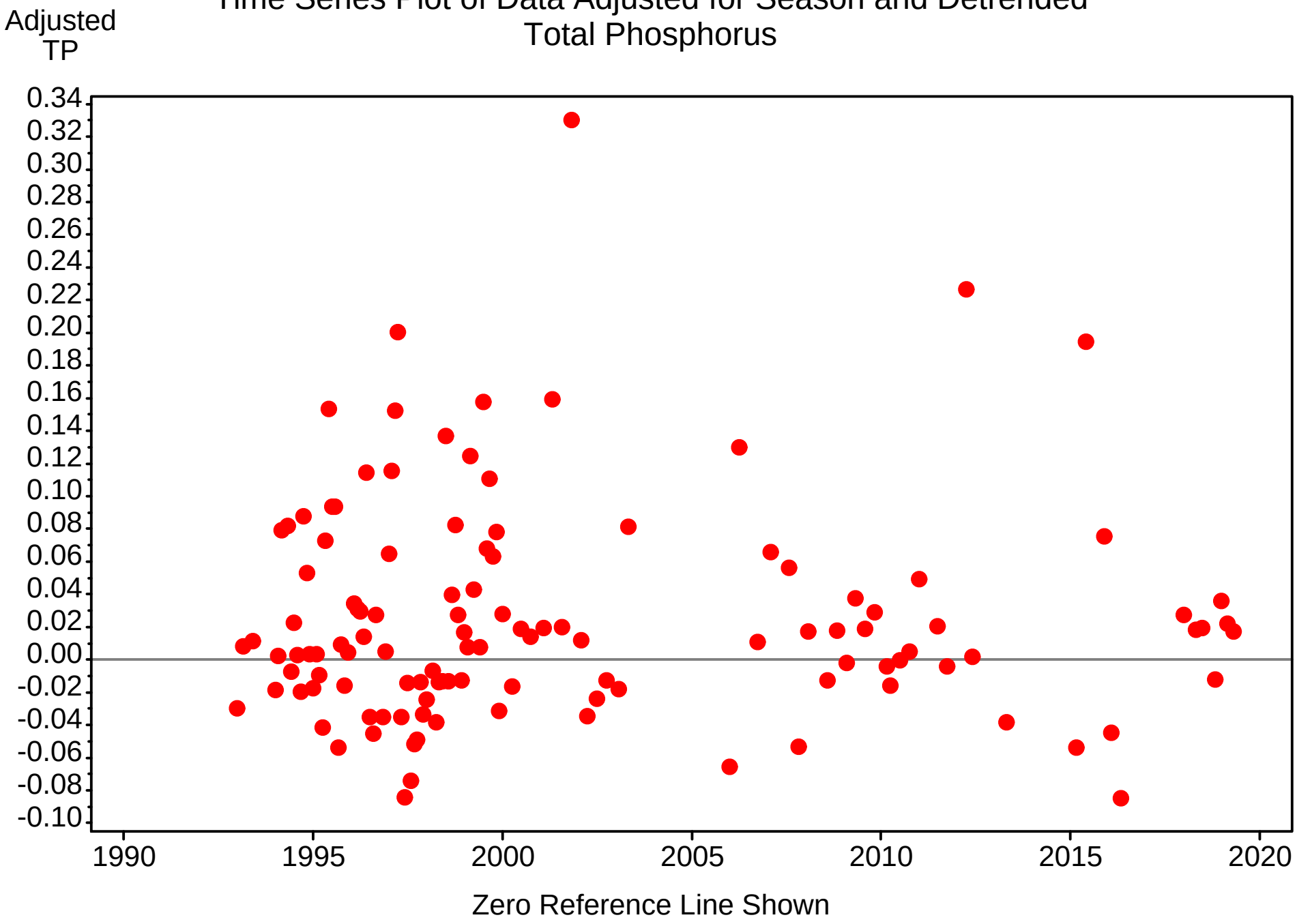
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.115	0.116	0.16	-.001

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.12022	0.099898	0.14340	-.00105556

S_21FLVEMDHL04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

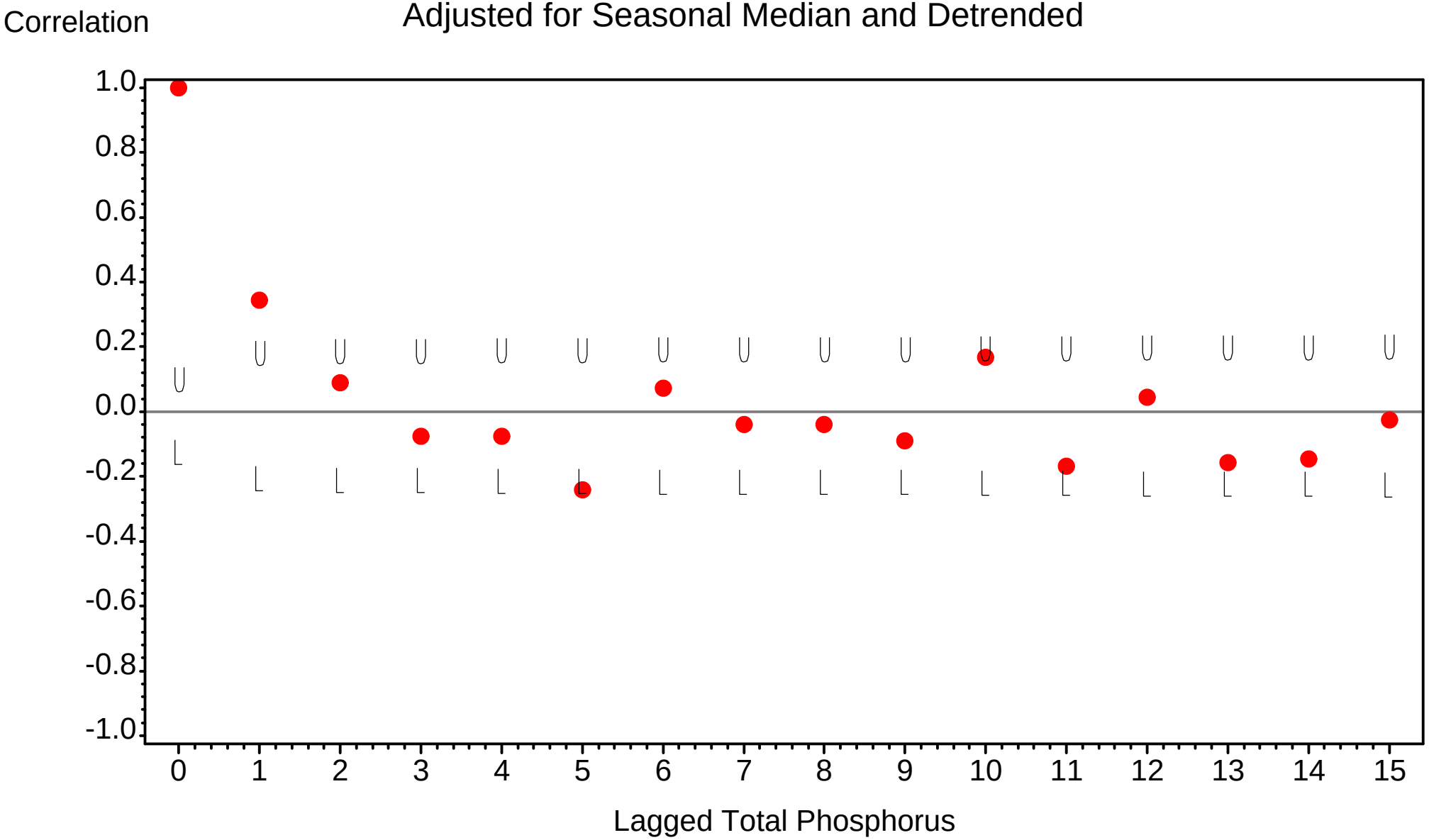


S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.343	0.096	0.192	-0.192
2	0.088	0.100	0.200	-0.200
3	-0.077	0.100	0.200	-0.200
4	-0.077	0.100	0.201	-0.201
5	-0.241	0.101	0.201	-0.201
6	0.073	0.102	0.205	-0.205
7	-0.040	0.102	0.205	-0.205
8	-0.040	0.102	0.205	-0.205
9	-0.091	0.103	0.205	-0.205
10	0.167	0.103	0.206	-0.206
11	-0.169	0.104	0.207	-0.207
12	0.045	0.104	0.209	-0.209
13	-0.158	0.105	0.209	-0.209
14	-0.145	0.105	0.211	-0.211
15	-0.027	0.106	0.212	-0.212

S_21FLVEMDHL04 Trends Appendix

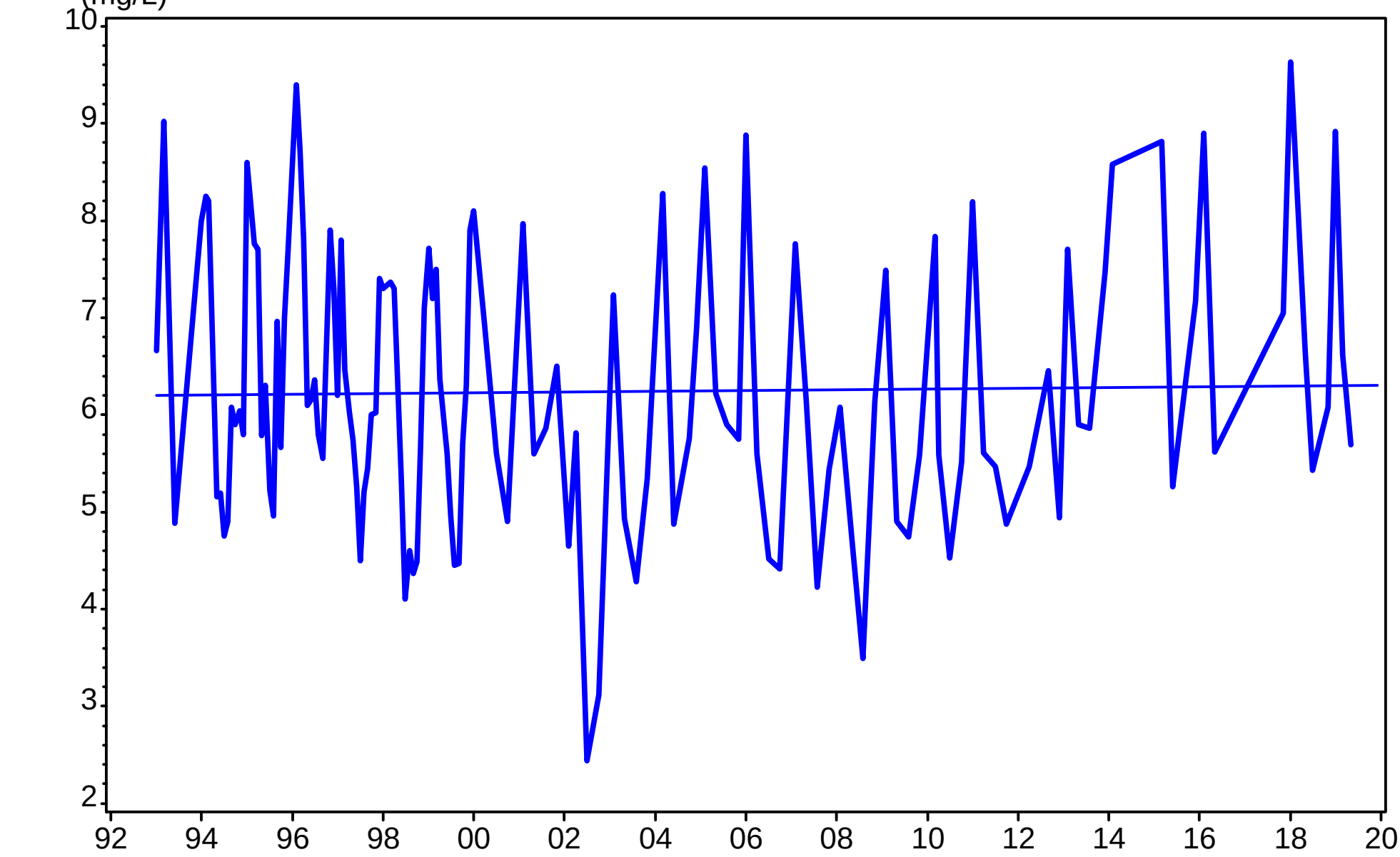
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



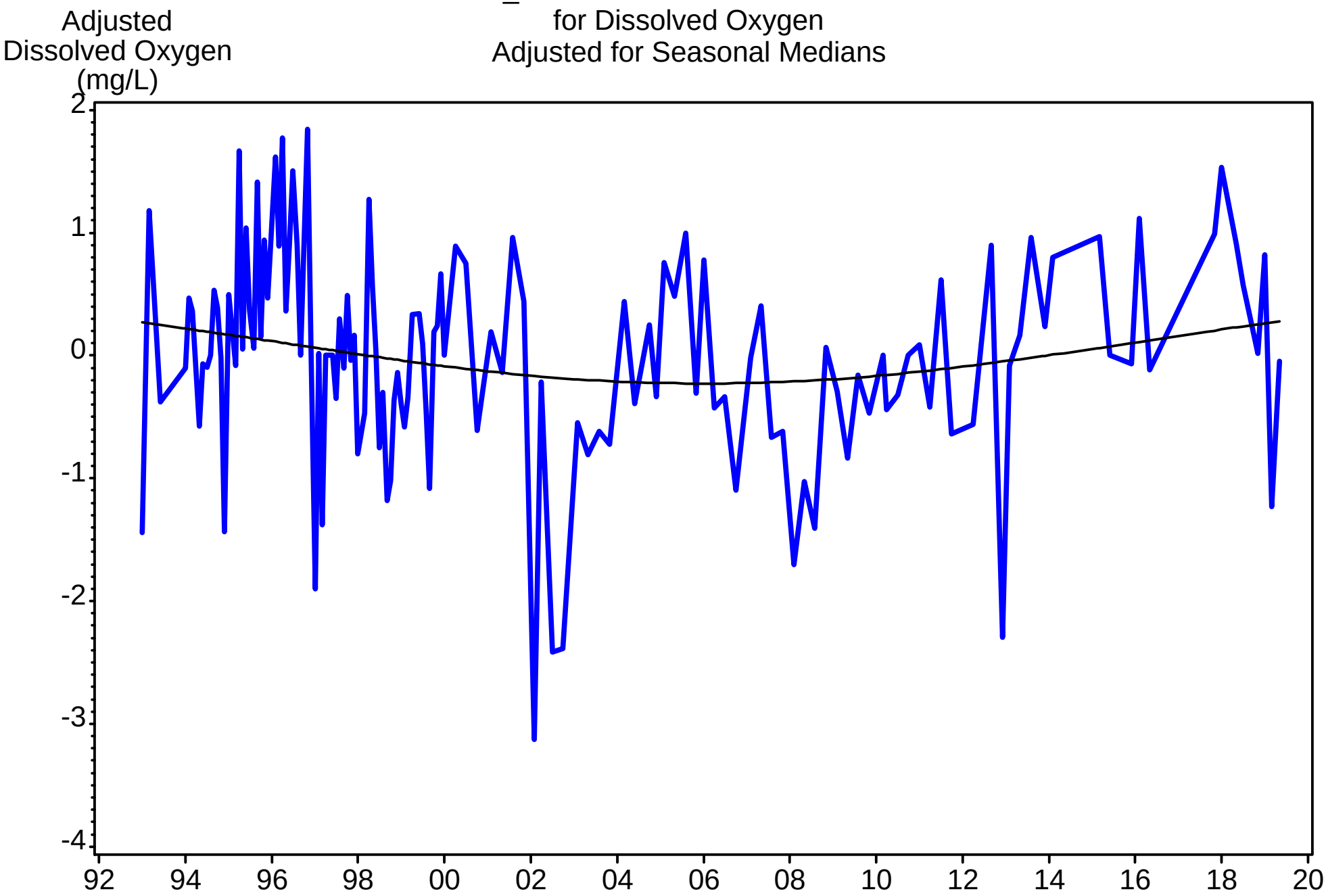
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL04 Trends

S_21FLVEMDHL04 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLVEMDHL04 Trends

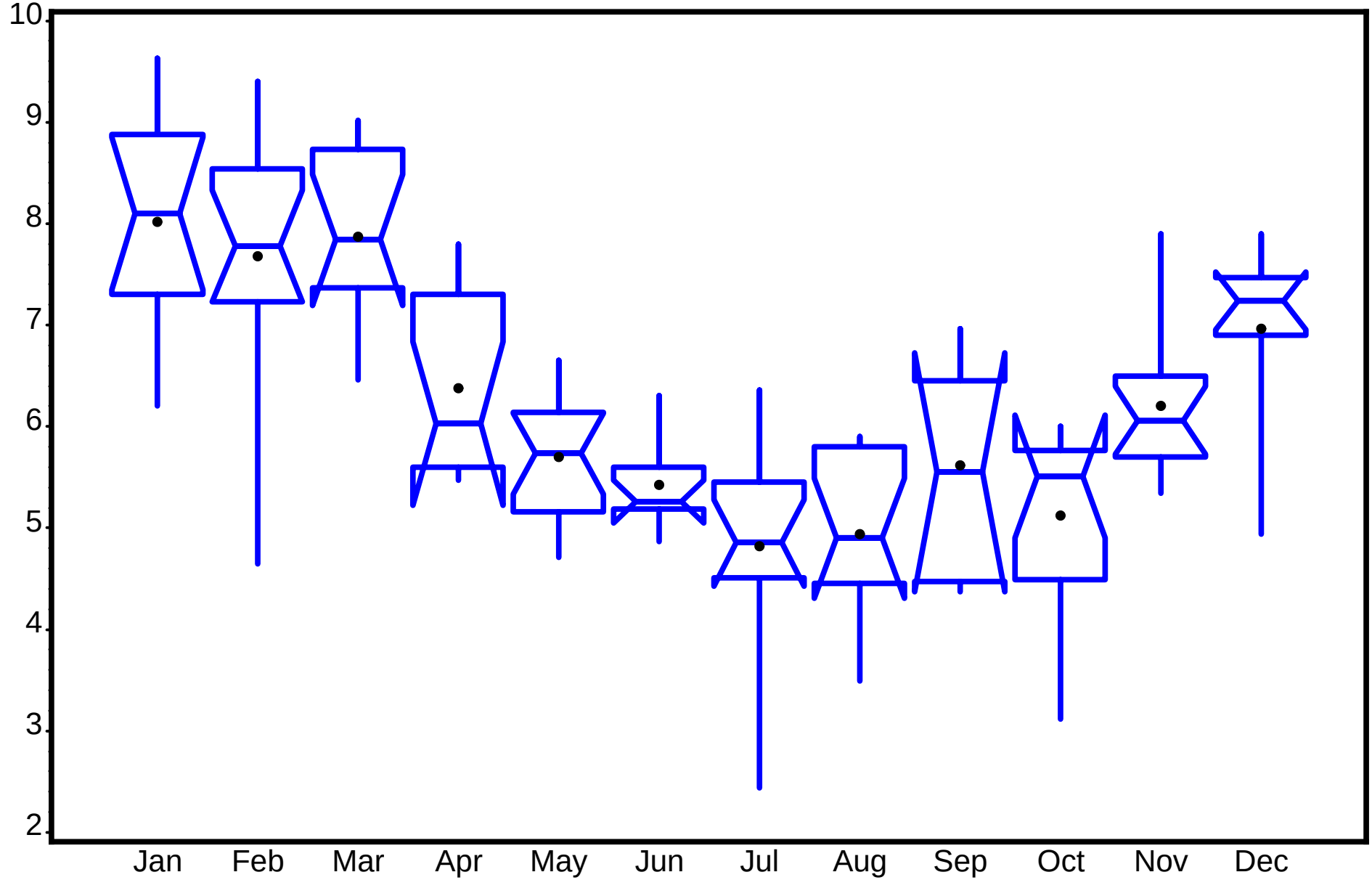


S_21FLVEMDHL04 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



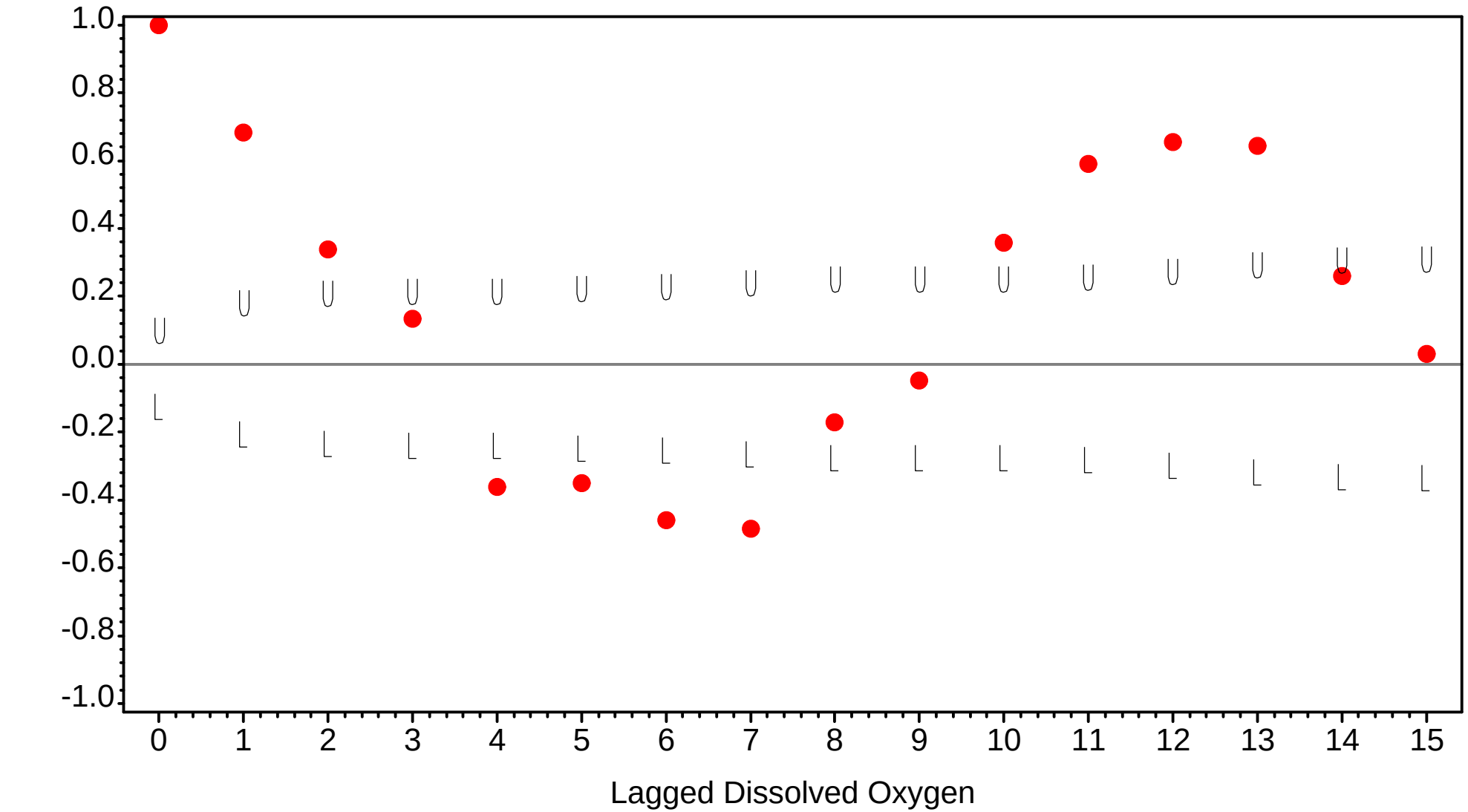
S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.682	0.096	0.192	-0.192
2	0.339	0.110	0.220	-0.220
3	0.135	0.113	0.227	-0.227
4	-0.361	0.114	0.228	-0.228
5	-0.351	0.117	0.235	-0.235
6	-0.459	0.120	0.241	-0.241
7	-0.484	0.126	0.252	-0.252
8	-0.170	0.131	0.263	-0.263
9	-0.047	0.132	0.264	-0.264
10	0.357	0.132	0.264	-0.264
11	0.590	0.135	0.270	-0.270
12	0.655	0.143	0.286	-0.286
13	0.643	0.152	0.304	-0.304
14	0.261	0.160	0.320	-0.320
15	0.031	0.161	0.323	-0.323

S_21FLVEMDHL04 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

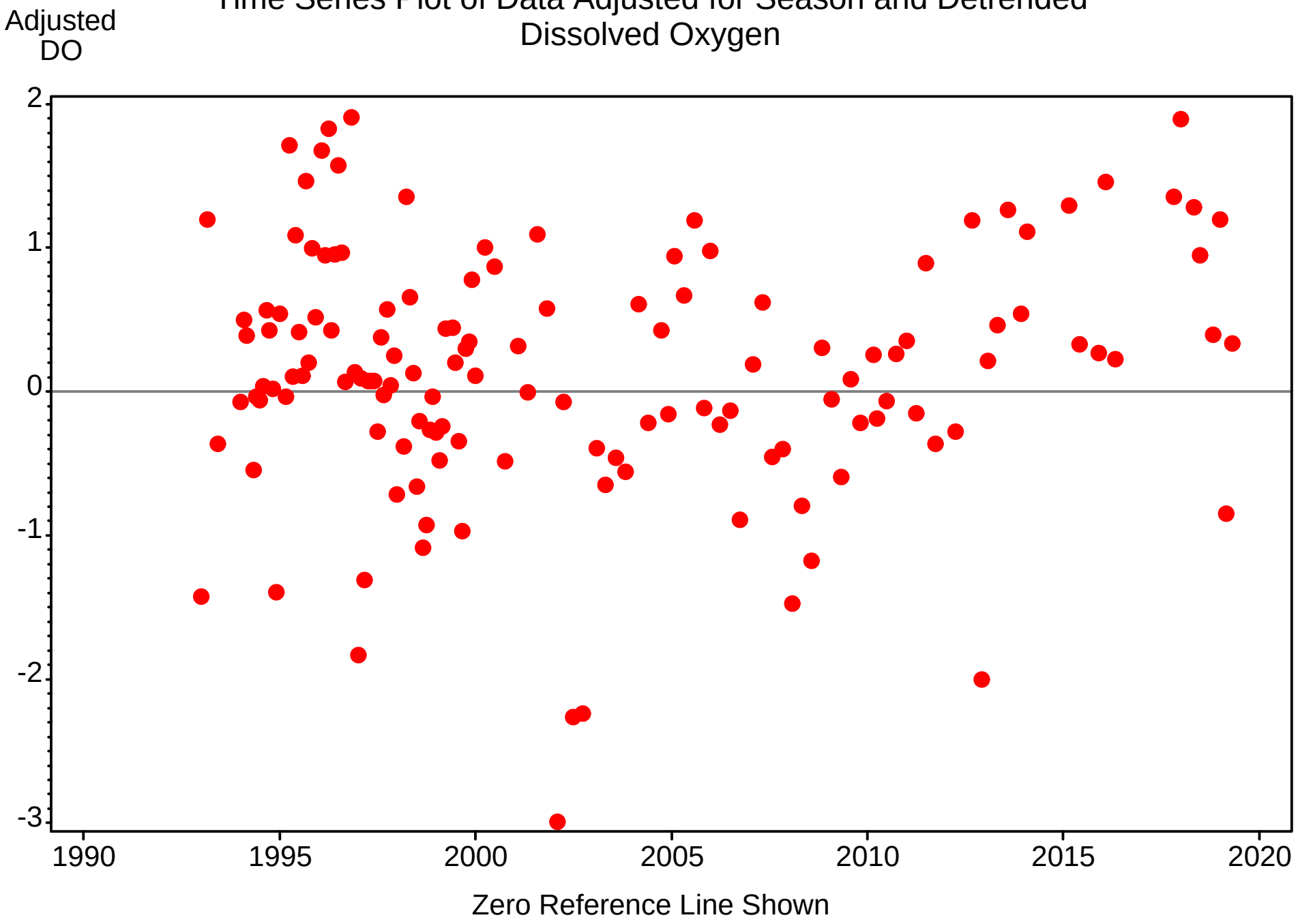
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.084	0.213	0.418	-0.014

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.083665	0.21280	0.41808	-0.014

S_21FLVEMDHL04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

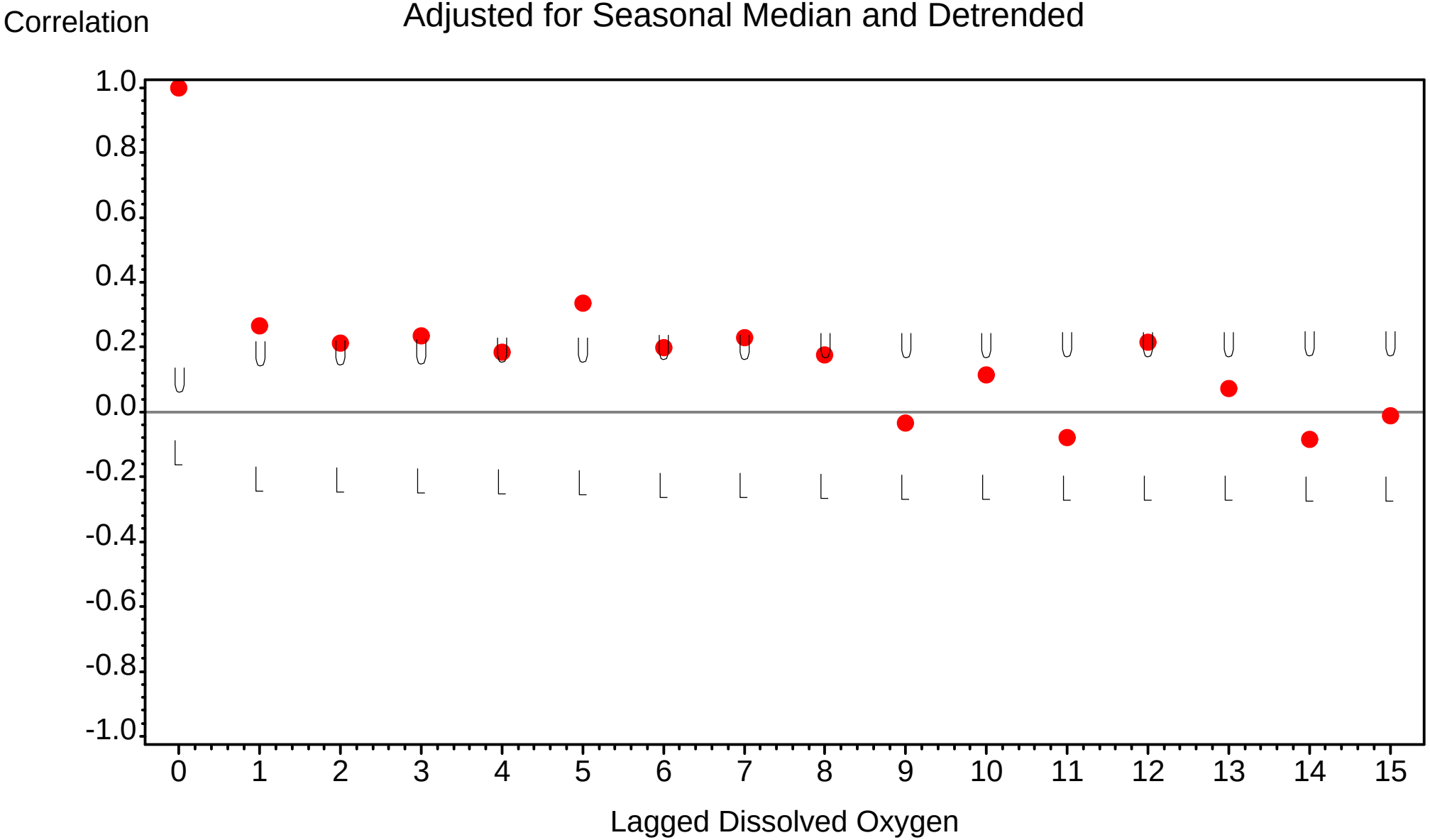


S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.265	0.096	0.192	-0.192
2	0.211	0.098	0.197	-0.197
3	0.235	0.100	0.200	-0.200
4	0.184	0.102	0.203	-0.203
5	0.335	0.103	0.205	-0.205
6	0.197	0.106	0.212	-0.212
7	0.229	0.107	0.214	-0.214
8	0.177	0.108	0.217	-0.217
9	-0.035	0.109	0.219	-0.219
10	0.115	0.109	0.219	-0.219
11	-0.080	0.110	0.220	-0.220
12	0.215	0.110	0.220	-0.220
13	0.071	0.111	0.222	-0.222
14	-0.085	0.111	0.223	-0.223
15	-0.011	0.112	0.223	-0.223

S_21FLVEMDHL04 Trends Appendix

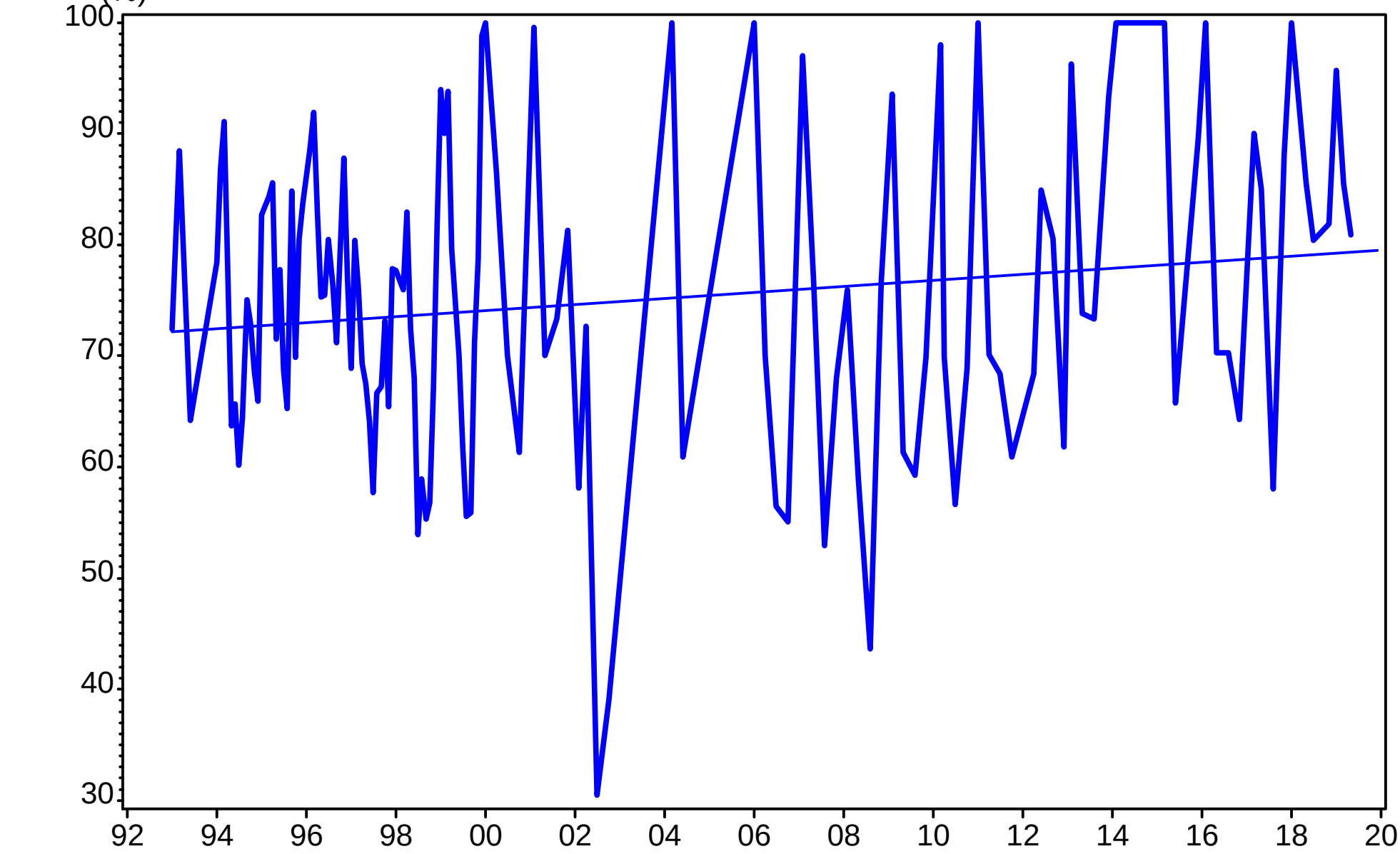
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



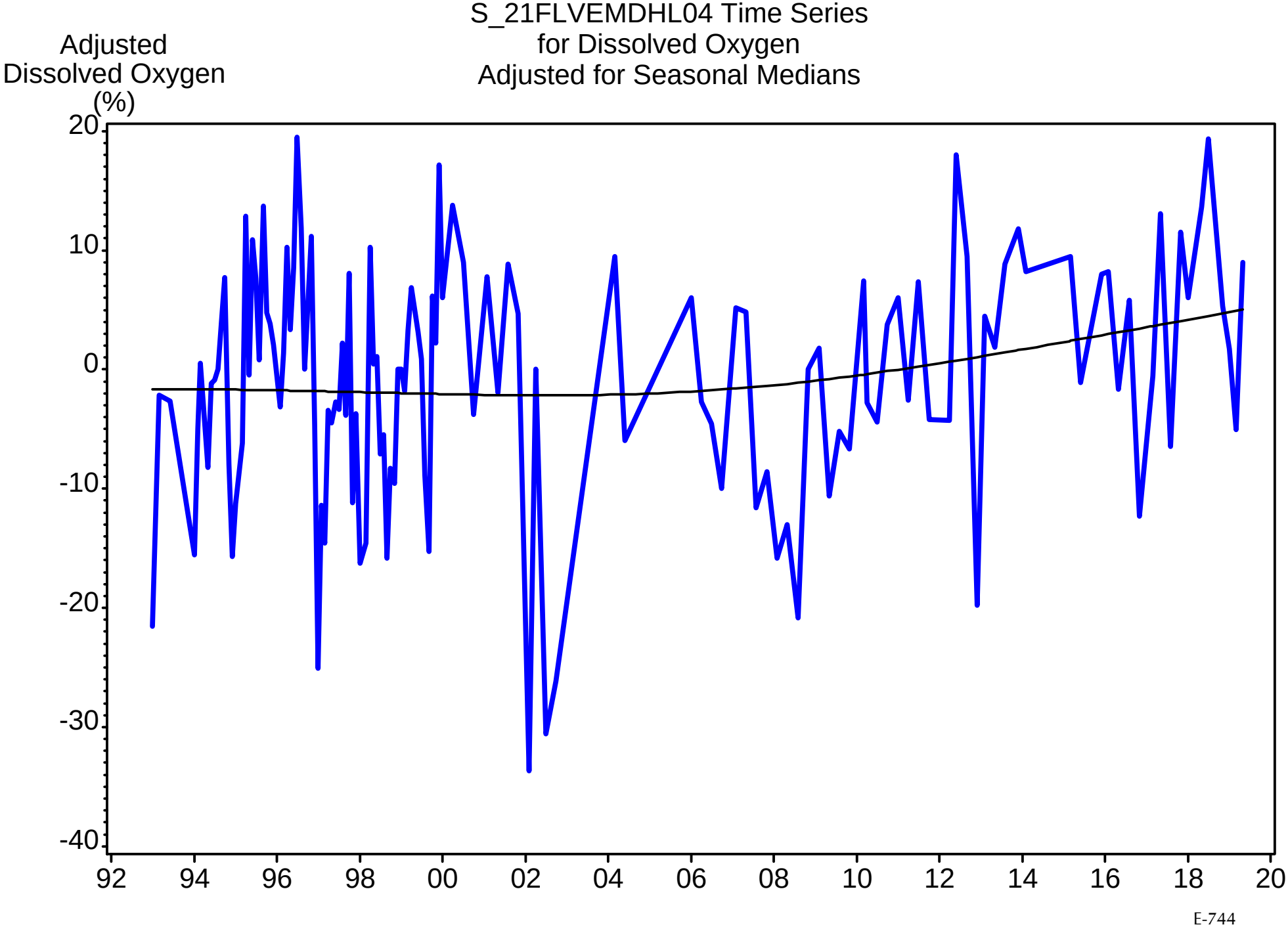
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL04 Trends

S_21FLVEMDHL04 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



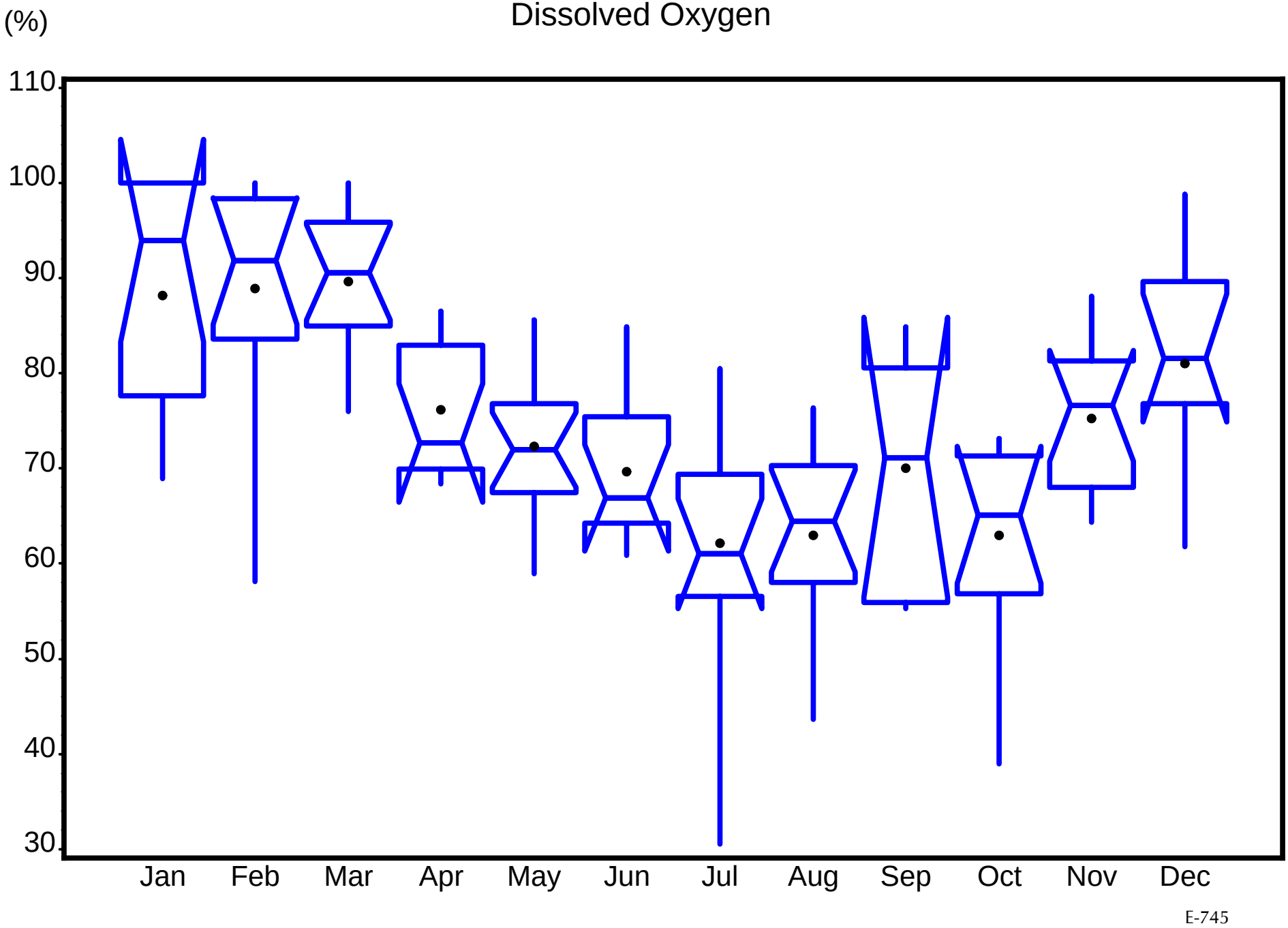
S_21FLVEMDHL04 Trends



S_21FLVEMDHL04 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



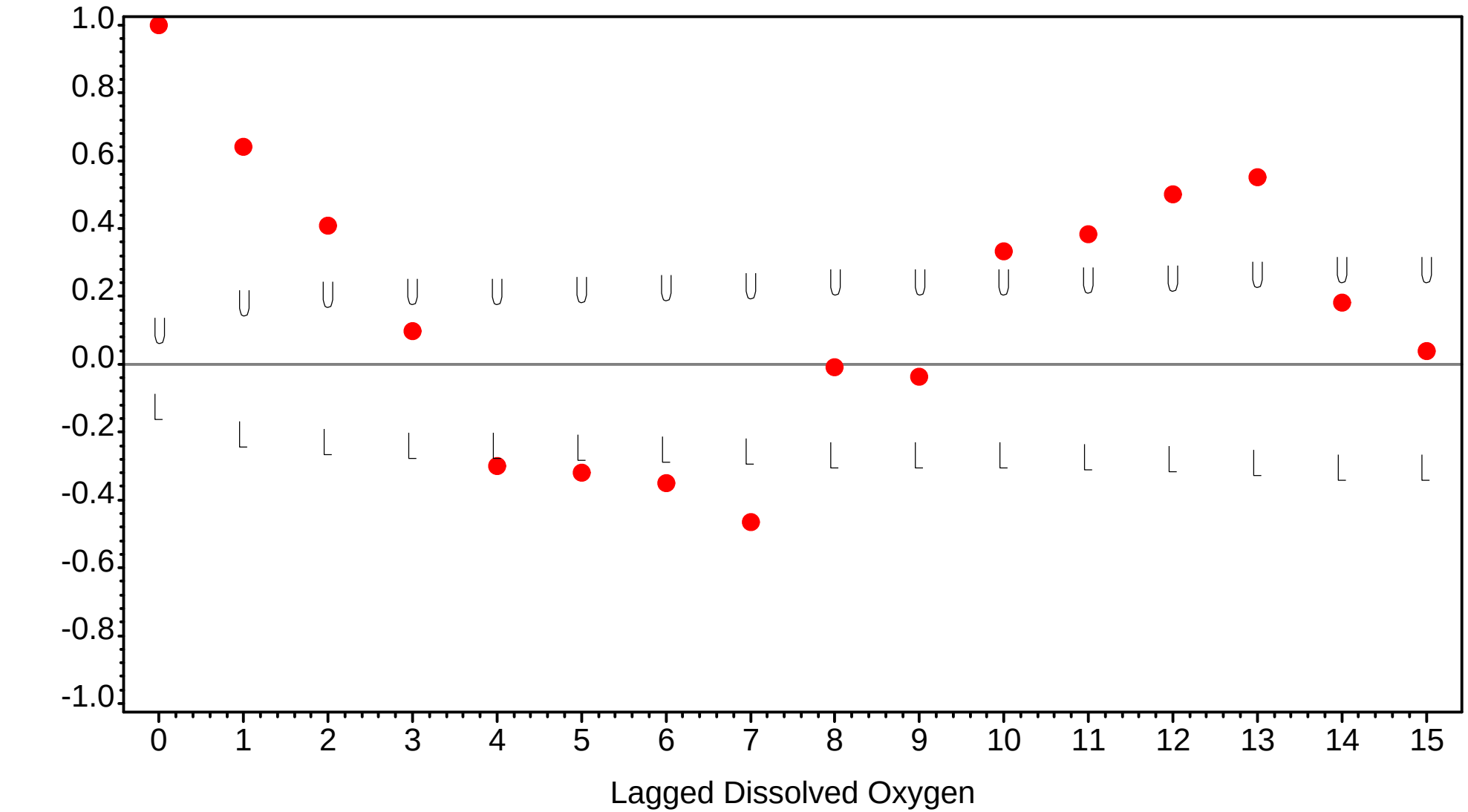
S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.641	0.096	0.192	-0.192
2	0.407	0.109	0.217	-0.217
3	0.097	0.113	0.226	-0.226
4	-0.301	0.113	0.227	-0.227
5	-0.321	0.116	0.232	-0.232
6	-0.351	0.119	0.237	-0.237
7	-0.464	0.122	0.244	-0.244
8	-0.010	0.127	0.254	-0.254
9	-0.036	0.127	0.254	-0.254
10	0.334	0.127	0.254	-0.254
11	0.382	0.130	0.260	-0.260
12	0.500	0.133	0.267	-0.267
13	0.552	0.139	0.278	-0.278
14	0.182	0.146	0.291	-0.291
15	0.038	0.146	0.292	-0.292

S_21FLVEMDHL04 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

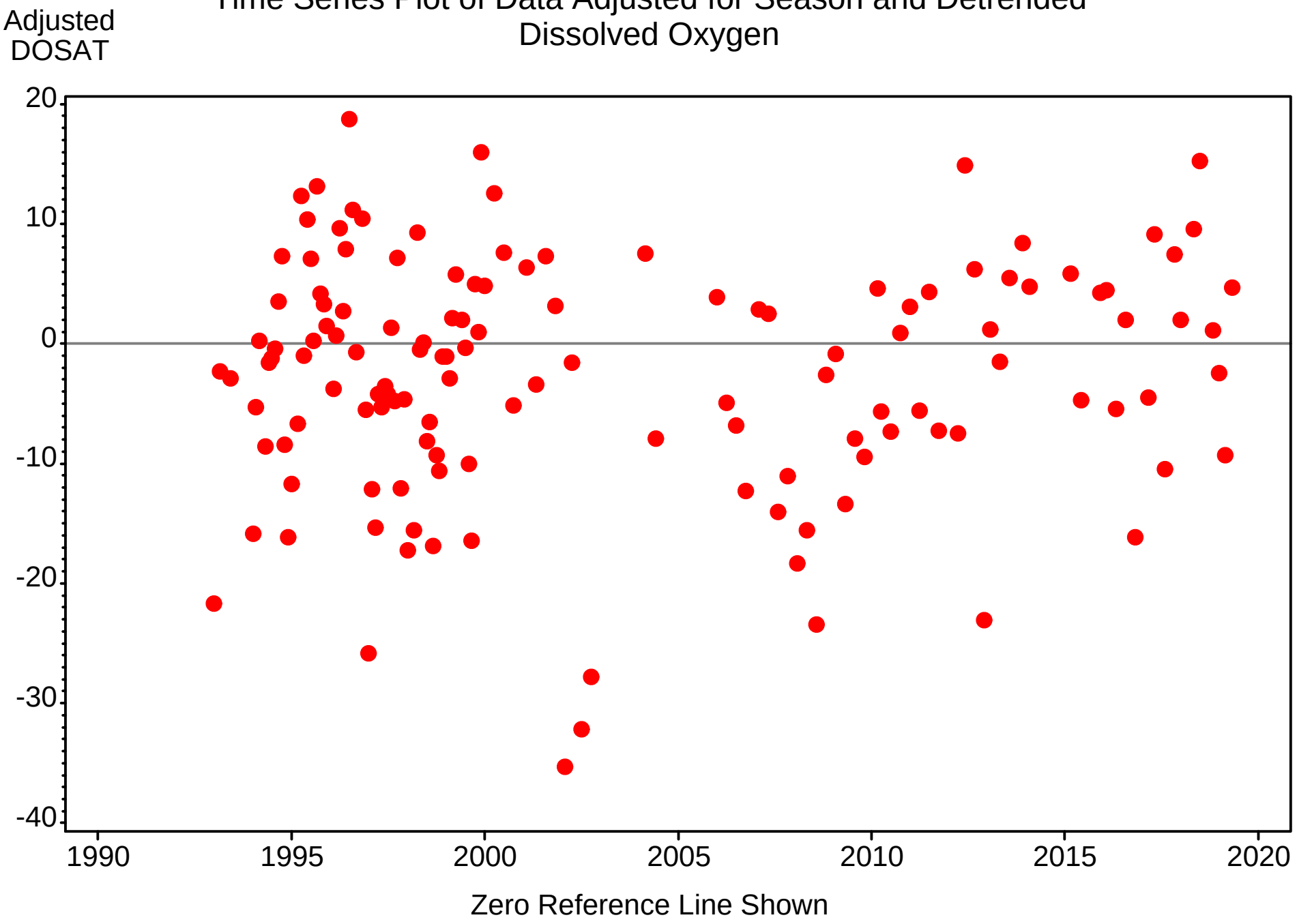
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.09	0.188	0.382	0.156

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.089744	0.18759	0.38162	0.15603

S_21FLVEMDHL04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

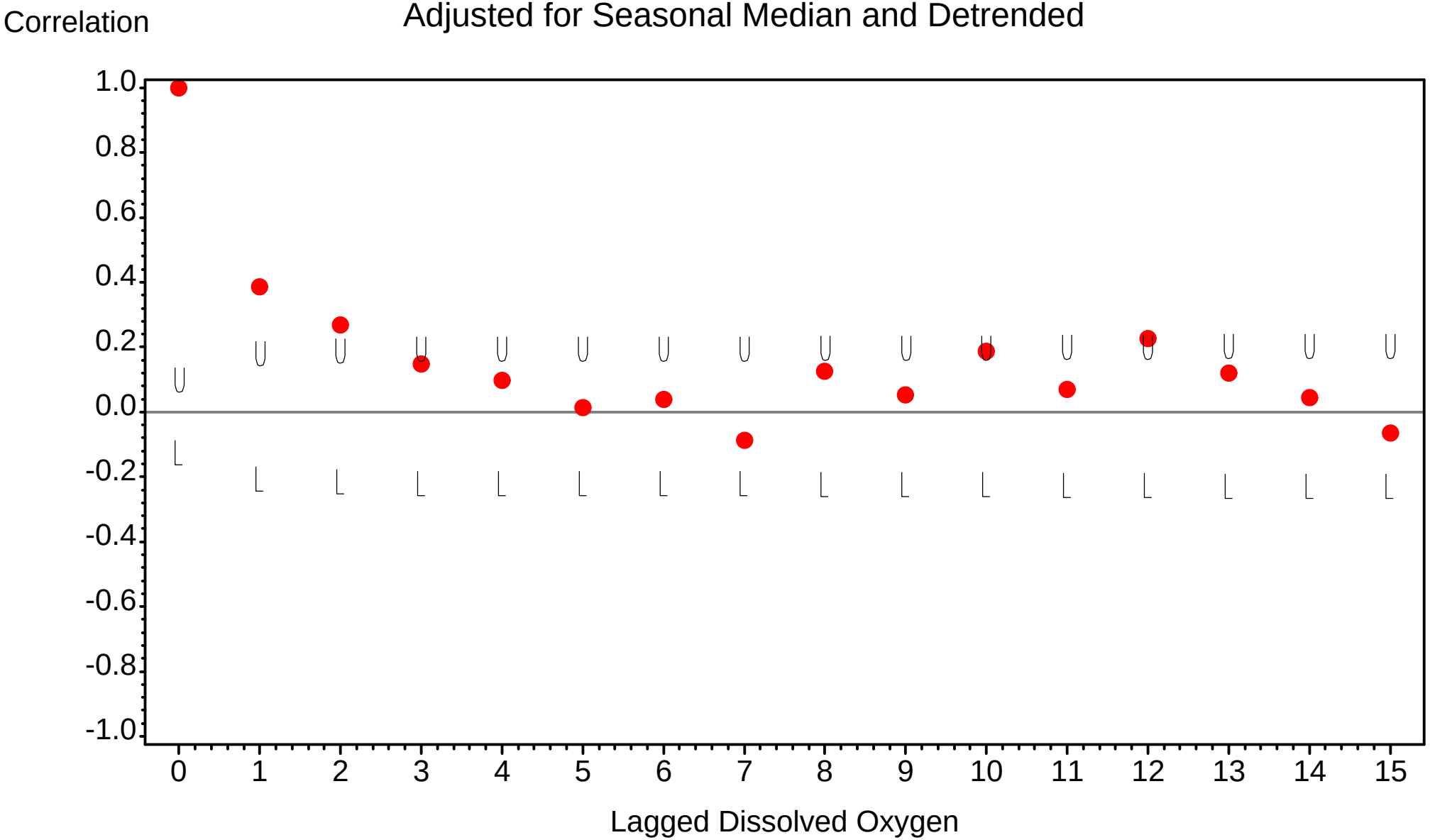


S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.385	0.096	0.192	-0.192
2	0.269	0.101	0.202	-0.202
3	0.149	0.103	0.206	-0.206
4	0.097	0.104	0.207	-0.207
5	0.013	0.104	0.208	-0.208
6	0.039	0.104	0.208	-0.208
7	-0.087	0.104	0.208	-0.208
8	0.126	0.104	0.209	-0.209
9	0.054	0.105	0.209	-0.209
10	0.188	0.105	0.210	-0.210
11	0.070	0.106	0.212	-0.212
12	0.227	0.106	0.212	-0.212
13	0.119	0.107	0.215	-0.215
14	0.043	0.108	0.216	-0.216
15	-0.066	0.108	0.216	-0.216

S_21FLVEMDHL04 Trends Appendix

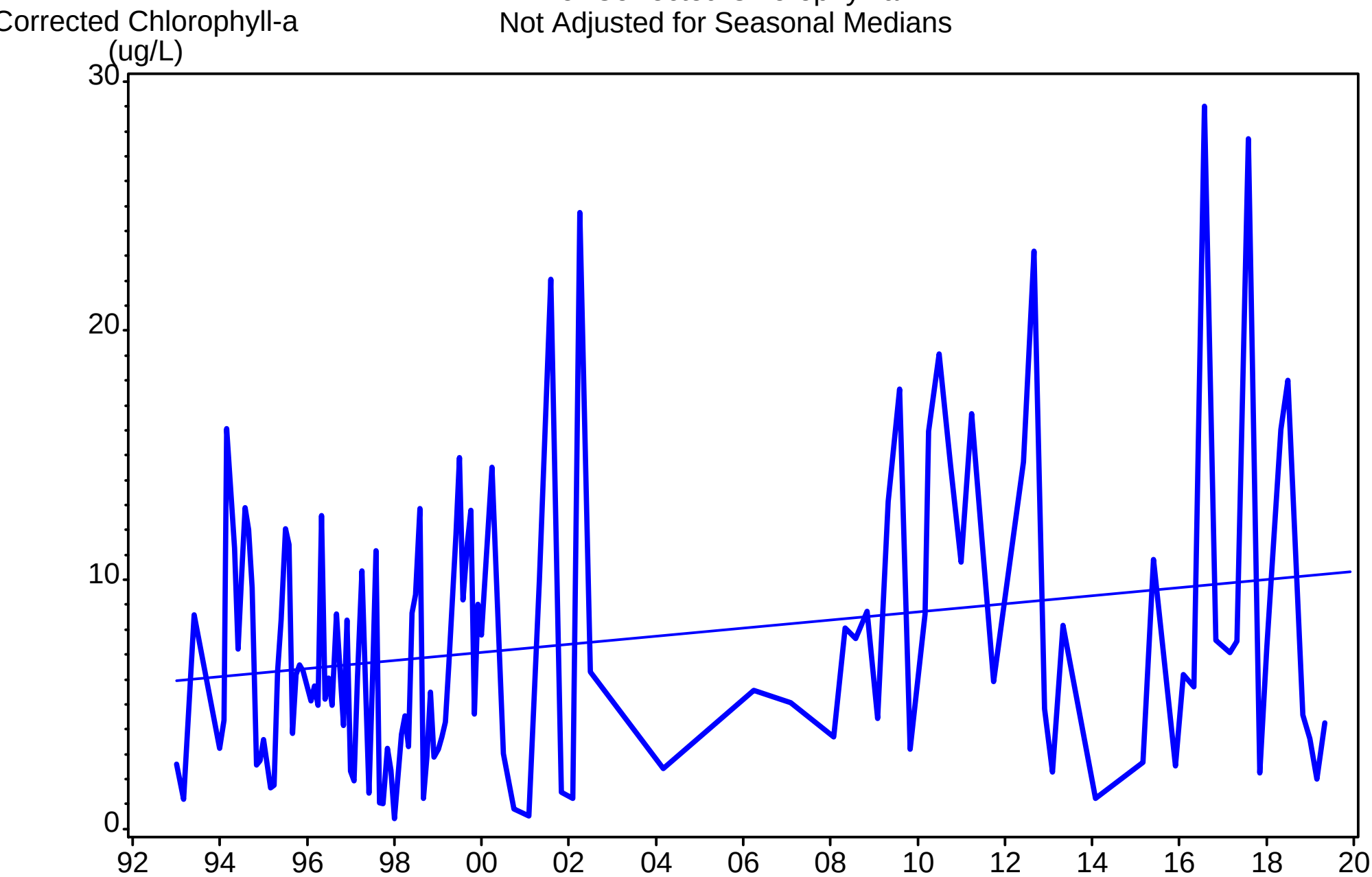
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



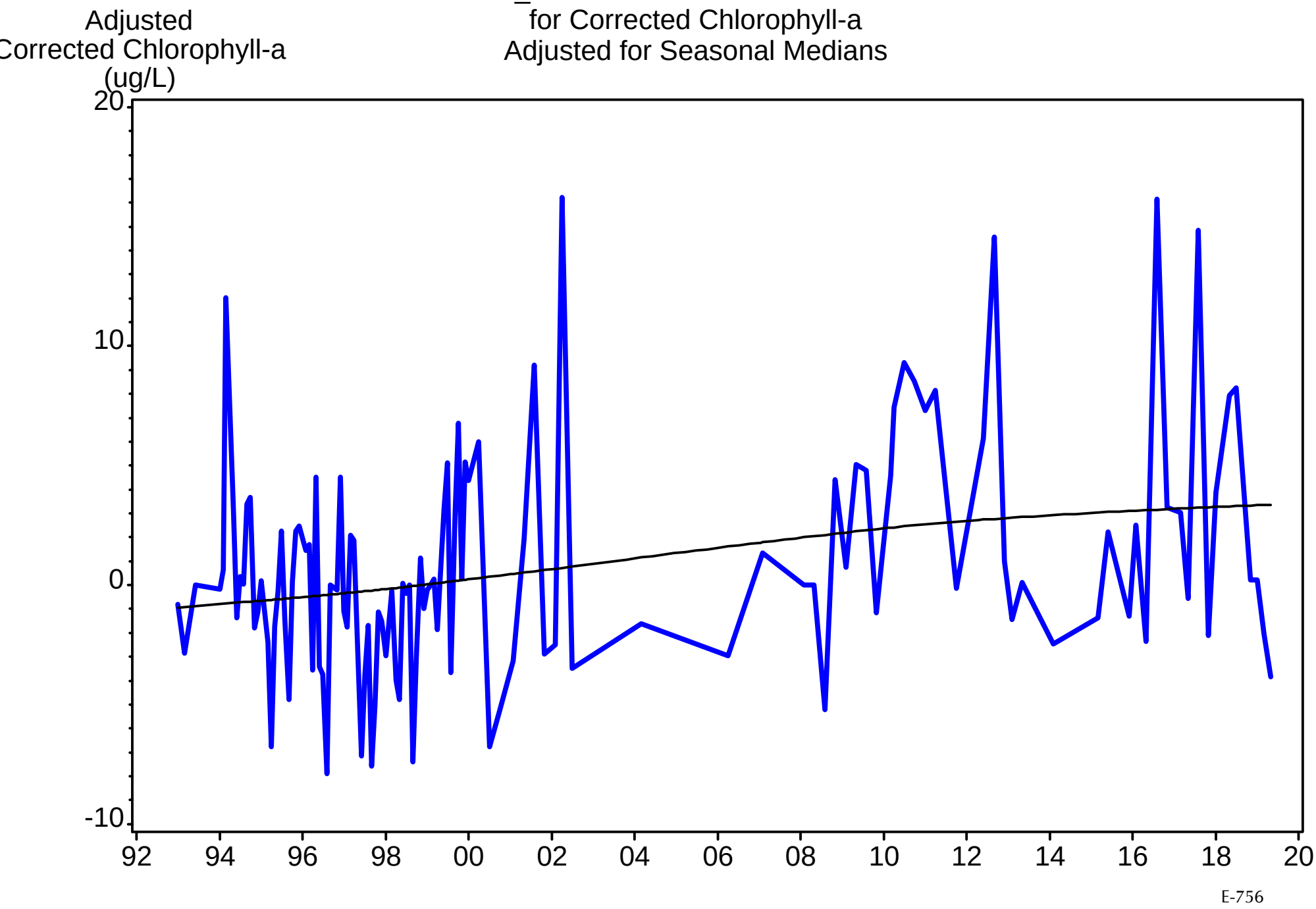
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL04 Trends

S_21FLVEMDHL04 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



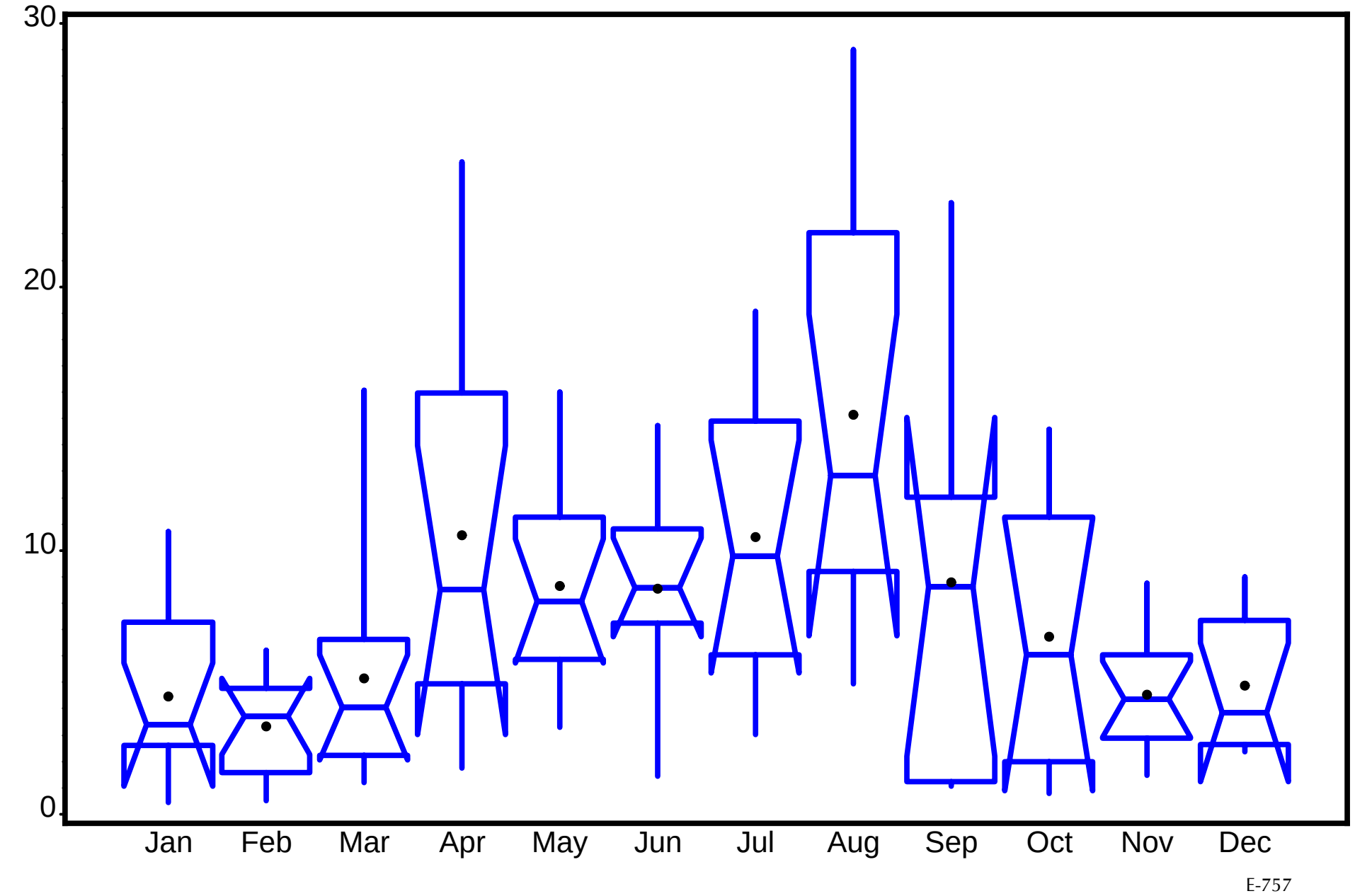
S_21FLVEMDHL04 Trends



S_21FLVEMDHL04 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a



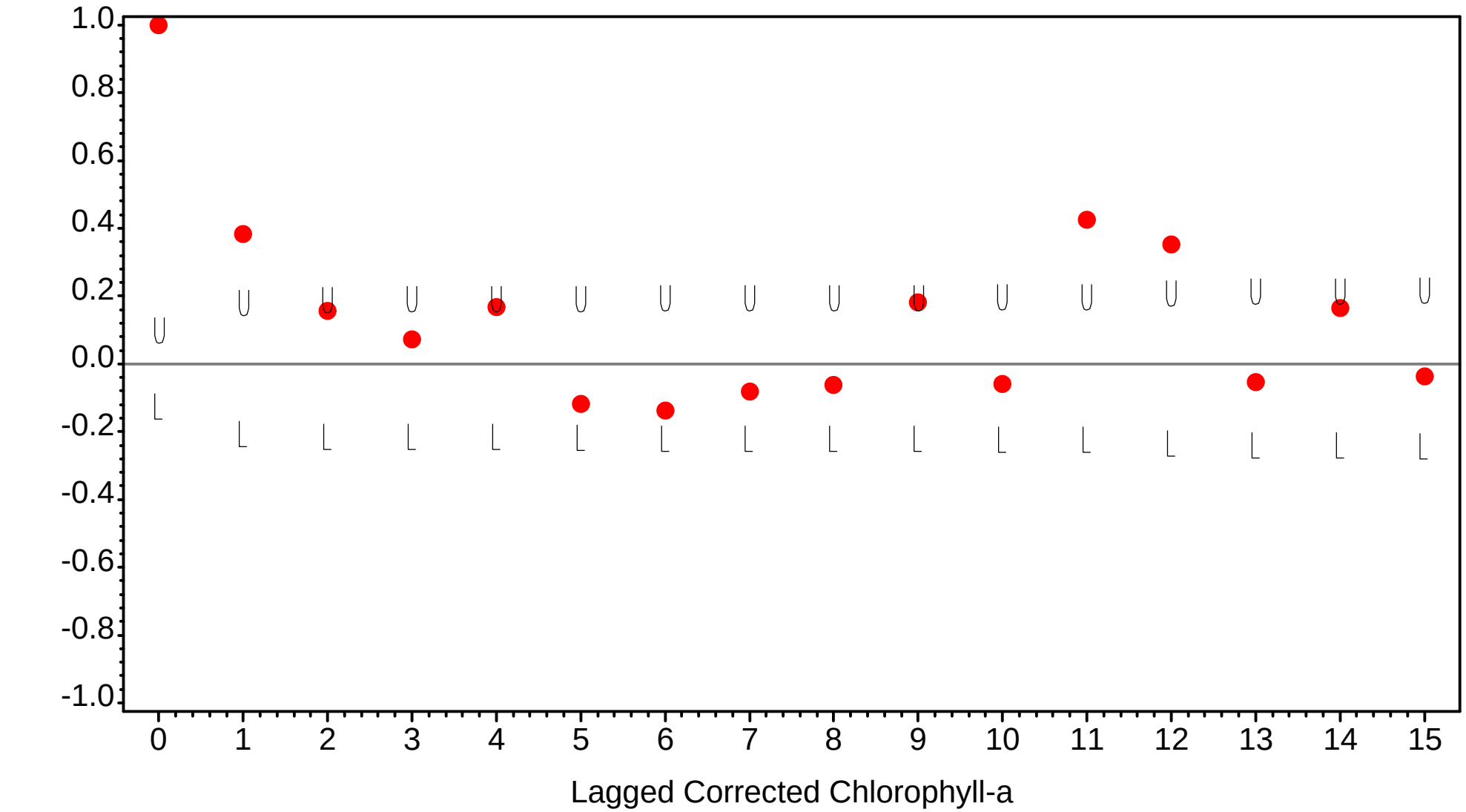
S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.383	0.096	0.192	-0.192
2	0.156	0.101	0.202	-0.202
3	0.072	0.102	0.203	-0.203
4	0.167	0.102	0.203	-0.203
5	-0.119	0.103	0.205	-0.205
6	-0.139	0.103	0.206	-0.206
7	-0.081	0.104	0.207	-0.207
8	-0.063	0.104	0.208	-0.208
9	0.181	0.104	0.208	-0.208
10	-0.059	0.105	0.210	-0.210
11	0.425	0.105	0.210	-0.210
12	0.351	0.110	0.220	-0.220
13	-0.055	0.114	0.227	-0.227
14	0.164	0.114	0.227	-0.227
15	-0.037	0.114	0.229	-0.229

S_21FLVEMDHL04 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

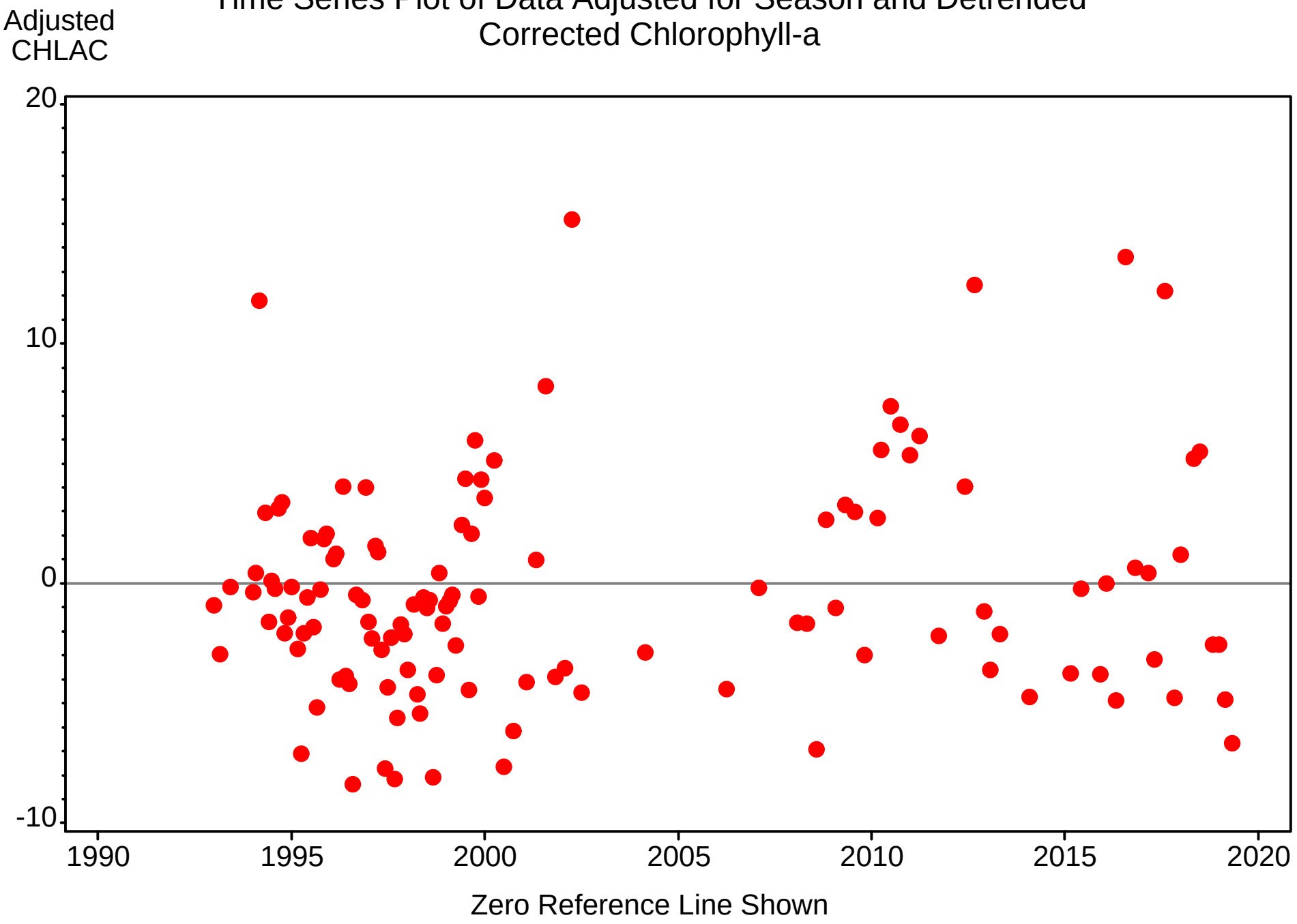
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.15	0.038	0.109	0.103

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.15026	0.037758	0.10869	0.10333

S_21FLVEMDHL04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



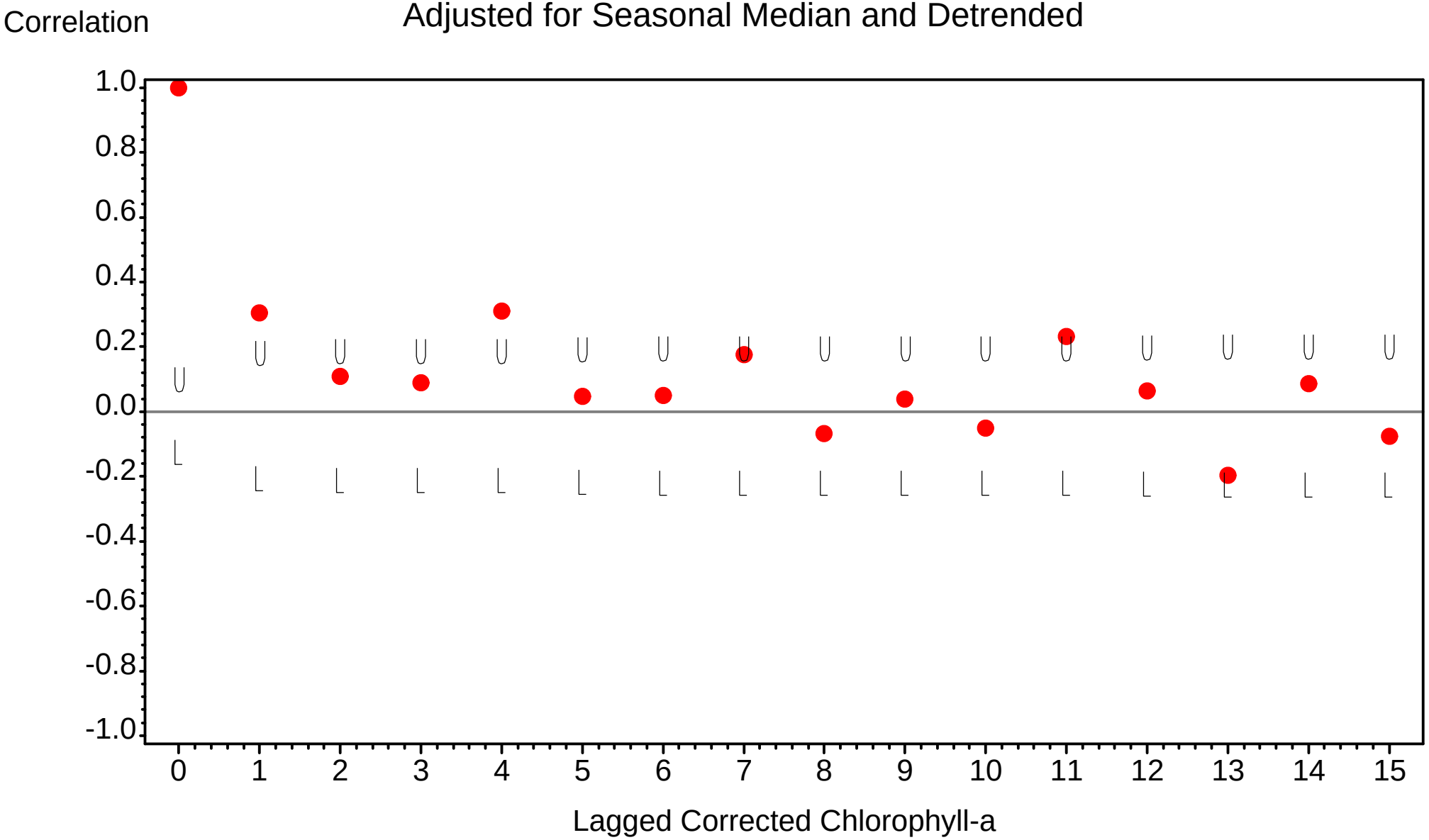
S_21FLVEMDHL04 Trends Appendix

Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.306	0.096	0.192	-0.192
2	0.109	0.099	0.198	-0.198
3	0.088	0.100	0.199	-0.199
4	0.310	0.100	0.200	-0.200
5	0.047	0.103	0.205	-0.205
6	0.050	0.103	0.206	-0.206
7	0.177	0.103	0.206	-0.206
8	-0.069	0.104	0.208	-0.208
9	0.039	0.104	0.208	-0.208
10	-0.052	0.104	0.208	-0.208
11	0.232	0.104	0.208	-0.208
12	0.065	0.106	0.211	-0.211
13	-0.196	0.106	0.212	-0.212
14	0.086	0.107	0.214	-0.214
15	-0.076	0.107	0.214	-0.214

S_21FLVEMDHL04 Trends Appendix

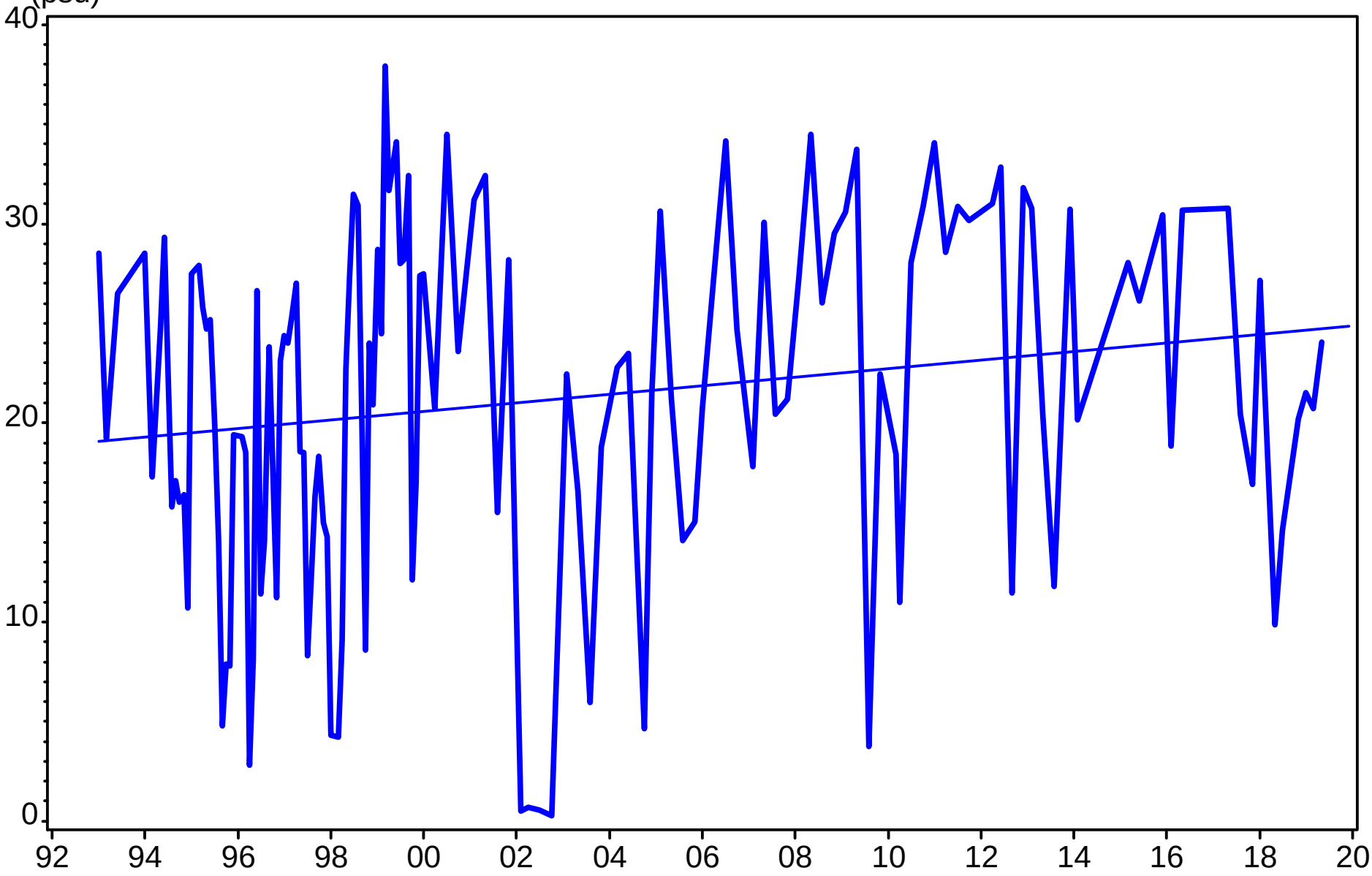
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



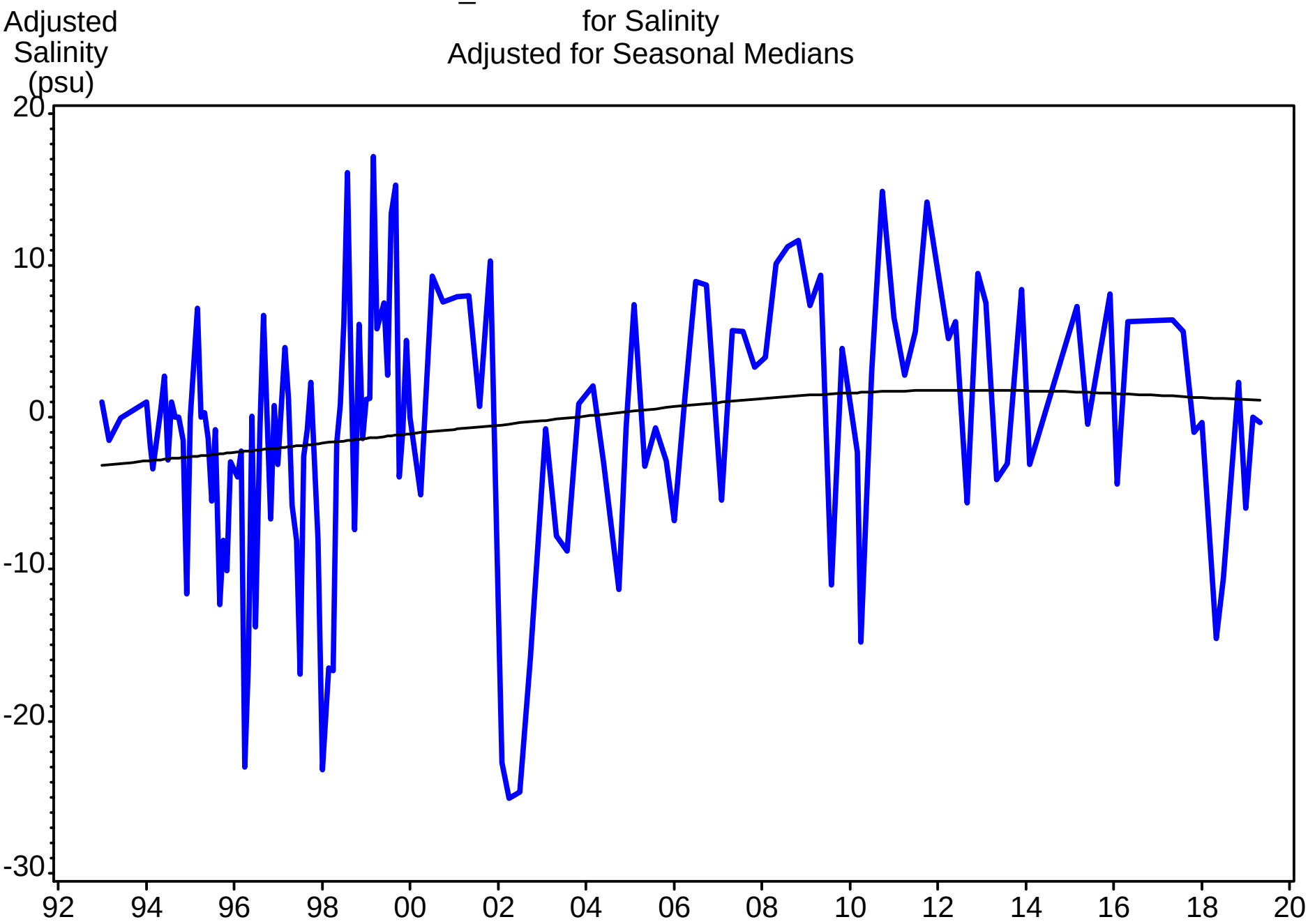
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL04 Trends

S_21FLVEMDHL04 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



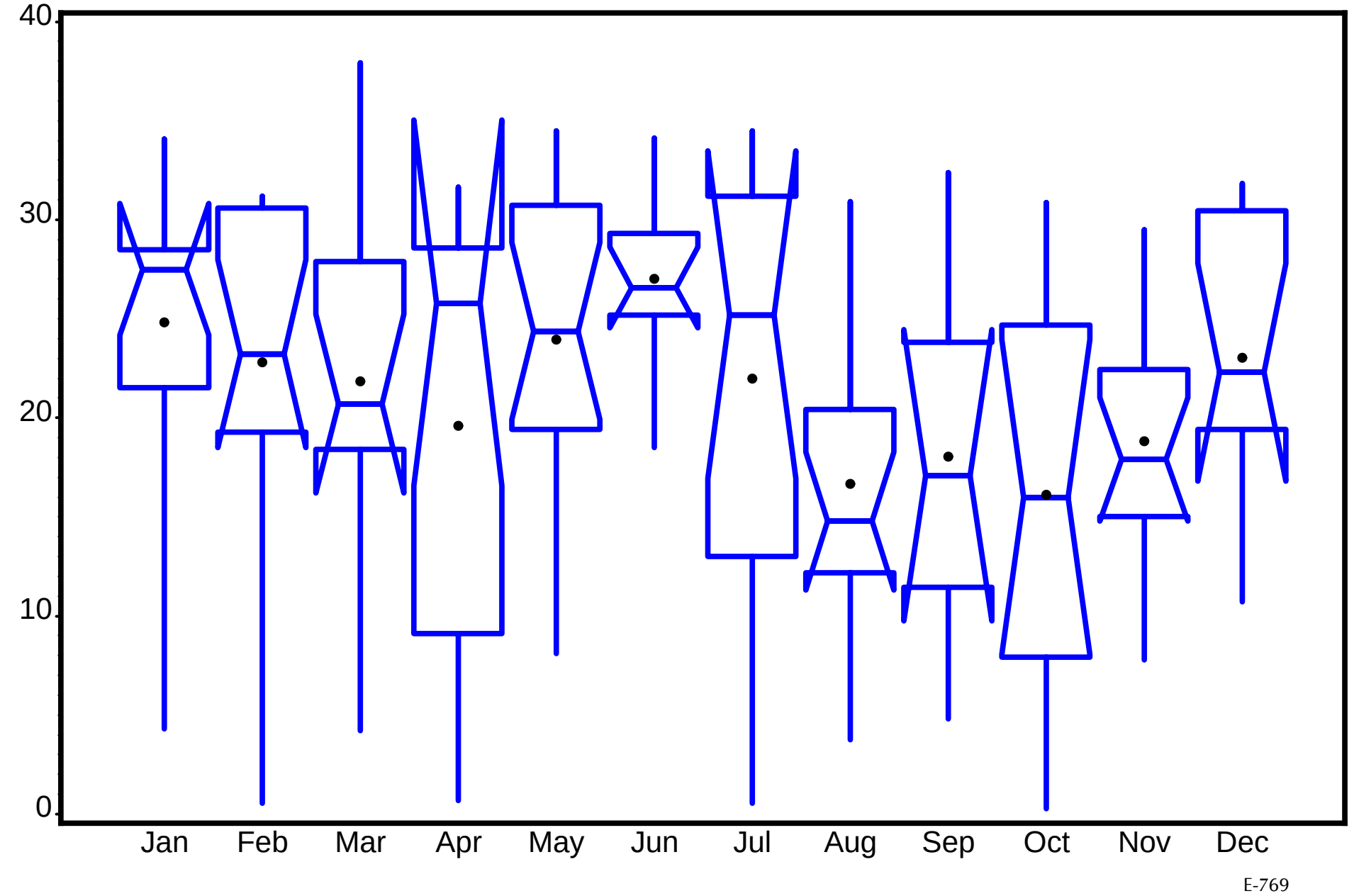
S_21FLVEMDHL04 Trends



S_21FLVEMDHL04 Trends Appendix

Seasonal Univariate Statistics

Salinity



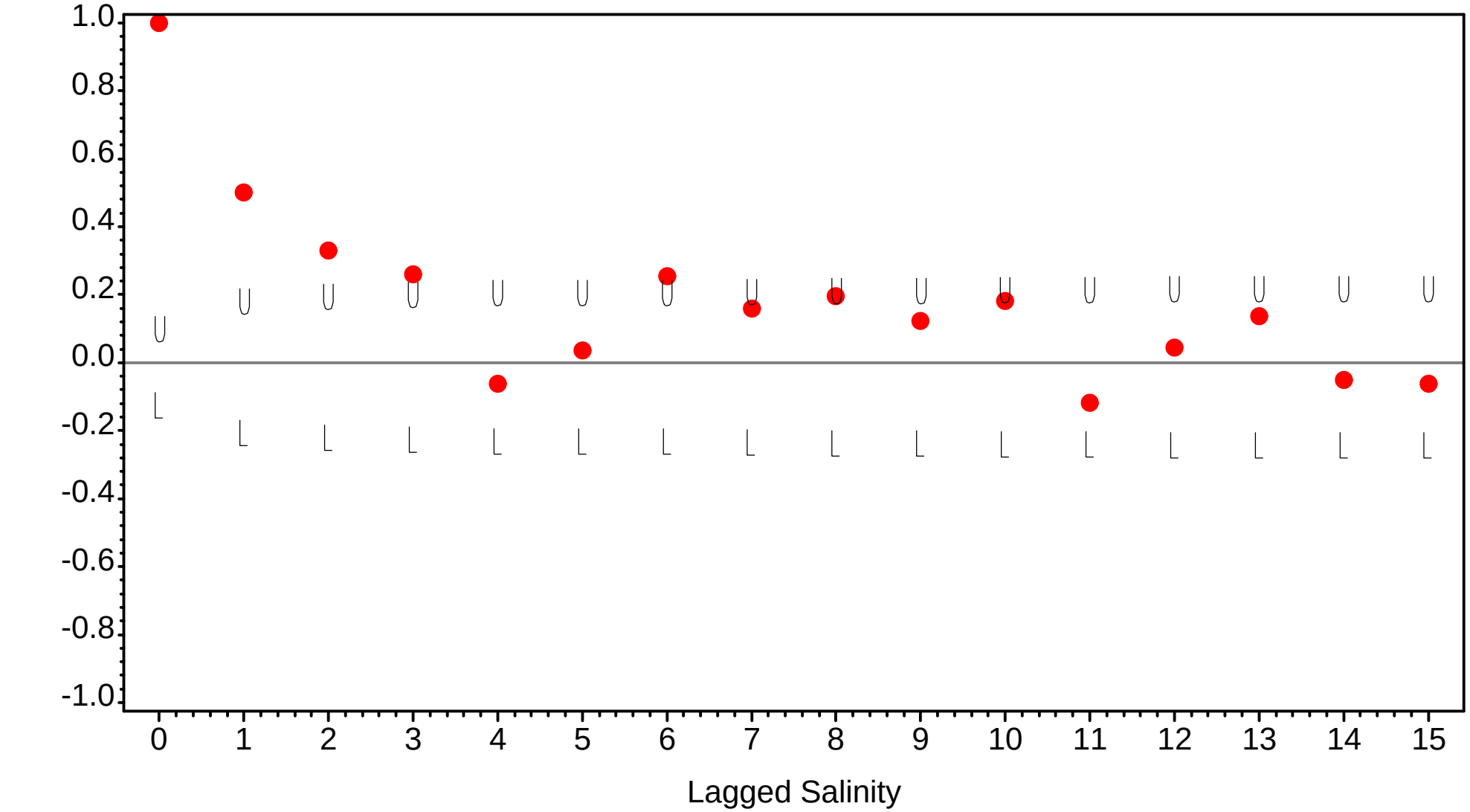
S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.501	0.096	0.192	-0.192
2	0.329	0.104	0.208	-0.208
3	0.260	0.107	0.214	-0.214
4	-0.061	0.109	0.218	-0.218
5	0.037	0.109	0.218	-0.218
6	0.254	0.109	0.218	-0.218
7	0.159	0.111	0.222	-0.222
8	0.195	0.112	0.223	-0.223
9	0.123	0.113	0.225	-0.225
10	0.182	0.113	0.226	-0.226
11	-0.117	0.114	0.228	-0.228
12	0.045	0.114	0.229	-0.229
13	0.136	0.114	0.229	-0.229
14	-0.051	0.115	0.230	-0.230
15	-0.061	0.115	0.230	-0.230

S_21FLVEMDHL04 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.153	0.02	0.128	0.254

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.15317	0.019942	0.12793	0.25372

S_21FLVEMDHL04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



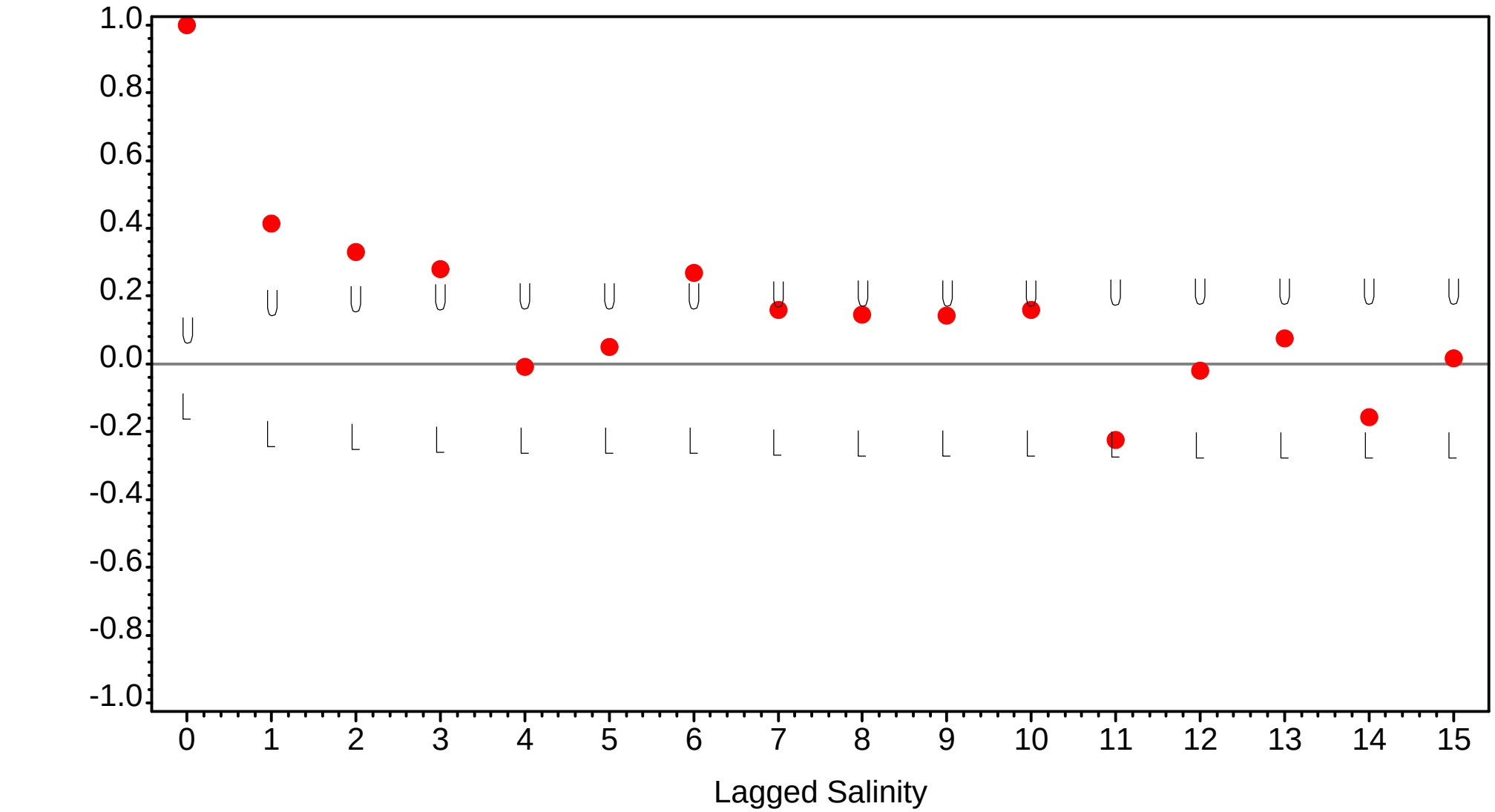
S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.415	0.096	0.192	-0.192
2	0.331	0.102	0.203	-0.203
3	0.280	0.105	0.210	-0.210
4	-0.008	0.107	0.214	-0.214
5	0.051	0.107	0.214	-0.214
6	0.269	0.107	0.214	-0.214
7	0.159	0.109	0.219	-0.219
8	0.146	0.110	0.220	-0.220
9	0.141	0.111	0.221	-0.221
10	0.158	0.111	0.222	-0.222
11	-0.225	0.112	0.224	-0.224
12	-0.020	0.113	0.227	-0.227
13	0.076	0.113	0.227	-0.227
14	-0.157	0.113	0.227	-0.227
15	0.015	0.114	0.228	-0.228

S_21FLVEMDHL04 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

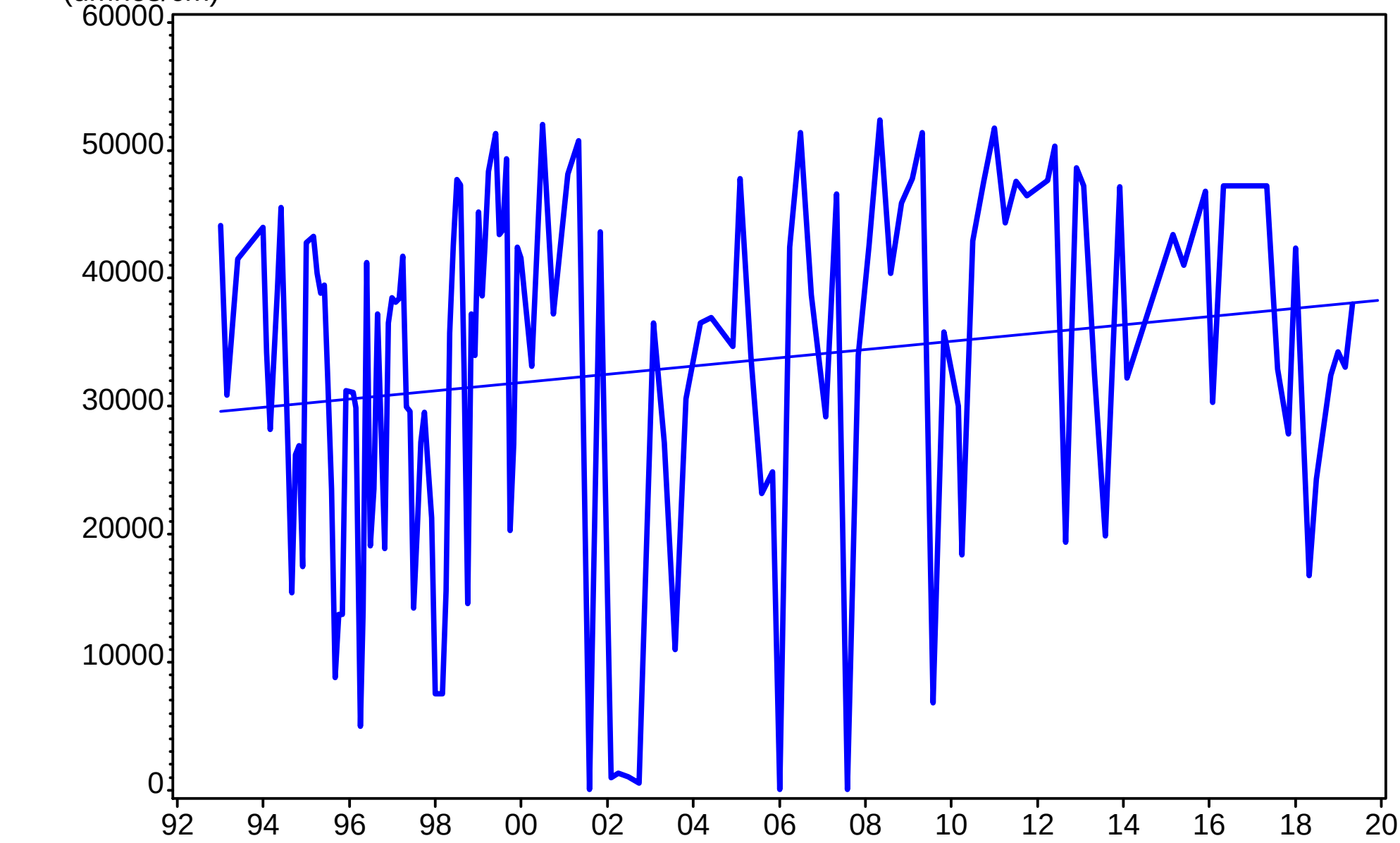


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

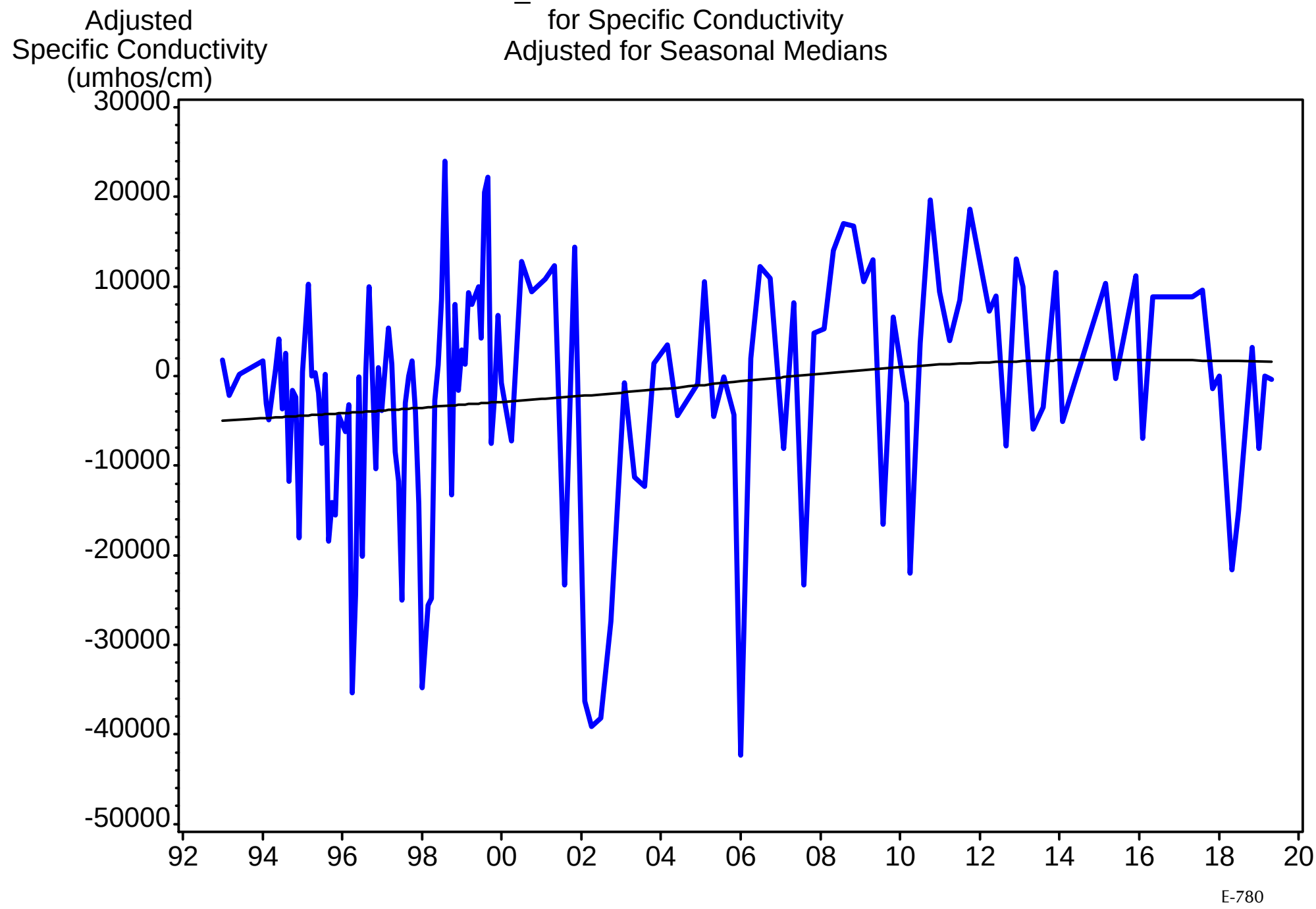
S_21FLVEMDHL04 Trends

S_21FLVEMDHL04 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



E-779

S_21FLVEMDHL04 Trends



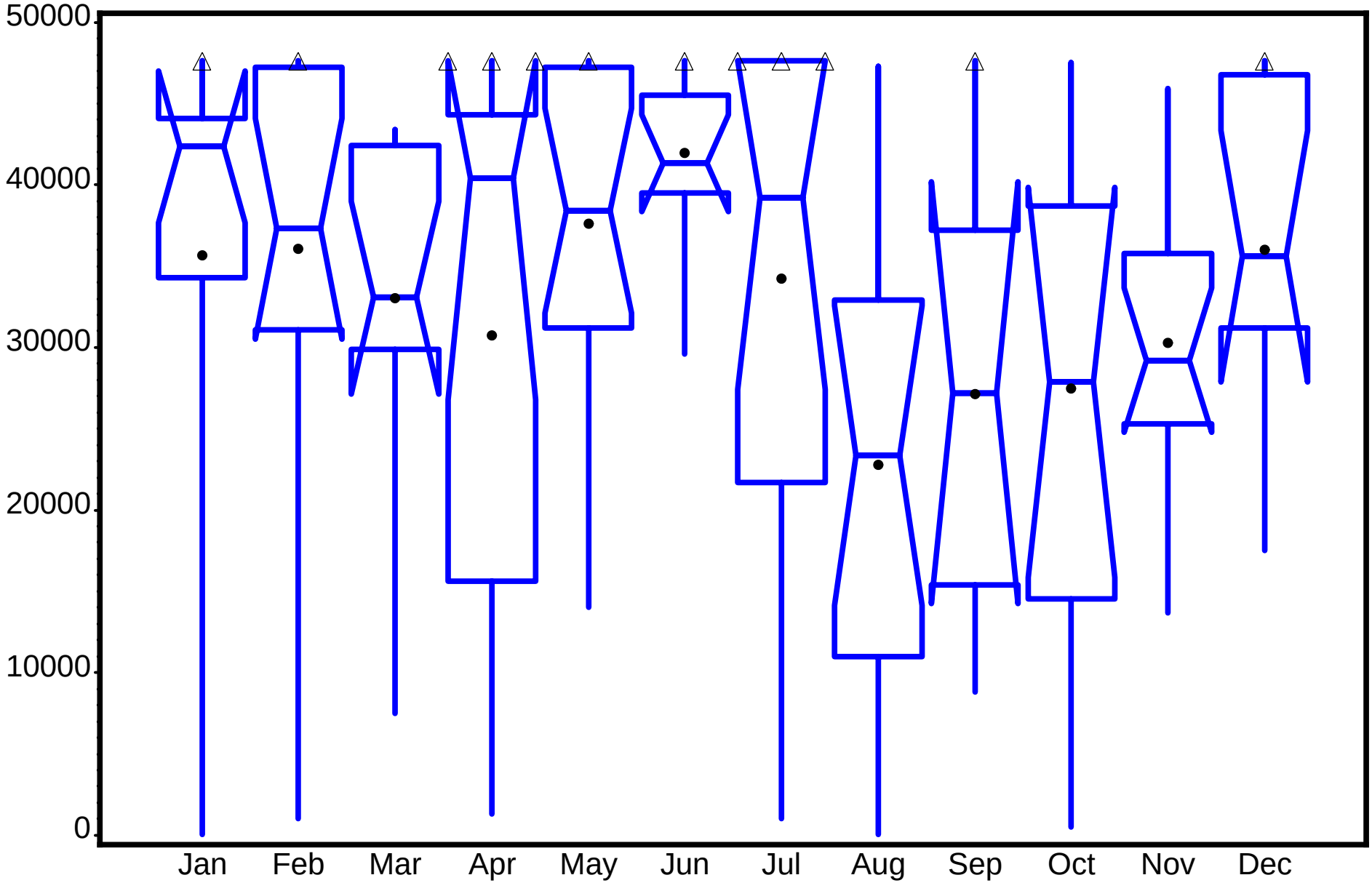
E-780

S_21FLVEMDHL04 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



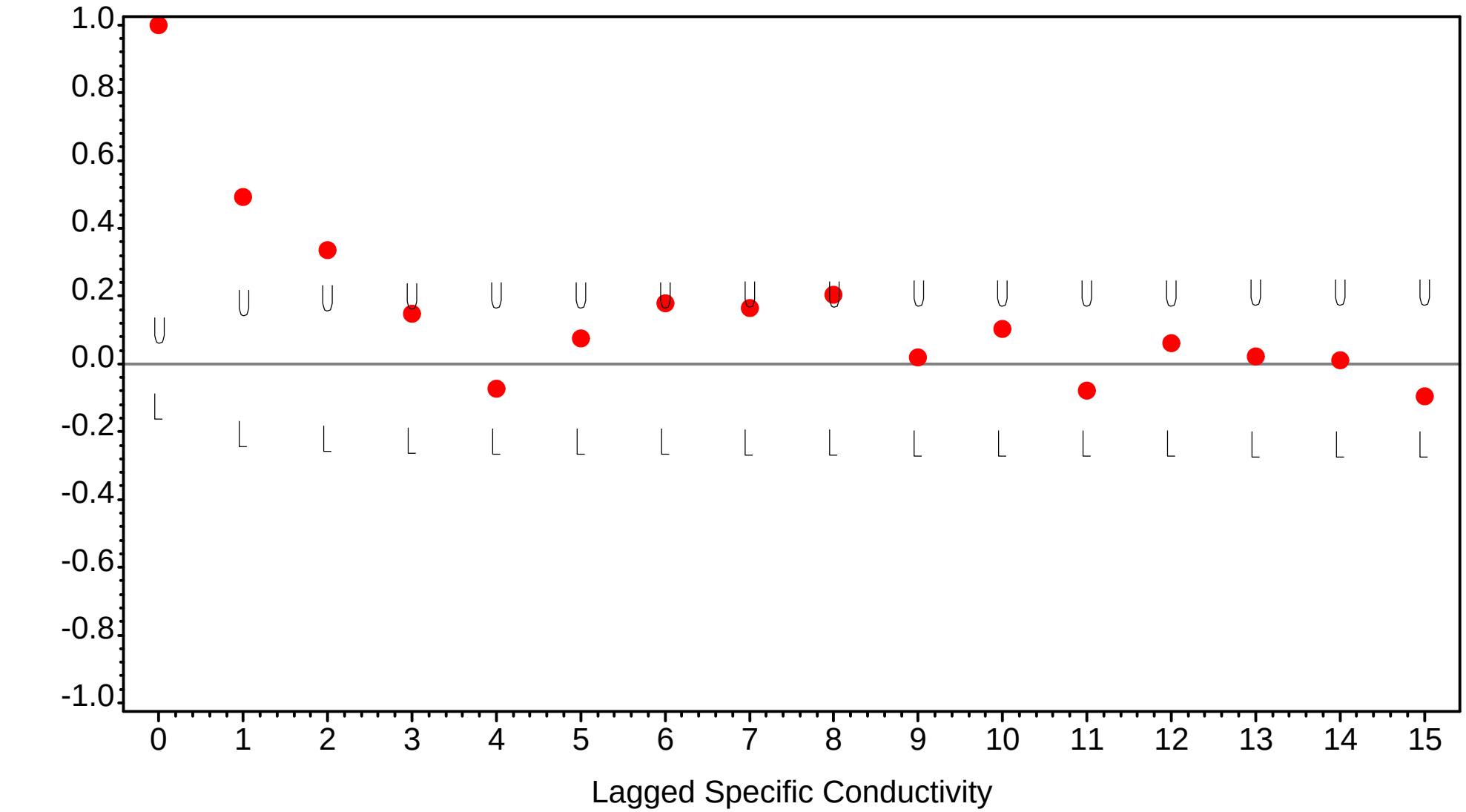
S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.491	0.096	0.192	-0.192
2	0.335	0.104	0.207	-0.207
3	0.149	0.107	0.214	-0.214
4	-0.072	0.108	0.215	-0.215
5	0.075	0.108	0.215	-0.215
6	0.179	0.108	0.216	-0.216
7	0.165	0.109	0.218	-0.218
8	0.203	0.110	0.219	-0.219
9	0.019	0.111	0.221	-0.221
10	0.103	0.111	0.221	-0.221
11	-0.080	0.111	0.222	-0.222
12	0.060	0.111	0.222	-0.222
13	0.023	0.111	0.223	-0.223
14	0.011	0.111	0.223	-0.223
15	-0.095	0.111	0.223	-0.223

S_21FLVEMDHL04 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

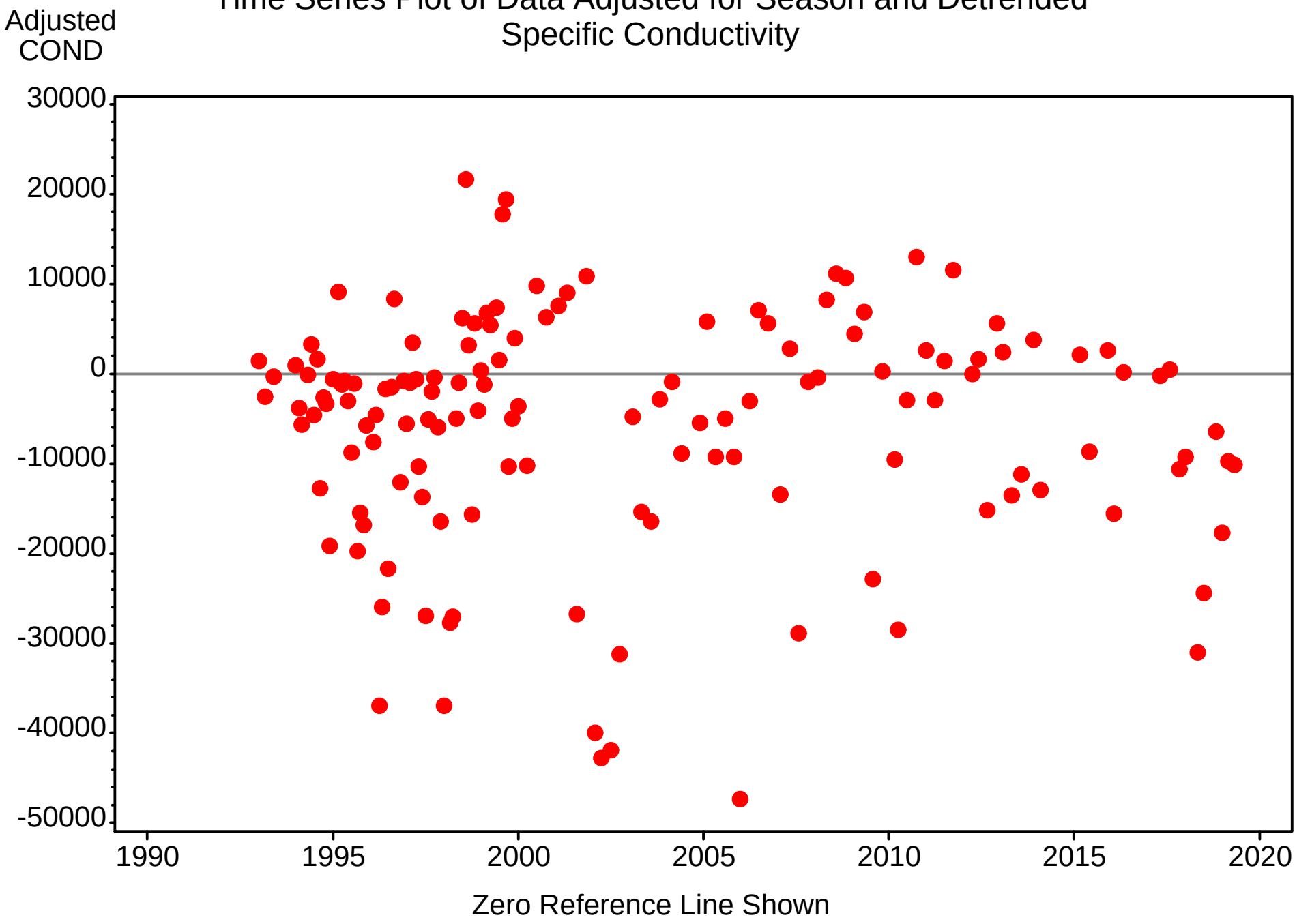
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.141	0.033	0.135	357.337

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.14103	0.033191	0.13465	357.337

S_21FLVEMDHL04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

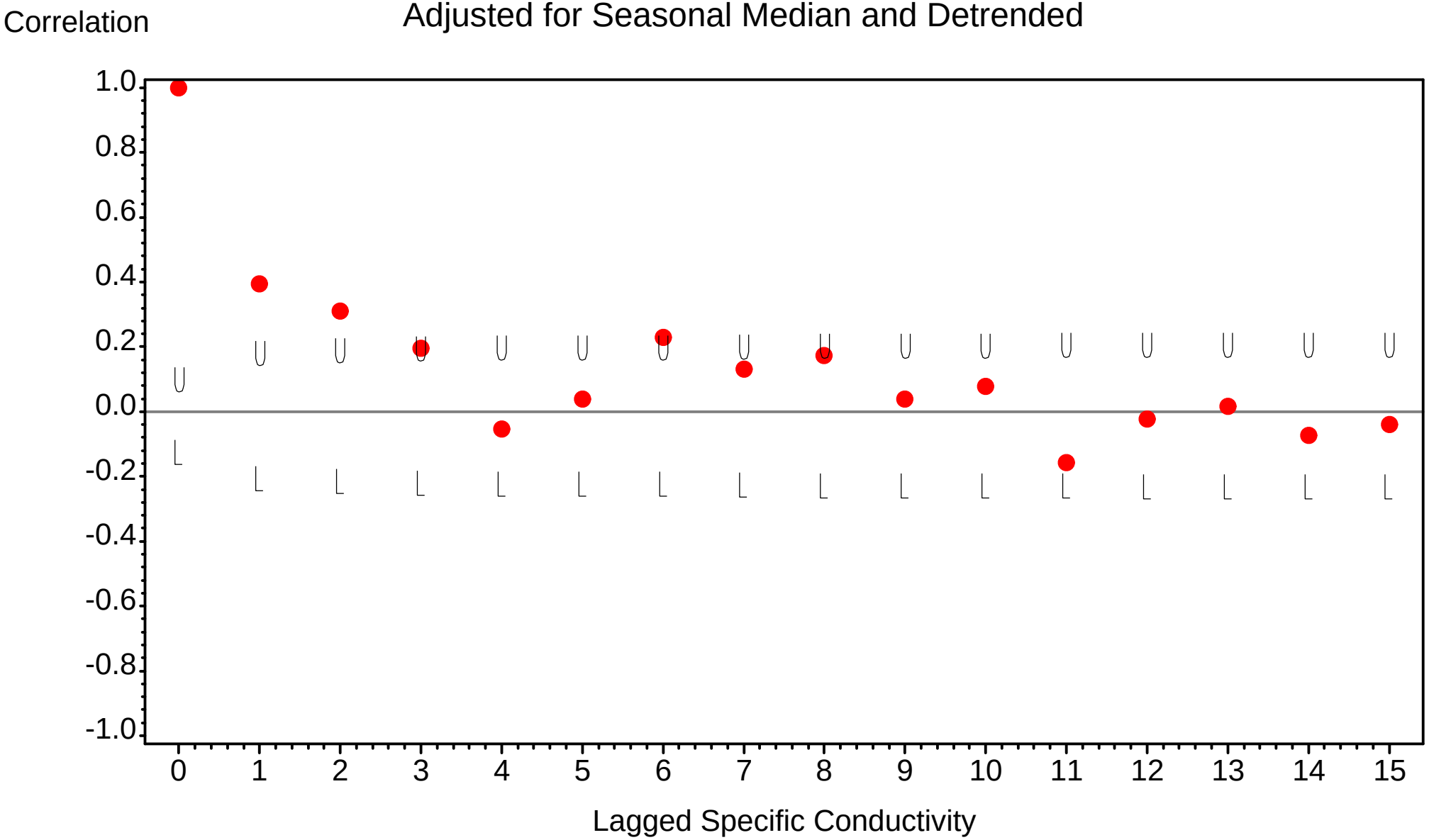


S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Specific Conductivity Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.395	0.096	0.192	-0.192
2	0.311	0.101	0.202	-0.202
3	0.195	0.104	0.208	-0.208
4	-0.055	0.105	0.210	-0.210
5	0.038	0.105	0.210	-0.210
6	0.230	0.105	0.211	-0.211
7	0.130	0.107	0.214	-0.214
8	0.173	0.107	0.215	-0.215
9	0.039	0.108	0.216	-0.216
10	0.078	0.108	0.216	-0.216
11	-0.158	0.108	0.217	-0.217
12	-0.022	0.109	0.218	-0.218
13	0.017	0.109	0.218	-0.218
14	-0.074	0.109	0.218	-0.218
15	-0.041	0.109	0.219	-0.219

S_21FLVEMDHL04 Trends Appendix

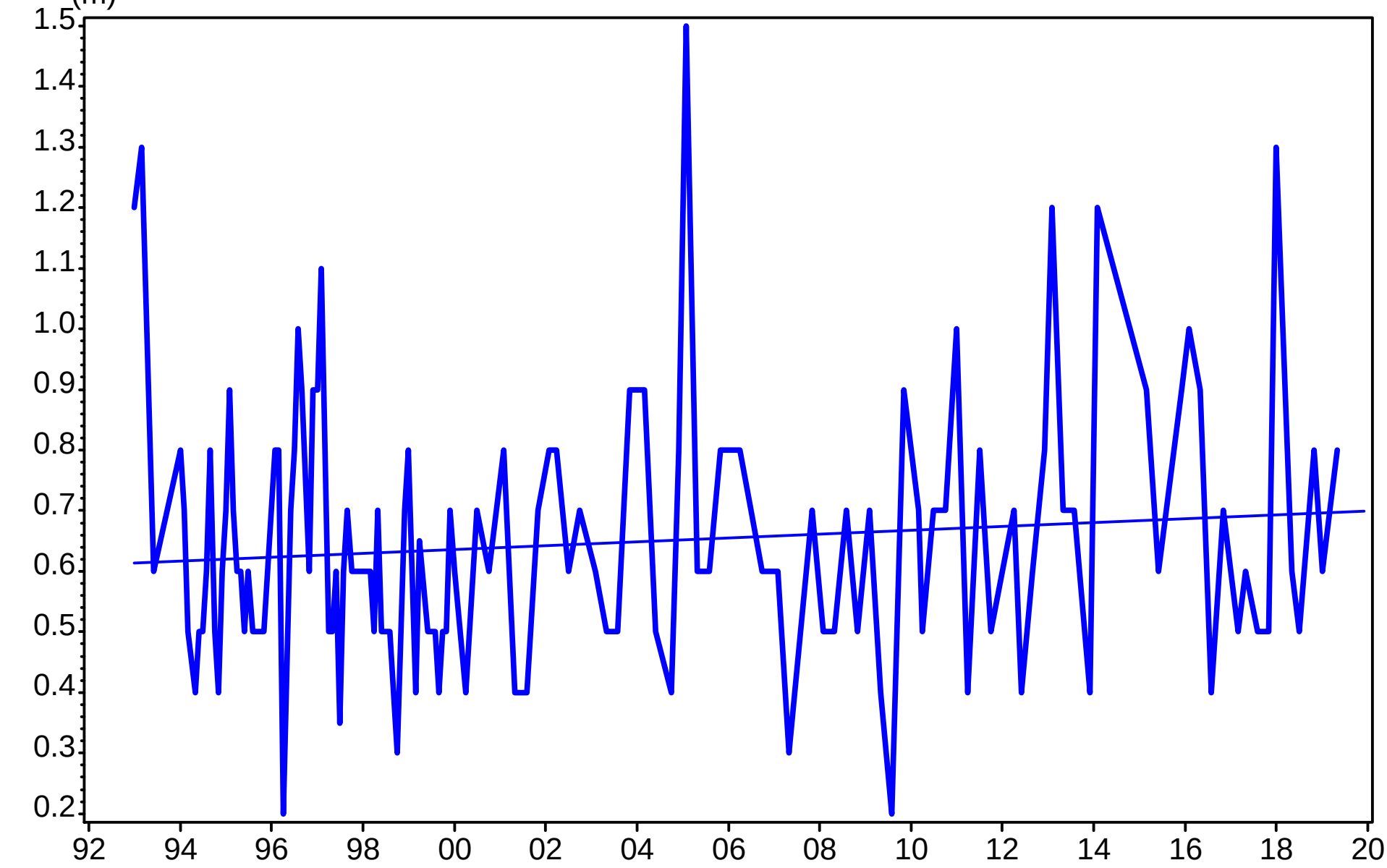
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



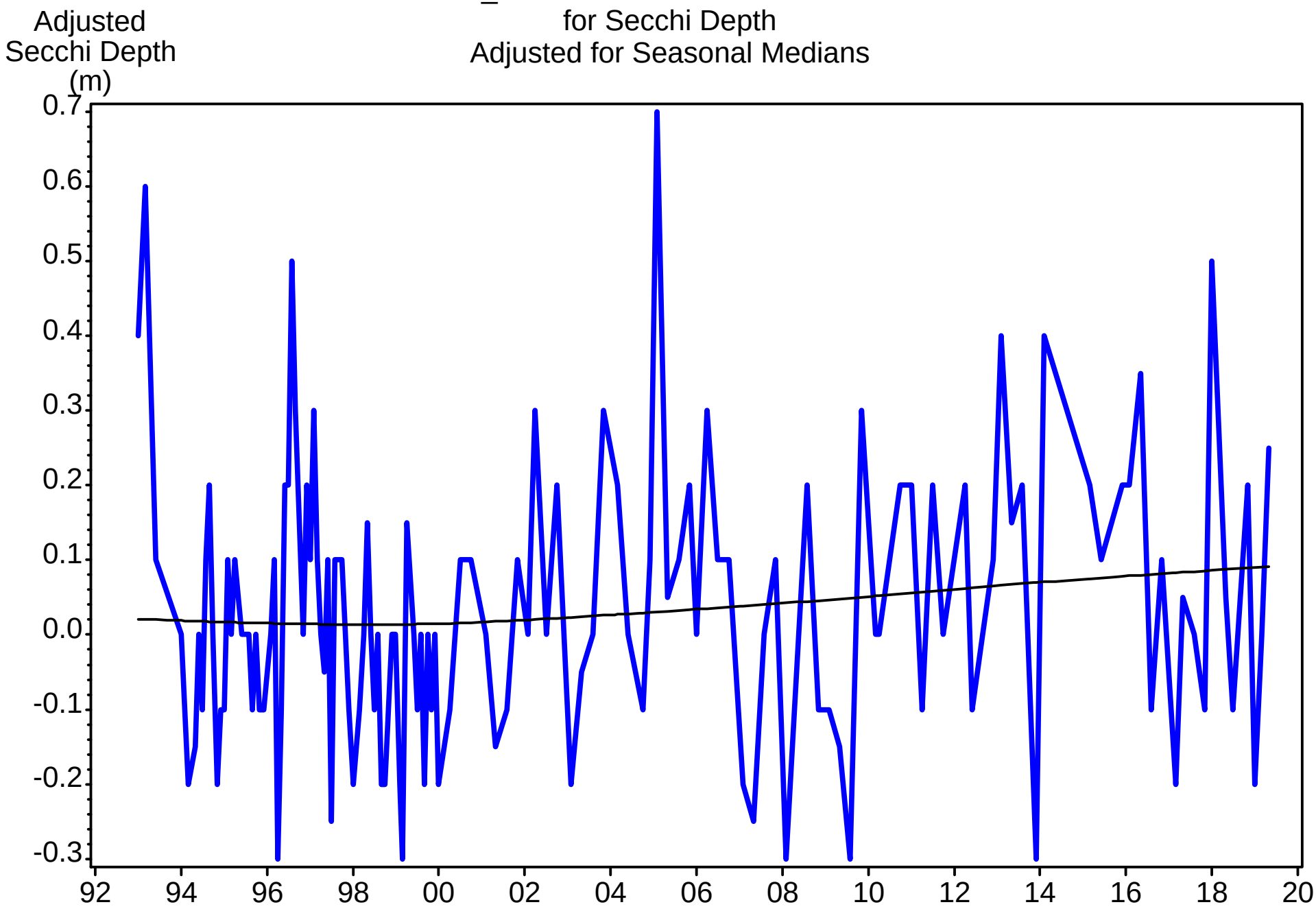
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL04 Trends

S_21FLVEMDHL04 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



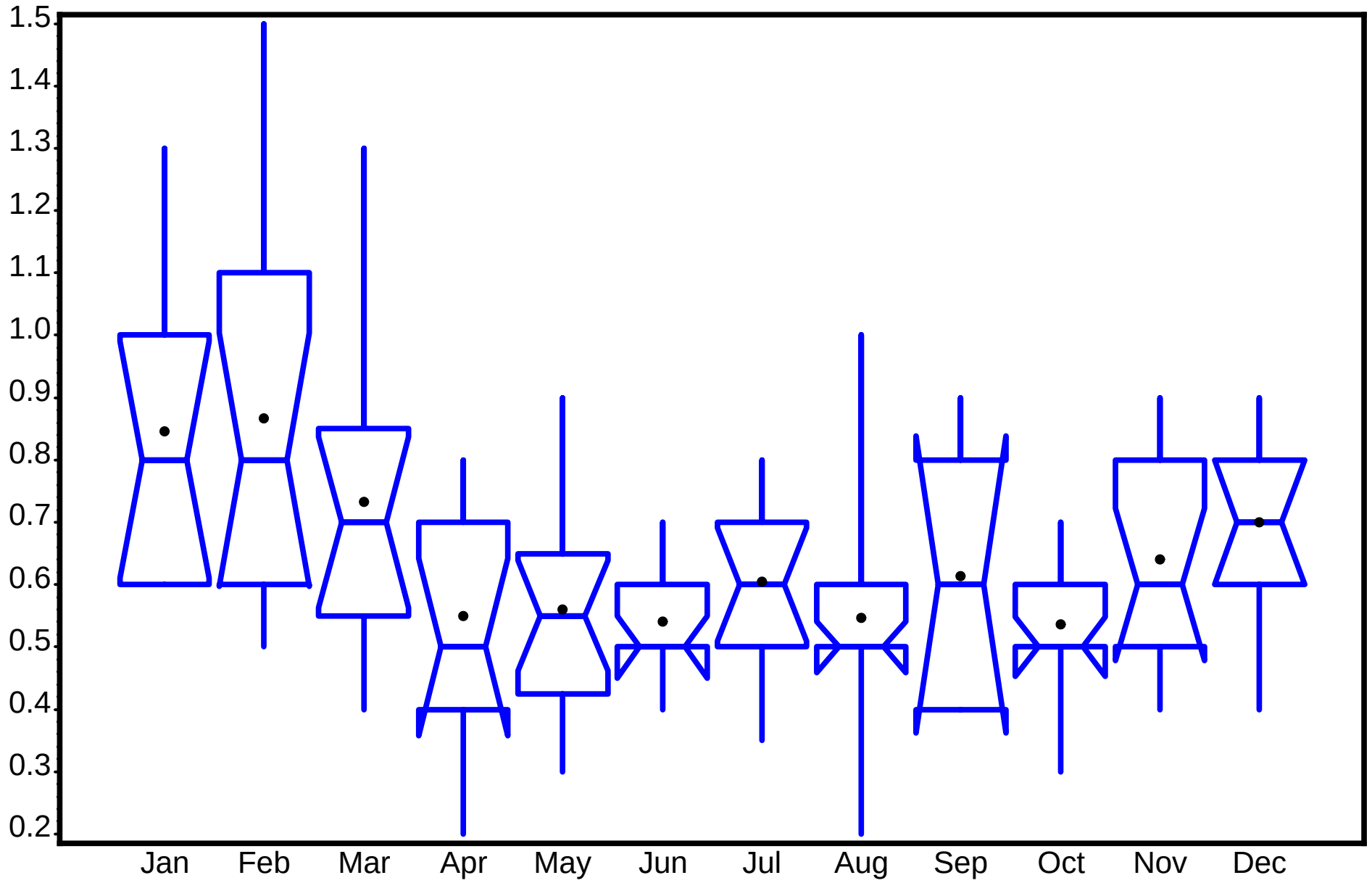
S_21FLVEMDHL04 Trends



S_21FLVEMDHL04 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



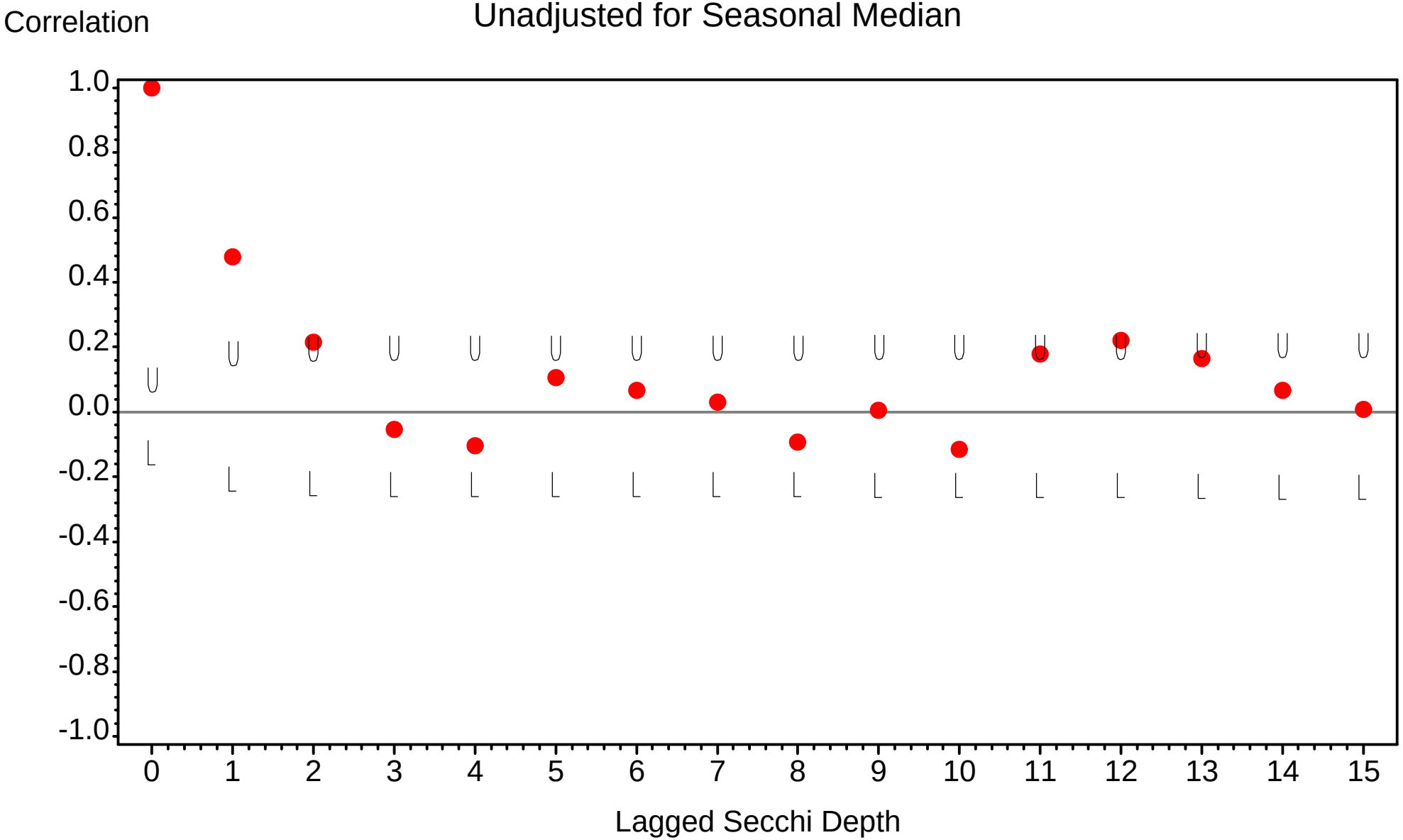
S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.477	0.096	0.192	-0.192
2	0.215	0.103	0.207	-0.207
3	-0.053	0.105	0.209	-0.209
4	-0.105	0.105	0.209	-0.209
5	0.105	0.105	0.210	-0.210
6	0.067	0.105	0.211	-0.211
7	0.030	0.106	0.211	-0.211
8	-0.092	0.106	0.211	-0.211
9	0.004	0.106	0.212	-0.212
10	-0.116	0.106	0.212	-0.212
11	0.180	0.106	0.212	-0.212
12	0.220	0.107	0.214	-0.214
13	0.164	0.108	0.217	-0.217
14	0.066	0.109	0.219	-0.219
15	0.008	0.109	0.219	-0.219

S_21FLVEMDHL04 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

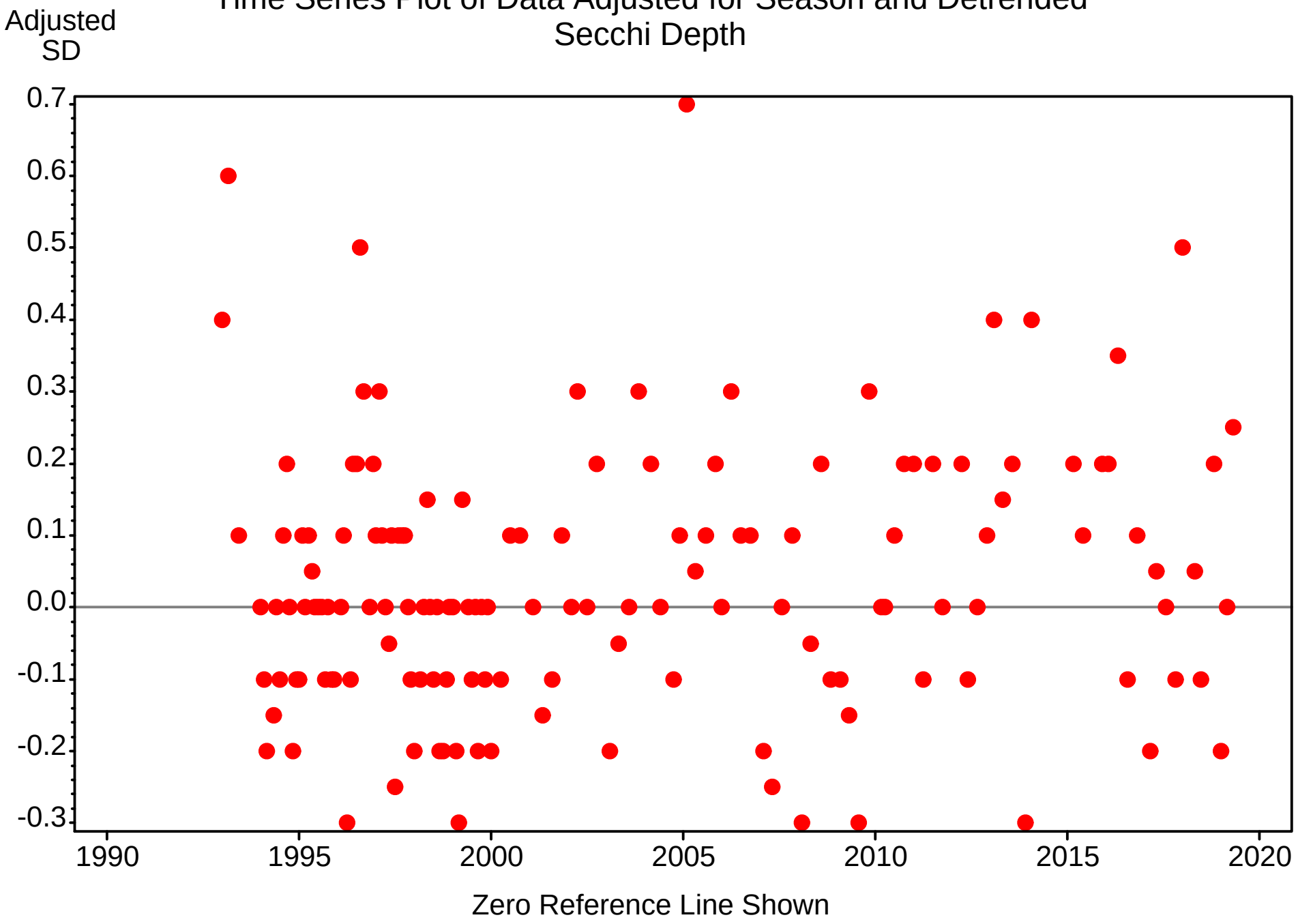
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.109	0.084	0.181	0

S_21FLVEMDHL04 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.10913	0.084028	0.18091	0

S_21FLVEMDHL04 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth

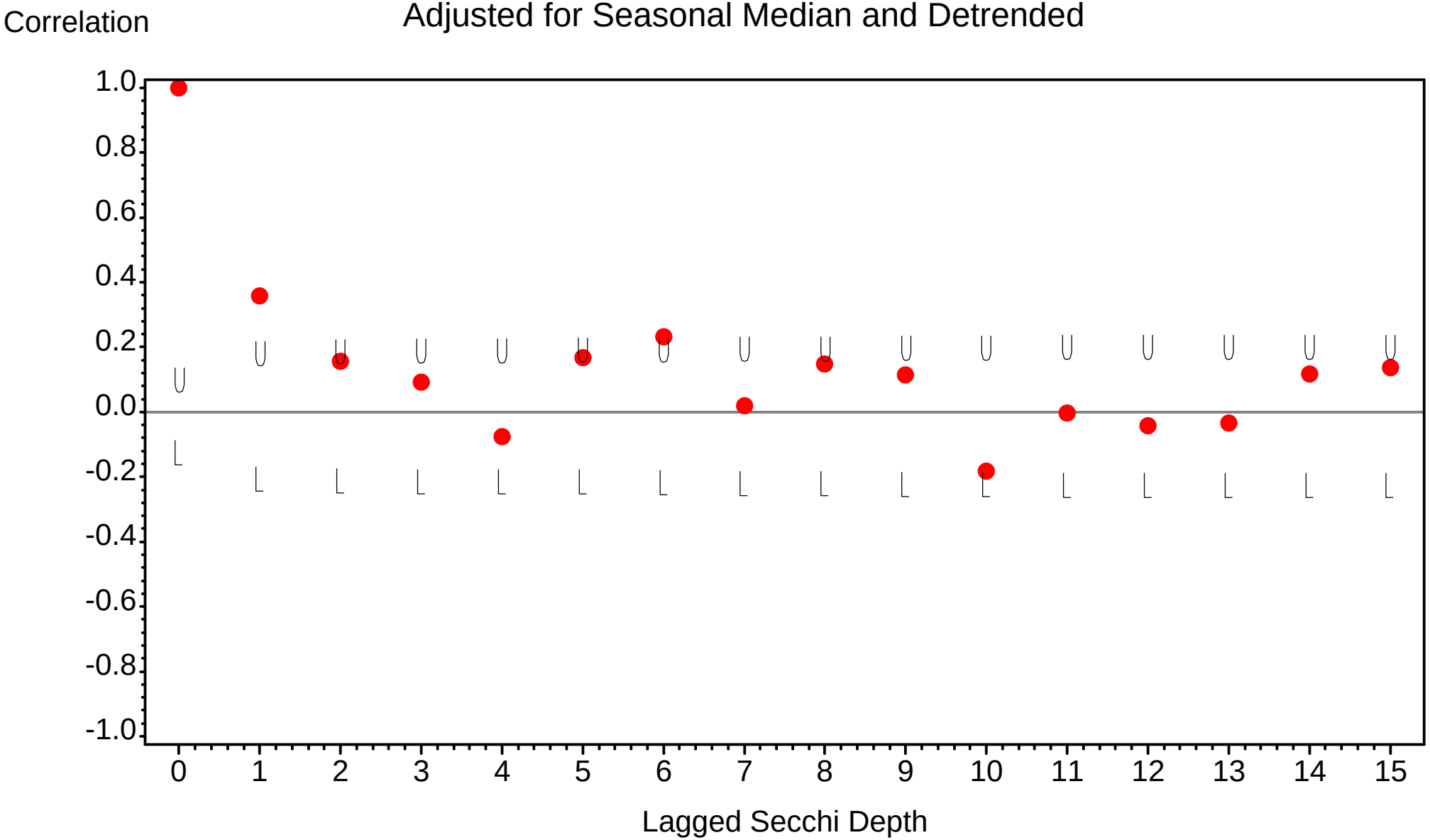


S_21FLVEMDHL04 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.357	0.096	0.192	-0.192
2	0.156	0.100	0.200	-0.200
3	0.093	0.101	0.202	-0.202
4	-0.076	0.101	0.202	-0.202
5	0.168	0.101	0.203	-0.203
6	0.231	0.102	0.205	-0.205
7	0.019	0.104	0.208	-0.208
8	0.148	0.104	0.208	-0.208
9	0.115	0.105	0.209	-0.209
10	-0.182	0.105	0.210	-0.210
11	-0.004	0.106	0.212	-0.212
12	-0.043	0.106	0.212	-0.212
13	-0.035	0.106	0.212	-0.212
14	0.118	0.106	0.212	-0.212
15	0.136	0.106	0.213	-0.213

S_21FLVEMDHL04 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
17	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
18	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
19	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
20	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
21	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
17	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
18	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
19	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
20	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
21	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
17	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
18	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
19	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
20	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
21	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
22	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
23	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28
24	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67
25	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
26	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90
27	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48
28	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
22	1.15	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017
23	0.99	Y	Y	N	N	-0.132	0.057	0.124	-0.001
24	1.60	Y	Y	N	N	0.150	0.038	0.109	0.103
25	0.27	N	Y	Y	Y	0.141	0.033	0.135	357.337
26	2.29	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014
27	1.87	Y	Y	Y	Y	0.090	0.188	0.382	0.156
28	0.20	N	Y	Y	Y	0.153	0.020	0.128	0.254

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	-0.14839	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
23	-0.13170	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
24	0.15026	0.03776	0.10869	0.103	0.15026	0.03776	0.103
25	0.14103	0.03319	0.13465	357.337	0.14100	0.13500	357.337
26	-0.08367	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014
27	0.08974	0.18759	0.38162	0.156	0.08974	0.38162	0.156
28	0.15317	0.01994	0.12793	0.254	0.15300	0.12800	0.254

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
29	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00
30	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
31	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43
32	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
33	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23
34	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47
35	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
29	1.03	Y	Y	N	N	0.109	0.084	0.181	0.000
30	0.75	Y	Y	Y	Y	0.015	0.858	0.907	0.001
31	1.03	Y	Y	N	N	-0.115	0.116	0.160	-0.001
32	1.38	Y	Y	Y	Y	0.074	0.356	0.527	0.052
33	0.08	N	Y	Y	Y	0.090	0.212	0.347	225.098
34	2.09	Y	N	N	N	-0.099	0.163	0.243	-0.023
35	2.11	Y	N	N	N	0.046	0.549	0.573	0.109

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
29	0.10913	0.08403	0.18091	0.000	0.10913	0.08403	0.000
30	0.01504	0.85776	0.90700	0.001	0.01504	0.90700	0.001
31	-0.12022	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001
32	0.07383	0.35568	0.52706	0.052	0.07383	0.52706	0.052
33	0.08958	0.21156	0.34660	225.098	0.09000	0.34700	225.098
34	-0.09906	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
35	0.04571	0.54949	0.57310	0.109	0.04571	0.54949	0.109

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
36	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09
37	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00
38	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
39	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
40	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
41	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09
42	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
36	0.29	N	Y	Y	Y	0.155	0.028	0.107	0.318
37	-9999.00	N	Y	N	N	0.192	0.005	0.044	0.011
38	1.04	Y	Y	N	N	-0.161	0.045	0.205	-0.029
39	0.45	N	N	N	N	0.021	0.810	0.860	0.000
40	0.33	N	Y	N	N	0.049	0.531	0.675	0.023
41	0.79	Y	Y	Y	Y	0.017	0.821	0.864	6.873
42	2.35	Y	Y	N	N	-0.022	0.763	0.834	-0.004

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
36	0.15482	0.02802	0.10656	0.318	0.15500	0.10700	0.318
37	0.19225	0.00486	0.04449	0.011	0.19200	0.00500	0.011
38	-0.16145	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
39	0.02128	0.80954	0.86021	0.000	0.02100	0.81000	0.000
40	0.04851	0.53077	0.67536	0.023	0.04900	0.53100	0.023
41	0.01671	0.82111	0.86399	6.874	0.01671	0.86399	6.874
42	-0.02159	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
43	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00
44	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00
45	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61
46	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
47	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10
48	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
49	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
43	2.11	Y	Y	Y	Y	0.049	0.487	0.514	0.154
44	0.98	Y	Y	Y	Y	0.070	0.304	0.474	0.025
45	1.08	Y	Y	N	N	0.064	0.330	0.509	0.000
46	1.88	Y	Y	N	N	0.017	0.845	0.901	0.002
47	1.51	Y	Y	Y	Y	0.050	0.519	0.695	0.000
48	-9999.00	N	Y	N	N	0.078	0.299	0.360	0.020
49	1.12	Y	N	Y	N	0.106	0.122	0.158	10.031

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
43	0.04892	0.48687	0.51426	0.154	0.04892	0.51426	0.154
44	0.06955	0.30398	0.47368	0.025	0.06955	0.47368	0.025
45	0.06415	0.32954	0.50893	0.000	0.06415	0.32954	0.000
46	0.01724	0.84540	0.90084	0.002	0.01724	0.84540	0.002
47	0.05031	0.51900	0.69540	0.000	0.05031	0.69540	0.000
48	0.07599	0.31036	0.36979	0.020	0.07800	0.29900	0.020
49	0.10598	0.12166	0.15796	10.031	0.10598	0.12166	10.031

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
50	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25
51	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00
52	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73
53	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00
54	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
55	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
56	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
50	0.82	Y	Y	N	N	-0.170	0.012	0.092	-0.059
51	0.70	Y	Y	N	N	-0.175	0.011	0.082	-0.515
52	1.54	Y	N	Y	N	0.092	0.169	0.290	0.004
53	1.54	Y	Y	Y	Y	0.094	0.155	0.427	0.007
54	1.48	Y	Y	N	N	-0.031	0.706	0.812	-0.002
55	-9999.00	N	N	N	N	-0.023	0.786	0.871	0.000
56	0.44	N	Y	N	N	-0.142	0.074	0.219	-0.011

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
50	-0.16974	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059
51	-0.17479	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
52	0.09207	0.16857	0.29012	0.004	0.09207	0.16857	0.004
53	0.09387	0.15479	0.42738	0.007	0.09387	0.42738	0.007
54	-0.03145	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
55	-0.02254	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
56	-0.14223	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011

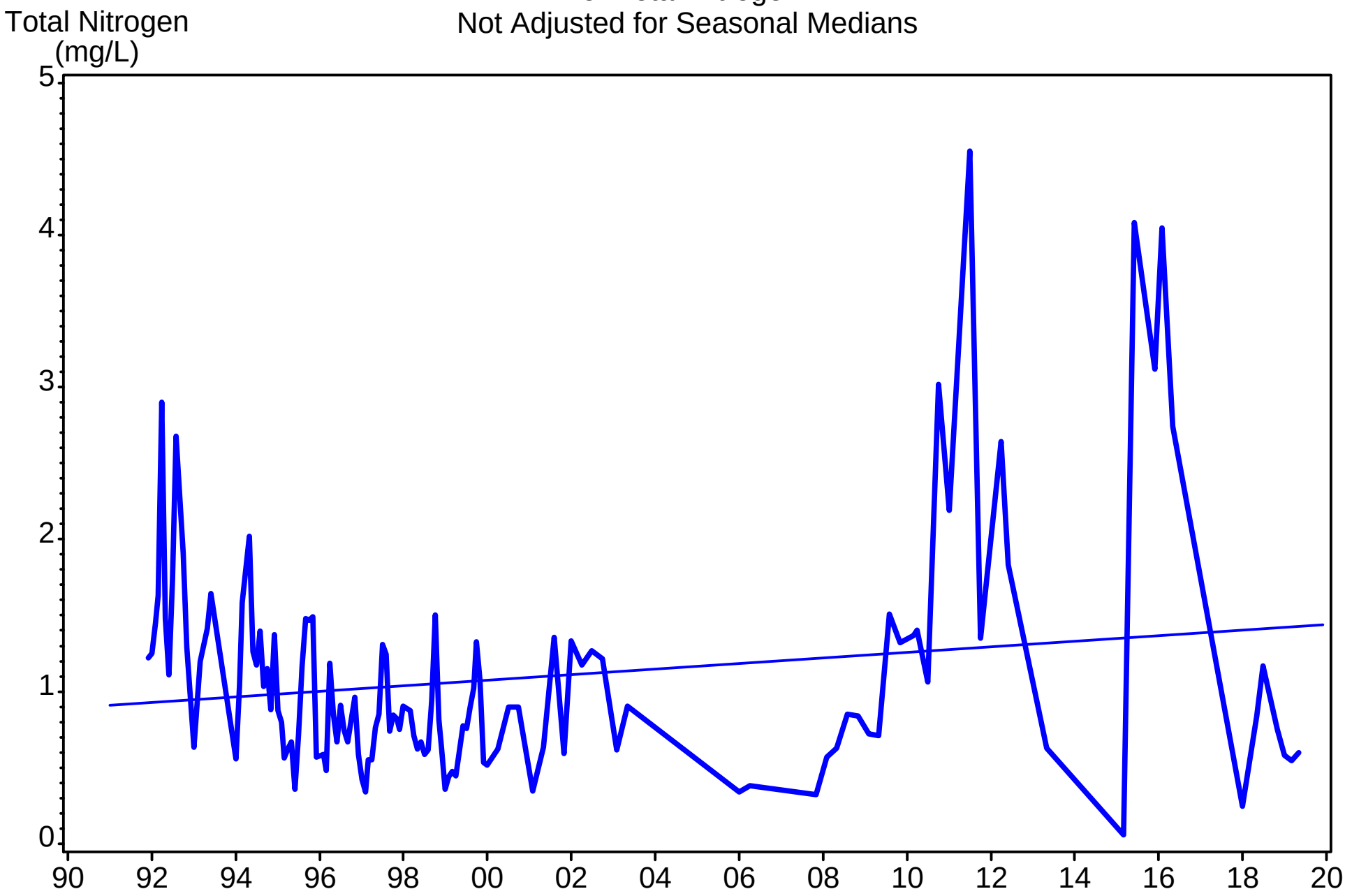
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
57	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19
58	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42
59	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81
60	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00
61	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00
62	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
63	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
57	-9999.00	N	N	Y	N	0.085	0.243	0.291	2.029
58	2.33	Y	Y	N	N	-0.040	0.591	0.737	-0.008
59	1.77	Y	Y	N	N	0.027	0.725	0.823	0.034
60	-9999.00	N	Y	Y	Y	0.123	0.076	0.159	0.001
61	0.68	Y	Y	N	N	0.194	0.005	0.046	0.009
62	0.31	N	Y	N	N	-0.241	0.003	0.076	-0.016
63	-9999.00	N	N	N	N	0.040	0.632	0.786	0.000

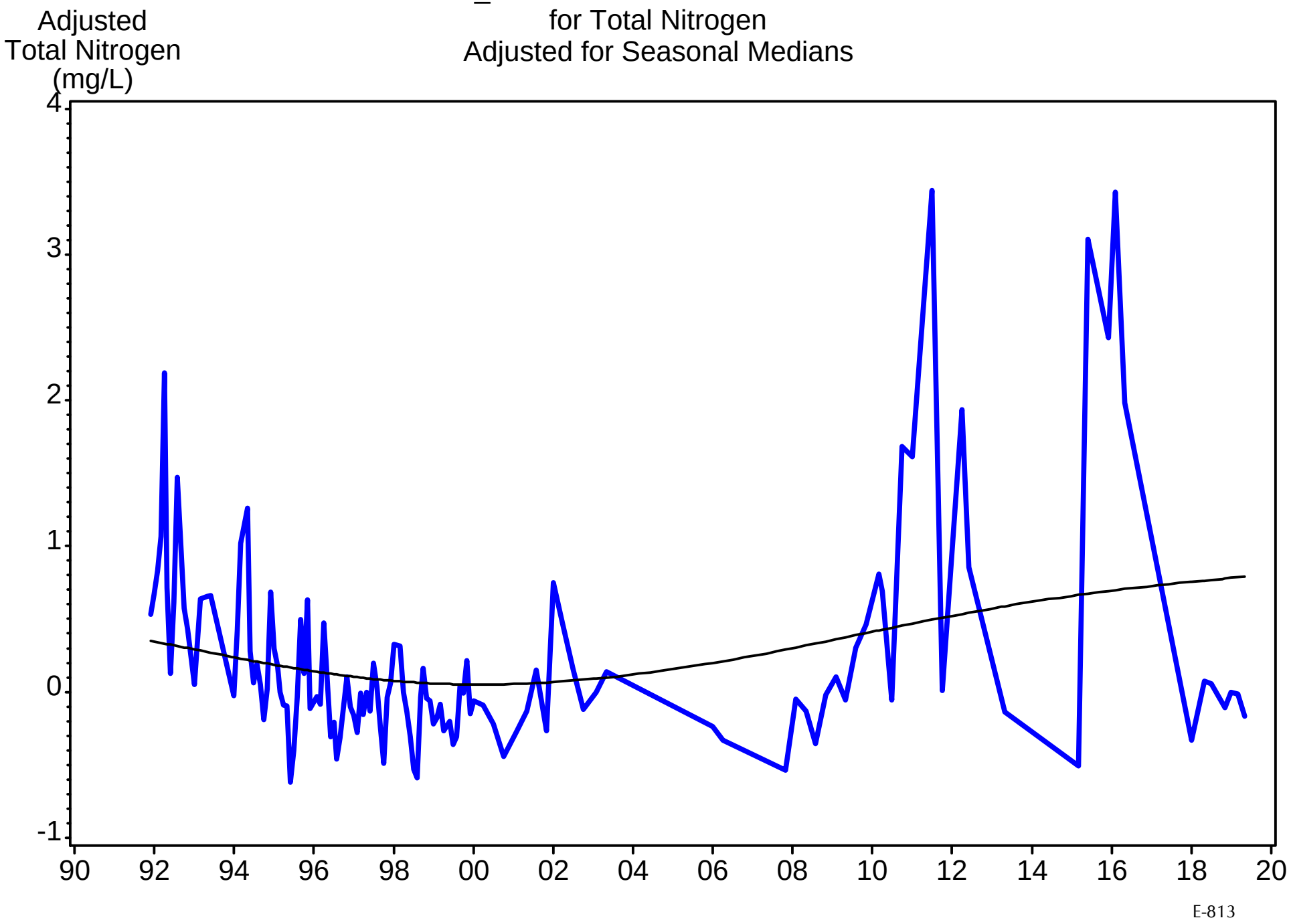
Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
57	0.08500	0.24287	0.29095	2.029	0.08500	0.24300	2.029
58	-0.03968	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008
59	0.02716	0.72528	0.82342	0.034	0.02716	0.72528	0.034
60	0.12322	0.07617	0.15857	0.001	0.12300	0.15900	0.001
61	0.19383	0.00462	0.04647	0.009	0.19383	0.00462	0.009
62	-0.24070	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
63	0.04009	0.63152	0.78567	0.000	0.04000	0.63200	0.000

S_21FLVEMDHL05 Trends

S_21FLVEMDHL05 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLVEMDHL05 Trends

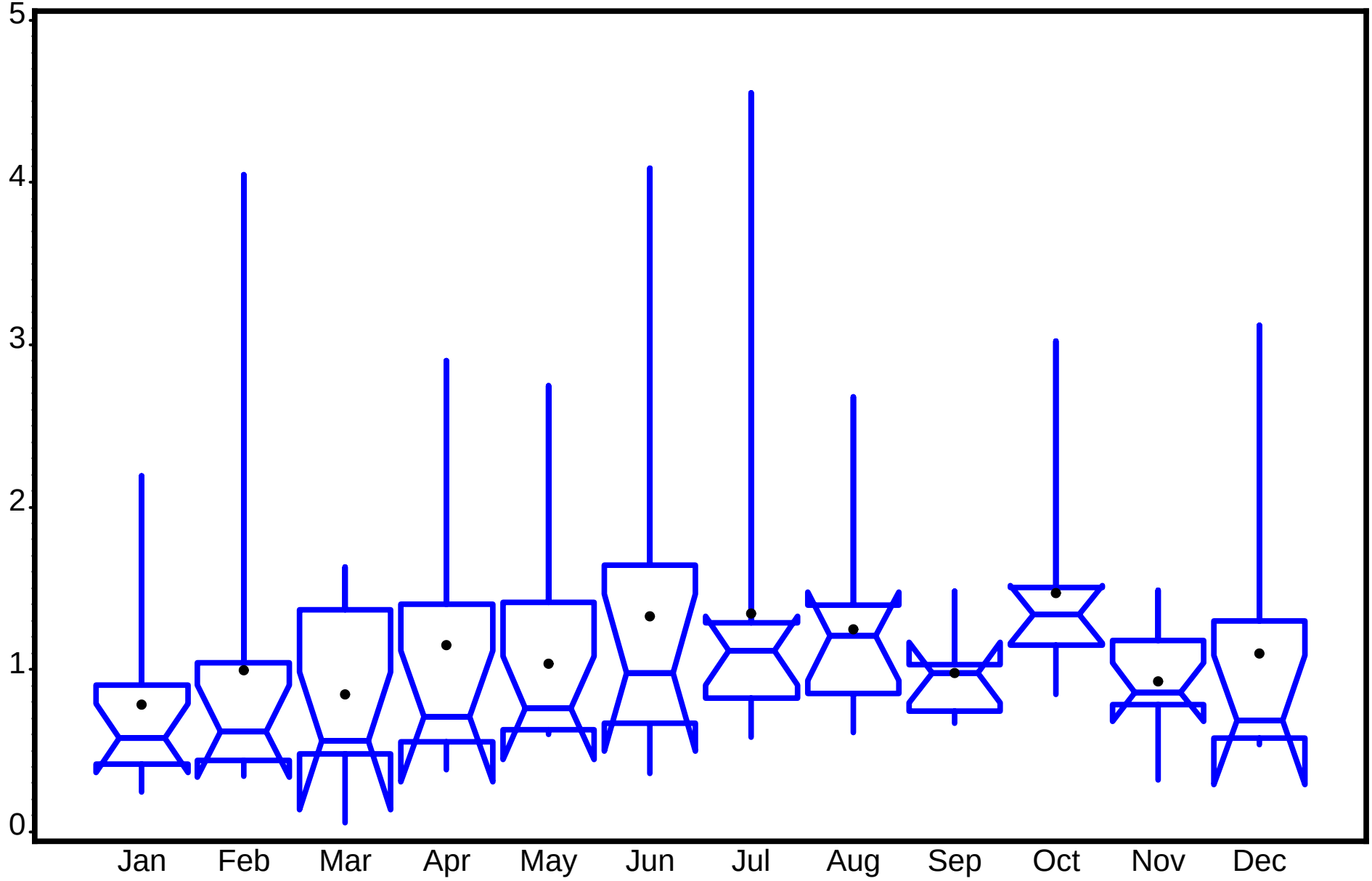


S_21FLVEMDHL05 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



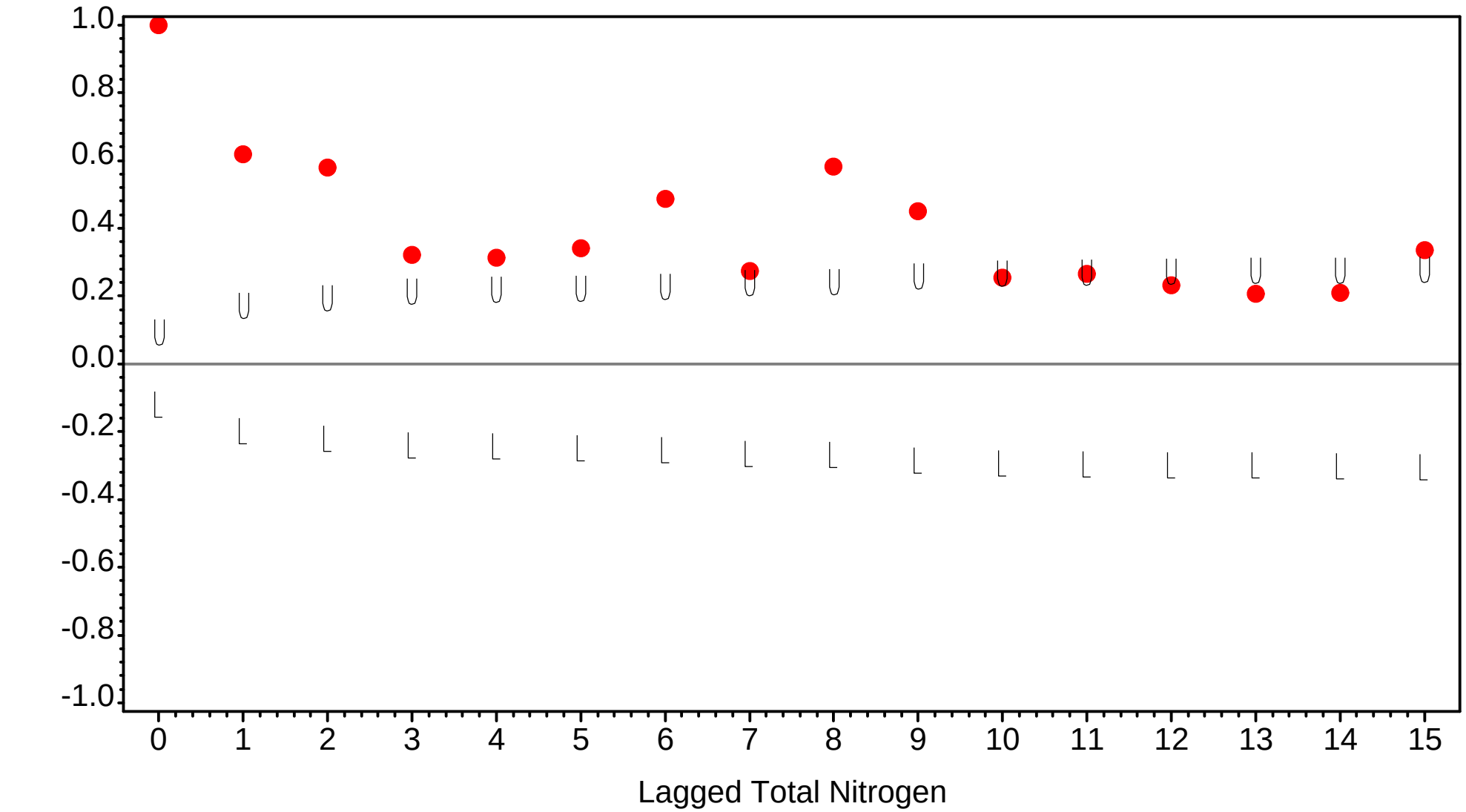
S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.618	0.093	0.186	-0.186
2	0.578	0.104	0.208	-0.208
3	0.321	0.113	0.226	-0.226
4	0.312	0.115	0.231	-0.231
5	0.342	0.118	0.236	-0.236
6	0.487	0.121	0.241	-0.241
7	0.275	0.126	0.252	-0.252
8	0.582	0.128	0.256	-0.256
9	0.449	0.135	0.271	-0.271
10	0.254	0.140	0.279	-0.279
11	0.265	0.141	0.282	-0.282
12	0.232	0.142	0.285	-0.285
13	0.206	0.143	0.287	-0.287
14	0.209	0.144	0.288	-0.288
15	0.335	0.145	0.290	-0.290

S_21FLVEMDHL05 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

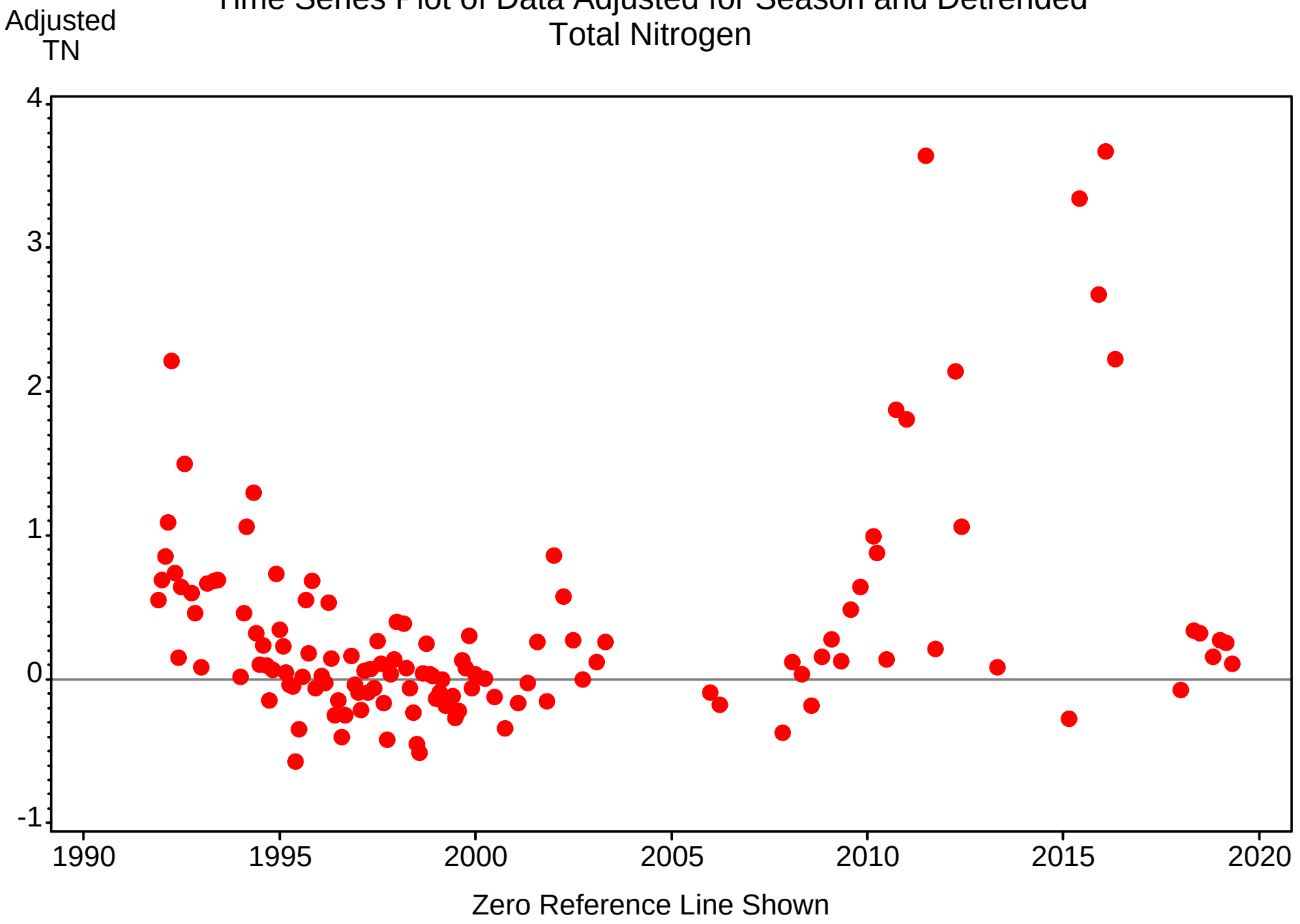
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.146	0.037	0.227	-.009

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.14590	0.036613	0.22687	-.00927273

S_21FLVEMDHL05 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



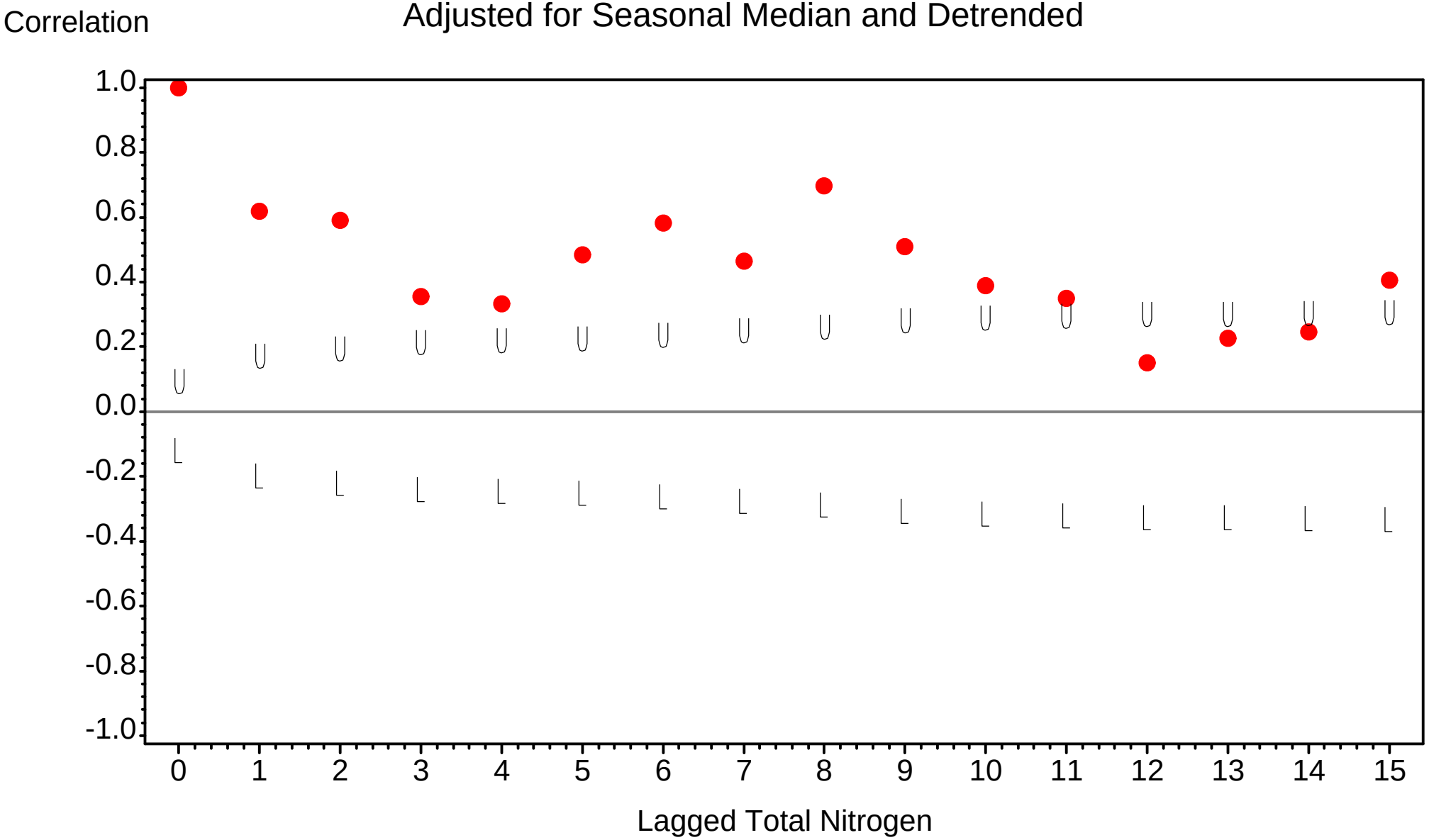
S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.619	0.093	0.186	-0.186
2	0.589	0.104	0.208	-0.208
3	0.355	0.113	0.226	-0.226
4	0.333	0.116	0.233	-0.233
5	0.484	0.119	0.238	-0.238
6	0.582	0.125	0.249	-0.249
7	0.464	0.132	0.264	-0.264
8	0.698	0.137	0.274	-0.274
9	0.508	0.147	0.293	-0.293
10	0.389	0.152	0.303	-0.303
11	0.349	0.154	0.309	-0.309
12	0.151	0.157	0.313	-0.313
13	0.227	0.157	0.314	-0.314
14	0.245	0.158	0.316	-0.316
15	0.405	0.159	0.318	-0.318

S_21FLVEMDHL05 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

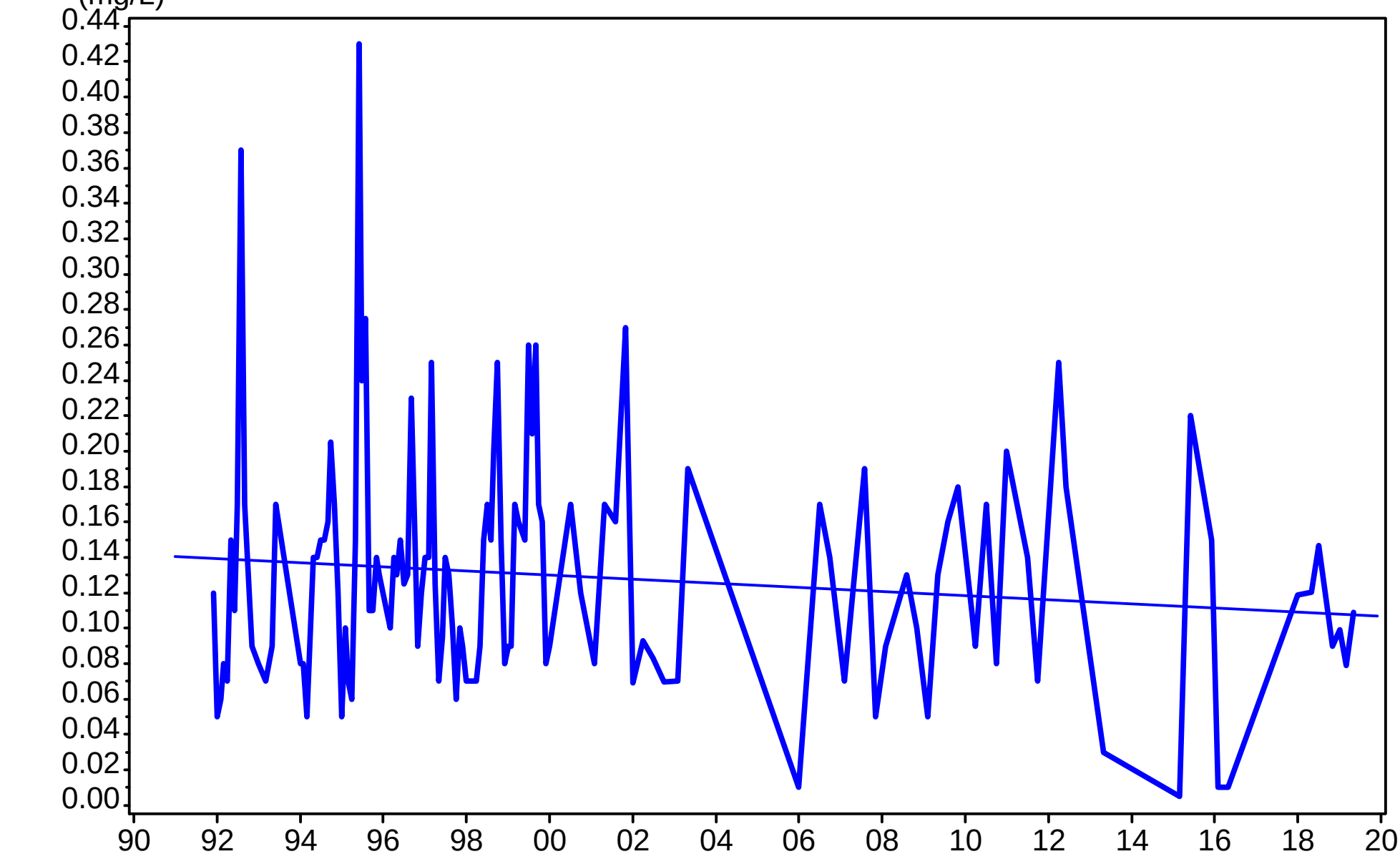


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

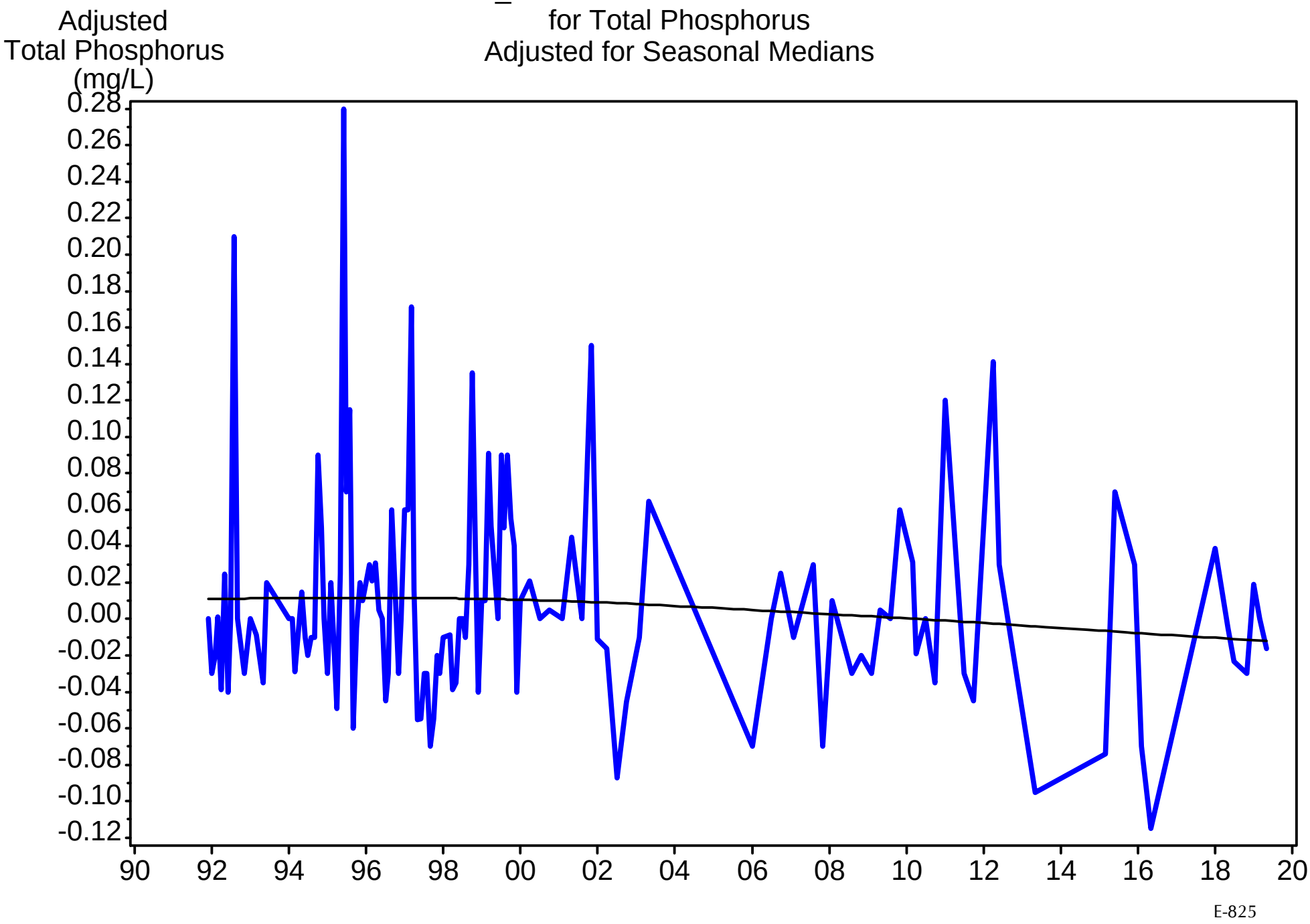
Zero Reference Line Shown

S_21FLVEMDHL05 Trends

S_21FLVEMDHL05 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



S_21FLVEMDHL05 Trends

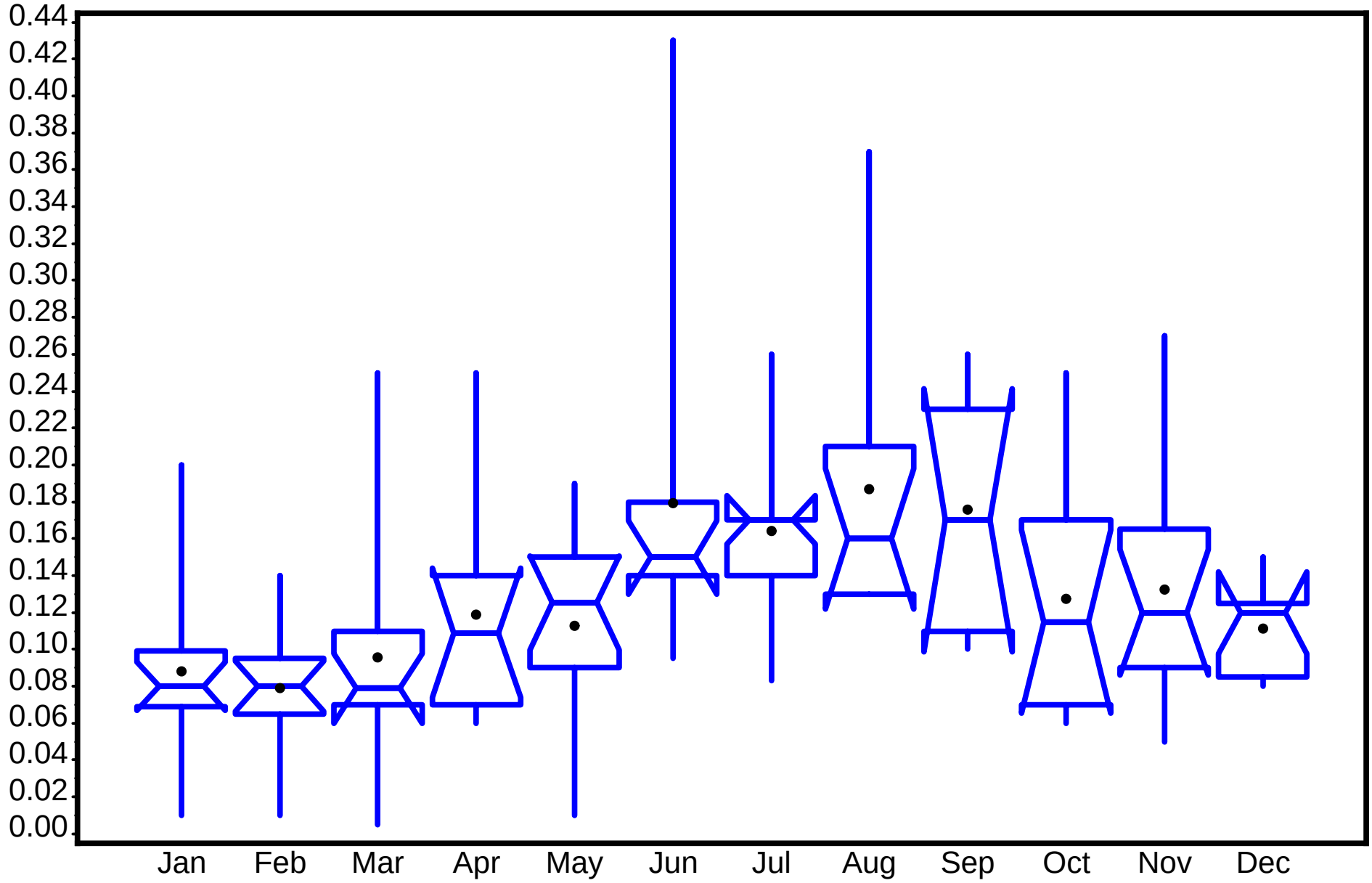


S_21FLVEMDHL05 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



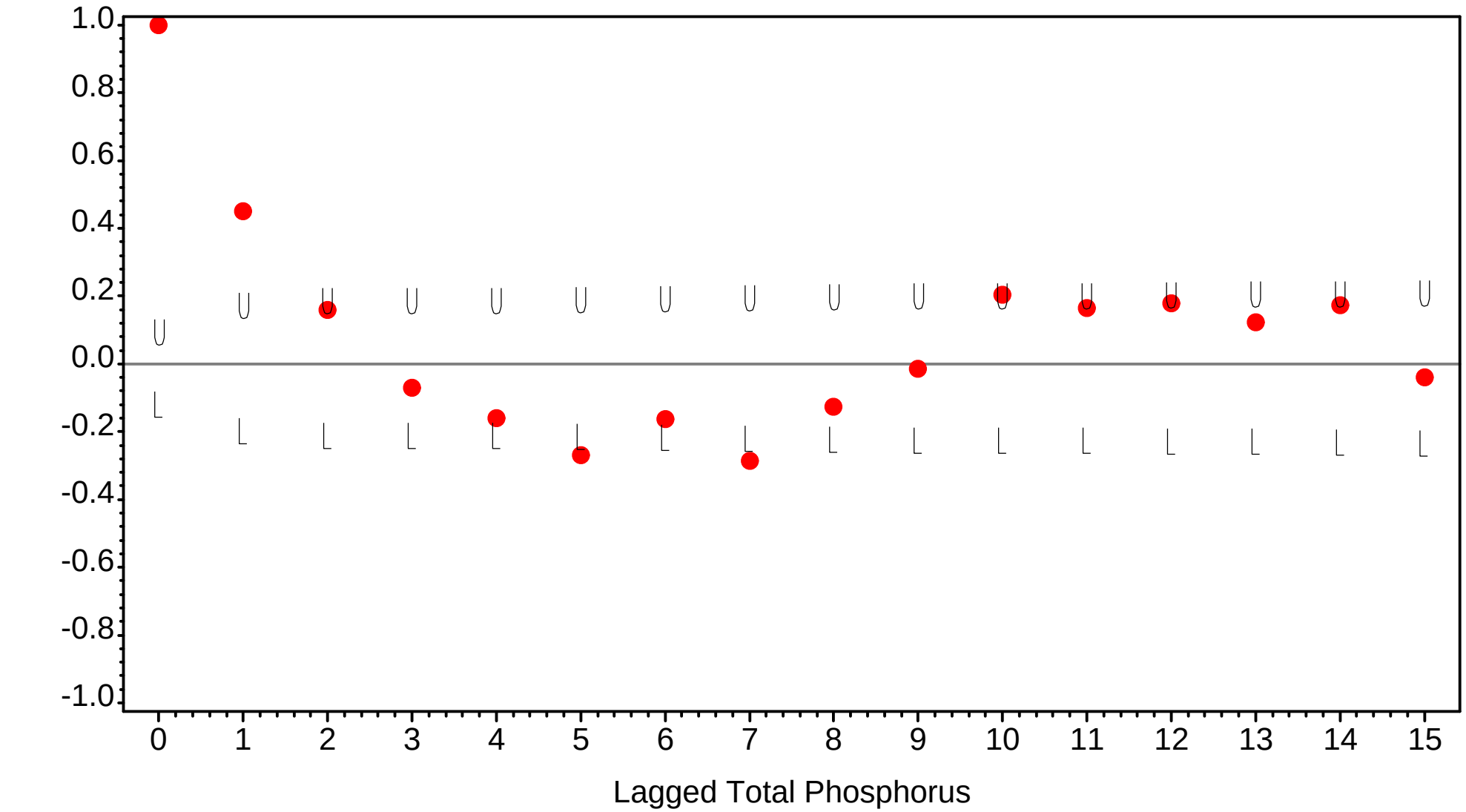
S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.450	0.093	0.186	-0.186
2	0.158	0.099	0.198	-0.198
3	-0.071	0.100	0.199	-0.199
4	-0.160	0.100	0.200	-0.200
5	-0.268	0.101	0.201	-0.201
6	-0.163	0.103	0.205	-0.205
7	-0.286	0.103	0.207	-0.207
8	-0.127	0.106	0.211	-0.211
9	-0.015	0.106	0.212	-0.212
10	0.203	0.106	0.212	-0.212
11	0.164	0.107	0.214	-0.214
12	0.179	0.108	0.216	-0.216
13	0.124	0.109	0.217	-0.217
14	0.174	0.109	0.218	-0.218
15	-0.040	0.110	0.220	-0.220

S_21FLVEMDHL05 Trends Appendix

Correlogram for Total Phosphorus

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

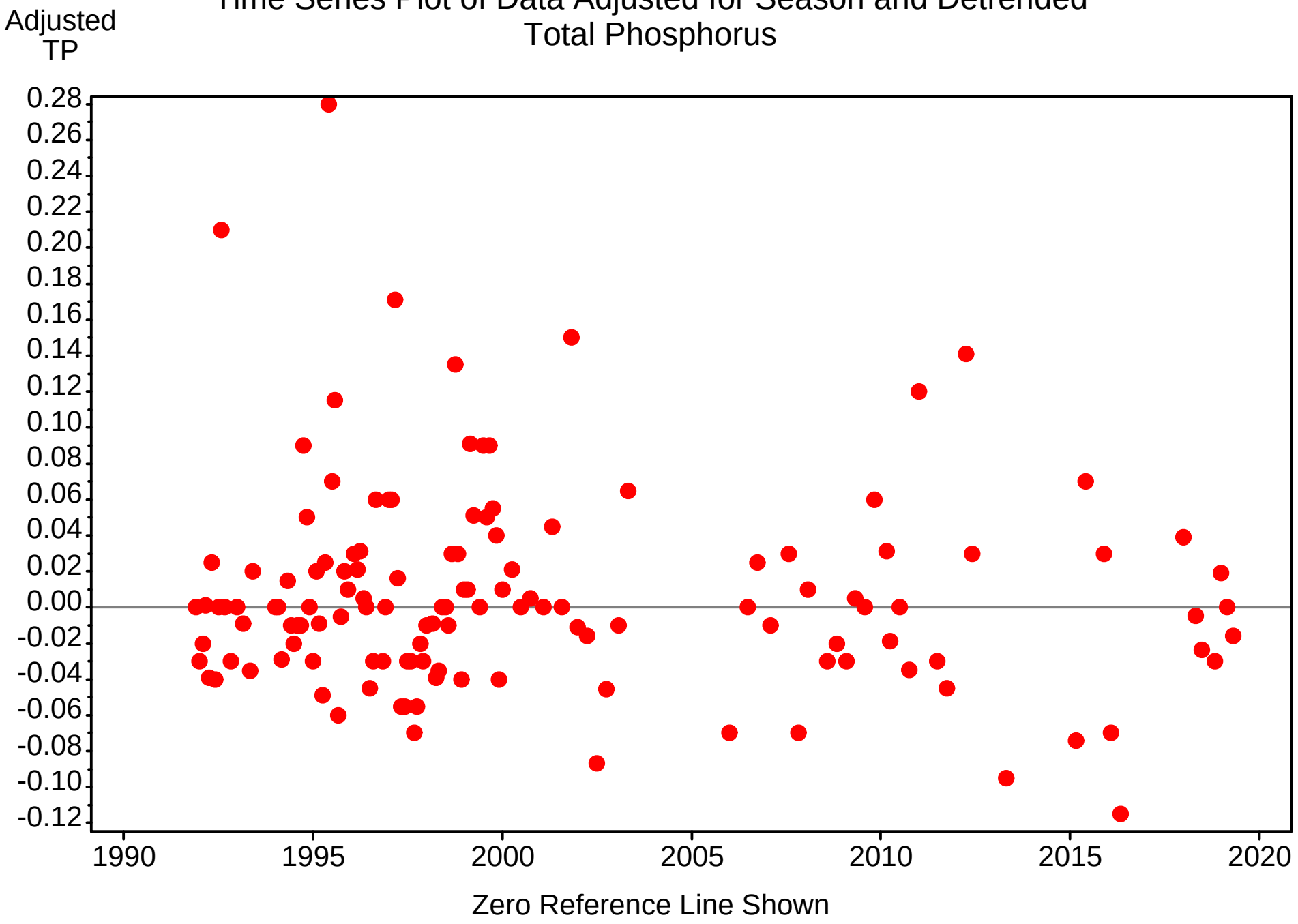
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.03	0.675	0.69	0

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.029718	0.67549	0.68953	0

S_21FLVEMDHL05 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

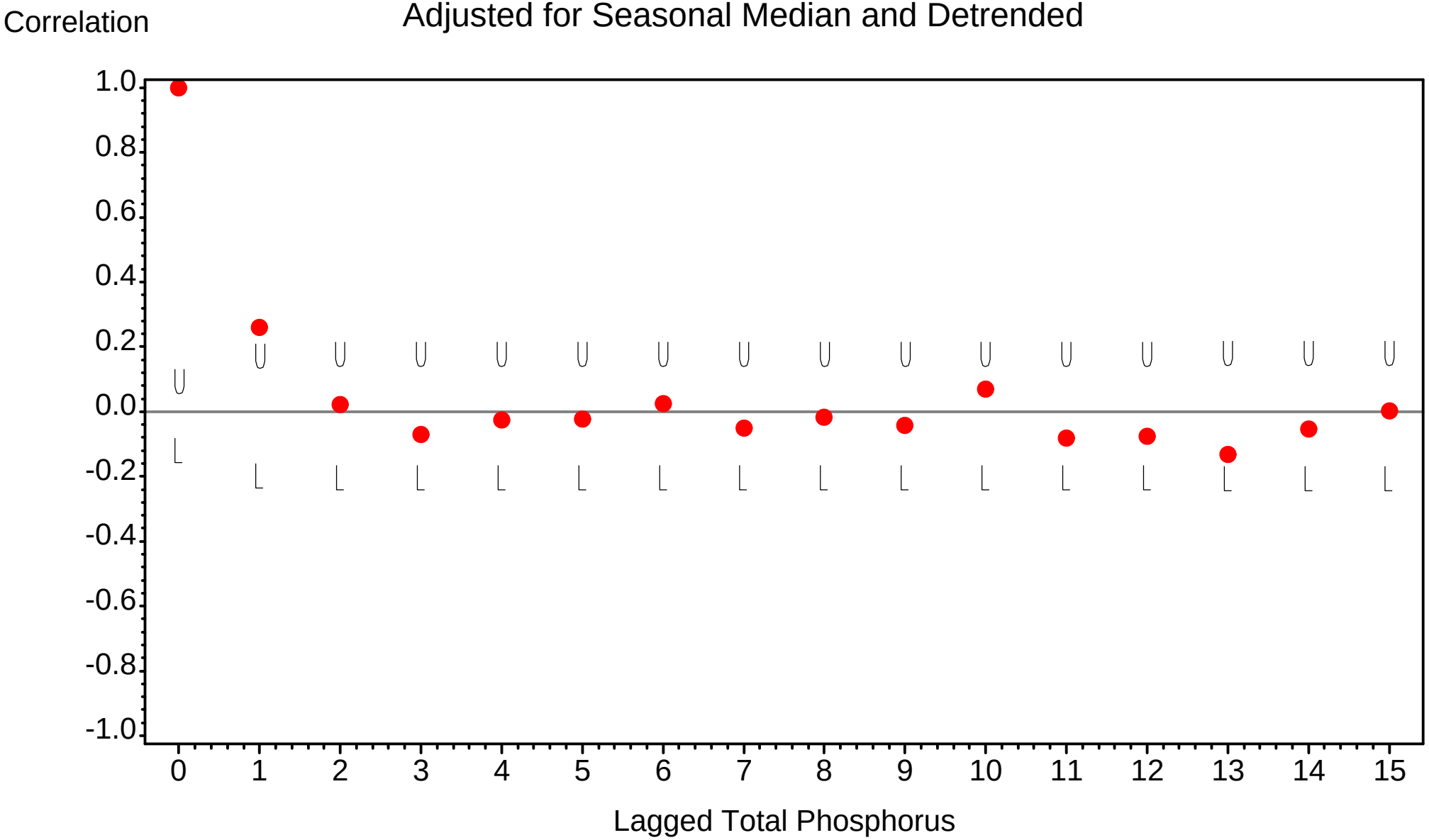


S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.261	0.093	0.186	-0.186
2	0.022	0.095	0.190	-0.190
3	-0.071	0.095	0.190	-0.190
4	-0.025	0.095	0.190	-0.190
5	-0.024	0.095	0.190	-0.190
6	0.025	0.095	0.190	-0.190
7	-0.052	0.095	0.190	-0.190
8	-0.016	0.095	0.190	-0.190
9	-0.042	0.095	0.190	-0.190
10	0.069	0.095	0.191	-0.191
11	-0.082	0.095	0.191	-0.191
12	-0.075	0.096	0.191	-0.191
13	-0.133	0.096	0.192	-0.192
14	-0.054	0.096	0.193	-0.193
15	0.003	0.096	0.193	-0.193

S_21FLVEMDHL05 Trends Appendix

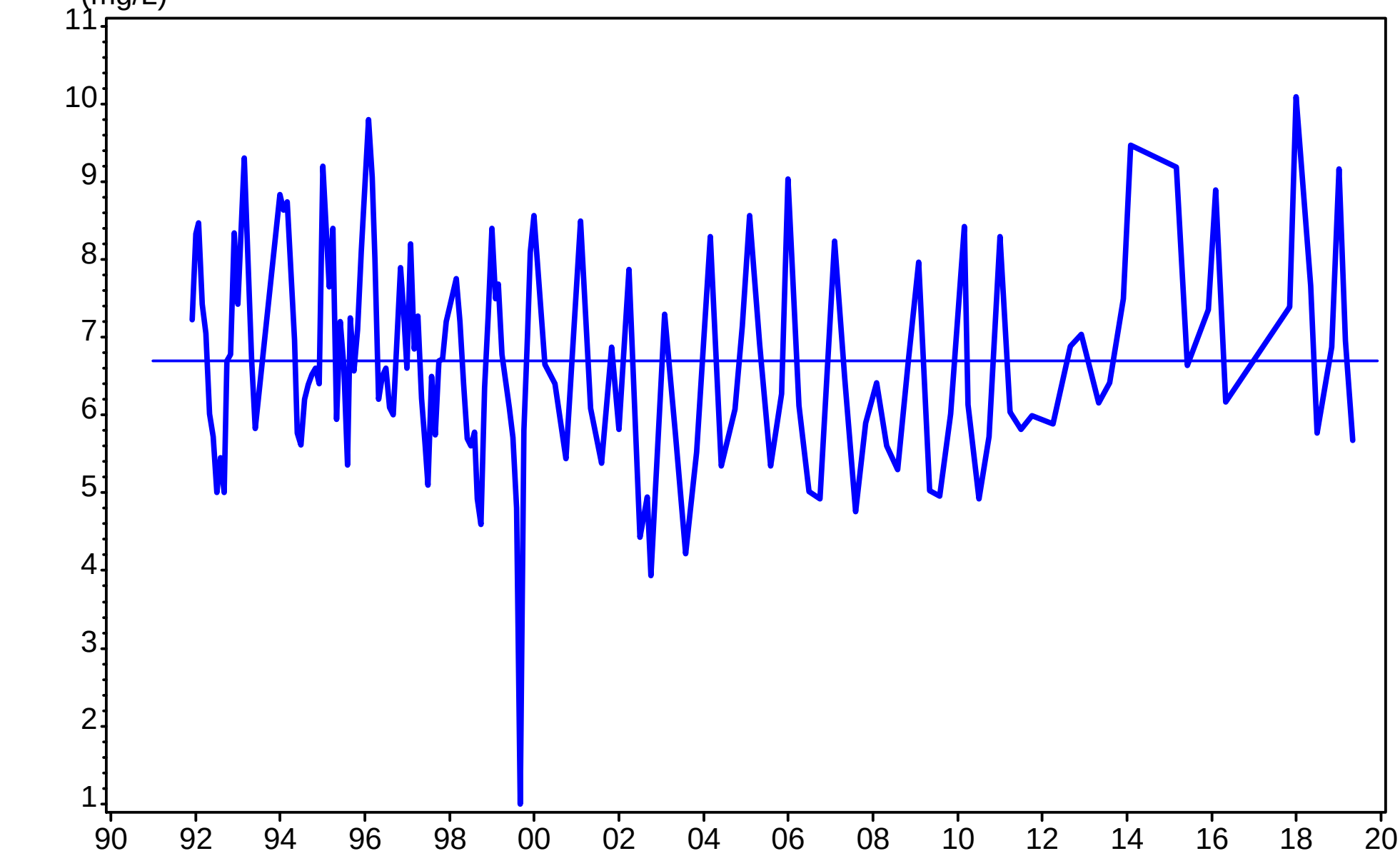
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



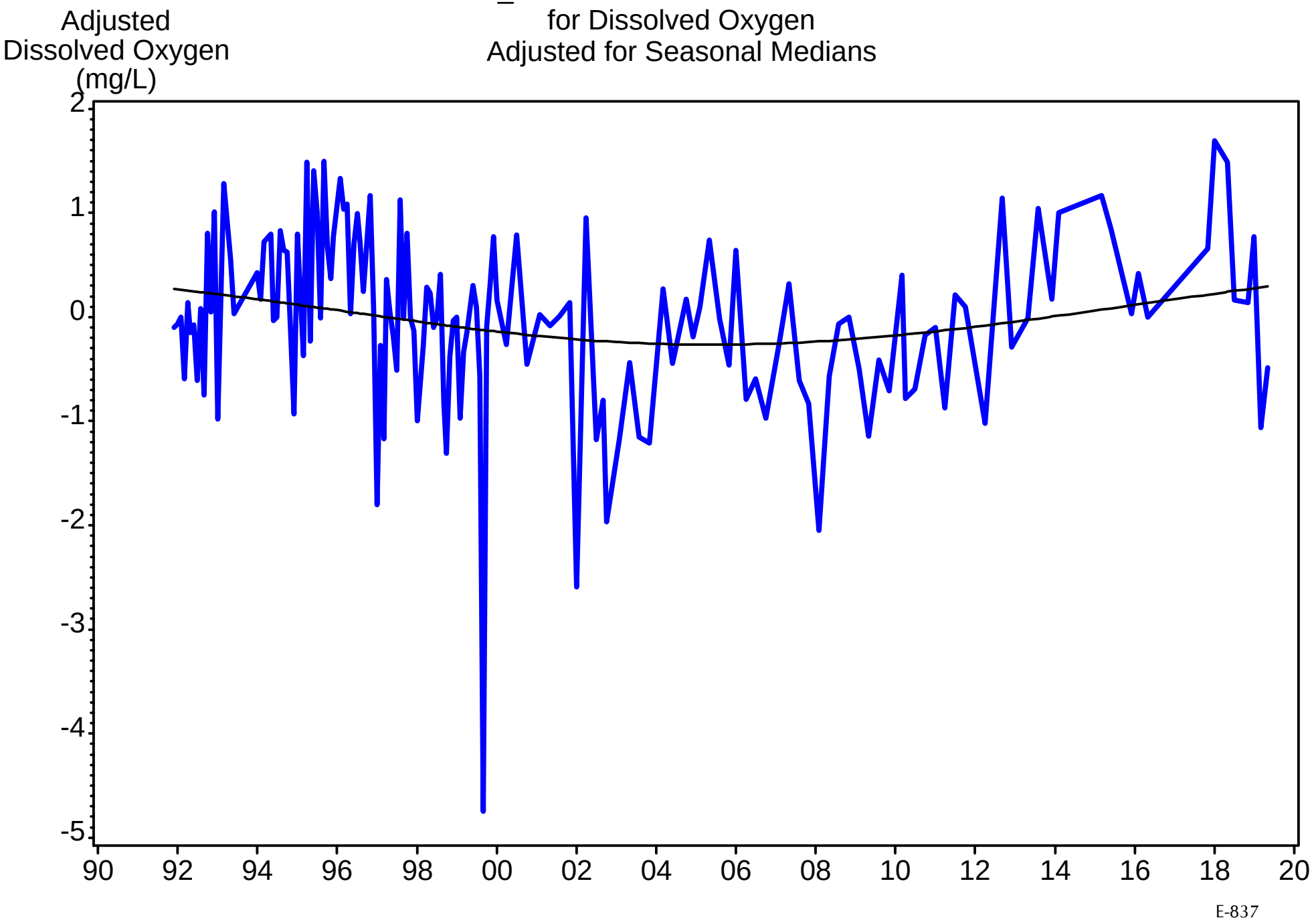
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL05 Trends

S_21FLVEMDHL05 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLVEMDHL05 Trends

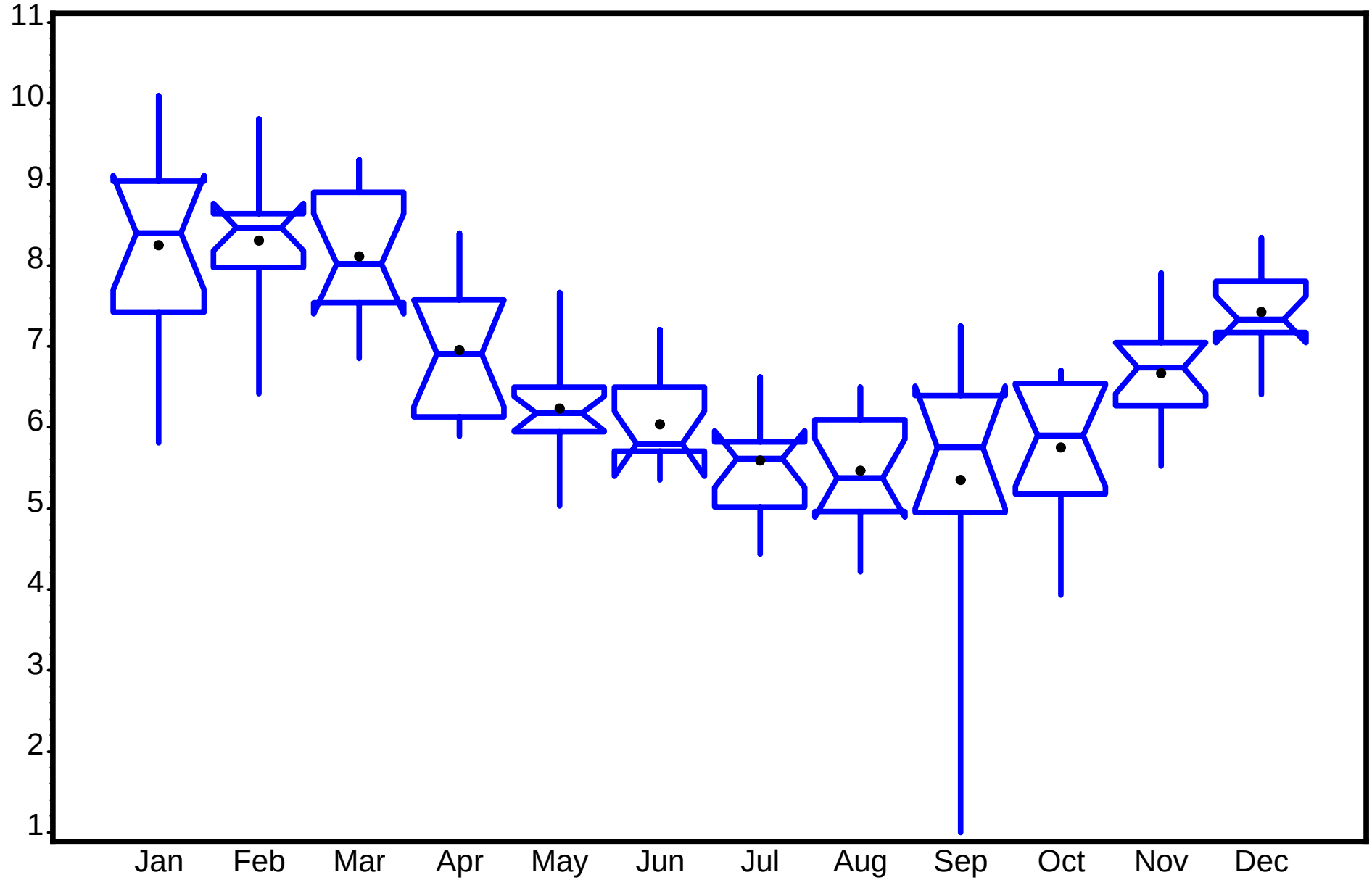


S_21FLVEMDHL05 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



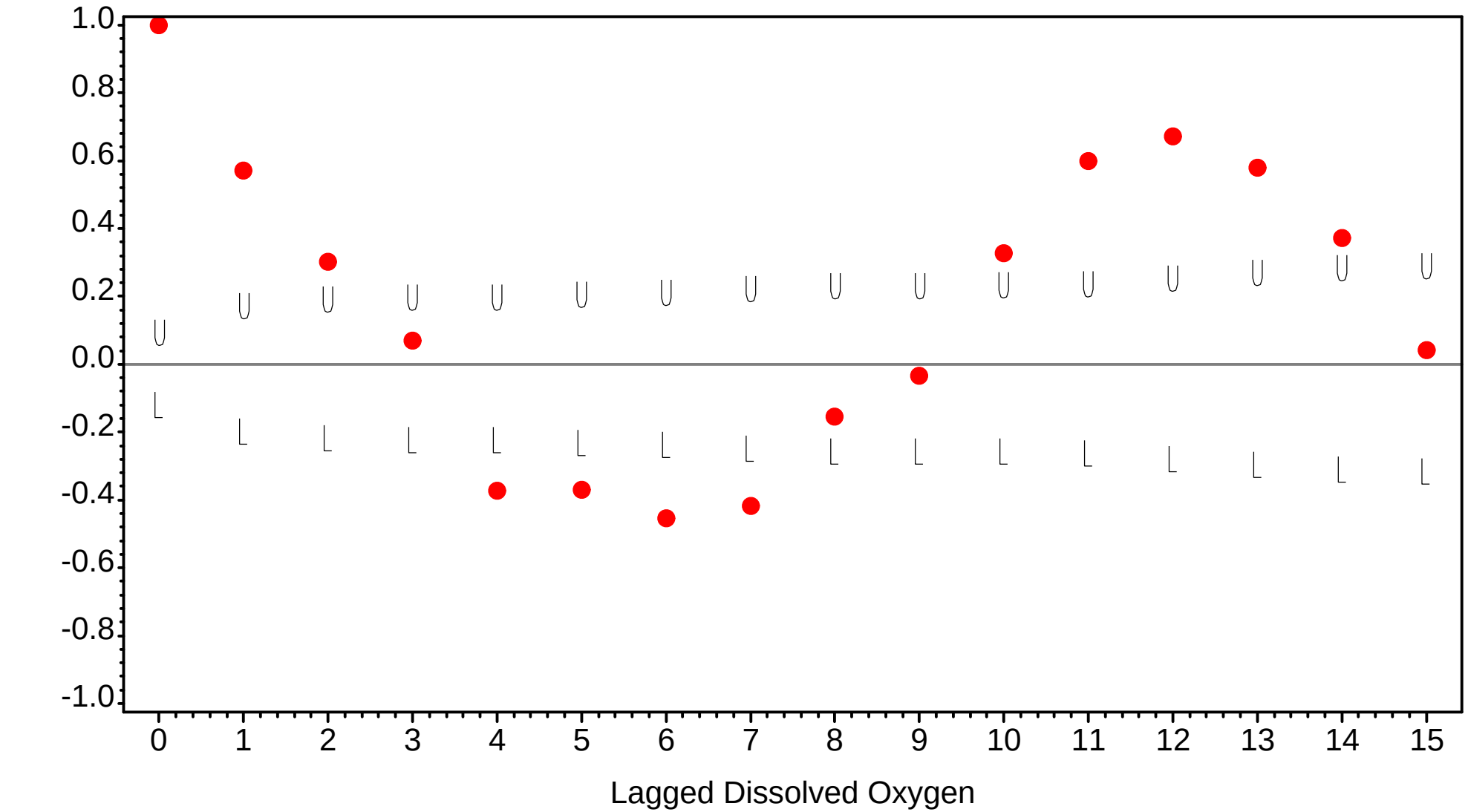
S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.570	0.093	0.186	-0.186
2	0.301	0.102	0.205	-0.205
3	0.069	0.105	0.210	-0.210
4	-0.373	0.105	0.210	-0.210
5	-0.369	0.109	0.218	-0.218
6	-0.453	0.112	0.225	-0.225
7	-0.418	0.117	0.235	-0.235
8	-0.154	0.122	0.243	-0.243
9	-0.034	0.122	0.244	-0.244
10	0.326	0.122	0.245	-0.245
11	0.599	0.125	0.249	-0.249
12	0.672	0.133	0.265	-0.265
13	0.578	0.142	0.284	-0.284
14	0.373	0.149	0.298	-0.298
15	0.042	0.151	0.303	-0.303

S_21FLVEMDHL05 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

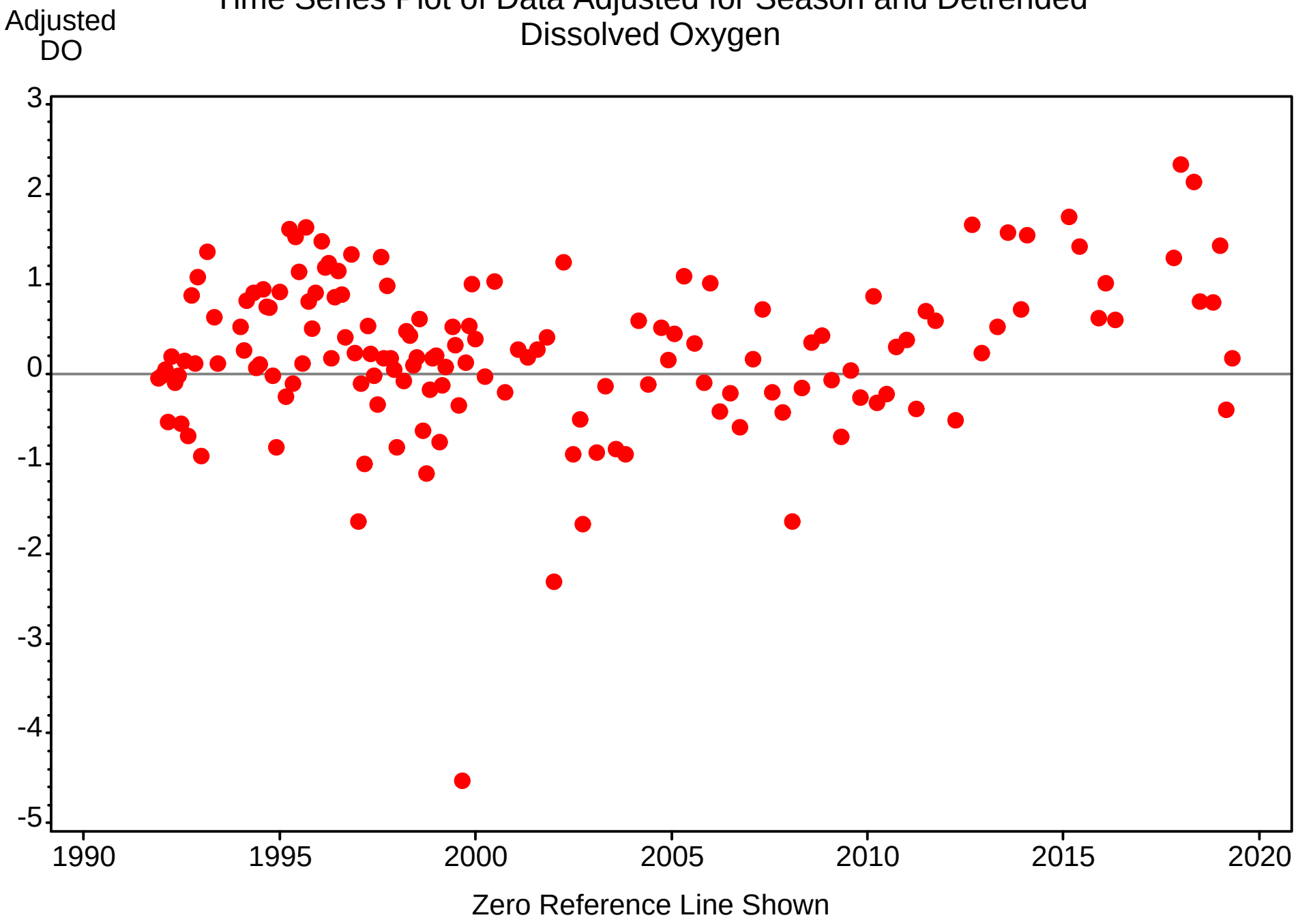
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.149	0.017	0.11	-0.023

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.14929	0.017045	0.11000	-0.022609

S_21FLVEMDHL05 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

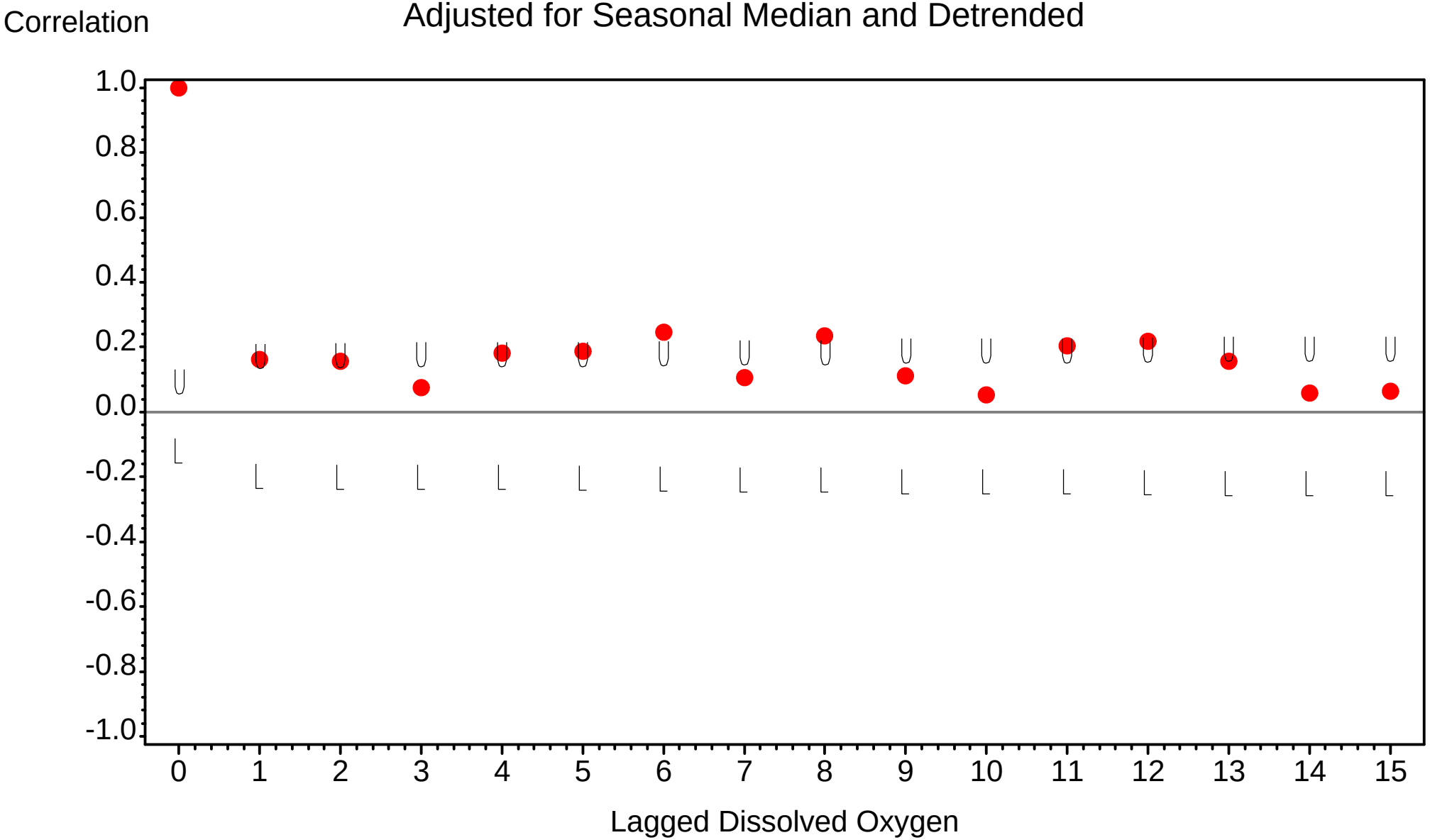


S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.163	0.093	0.186	-0.186
2	0.156	0.094	0.187	-0.187
3	0.076	0.094	0.189	-0.189
4	0.181	0.095	0.189	-0.189
5	0.187	0.096	0.191	-0.191
6	0.246	0.097	0.193	-0.193
7	0.105	0.098	0.197	-0.197
8	0.236	0.099	0.197	-0.197
9	0.111	0.100	0.201	-0.201
10	0.054	0.101	0.201	-0.201
11	0.205	0.101	0.202	-0.202
12	0.217	0.102	0.204	-0.204
13	0.156	0.103	0.207	-0.207
14	0.057	0.104	0.208	-0.208
15	0.065	0.104	0.208	-0.208

S_21FLVEMDHL05 Trends Appendix

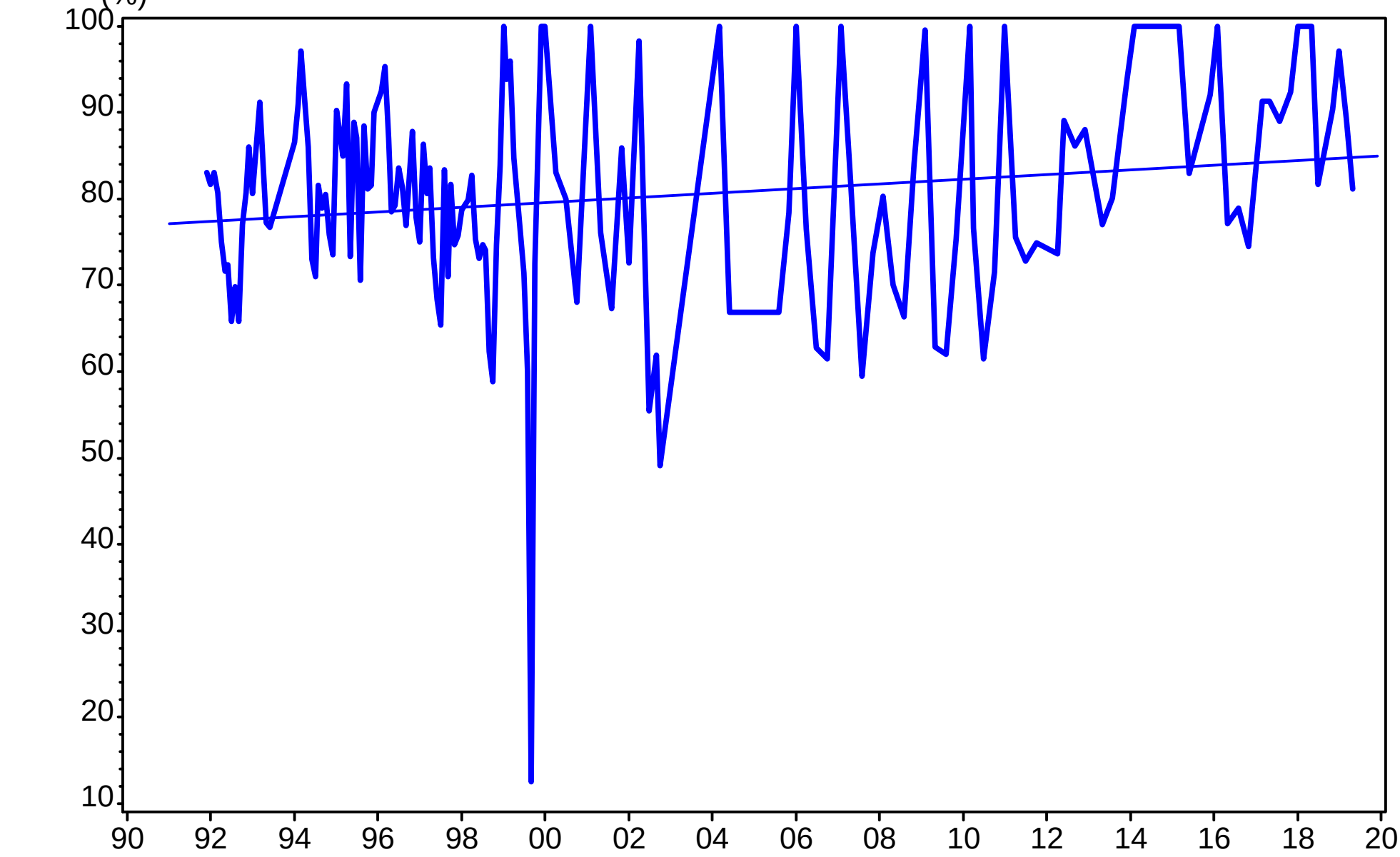
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



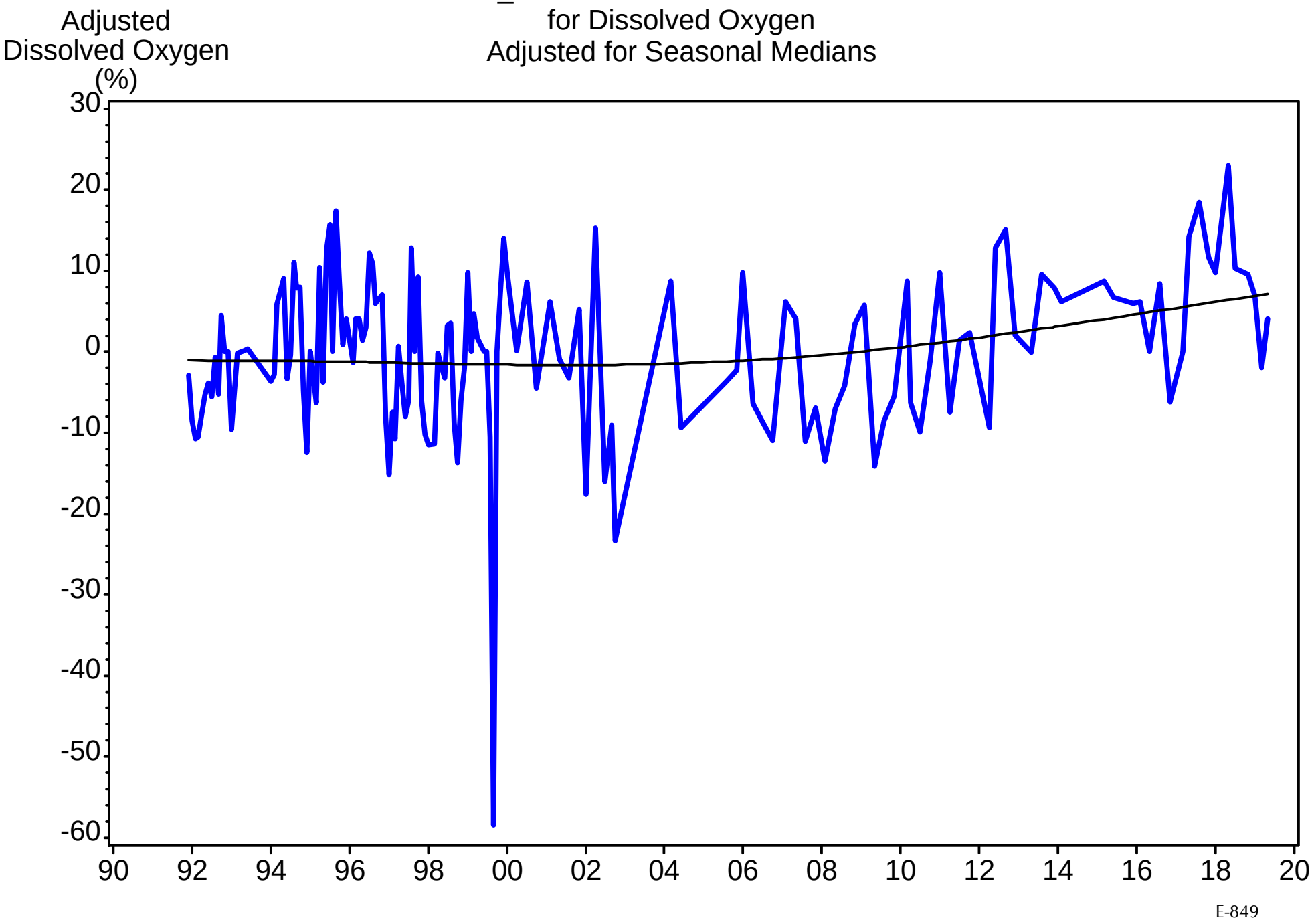
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL05 Trends

S_21FLVEMDHL05 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



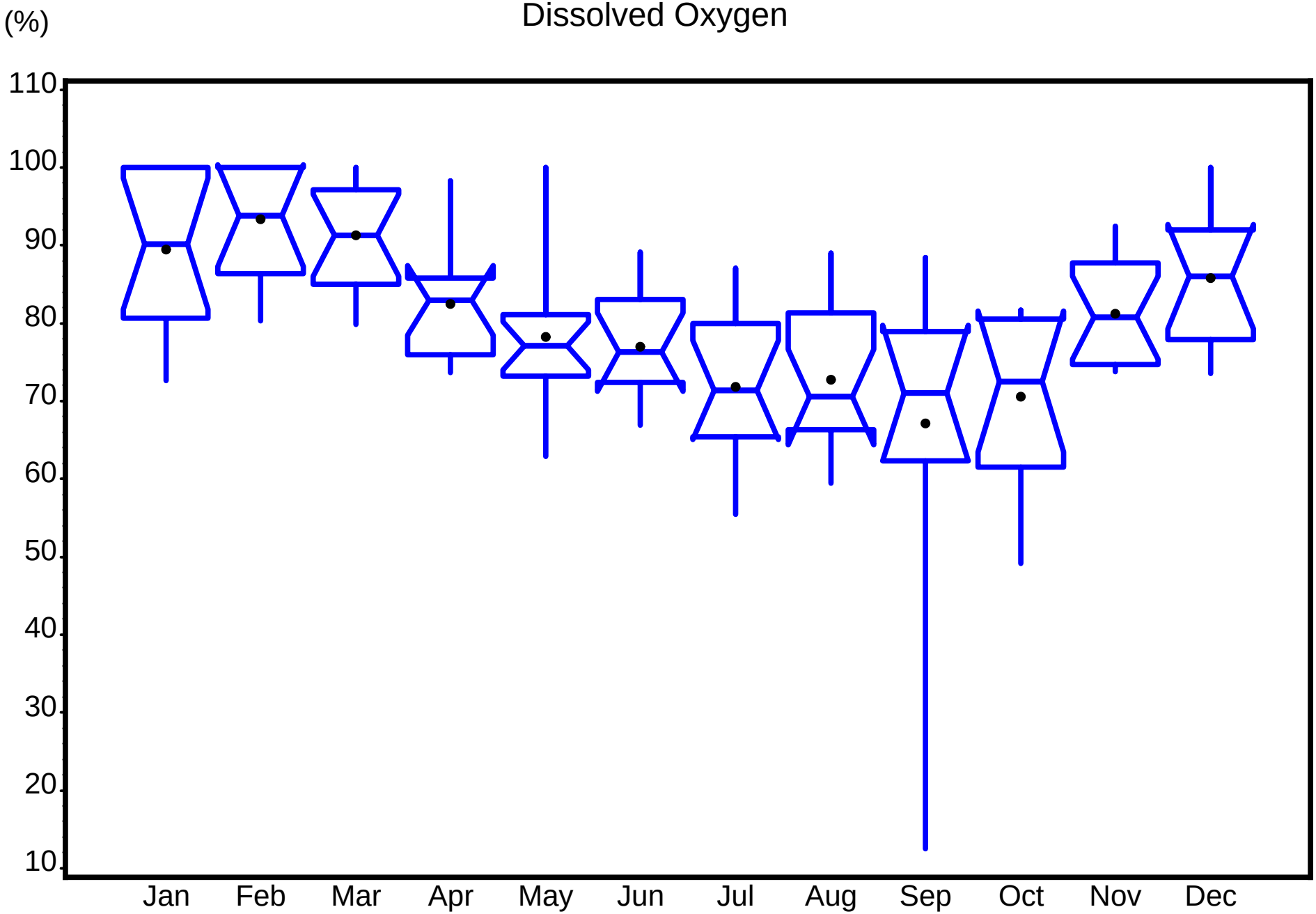
S_21FLVEMDHL05 Trends



S_21FLVEMDHL05 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



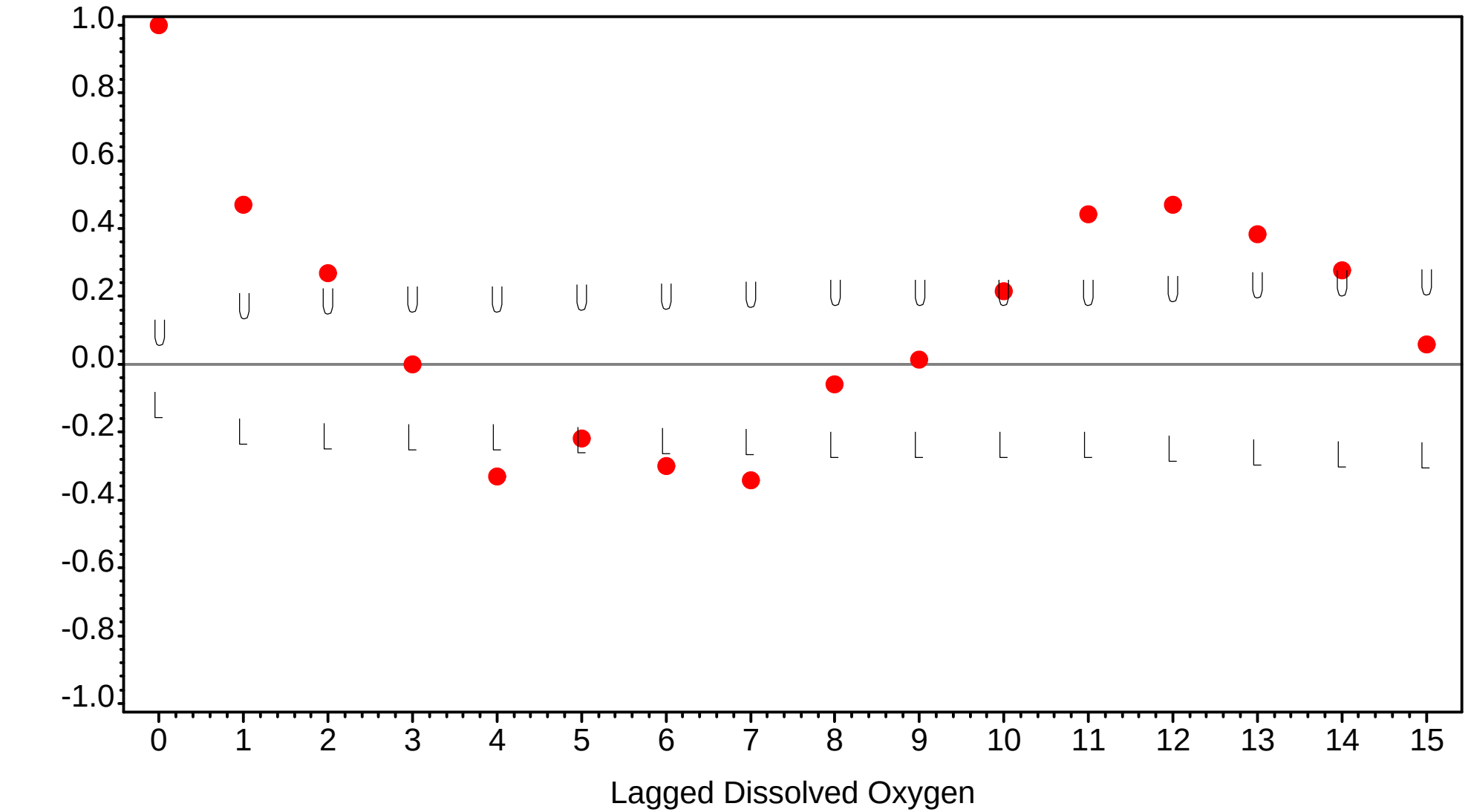
S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.471	0.093	0.186	-0.186
2	0.268	0.099	0.199	-0.199
3	-0.001	0.102	0.203	-0.203
4	-0.330	0.102	0.203	-0.203
5	-0.218	0.105	0.209	-0.209
6	-0.299	0.106	0.212	-0.212
7	-0.343	0.108	0.217	-0.217
8	-0.060	0.111	0.223	-0.223
9	0.013	0.111	0.223	-0.223
10	0.214	0.111	0.223	-0.223
11	0.443	0.113	0.225	-0.225
12	0.470	0.118	0.235	-0.235
13	0.384	0.123	0.246	-0.246
14	0.277	0.126	0.252	-0.252
15	0.059	0.128	0.256	-0.256

S_21FLVEMDHL05 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

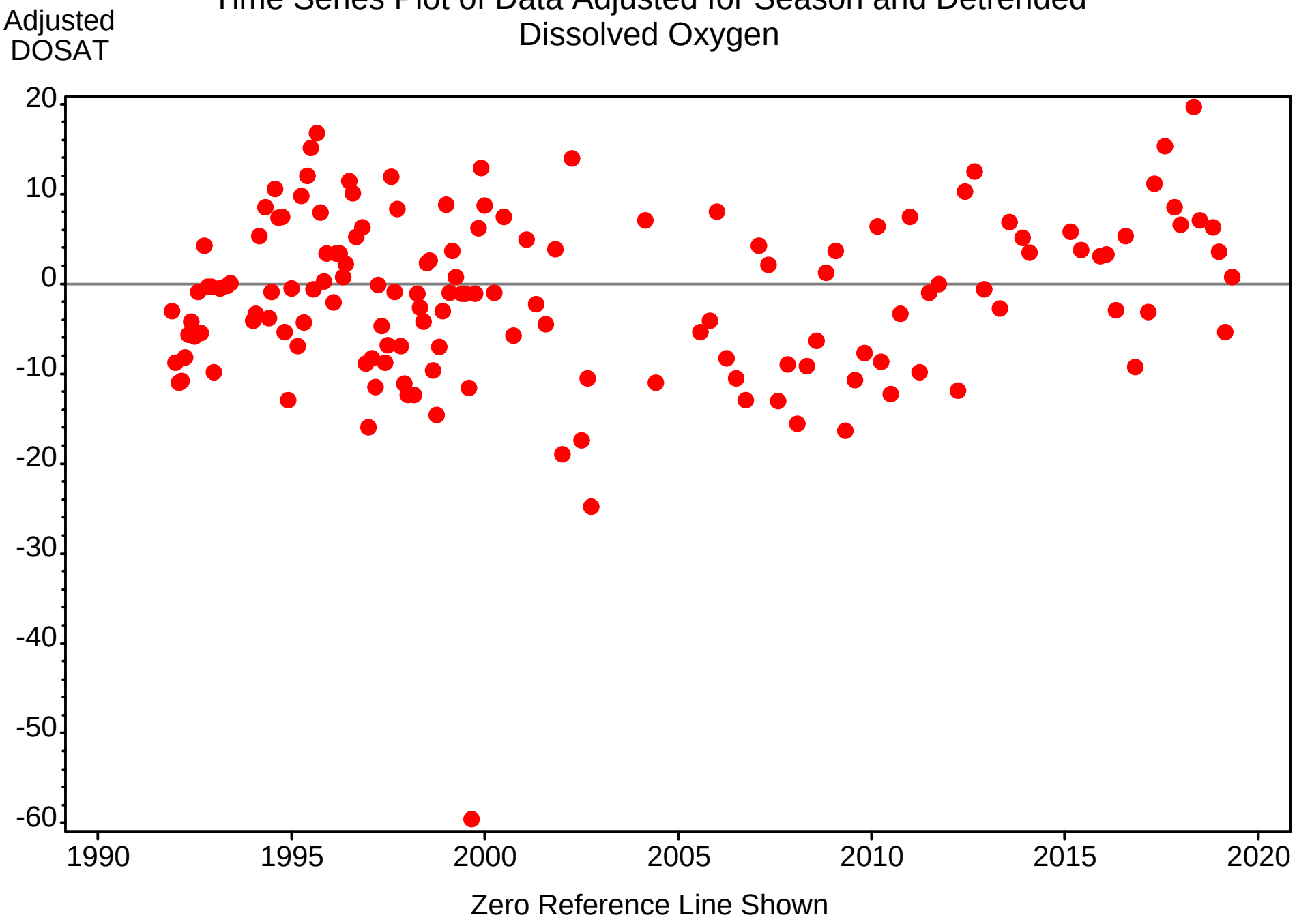
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.081	0.199	0.362	0.114

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.081264	0.19863	0.36237	0.11425

S_21FLVEMDHL05 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

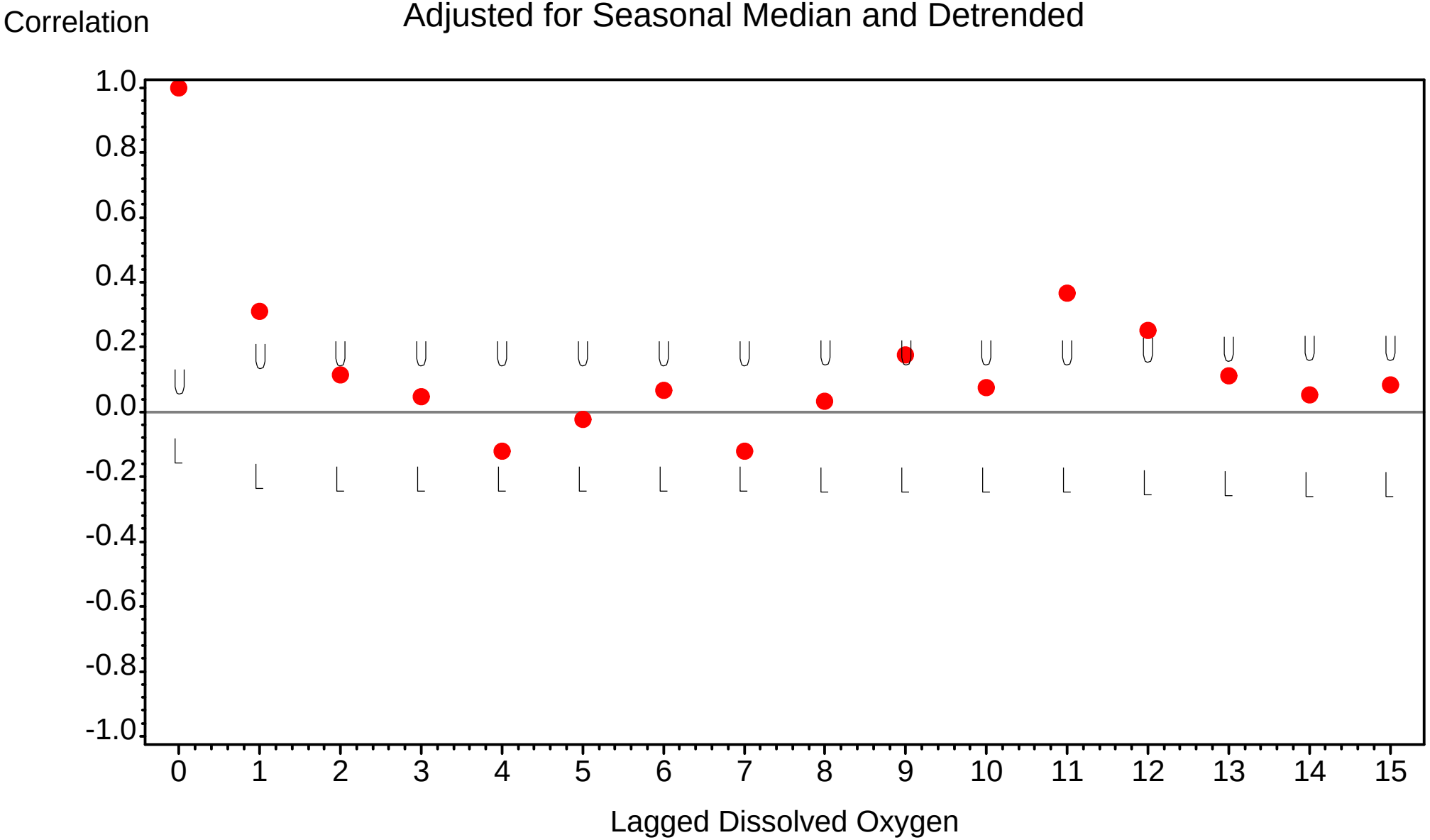


S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.309	0.093	0.186	-0.186
2	0.115	0.096	0.192	-0.192
3	0.047	0.096	0.192	-0.192
4	-0.122	0.096	0.192	-0.192
5	-0.022	0.097	0.193	-0.193
6	0.068	0.097	0.193	-0.193
7	-0.121	0.097	0.194	-0.194
8	0.032	0.097	0.195	-0.195
9	0.176	0.097	0.195	-0.195
10	0.075	0.098	0.196	-0.196
11	0.366	0.098	0.197	-0.197
12	0.252	0.102	0.204	-0.204
13	0.111	0.104	0.208	-0.208
14	0.054	0.104	0.209	-0.209
15	0.083	0.104	0.209	-0.209

S_21FLVEMDHL05 Trends Appendix

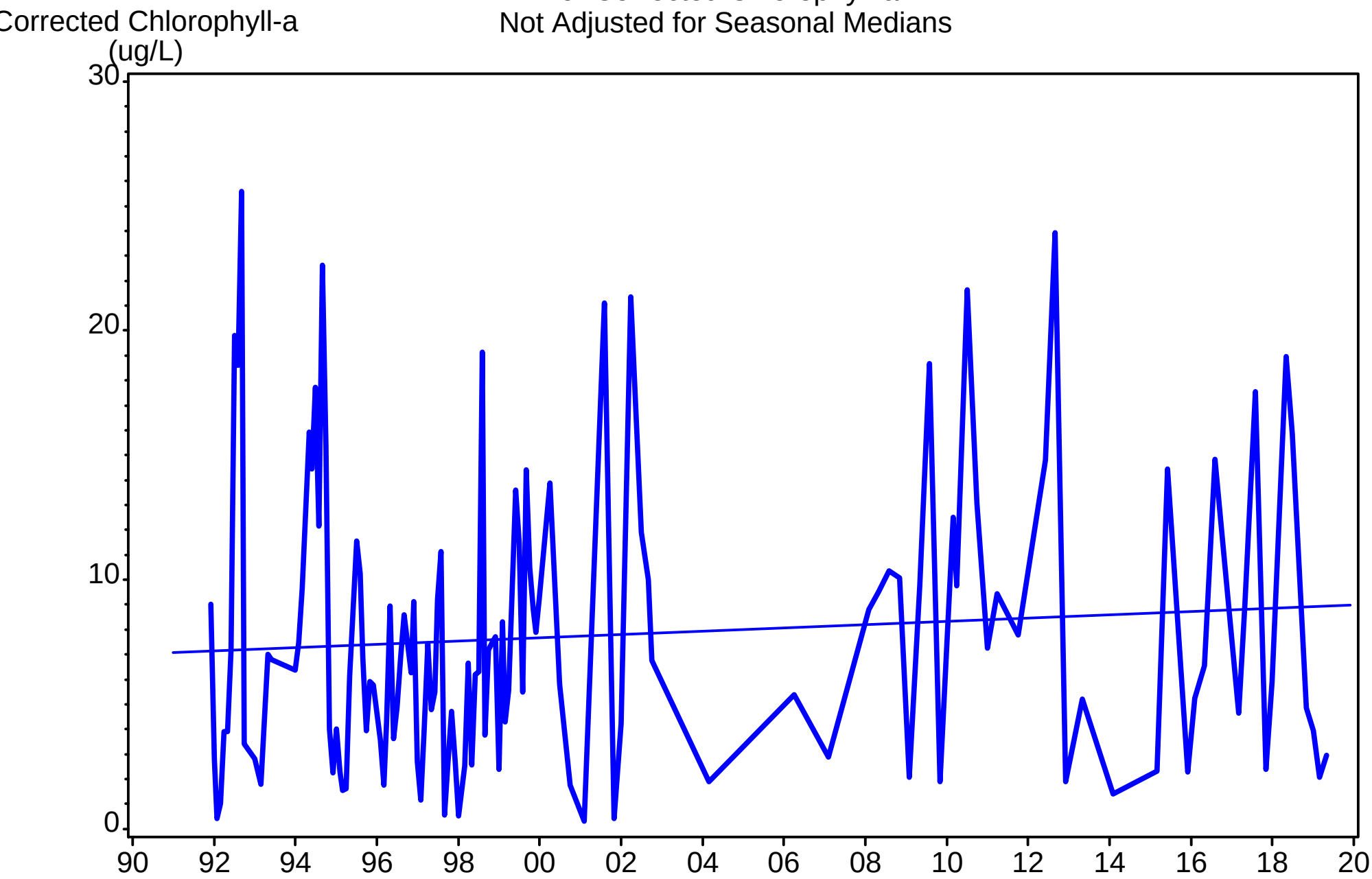
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



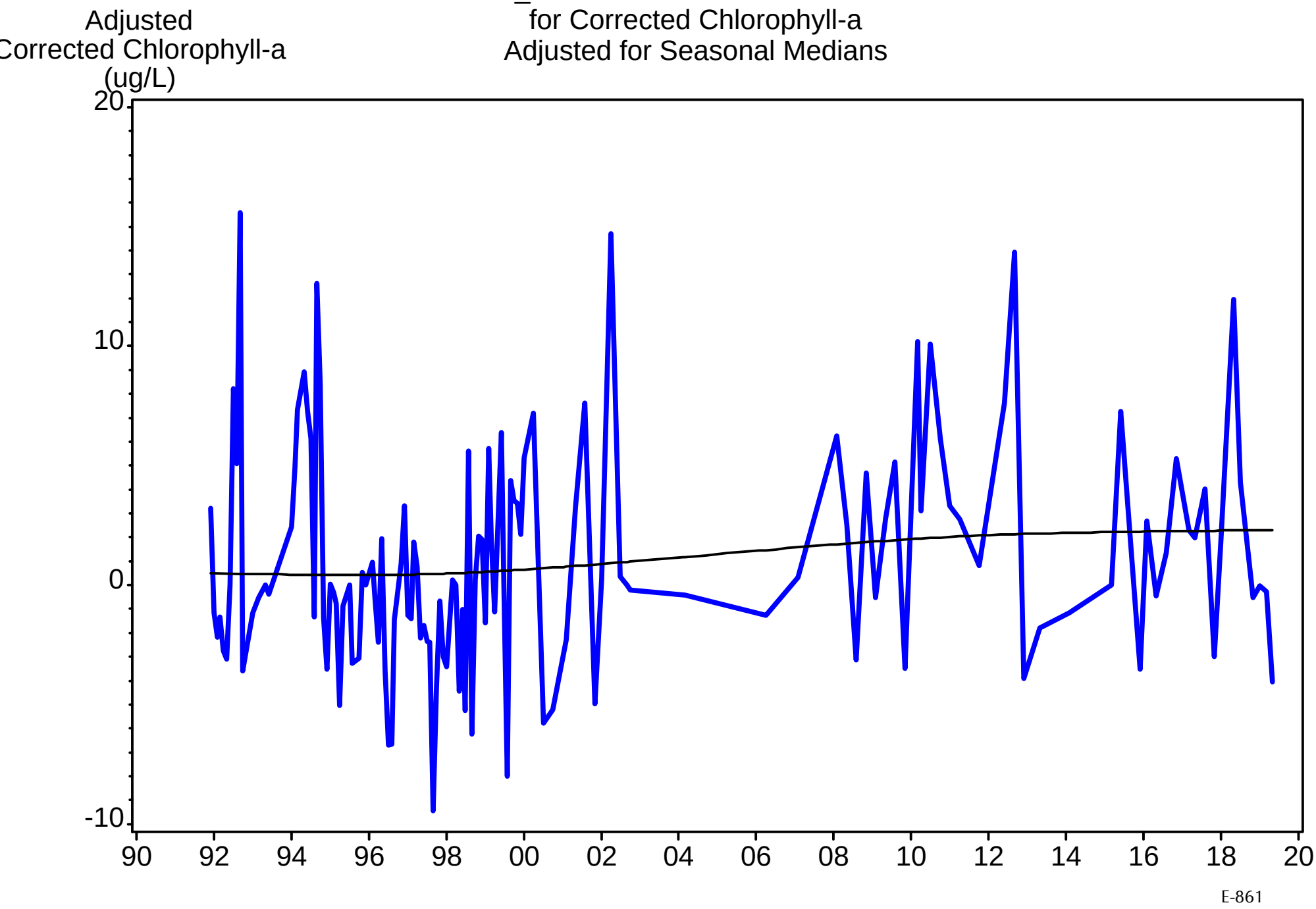
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL05 Trends

S_21FLVEMDHL05 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



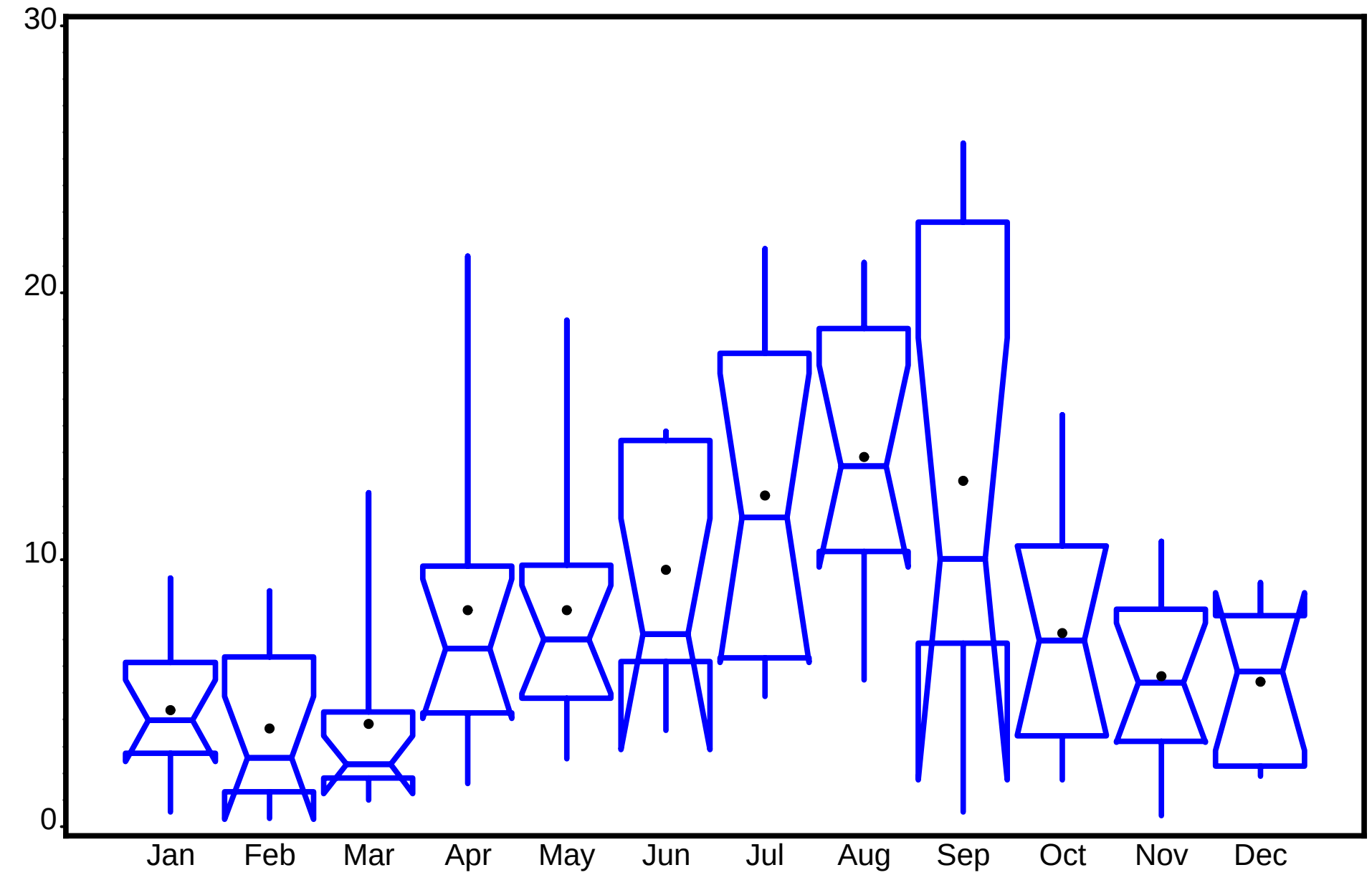
S_21FLVEMDHL05 Trends



S_21FLVEMDHL05 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a

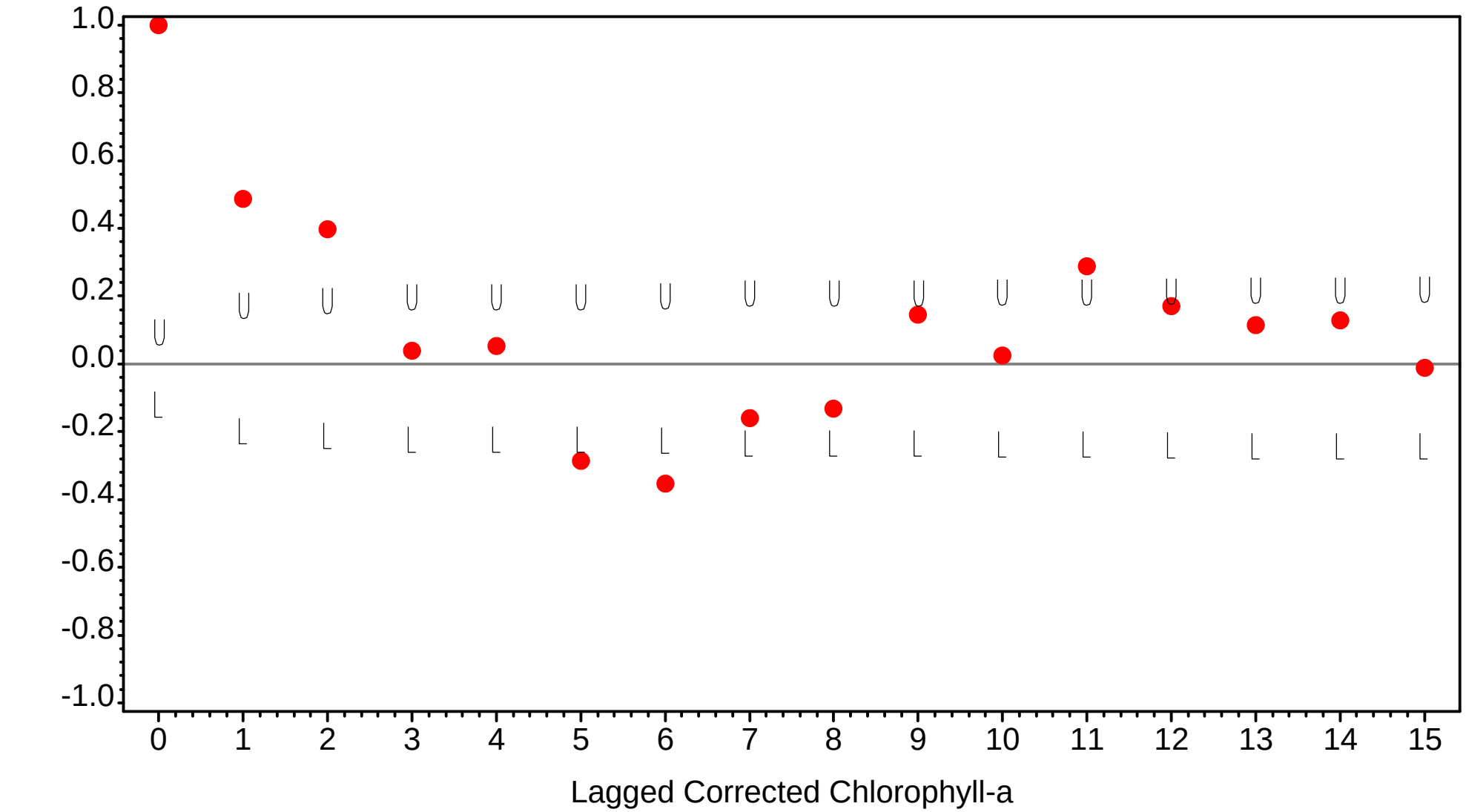


S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.487	0.093	0.186	-0.186
2	0.397	0.100	0.200	-0.200
3	0.040	0.104	0.209	-0.209
4	0.054	0.104	0.209	-0.209
5	-0.285	0.104	0.209	-0.209
6	-0.354	0.107	0.213	-0.213
7	-0.160	0.110	0.220	-0.220
8	-0.133	0.111	0.221	-0.221
9	0.145	0.111	0.222	-0.222
10	0.026	0.112	0.223	-0.223
11	0.288	0.112	0.223	-0.223
12	0.169	0.114	0.228	-0.228
13	0.113	0.115	0.229	-0.229
14	0.129	0.115	0.230	-0.230
15	-0.011	0.115	0.231	-0.231

S_21FLVEMDHL05 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

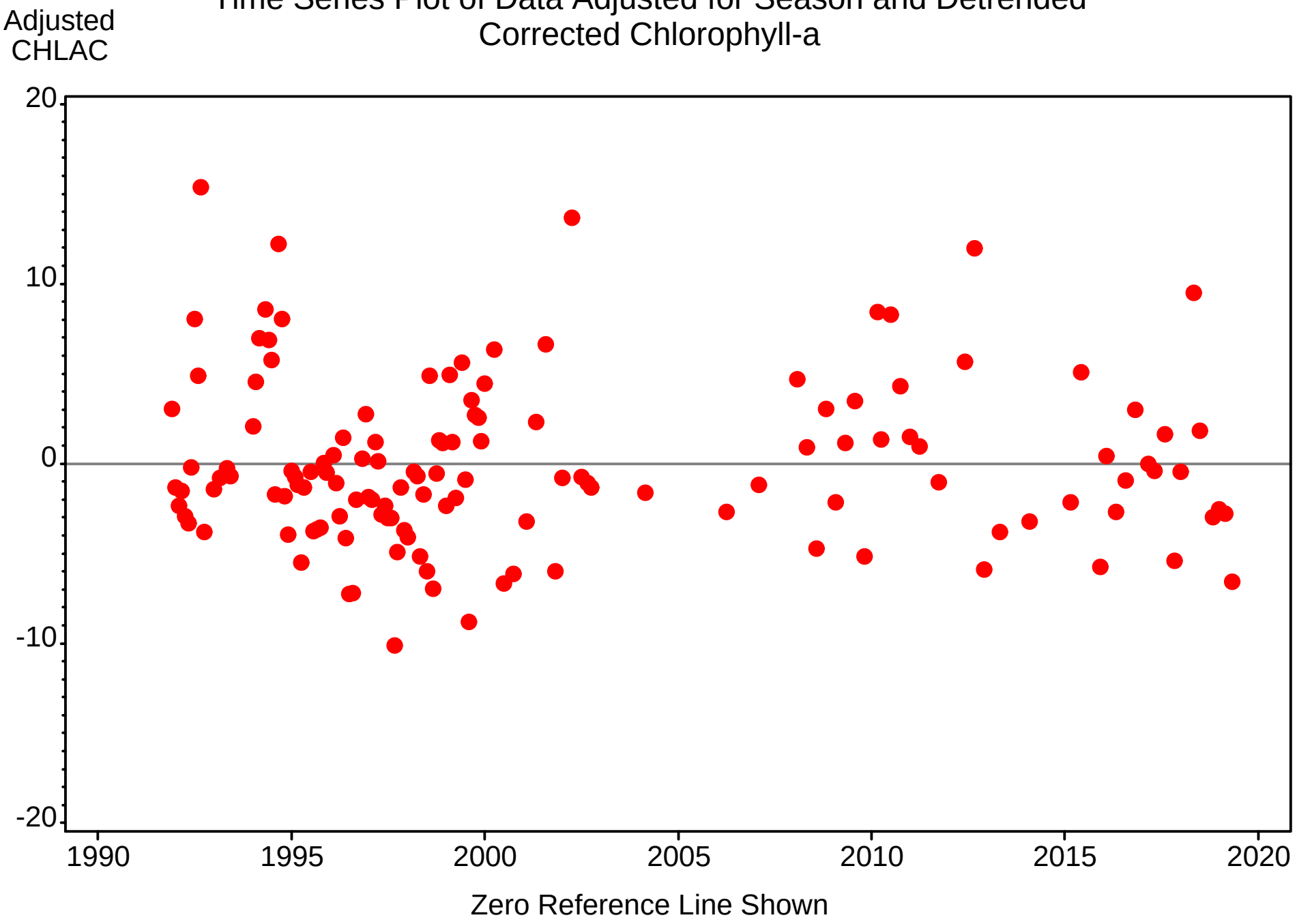
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.145	0.032	0.115	0.086

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.14507	0.031818	0.11509	0.08625

S_21FLVEMDHL05 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



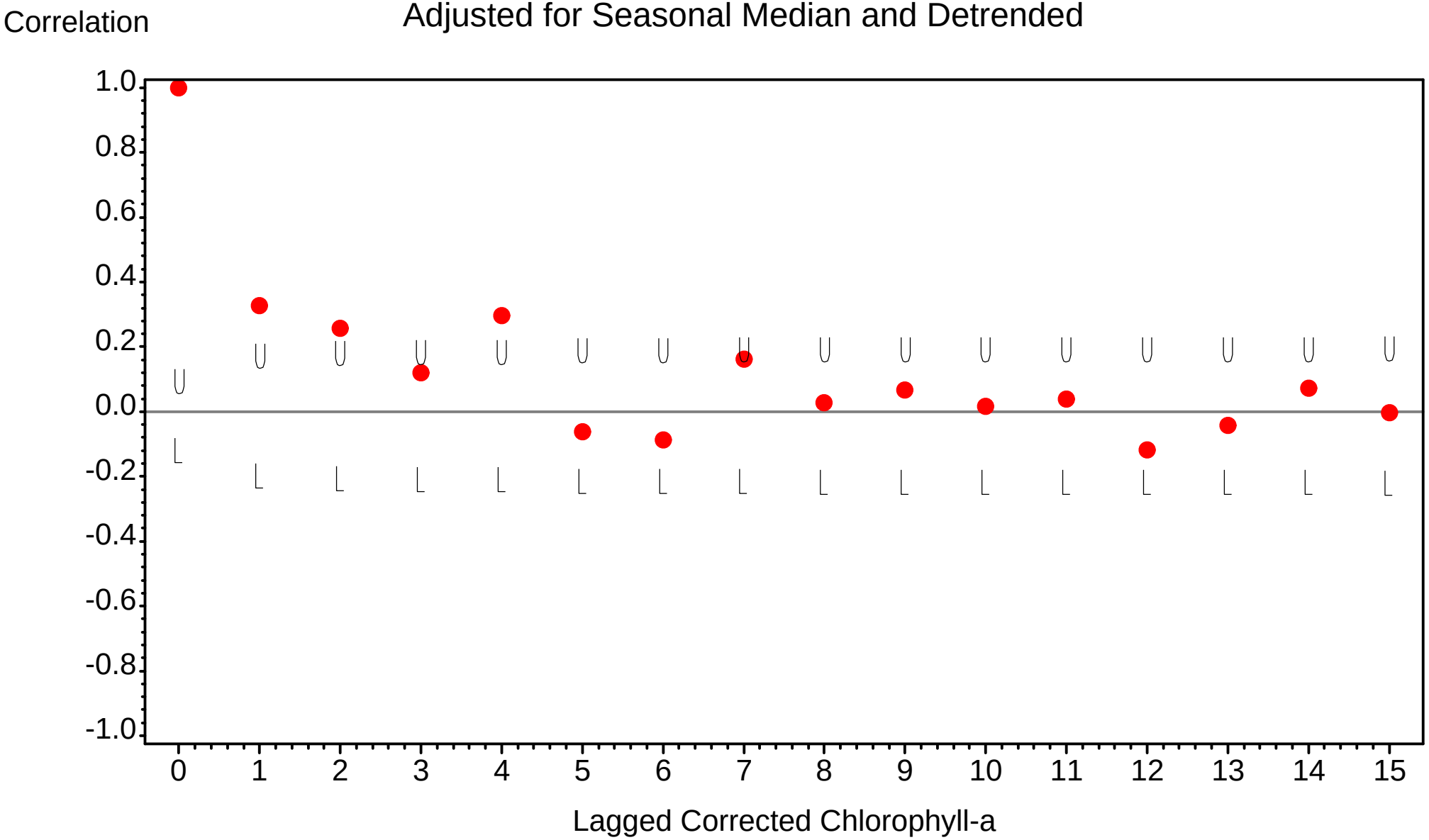
S_21FLVEMDHL05 Trends Appendix

Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.326	0.093	0.186	-0.186
2	0.256	0.096	0.192	-0.192
3	0.120	0.098	0.196	-0.196
4	0.295	0.098	0.197	-0.197
5	-0.063	0.101	0.202	-0.202
6	-0.087	0.101	0.202	-0.202
7	0.162	0.101	0.203	-0.203
8	0.027	0.102	0.204	-0.204
9	0.066	0.102	0.204	-0.204
10	0.017	0.102	0.204	-0.204
11	0.039	0.102	0.204	-0.204
12	-0.119	0.102	0.204	-0.204
13	-0.043	0.103	0.205	-0.205
14	0.072	0.103	0.205	-0.205
15	-0.003	0.103	0.206	-0.206

S_21FLVEMDHL05 Trends Appendix

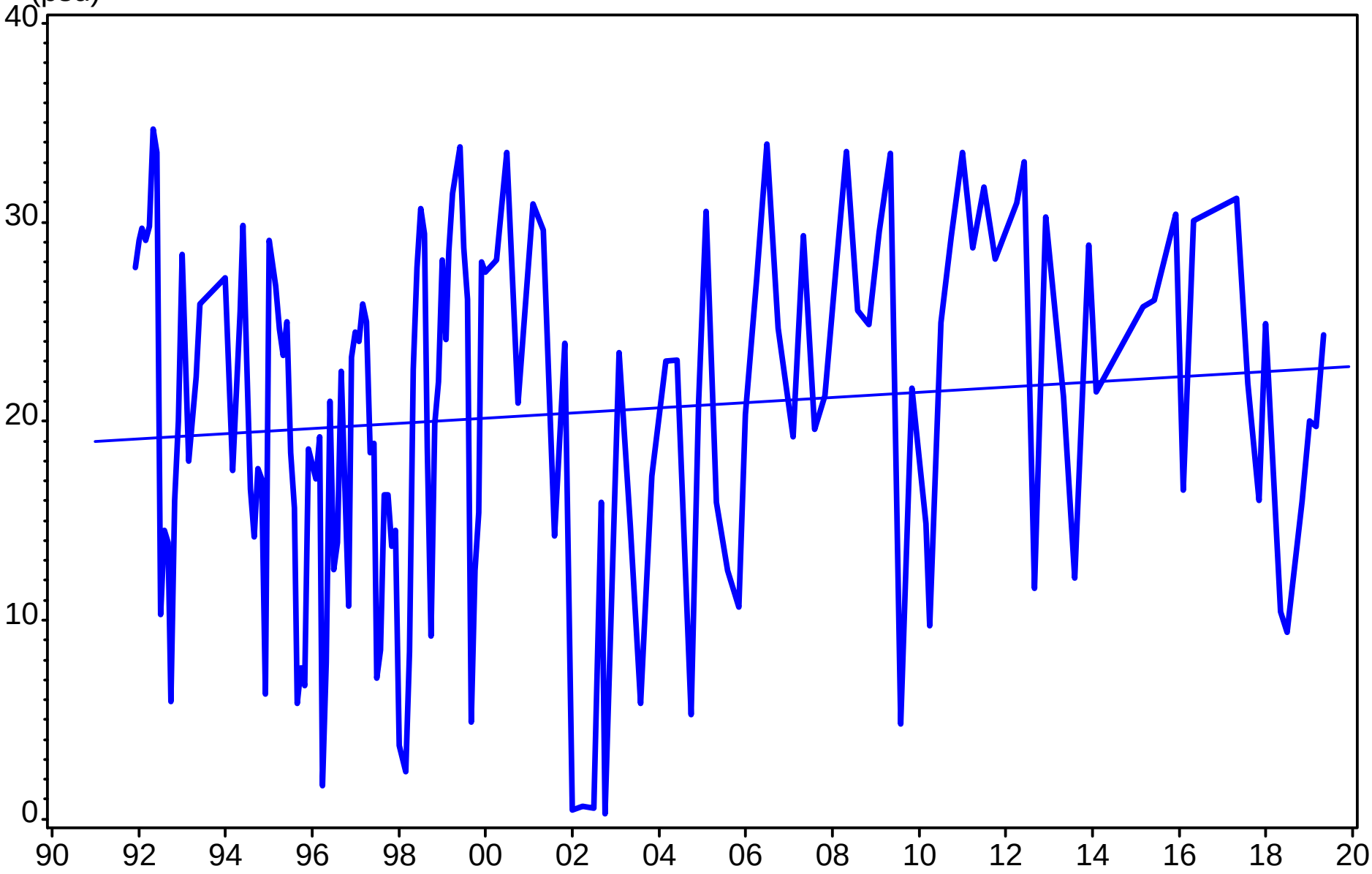
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



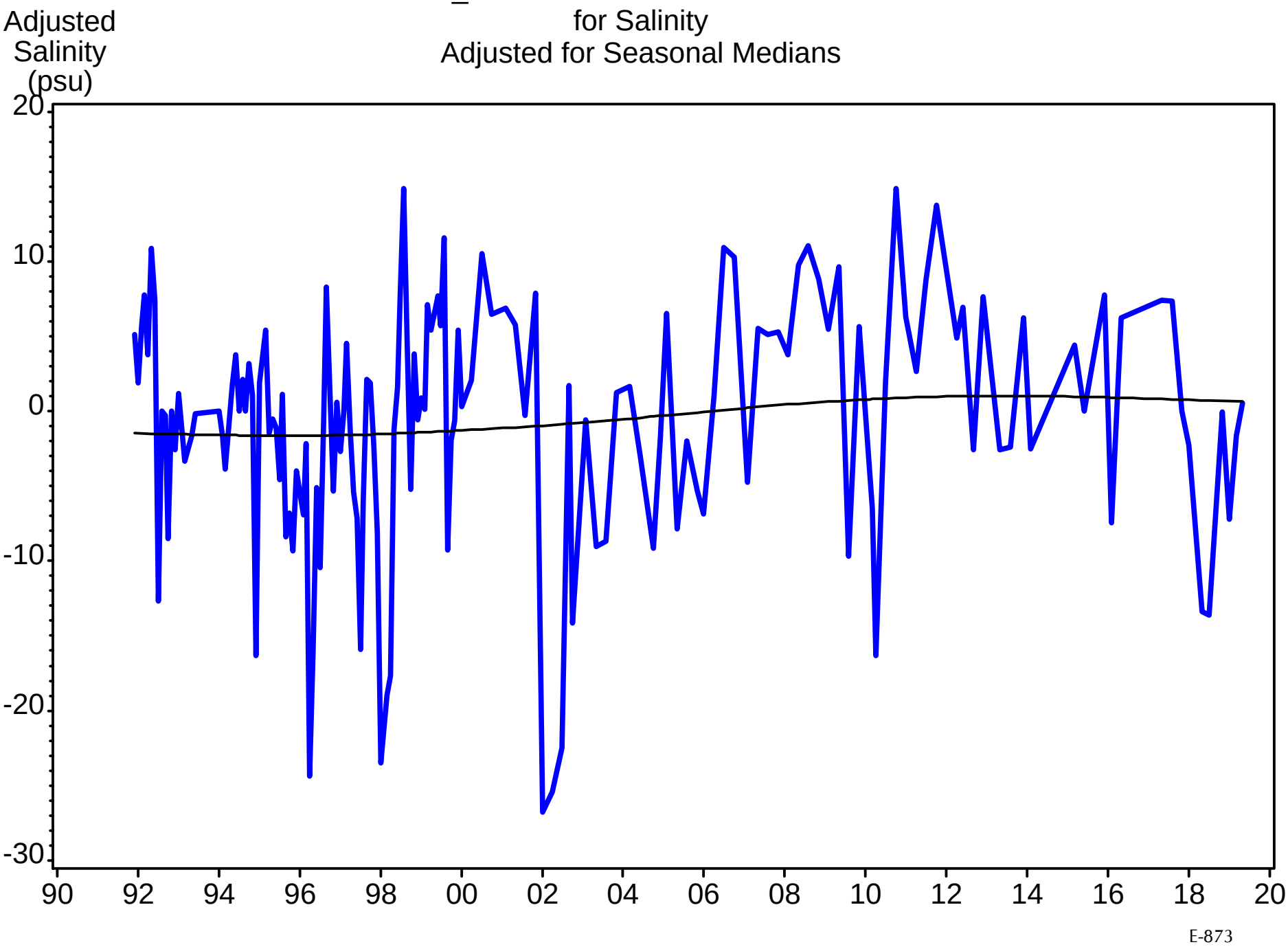
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL05 Trends

S_21FLVEMDHL05 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



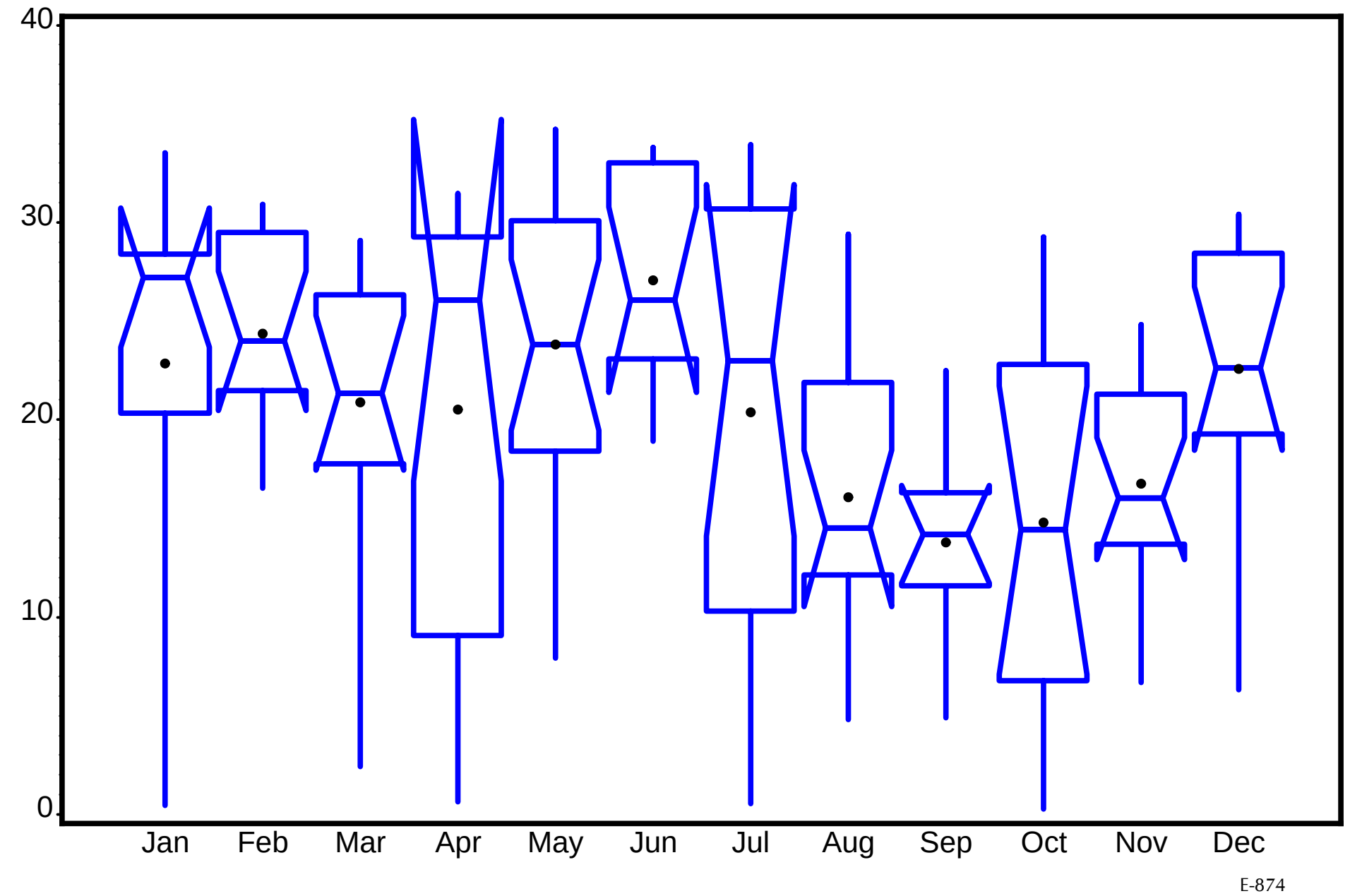
S_21FLVEMDHL05 Trends



S_21FLVEMDHL05 Trends Appendix

Seasonal Univariate Statistics

Salinity



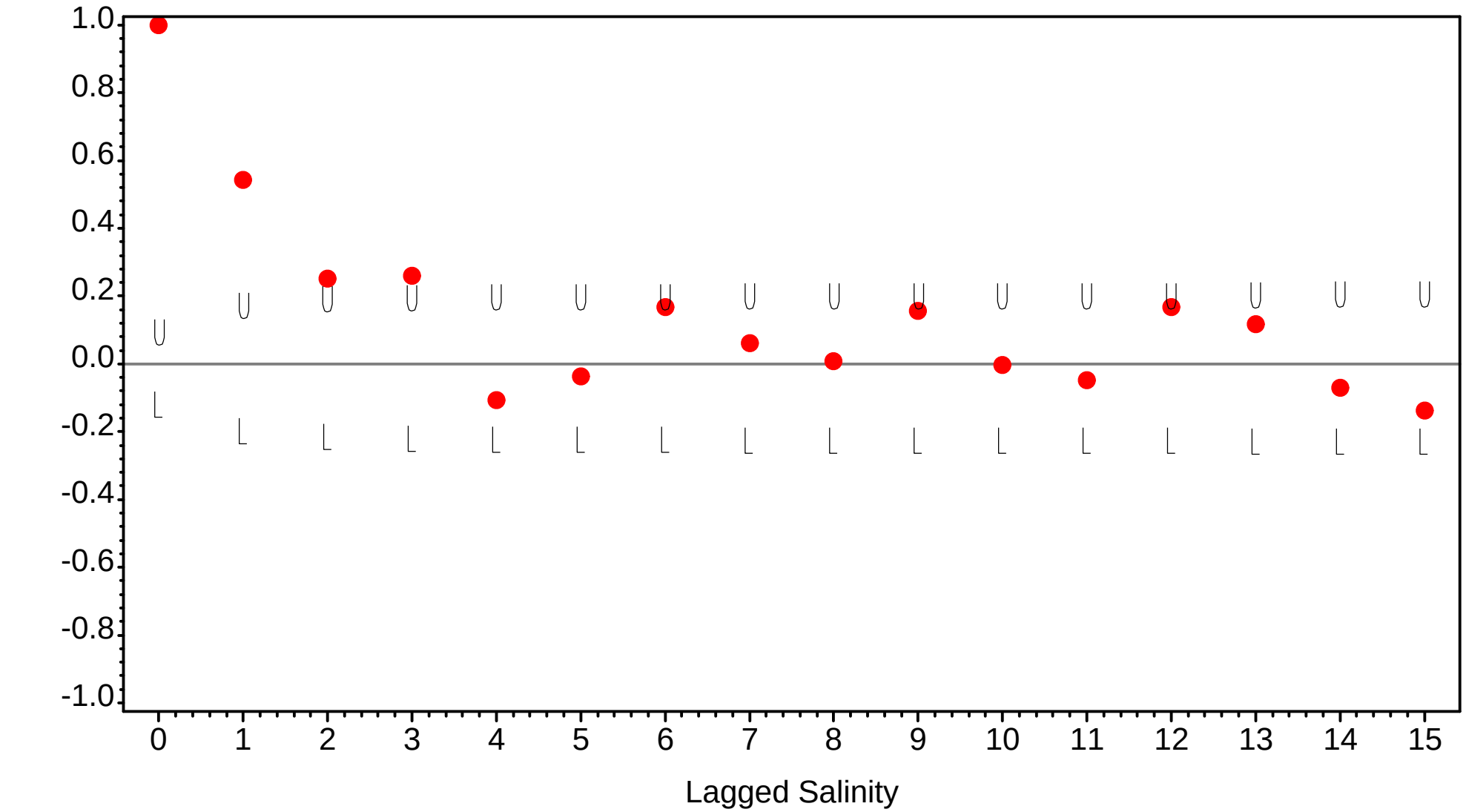
S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.544	0.093	0.186	-0.186
2	0.251	0.102	0.203	-0.203
3	0.259	0.103	0.207	-0.207
4	-0.106	0.105	0.210	-0.210
5	-0.037	0.106	0.211	-0.211
6	0.168	0.106	0.211	-0.211
7	0.062	0.106	0.213	-0.213
8	0.009	0.106	0.213	-0.213
9	0.157	0.106	0.213	-0.213
10	-0.003	0.107	0.214	-0.214
11	-0.047	0.107	0.214	-0.214
12	0.168	0.107	0.214	-0.214
13	0.118	0.108	0.216	-0.216
14	-0.070	0.108	0.217	-0.217
15	-0.138	0.108	0.217	-0.217

S_21FLVEMDHL05 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

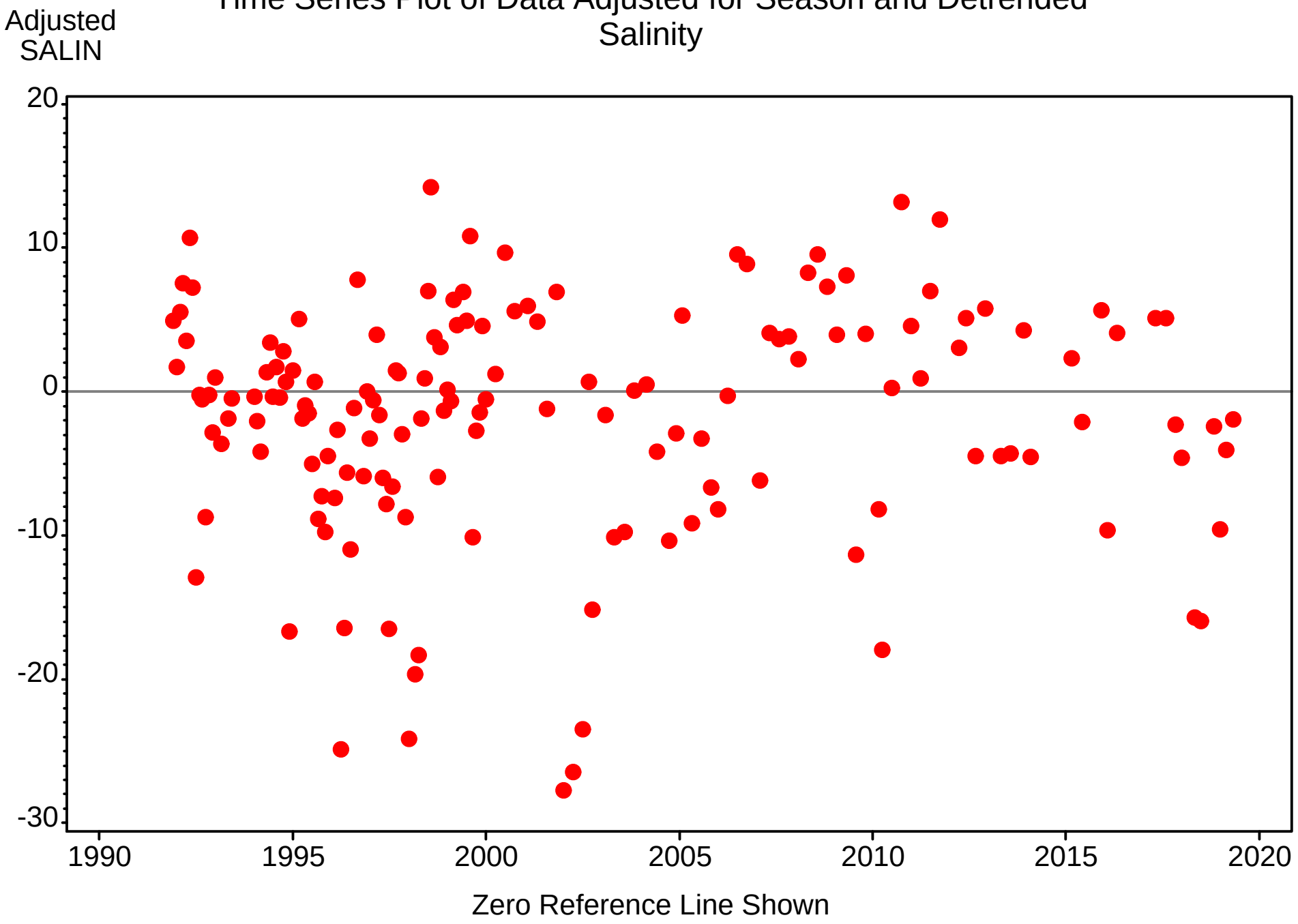
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.06	0.339	0.502	0.082

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.059874	0.33872	0.50152	0.082491

S_21FLVEMDHL05 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



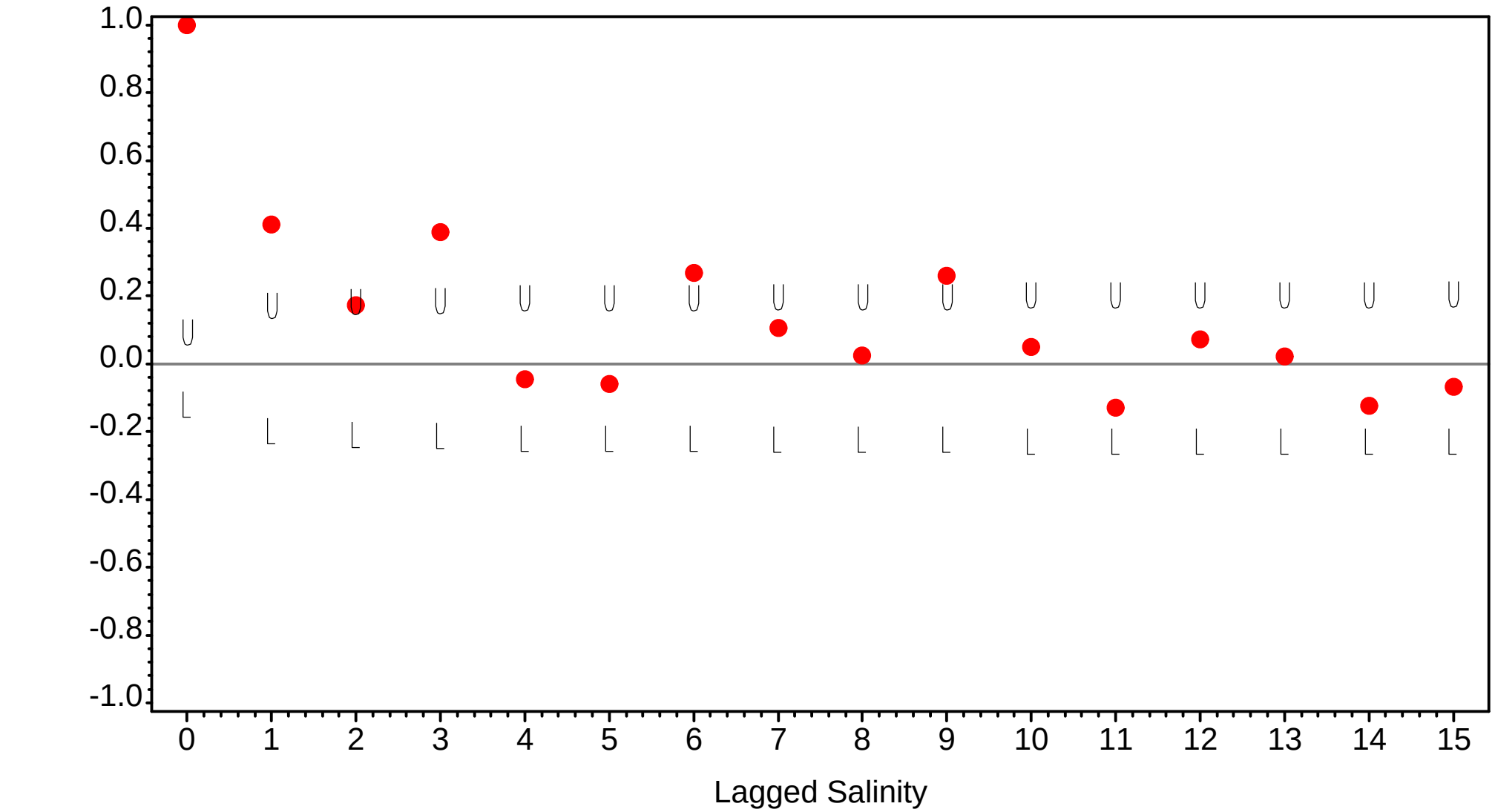
S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.411	0.093	0.186	-0.186
2	0.174	0.098	0.196	-0.196
3	0.389	0.099	0.198	-0.198
4	-0.044	0.103	0.206	-0.206
5	-0.060	0.103	0.206	-0.206
6	0.269	0.103	0.207	-0.207
7	0.105	0.105	0.211	-0.211
8	0.024	0.106	0.211	-0.211
9	0.260	0.106	0.211	-0.211
10	0.050	0.107	0.215	-0.215
11	-0.130	0.107	0.215	-0.215
12	0.071	0.108	0.216	-0.216
13	0.021	0.108	0.216	-0.216
14	-0.125	0.108	0.216	-0.216
15	-0.068	0.108	0.217	-0.217

S_21FLVEMDHL05 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

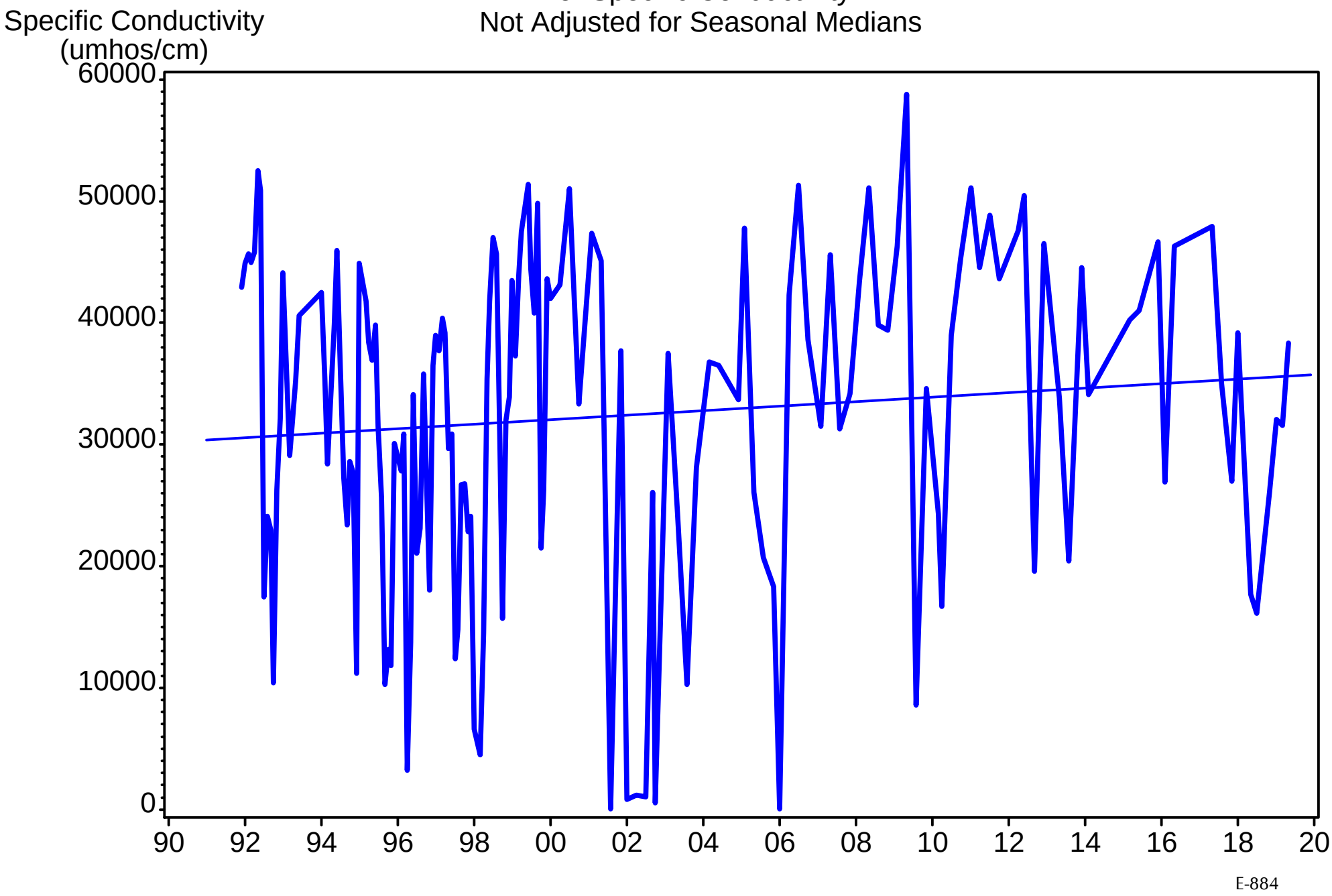


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

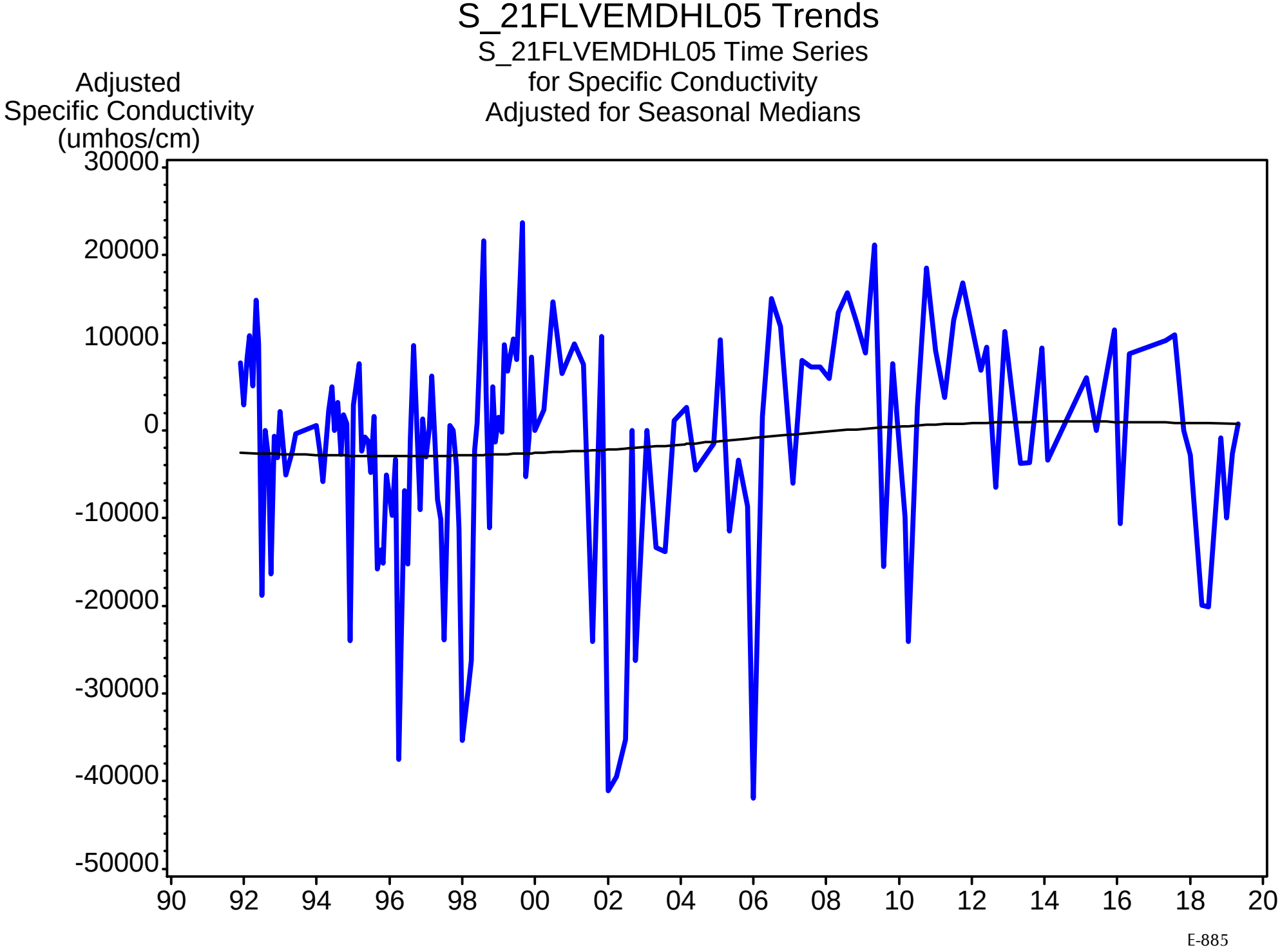
Zero Reference Line Shown

S_21FLVEMDHL05 Trends

S_21FLVEMDHL05 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



S_21FLVEMDHL05 Trends

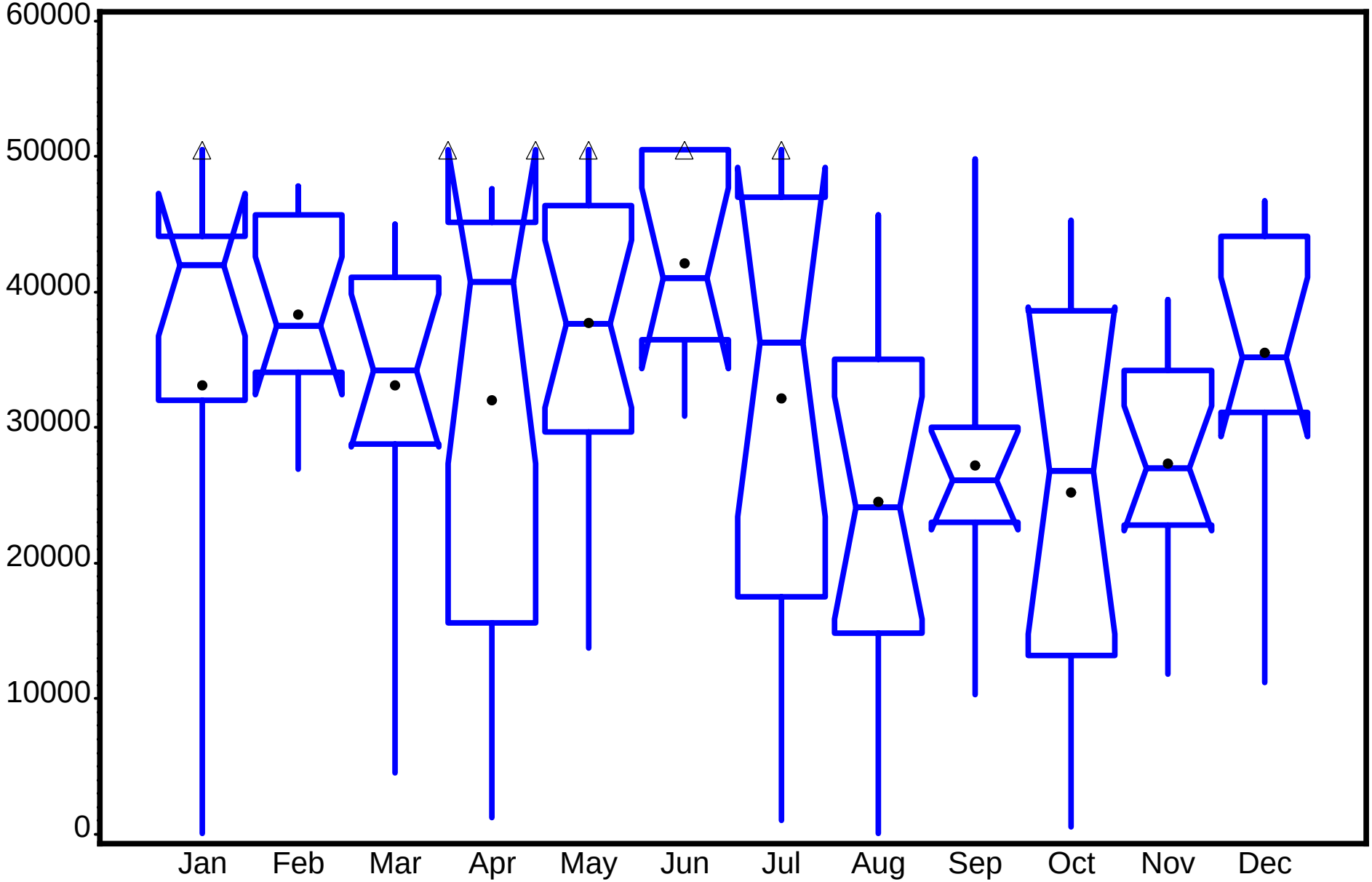


S_21FLVEMDHL05 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



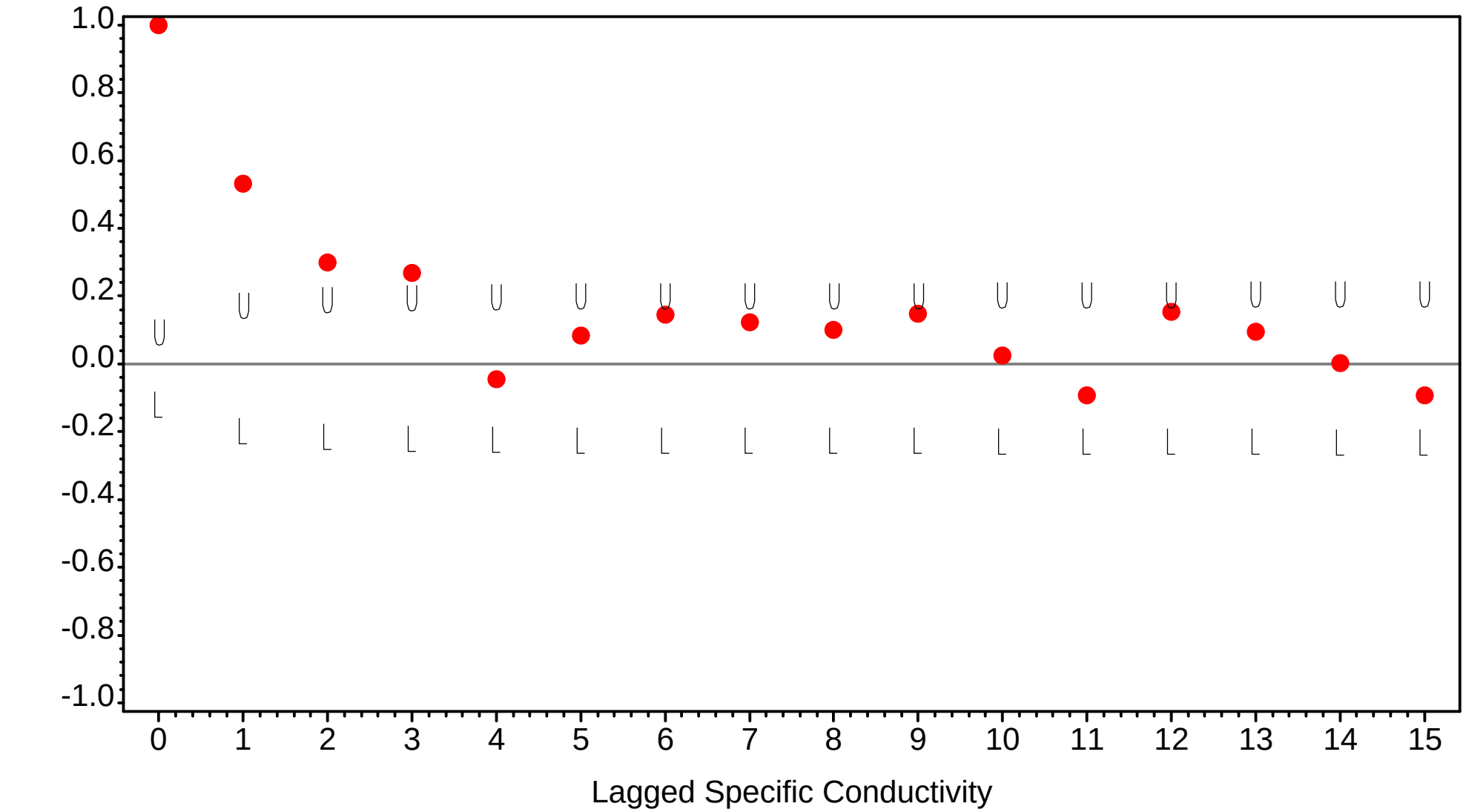
S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.532	0.093	0.186	-0.186
2	0.299	0.101	0.202	-0.202
3	0.269	0.104	0.207	-0.207
4	-0.044	0.106	0.211	-0.211
5	0.084	0.106	0.212	-0.212
6	0.144	0.106	0.212	-0.212
7	0.123	0.107	0.213	-0.213
8	0.099	0.107	0.214	-0.214
9	0.148	0.107	0.214	-0.214
10	0.024	0.108	0.216	-0.216
11	-0.094	0.108	0.216	-0.216
12	0.153	0.108	0.216	-0.216
13	0.094	0.109	0.217	-0.217
14	0.001	0.109	0.218	-0.218
15	-0.093	0.109	0.218	-0.218

S_21FLVEMDHL05 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

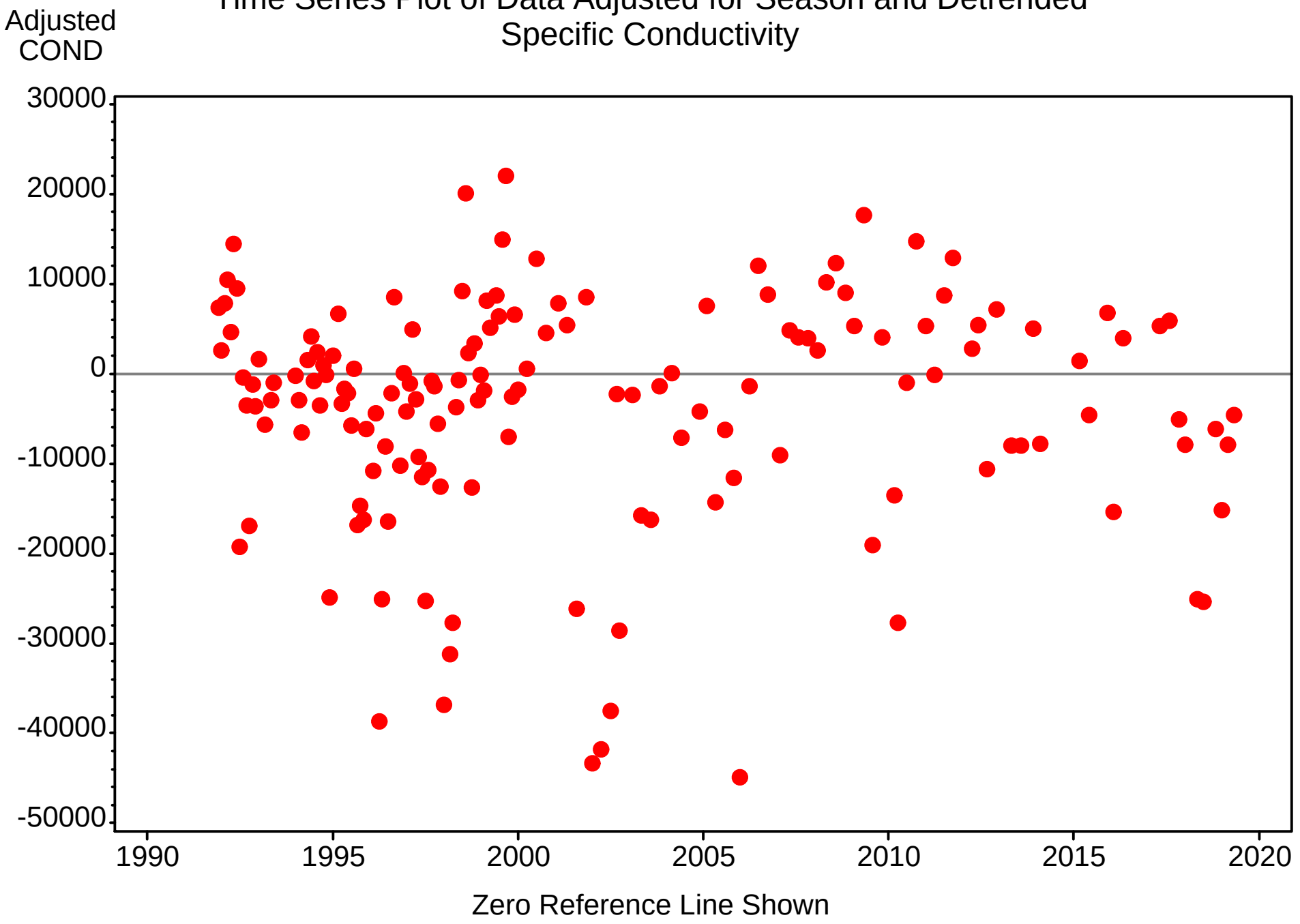
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.085	0.174	0.337	182.245

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.085016	0.17411	0.33661	182.245

S_21FLVEMDHL05 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

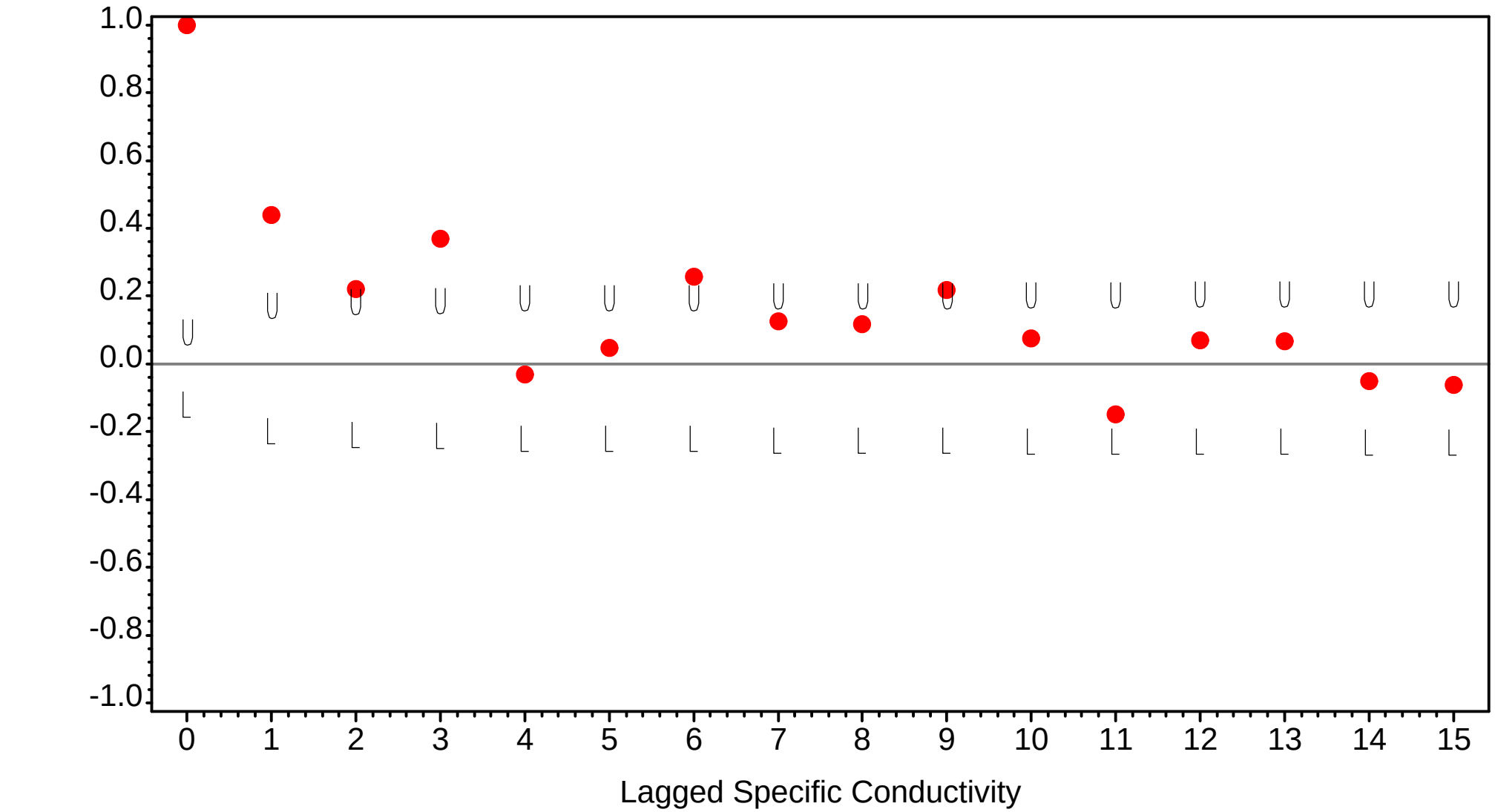


S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.440	0.093	0.186	-0.186
2	0.221	0.099	0.197	-0.197
3	0.368	0.100	0.200	-0.200
4	-0.030	0.104	0.208	-0.208
5	0.047	0.104	0.208	-0.208
6	0.258	0.104	0.208	-0.208
7	0.126	0.106	0.212	-0.212
8	0.116	0.106	0.212	-0.212
9	0.218	0.107	0.213	-0.213
10	0.075	0.108	0.216	-0.216
11	-0.149	0.108	0.216	-0.216
12	0.069	0.109	0.217	-0.217
13	0.067	0.109	0.217	-0.217
14	-0.050	0.109	0.218	-0.218
15	-0.061	0.109	0.218	-0.218

S_21FLVEMDHL05 Trends Appendix

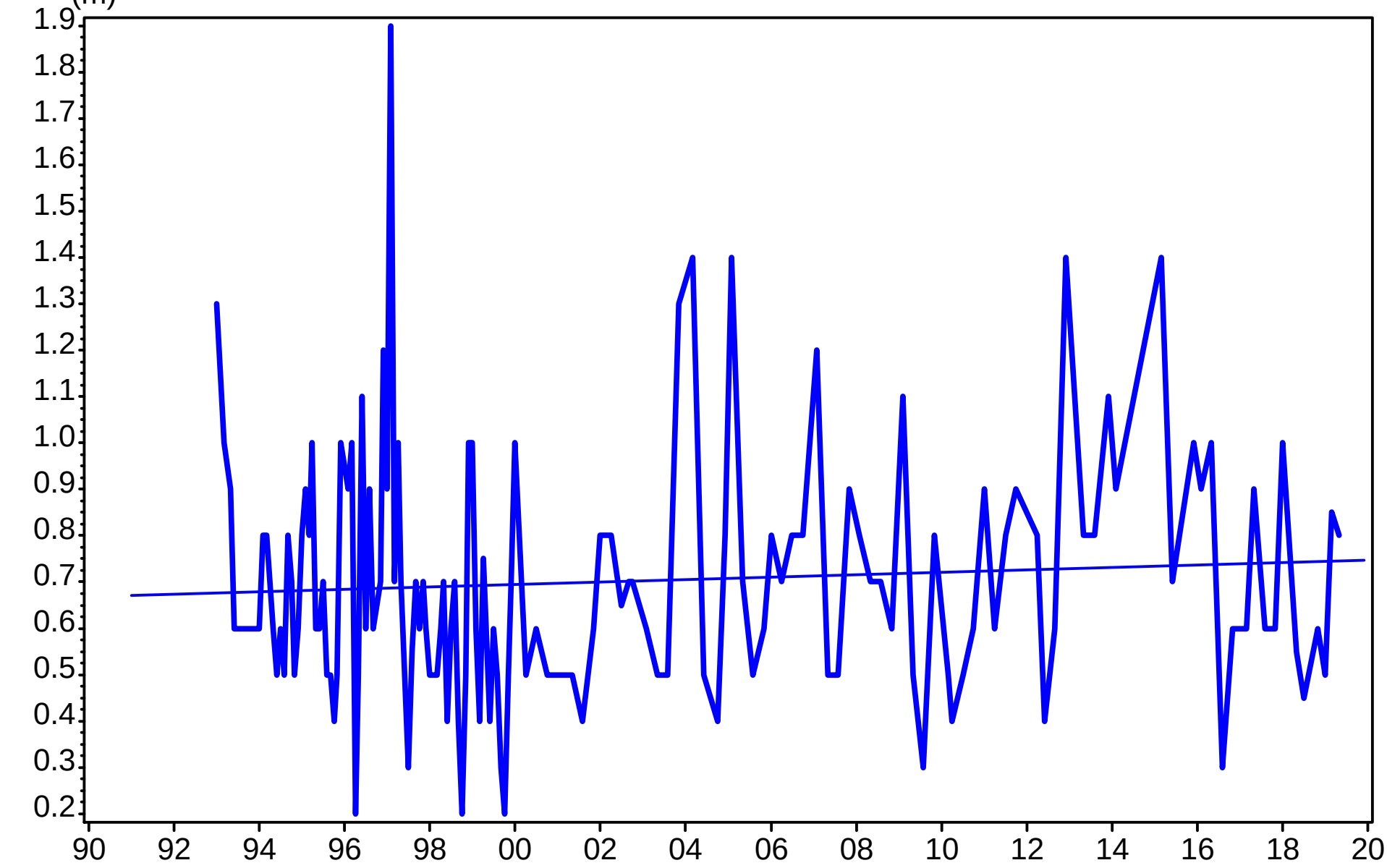
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

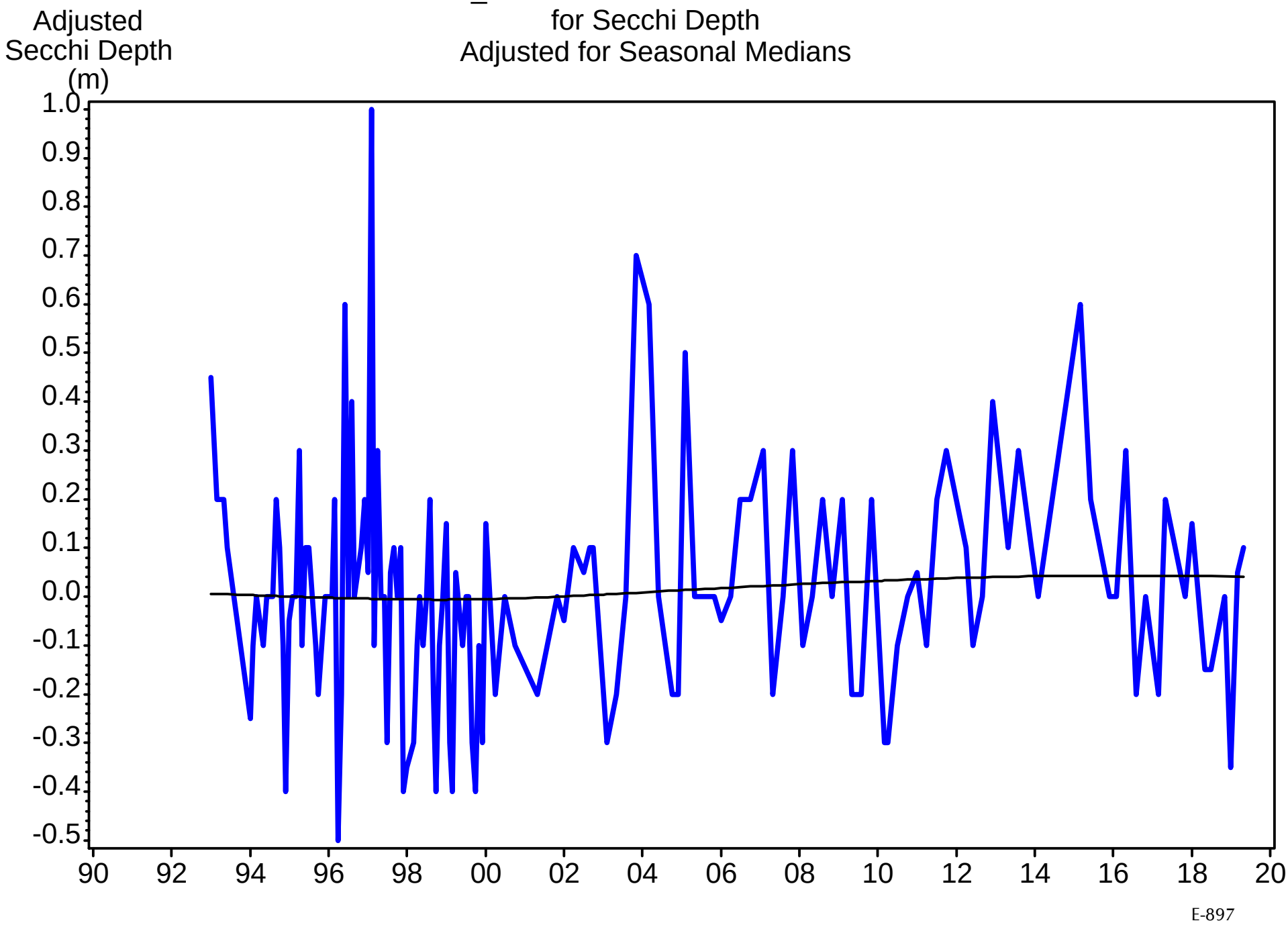
S_21FLVEMDHL05 Trends

S_21FLVEMDHL05 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



E-896

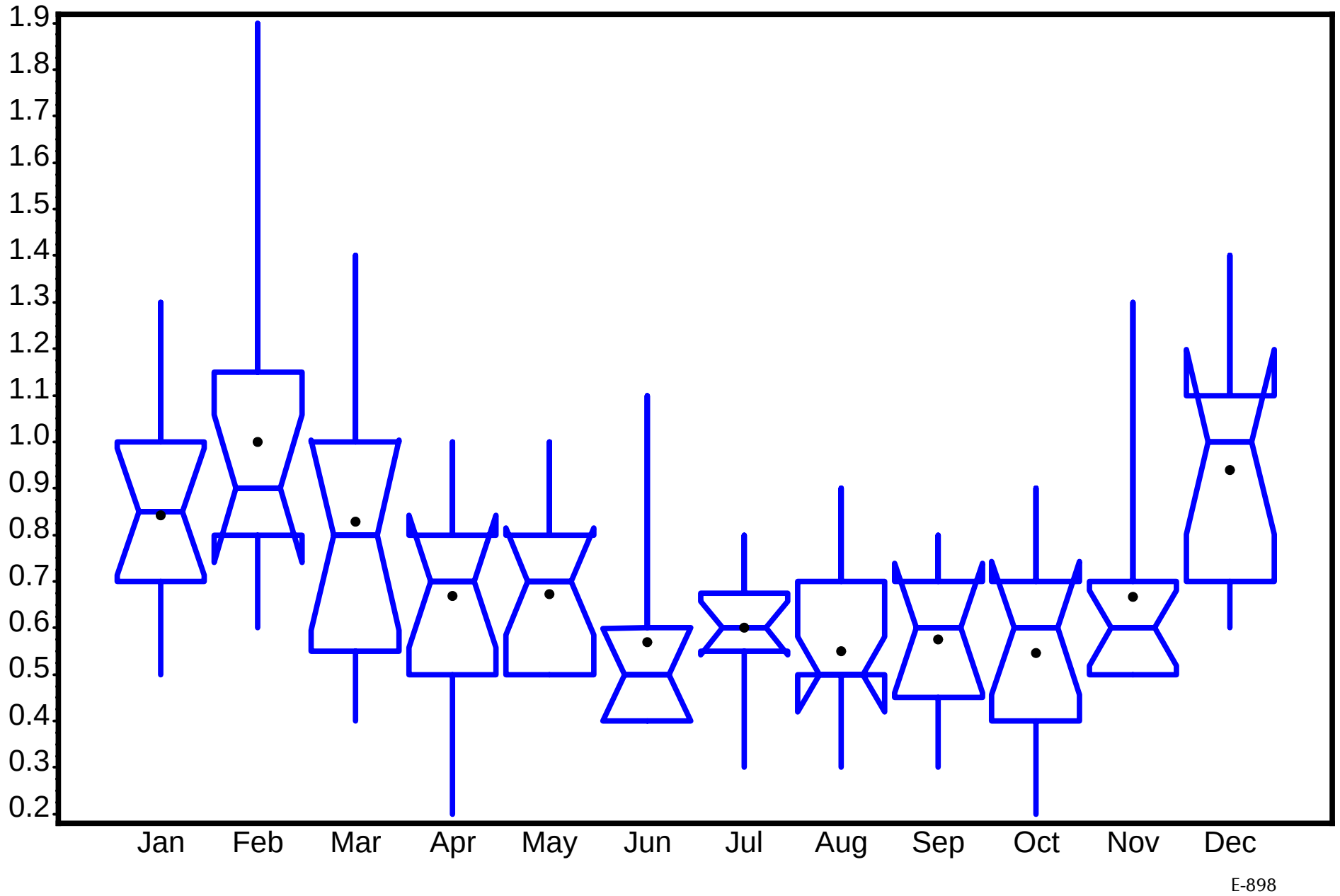
S_21FLVEMDHL05 Trends



S_21FLVEMDHL05 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



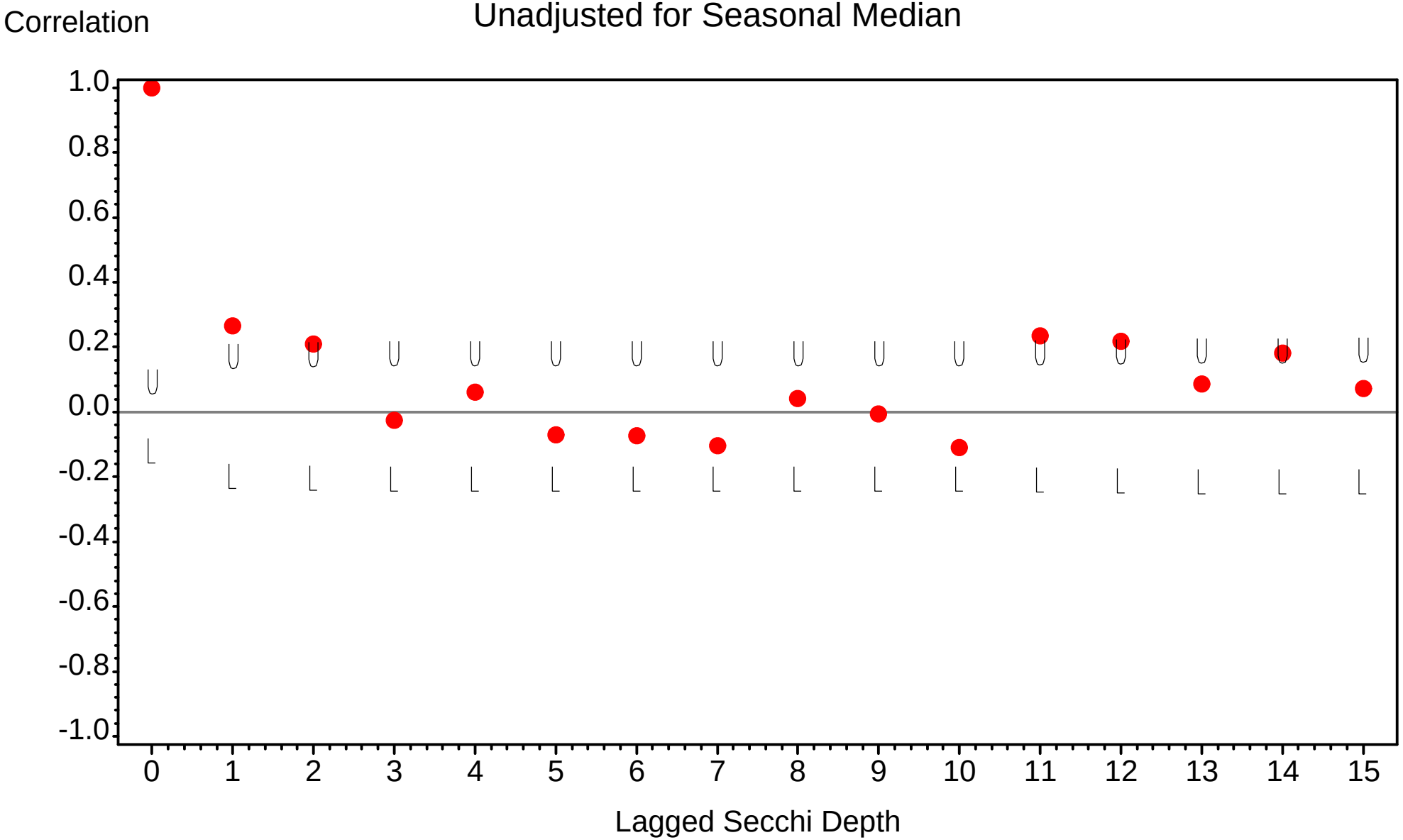
S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.265	0.093	0.186	-0.186
2	0.209	0.095	0.190	-0.190
3	-0.027	0.096	0.193	-0.193
4	0.061	0.096	0.193	-0.193
5	-0.071	0.096	0.193	-0.193
6	-0.073	0.097	0.193	-0.193
7	-0.103	0.097	0.193	-0.193
8	0.042	0.097	0.194	-0.194
9	-0.007	0.097	0.194	-0.194
10	-0.109	0.097	0.194	-0.194
11	0.234	0.097	0.195	-0.195
12	0.217	0.099	0.198	-0.198
13	0.086	0.100	0.201	-0.201
14	0.182	0.101	0.201	-0.201
15	0.071	0.102	0.203	-0.203

S_21FLVEMDHL05 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

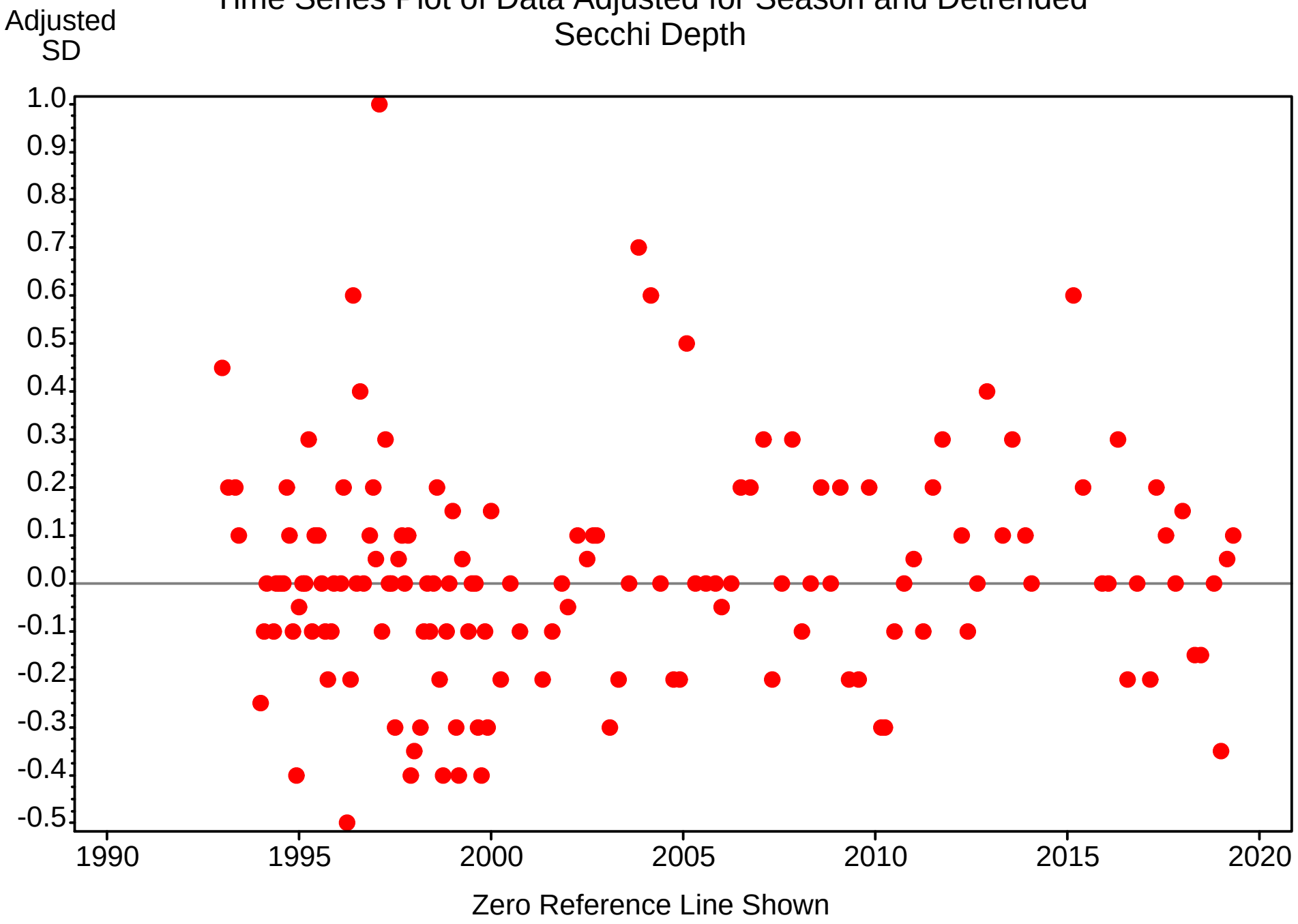
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.047	0.468	0.545	0

S_21FLVEMDHL05 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.046539	0.46800	0.54466	0

S_21FLVEMDHL05 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth

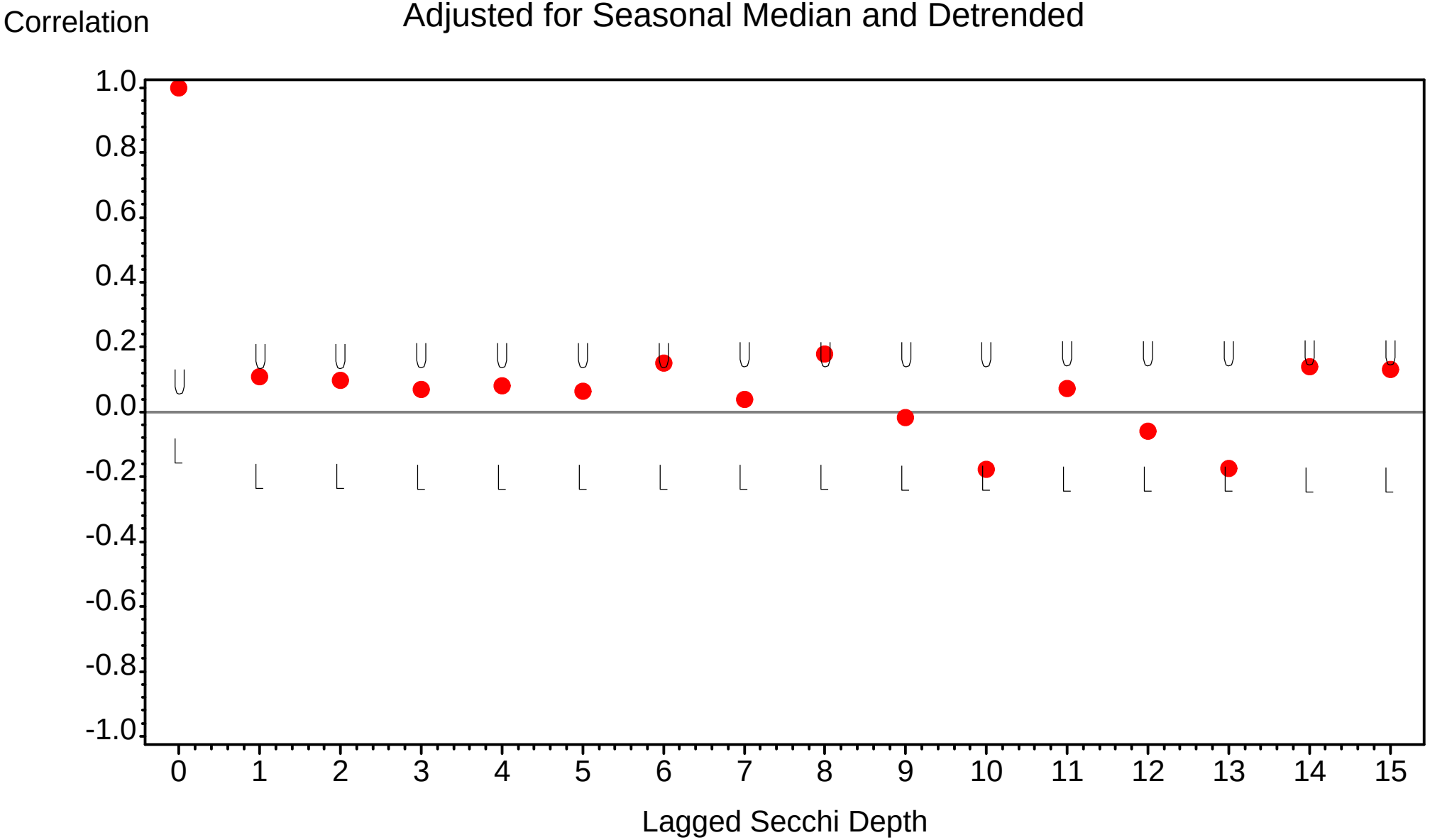


S_21FLVEMDHL05 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.108	0.093	0.186	-0.186
2	0.098	0.093	0.186	-0.186
3	0.069	0.094	0.187	-0.187
4	0.081	0.094	0.187	-0.187
5	0.064	0.094	0.188	-0.188
6	0.151	0.094	0.188	-0.188
7	0.039	0.095	0.189	-0.189
8	0.180	0.095	0.189	-0.189
9	-0.017	0.096	0.191	-0.191
10	-0.178	0.096	0.191	-0.191
11	0.072	0.097	0.193	-0.193
12	-0.060	0.097	0.194	-0.194
13	-0.175	0.097	0.194	-0.194
14	0.140	0.098	0.196	-0.196
15	0.132	0.098	0.197	-0.197

S_21FLVEMDHL05 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
17	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
18	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
19	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
20	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
21	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
17	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
18	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
19	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
20	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
21	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
17	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
18	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
19	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
20	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
21	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
22	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
23	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28
24	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67
25	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
26	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90
27	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48
28	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
22	1.15	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017
23	0.99	Y	Y	N	N	-0.132	0.057	0.124	-0.001
24	1.60	Y	Y	N	N	0.150	0.038	0.109	0.103
25	0.27	N	Y	Y	Y	0.141	0.033	0.135	357.337
26	2.29	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014
27	1.87	Y	Y	Y	Y	0.090	0.188	0.382	0.156
28	0.20	N	Y	Y	Y	0.153	0.020	0.128	0.254

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	-0.14839	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
23	-0.13170	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
24	0.15026	0.03776	0.10869	0.103	0.15026	0.03776	0.103
25	0.14103	0.03319	0.13465	357.337	0.14100	0.13500	357.337
26	-0.08367	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014
27	0.08974	0.18759	0.38162	0.156	0.08974	0.38162	0.156
28	0.15317	0.01994	0.12793	0.254	0.15300	0.12800	0.254

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
29	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00
30	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
31	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43
32	S_21FLVEMDHL05	S_21FLVEMDHL05	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.66
33	S_21FLVEMDHL05	S_21FLVEMDHL05	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
34	S_21FLVEMDHL05	S_21FLVEMDHL05	DO	Dissolved Oxygen	(mg/L)	22	30	2.01
35	S_21FLVEMDHL05	S_21FLVEMDHL05	DOSAT	Dissolved Oxygen	(%)	32	40	1.41

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
29	1.03	Y	Y	N	N	0.109	0.084	0.181	0.000
30	0.75	Y	Y	Y	Y	0.015	0.858	0.907	0.001
31	1.03	Y	Y	N	N	-0.115	0.116	0.160	-0.001
32	0.74	Y	Y	Y	Y	0.145	0.032	0.115	0.086
33	0.71	Y	Y	Y	Y	0.085	0.174	0.337	182.245
34	2.54	Y	N	N	N	-0.149	0.017	0.110	-0.023
35	2.00	Y	Y	N	N	0.081	0.199	0.362	0.114

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
29	0.10913	0.08403	0.18091	0.000	0.10913	0.08403	0.000
30	0.01504	0.85776	0.90700	0.001	0.01504	0.90700	0.001
31	-0.12022	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001
32	0.14507	0.03182	0.11509	0.086	0.14507	0.11509	0.086
33	0.08502	0.17411	0.33661	182.245	0.08502	0.33661	182.245
34	-0.14929	0.01704	0.11000	-0.023	-0.14929	0.01704	-0.023
35	0.08126	0.19863	0.36237	0.114	0.08126	0.19863	0.114

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
36	S_21FLVEMDHL05	S_21FLVEMDHL05	SALIN	Salinity	(psu)	52	60	-9999.00
37	S_21FLVEMDHL05	S_21FLVEMDHL05	SD	Secchi Depth	(m)	72	80	0.38
38	S_21FLVEMDHL05	S_21FLVEMDHL05	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
39	S_21FLVEMDHL05	S_21FLVEMDHL05	TP	Total Phosphorus	(mg/L)	12	20	0.80
40	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
41	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23
42	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
36	0.79	Y	Y	N	N	0.060	0.339	0.502	0.082
37	1.10	Y	N	N	N	0.047	0.468	0.545	0.000
38	0.81	Y	Y	Y	Y	-0.146	0.037	0.227	-0.009
39	0.83	Y	Y	N	N	-0.030	0.675	0.690	0.000
40	1.38	Y	Y	Y	Y	0.074	0.356	0.527	0.052
41	0.08	N	Y	Y	Y	0.090	0.212	0.347	225.098
42	2.09	Y	N	N	N	-0.099	0.163	0.243	-0.023

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
36	0.05987	0.33872	0.50152	0.082	0.05987	0.33872	0.082
37	0.04654	0.46800	0.54466	0.000	0.04654	0.46800	0.000
38	-0.14590	0.03661	0.22687	-0.009	-0.14590	0.22687	-0.009
39	-0.02972	0.67549	0.68953	0.000	-0.02972	0.67549	0.000
40	0.07383	0.35568	0.52706	0.052	0.07383	0.52706	0.052
41	0.08958	0.21156	0.34660	225.098	0.09000	0.34700	225.098
42	-0.09906	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
43	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56
44	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09
45	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00
46	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
47	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00
48	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
49	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
43	2.11	Y	N	N	N	0.046	0.549	0.573	0.109
44	0.29	N	Y	Y	Y	0.155	0.028	0.107	0.318
45	-9999.00	N	Y	N	N	0.192	0.005	0.044	0.011
46	1.04	Y	Y	N	N	-0.161	0.045	0.205	-0.029
47	0.45	N	N	N	N	0.021	0.810	0.860	0.000
48	0.33	N	Y	N	N	0.049	0.531	0.675	0.023
49	0.79	Y	Y	Y	Y	0.017	0.821	0.864	6.873

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
43	0.04571	0.54949	0.57310	0.109	0.04571	0.54949	0.109
44	0.15482	0.02802	0.10656	0.318	0.15500	0.10700	0.318
45	0.19225	0.00486	0.04449	0.011	0.19200	0.00500	0.011
46	-0.16145	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
47	0.02128	0.80954	0.86021	0.000	0.02100	0.81000	0.000
48	0.04851	0.53077	0.67536	0.023	0.04900	0.53100	0.023
49	0.01671	0.82111	0.86399	6.874	0.01671	0.86399	6.874

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
50	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
51	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00
52	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00
53	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61
54	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
55	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10
56	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
50	2.35	Y	Y	N	N	-0.022	0.763	0.834	-0.004
51	2.11	Y	Y	Y	Y	0.049	0.487	0.514	0.154
52	0.98	Y	Y	Y	Y	0.070	0.304	0.474	0.025
53	1.08	Y	Y	N	N	0.064	0.330	0.509	0.000
54	1.88	Y	Y	N	N	0.017	0.845	0.901	0.002
55	1.51	Y	Y	Y	Y	0.050	0.519	0.695	0.000
56	-9999.00	N	Y	N	N	0.078	0.299	0.360	0.020

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
50	-0.02159	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
51	0.04892	0.48687	0.51426	0.154	0.04892	0.51426	0.154
52	0.06955	0.30398	0.47368	0.025	0.06955	0.47368	0.025
53	0.06415	0.32954	0.50893	0.000	0.06415	0.32954	0.000
54	0.01724	0.84540	0.90084	0.002	0.01724	0.84540	0.002
55	0.05031	0.51900	0.69540	0.000	0.05031	0.69540	0.000
56	0.07599	0.31036	0.36979	0.020	0.07800	0.29900	0.020

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
57	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82
58	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25
59	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00
60	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73
61	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00
62	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
63	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
57	1.12	Y	N	Y	N	0.106	0.122	0.158	10.031
58	0.82	Y	Y	N	N	-0.170	0.012	0.092	-0.059
59	0.70	Y	Y	N	N	-0.175	0.011	0.082	-0.515
60	1.54	Y	N	Y	N	0.092	0.169	0.290	0.004
61	1.54	Y	Y	Y	Y	0.094	0.155	0.427	0.007
62	1.48	Y	Y	N	N	-0.031	0.706	0.812	-0.002
63	-9999.00	N	N	N	N	-0.023	0.786	0.871	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
57	0.10598	0.12166	0.15796	10.031	0.10598	0.12166	10.031
58	-0.16974	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059
59	-0.17479	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
60	0.09207	0.16857	0.29012	0.004	0.09207	0.16857	0.004
61	0.09387	0.15479	0.42738	0.007	0.09387	0.42738	0.007
62	-0.03145	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
63	-0.02254	0.78614	0.87138	0.000	-0.02300	0.78600	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
64	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
65	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19
66	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42
67	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81
68	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00
69	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
64	0.44	N	Y	N	N	-0.142	0.074	0.219	-0.011
65	-9999.00	N	N	Y	N	0.085	0.243	0.291	2.029
66	2.33	Y	Y	N	N	-0.040	0.591	0.737	-0.008
67	1.77	Y	Y	N	N	0.027	0.725	0.823	0.034
68	-9999.00	N	Y	Y	Y	0.123	0.076	0.159	0.001
69	0.68	Y	Y	N	N	0.194	0.005	0.046	0.009

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
64	-0.14223	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011
65	0.08500	0.24287	0.29095	2.029	0.08500	0.24300	2.029
66	-0.03968	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008
67	0.02716	0.72528	0.82342	0.034	0.02716	0.72528	0.034
68	0.12322	0.07617	0.15857	0.001	0.12300	0.15900	0.001
69	0.19383	0.00462	0.04647	0.009	0.19383	0.00462	0.009

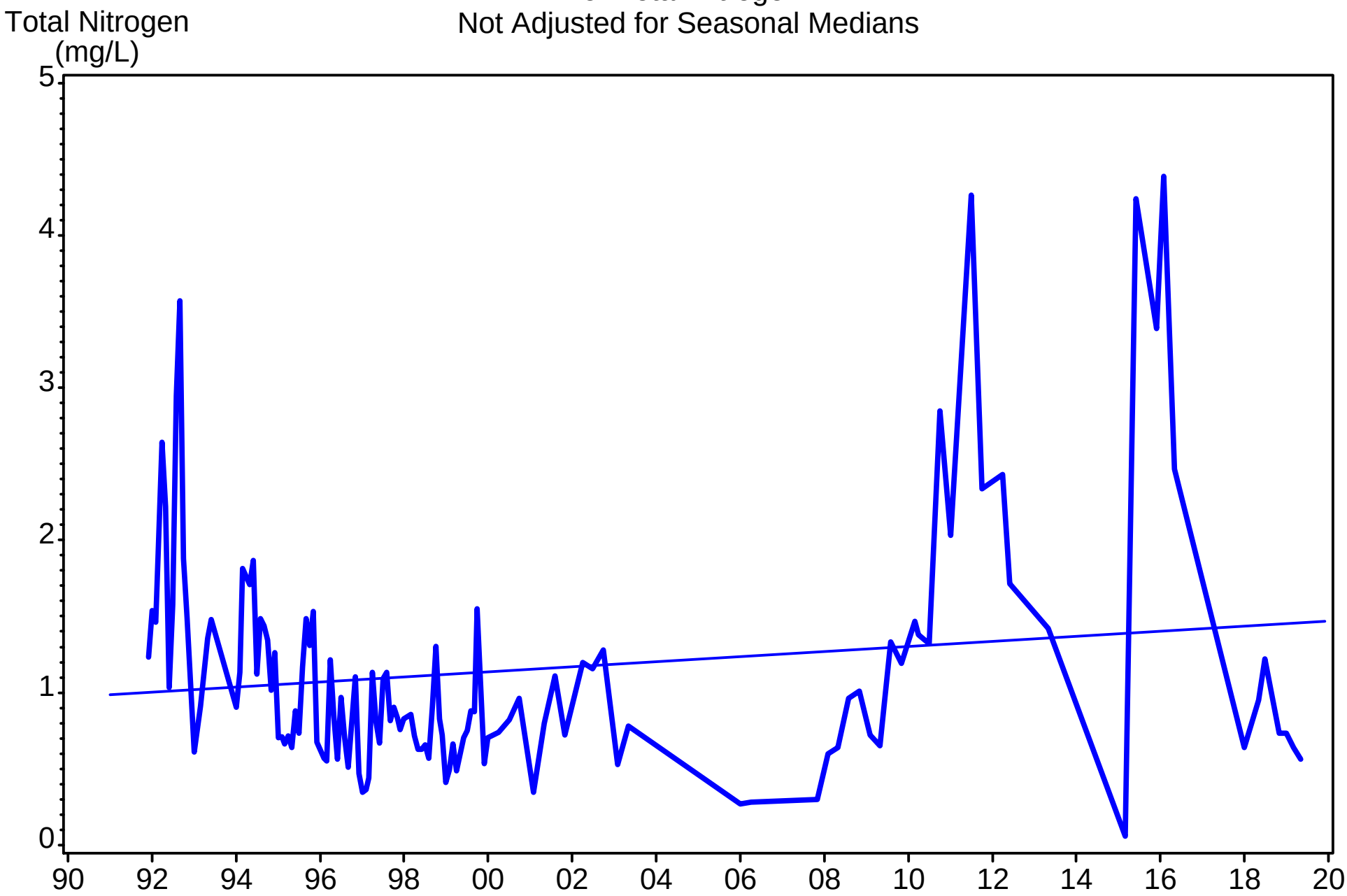
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
70	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00
71	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
70	0.31	N	Y	N	N	-0.241	0.003	0.076	-0.016
71	-9999.00	N	N	N	N	0.040	0.632	0.786	0.000

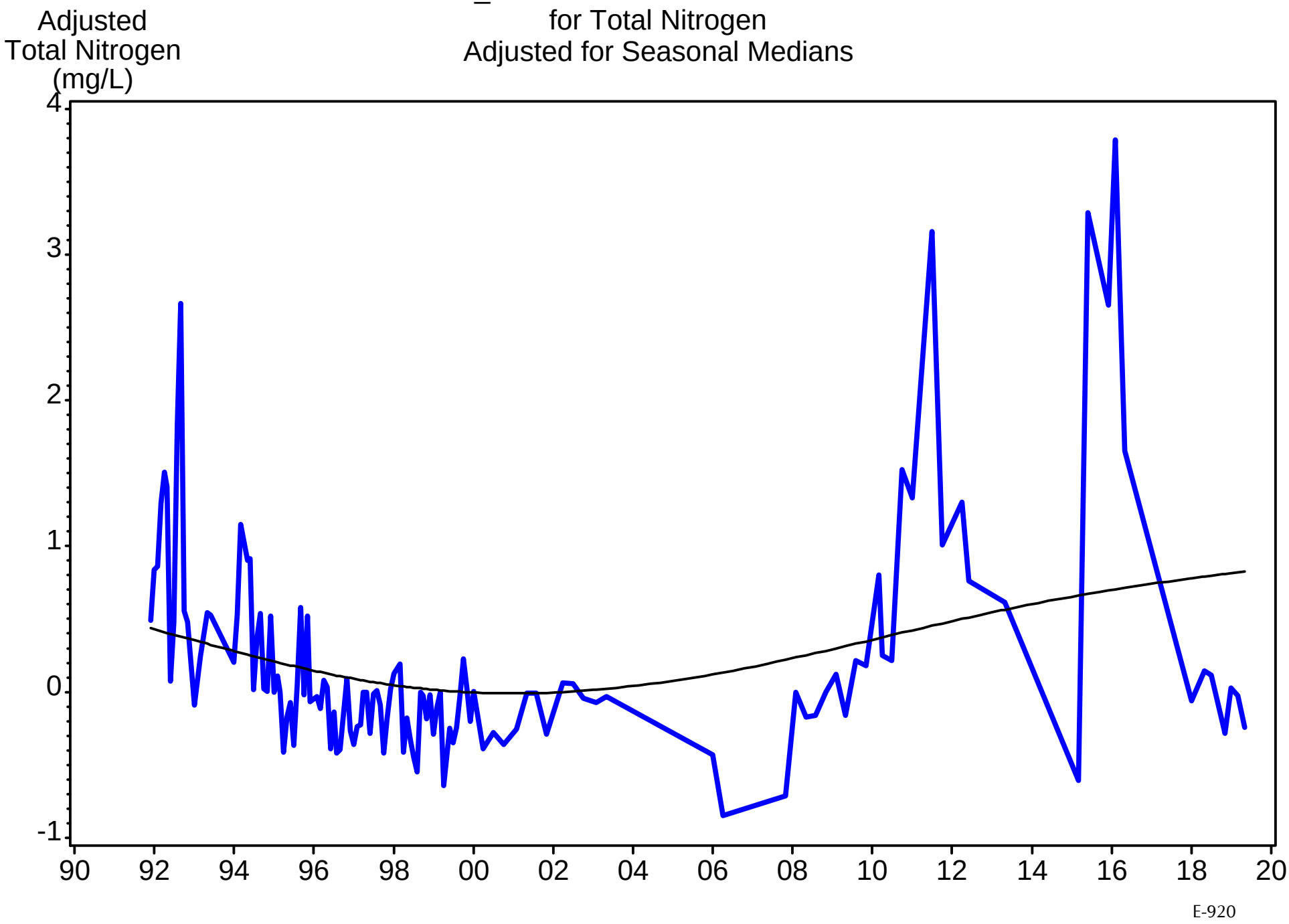
Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
70	-0.24070	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
71	0.04009	0.63152	0.78567	0.000	0.04000	0.63200	0.000

S_21FLVEMDHL06 Trends

S_21FLVEMDHL06 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



S_21FLVEMDHL06 Trends

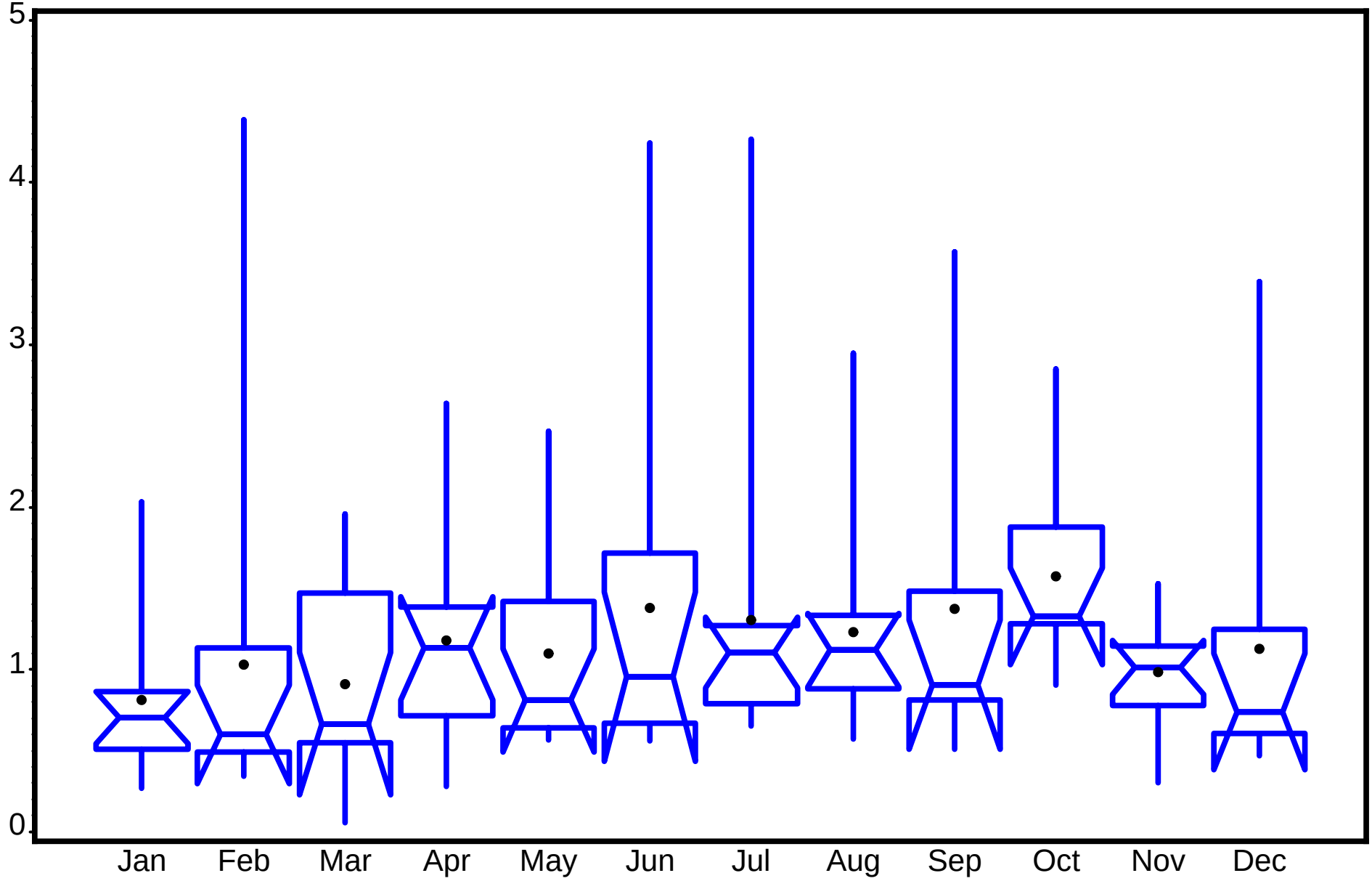


S_21FLVEMDHL06 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



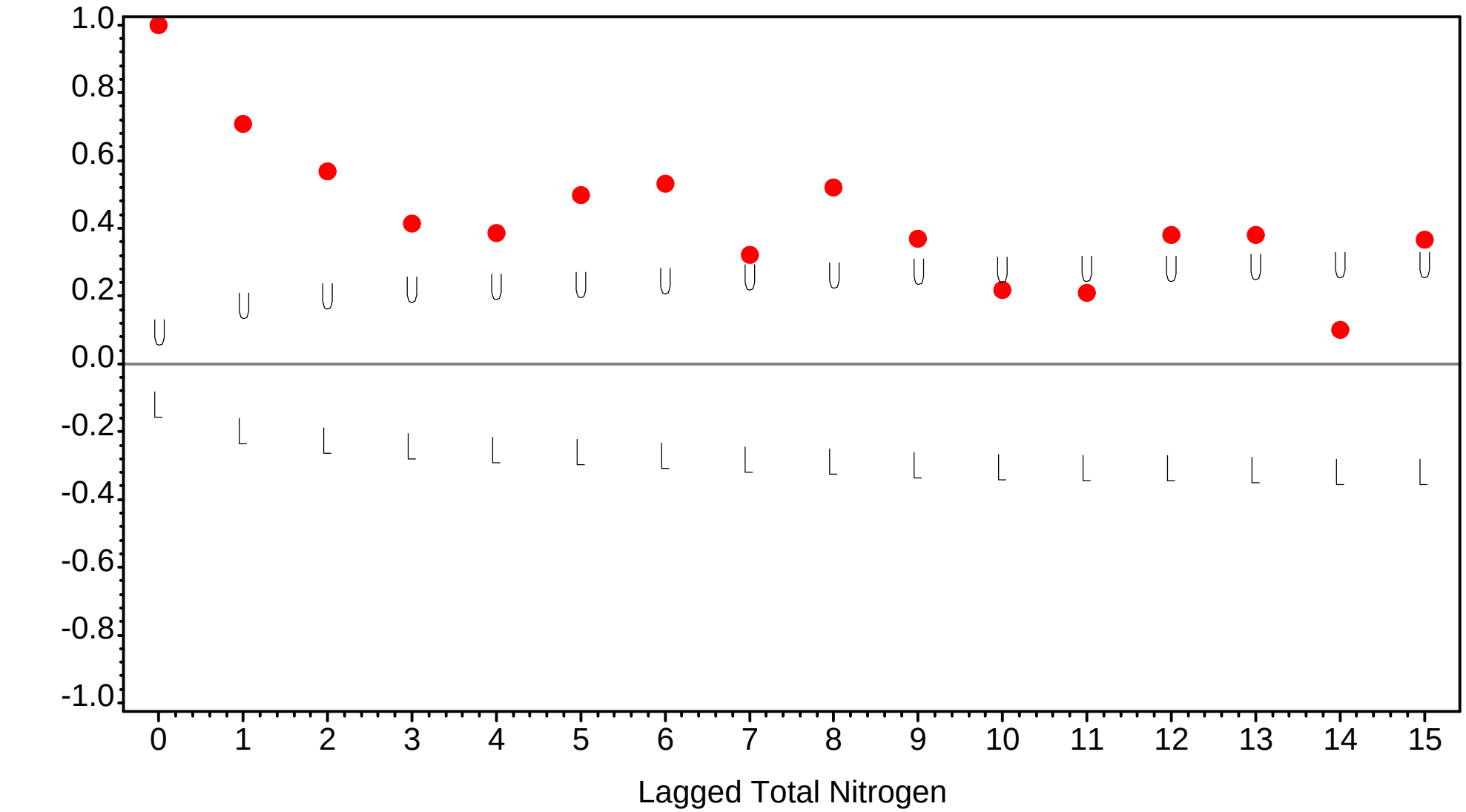
S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.707	0.093	0.186	-0.186
2	0.569	0.107	0.214	-0.214
3	0.415	0.116	0.231	-0.231
4	0.385	0.120	0.240	-0.240
5	0.498	0.123	0.247	-0.247
6	0.531	0.129	0.258	-0.258
7	0.321	0.135	0.270	-0.270
8	0.519	0.137	0.275	-0.275
9	0.370	0.143	0.286	-0.286
10	0.219	0.146	0.291	-0.291
11	0.210	0.146	0.293	-0.293
12	0.381	0.147	0.295	-0.295
13	0.380	0.150	0.300	-0.300
14	0.100	0.153	0.306	-0.306
15	0.365	0.153	0.306	-0.306

S_21FLVEMDHL06 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

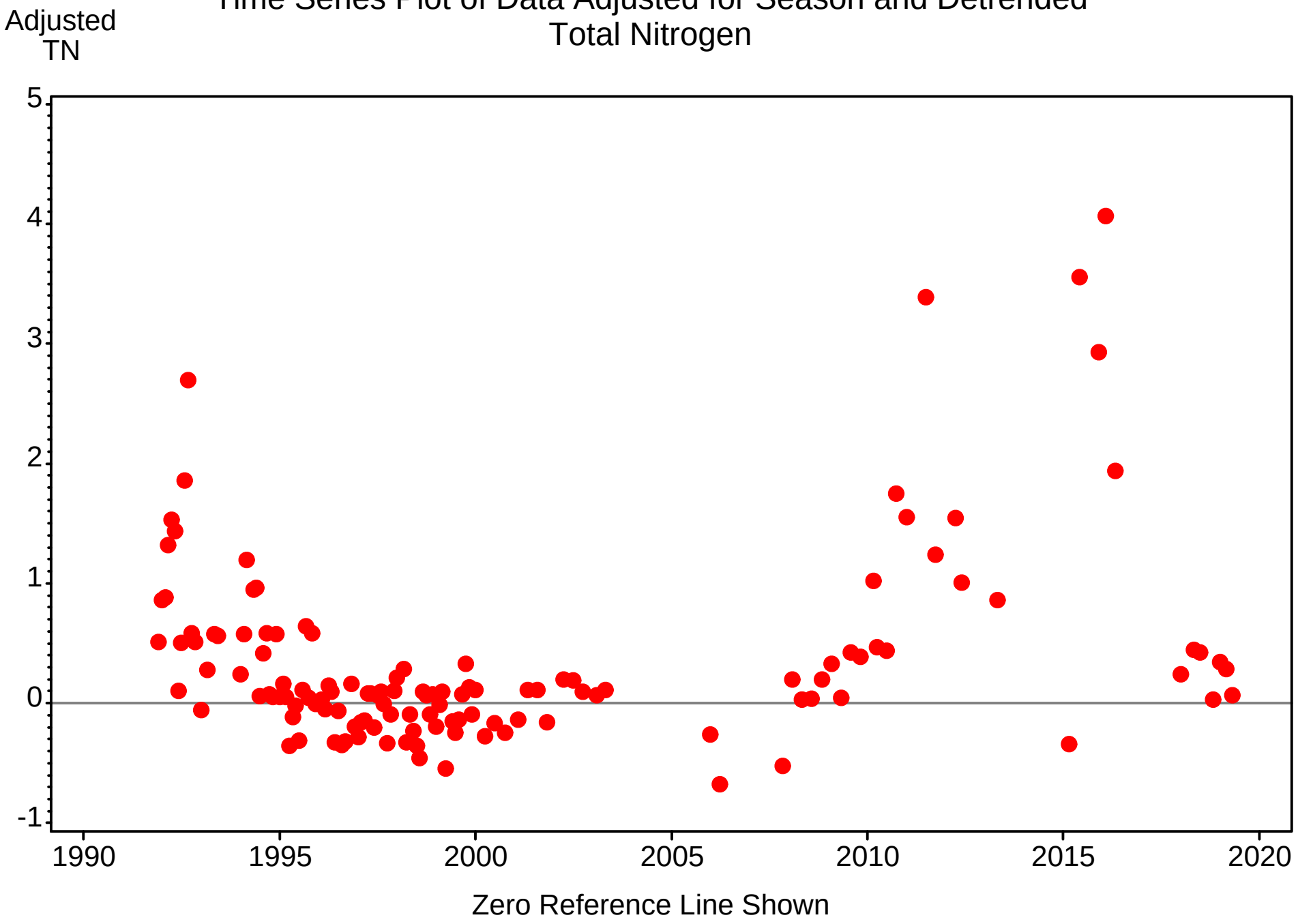
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.126	0.072	0.357	-0.011

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.12577	0.071931	0.35680	-0.010741

S_21FLVEMDHL06 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



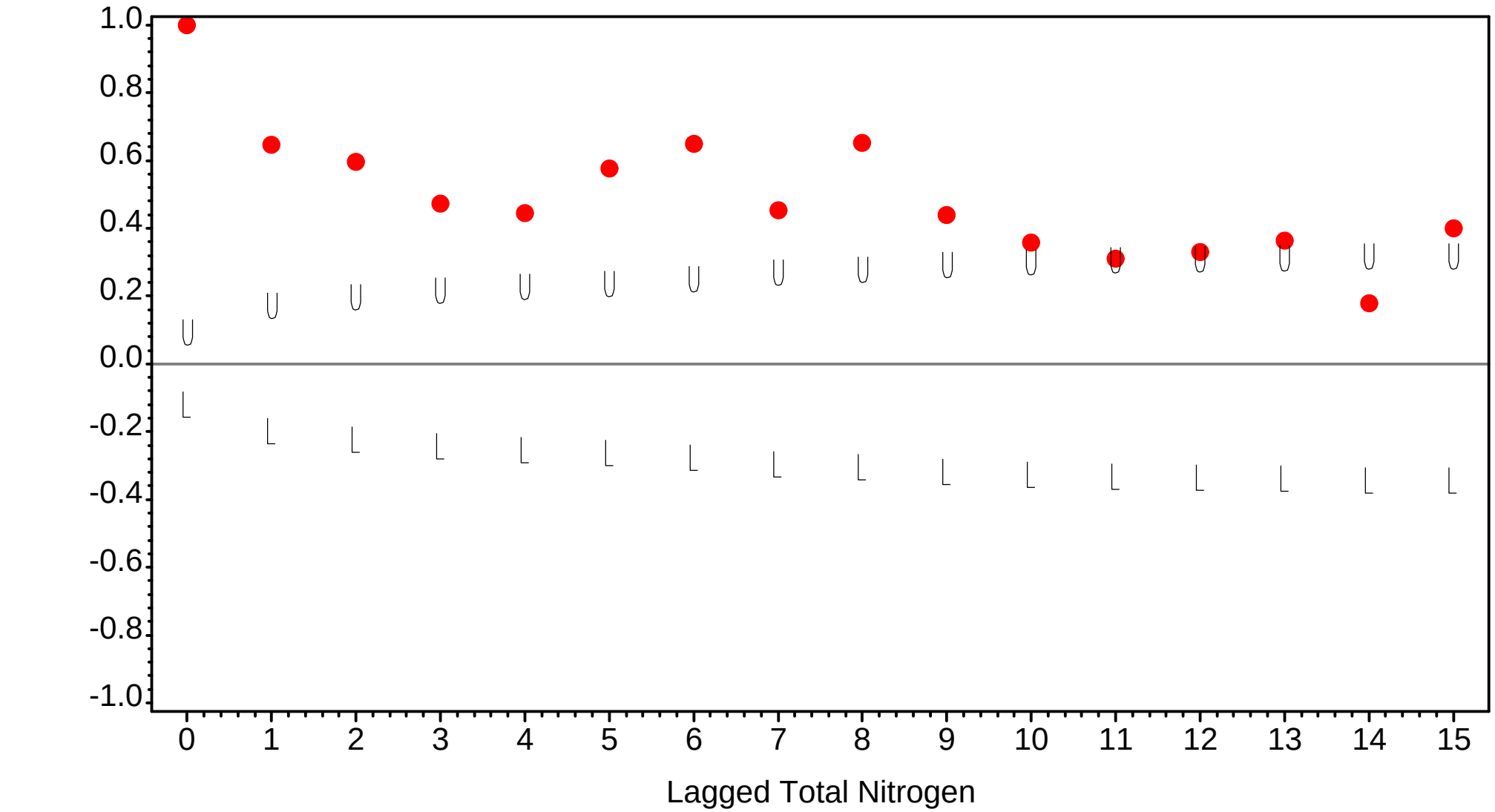
S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.646	0.093	0.186	-0.186
2	0.597	0.105	0.210	-0.210
3	0.472	0.114	0.229	-0.229
4	0.445	0.120	0.240	-0.240
5	0.575	0.124	0.249	-0.249
6	0.650	0.132	0.264	-0.264
7	0.454	0.141	0.282	-0.282
8	0.653	0.145	0.290	-0.290
9	0.439	0.153	0.306	-0.306
10	0.357	0.157	0.313	-0.313
11	0.311	0.159	0.318	-0.318
12	0.331	0.161	0.322	-0.322
13	0.363	0.163	0.325	-0.325
14	0.180	0.165	0.330	-0.330
15	0.400	0.166	0.331	-0.331

S_21FLVEMDHL06 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

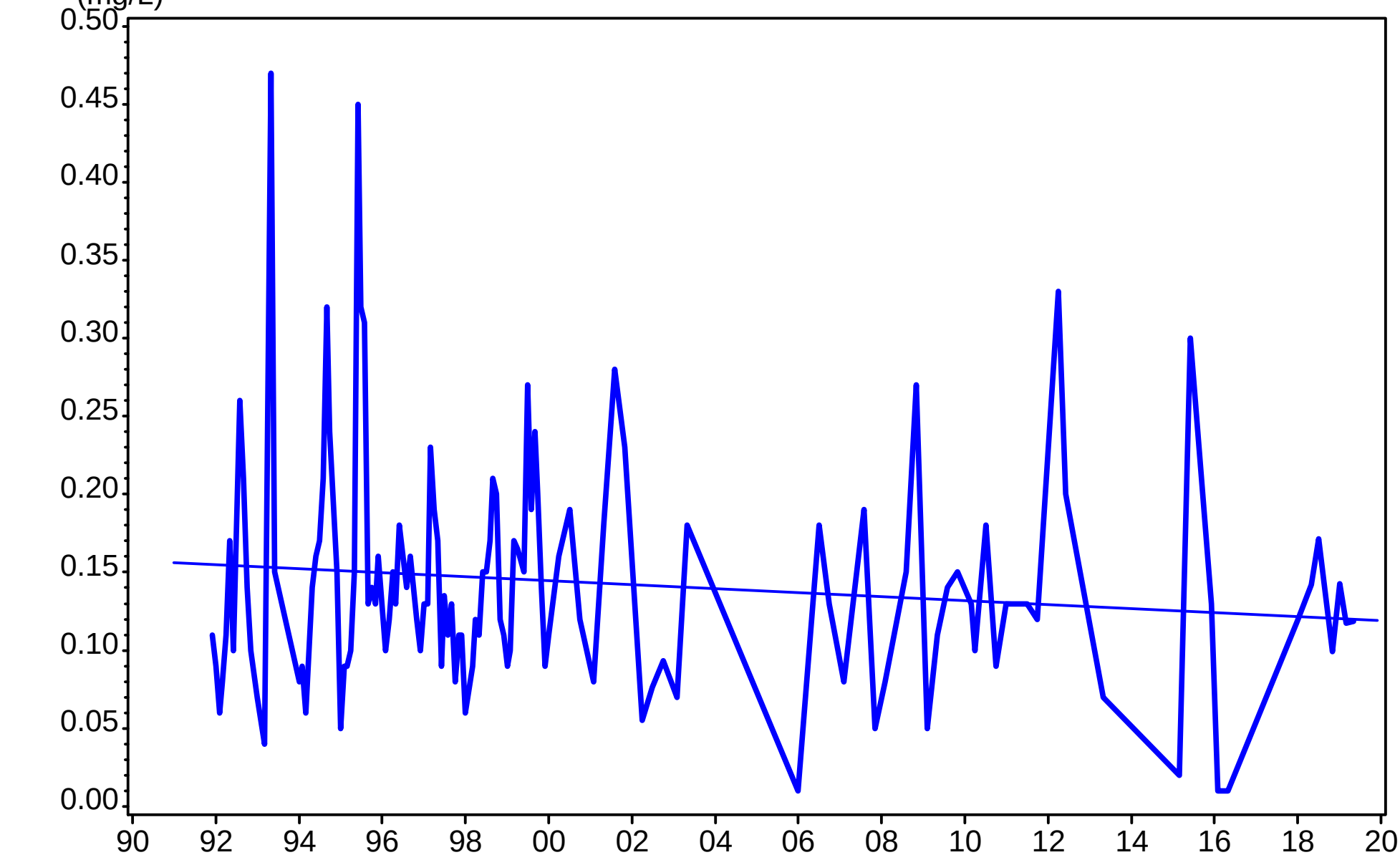


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

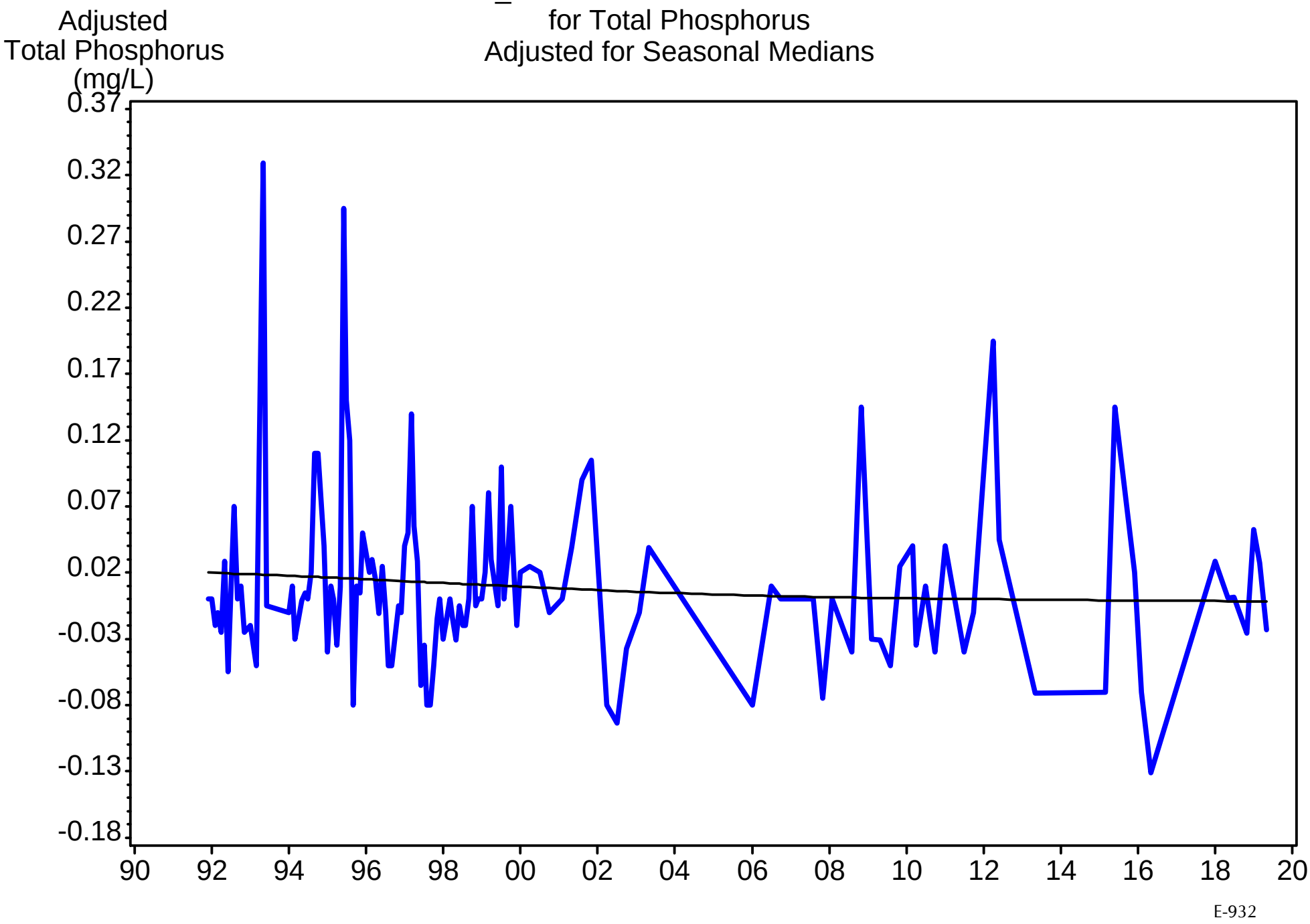
S_21FLVEMDHL06 Trends

S_21FLVEMDHL06 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



E-931

S_21FLVEMDHL06 Trends



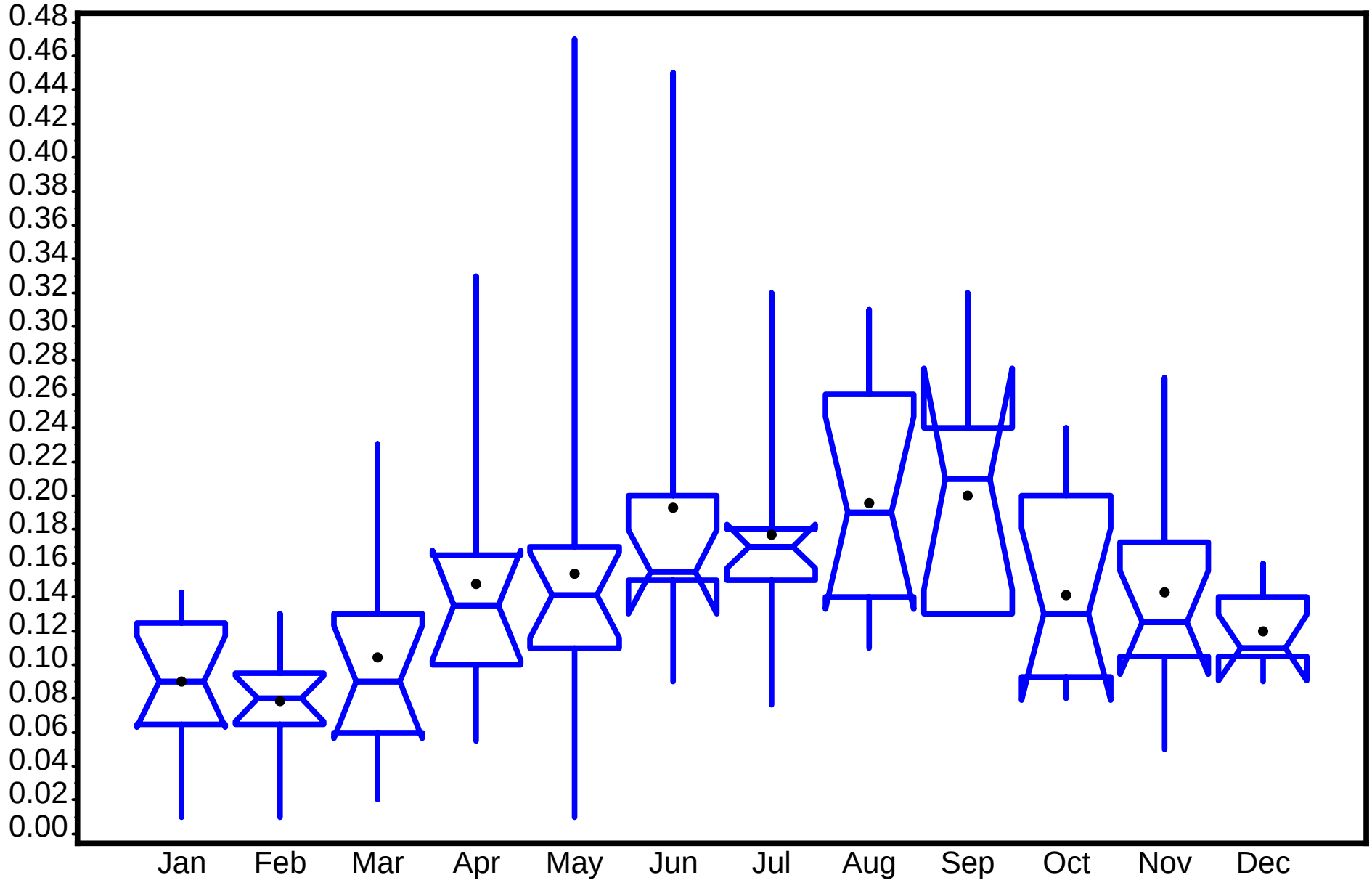
E-932

S_21FLVEMDHL06 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



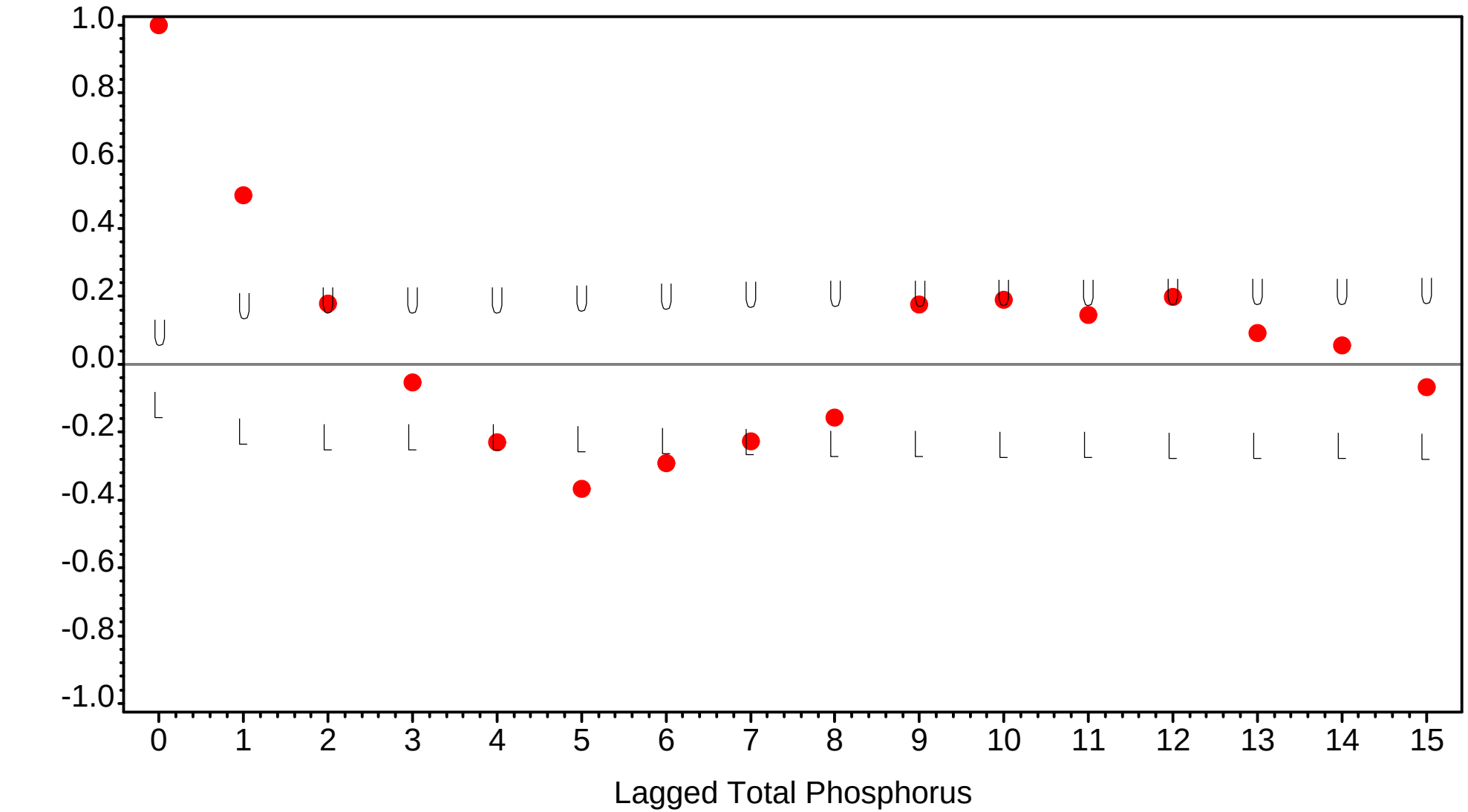
S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.499	0.093	0.186	-0.186
2	0.179	0.100	0.201	-0.201
3	-0.054	0.101	0.202	-0.202
4	-0.231	0.101	0.202	-0.202
5	-0.367	0.103	0.206	-0.206
6	-0.291	0.106	0.213	-0.213
7	-0.227	0.109	0.217	-0.217
8	-0.157	0.110	0.220	-0.220
9	0.175	0.111	0.221	-0.221
10	0.191	0.112	0.223	-0.223
11	0.146	0.112	0.225	-0.225
12	0.197	0.113	0.226	-0.226
13	0.093	0.114	0.228	-0.228
14	0.056	0.114	0.228	-0.228
15	-0.068	0.114	0.229	-0.229

S_21FLVEMDHL06 Trends Appendix

Correlogram for Total Phosphorus

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

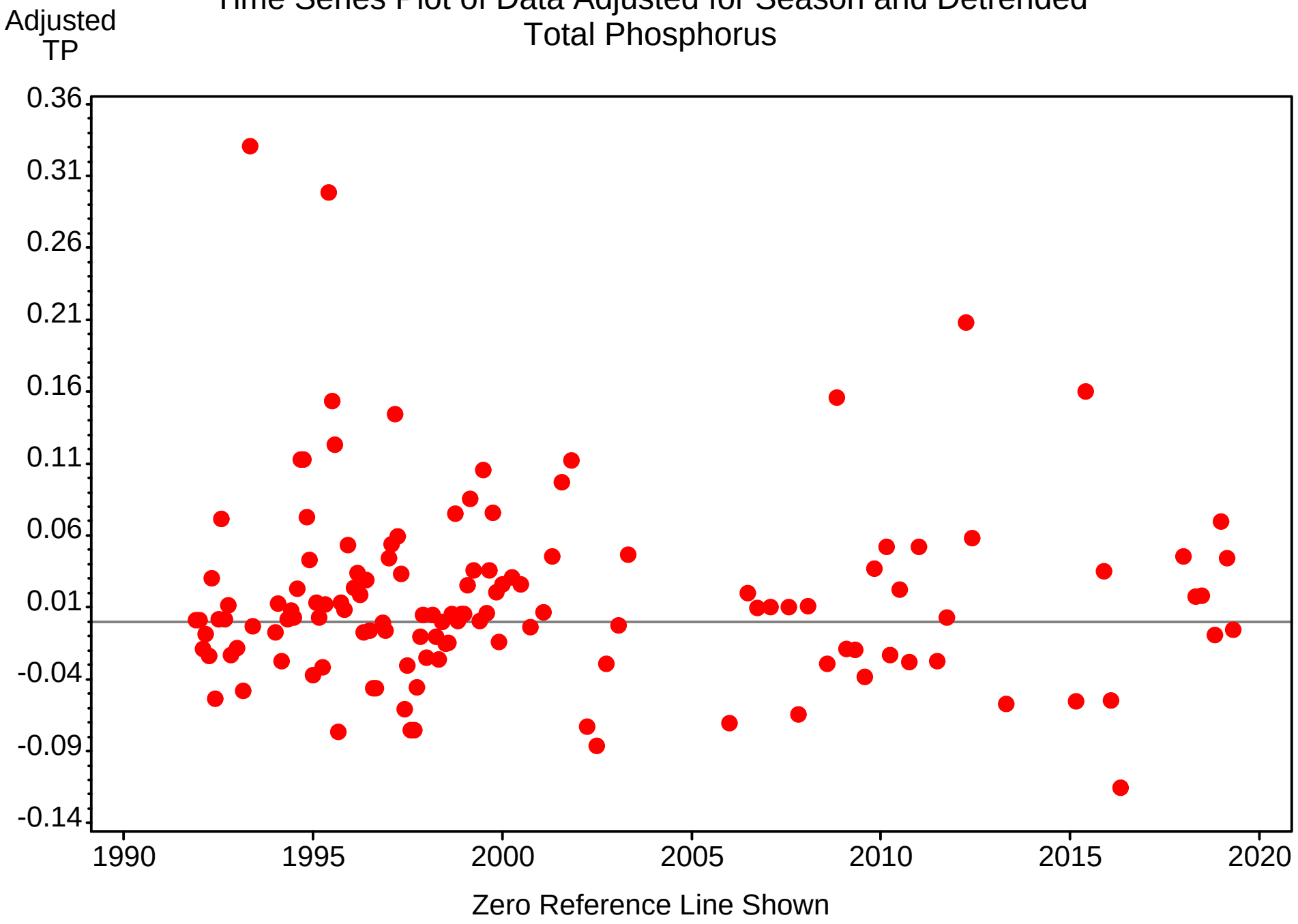
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.07	0.311	0.352	-.001

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.070045	0.31141	0.35163	-.000588235

S_21FLVEMDHL06 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

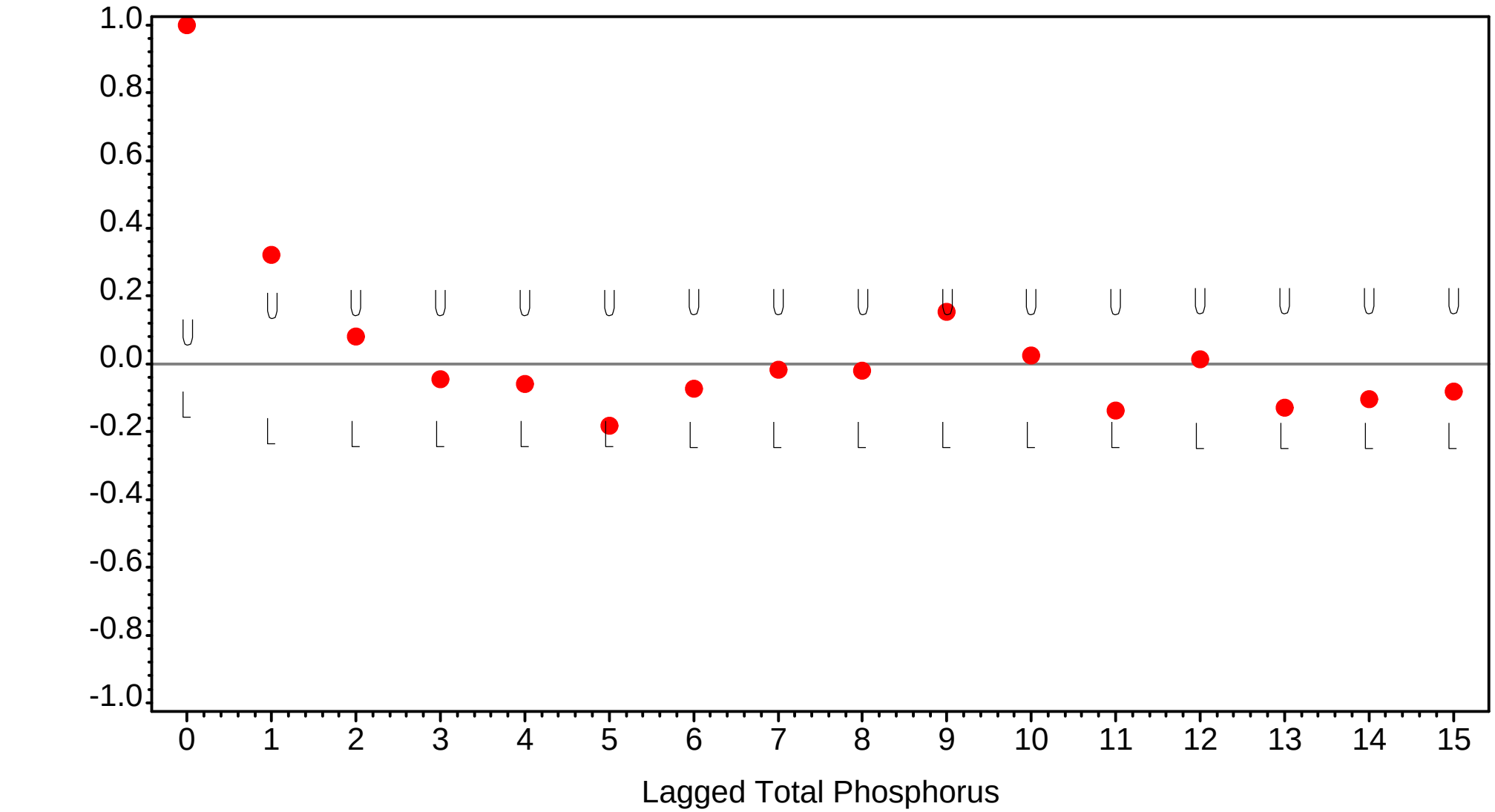


S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.322	0.093	0.186	-0.186
2	0.081	0.096	0.192	-0.192
3	-0.046	0.096	0.192	-0.192
4	-0.059	0.096	0.193	-0.193
5	-0.183	0.096	0.193	-0.193
6	-0.072	0.097	0.195	-0.195
7	-0.016	0.098	0.195	-0.195
8	-0.020	0.098	0.195	-0.195
9	0.154	0.098	0.195	-0.195
10	0.026	0.098	0.196	-0.196
11	-0.137	0.098	0.196	-0.196
12	0.013	0.099	0.198	-0.198
13	-0.129	0.099	0.198	-0.198
14	-0.105	0.099	0.199	-0.199
15	-0.081	0.100	0.199	-0.199

S_21FLVEMDHL06 Trends Appendix

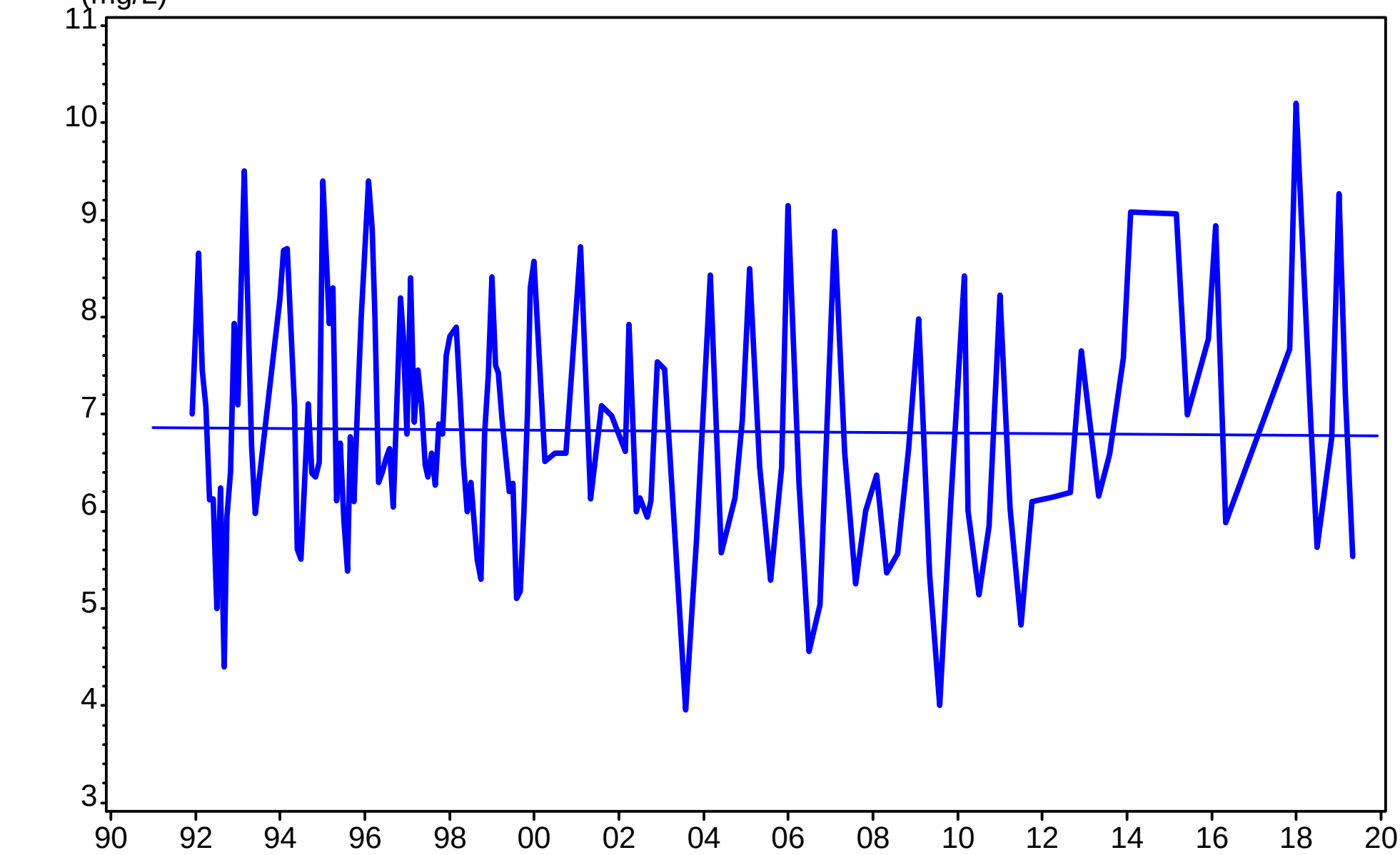
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



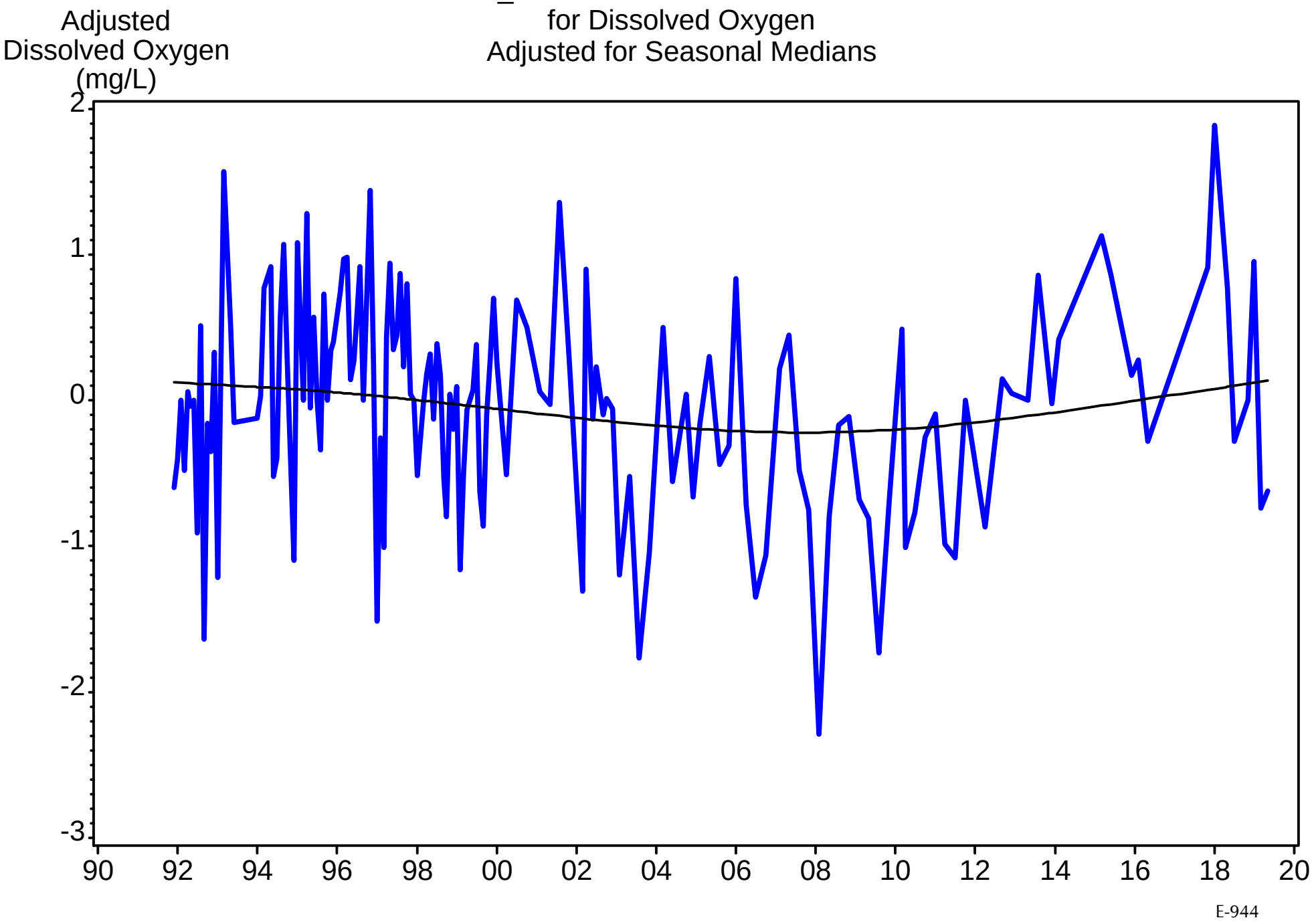
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL06 Trends

S_21FLVEMDHL06 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



S_21FLVEMDHL06 Trends

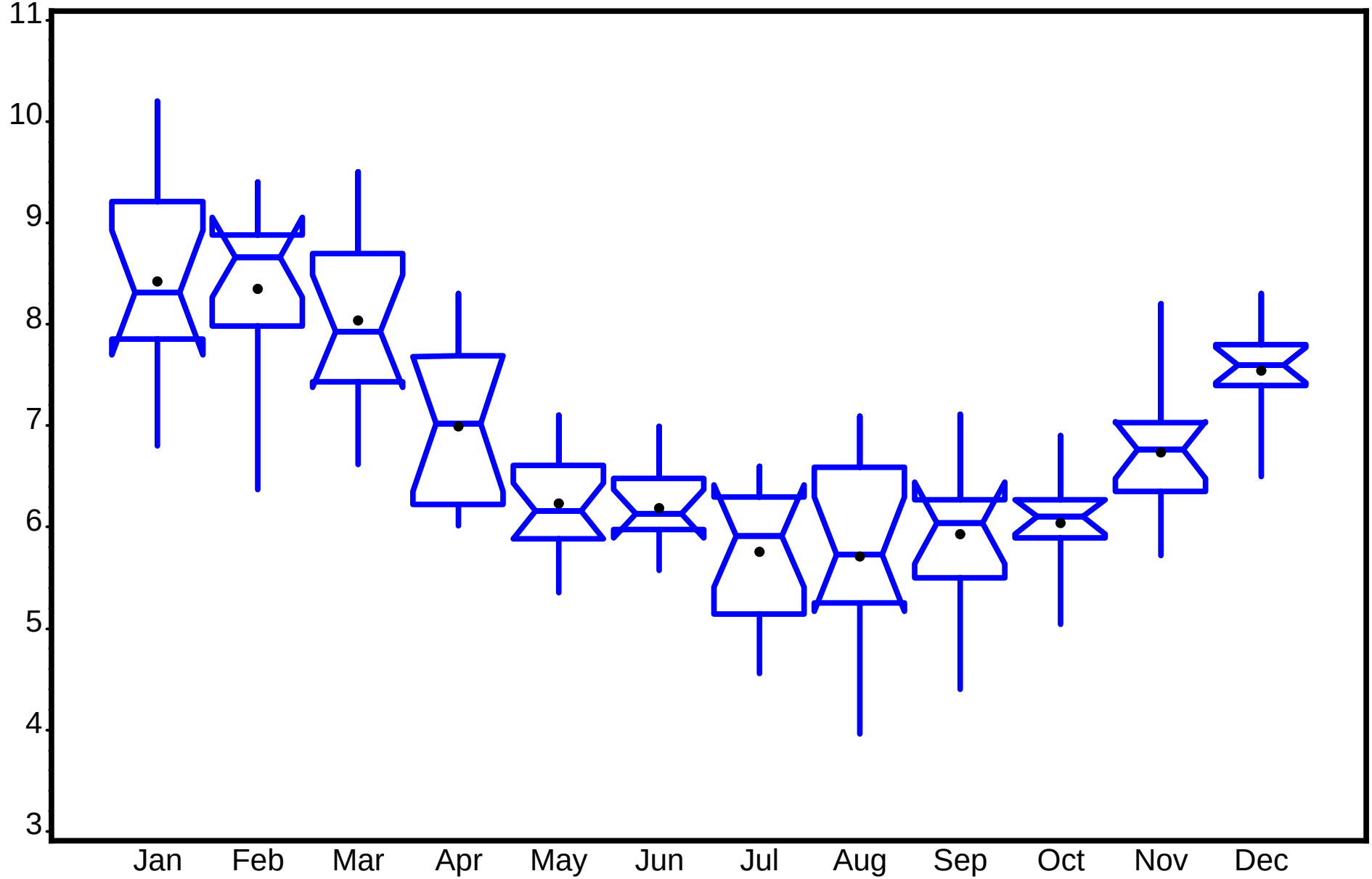


S_21FLVEMDHL06 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)

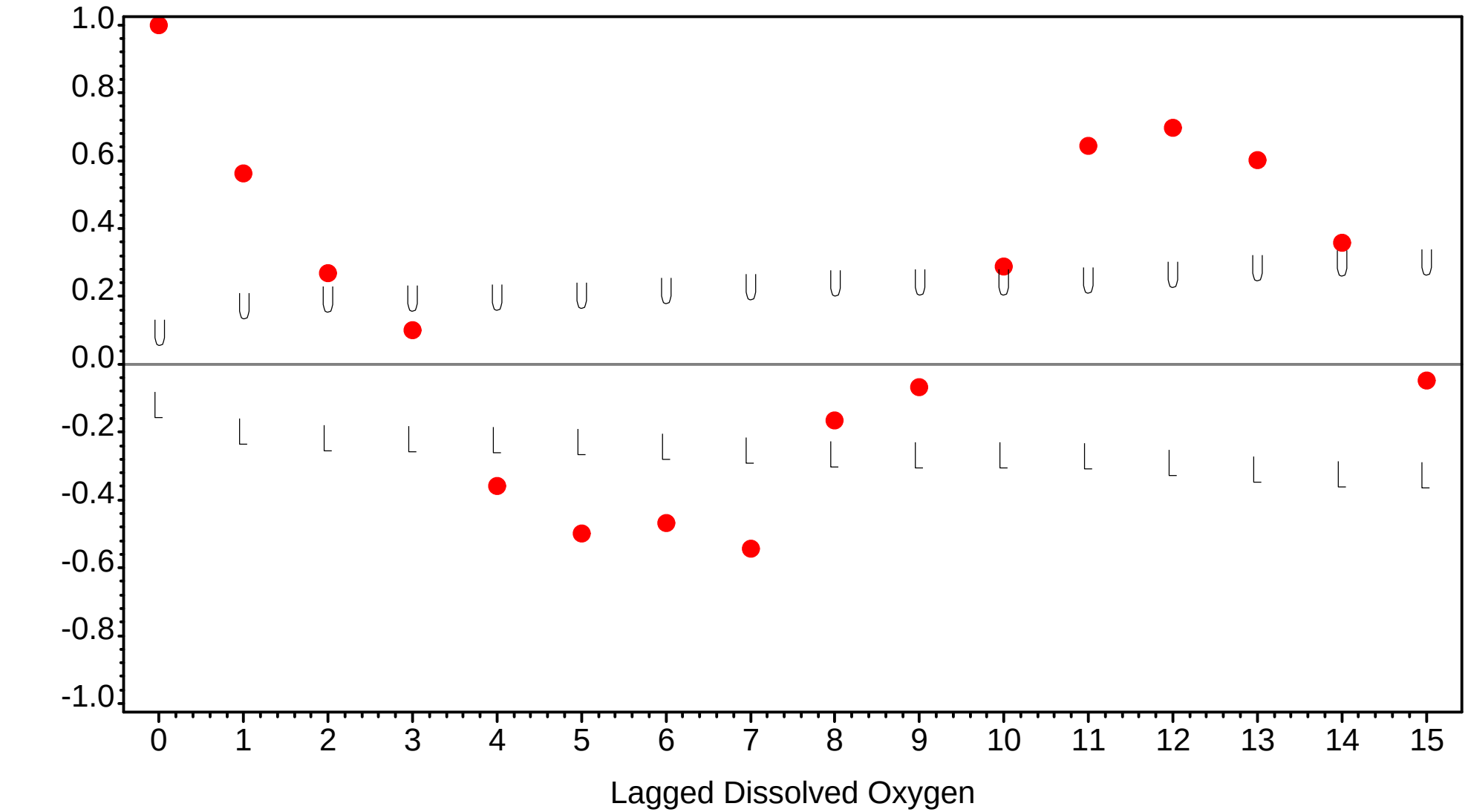


S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.562	0.093	0.186	-0.186
2	0.269	0.102	0.204	-0.204
3	0.099	0.104	0.208	-0.208
4	-0.359	0.104	0.209	-0.209
5	-0.500	0.108	0.216	-0.216
6	-0.469	0.114	0.229	-0.229
7	-0.545	0.120	0.240	-0.240
8	-0.166	0.127	0.253	-0.253
9	-0.068	0.127	0.255	-0.255
10	0.288	0.127	0.255	-0.255
11	0.644	0.129	0.259	-0.259
12	0.696	0.138	0.276	-0.276
13	0.601	0.148	0.296	-0.296
14	0.359	0.155	0.310	-0.310
15	-0.049	0.157	0.314	-0.314

S_21FLVEMDHL06 Trends Appendix

Correlogram for Dissolved Oxygen
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

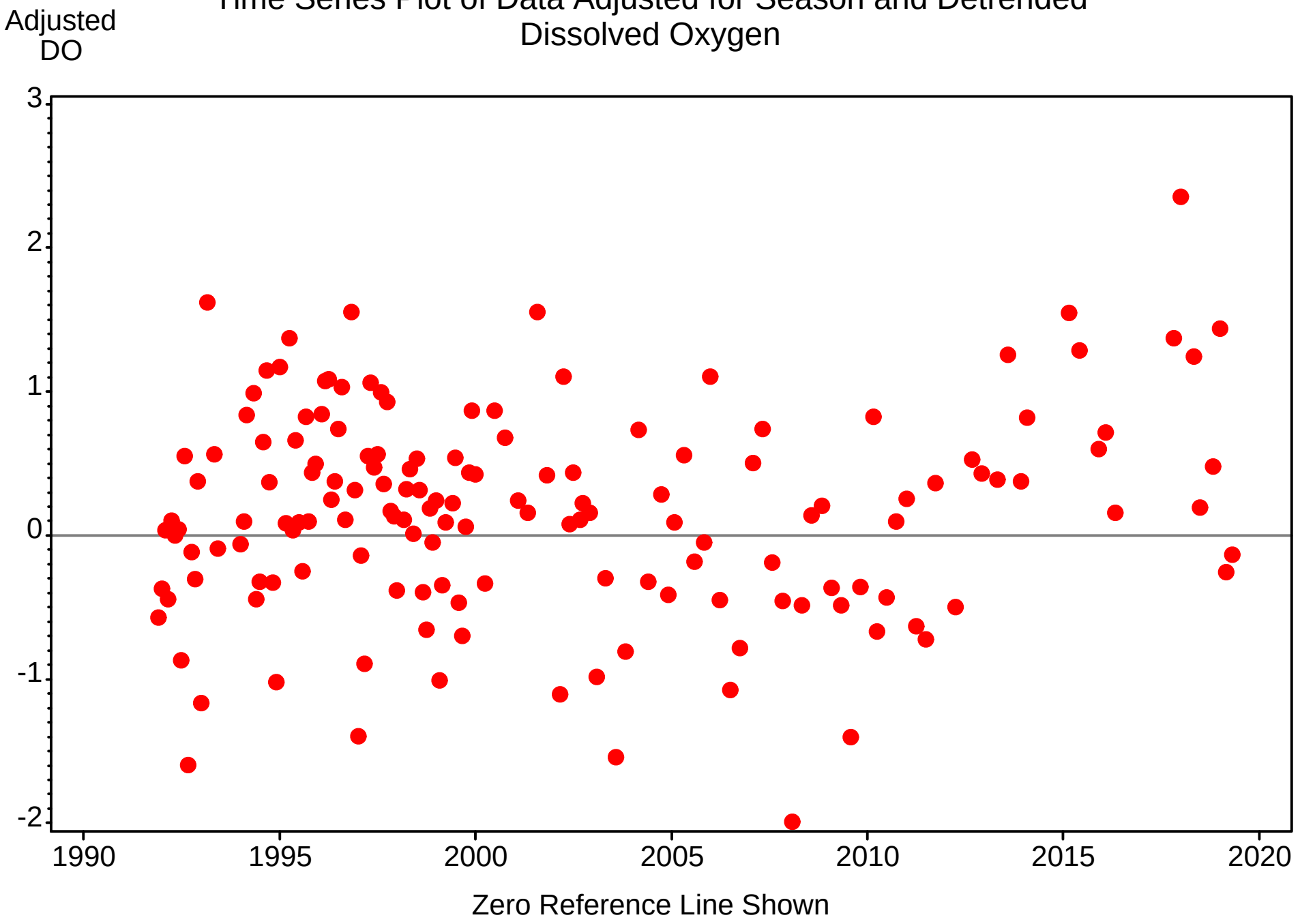
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.116	0.062	0.197	-0.017

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.11576	0.062435	0.19679	-0.016667

S_21FLVEMDHL06 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

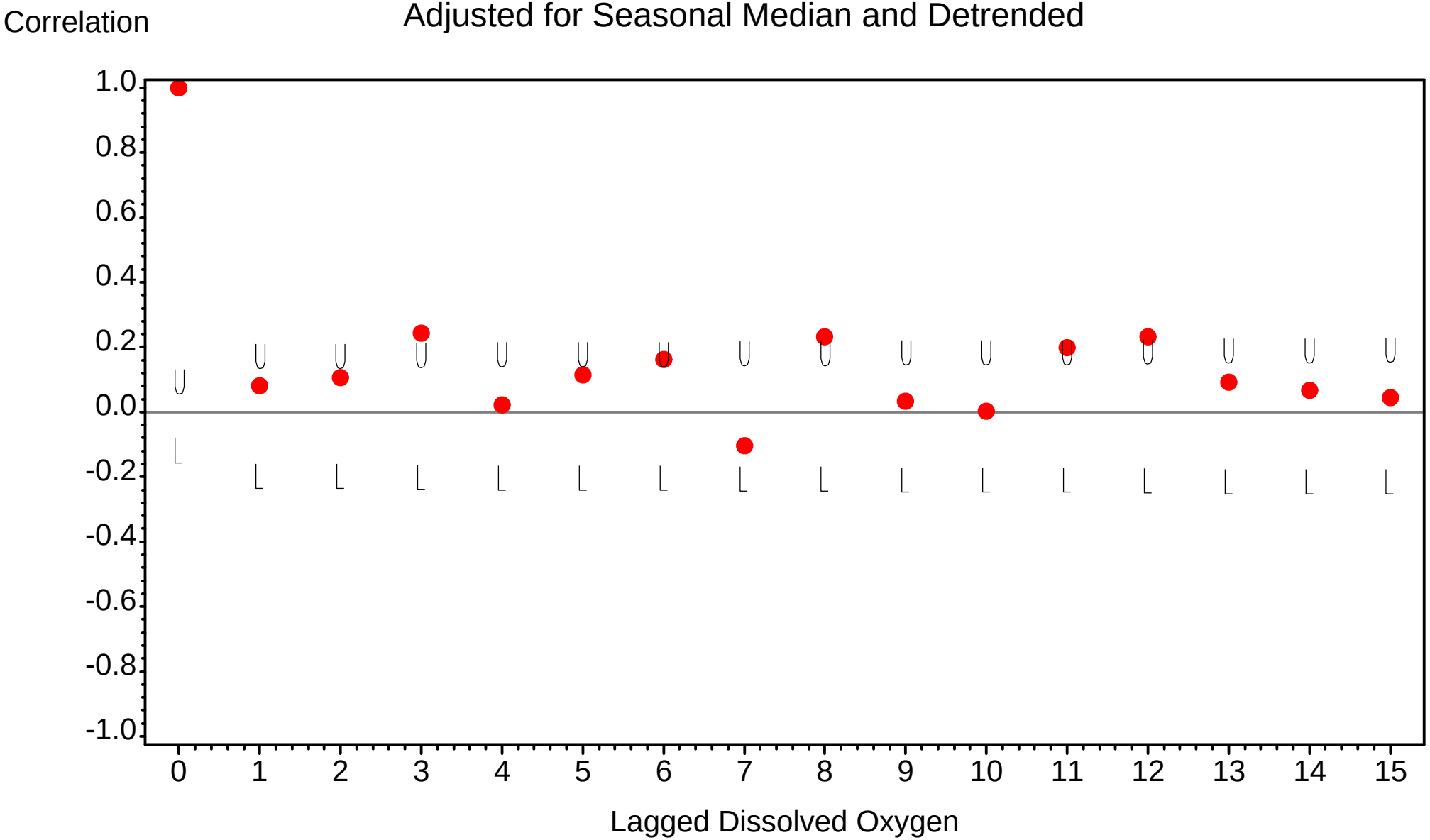


S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.080	0.093	0.186	-0.186
2	0.106	0.093	0.186	-0.186
3	0.244	0.093	0.187	-0.187
4	0.021	0.095	0.190	-0.190
5	0.113	0.095	0.190	-0.190
6	0.162	0.096	0.191	-0.191
7	-0.104	0.096	0.193	-0.193
8	0.232	0.097	0.193	-0.193
9	0.032	0.098	0.197	-0.197
10	0.002	0.098	0.197	-0.197
11	0.199	0.098	0.197	-0.197
12	0.232	0.099	0.199	-0.199
13	0.091	0.101	0.202	-0.202
14	0.066	0.101	0.202	-0.202
15	0.045	0.101	0.203	-0.203

S_21FLVEMDHL06 Trends Appendix

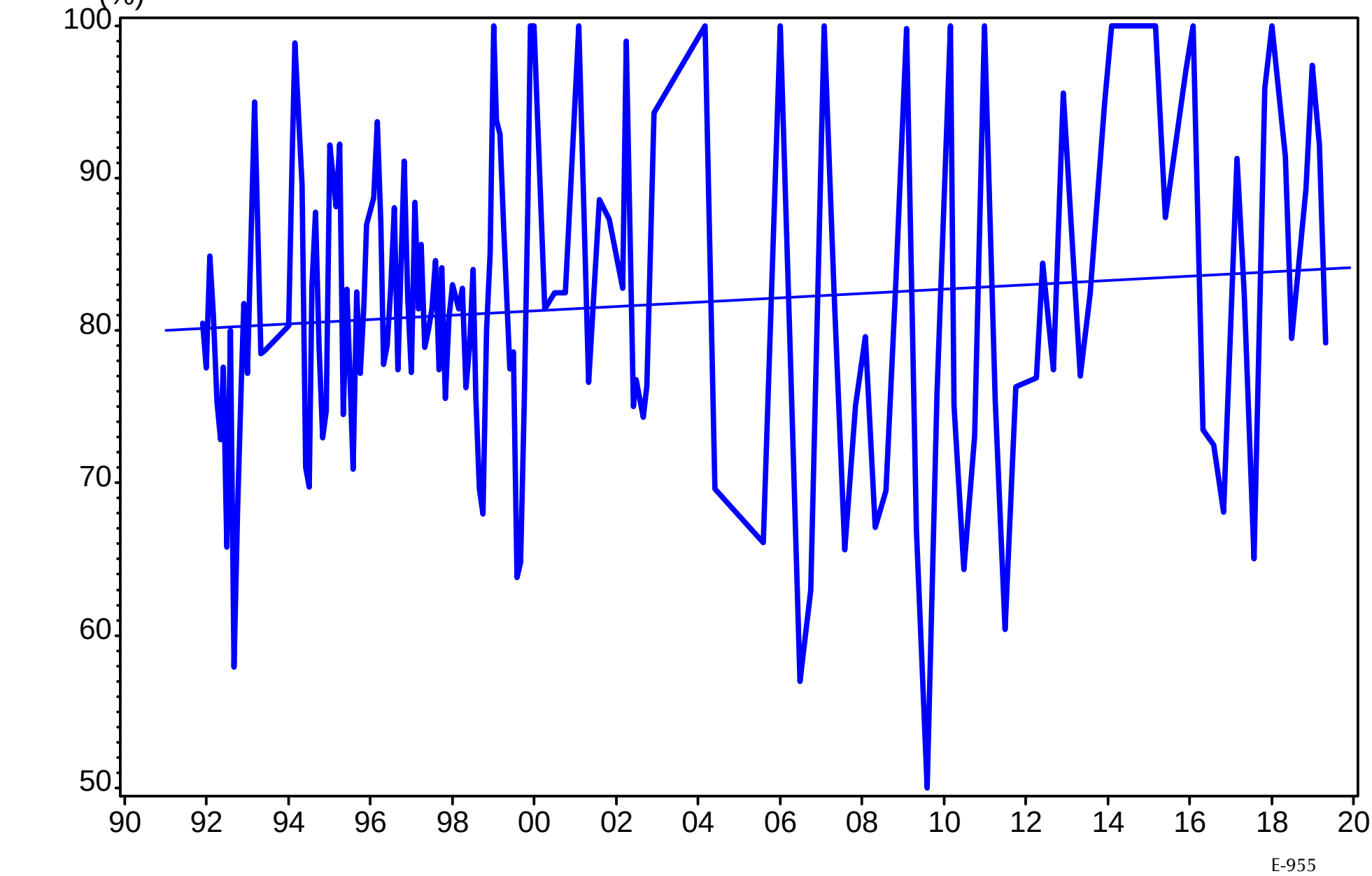
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



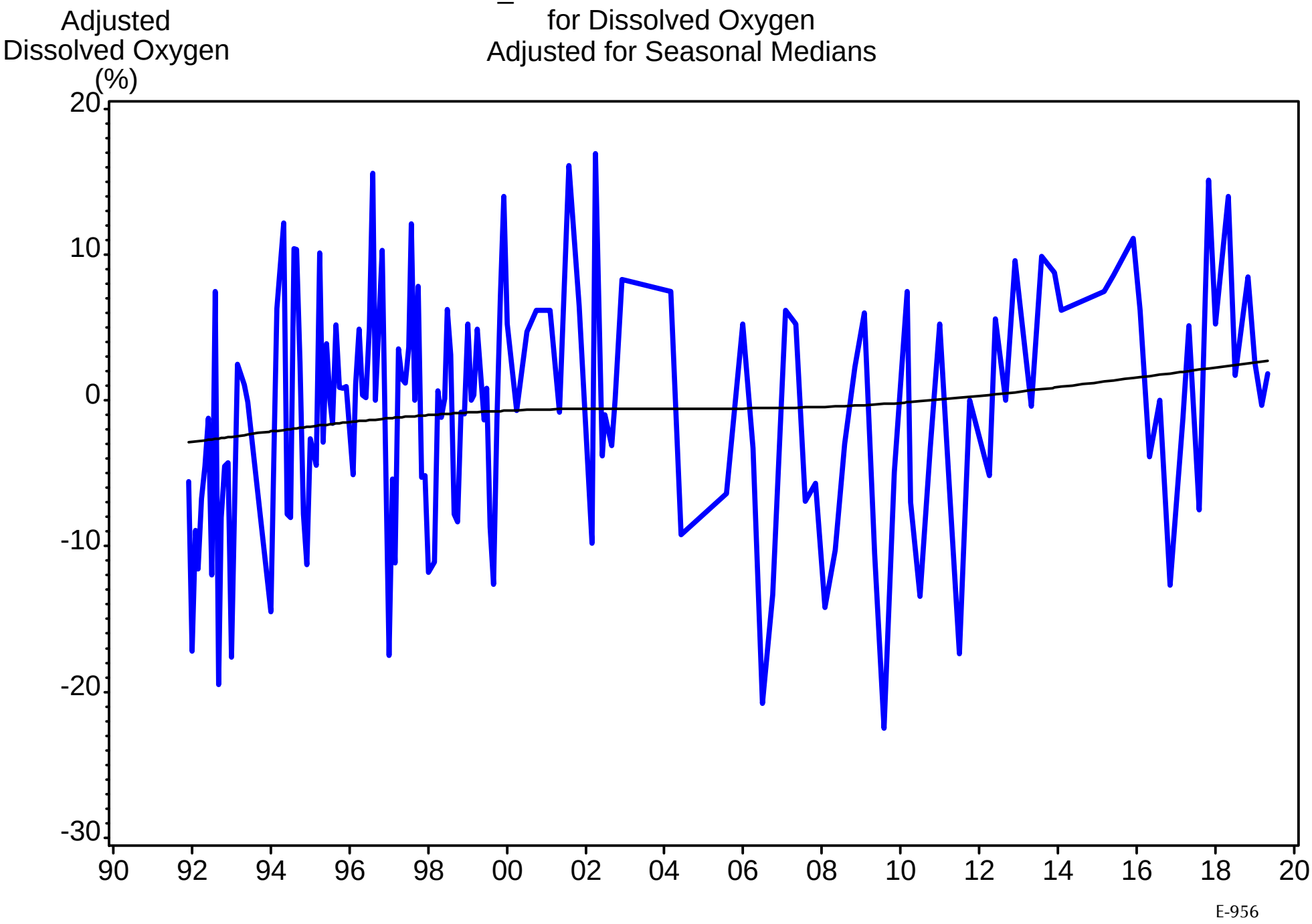
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL06 Trends

S_21FLVEMDHL06 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



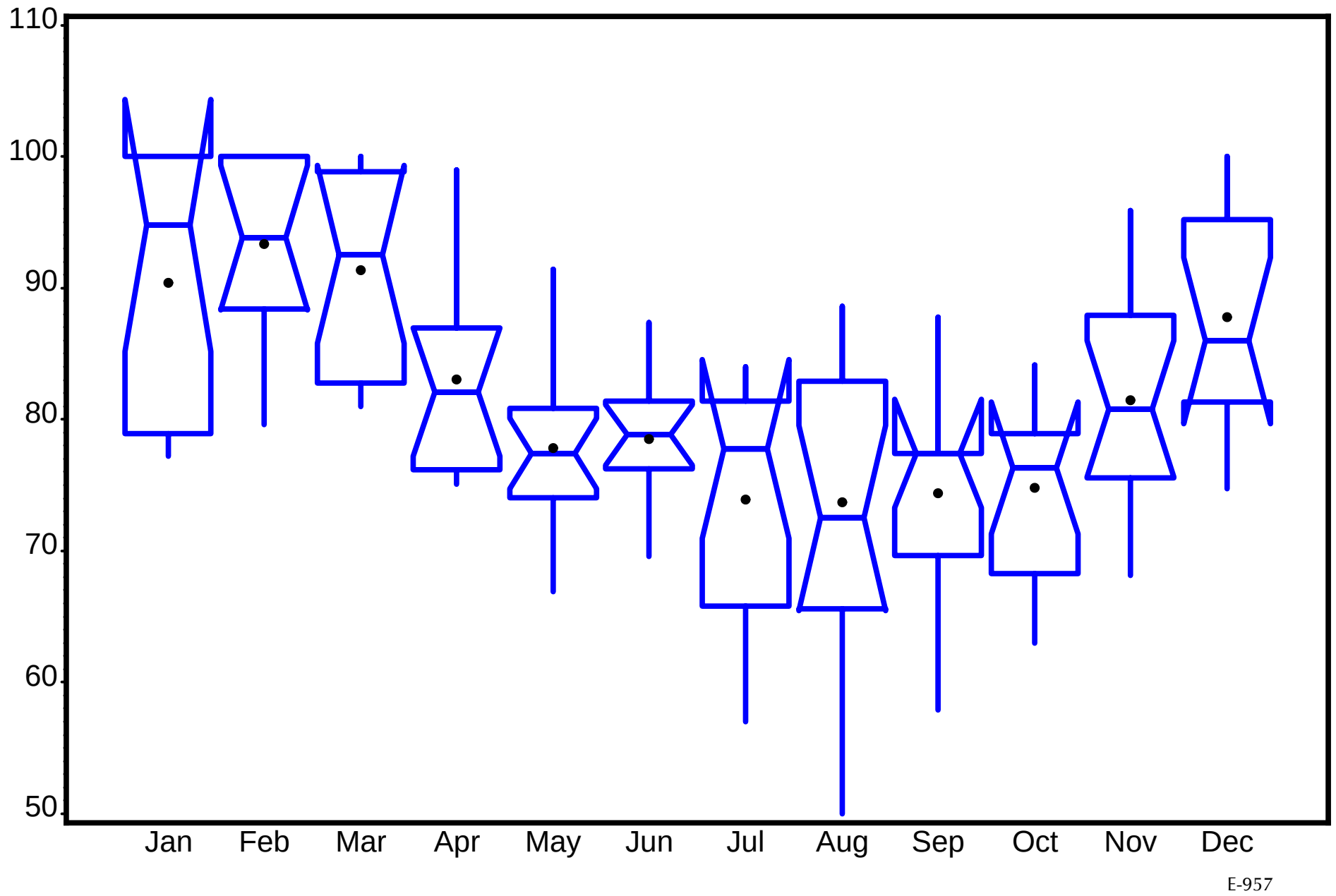
S_21FLVEMDHL06 Trends



S_21FLVEMDHL06 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



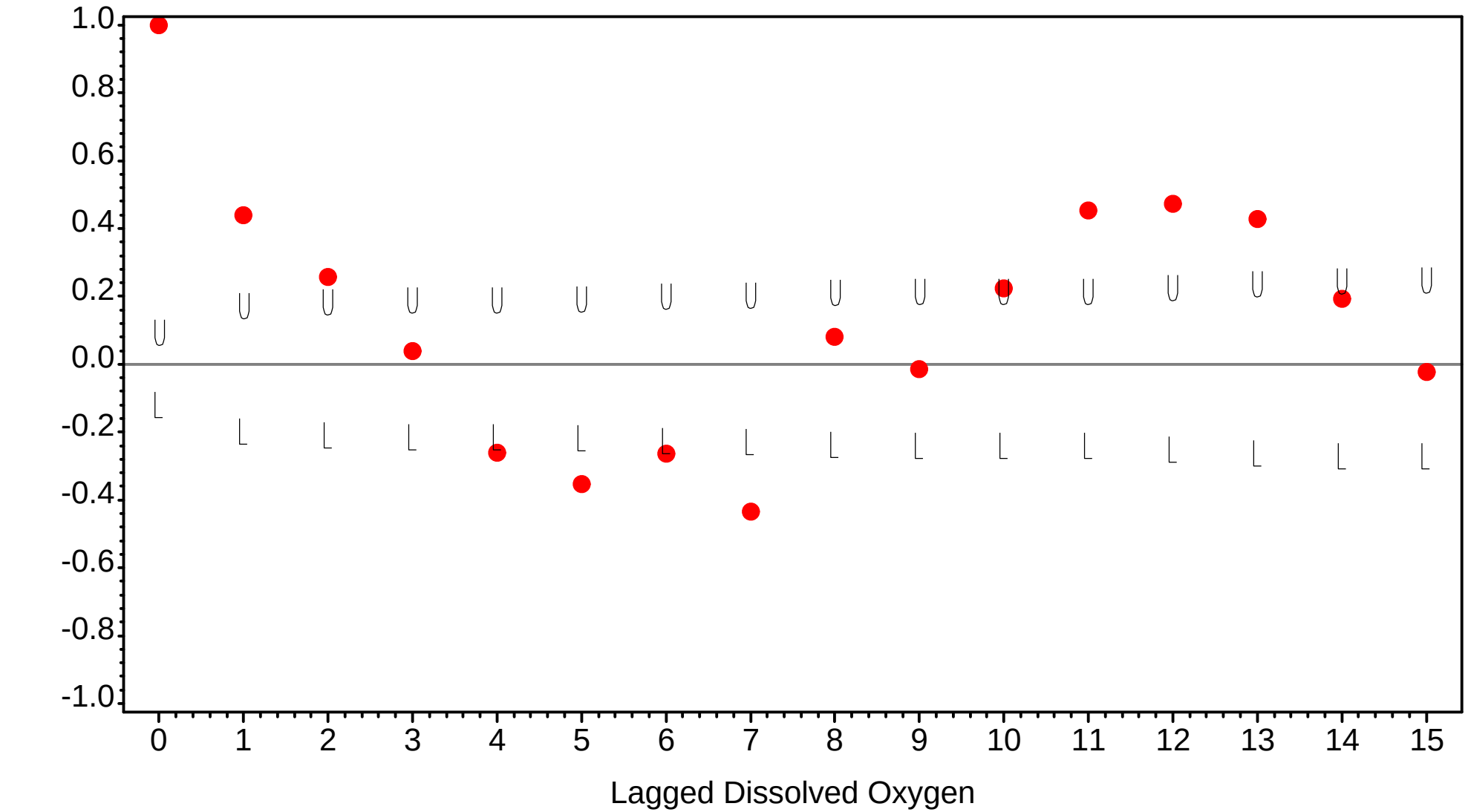
E-957

S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.438	0.093	0.186	-0.186
2	0.258	0.099	0.197	-0.197
3	0.038	0.101	0.201	-0.201
4	-0.260	0.101	0.201	-0.201
5	-0.353	0.102	0.205	-0.205
6	-0.264	0.106	0.212	-0.212
7	-0.434	0.108	0.216	-0.216
8	0.080	0.113	0.225	-0.225
9	-0.015	0.113	0.226	-0.226
10	0.223	0.113	0.226	-0.226
11	0.454	0.114	0.228	-0.228
12	0.473	0.119	0.238	-0.238
13	0.429	0.124	0.249	-0.249
14	0.193	0.129	0.257	-0.257
15	-0.023	0.129	0.259	-0.259

S_21FLVEMDHL06 Trends Appendix

Correlogram for Dissolved Oxygen
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

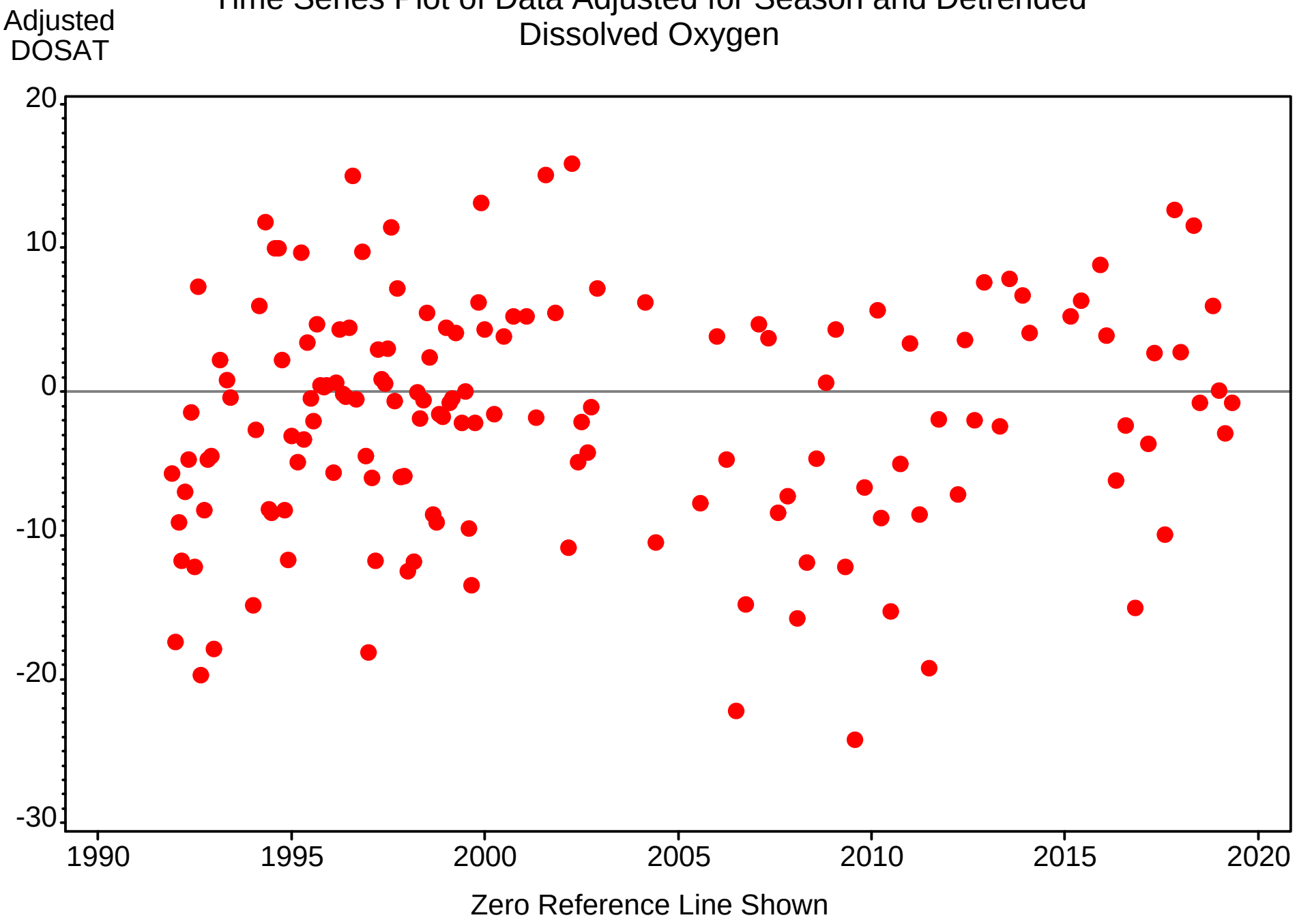
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.08	0.201	0.322	0.088

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.080447	0.20088	0.32170	0.088000

S_21FLVEMDHL06 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

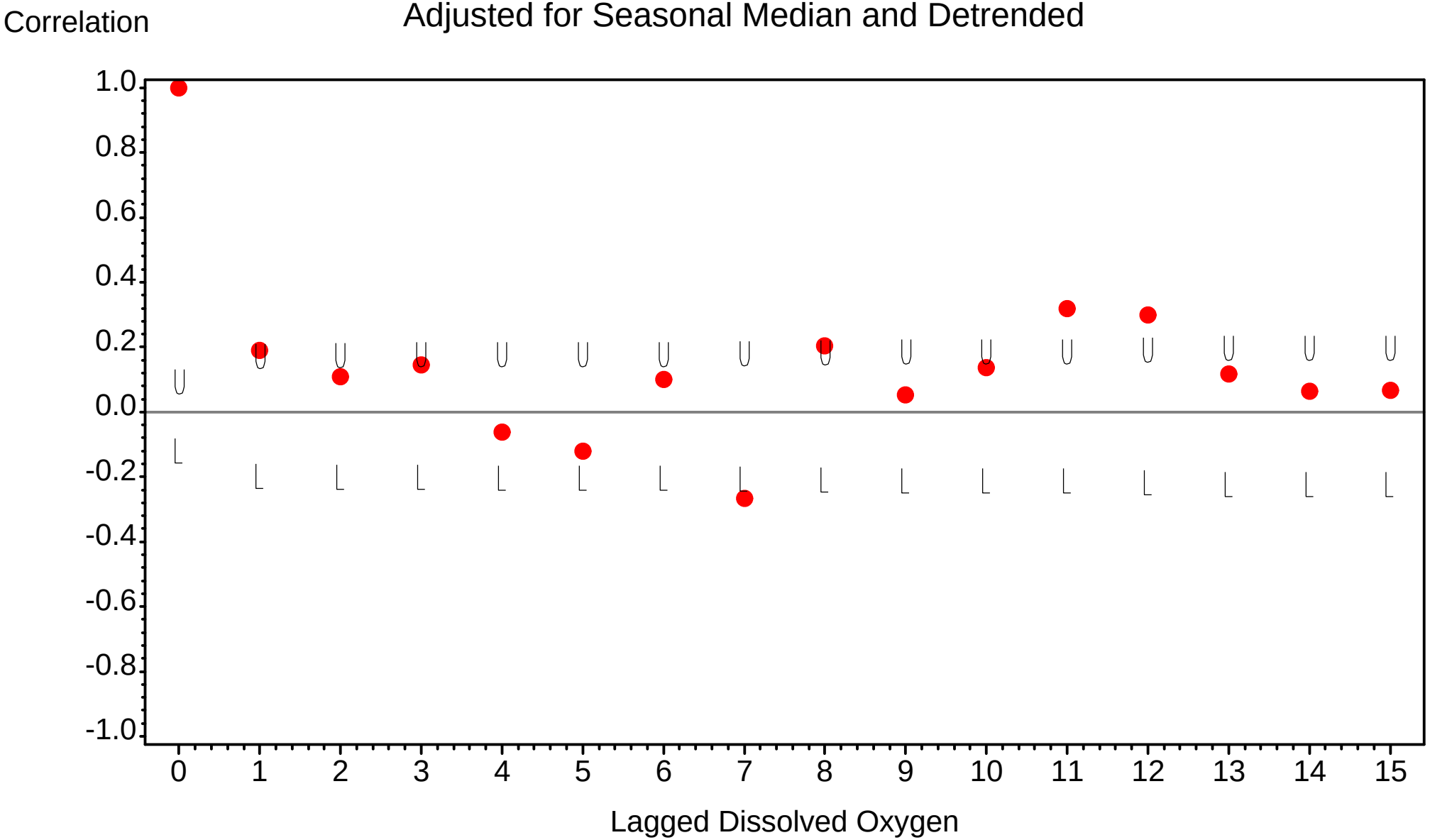


S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.190	0.093	0.186	-0.186
2	0.109	0.094	0.188	-0.188
3	0.146	0.094	0.189	-0.189
4	-0.062	0.095	0.190	-0.190
5	-0.121	0.095	0.190	-0.190
6	0.100	0.096	0.191	-0.191
7	-0.266	0.096	0.192	-0.192
8	0.205	0.098	0.196	-0.196
9	0.053	0.099	0.198	-0.198
10	0.136	0.099	0.198	-0.198
11	0.318	0.100	0.200	-0.200
12	0.300	0.103	0.205	-0.205
13	0.118	0.105	0.210	-0.210
14	0.063	0.105	0.211	-0.211
15	0.068	0.106	0.211	-0.211

S_21FLVEMDHL06 Trends Appendix

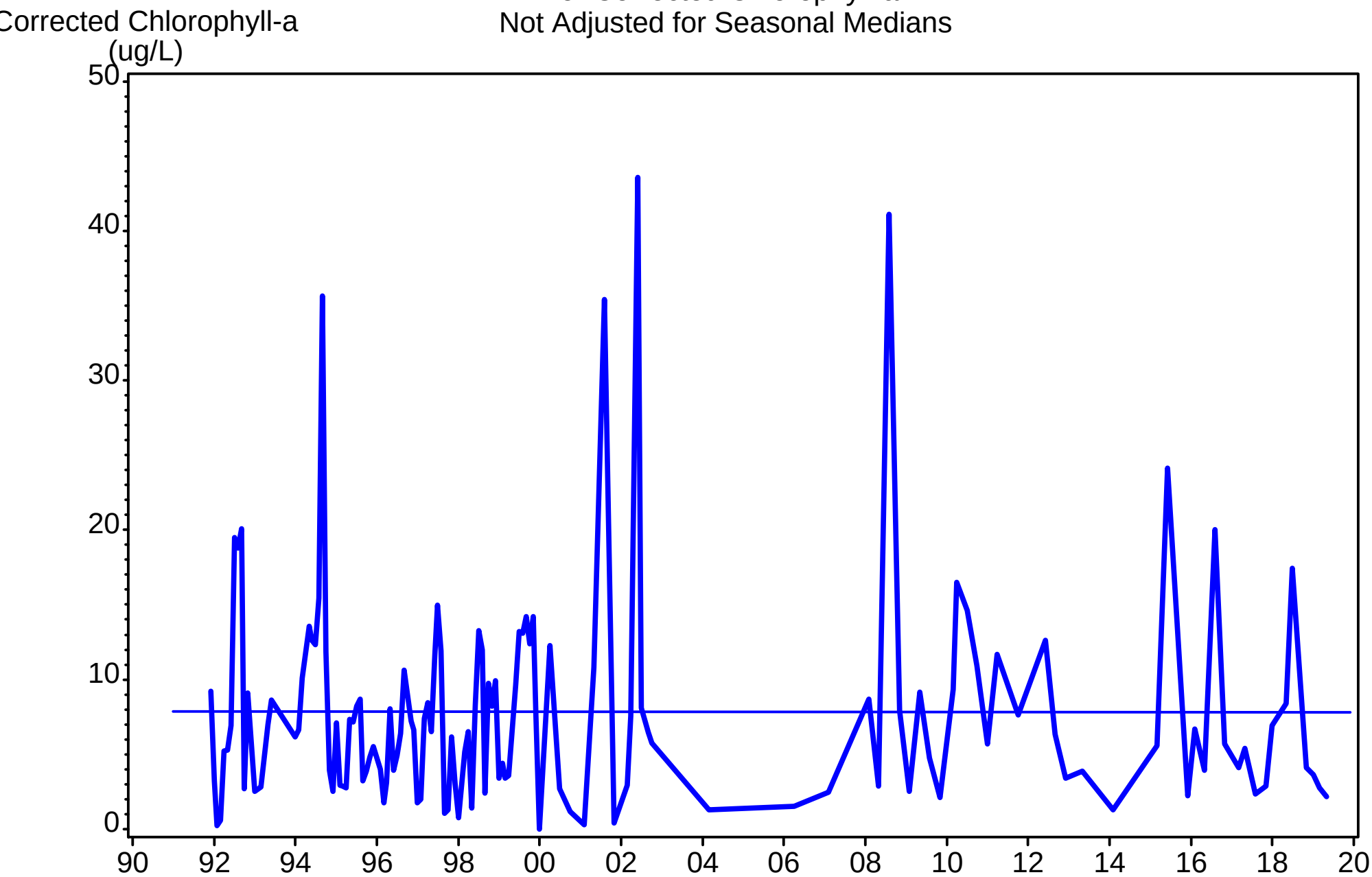
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

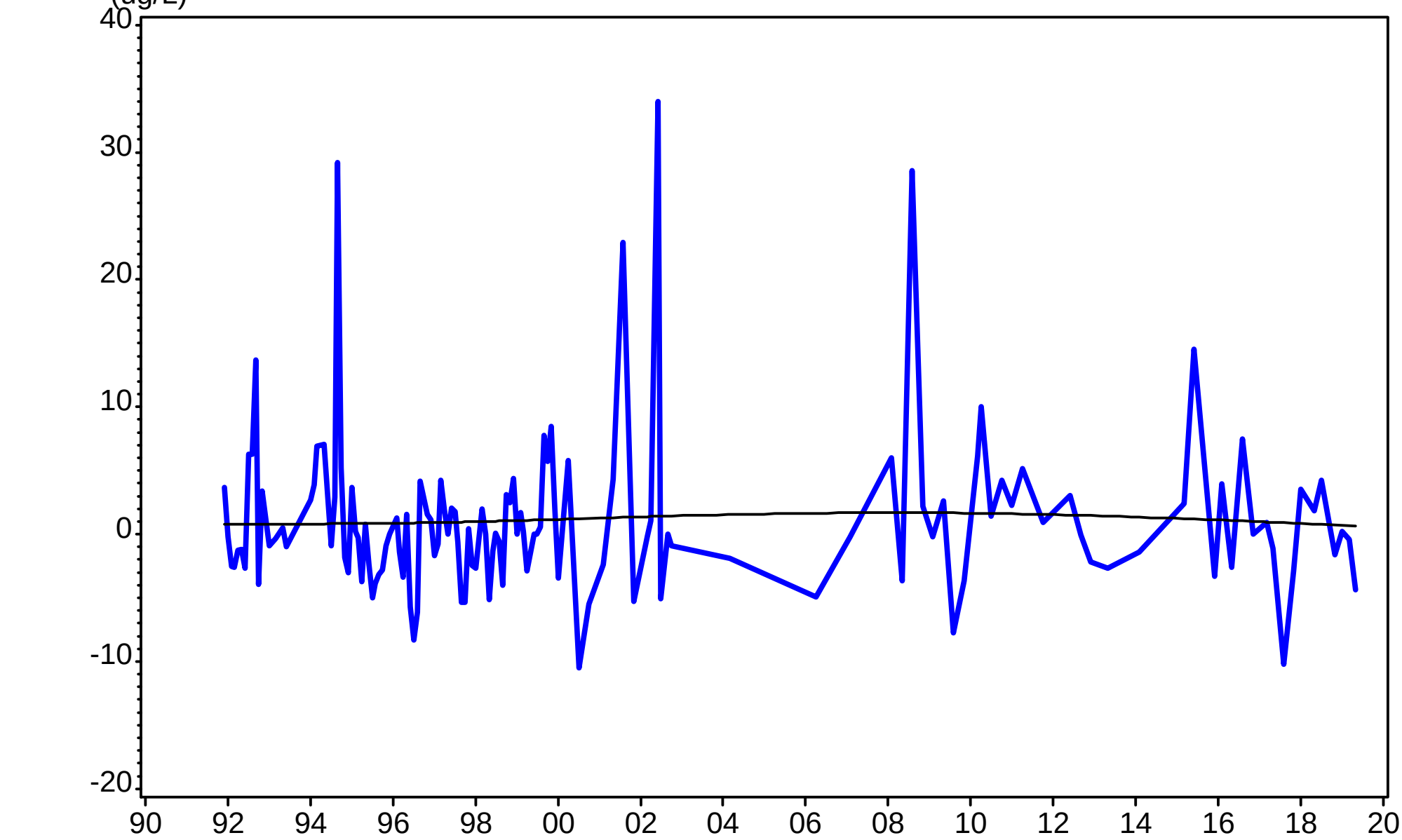
S_21FLVEMDHL06 Trends

S_21FLVEMDHL06 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



S_21FLVEMDHL06 Trends

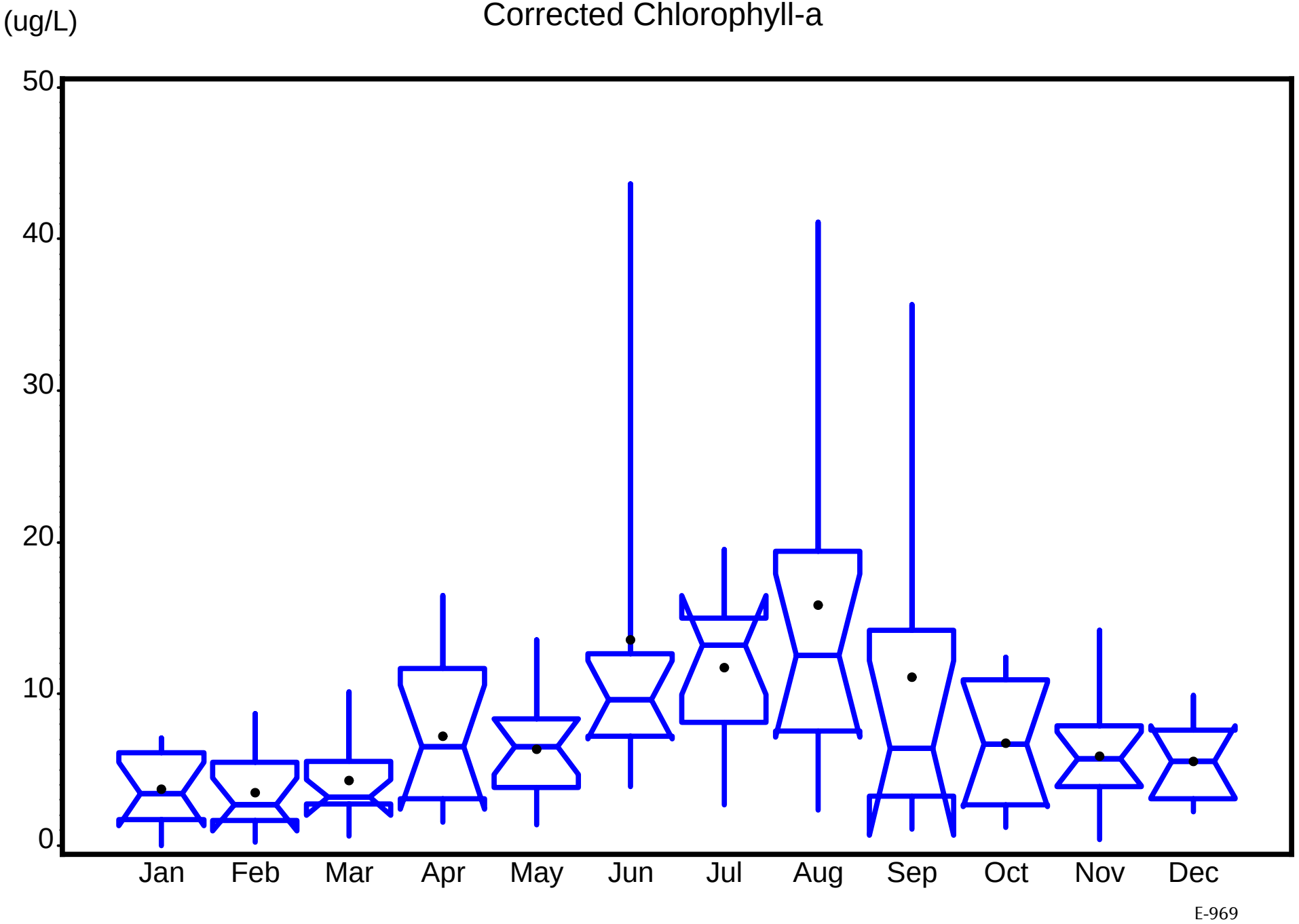
S_21FLVEMDHL06 Time Series for Corrected Chlorophyll-a Adjusted for Seasonal Medians



S_21FLVEMDHL06 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a



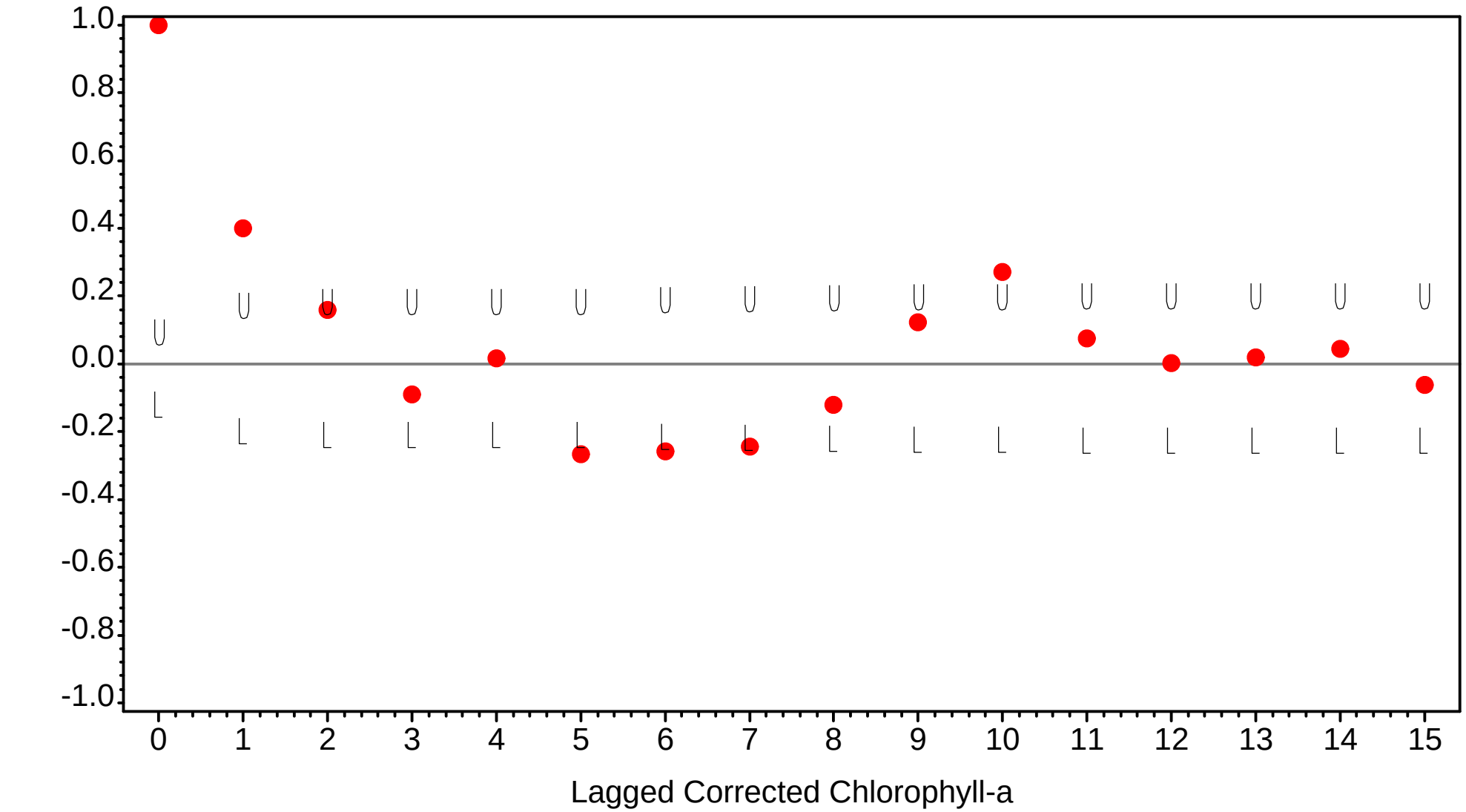
S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.400	0.093	0.186	-0.186
2	0.158	0.098	0.195	-0.195
3	-0.089	0.098	0.197	-0.197
4	0.017	0.099	0.197	-0.197
5	-0.266	0.099	0.197	-0.197
6	-0.258	0.101	0.201	-0.201
7	-0.245	0.103	0.205	-0.205
8	-0.120	0.104	0.208	-0.208
9	0.123	0.105	0.209	-0.209
10	0.271	0.105	0.210	-0.210
11	0.075	0.107	0.214	-0.214
12	0.003	0.107	0.214	-0.214
13	0.018	0.107	0.214	-0.214
14	0.044	0.107	0.214	-0.214
15	-0.061	0.107	0.214	-0.214

S_21FLVEMDHL06 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

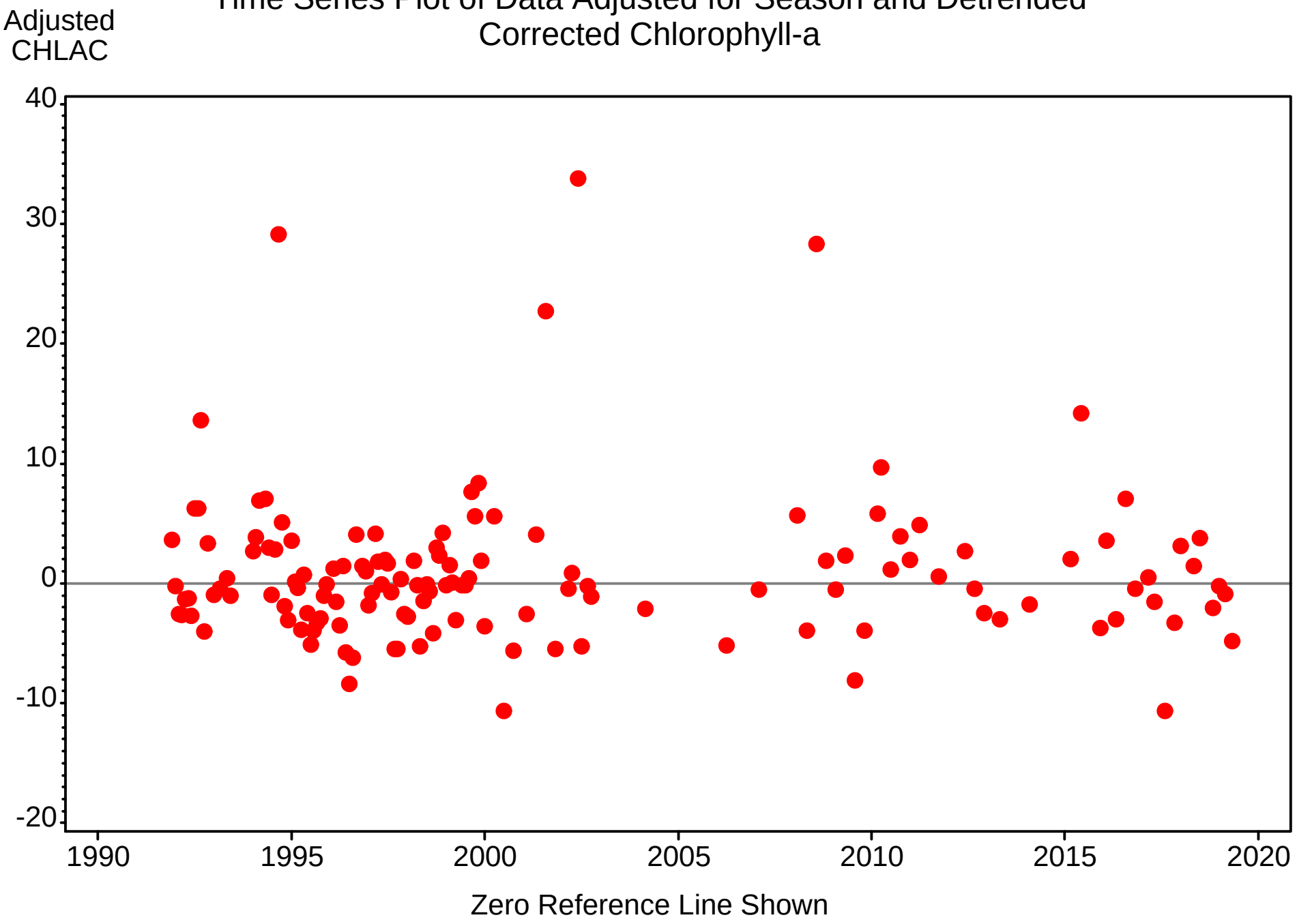
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.024	0.729	0.758	0.016

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.024226	0.7288	0.75791	0.015556

S_21FLVEMDHL06 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



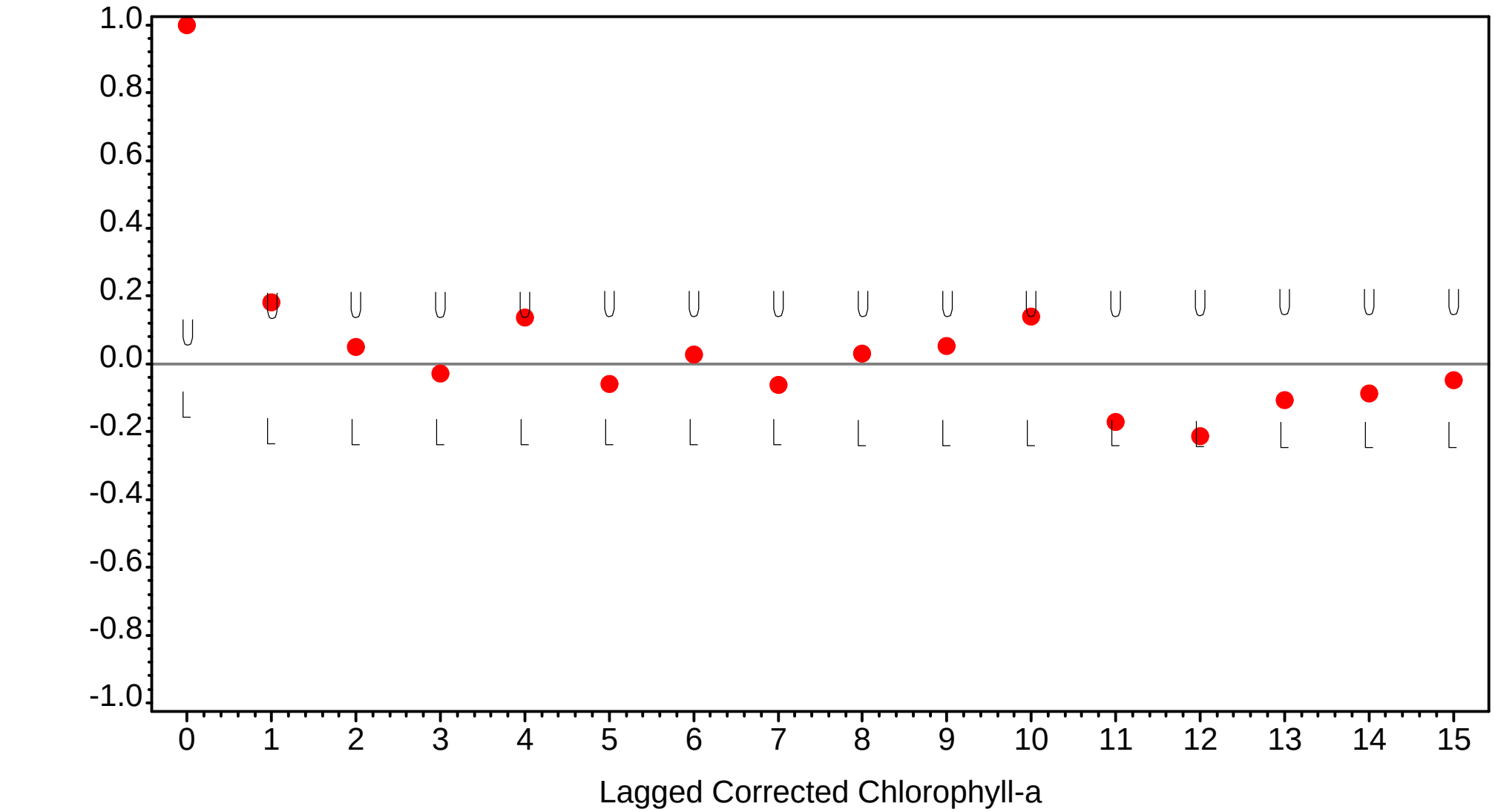
S_21FLVEMDHL06 Trends Appendix

Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.181	0.093	0.186	-0.186
2	0.050	0.094	0.188	-0.188
3	-0.029	0.094	0.188	-0.188
4	0.138	0.094	0.188	-0.188
5	-0.060	0.095	0.189	-0.189
6	0.028	0.095	0.189	-0.189
7	-0.062	0.095	0.189	-0.189
8	0.030	0.095	0.190	-0.190
9	0.054	0.095	0.190	-0.190
10	0.139	0.095	0.190	-0.190
11	-0.172	0.095	0.191	-0.191
12	-0.213	0.096	0.193	-0.193
13	-0.106	0.098	0.195	-0.195
14	-0.087	0.098	0.196	-0.196
15	-0.049	0.098	0.197	-0.197

S_21FLVEMDHL06 Trends Appendix

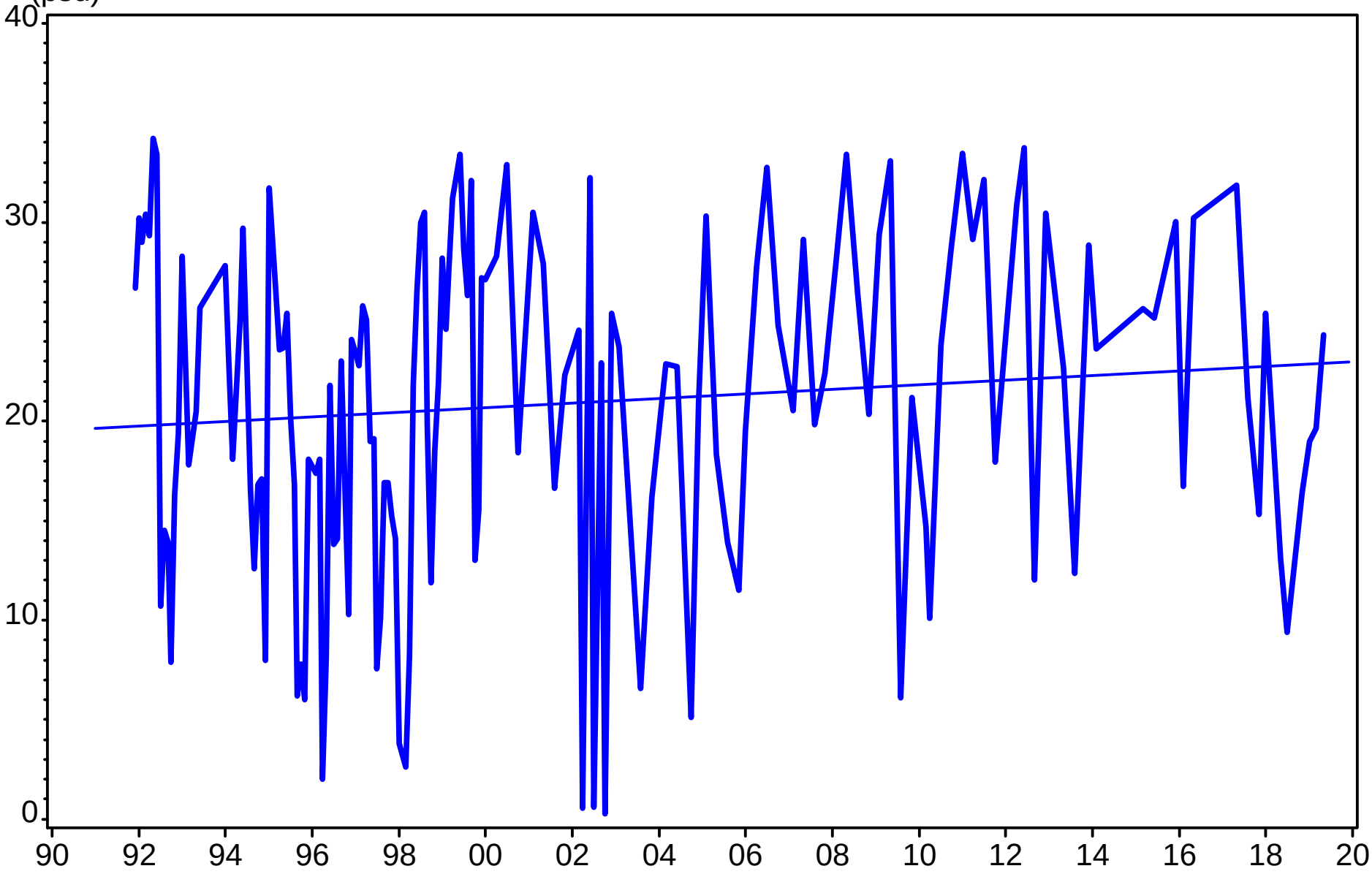
Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

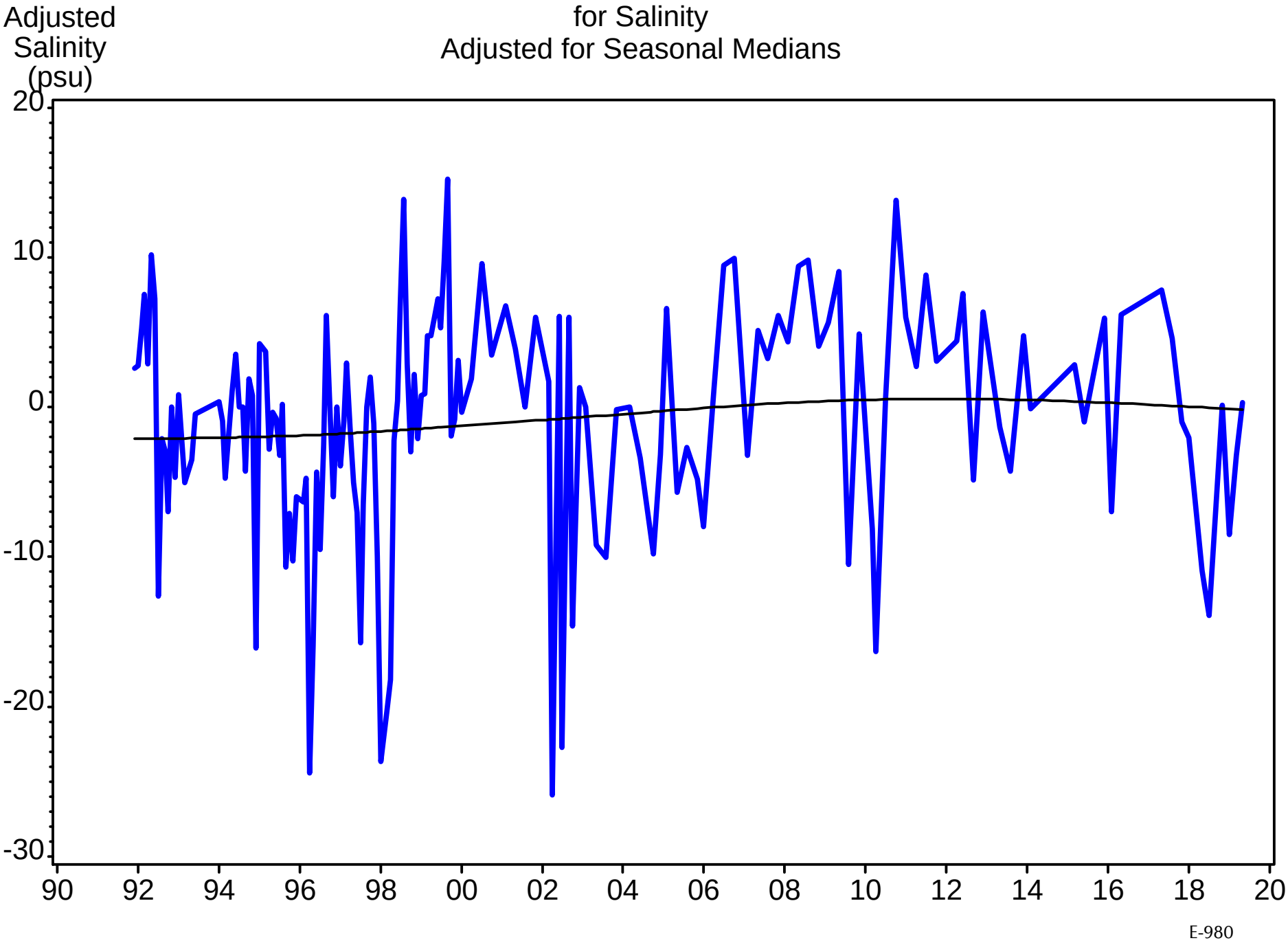
S_21FLVEMDHL06 Trends

S_21FLVEMDHL06 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



S_21FLVEMDHL06 Trends

S_21FLVEMDHL06 Time Series for Salinity Adjusted for Seasonal Medians

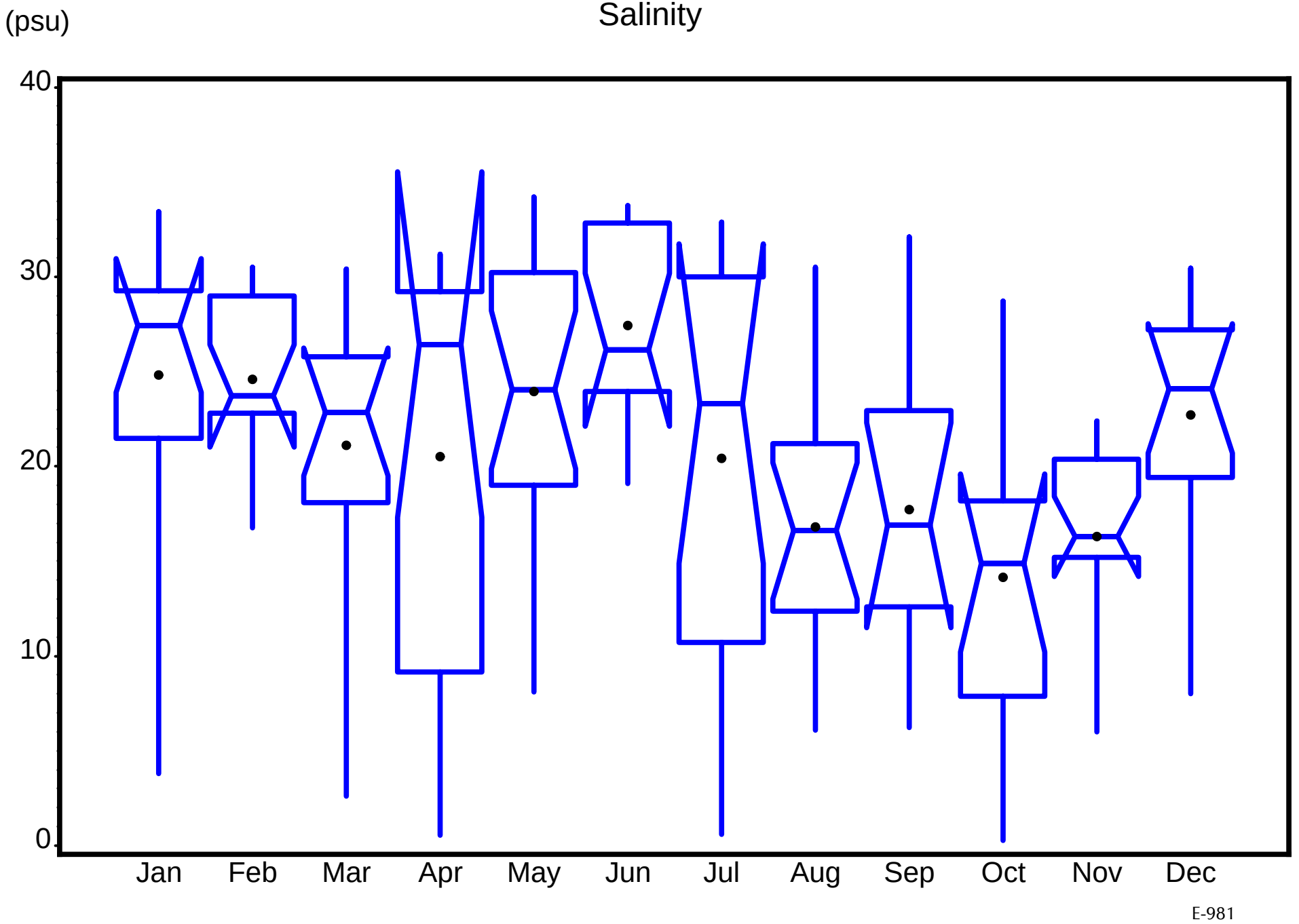


E-980

S_21FLVEMDHL06 Trends Appendix

Seasonal Univariate Statistics

Salinity



E-981

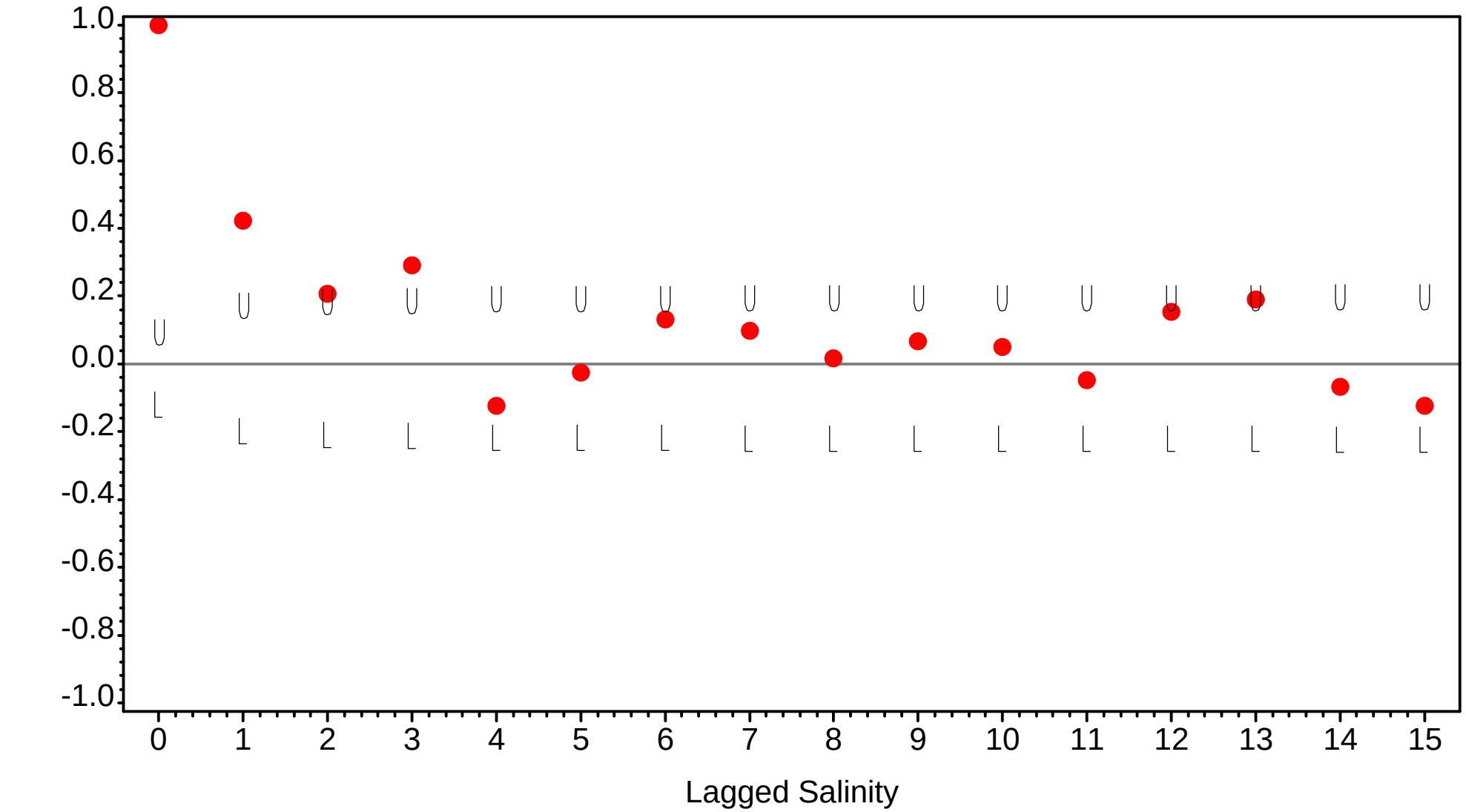
S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.421	0.093	0.186	-0.186
2	0.207	0.098	0.196	-0.196
3	0.290	0.099	0.199	-0.199
4	-0.125	0.102	0.204	-0.204
5	-0.025	0.102	0.205	-0.205
6	0.131	0.102	0.205	-0.205
7	0.098	0.103	0.206	-0.206
8	0.016	0.103	0.206	-0.206
9	0.066	0.103	0.206	-0.206
10	0.050	0.103	0.206	-0.206
11	-0.048	0.103	0.206	-0.206
12	0.153	0.103	0.207	-0.207
13	0.191	0.104	0.208	-0.208
14	-0.067	0.105	0.210	-0.210
15	-0.123	0.105	0.210	-0.210

S_21FLVEMDHL06 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

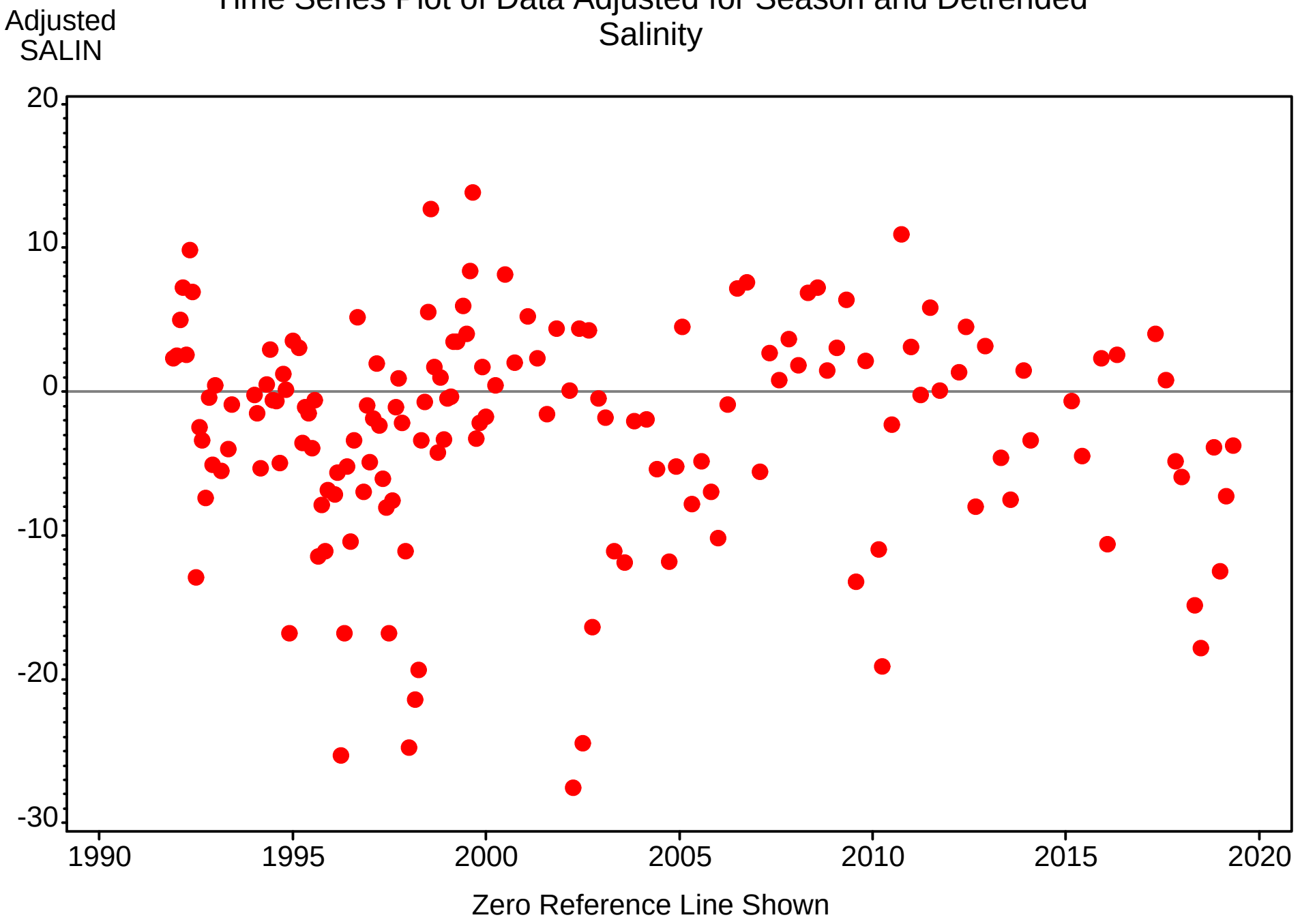
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.09	0.143	0.319	0.138

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.090256	0.14300	0.31855	0.13833

S_21FLVEMDHL06 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



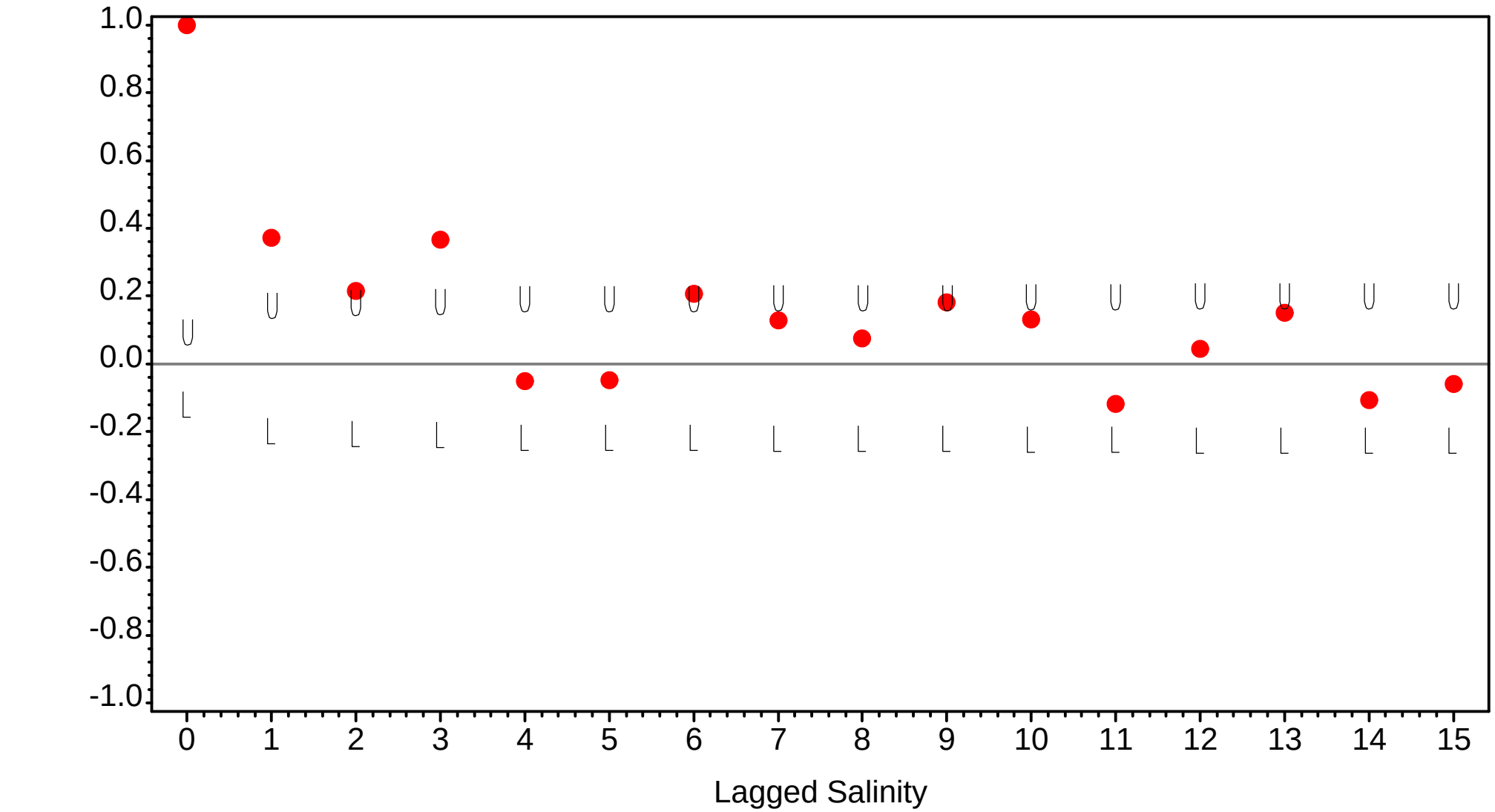
S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.372	0.093	0.186	-0.186
2	0.216	0.097	0.194	-0.194
3	0.366	0.098	0.197	-0.197
4	-0.051	0.102	0.205	-0.205
5	-0.048	0.102	0.205	-0.205
6	0.206	0.102	0.205	-0.205
7	0.129	0.104	0.207	-0.207
8	0.075	0.104	0.208	-0.208
9	0.182	0.104	0.208	-0.208
10	0.131	0.105	0.210	-0.210
11	-0.119	0.106	0.211	-0.211
12	0.043	0.106	0.212	-0.212
13	0.151	0.106	0.212	-0.212
14	-0.107	0.107	0.213	-0.213
15	-0.059	0.107	0.214	-0.214

S_21FLVEMDHL06 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

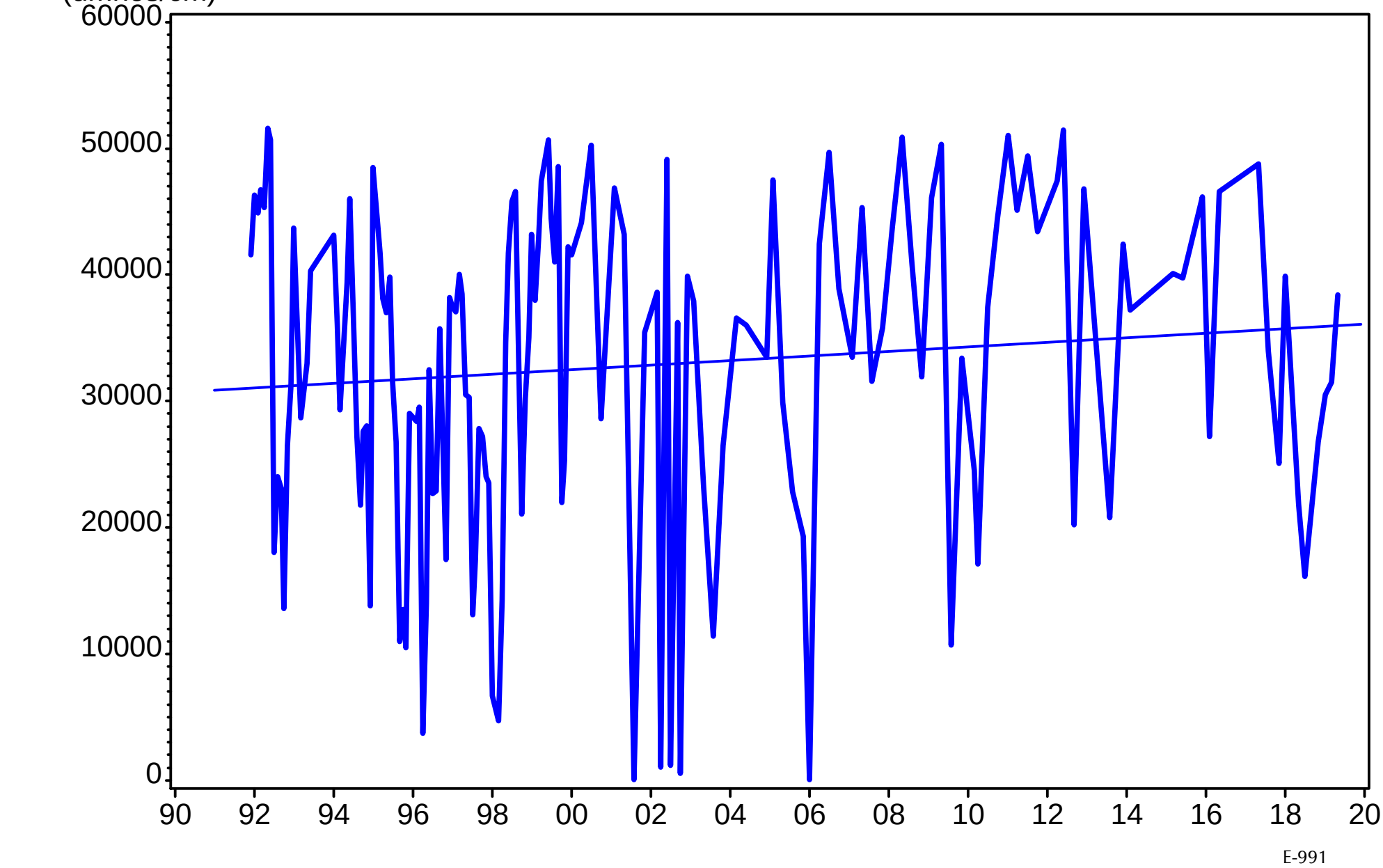


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

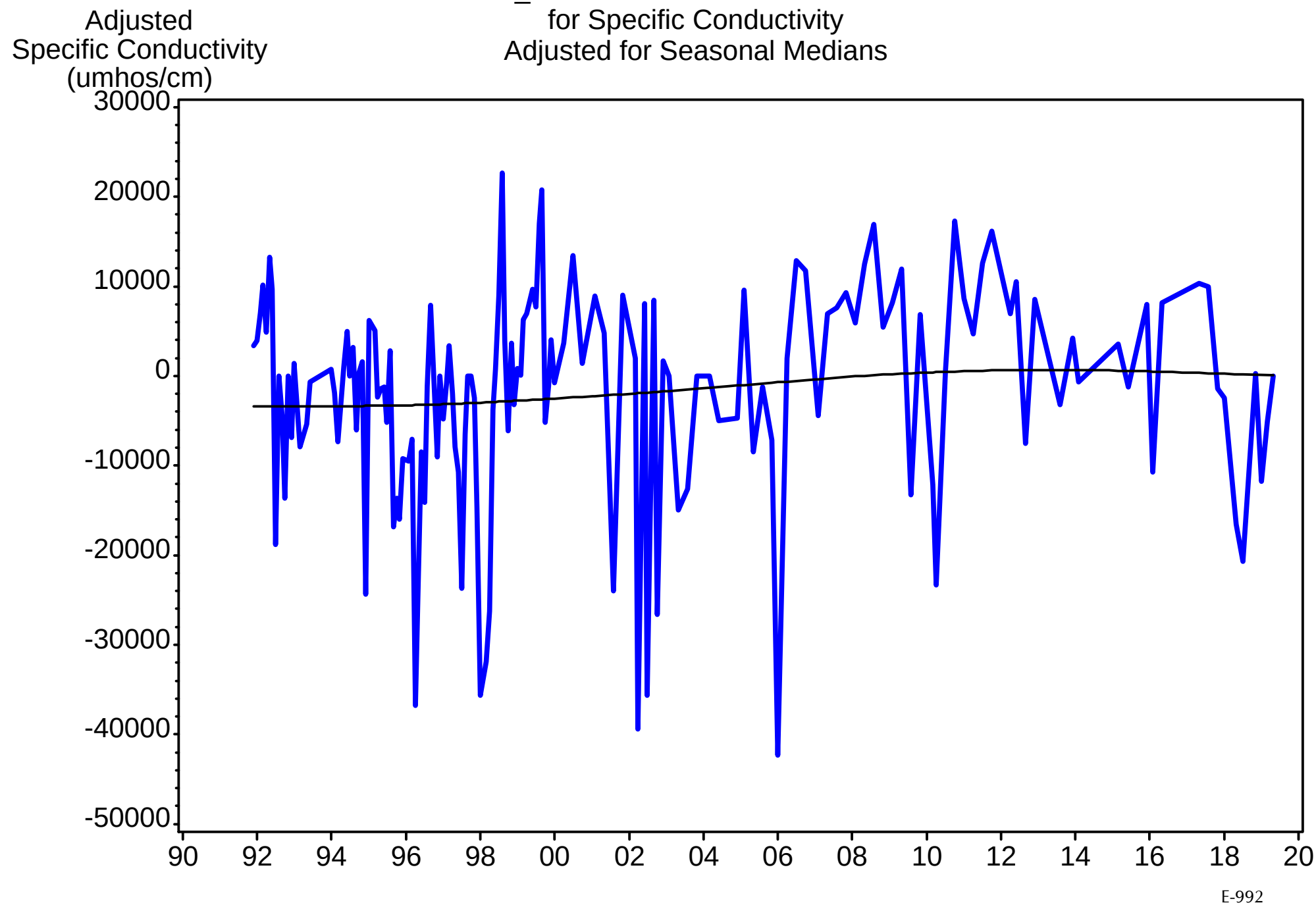
S_21FLVEMDHL06 Trends

S_21FLVEMDHL06 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



E-991

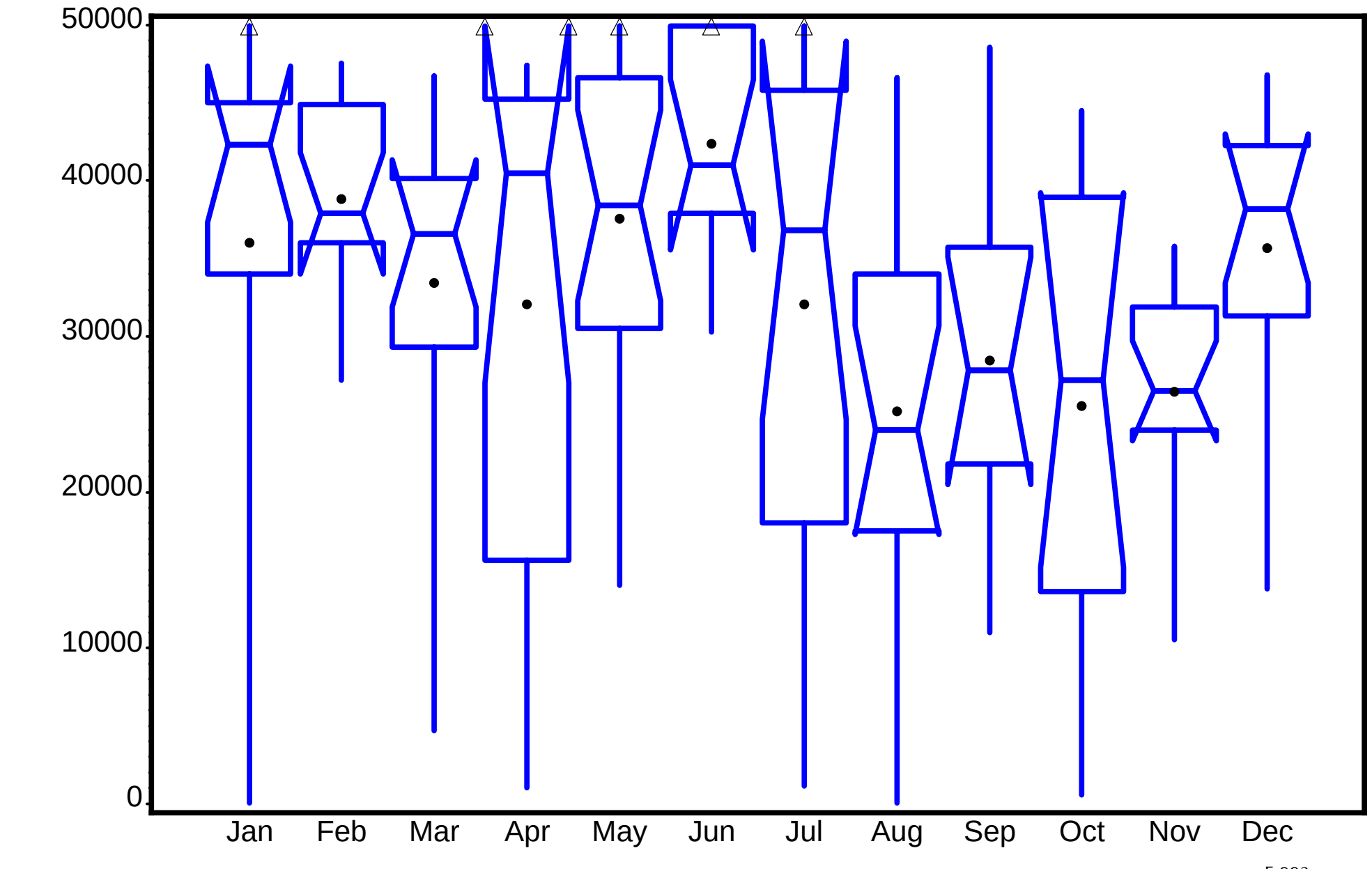
S_21FLVEMDHL06 Trends



S_21FLVEMDHL06 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity



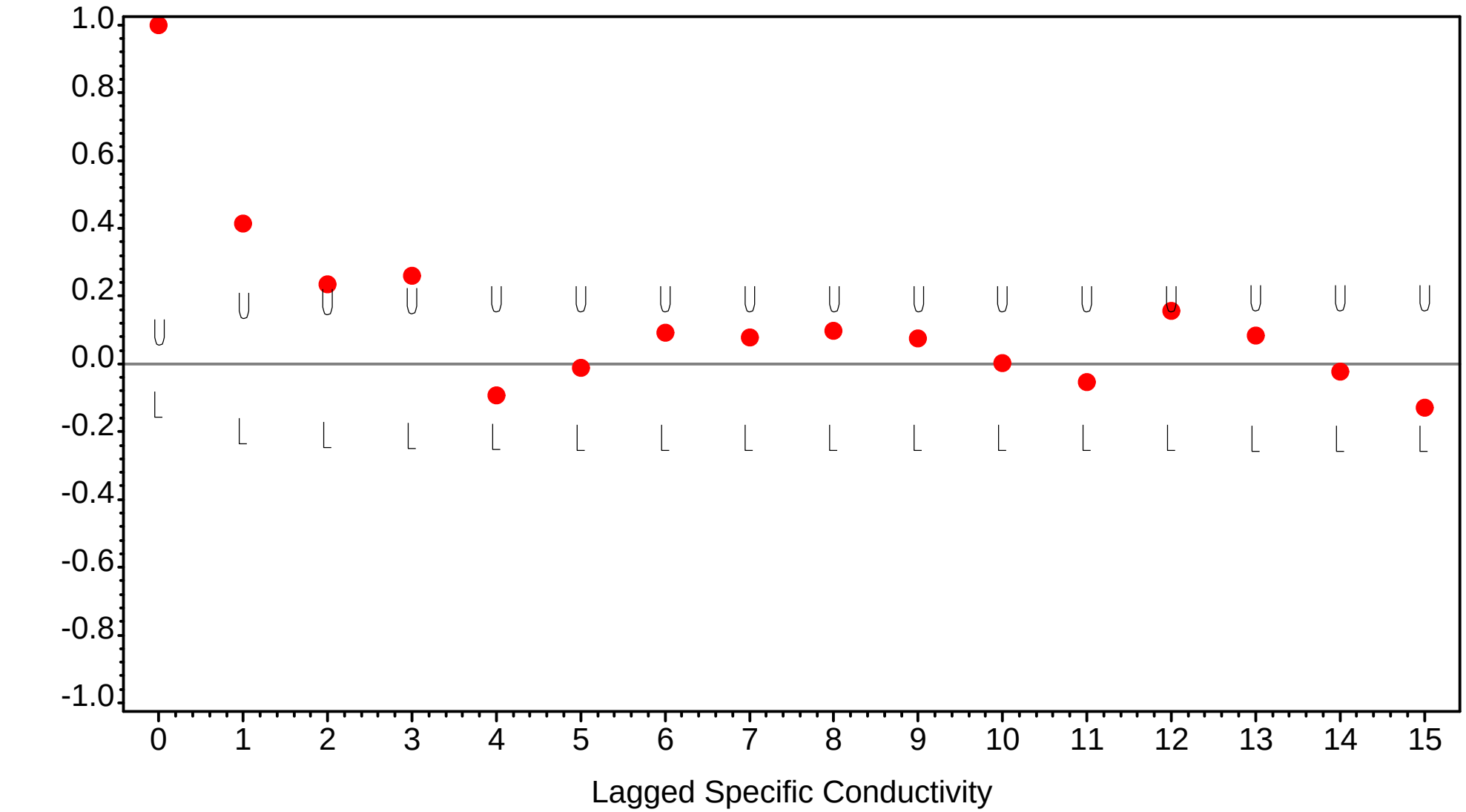
S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.413	0.093	0.186	-0.186
2	0.235	0.098	0.196	-0.196
3	0.261	0.100	0.199	-0.199
4	-0.093	0.102	0.203	-0.203
5	-0.013	0.102	0.204	-0.204
6	0.092	0.102	0.204	-0.204
7	0.079	0.102	0.204	-0.204
8	0.098	0.102	0.204	-0.204
9	0.074	0.102	0.205	-0.205
10	0.002	0.103	0.205	-0.205
11	-0.054	0.103	0.205	-0.205
12	0.156	0.103	0.205	-0.205
13	0.084	0.103	0.207	-0.207
14	-0.024	0.104	0.207	-0.207
15	-0.129	0.104	0.207	-0.207

S_21FLVEMDHL06 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

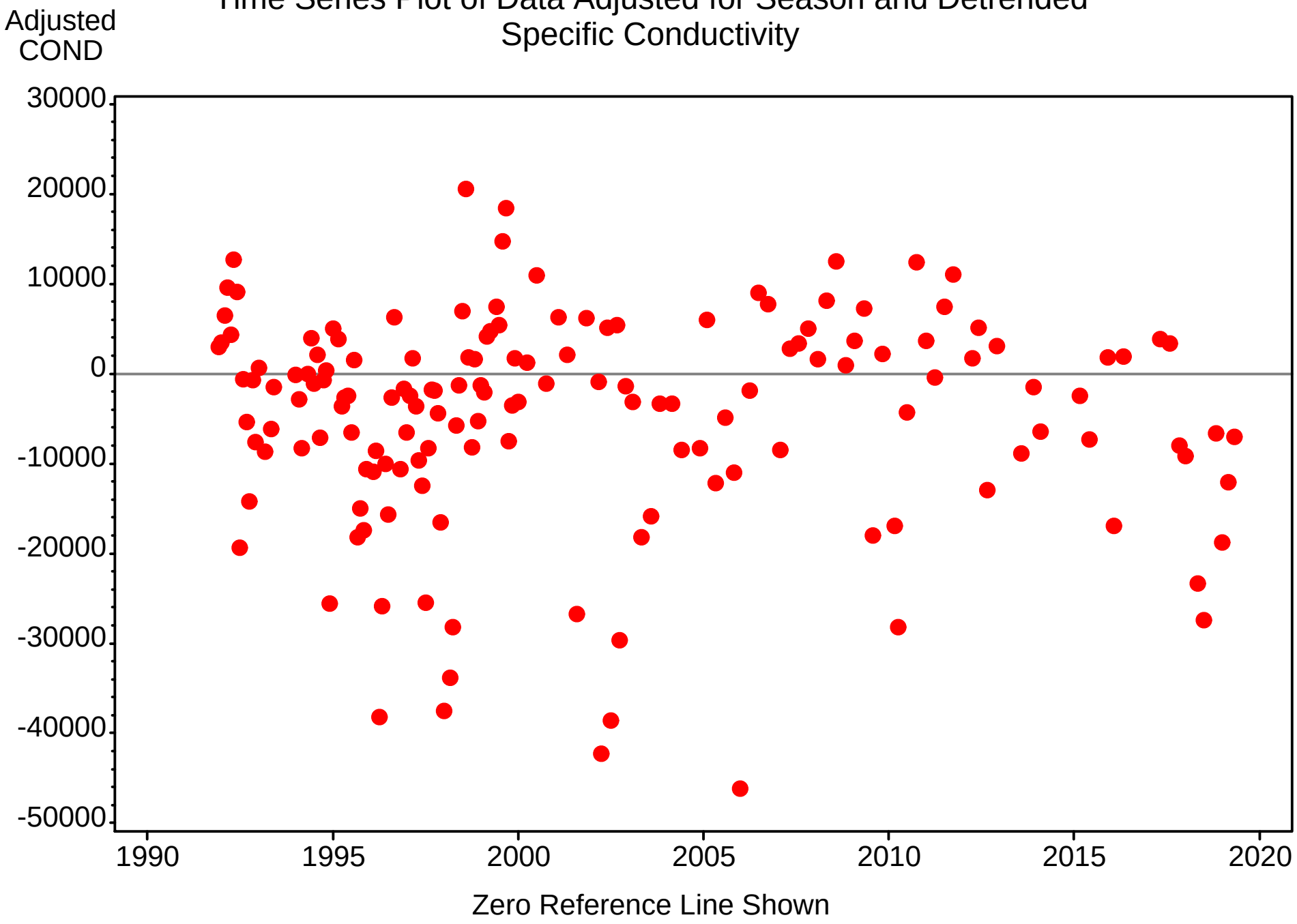
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.105	0.092	0.238	239

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.10454	0.091559	0.23833	239

S_21FLVEMDHL06 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity



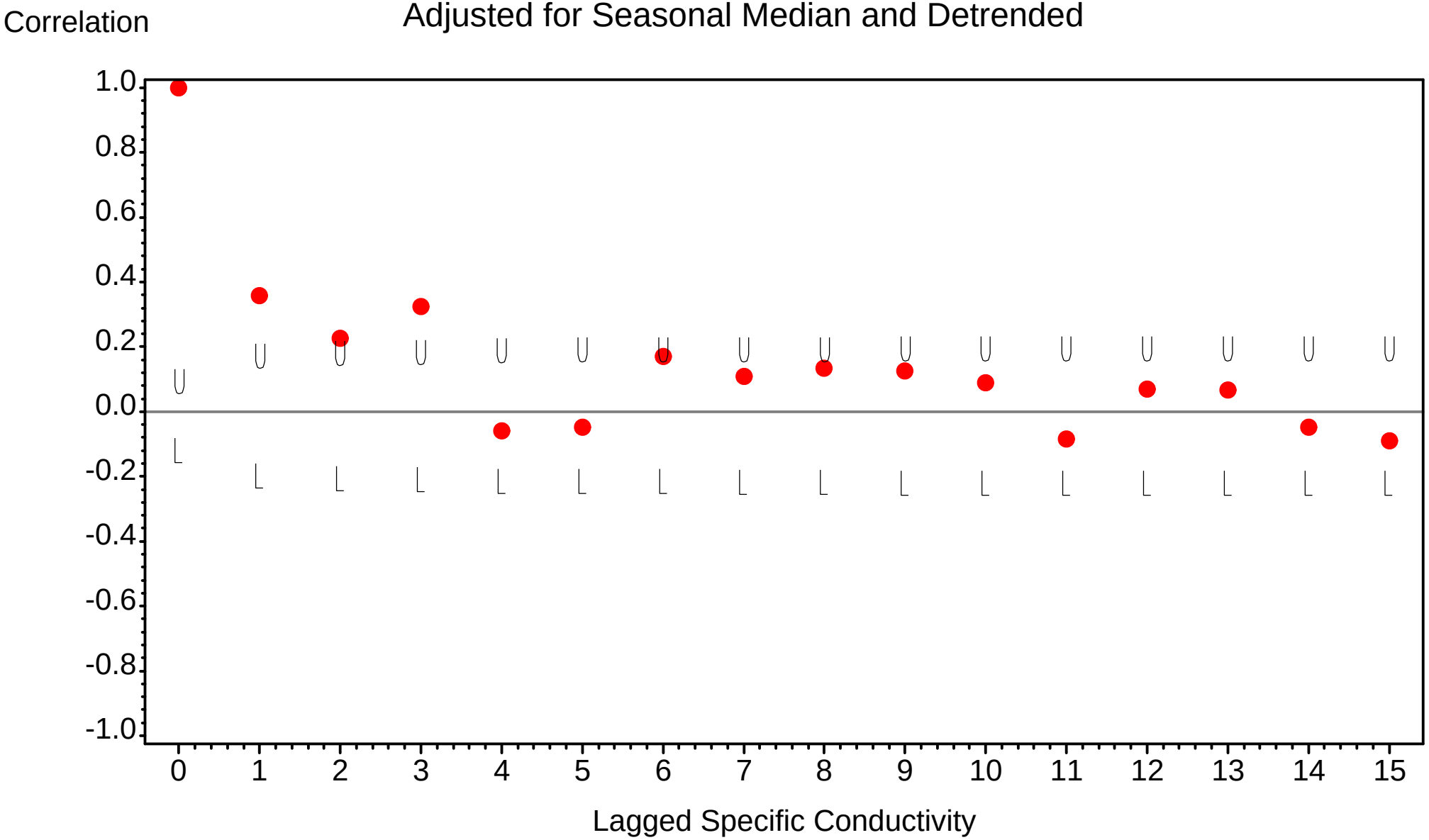
S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.357	0.093	0.186	-0.186
2	0.225	0.097	0.193	-0.193
3	0.325	0.098	0.196	-0.196
4	-0.059	0.101	0.202	-0.202
5	-0.049	0.101	0.203	-0.203
6	0.169	0.101	0.203	-0.203
7	0.110	0.102	0.204	-0.204
8	0.135	0.103	0.205	-0.205
9	0.126	0.103	0.206	-0.206
10	0.089	0.104	0.207	-0.207
11	-0.085	0.104	0.207	-0.207
12	0.070	0.104	0.208	-0.208
13	0.067	0.104	0.208	-0.208
14	-0.049	0.104	0.208	-0.208
15	-0.089	0.104	0.208	-0.208

S_21FLVEMDHL06 Trends Appendix

Correlogram for Specific Conductivity

Adjusted for Seasonal Median and Detrended



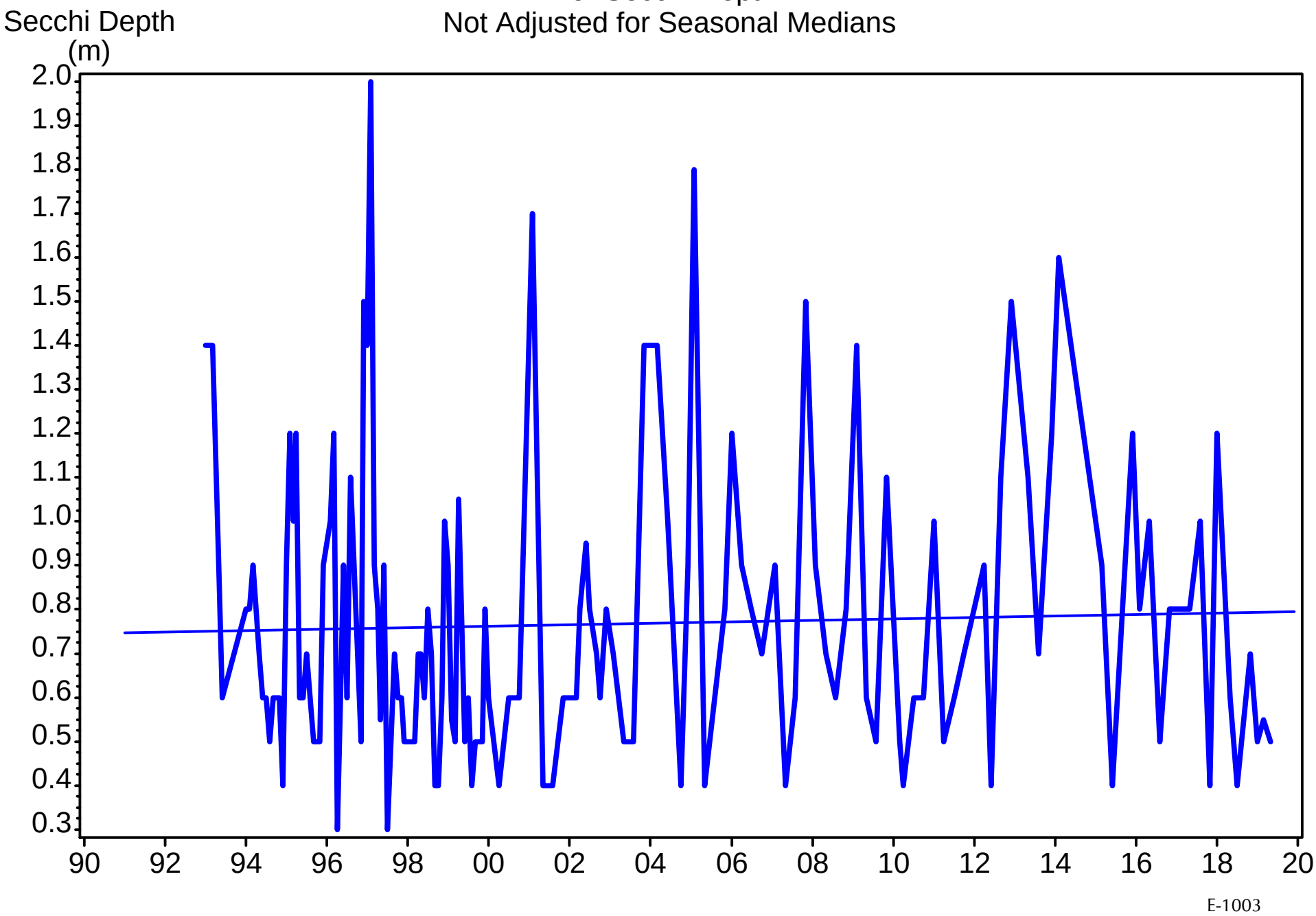
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1000

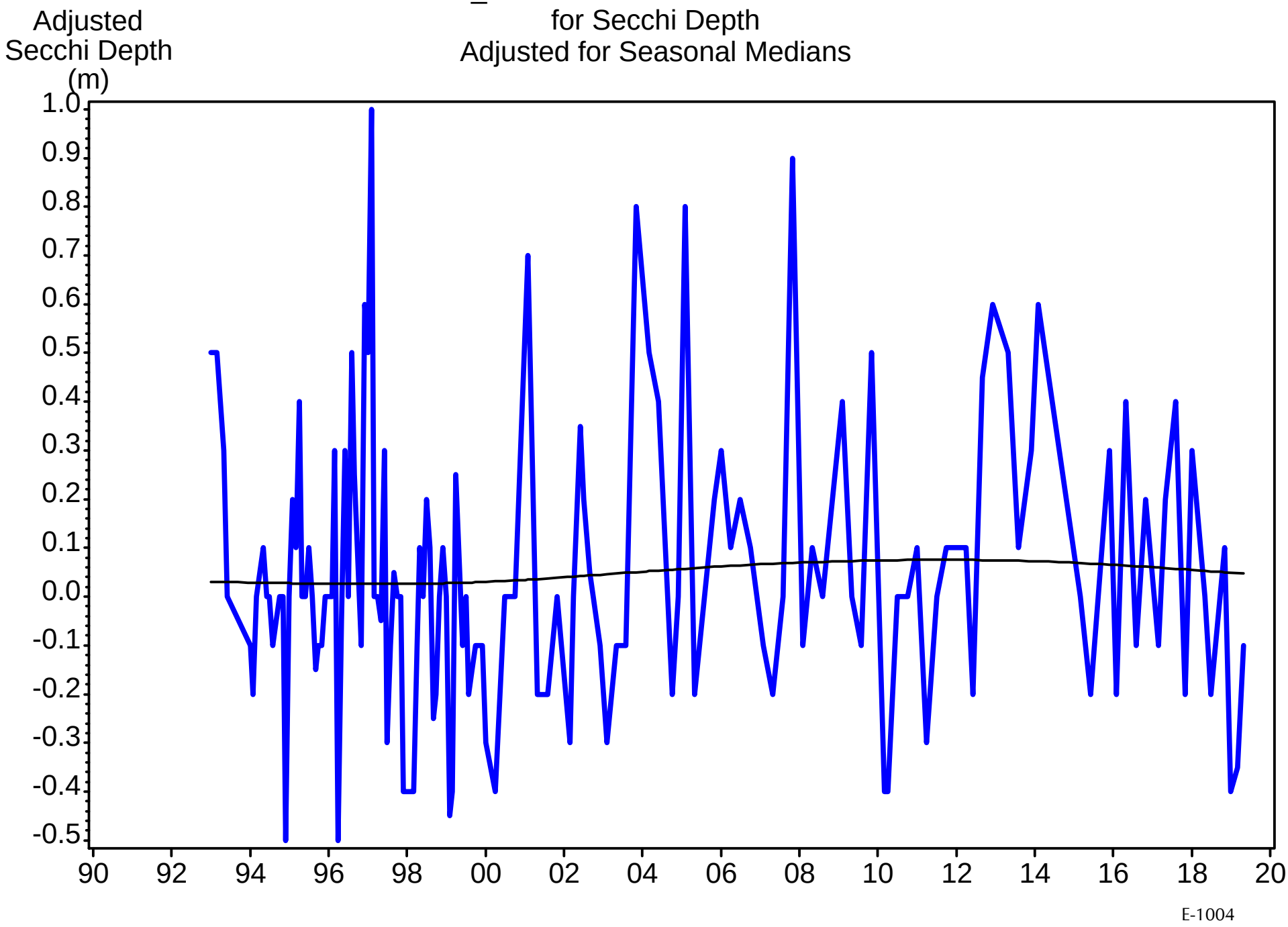
S_21FLVEMDHL06 Trends

S_21FLVEMDHL06 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



E-1003

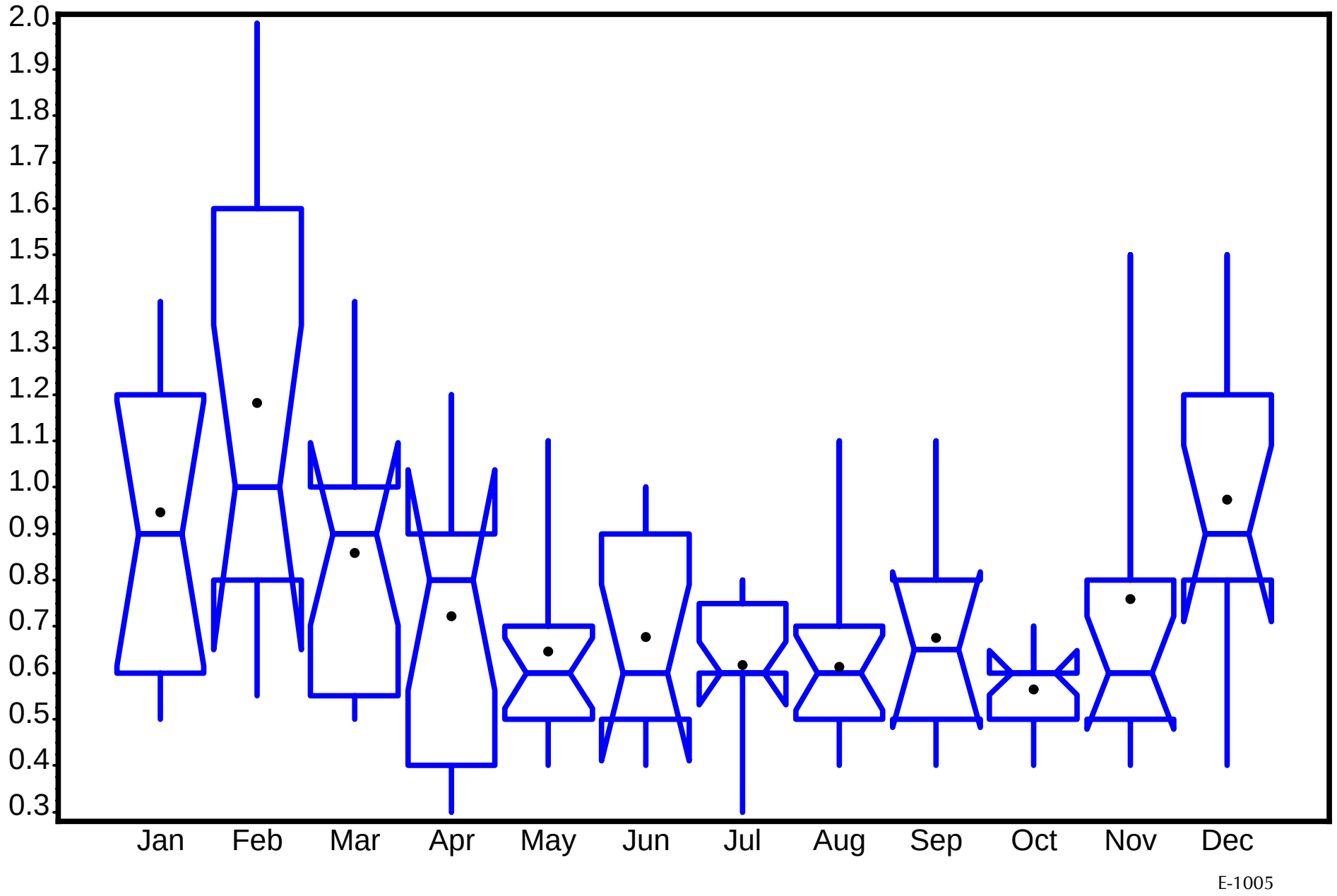
S_21FLVEMDHL06 Trends



S_21FLVEMDHL06 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



E-1005

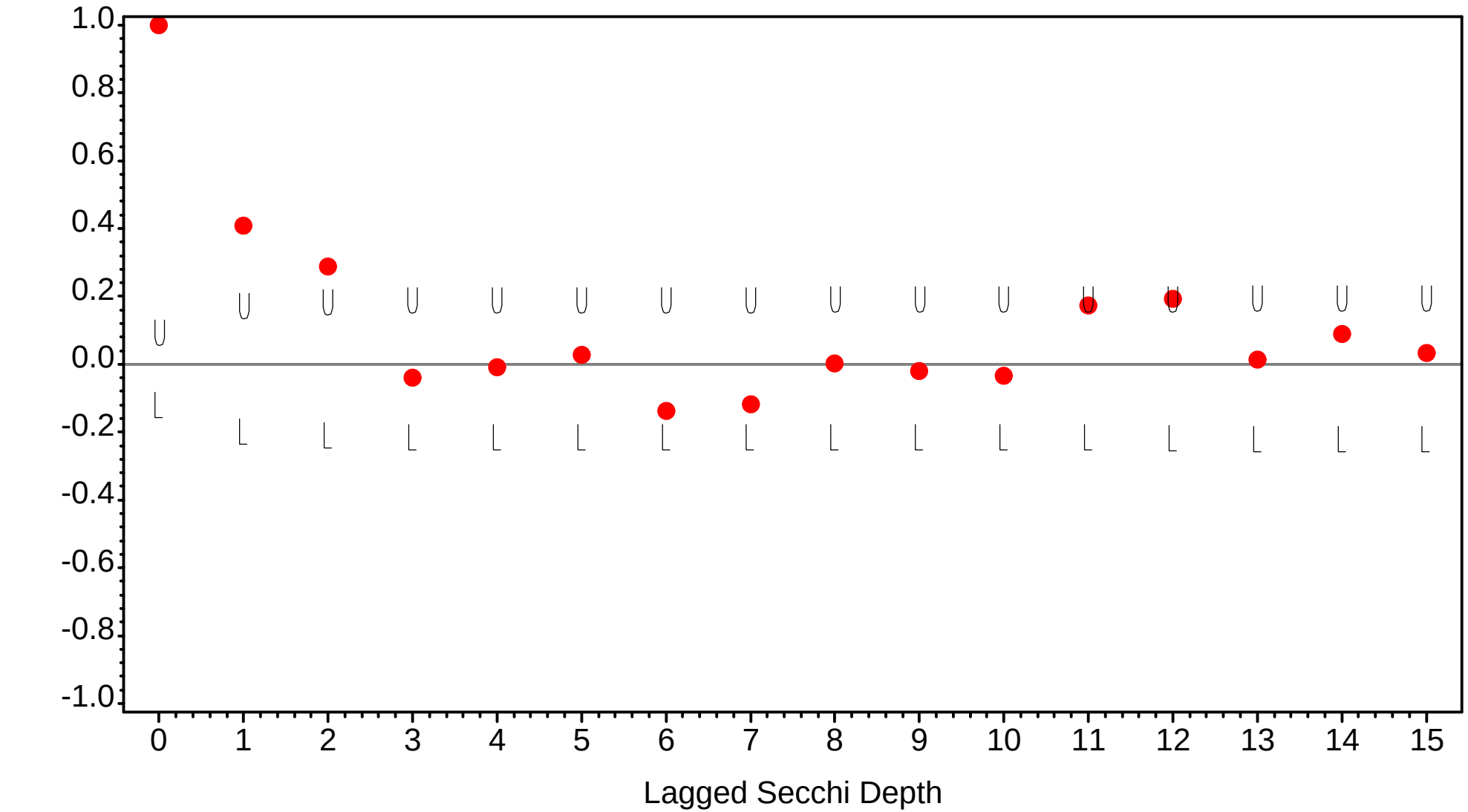
S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.408	0.093	0.186	-0.186
2	0.288	0.098	0.196	-0.196
3	-0.041	0.100	0.201	-0.201
4	-0.010	0.100	0.201	-0.201
5	0.027	0.100	0.201	-0.201
6	-0.138	0.100	0.201	-0.201
7	-0.118	0.101	0.202	-0.202
8	0.001	0.101	0.203	-0.203
9	-0.020	0.101	0.203	-0.203
10	-0.035	0.101	0.203	-0.203
11	0.172	0.101	0.203	-0.203
12	0.192	0.102	0.204	-0.204
13	0.013	0.103	0.206	-0.206
14	0.090	0.103	0.206	-0.206
15	0.034	0.103	0.207	-0.207

S_21FLVEMDHL06 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

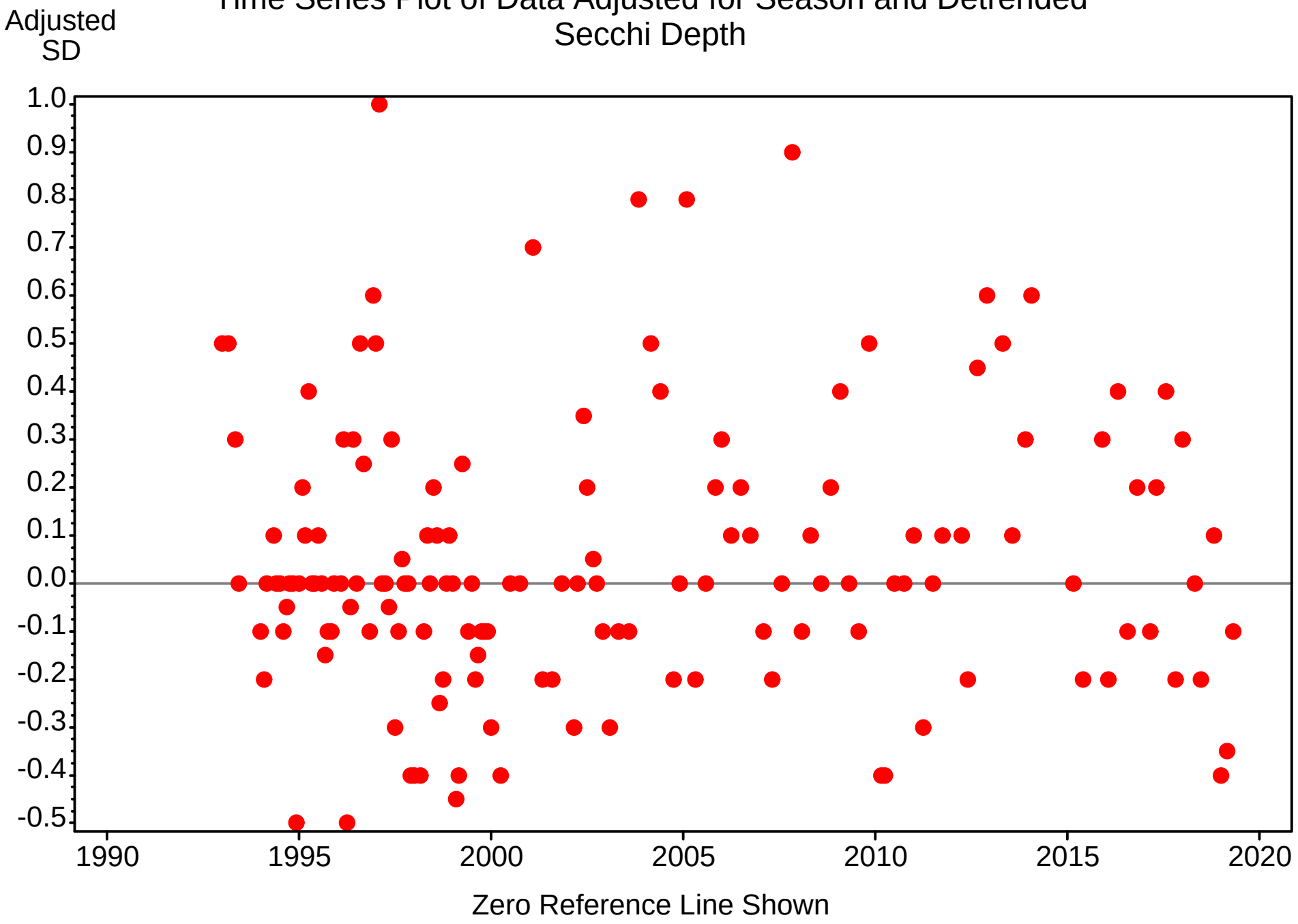
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.047	0.458	0.5	0

S_21FLVEMDHL06 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.047072	0.45795	0.50041	0

S_21FLVEMDHL06 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth

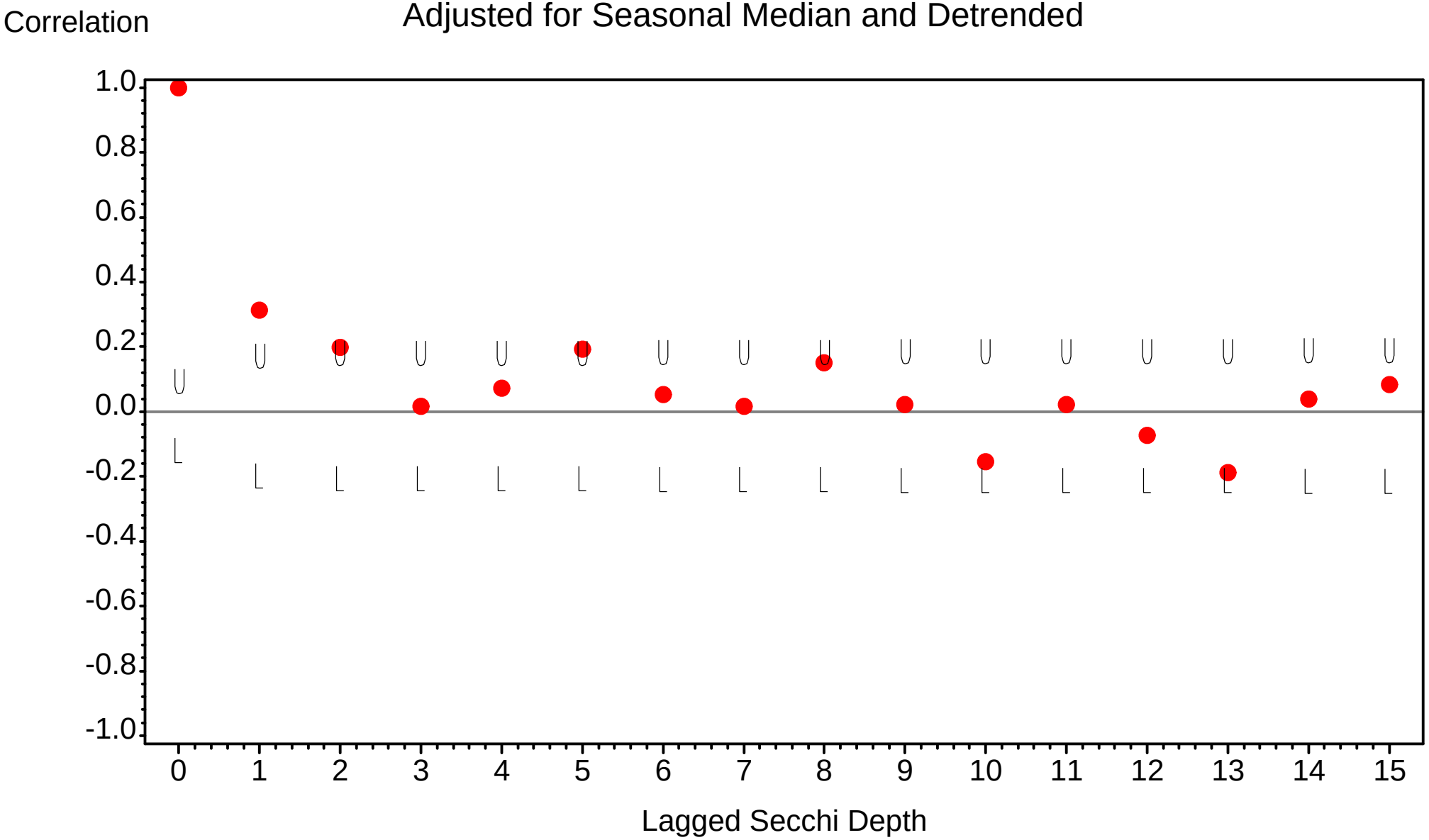


S_21FLVEMDHL06 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.312	0.093	0.186	-0.186
2	0.197	0.096	0.192	-0.192
3	0.015	0.097	0.194	-0.194
4	0.071	0.097	0.194	-0.194
5	0.193	0.097	0.194	-0.194
6	0.052	0.098	0.196	-0.196
7	0.015	0.098	0.197	-0.197
8	0.150	0.098	0.197	-0.197
9	0.021	0.099	0.198	-0.198
10	-0.154	0.099	0.198	-0.198
11	0.023	0.100	0.199	-0.199
12	-0.072	0.100	0.199	-0.199
13	-0.189	0.100	0.200	-0.200
14	0.040	0.101	0.202	-0.202
15	0.084	0.101	0.202	-0.202

S_21FLVEMDHL06 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
17	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
18	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
19	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
20	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
21	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
17	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
18	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
19	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
20	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
21	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
17	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
18	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
19	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
20	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
21	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
22	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.15
23	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28	0.99
24	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67	1.60
25	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.27
26	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90	2.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
22	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017	-0.14839
23	Y	Y	N	N	-0.132	0.057	0.124	-0.001	-0.13170
24	Y	Y	N	N	0.150	0.038	0.109	0.103	0.15026
25	N	Y	Y	Y	0.141	0.033	0.135	357.337	0.14103
26	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014	-0.08367

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
23	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
24	0.03776	0.10869	0.103	0.15026	0.03776	0.103
25	0.03319	0.13465	357.337	0.14100	0.13500	357.337
26	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
27	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48	1.87
28	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00	0.20
29	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00	1.03
30	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.75
31	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43	1.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
27	Y	Y	Y	Y	0.090	0.188	0.382	0.156	0.08974
28	N	Y	Y	Y	0.153	0.020	0.128	0.254	0.15317
29	Y	Y	N	N	0.109	0.084	0.181	0.000	0.10913
30	Y	Y	Y	Y	0.015	0.858	0.907	0.001	0.01504
31	Y	Y	N	N	-0.115	0.116	0.160	-0.001	-0.12022

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
27	0.18759	0.38162	0.156	0.08974	0.38162	0.156
28	0.01994	0.12793	0.254	0.15300	0.12800	0.254
29	0.08403	0.18091	0.000	0.10913	0.08403	0.000
30	0.85776	0.90700	0.001	0.01504	0.90700	0.001
31	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
32	S_21FLVEMDHL05	S_21FLVEMDHL05	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.66	0.74
33	S_21FLVEMDHL05	S_21FLVEMDHL05	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.71
34	S_21FLVEMDHL05	S_21FLVEMDHL05	DO	Dissolved Oxygen	(mg/L)	22	30	2.01	2.54
35	S_21FLVEMDHL05	S_21FLVEMDHL05	DOSAT	Dissolved Oxygen	(%)	32	40	1.41	2.00
36	S_21FLVEMDHL05	S_21FLVEMDHL05	SALIN	Salinity	(psu)	52	60	-9999.00	0.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
32	Y	Y	Y	Y	0.145	0.032	0.115	0.086	0.14507
33	Y	Y	Y	Y	0.085	0.174	0.337	182.245	0.08502
34	Y	N	N	N	-0.149	0.017	0.110	-0.023	-0.14929
35	Y	Y	N	N	0.081	0.199	0.362	0.114	0.08126
36	Y	Y	N	N	0.060	0.339	0.502	0.082	0.05987

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
32	0.03182	0.11509	0.086	0.14507	0.11509	0.086
33	0.17411	0.33661	182.245	0.08502	0.33661	182.245
34	0.01704	0.11000	-0.023	-0.14929	0.01704	-0.023
35	0.19863	0.36237	0.114	0.08126	0.19863	0.114
36	0.33872	0.50152	0.082	0.05987	0.33872	0.082

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
37	S_21FLVEMDHL05	S_21FLVEMDHL05	SD	Secchi Depth	(m)	72	80	0.38	1.10
38	S_21FLVEMDHL05	S_21FLVEMDHL05	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.81
39	S_21FLVEMDHL05	S_21FLVEMDHL05	TP	Total Phosphorus	(mg/L)	12	20	0.80	0.83
40	S_21FLVEMDHL06	S_21FLVEMDHL06	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.28	0.01
41	S_21FLVEMDHL06	S_21FLVEMDHL06	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.76

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
37	Y	N	N	N	0.047	0.468	0.545	0.000	0.04654
38	Y	Y	Y	Y	-0.146	0.037	0.227	-0.009	-0.14590
39	Y	Y	N	N	-0.030	0.675	0.690	0.000	-0.02972
40	Y	N	N	N	0.024	0.729	0.758	0.016	0.02423
41	Y	Y	Y	Y	0.105	0.092	0.238	239.000	0.10454

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
37	0.46800	0.54466	0.000	0.04654	0.46800	0.000
38	0.03661	0.22687	-0.009	-0.14590	0.22687	-0.009
39	0.67549	0.68953	0.000	-0.02972	0.67549	0.000
40	0.72880	0.75791	0.016	0.02423	0.72880	0.016
41	0.09156	0.23833	239.000	0.10454	0.23833	239.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
42	S_21FLVEMDHL06	S_21FLVEMDHL06	DO	Dissolved Oxygen	(mg/L)	22	30	2.05	2.52
43	S_21FLVEMDHL06	S_21FLVEMDHL06	DOSAT	Dissolved Oxygen	(%)	32	40	1.25	1.99
44	S_21FLVEMDHL06	S_21FLVEMDHL06	SALIN	Salinity	(psu)	52	60	-9999.00	0.74
45	S_21FLVEMDHL06	S_21FLVEMDHL06	SD	Secchi Depth	(m)	72	80	0.69	0.94
46	S_21FLVEMDHL06	S_21FLVEMDHL06	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
42	Y	N	N	N	-0.116	0.062	0.197	-0.017	-0.11576
43	Y	Y	N	N	0.080	0.201	0.322	0.088	0.08045
44	Y	Y	Y	Y	0.090	0.143	0.319	0.138	0.09026
45	Y	Y	Y	Y	0.047	0.458	0.500	0.000	0.04707
46	Y	Y	Y	Y	-0.126	0.072	0.357	-0.011	-0.12577

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
42	0.06243	0.19679	-0.017	-0.11576	0.06243	-0.017
43	0.20088	0.32170	0.088	0.08045	0.20088	0.088
44	0.14300	0.31855	0.138	0.09026	0.31855	0.138
45	0.45795	0.50041	0.000	0.04707	0.50041	0.000
46	0.07193	0.35680	-0.011	-0.12577	0.35680	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
47	S_21FLVEMDHL06	S_21FLVEMDHL06	TP	Total Phosphorus	(mg/L)	12	20	1.37	0.87
48	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	1.38
49	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23	0.08
50	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47	2.09
51	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56	2.11
52	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09	0.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
47	Y	Y	N	N	-0.070	0.311	0.352	-0.001	-0.07004
48	Y	Y	Y	Y	0.074	0.356	0.527	0.052	0.07383
49	N	Y	Y	Y	0.090	0.212	0.347	225.098	0.08958
50	Y	N	N	N	-0.099	0.163	0.243	-0.023	-0.09906
51	Y	N	N	N	0.046	0.549	0.573	0.109	0.04571
52	N	Y	Y	Y	0.155	0.028	0.107	0.318	0.15482

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
47	0.31141	0.35163	-0.001	-0.07004	0.31141	-0.001
48	0.35568	0.52706	0.052	0.07383	0.52706	0.052
49	0.21156	0.34660	225.098	0.09000	0.34700	225.098
50	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
51	0.54949	0.57310	0.109	0.04571	0.54949	0.109
52	0.02802	0.10656	0.318	0.15500	0.10700	0.318

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
53	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00	-9999.00
54	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.04
55	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	0.45
56	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.33

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
53	N	Y	N	N	0.192	0.005	0.044	0.011	0.19225
54	Y	Y	N	N	-0.161	0.045	0.205	-0.029	-0.16145
55	N	N	N	N	0.021	0.810	0.860	0.000	0.02128
56	N	Y	N	N	0.049	0.531	0.675	0.023	0.04851

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
53	0.00486	0.04449	0.011	0.19200	0.00500	0.011
54	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
55	0.80954	0.86021	0.000	0.02100	0.81000	0.000
56	0.53077	0.67536	0.023	0.04900	0.53100	0.023

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
57	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09	0.79
58	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16	2.35
59	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00	2.11
60	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00	0.98
61	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61	1.08

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
57	Y	Y	Y	Y	0.017	0.821	0.864	6.873	0.01671
58	Y	Y	N	N	-0.022	0.763	0.834	-0.004	-0.02159
59	Y	Y	Y	Y	0.049	0.487	0.514	0.154	0.04892
60	Y	Y	Y	Y	0.070	0.304	0.474	0.025	0.06955
61	Y	Y	N	N	0.064	0.330	0.509	0.000	0.06415

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
57	0.82111	0.86399	6.874	0.01671	0.86399	6.874
58	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
59	0.48687	0.51426	0.154	0.04892	0.51426	0.154
60	0.30398	0.47368	0.025	0.06955	0.47368	0.025
61	0.32954	0.50893	0.000	0.06415	0.32954	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
62	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.88
63	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10	1.51
64	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	-9999.00
65	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82	1.12
66	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25	0.82

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
62	Y	Y	N	N	0.017	0.845	0.901	0.002	0.01724
63	Y	Y	Y	Y	0.050	0.519	0.695	0.000	0.05031
64	N	Y	N	N	0.078	0.299	0.360	0.020	0.07599
65	Y	N	Y	N	0.106	0.122	0.158	10.031	0.10598
66	Y	Y	N	N	-0.170	0.012	0.092	-0.059	-0.16974

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
62	0.84540	0.90084	0.002	0.01724	0.84540	0.002
63	0.51900	0.69540	0.000	0.05031	0.69540	0.000
64	0.31036	0.36979	0.020	0.07800	0.29900	0.020
65	0.12166	0.15796	10.031	0.10598	0.12166	10.031
66	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
67	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	0.70
68	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73	1.54
69	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00	1.54
70	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.48

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
67	Y	Y	N	N	-0.175	0.011	0.082	-0.515	-0.17479
68	Y	N	Y	N	0.092	0.169	0.290	0.004	0.09207
69	Y	Y	Y	Y	0.094	0.155	0.427	0.007	0.09387
70	Y	Y	N	N	-0.031	0.706	0.812	-0.002	-0.03145

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
67	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
68	0.16857	0.29012	0.004	0.09207	0.16857	0.004
69	0.15479	0.42738	0.007	0.09387	0.42738	0.007
70	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
71	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00
72	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.44
73	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19	-9999.00
74	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42	2.33
75	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81	1.77

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
71	N	N	N	N	-0.023	0.786	0.871	0.000	-0.02254
72	N	Y	N	N	-0.142	0.074	0.219	-0.011	-0.14223
73	N	N	Y	N	0.085	0.243	0.291	2.029	0.08500
74	Y	Y	N	N	-0.040	0.591	0.737	-0.008	-0.03968
75	Y	Y	N	N	0.027	0.725	0.823	0.034	0.02716

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
71	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
72	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011
73	0.24287	0.29095	2.029	0.08500	0.24300	2.029
74	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008
75	0.72528	0.82342	0.034	0.02716	0.72528	0.034

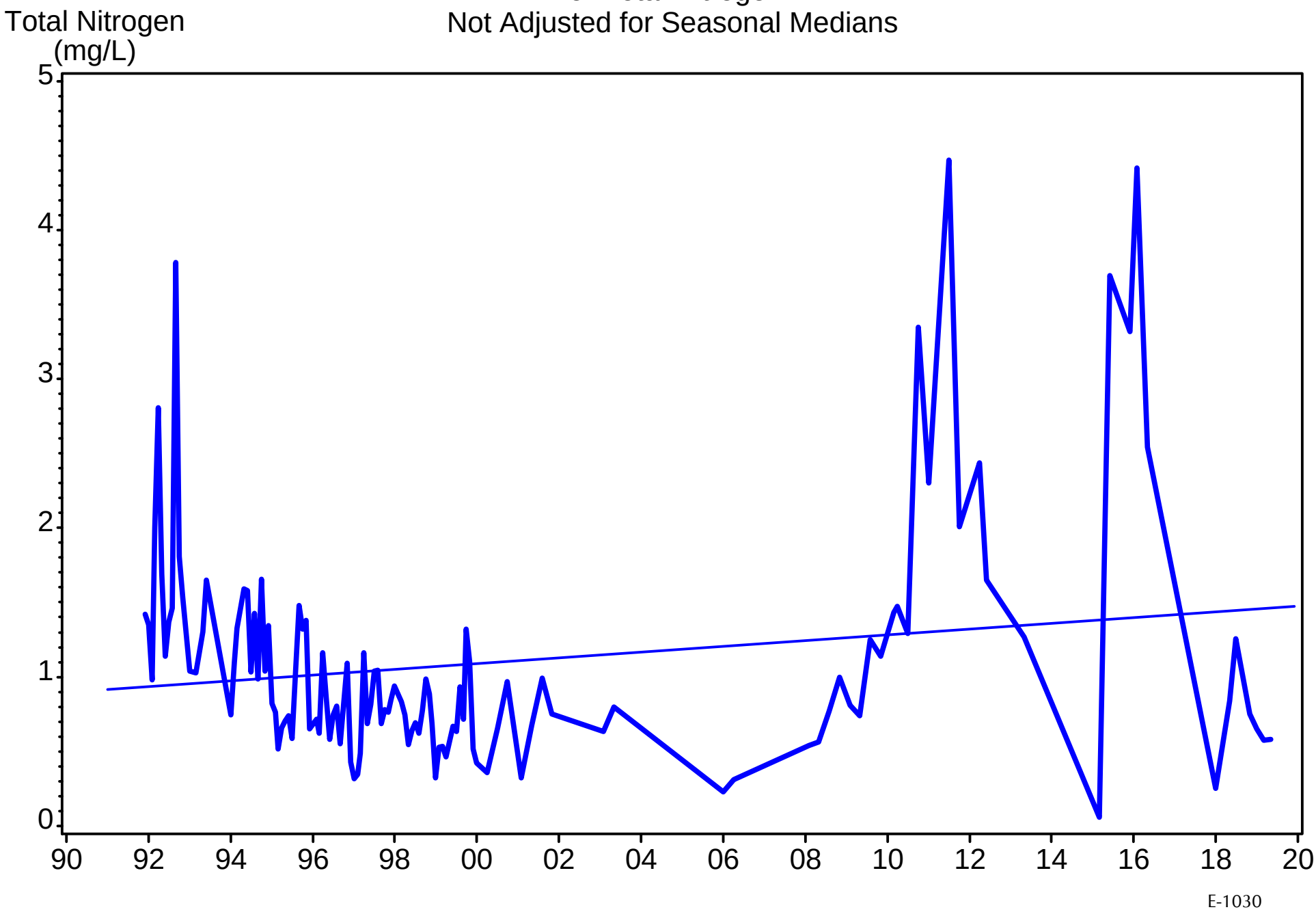
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
76	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00	-9999.00
77	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00	0.68
78	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.31
79	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
76	N	Y	Y	Y	0.123	0.076	0.159	0.001	0.12322
77	Y	Y	N	N	0.194	0.005	0.046	0.009	0.19383
78	N	Y	N	N	-0.241	0.003	0.076	-0.016	-0.24070
79	N	N	N	N	0.040	0.632	0.786	0.000	0.04009

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
76	0.07617	0.15857	0.001	0.12300	0.15900	0.001
77	0.00462	0.04647	0.009	0.19383	0.00462	0.009
78	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
79	0.63152	0.78567	0.000	0.04000	0.63200	0.000

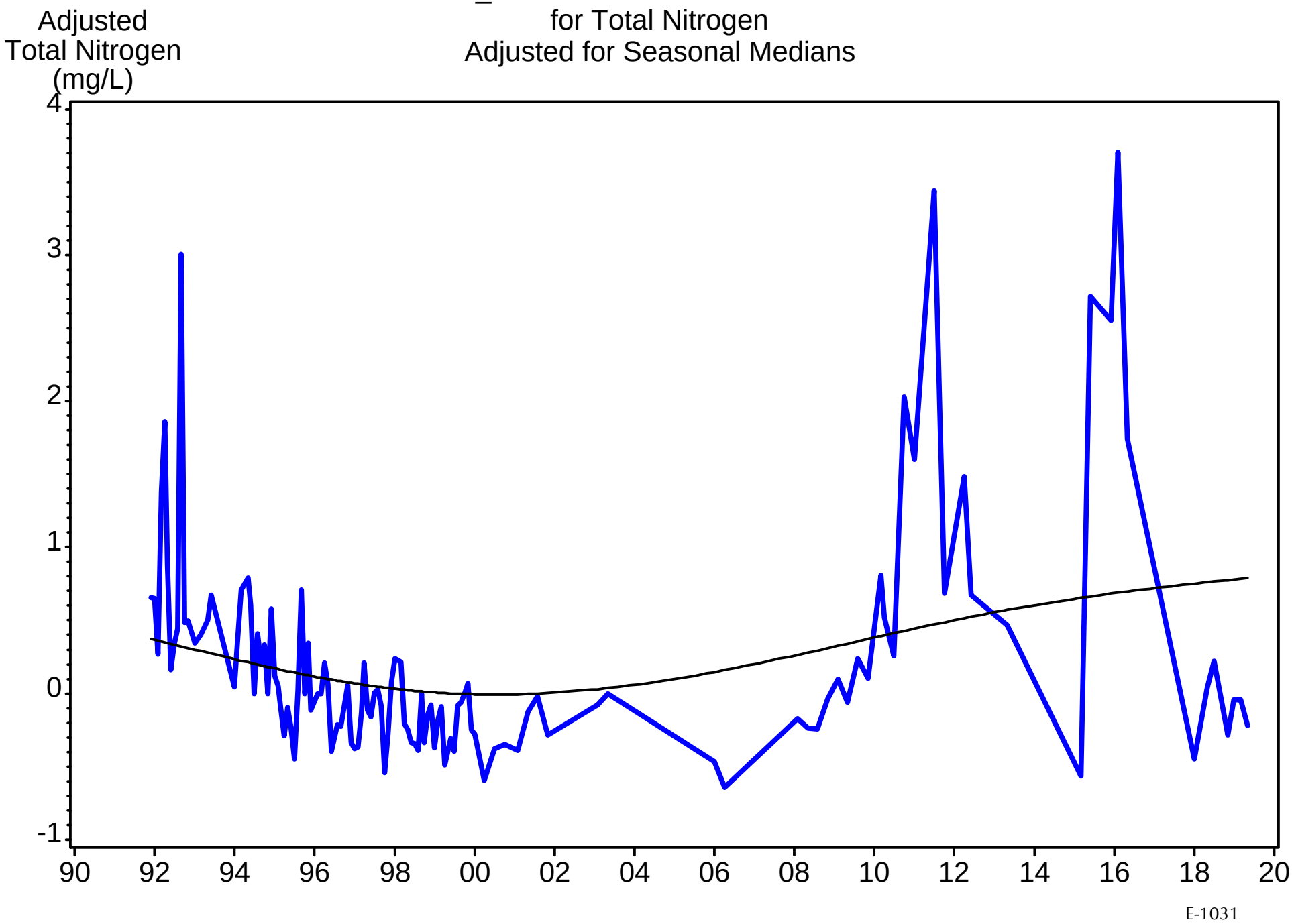
S_21FLVEMDHL07 Trends

S_21FLVEMDHL07 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



E-1030

S_21FLVEMDHL07 Trends

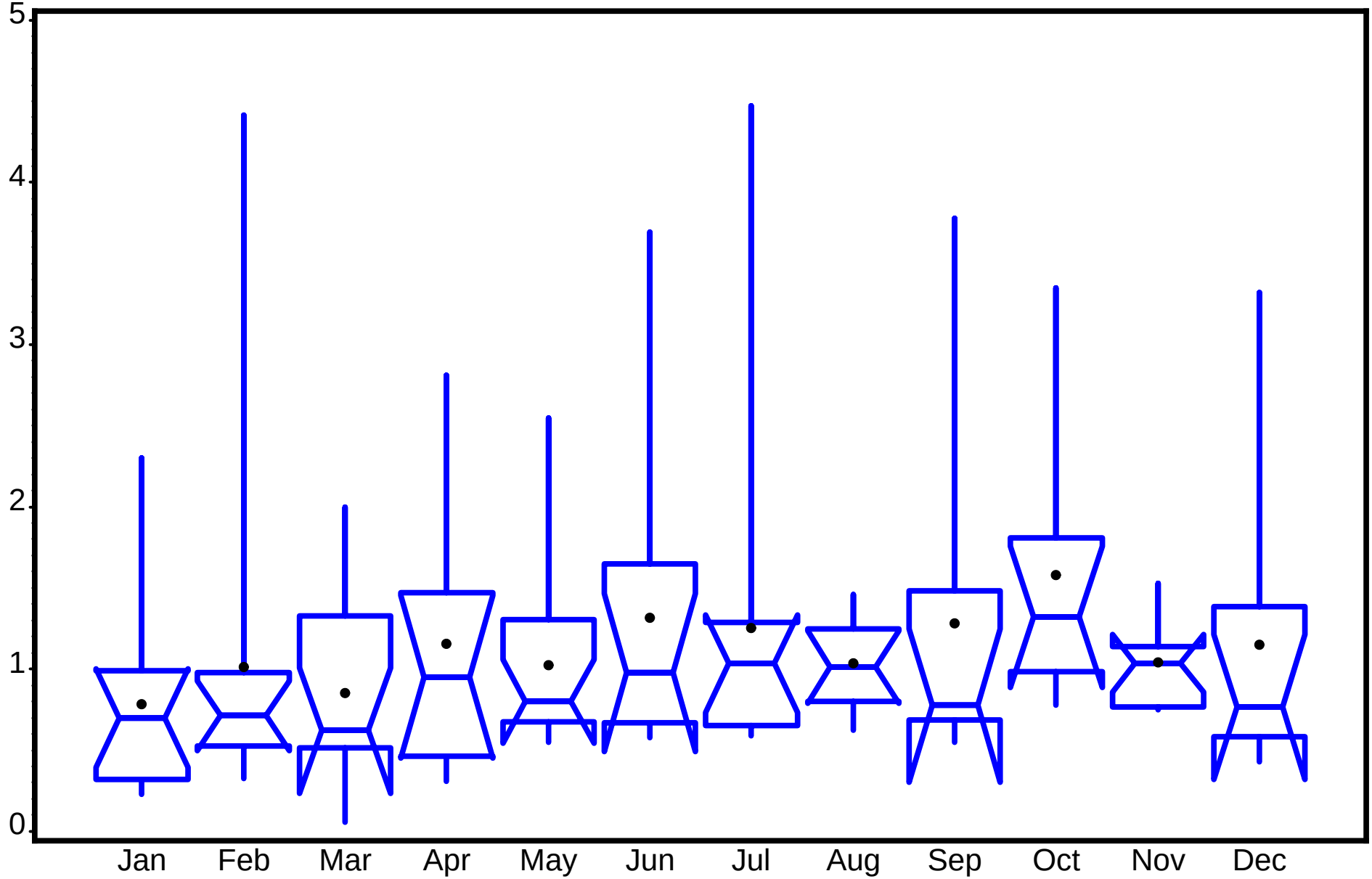


S_21FLVEMDHL07 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



E-1032

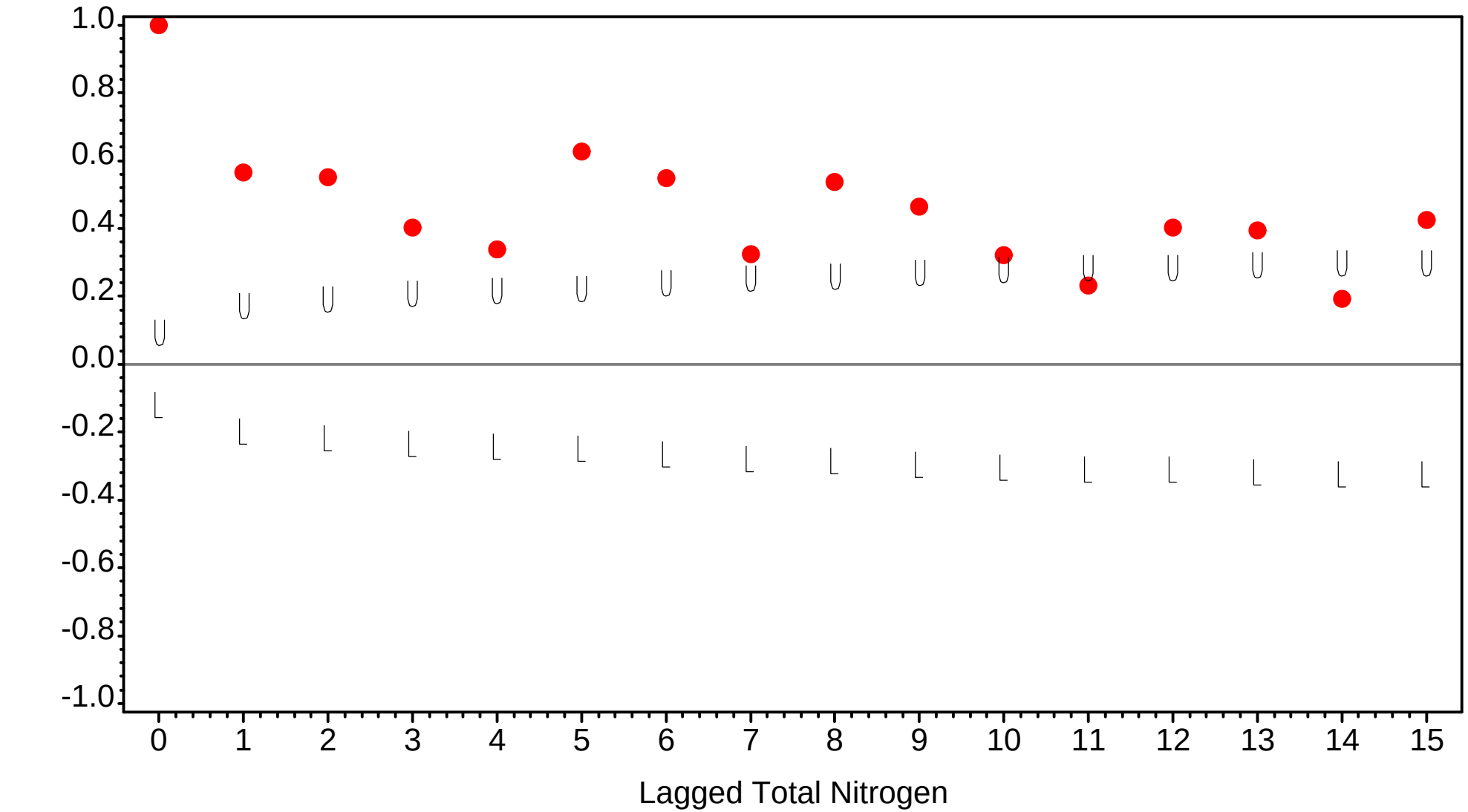
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.566	0.093	0.186	-0.186
2	0.550	0.102	0.205	-0.205
3	0.402	0.110	0.221	-0.221
4	0.339	0.115	0.229	-0.229
5	0.628	0.117	0.235	-0.235
6	0.548	0.127	0.253	-0.253
7	0.324	0.133	0.267	-0.267
8	0.538	0.136	0.271	-0.271
9	0.464	0.142	0.283	-0.283
10	0.321	0.146	0.292	-0.292
11	0.233	0.148	0.296	-0.296
12	0.404	0.149	0.298	-0.298
13	0.395	0.152	0.304	-0.304
14	0.193	0.155	0.310	-0.310
15	0.426	0.156	0.311	-0.311

S_21FLVEMDHL07 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

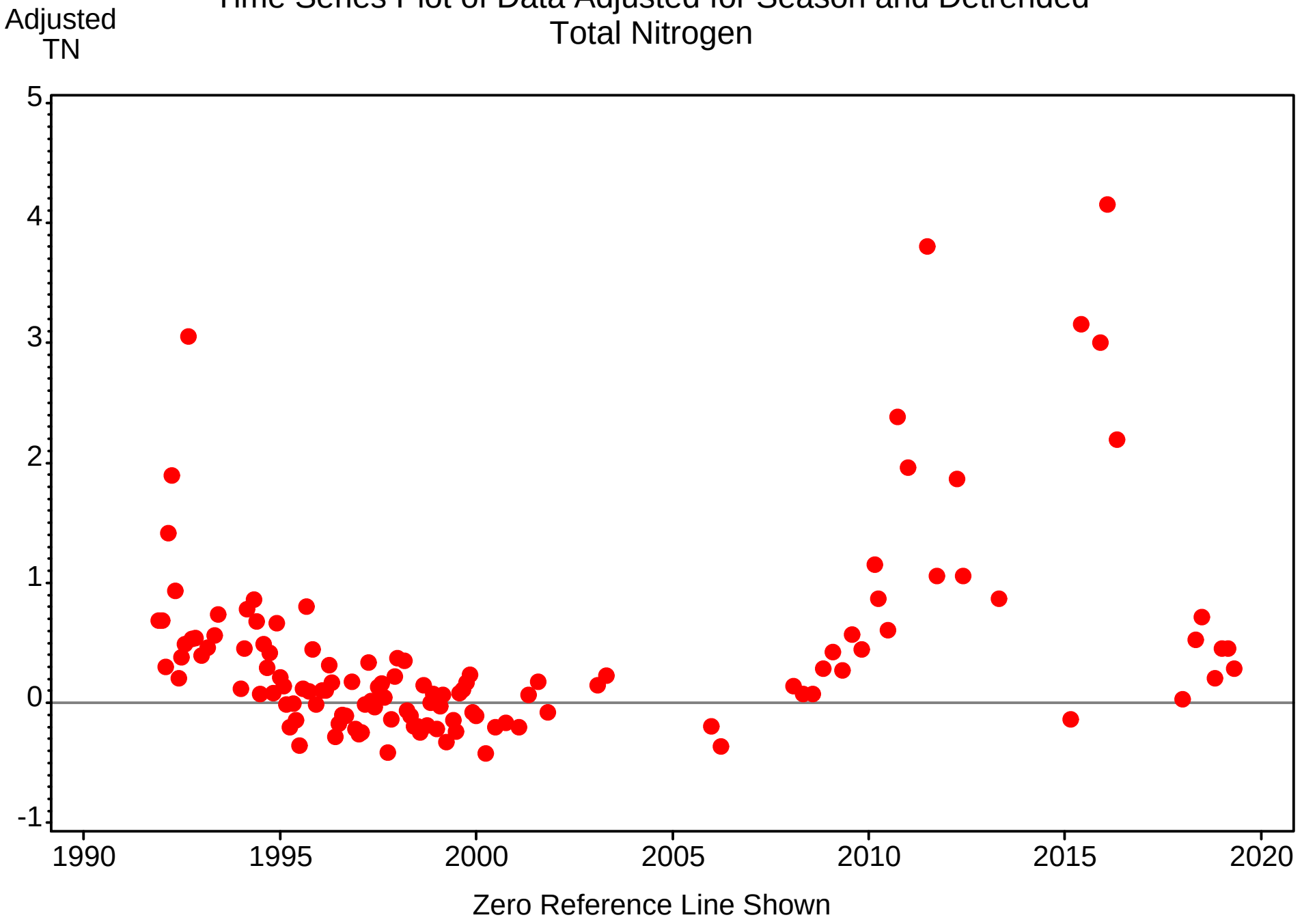
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.185	.009	0.183	-0.017

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.18331	.00999313	0.18667	-0.017143

S_21FLVEMDHL07 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



E-1037

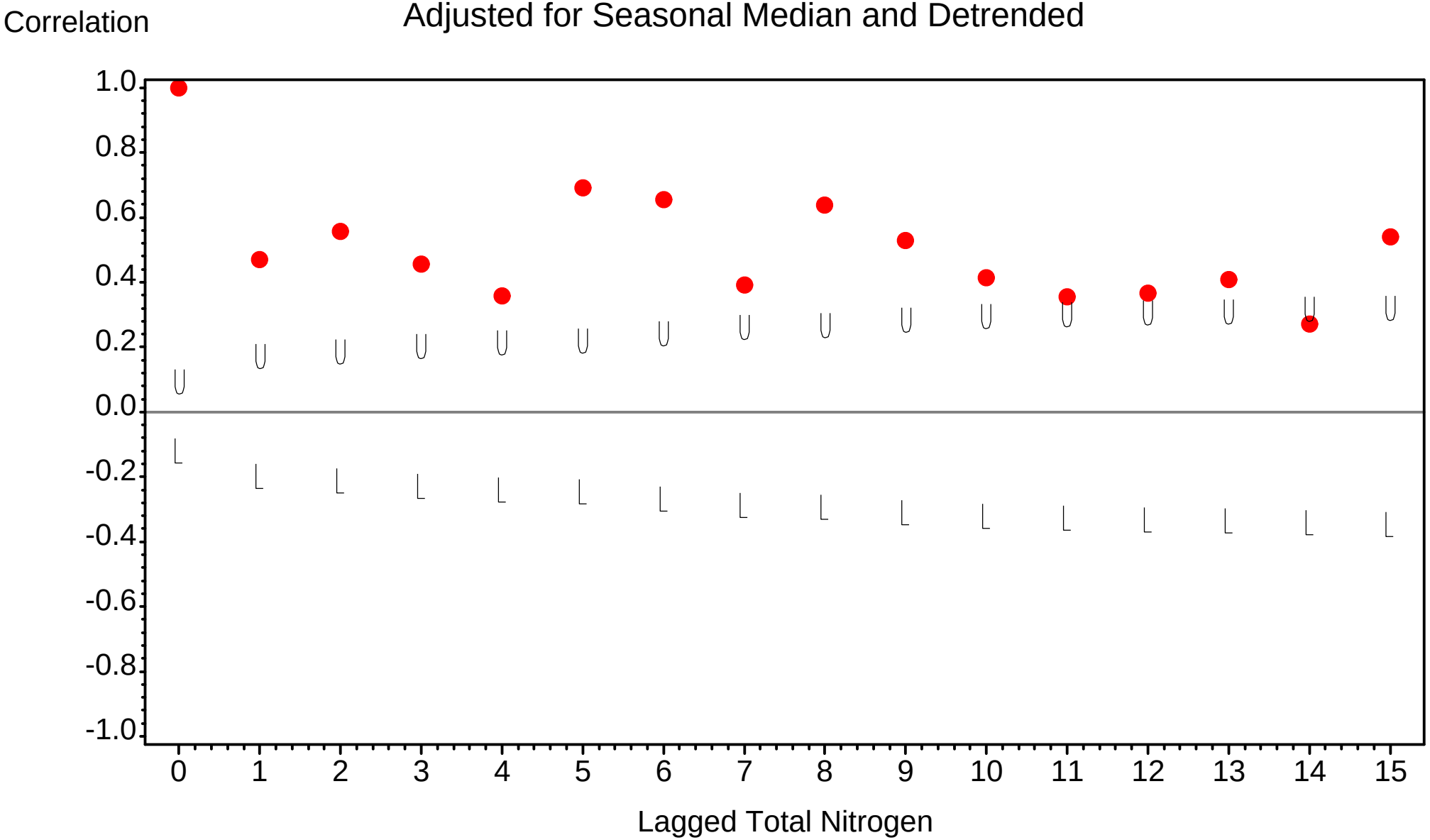
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.469	0.093	0.186	-0.186
2	0.557	0.099	0.199	-0.199
3	0.456	0.108	0.216	-0.216
4	0.357	0.113	0.227	-0.227
5	0.690	0.117	0.233	-0.233
6	0.655	0.128	0.256	-0.256
7	0.392	0.137	0.274	-0.274
8	0.637	0.140	0.281	-0.281
9	0.529	0.148	0.297	-0.297
10	0.414	0.154	0.307	-0.307
11	0.355	0.157	0.314	-0.314
12	0.367	0.159	0.318	-0.318
13	0.408	0.162	0.323	-0.323
14	0.272	0.165	0.329	-0.329
15	0.540	0.166	0.332	-0.332

S_21FLVEMDHL07 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

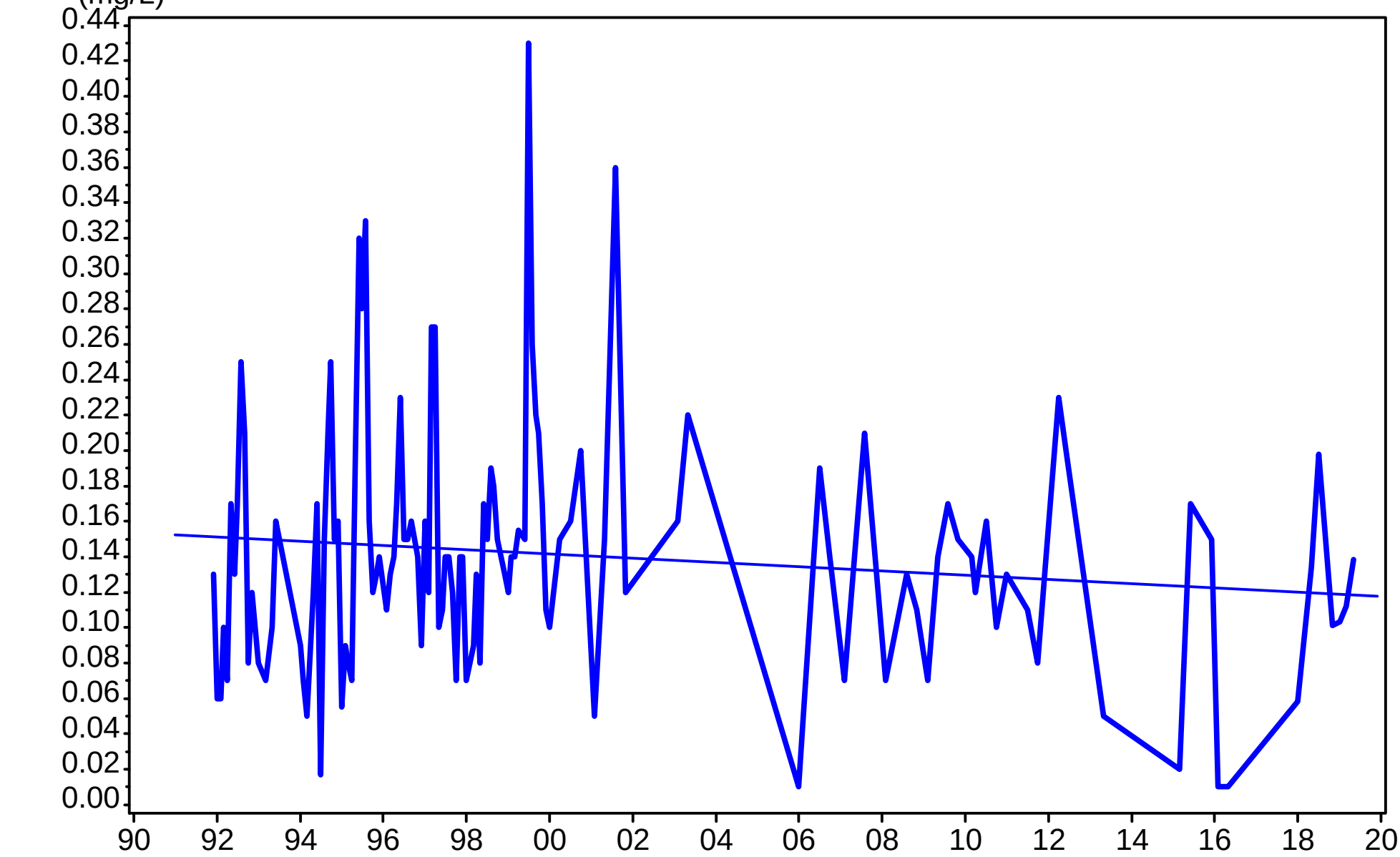


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

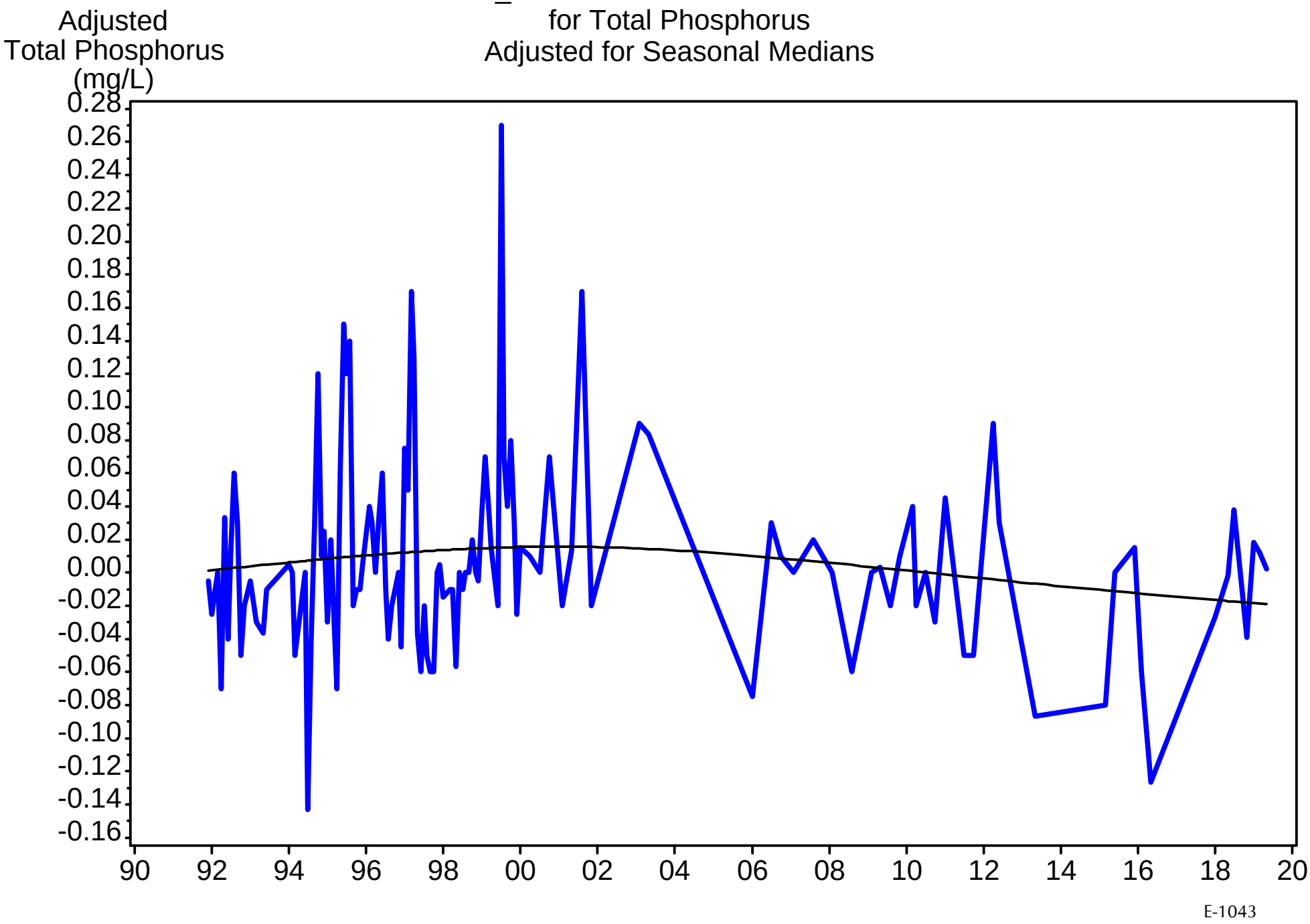
S_21FLVEMDHL07 Trends

S_21FLVEMDHL07 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



E-1042

S_21FLVEMDHL07 Trends

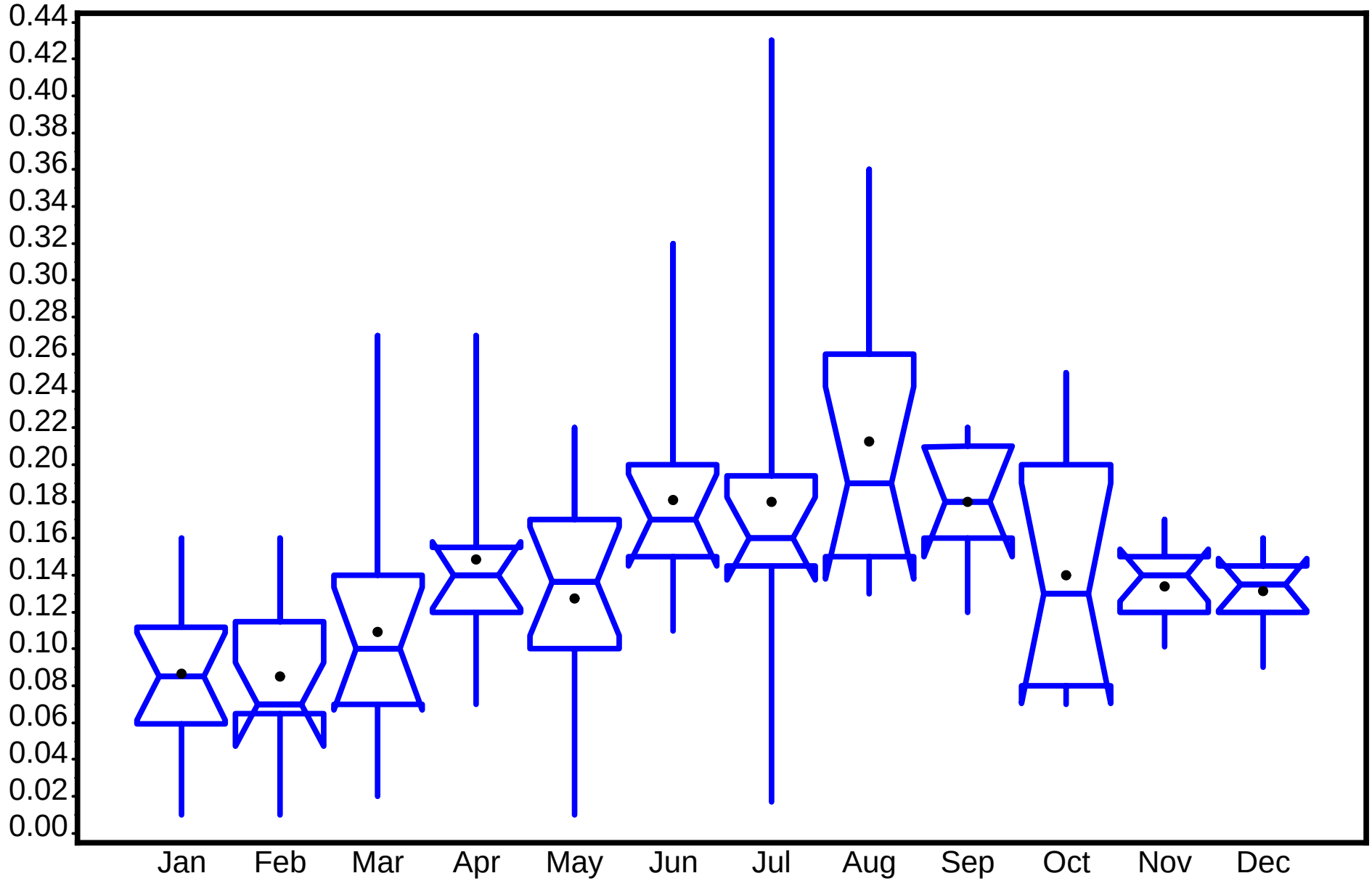


S_21FLVEMDHL07 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



E-1044

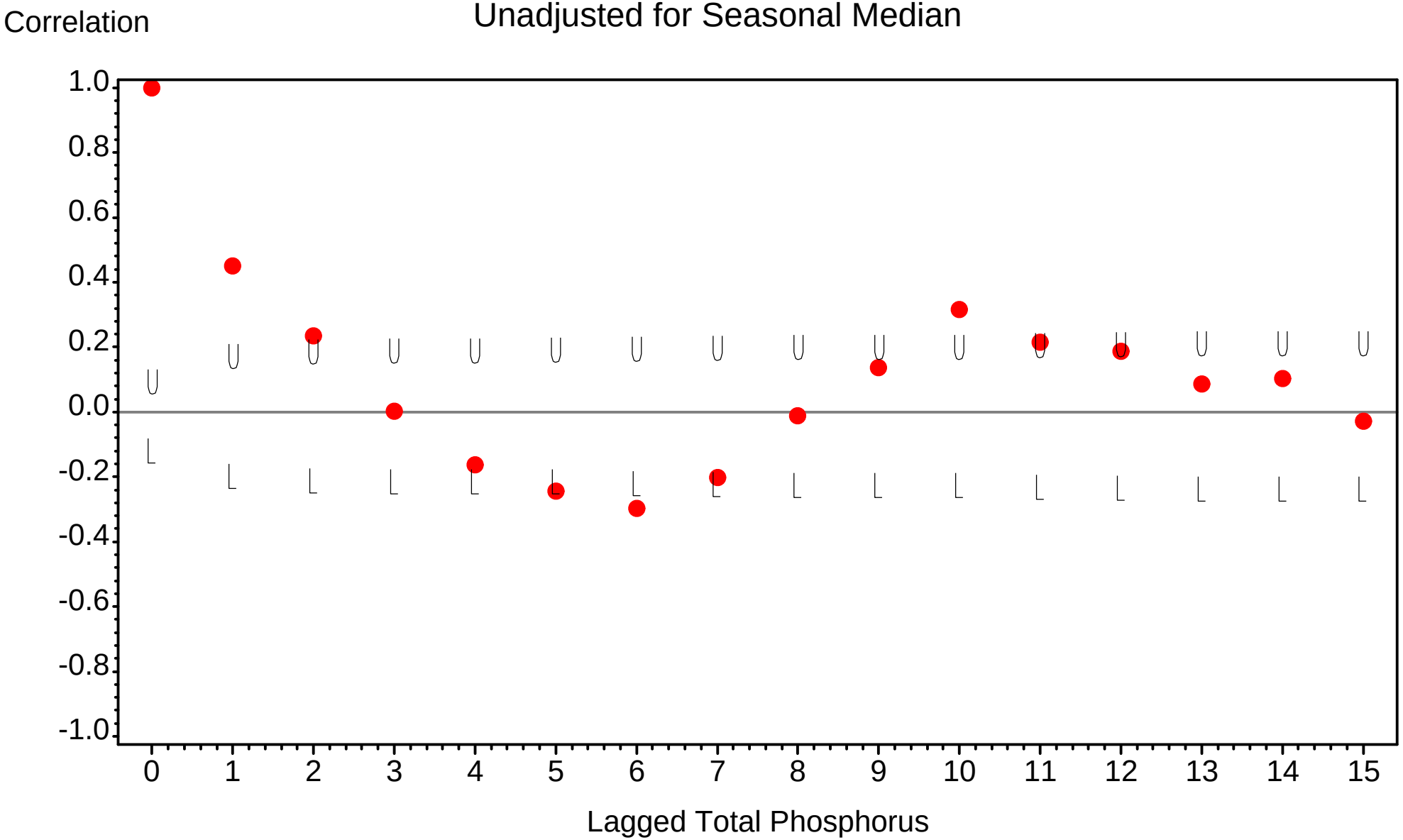
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.451	0.093	0.186	-0.186
2	0.234	0.099	0.198	-0.198
3	0.003	0.101	0.201	-0.201
4	-0.163	0.101	0.201	-0.201
5	-0.244	0.101	0.203	-0.203
6	-0.297	0.103	0.206	-0.206
7	-0.201	0.105	0.211	-0.211
8	-0.013	0.106	0.213	-0.213
9	0.137	0.106	0.213	-0.213
10	0.316	0.107	0.214	-0.214
11	0.214	0.110	0.219	-0.219
12	0.187	0.111	0.222	-0.222
13	0.086	0.112	0.223	-0.223
14	0.102	0.112	0.224	-0.224
15	-0.029	0.112	0.224	-0.224

S_21FLVEMDHL07 Trends Appendix

Correlogram for Total Phosphorus

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

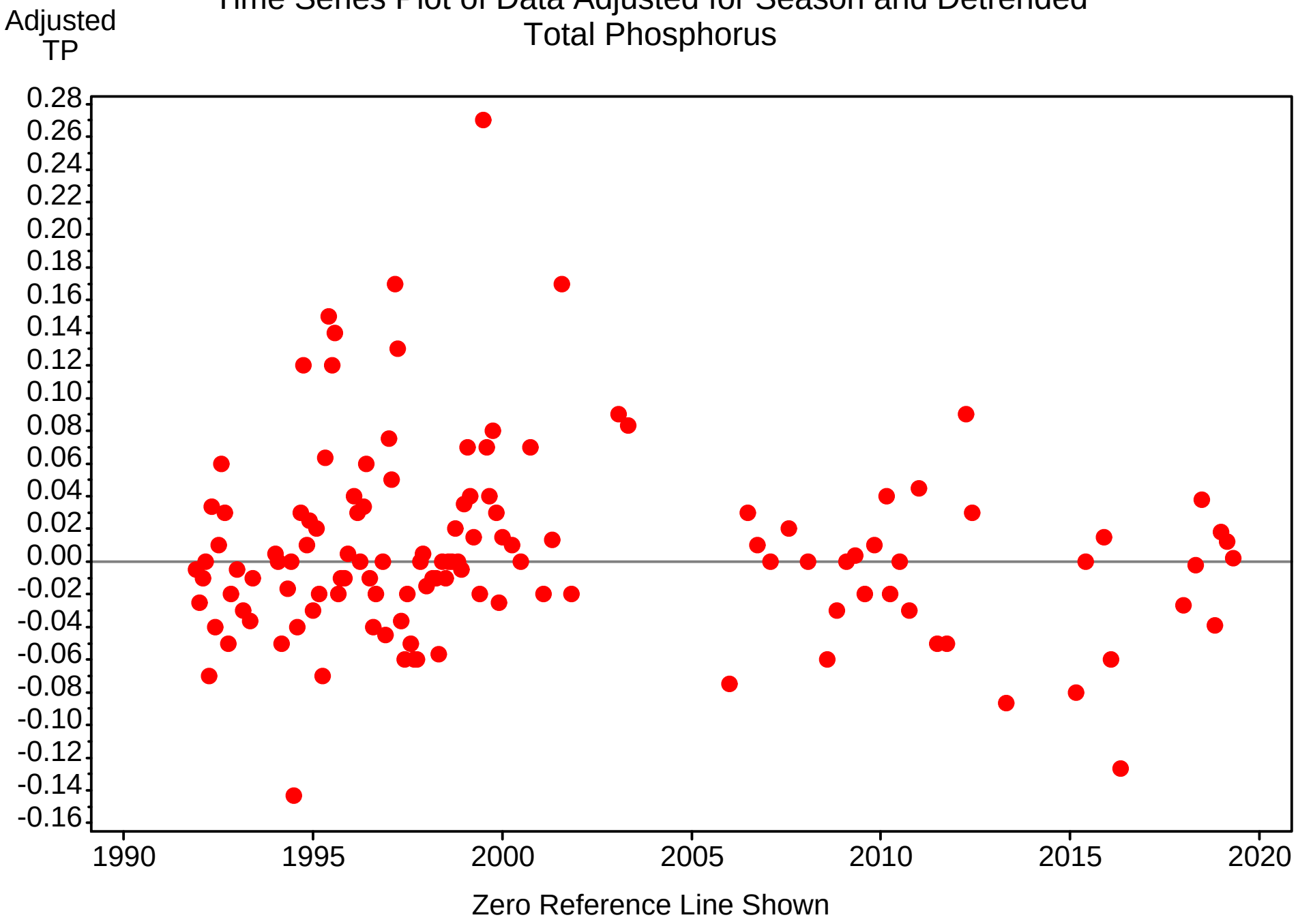
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
.002	1	1	0

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
.00158983	1	1	0

S_21FLVEMDHL07 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus



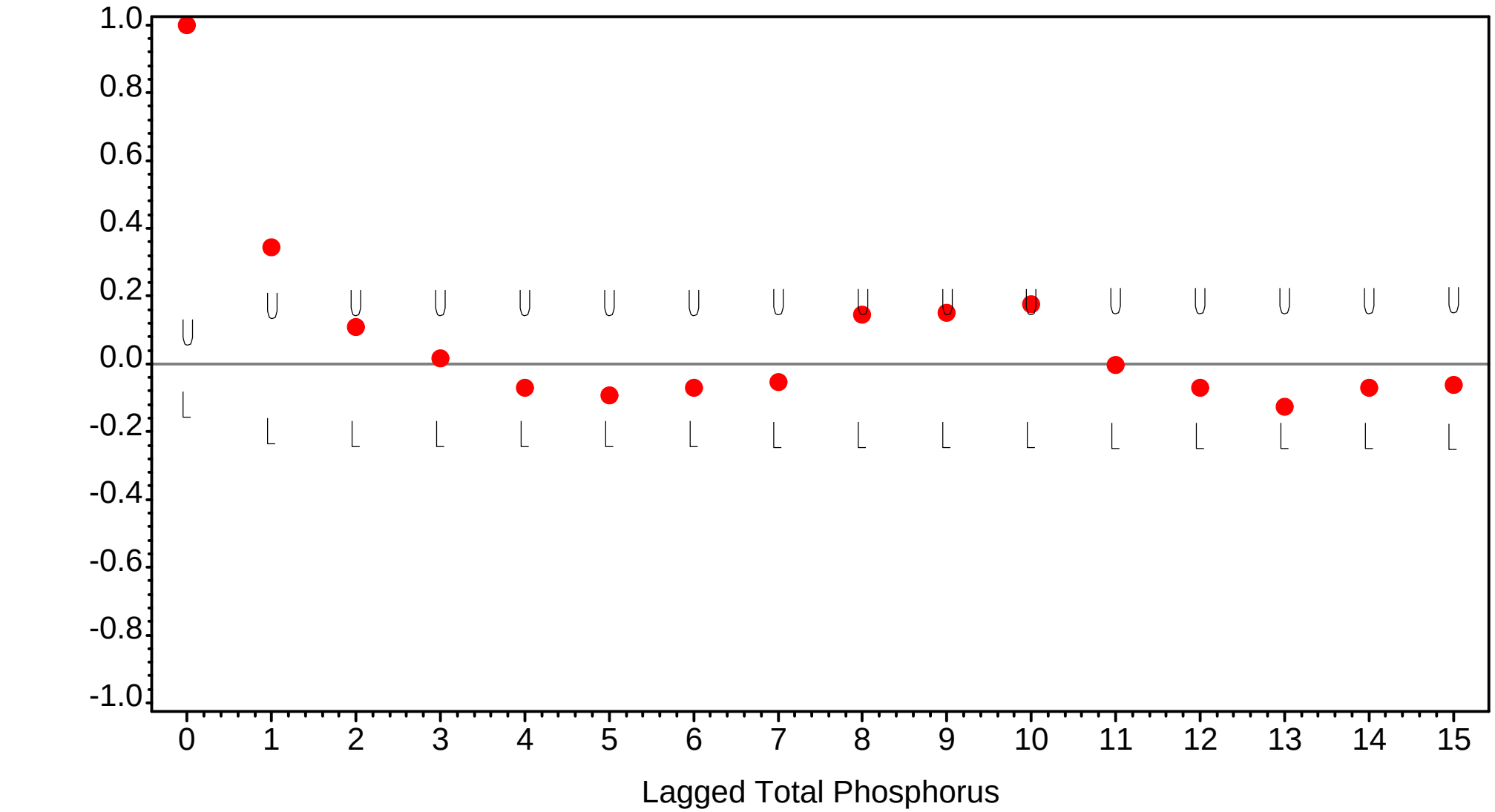
E-1049

S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.345	0.093	0.186	-0.186
2	0.110	0.096	0.193	-0.193
3	0.017	0.097	0.194	-0.194
4	-0.070	0.097	0.194	-0.194
5	-0.093	0.097	0.194	-0.194
6	-0.070	0.097	0.194	-0.194
7	-0.053	0.097	0.195	-0.195
8	0.144	0.097	0.195	-0.195
9	0.150	0.098	0.196	-0.196
10	0.177	0.099	0.197	-0.197
11	-0.002	0.100	0.199	-0.199
12	-0.071	0.100	0.199	-0.199
13	-0.127	0.100	0.200	-0.200
14	-0.070	0.100	0.200	-0.200
15	-0.063	0.100	0.201	-0.201

S_21FLVEMDHL07 Trends Appendix

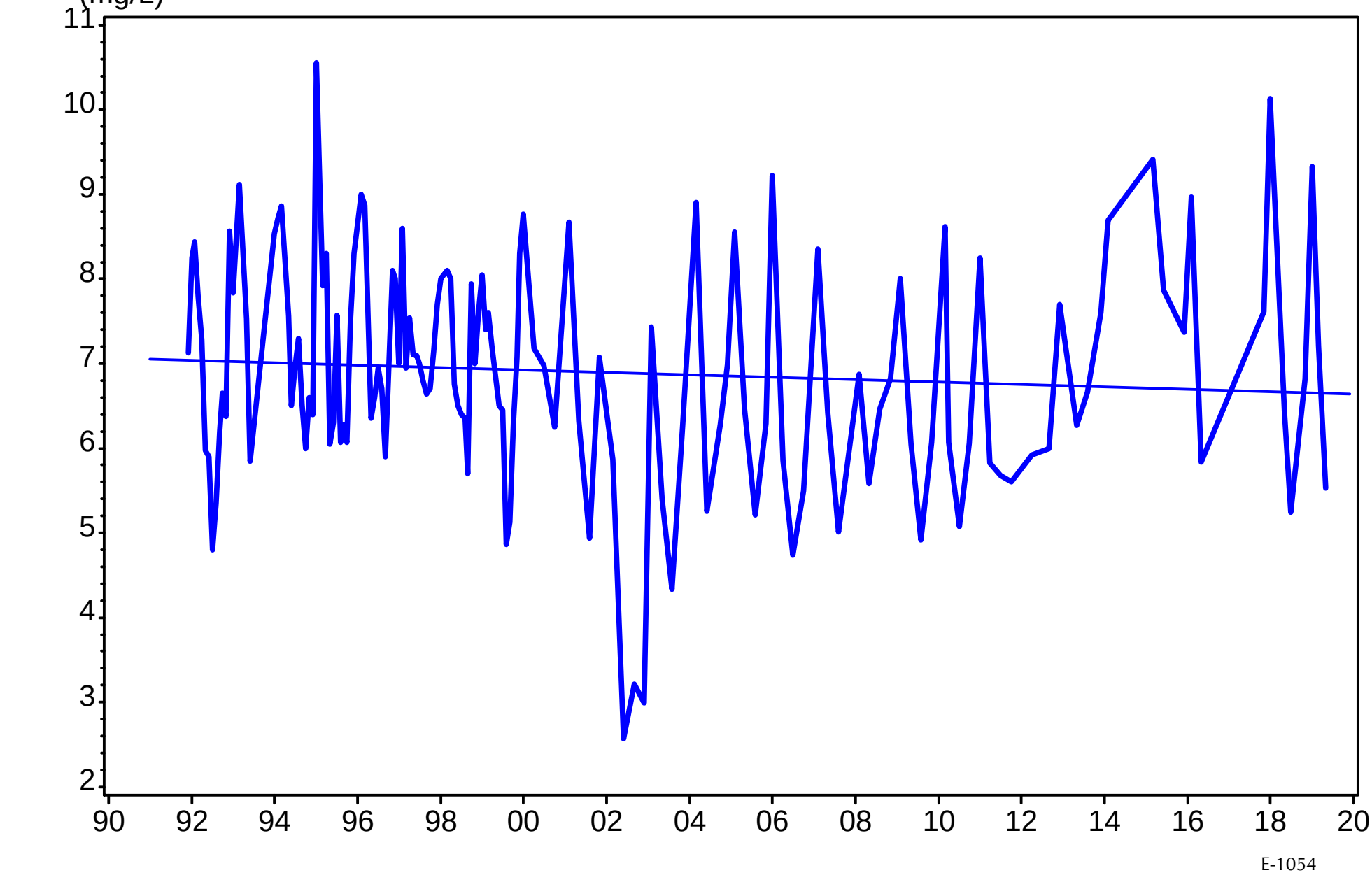
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

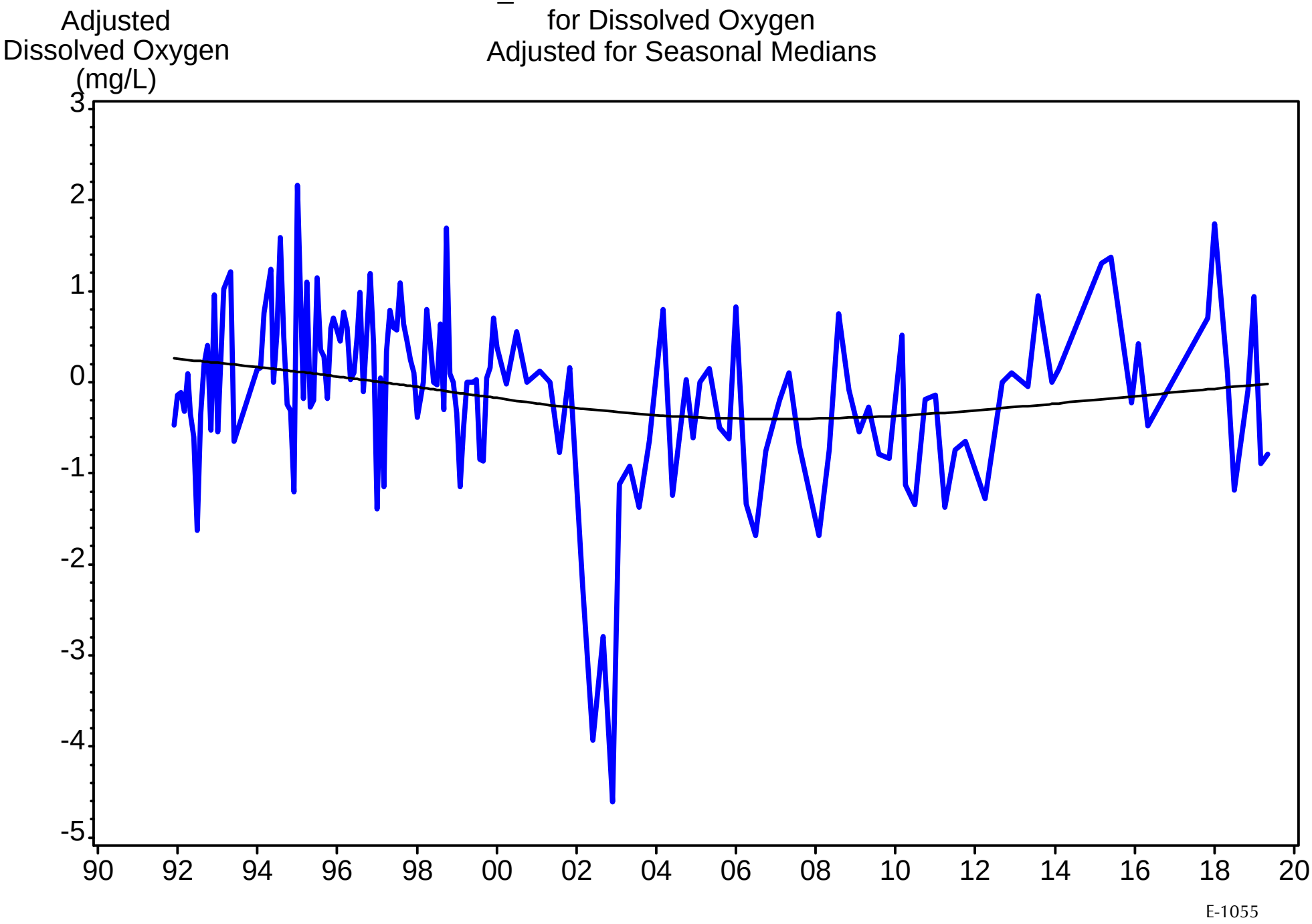
S_21FLVEMDHL07 Trends

S_21FLVEMDHL07 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1054

S_21FLVEMDHL07 Trends

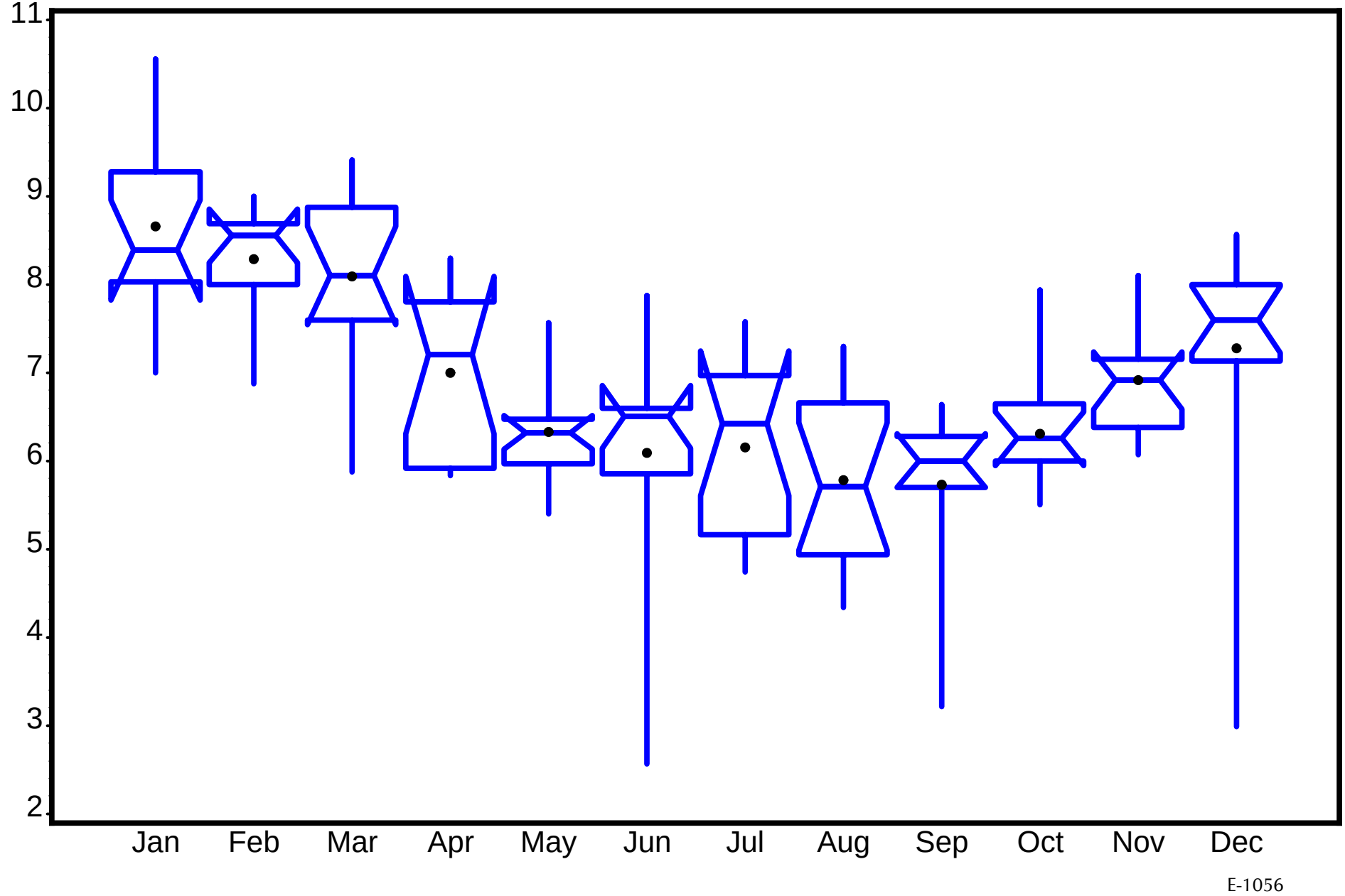


S_21FLVEMDHL07 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



E-1056

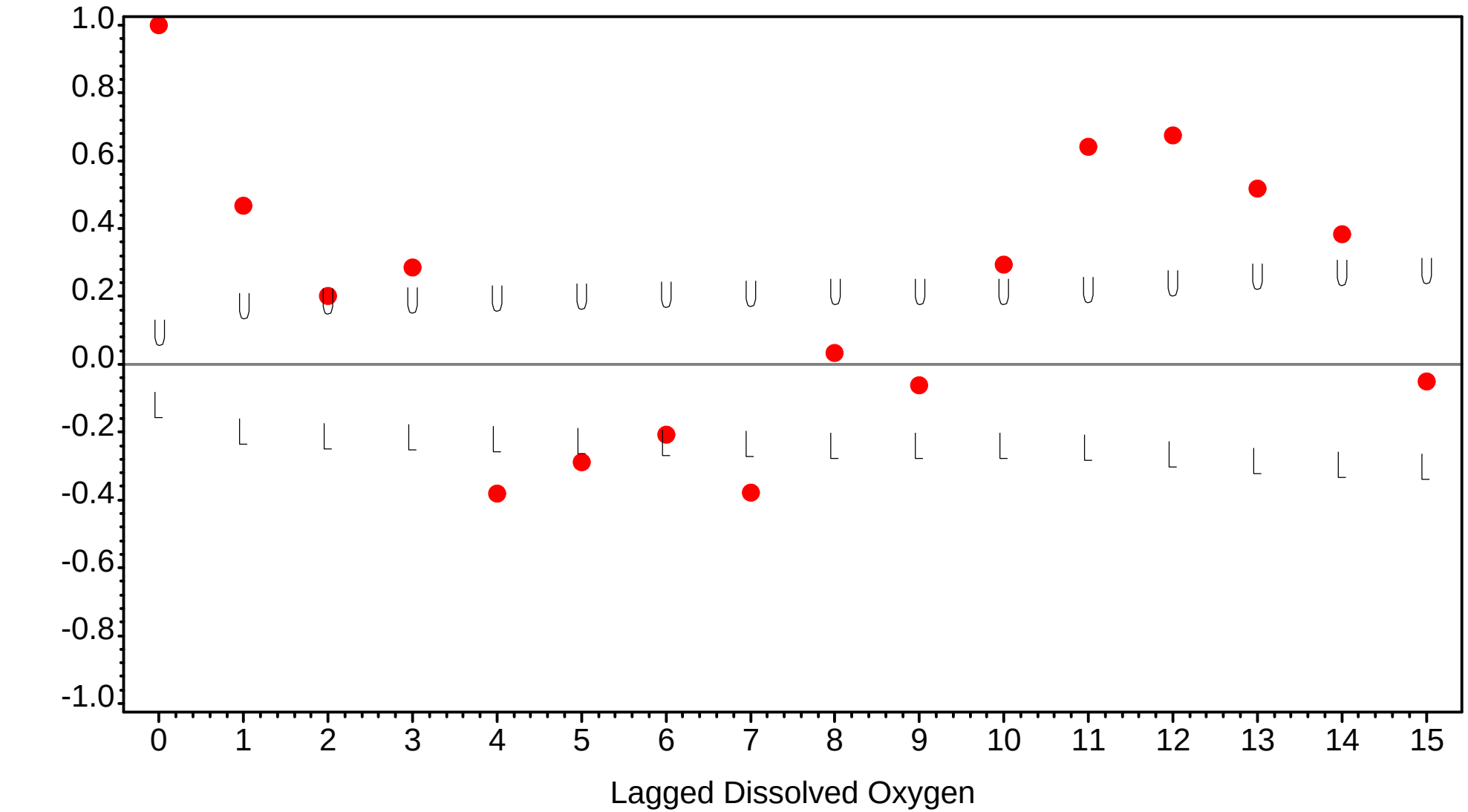
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.467	0.093	0.186	-0.186
2	0.200	0.099	0.199	-0.199
3	0.286	0.101	0.201	-0.201
4	-0.380	0.103	0.206	-0.206
5	-0.290	0.107	0.214	-0.214
6	-0.208	0.109	0.218	-0.218
7	-0.378	0.110	0.220	-0.220
8	0.034	0.114	0.228	-0.228
9	-0.061	0.114	0.228	-0.228
10	0.294	0.114	0.228	-0.228
11	0.641	0.116	0.232	-0.232
12	0.673	0.126	0.252	-0.252
13	0.518	0.136	0.272	-0.272
14	0.383	0.141	0.283	-0.283
15	-0.052	0.144	0.289	-0.289

S_21FLVEMDHL07 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

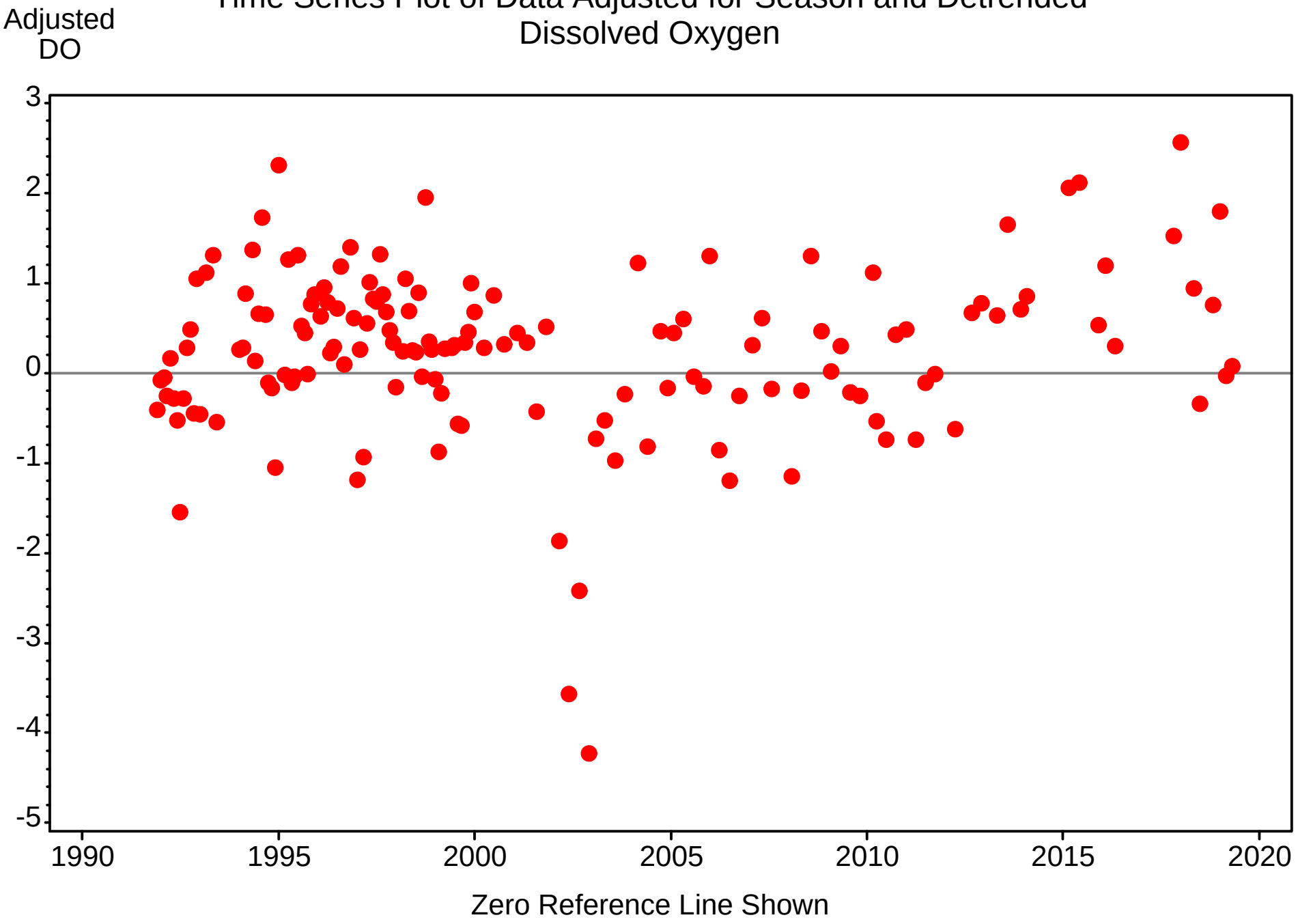
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.184	.003	0.046	-0.029

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.18418	.00341738	0.045764	-0.029412

S_21FLVEMDHL07 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



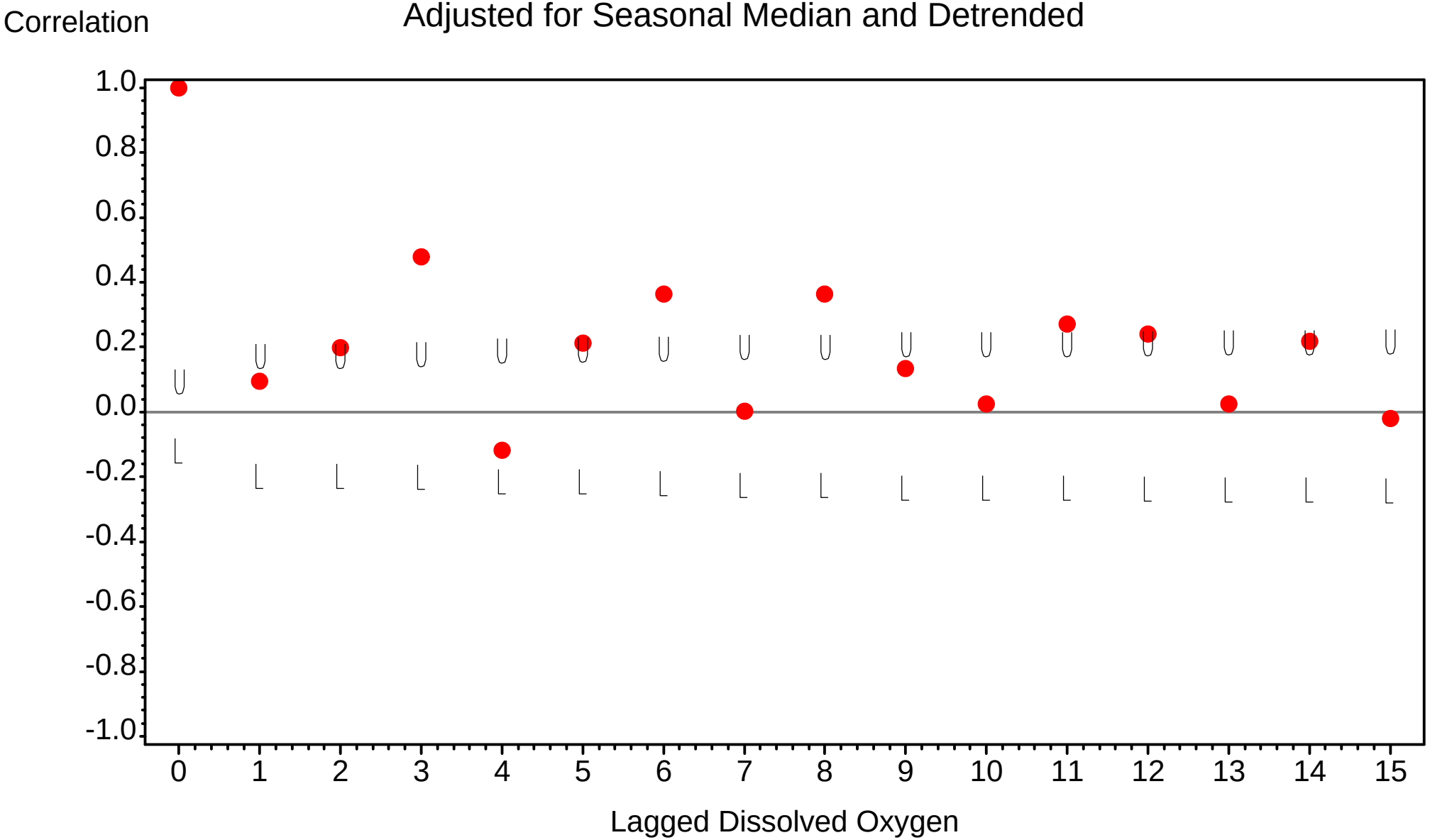
E-1061

S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.095	0.093	0.186	-0.186
2	0.198	0.093	0.186	-0.186
3	0.479	0.094	0.189	-0.189
4	-0.119	0.101	0.202	-0.202
5	0.212	0.101	0.203	-0.203
6	0.364	0.103	0.206	-0.206
7	0.002	0.106	0.213	-0.213
8	0.364	0.106	0.213	-0.213
9	0.135	0.110	0.220	-0.220
10	0.026	0.110	0.221	-0.221
11	0.271	0.110	0.221	-0.221
12	0.239	0.112	0.225	-0.225
13	0.024	0.114	0.228	-0.228
14	0.217	0.114	0.228	-0.228
15	-0.020	0.115	0.230	-0.230

S_21FLVEMDHL07 Trends Appendix

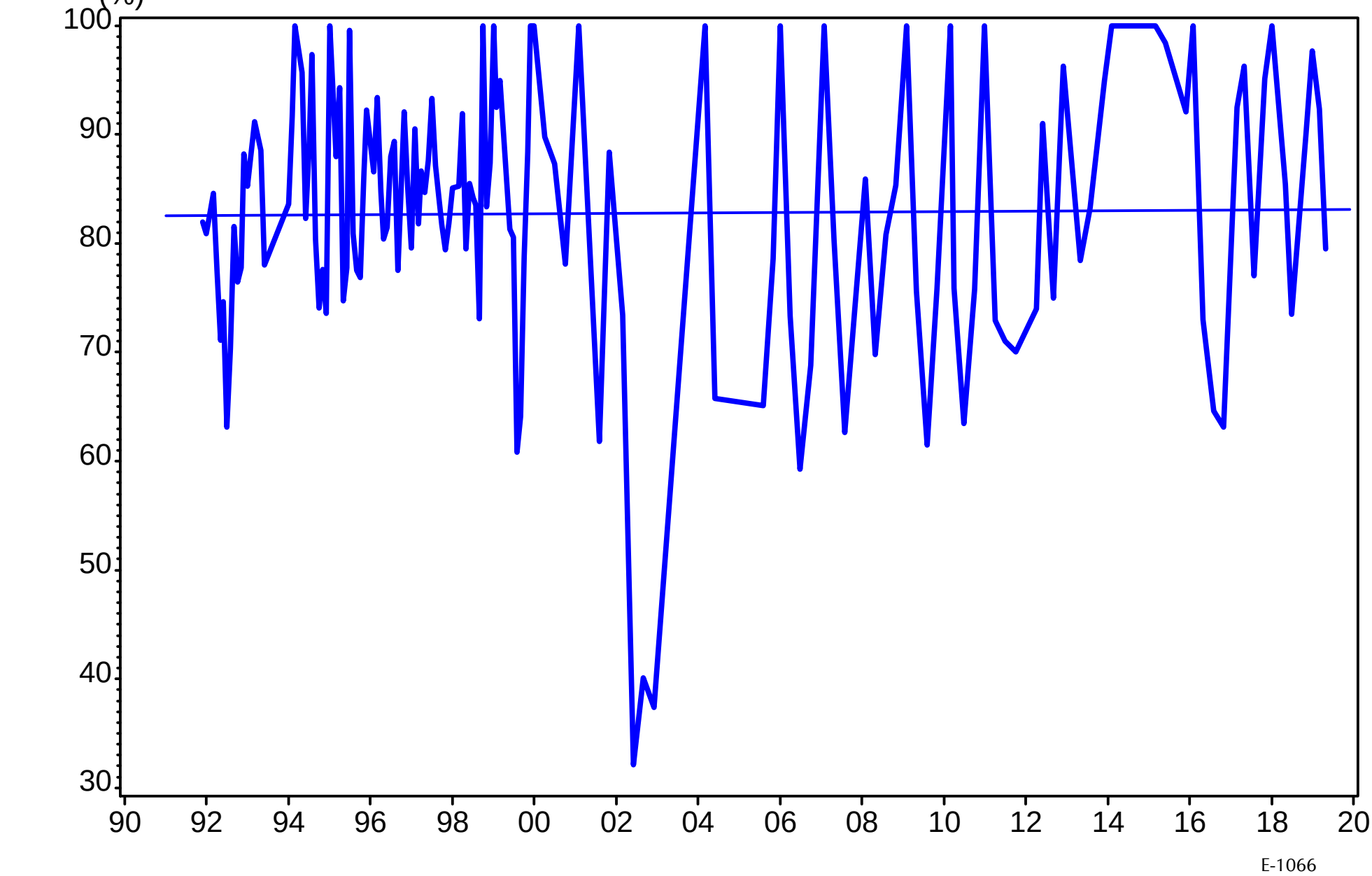
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

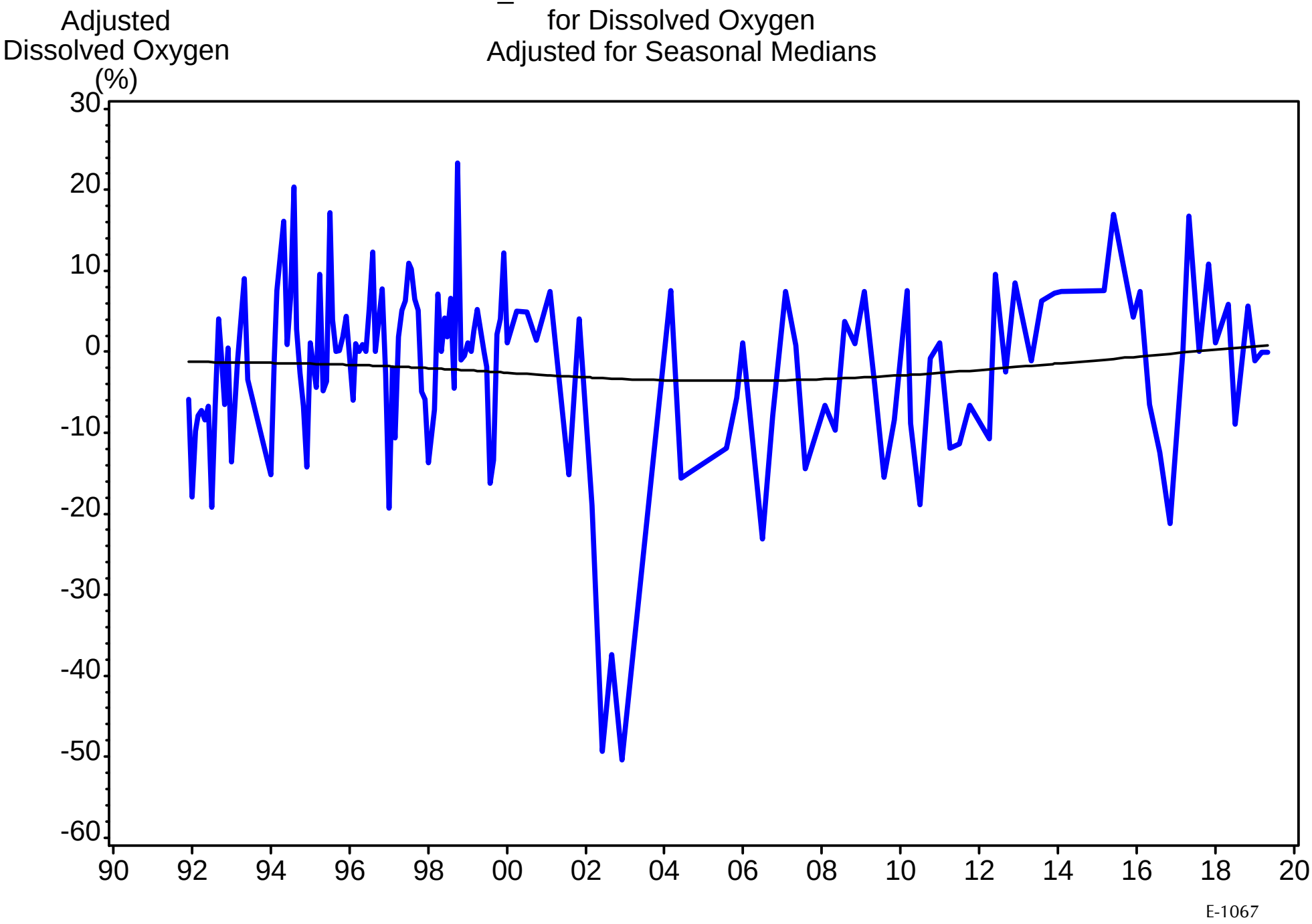
S_21FLVEMDHL07 Trends

S_21FLVEMDHL07 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1066

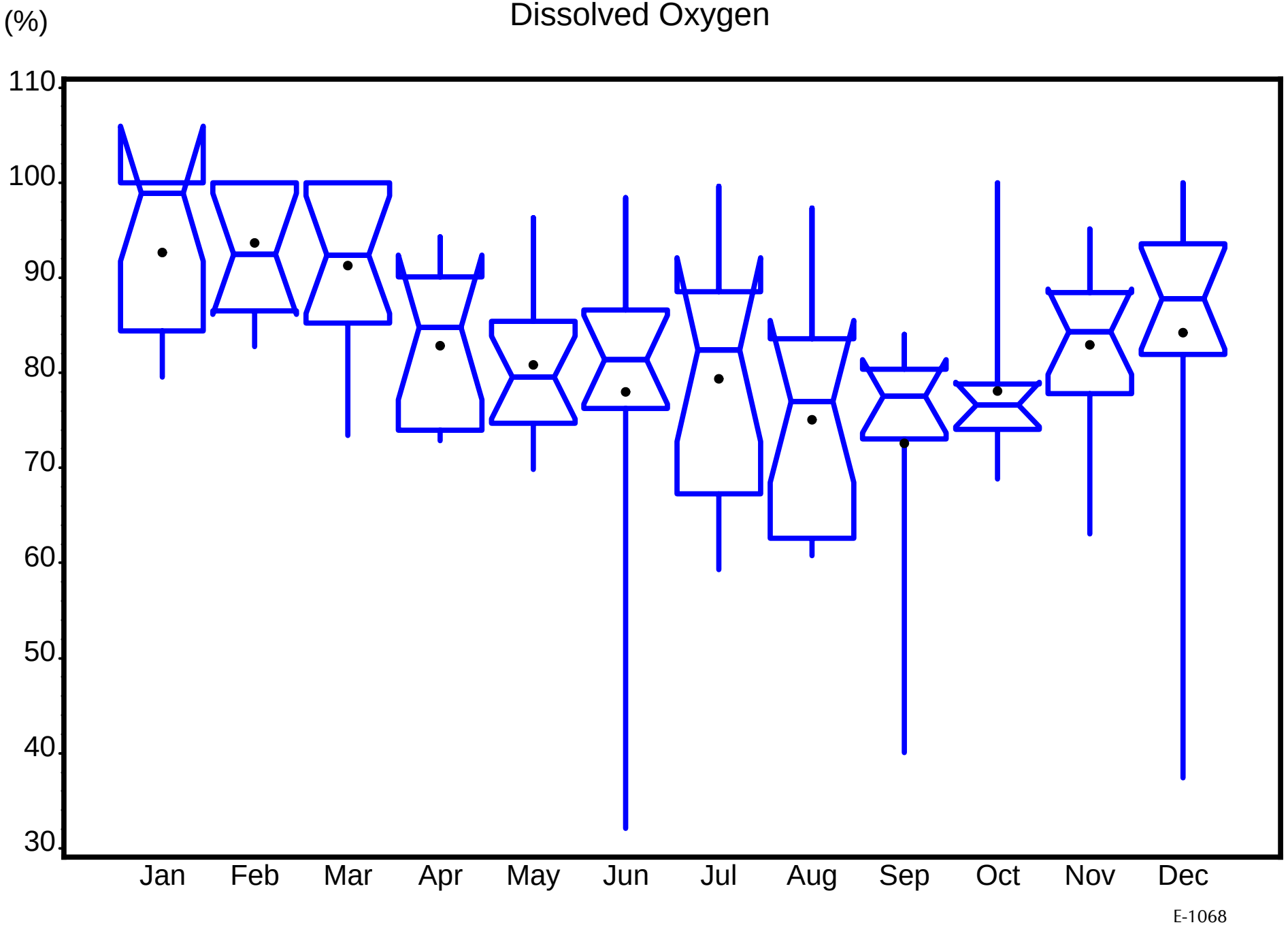
S_21FLVEMDHL07 Trends



S_21FLVEMDHL07 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



E-1068

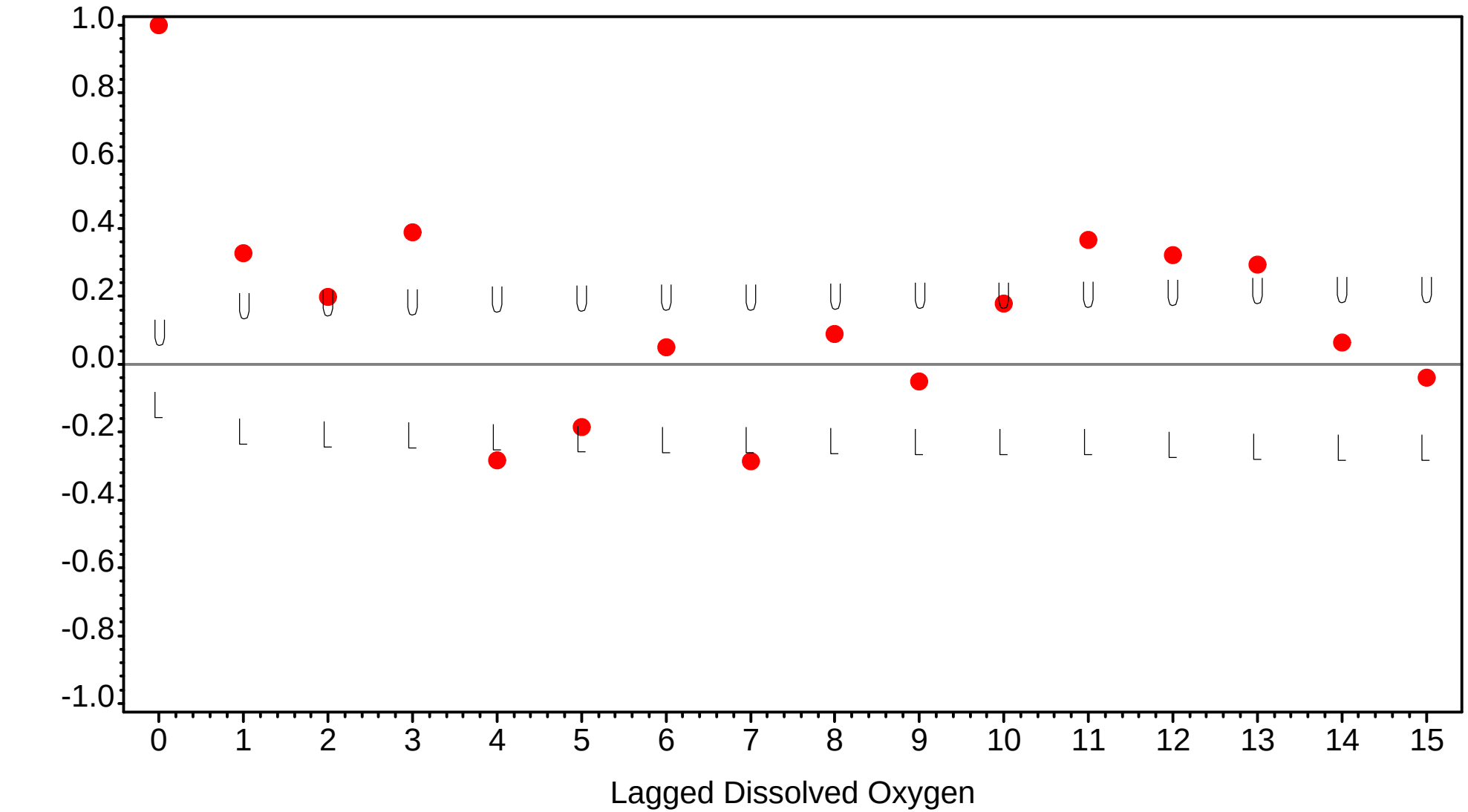
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.328	0.093	0.186	-0.186
2	0.197	0.096	0.192	-0.192
3	0.390	0.097	0.195	-0.195
4	-0.284	0.102	0.203	-0.203
5	-0.186	0.104	0.208	-0.208
6	0.051	0.105	0.210	-0.210
7	-0.286	0.105	0.210	-0.210
8	0.089	0.107	0.214	-0.214
9	-0.050	0.107	0.215	-0.215
10	0.178	0.107	0.215	-0.215
11	0.365	0.108	0.217	-0.217
12	0.322	0.112	0.224	-0.224
13	0.294	0.114	0.229	-0.229
14	0.063	0.117	0.233	-0.233
15	-0.041	0.117	0.233	-0.233

S_21FLVEMDHL07 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

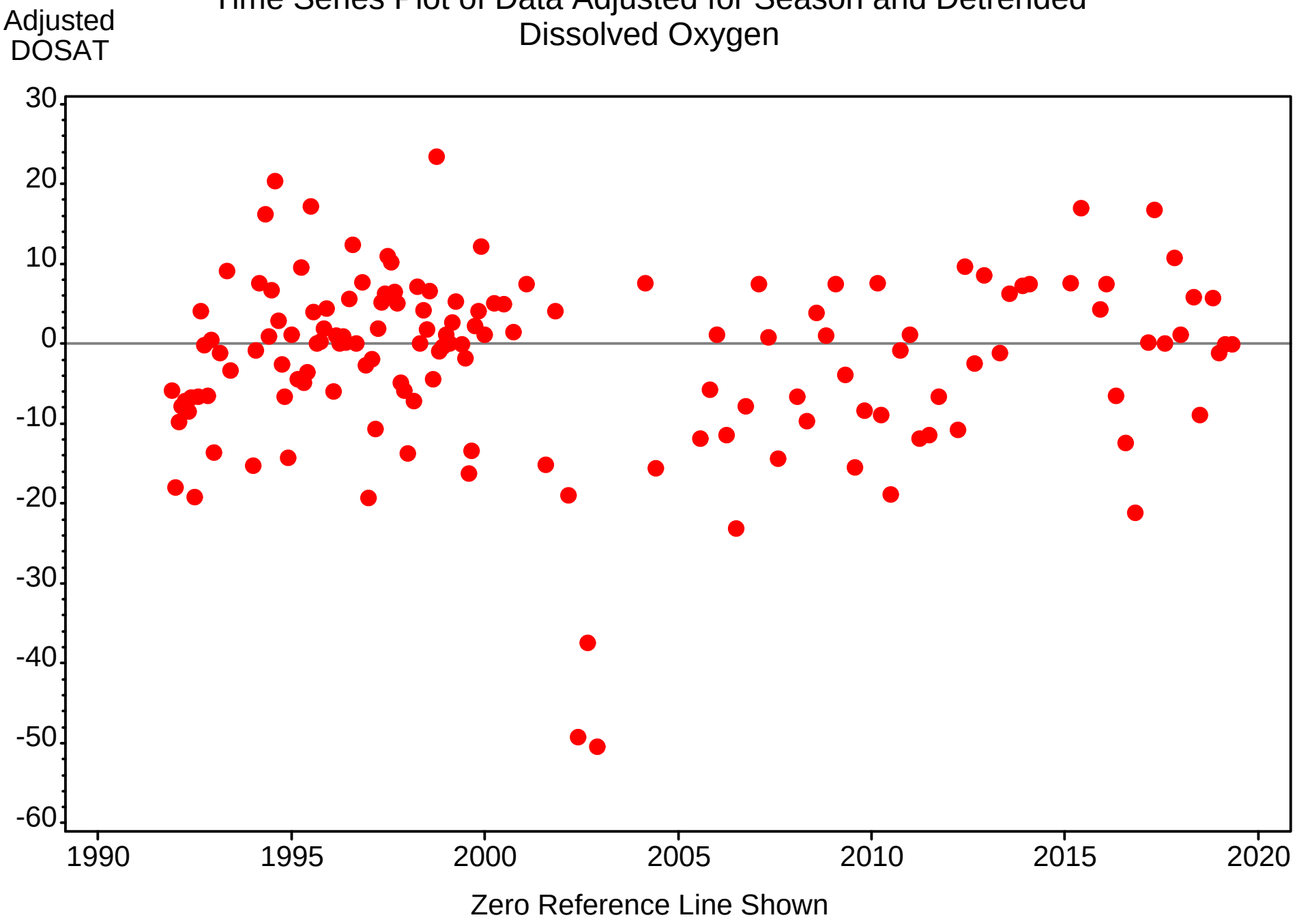
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
.008	0.91	0.929	0

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
.00826446	0.91015	0.92863	0

S_21FLVEMDHL07 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



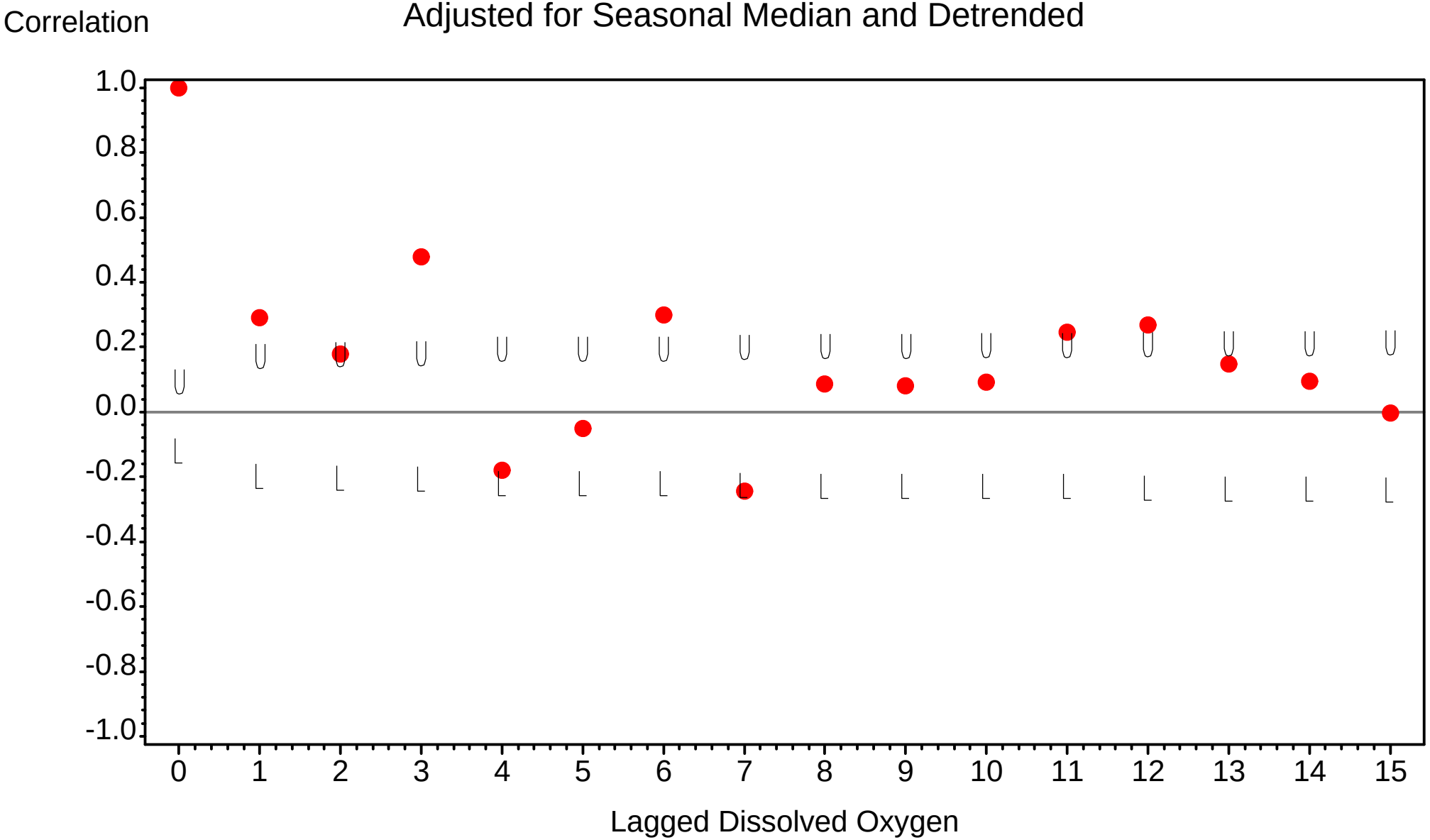
E-1073

S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.290	0.093	0.186	-0.186
2	0.179	0.095	0.191	-0.191
3	0.478	0.096	0.193	-0.193
4	-0.179	0.103	0.206	-0.206
5	-0.050	0.104	0.208	-0.208
6	0.299	0.104	0.208	-0.208
7	-0.243	0.106	0.213	-0.213
8	0.085	0.108	0.216	-0.216
9	0.080	0.108	0.216	-0.216
10	0.091	0.108	0.217	-0.217
11	0.247	0.109	0.217	-0.217
12	0.268	0.110	0.220	-0.220
13	0.148	0.112	0.224	-0.224
14	0.095	0.113	0.225	-0.225
15	-0.003	0.113	0.226	-0.226

S_21FLVEMDHL07 Trends Appendix

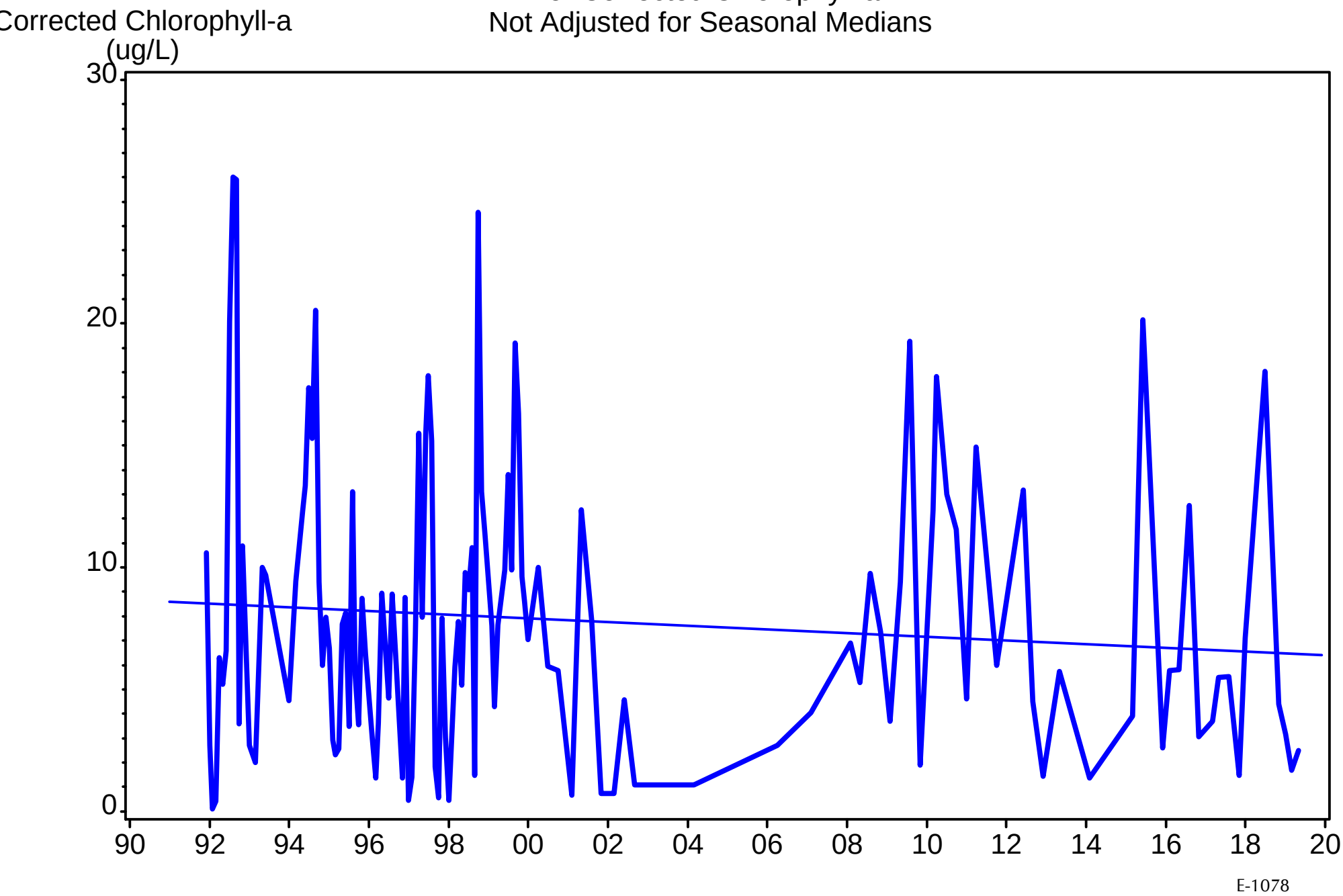
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

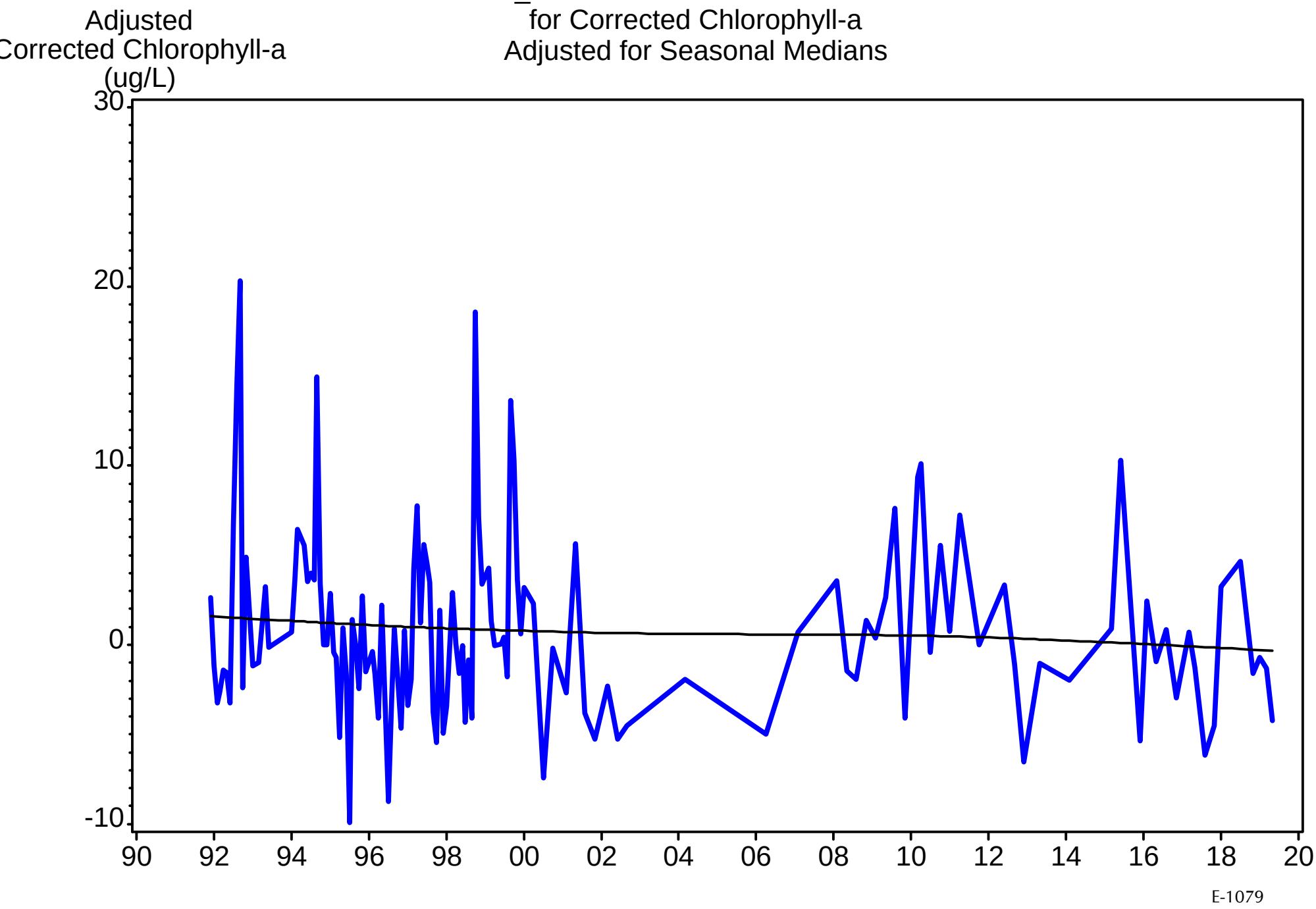
S_21FLVEMDHL07 Trends

S_21FLVEMDHL07 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



E-1078

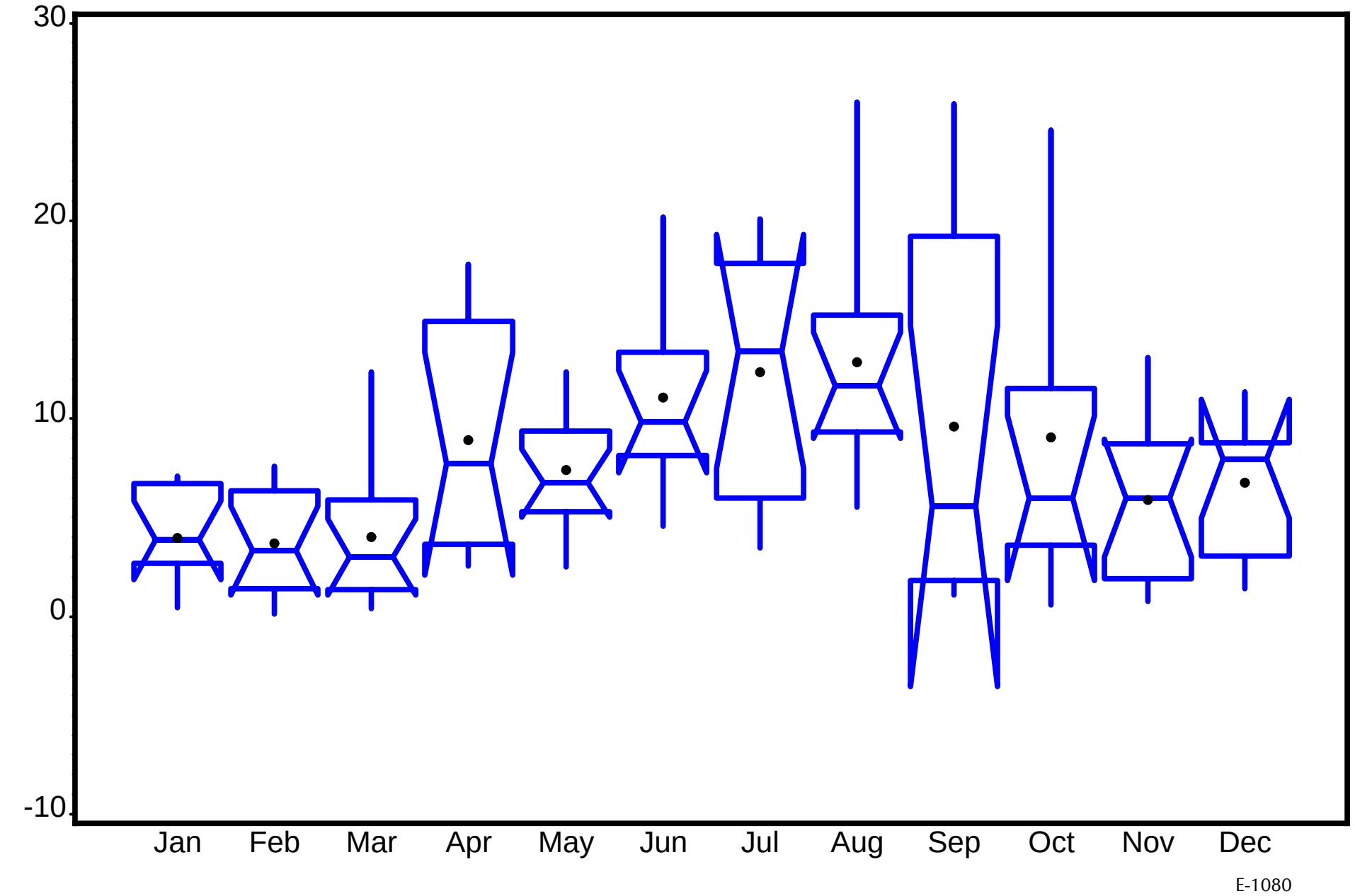
S_21FLVEMDHL07 Trends



S_21FLVEMDHL07 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a



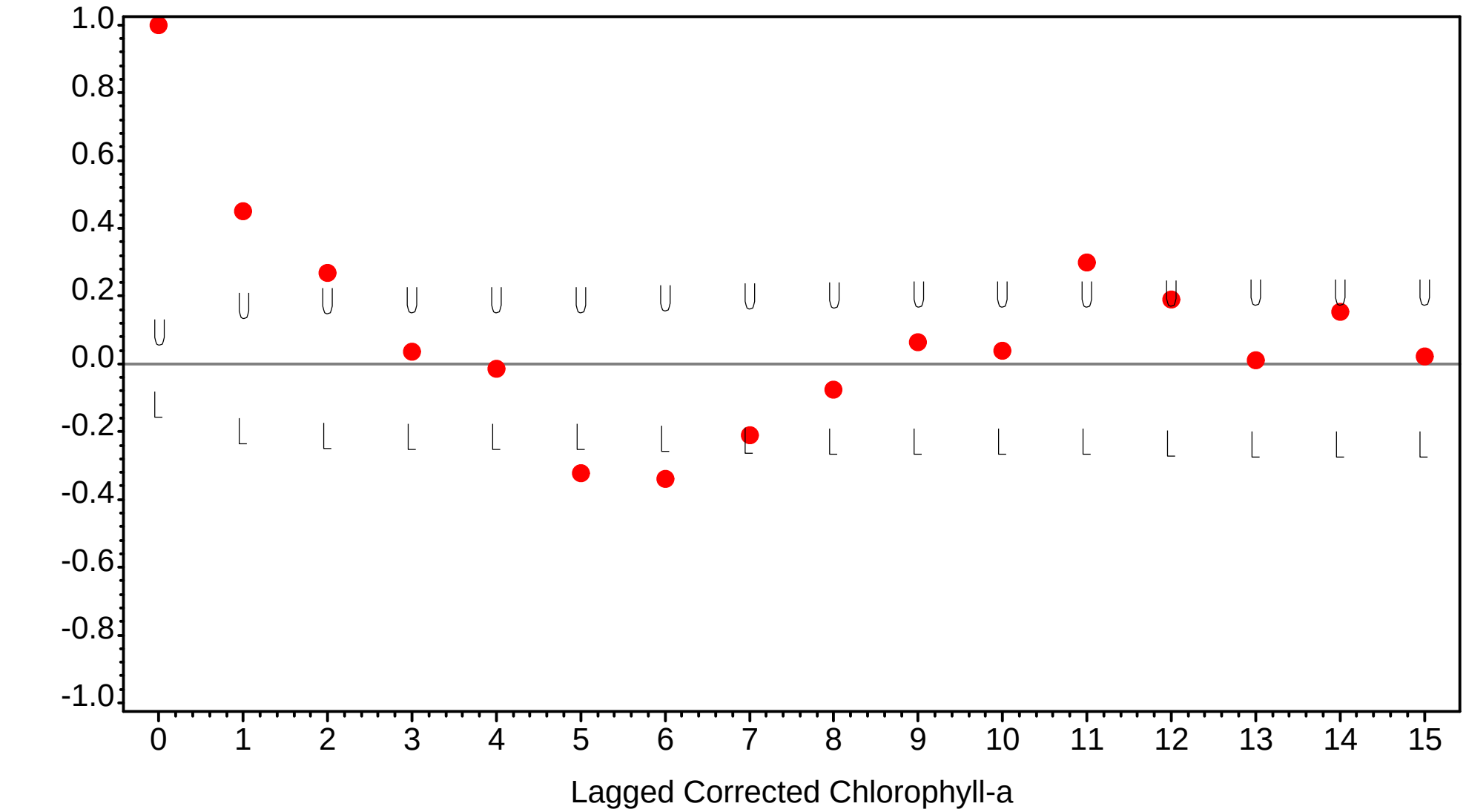
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.449	0.093	0.186	-0.186
2	0.268	0.099	0.198	-0.198
3	0.037	0.101	0.202	-0.202
4	-0.015	0.101	0.202	-0.202
5	-0.323	0.101	0.202	-0.202
6	-0.339	0.104	0.208	-0.208
7	-0.211	0.107	0.214	-0.214
8	-0.075	0.108	0.216	-0.216
9	0.065	0.108	0.217	-0.217
10	0.040	0.109	0.217	-0.217
11	0.299	0.109	0.217	-0.217
12	0.191	0.111	0.222	-0.222
13	0.012	0.112	0.224	-0.224
14	0.154	0.112	0.224	-0.224
15	0.023	0.112	0.225	-0.225

S_21FLVEMDHL07 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1082

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

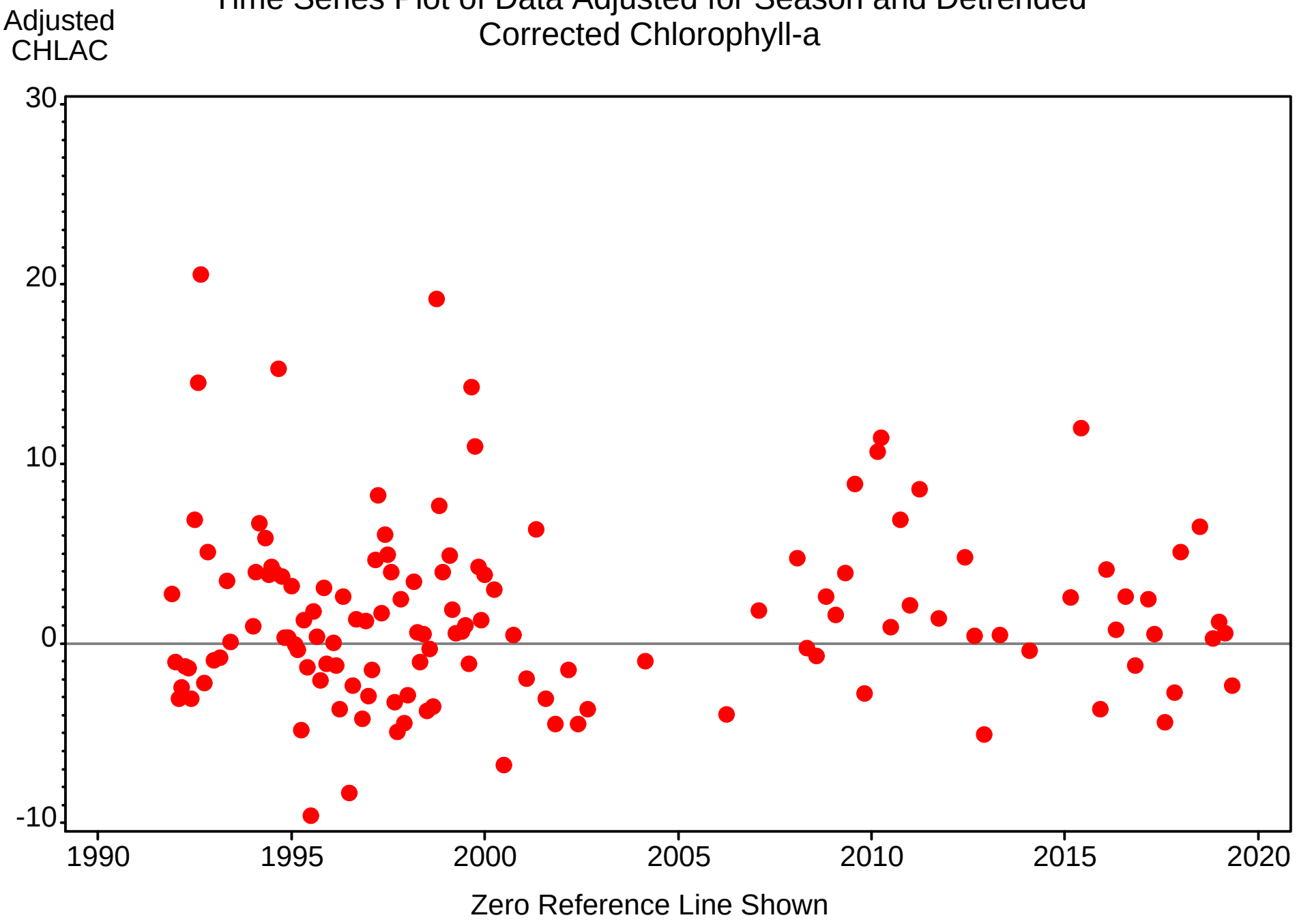
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.072	0.299	0.4	-0.064

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.072059	0.29904	0.39997	-0.064491

S_21FLVEMDHL07 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



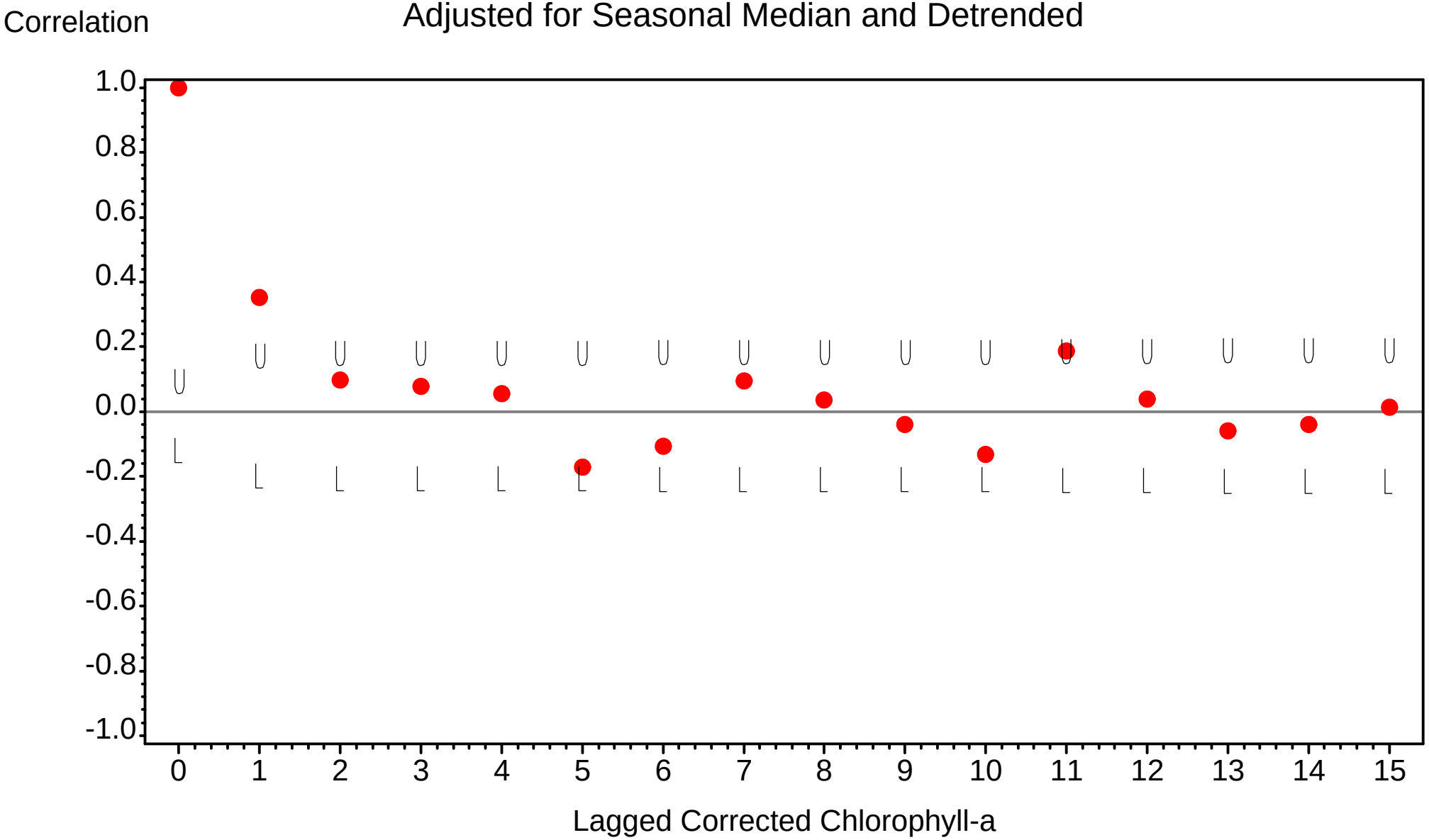
S_21FLVEMDHL07 Trends Appendix

Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.352	0.093	0.186	-0.186
2	0.097	0.097	0.193	-0.193
3	0.078	0.097	0.194	-0.194
4	0.056	0.097	0.194	-0.194
5	-0.172	0.097	0.194	-0.194
6	-0.108	0.098	0.196	-0.196
7	0.096	0.098	0.197	-0.197
8	0.035	0.099	0.197	-0.197
9	-0.039	0.099	0.197	-0.197
10	-0.131	0.099	0.197	-0.197
11	0.188	0.099	0.198	-0.198
12	0.039	0.100	0.200	-0.200
13	-0.060	0.100	0.201	-0.201
14	-0.039	0.100	0.201	-0.201
15	0.013	0.100	0.201	-0.201

S_21FLVEMDHL07 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended

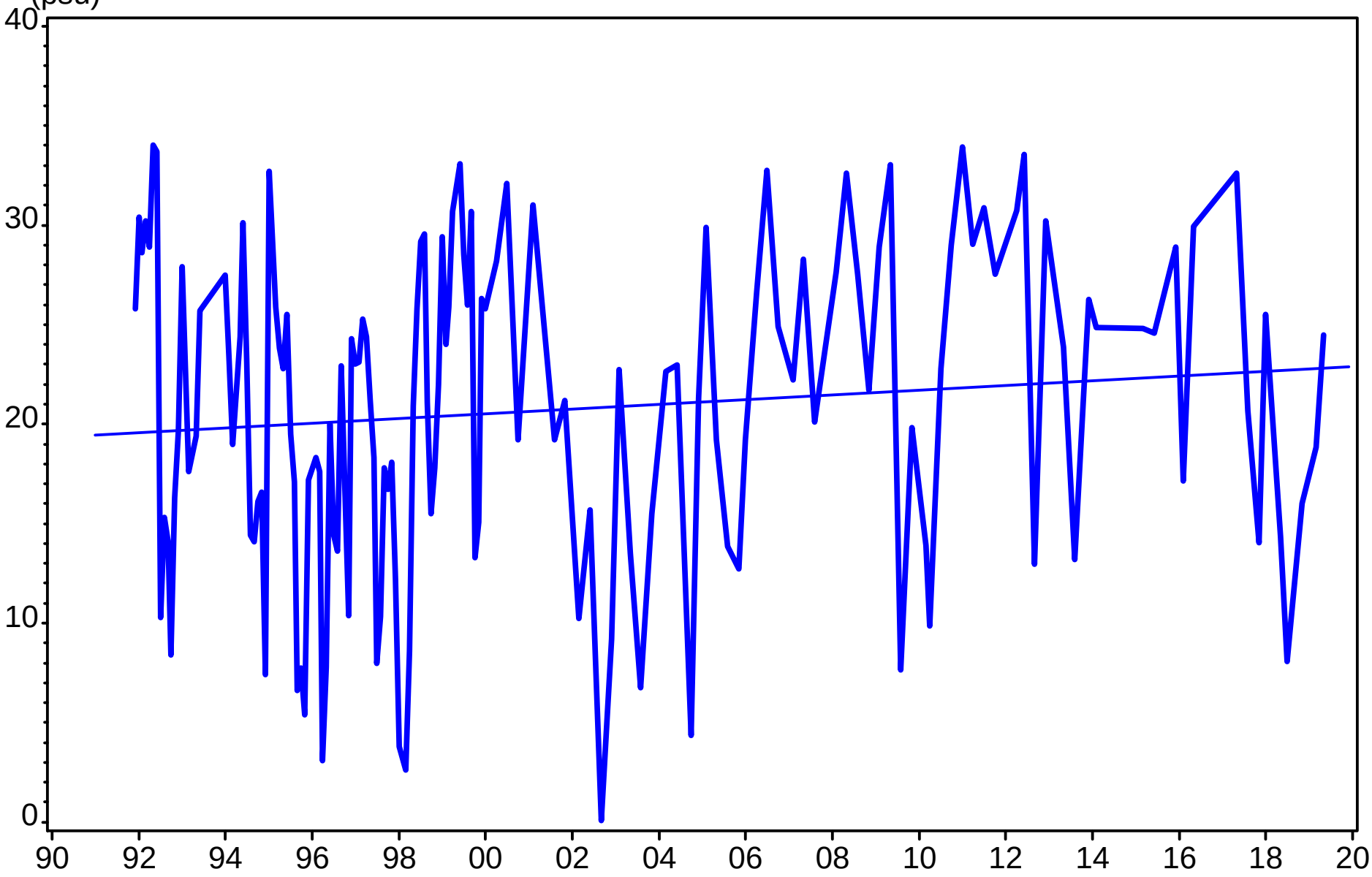


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1087

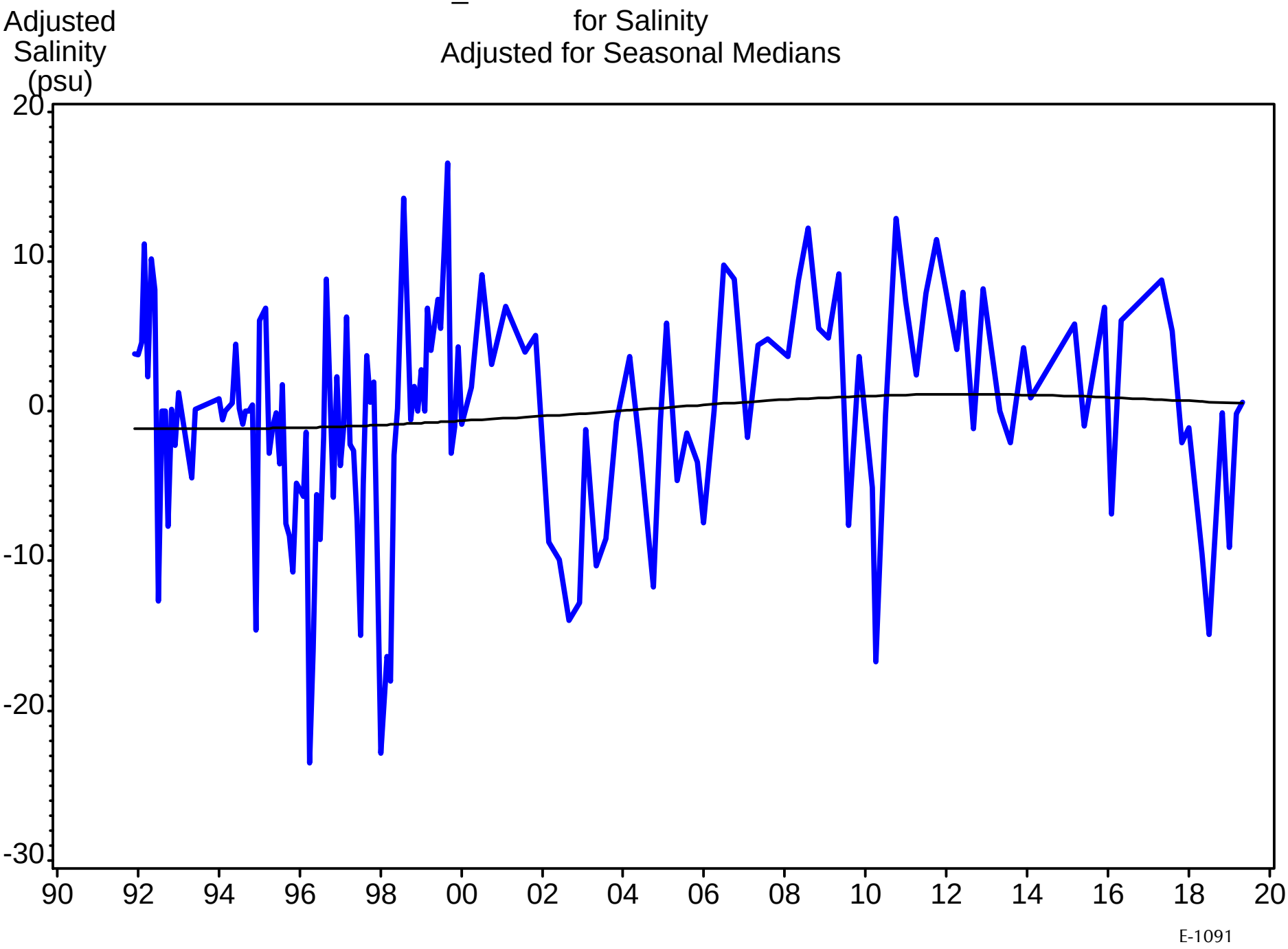
S_21FLVEMDHL07 Trends

S_21FLVEMDHL07 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



E-1090

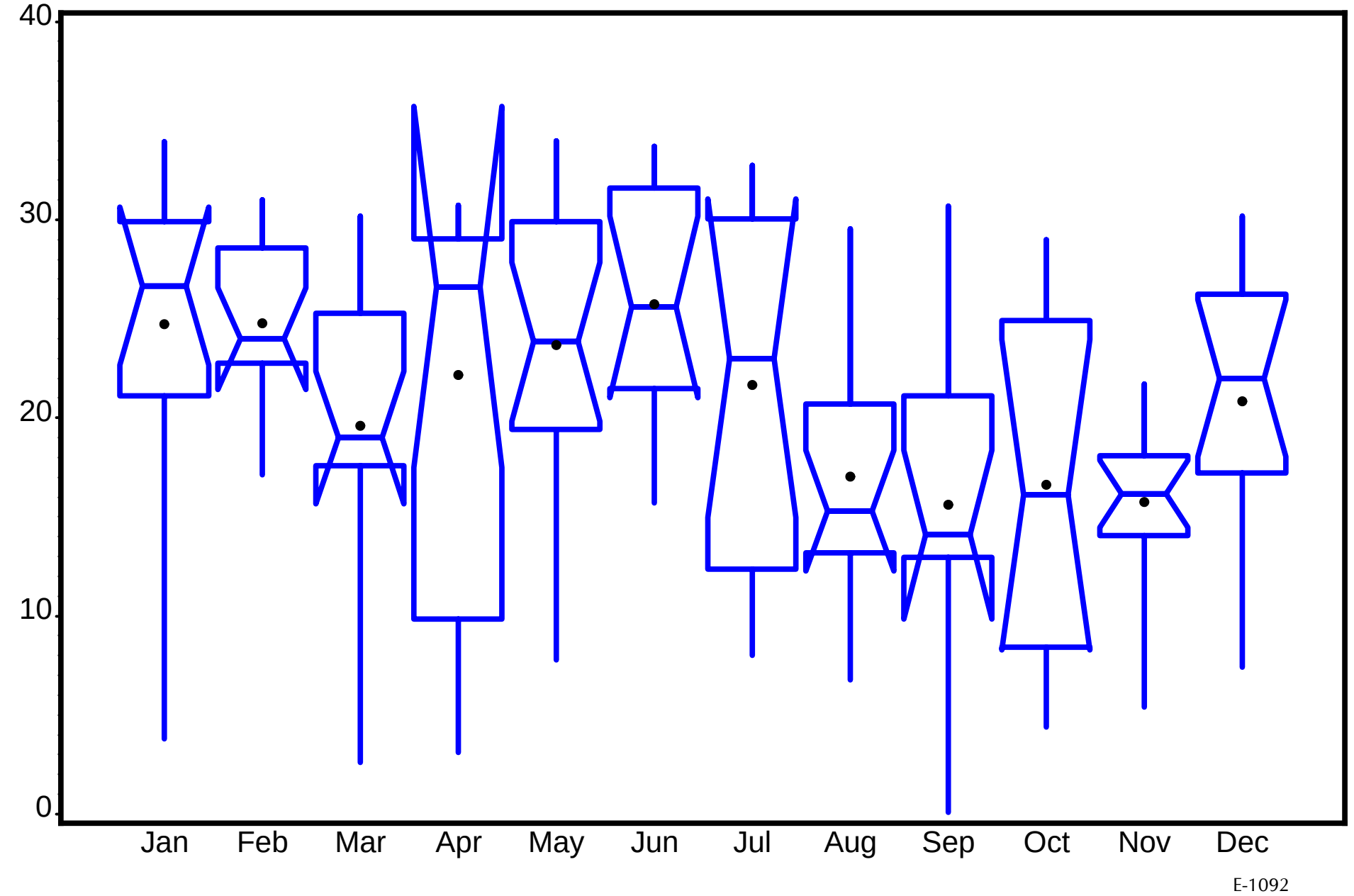
S_21FLVEMDHL07 Trends



S_21FLVEMDHL07 Trends Appendix

Seasonal Univariate Statistics

Salinity



E-1092

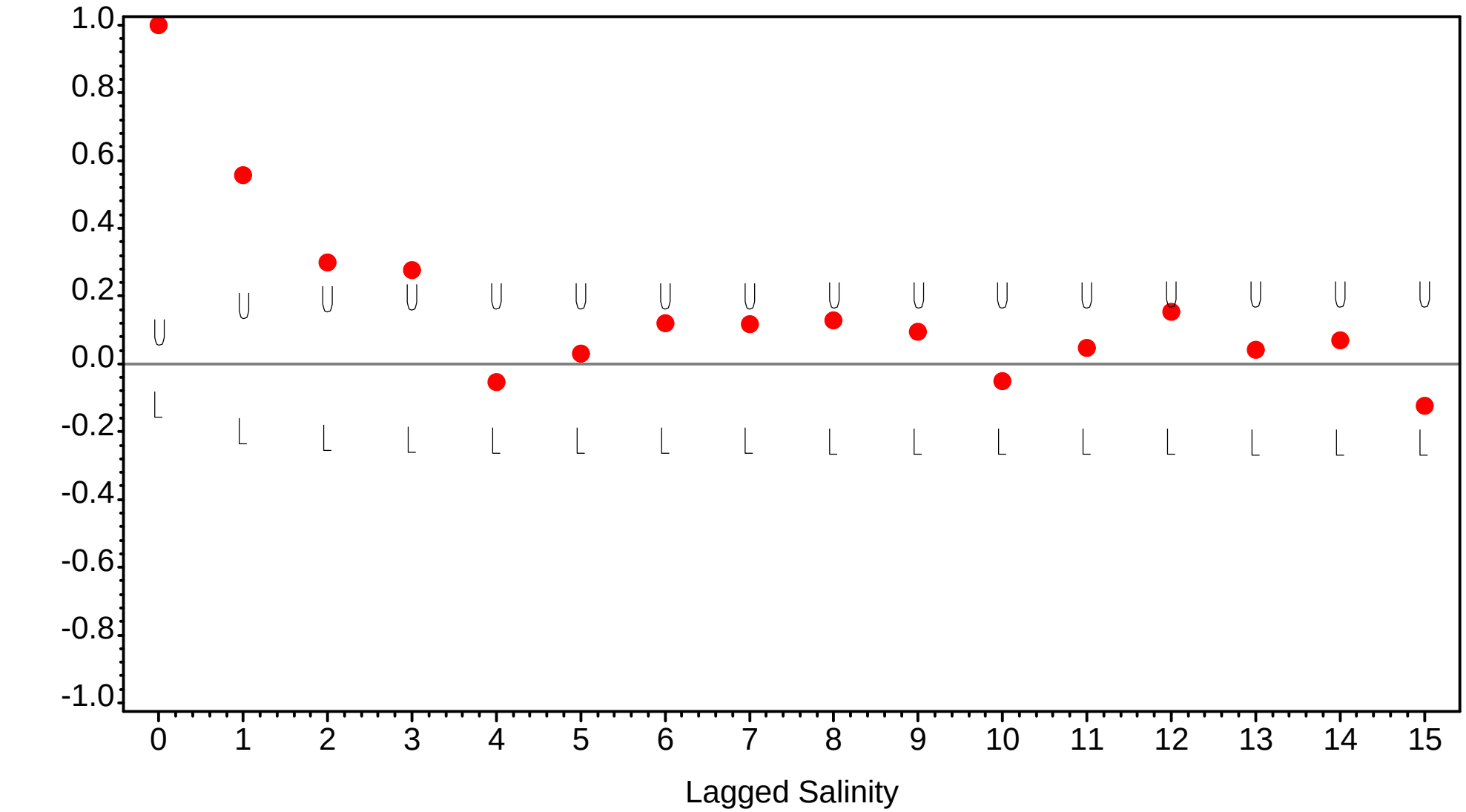
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.558	0.093	0.186	-0.186
2	0.299	0.102	0.204	-0.204
3	0.277	0.105	0.209	-0.209
4	-0.054	0.107	0.213	-0.213
5	0.031	0.107	0.213	-0.213
6	0.121	0.107	0.213	-0.213
7	0.117	0.107	0.214	-0.214
8	0.127	0.107	0.215	-0.215
9	0.094	0.108	0.216	-0.216
10	-0.050	0.108	0.216	-0.216
11	0.047	0.108	0.216	-0.216
12	0.154	0.108	0.217	-0.217
13	0.042	0.109	0.218	-0.218
14	0.069	0.109	0.218	-0.218
15	-0.123	0.109	0.218	-0.218

S_21FLVEMDHL07 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

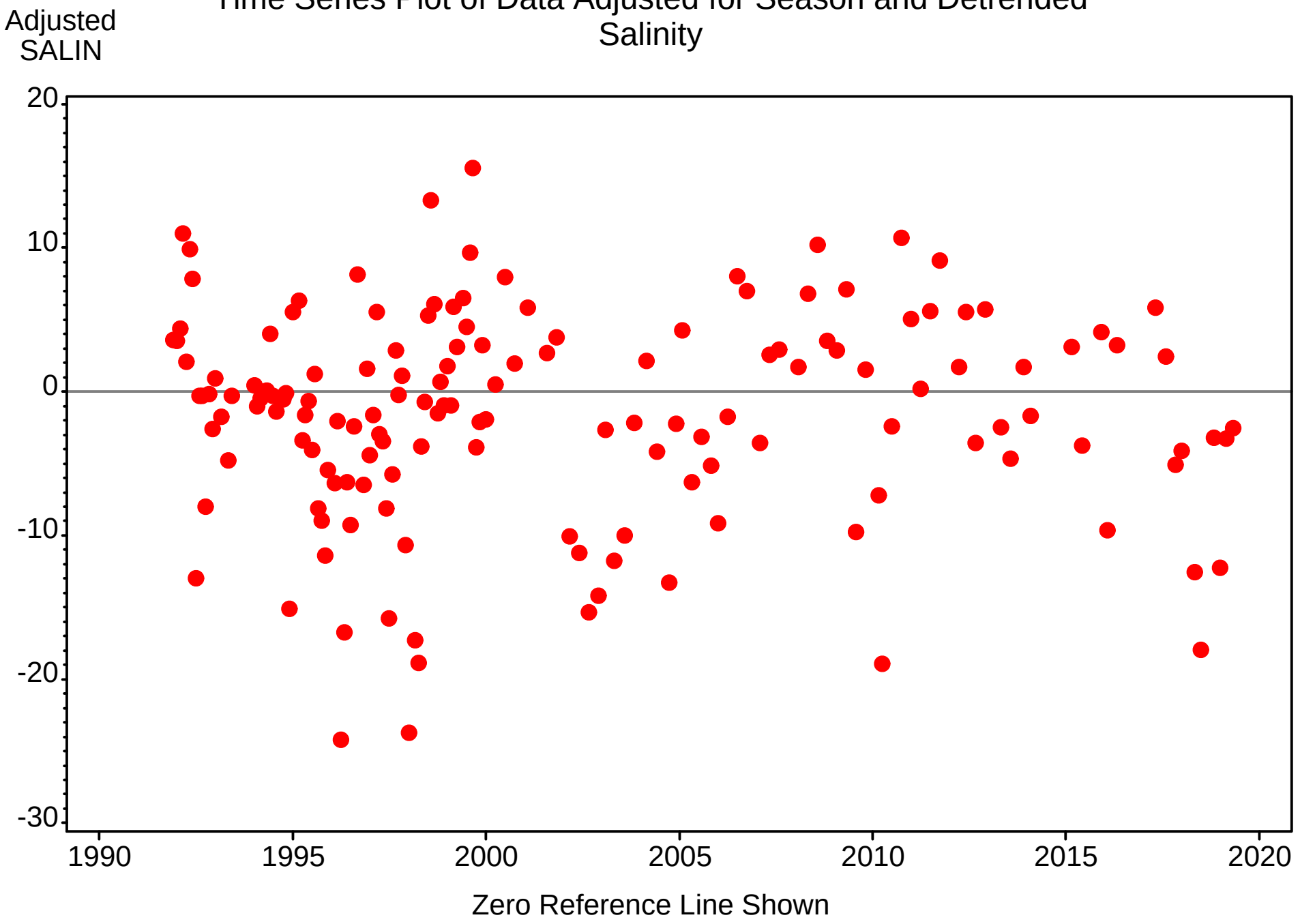
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.073	0.25	0.428	0.107

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.072528	0.25004	0.42819	0.10708

S_21FLVEMDHL07 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



E-1097

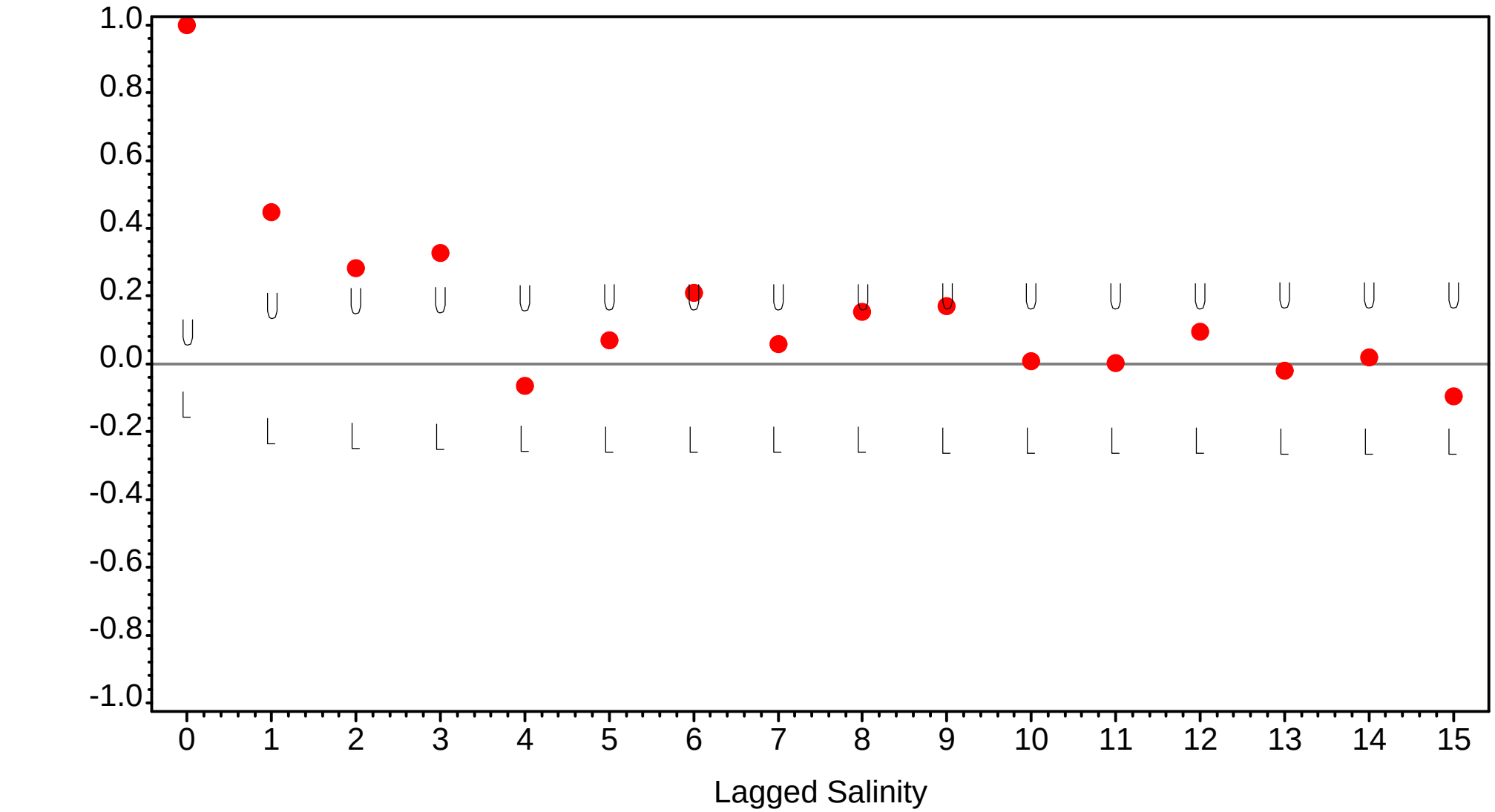
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.448	0.093	0.186	-0.186
2	0.282	0.099	0.198	-0.198
3	0.328	0.101	0.202	-0.202
4	-0.064	0.104	0.208	-0.208
5	0.070	0.104	0.209	-0.209
6	0.210	0.104	0.209	-0.209
7	0.058	0.106	0.211	-0.211
8	0.153	0.106	0.211	-0.211
9	0.169	0.106	0.213	-0.213
10	0.009	0.107	0.214	-0.214
11	0.002	0.107	0.214	-0.214
12	0.096	0.107	0.214	-0.214
13	-0.021	0.107	0.215	-0.215
14	0.019	0.107	0.215	-0.215
15	-0.097	0.107	0.215	-0.215

S_21FLVEMDHL07 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended



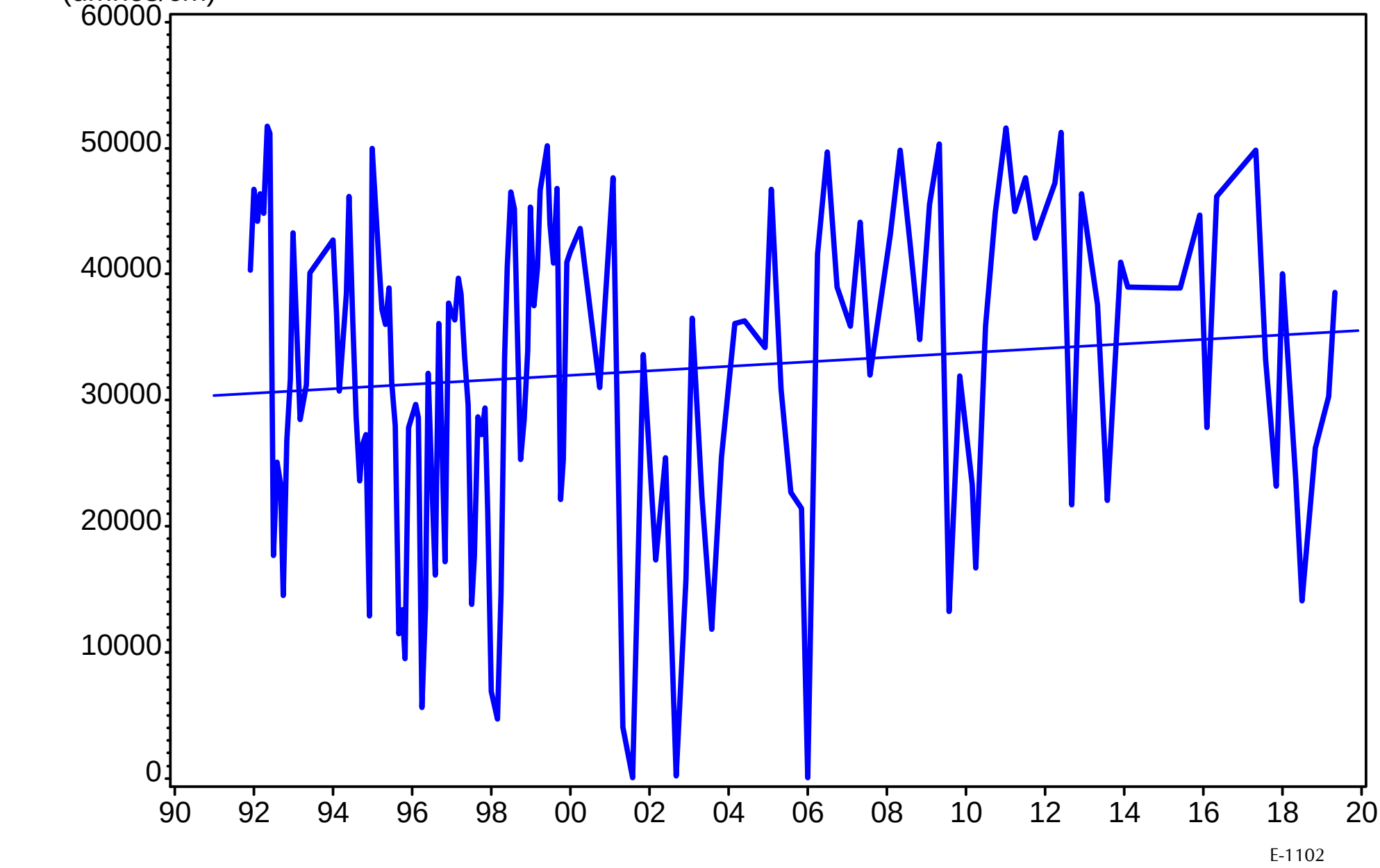
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1099

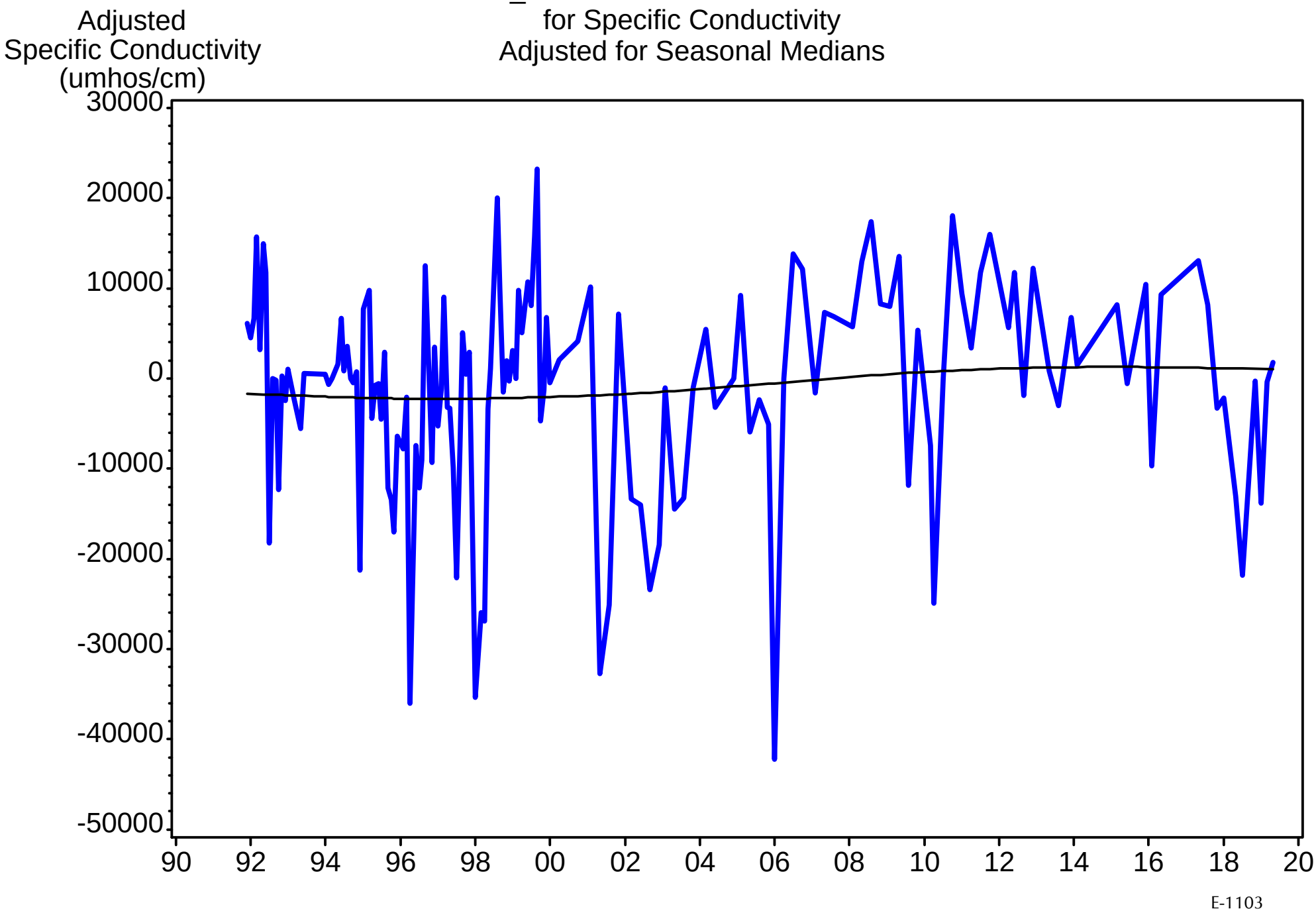
S_21FLVEMDHL07 Trends

S_21FLVEMDHL07 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



E-1102

S_21FLVEMDHL07 Trends

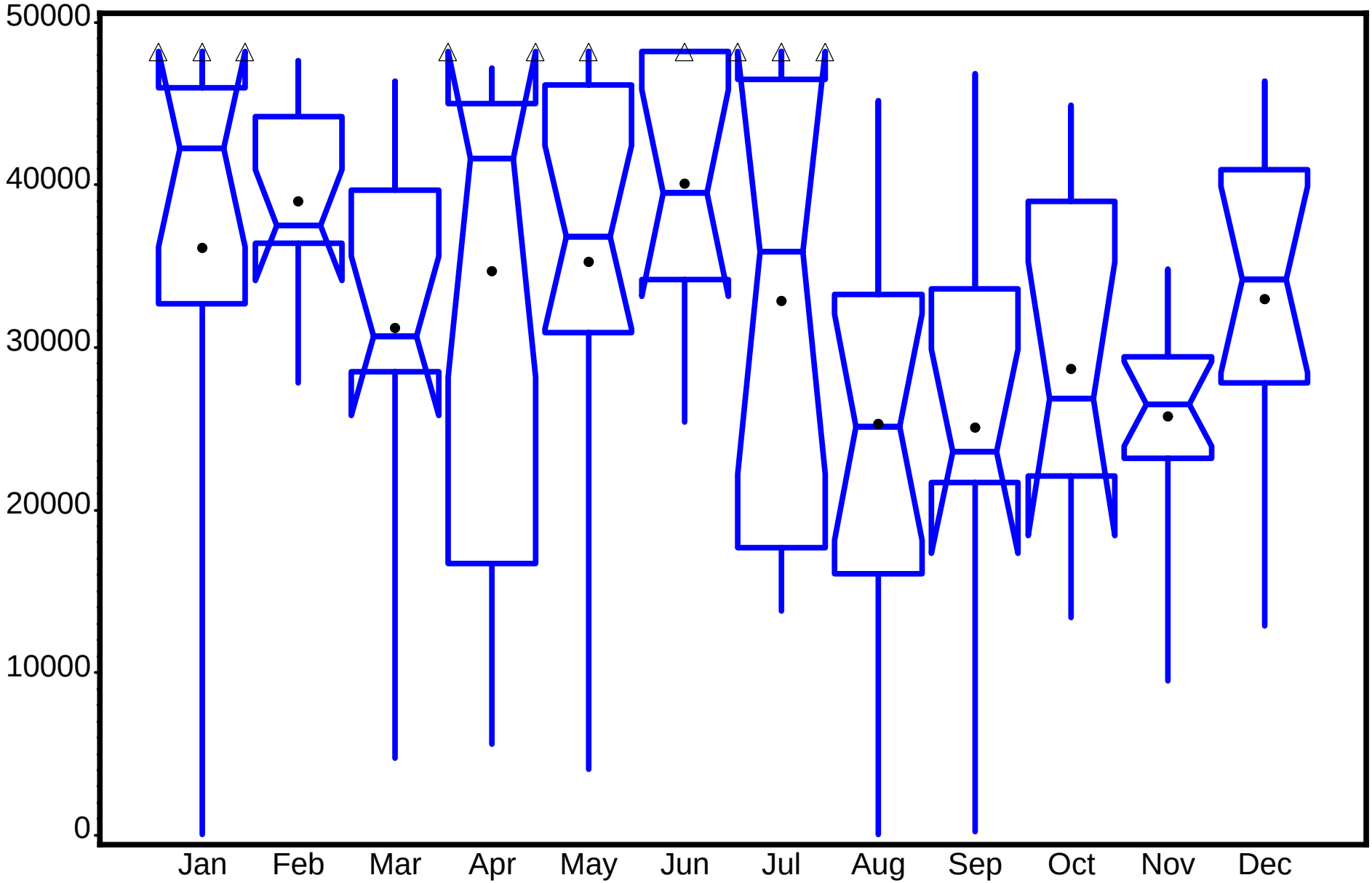


S_21FLVEMDHL07 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



E-1104

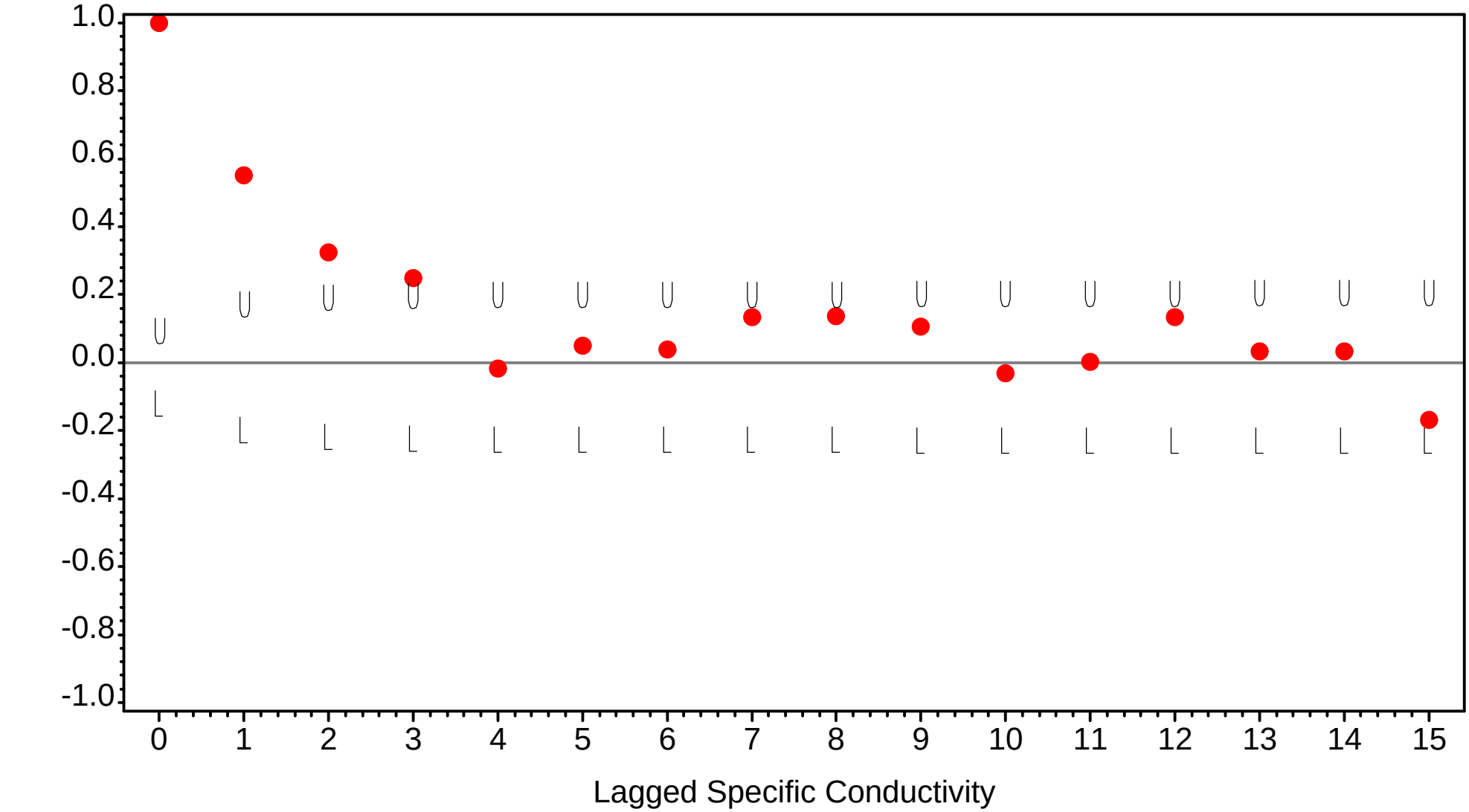
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.550	0.093	0.186	-0.186
2	0.323	0.102	0.204	-0.204
3	0.249	0.105	0.209	-0.209
4	-0.018	0.106	0.213	-0.213
5	0.051	0.106	0.213	-0.213
6	0.039	0.106	0.213	-0.213
7	0.135	0.106	0.213	-0.213
8	0.136	0.107	0.214	-0.214
9	0.105	0.107	0.215	-0.215
10	-0.031	0.108	0.216	-0.216
11	0.002	0.108	0.216	-0.216
12	0.135	0.108	0.216	-0.216
13	0.032	0.108	0.217	-0.217
14	0.032	0.108	0.217	-0.217
15	-0.169	0.108	0.217	-0.217

S_21FLVEMDHL07 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

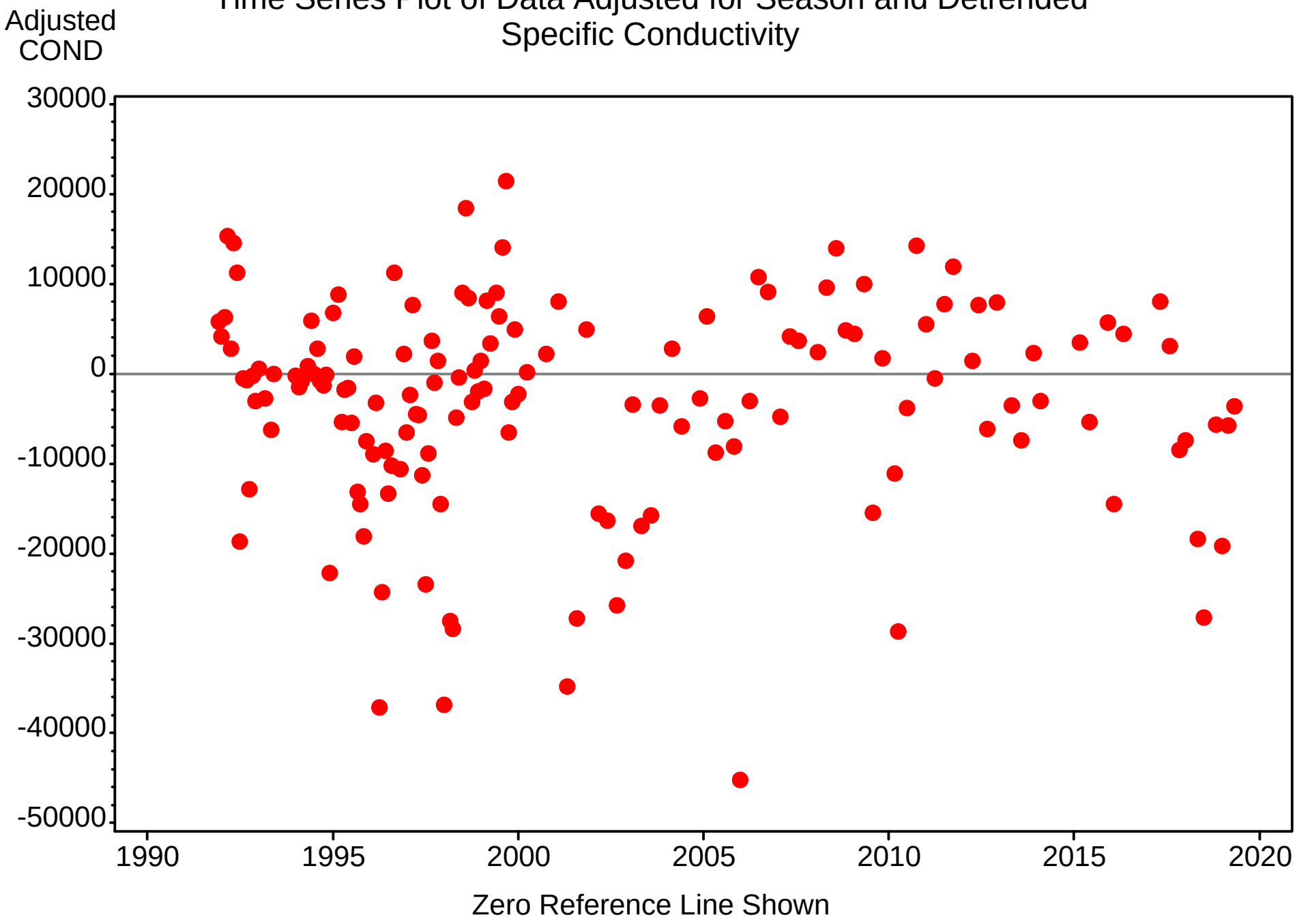
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.087	0.169	0.316	185.539

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.087197	0.16902	0.31573	185.539

S_21FLVEMDHL07 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity



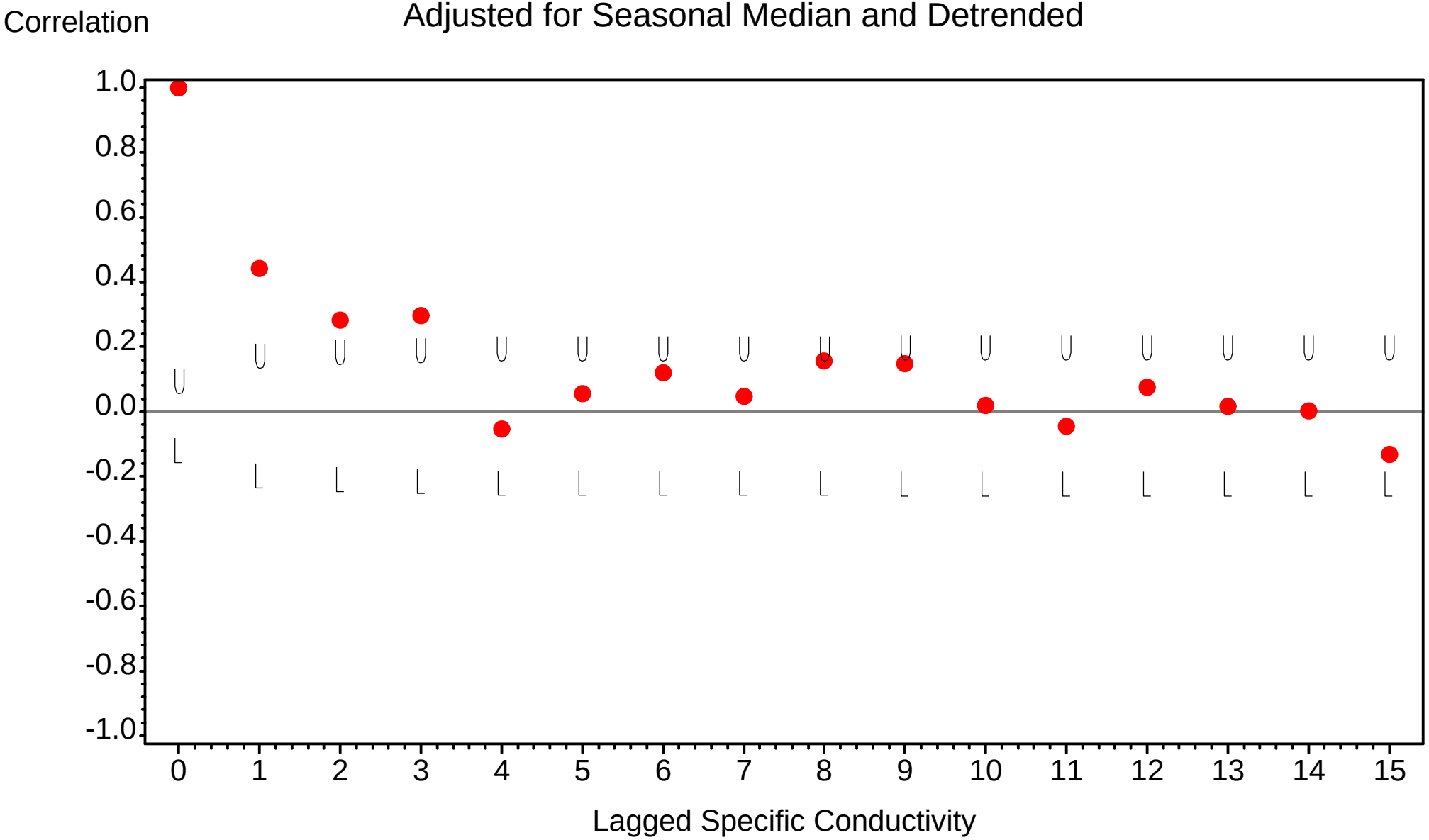
E-1109

S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.441	0.093	0.186	-0.186
2	0.281	0.099	0.197	-0.197
3	0.296	0.101	0.202	-0.202
4	-0.053	0.103	0.207	-0.207
5	0.056	0.104	0.207	-0.207
6	0.119	0.104	0.207	-0.207
7	0.047	0.104	0.208	-0.208
8	0.156	0.104	0.208	-0.208
9	0.148	0.105	0.209	-0.209
10	0.018	0.105	0.211	-0.211
11	-0.045	0.105	0.211	-0.211
12	0.076	0.105	0.211	-0.211
13	0.017	0.106	0.211	-0.211
14	0.001	0.106	0.211	-0.211
15	-0.131	0.106	0.211	-0.211

S_21FLVEMDHL07 Trends Appendix

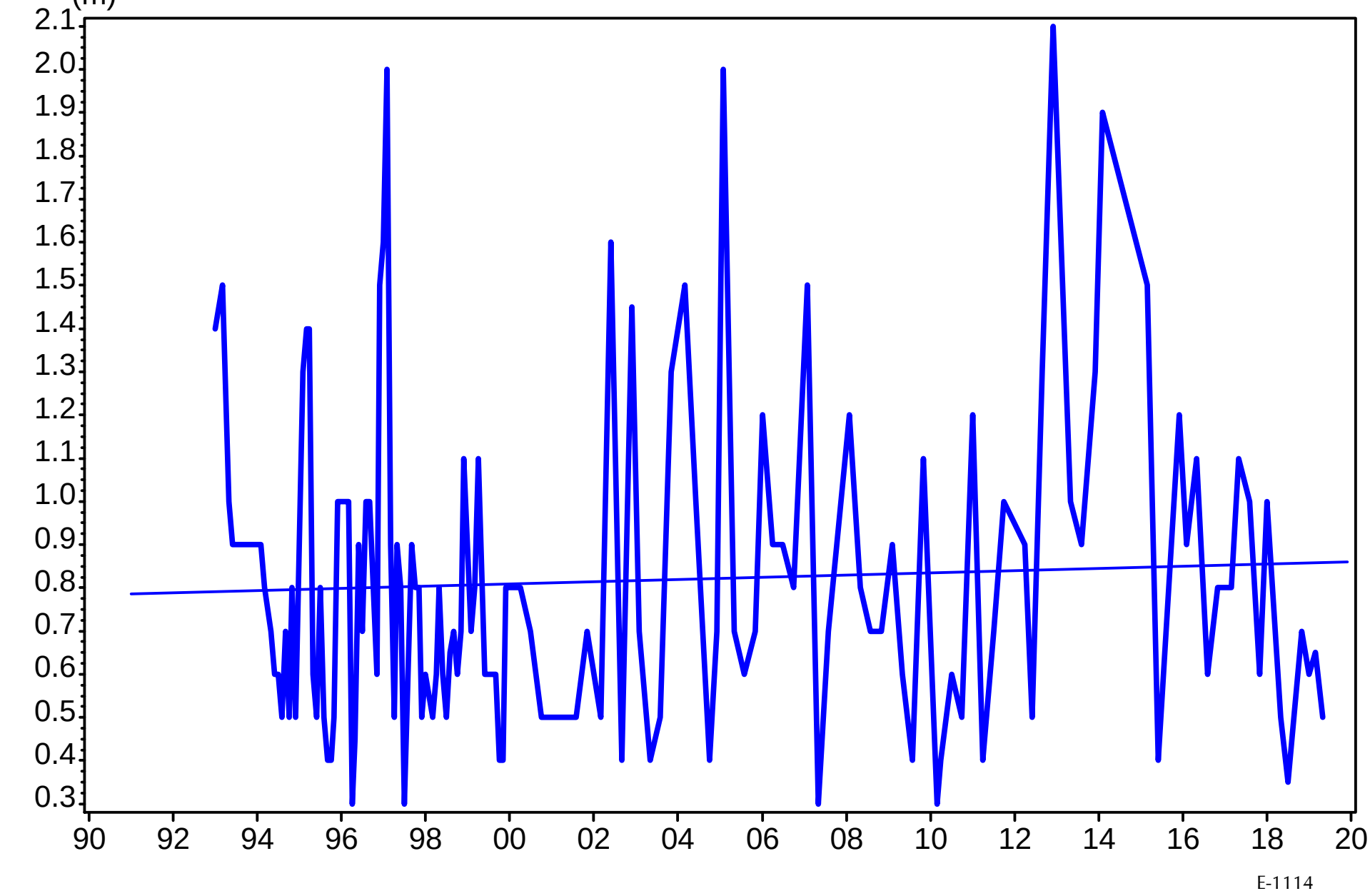
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

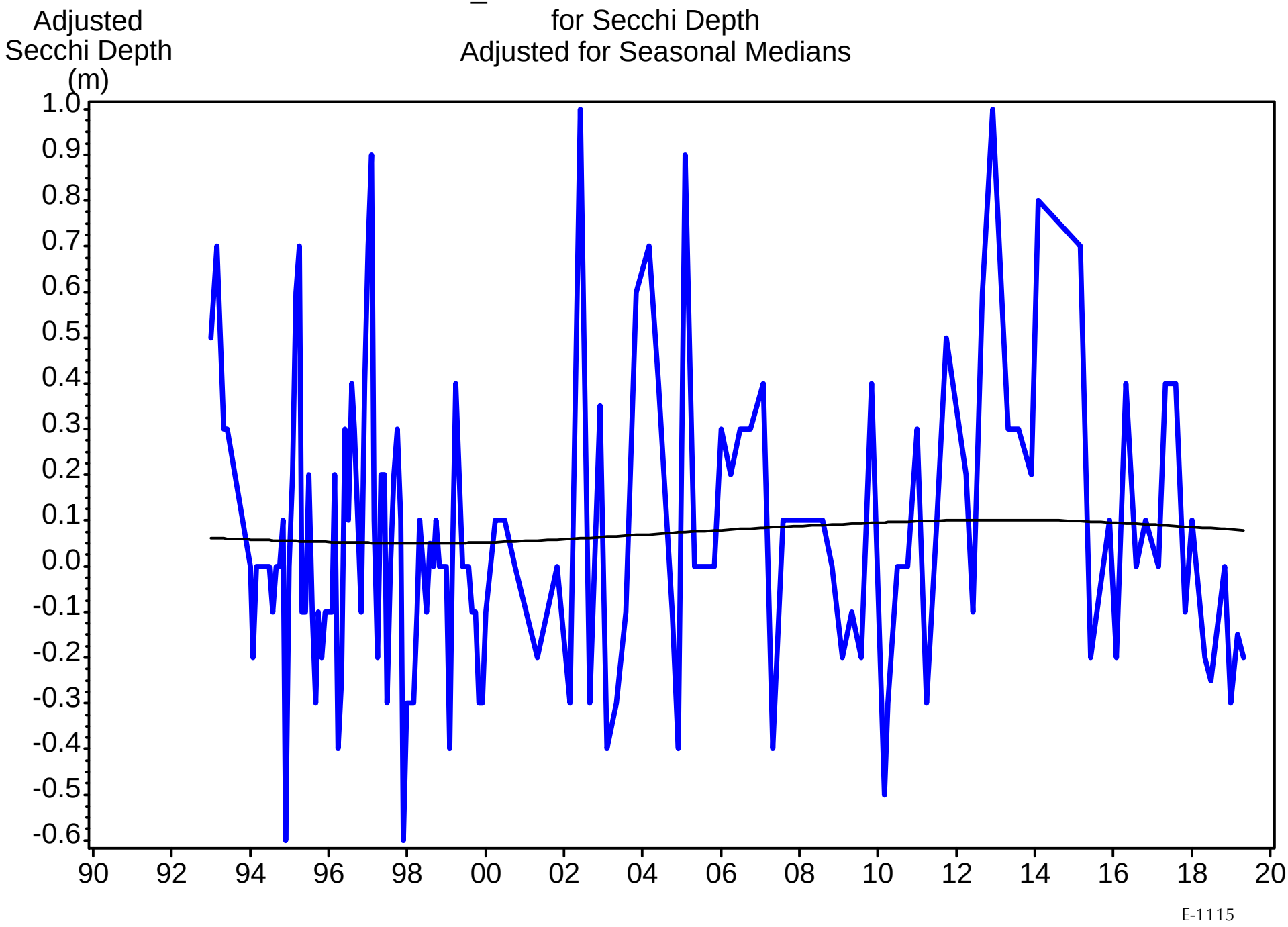
S_21FLVEMDHL07 Trends

S_21FLVEMDHL07 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



E-1114

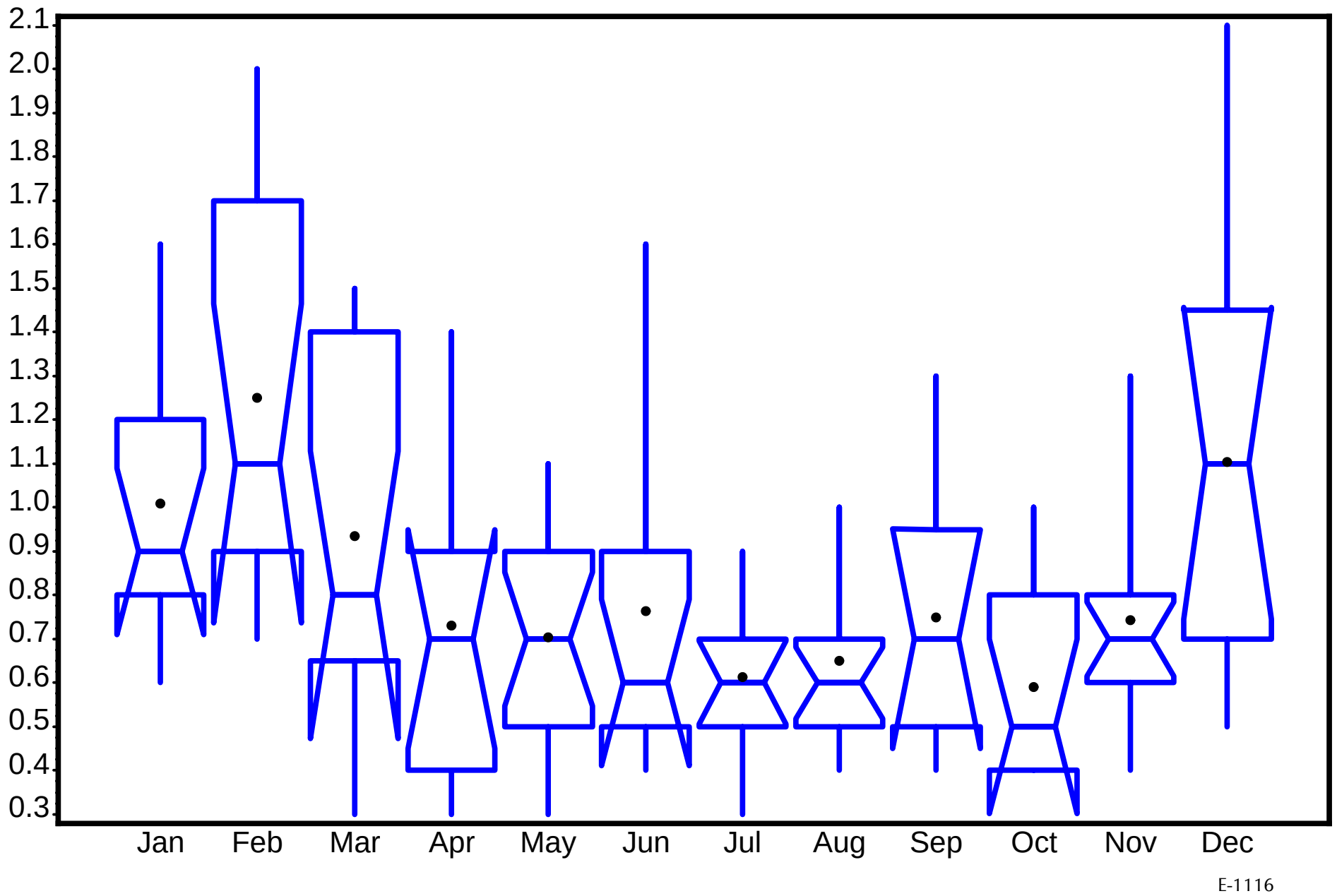
S_21FLVEMDHL07 Trends



S_21FLVEMDHL07 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



E-1116

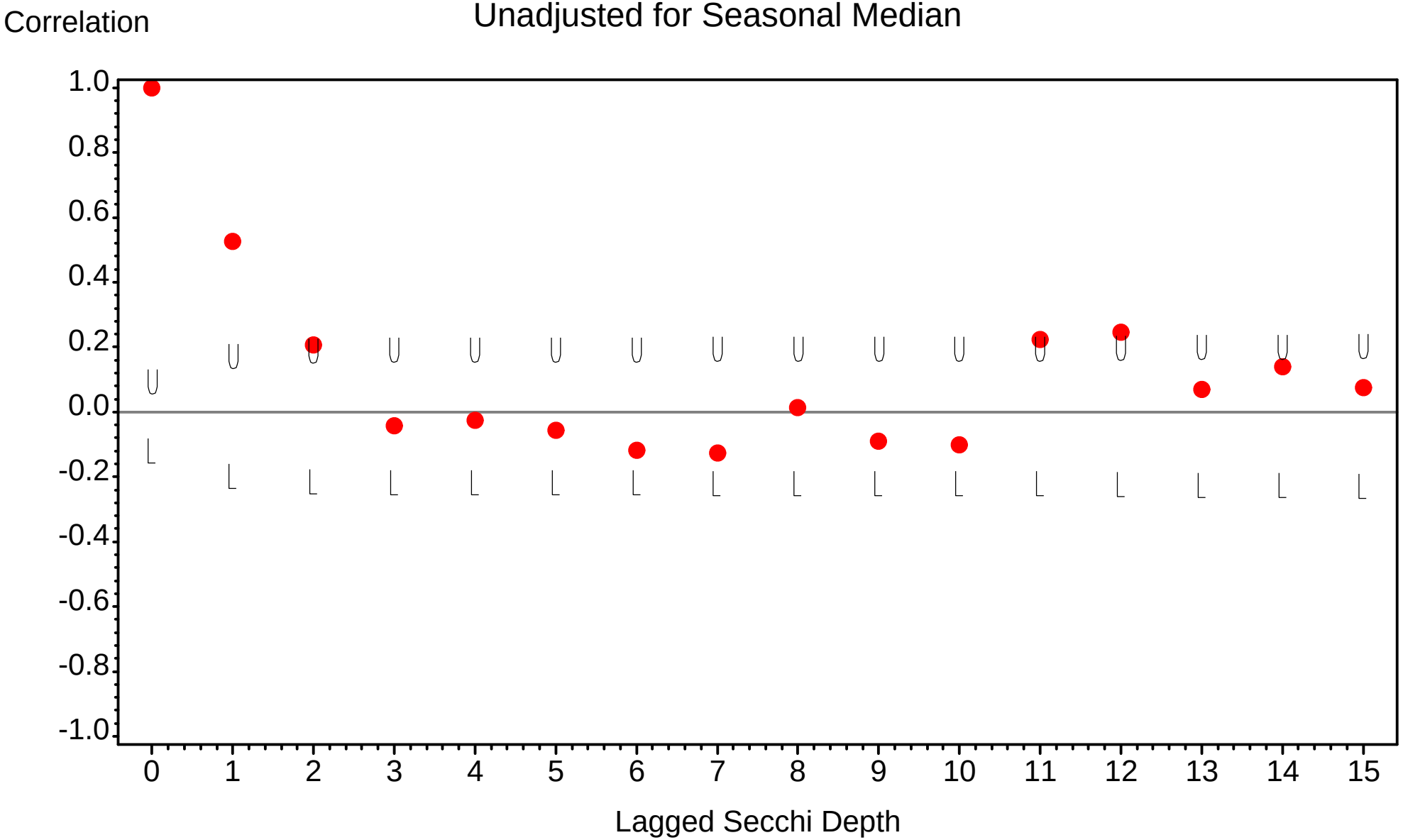
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.525	0.093	0.186	-0.186
2	0.208	0.101	0.202	-0.202
3	-0.042	0.102	0.204	-0.204
4	-0.026	0.102	0.205	-0.205
5	-0.056	0.102	0.205	-0.205
6	-0.117	0.102	0.205	-0.205
7	-0.127	0.103	0.206	-0.206
8	0.014	0.103	0.206	-0.206
9	-0.090	0.103	0.206	-0.206
10	-0.101	0.103	0.207	-0.207
11	0.224	0.104	0.208	-0.208
12	0.245	0.105	0.210	-0.210
13	0.069	0.107	0.214	-0.214
14	0.139	0.107	0.214	-0.214
15	0.076	0.107	0.215	-0.215

S_21FLVEMDHL07 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

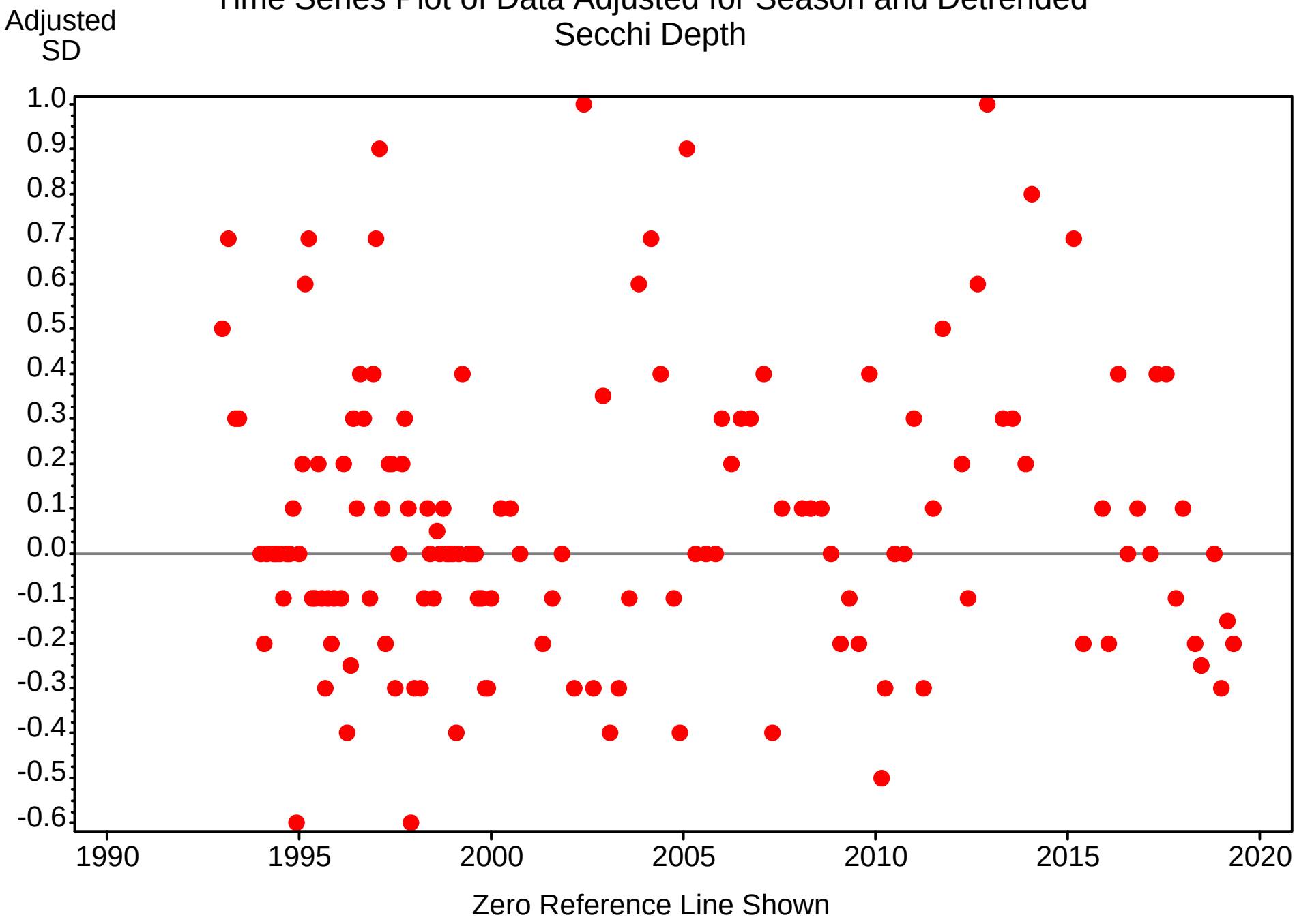
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.025	0.714	0.742	0

S_21FLVEMDHL07 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.02457	0.71425	0.74214	0

S_21FLVEMDHL07 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth



E-1121

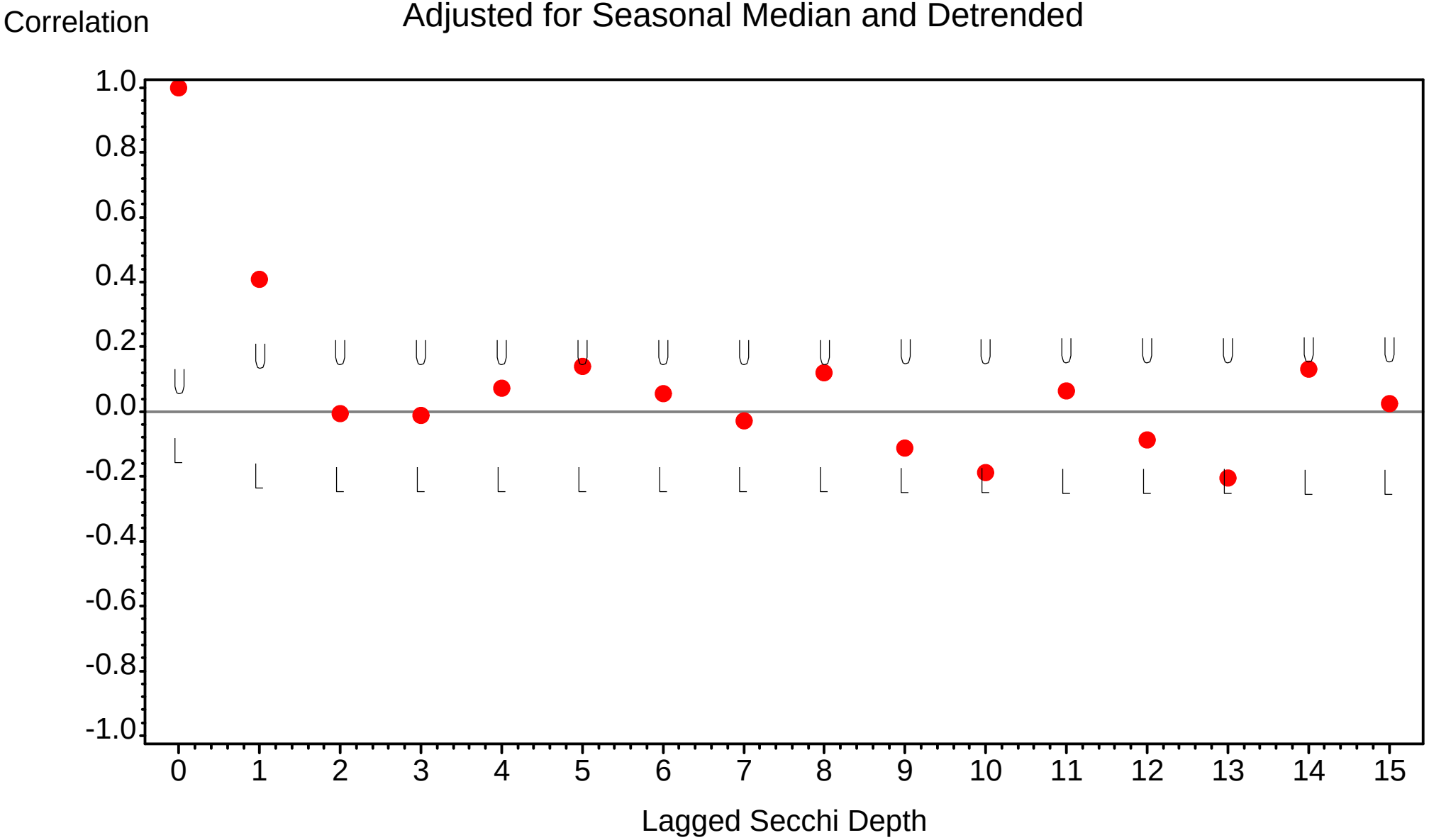
S_21FLVEMDHL07 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.409	0.093	0.186	-0.186
2	-0.005	0.098	0.196	-0.196
3	-0.011	0.098	0.196	-0.196
4	0.071	0.098	0.196	-0.196
5	0.139	0.098	0.196	-0.196
6	0.055	0.099	0.197	-0.197
7	-0.029	0.099	0.197	-0.197
8	0.121	0.099	0.197	-0.197
9	-0.112	0.099	0.198	-0.198
10	-0.188	0.100	0.199	-0.199
11	0.064	0.101	0.201	-0.201
12	-0.086	0.101	0.201	-0.201
13	-0.206	0.101	0.202	-0.202
14	0.130	0.102	0.204	-0.204
15	0.025	0.103	0.205	-0.205

S_21FLVEMDHL07 Trends Appendix

Correlogram for Secchi Depth

Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
17	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
18	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
19	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
20	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
21	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
17	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
18	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
19	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
20	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
21	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
17	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
18	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
19	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
20	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
21	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
22	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.15
23	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28	0.99
24	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67	1.60
25	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.27
26	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90	2.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
22	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017	-0.14839
23	Y	Y	N	N	-0.132	0.057	0.124	-0.001	-0.13170
24	Y	Y	N	N	0.150	0.038	0.109	0.103	0.15026
25	N	Y	Y	Y	0.141	0.033	0.135	357.337	0.14103
26	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014	-0.08367

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
23	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
24	0.03776	0.10869	0.103	0.15026	0.03776	0.103
25	0.03319	0.13465	357.337	0.14100	0.13500	357.337
26	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
27	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48	1.87
28	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00	0.20
29	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00	1.03
30	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.75
31	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43	1.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
27	Y	Y	Y	Y	0.090	0.188	0.382	0.156	0.08974
28	N	Y	Y	Y	0.153	0.020	0.128	0.254	0.15317
29	Y	Y	N	N	0.109	0.084	0.181	0.000	0.10913
30	Y	Y	Y	Y	0.015	0.858	0.907	0.001	0.01504
31	Y	Y	N	N	-0.115	0.116	0.160	-0.001	-0.12022

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
27	0.18759	0.38162	0.156	0.08974	0.38162	0.156
28	0.01994	0.12793	0.254	0.15300	0.12800	0.254
29	0.08403	0.18091	0.000	0.10913	0.08403	0.000
30	0.85776	0.90700	0.001	0.01504	0.90700	0.001
31	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
32	S_21FLVEMDHL05	S_21FLVEMDHL05	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.66	0.74
33	S_21FLVEMDHL05	S_21FLVEMDHL05	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.71
34	S_21FLVEMDHL05	S_21FLVEMDHL05	DO	Dissolved Oxygen	(mg/L)	22	30	2.01	2.54
35	S_21FLVEMDHL05	S_21FLVEMDHL05	DOSAT	Dissolved Oxygen	(%)	32	40	1.41	2.00
36	S_21FLVEMDHL05	S_21FLVEMDHL05	SALIN	Salinity	(psu)	52	60	-9999.00	0.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
32	Y	Y	Y	Y	0.145	0.032	0.115	0.086	0.14507
33	Y	Y	Y	Y	0.085	0.174	0.337	182.245	0.08502
34	Y	N	N	N	-0.149	0.017	0.110	-0.023	-0.14929
35	Y	Y	N	N	0.081	0.199	0.362	0.114	0.08126
36	Y	Y	N	N	0.060	0.339	0.502	0.082	0.05987

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
32	0.03182	0.11509	0.086	0.14507	0.11509	0.086
33	0.17411	0.33661	182.245	0.08502	0.33661	182.245
34	0.01704	0.11000	-0.023	-0.14929	0.01704	-0.023
35	0.19863	0.36237	0.114	0.08126	0.19863	0.114
36	0.33872	0.50152	0.082	0.05987	0.33872	0.082

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
37	S_21FLVEMDHL05	S_21FLVEMDHL05	SD	Secchi Depth	(m)	72	80	0.38	1.10
38	S_21FLVEMDHL05	S_21FLVEMDHL05	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.81
39	S_21FLVEMDHL05	S_21FLVEMDHL05	TP	Total Phosphorus	(mg/L)	12	20	0.80	0.83
40	S_21FLVEMDHL06	S_21FLVEMDHL06	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.28	0.01
41	S_21FLVEMDHL06	S_21FLVEMDHL06	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.76

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
37	Y	N	N	N	0.047	0.468	0.545	0.000	0.04654
38	Y	Y	Y	Y	-0.146	0.037	0.227	-0.009	-0.14590
39	Y	Y	N	N	-0.030	0.675	0.690	0.000	-0.02972
40	Y	N	N	N	0.024	0.729	0.758	0.016	0.02423
41	Y	Y	Y	Y	0.105	0.092	0.238	239.000	0.10454

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
37	0.46800	0.54466	0.000	0.04654	0.46800	0.000
38	0.03661	0.22687	-0.009	-0.14590	0.22687	-0.009
39	0.67549	0.68953	0.000	-0.02972	0.67549	0.000
40	0.72880	0.75791	0.016	0.02423	0.72880	0.016
41	0.09156	0.23833	239.000	0.10454	0.23833	239.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
42	S_21FLVEMDHL06	S_21FLVEMDHL06	DO	Dissolved Oxygen	(mg/L)	22	30	2.05	2.52
43	S_21FLVEMDHL06	S_21FLVEMDHL06	DOSAT	Dissolved Oxygen	(%)	32	40	1.25	1.99
44	S_21FLVEMDHL06	S_21FLVEMDHL06	SALIN	Salinity	(psu)	52	60	-9999.00	0.74
45	S_21FLVEMDHL06	S_21FLVEMDHL06	SD	Secchi Depth	(m)	72	80	0.69	0.94
46	S_21FLVEMDHL06	S_21FLVEMDHL06	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
42	Y	N	N	N	-0.116	0.062	0.197	-0.017	-0.11576
43	Y	Y	N	N	0.080	0.201	0.322	0.088	0.08045
44	Y	Y	Y	Y	0.090	0.143	0.319	0.138	0.09026
45	Y	Y	Y	Y	0.047	0.458	0.500	0.000	0.04707
46	Y	Y	Y	Y	-0.126	0.072	0.357	-0.011	-0.12577

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
42	0.06243	0.19679	-0.017	-0.11576	0.06243	-0.017
43	0.20088	0.32170	0.088	0.08045	0.20088	0.088
44	0.14300	0.31855	0.138	0.09026	0.31855	0.138
45	0.45795	0.50041	0.000	0.04707	0.50041	0.000
46	0.07193	0.35680	-0.011	-0.12577	0.35680	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
47	S_21FLVEMDHL06	S_21FLVEMDHL06	TP	Total Phosphorus	(mg/L)	12	20	1.37	0.87
48	S_21FLVEMDHL07	S_21FLVEMDHL07	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.63	0.86
49	S_21FLVEMDHL07	S_21FLVEMDHL07	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.63
50	S_21FLVEMDHL07	S_21FLVEMDHL07	DO	Dissolved Oxygen	(mg/L)	22	30	0.95	2.67
51	S_21FLVEMDHL07	S_21FLVEMDHL07	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	1.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
47	Y	Y	N	N	-0.070	0.311	0.352	-0.001	-0.07004
48	Y	Y	N	N	-0.072	0.299	0.400	-0.064	-0.07206
49	Y	Y	Y	Y	0.087	0.169	0.316	185.539	0.08720
50	Y	N	Y	N	-0.184	0.003	0.046	-0.029	-0.18418
51	Y	Y	N	N	0.008	0.910	0.929	0.000	0.00826

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
47	0.31141	0.35163	-0.001	-0.07004	0.31141	-0.001
48	0.29904	0.39997	-0.064	-0.07206	0.29904	-0.064
49	0.16902	0.31573	185.539	0.08720	0.31573	185.539
50	0.00342	0.04576	-0.029	-0.18418	0.00342	-0.029
51	0.91015	0.92863	0.000	0.00826	0.91015	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
52	S_21FLVEMDHL07	S_21FLVEMDHL07	SALIN	Salinity	(psu)	52	60	-9999.00	0.71
53	S_21FLVEMDHL07	S_21FLVEMDHL07	SD	Secchi Depth	(m)	72	80	0.57	1.17
54	S_21FLVEMDHL07	S_21FLVEMDHL07	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.36
55	S_21FLVEMDHL07	S_21FLVEMDHL07	TP	Total Phosphorus	(mg/L)	12	20	1.44	0.84
56	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	1.38

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
52	Y	Y	Y	Y	0.073	0.250	0.428	0.107	0.07253
53	Y	Y	N	N	0.025	0.714	0.742	0.000	0.02457
54	Y	Y	Y	Y	-0.185	0.009	0.183	-0.017	-0.18331
55	Y	Y	N	N	0.002	1.000	1.000	0.000	0.00159
56	Y	Y	Y	Y	0.074	0.356	0.527	0.052	0.07383

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
52	0.25004	0.42819	0.107	0.07253	0.42819	0.107
53	0.71425	0.74214	0.000	0.02457	0.71425	0.000
54	0.00999	0.18667	-0.017	-0.18331	0.18667	-0.017
55	1.00000	1.00000	0.000	0.00159	1.00000	0.000
56	0.35568	0.52706	0.052	0.07383	0.52706	0.052

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
57	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23	0.08
58	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47	2.09
59	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56	2.11
60	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09	0.29
61	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
57	N	Y	Y	Y	0.090	0.212	0.347	225.098	0.08958
58	Y	N	N	N	-0.099	0.163	0.243	-0.023	-0.09906
59	Y	N	N	N	0.046	0.549	0.573	0.109	0.04571
60	N	Y	Y	Y	0.155	0.028	0.107	0.318	0.15482
61	N	Y	N	N	0.192	0.005	0.044	0.011	0.19225

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
57	0.21156	0.34660	225.098	0.09000	0.34700	225.098
58	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
59	0.54949	0.57310	0.109	0.04571	0.54949	0.109
60	0.02802	0.10656	0.318	0.15500	0.10700	0.318
61	0.00486	0.04449	0.011	0.19200	0.00500	0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
62	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.04
63	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	0.45
64	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.33
65	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09	0.79
66	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16	2.35

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
62	Y	Y	N	N	-0.161	0.045	0.205	-0.029	-0.16145
63	N	N	N	N	0.021	0.810	0.860	0.000	0.02128
64	N	Y	N	N	0.049	0.531	0.675	0.023	0.04851
65	Y	Y	Y	Y	0.017	0.821	0.864	6.873	0.01671
66	Y	Y	N	N	-0.022	0.763	0.834	-0.004	-0.02159

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
62	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
63	0.80954	0.86021	0.000	0.02100	0.81000	0.000
64	0.53077	0.67536	0.023	0.04900	0.53100	0.023
65	0.82111	0.86399	6.874	0.01671	0.86399	6.874
66	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
67	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00	2.11
68	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00	0.98
69	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61	1.08
70	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.88
71	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10	1.51

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
67	Y	Y	Y	Y	0.049	0.487	0.514	0.154	0.04892
68	Y	Y	Y	Y	0.070	0.304	0.474	0.025	0.06955
69	Y	Y	N	N	0.064	0.330	0.509	0.000	0.06415
70	Y	Y	N	N	0.017	0.845	0.901	0.002	0.01724
71	Y	Y	Y	Y	0.050	0.519	0.695	0.000	0.05031

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
67	0.48687	0.51426	0.154	0.04892	0.51426	0.154
68	0.30398	0.47368	0.025	0.06955	0.47368	0.025
69	0.32954	0.50893	0.000	0.06415	0.32954	0.000
70	0.84540	0.90084	0.002	0.01724	0.84540	0.002
71	0.51900	0.69540	0.000	0.05031	0.69540	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
72	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	-9999.00
73	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82	1.12
74	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25	0.82
75	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	0.70
76	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73	1.54

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
72	N	Y	N	N	0.078	0.299	0.360	0.020	0.07599
73	Y	N	Y	N	0.106	0.122	0.158	10.031	0.10598
74	Y	Y	N	N	-0.170	0.012	0.092	-0.059	-0.16974
75	Y	Y	N	N	-0.175	0.011	0.082	-0.515	-0.17479
76	Y	N	Y	N	0.092	0.169	0.290	0.004	0.09207

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
72	0.31036	0.36979	0.020	0.07800	0.29900	0.020
73	0.12166	0.15796	10.031	0.10598	0.12166	10.031
74	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059
75	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
76	0.16857	0.29012	0.004	0.09207	0.16857	0.004

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
77	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00	1.54
78	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.48
79	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00
80	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
77	Y	Y	Y	Y	0.094	0.155	0.427	0.007	0.09387
78	Y	Y	N	N	-0.031	0.706	0.812	-0.002	-0.03145
79	N	N	N	N	-0.023	0.786	0.871	0.000	-0.02254
80	N	Y	N	N	-0.142	0.074	0.219	-0.011	-0.14223

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
77	0.15479	0.42738	0.007	0.09387	0.42738	0.007
78	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
79	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
80	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
81	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19	-9999.00
82	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42	2.33
83	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81	1.77
84	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00	-9999.00
85	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00	0.68

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
81	N	N	Y	N	0.085	0.243	0.291	2.029	0.08500
82	Y	Y	N	N	-0.040	0.591	0.737	-0.008	-0.03968
83	Y	Y	N	N	0.027	0.725	0.823	0.034	0.02716
84	N	Y	Y	Y	0.123	0.076	0.159	0.001	0.12322
85	Y	Y	N	N	0.194	0.005	0.046	0.009	0.19383

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
81	0.24287	0.29095	2.029	0.08500	0.24300	2.029
82	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008
83	0.72528	0.82342	0.034	0.02716	0.72528	0.034
84	0.07617	0.15857	0.001	0.12300	0.15900	0.001
85	0.00462	0.04647	0.009	0.19383	0.00462	0.009

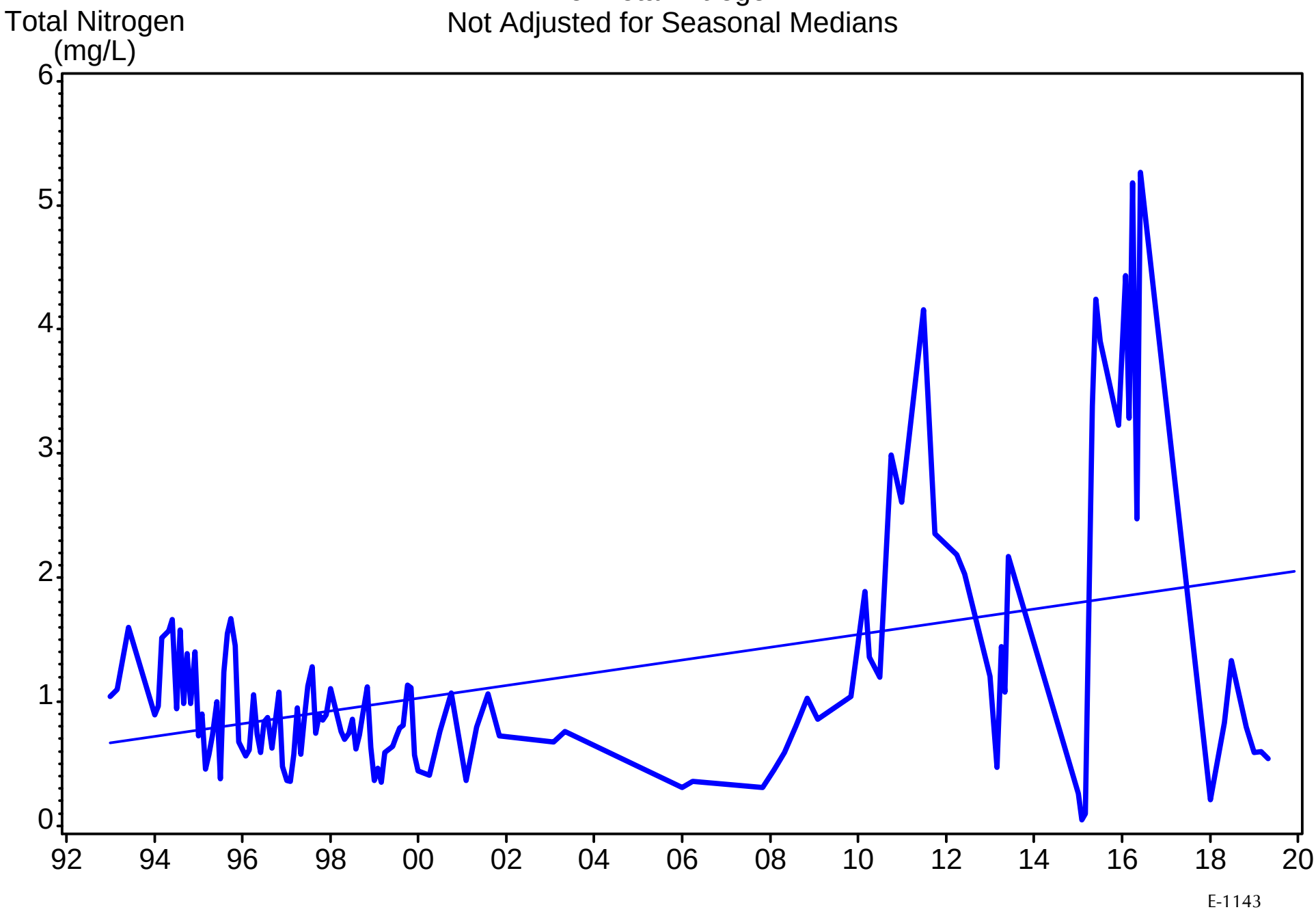
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
86	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.31
87	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
86	N	Y	N	N	-0.241	0.003	0.076	-0.016	-0.24070
87	N	N	N	N	0.040	0.632	0.786	0.000	0.04009

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
86	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
87	0.63152	0.78567	0.000	0.04000	0.63200	0.000

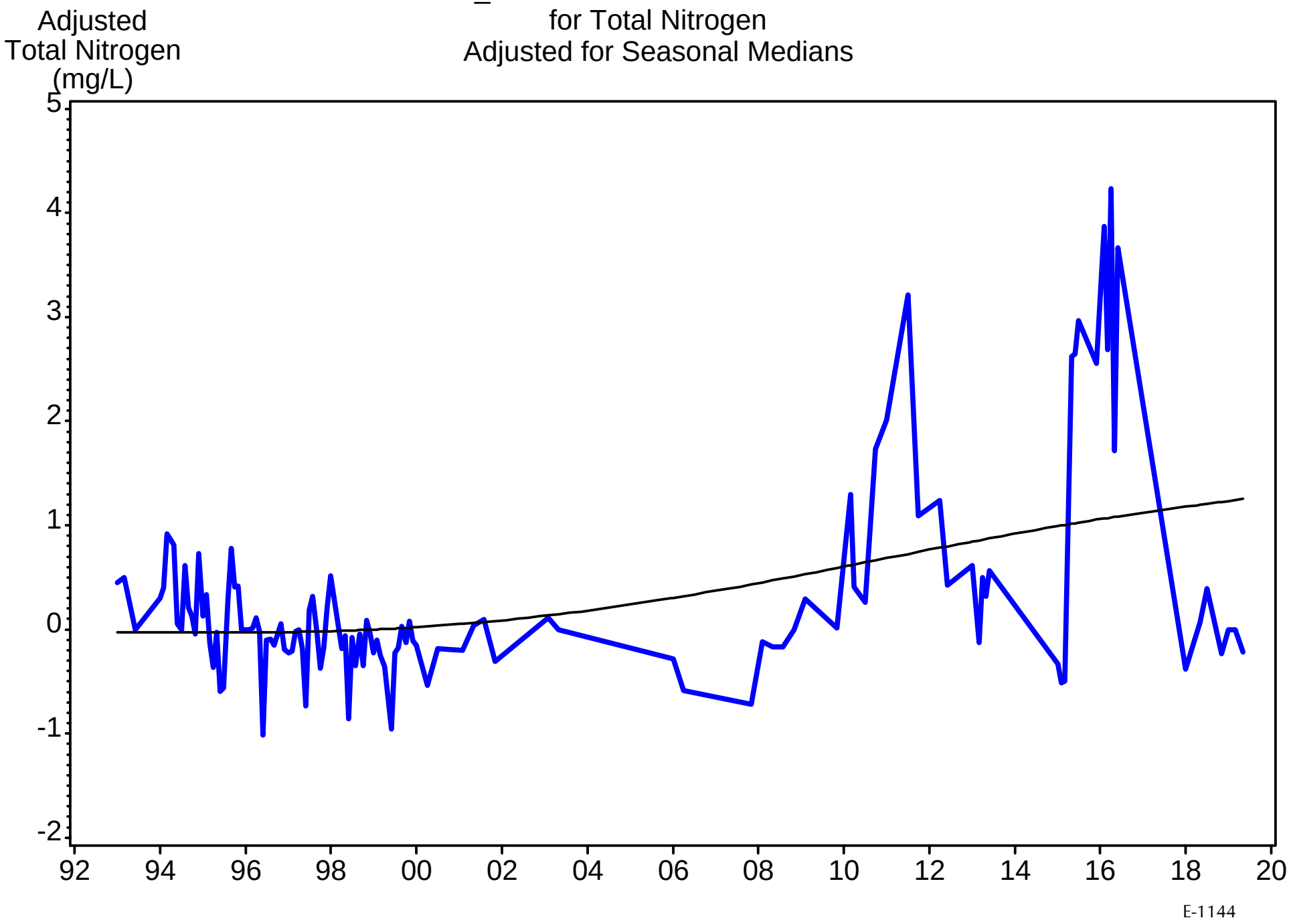
S_21FLVEMDHL08 Trends

S_21FLVEMDHL08 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



E-1143

S_21FLVEMDHL08 Trends

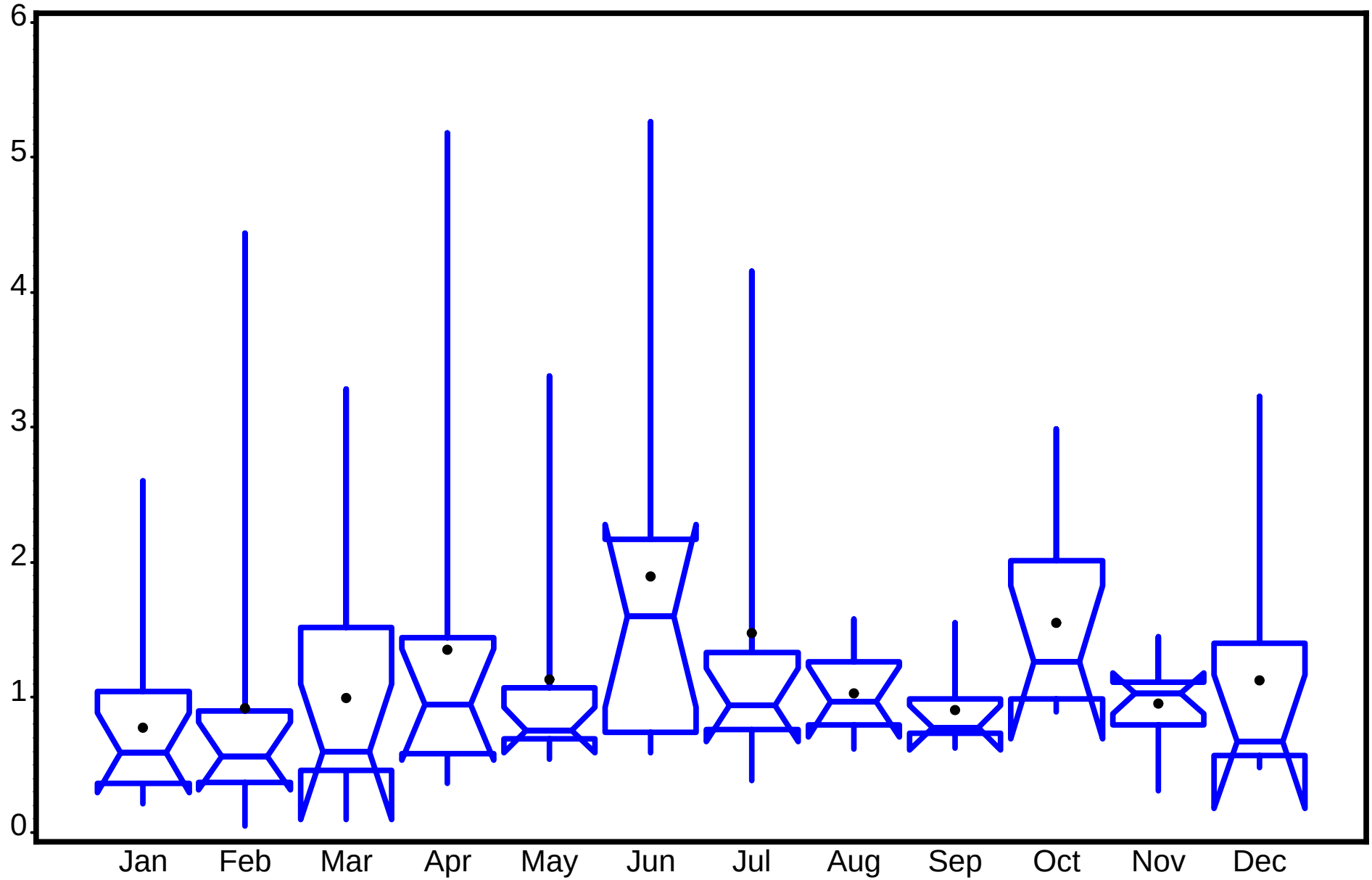


S_21FLVEMDHL08 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



E-1145

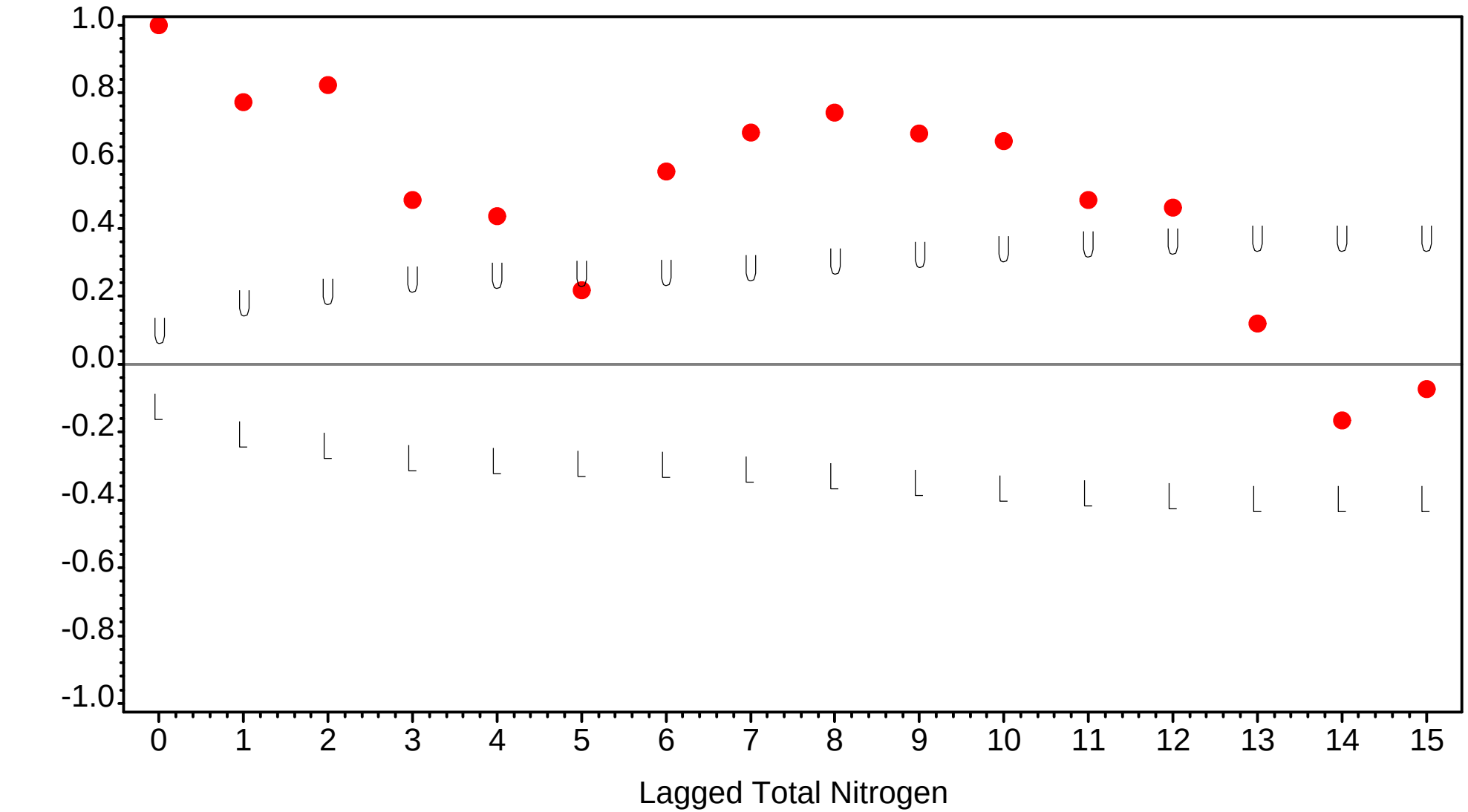
S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.773	0.096	0.192	-0.192
2	0.823	0.114	0.228	-0.228
3	0.484	0.131	0.262	-0.262
4	0.437	0.136	0.273	-0.273
5	0.218	0.141	0.281	-0.281
6	0.567	0.142	0.283	-0.283
7	0.684	0.148	0.297	-0.297
8	0.742	0.158	0.316	-0.316
9	0.679	0.168	0.337	-0.337
10	0.658	0.177	0.353	-0.353
11	0.483	0.184	0.368	-0.368
12	0.461	0.188	0.376	-0.376
13	0.120	0.191	0.383	-0.383
14	-0.167	0.192	0.383	-0.383
15	-0.073	0.192	0.384	-0.384

S_21FLVEMDHL08 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

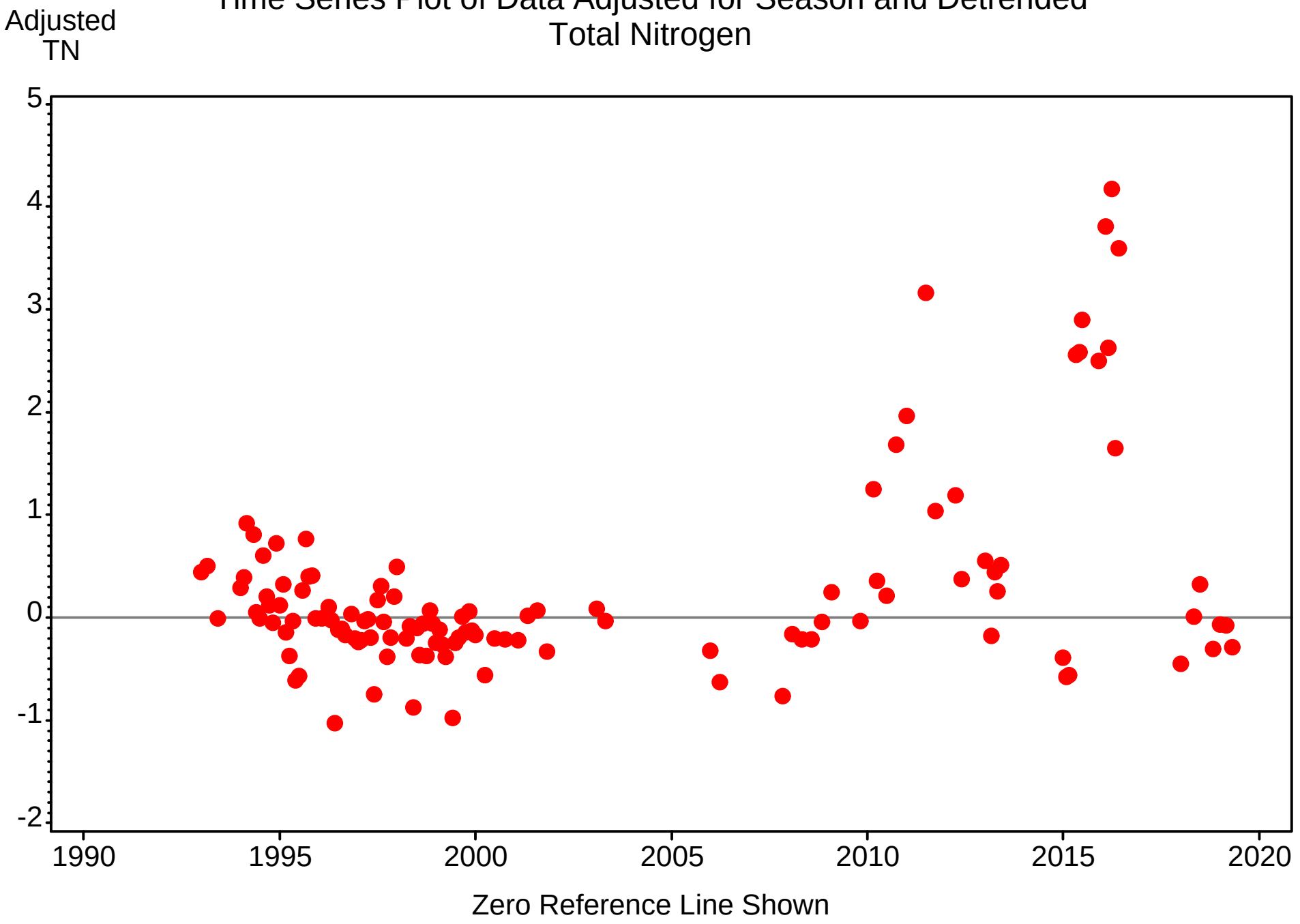
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.028	0.718	0.811	.003

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.027682	0.71842	0.81125	.00264286

S_21FLVEMDHL08 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



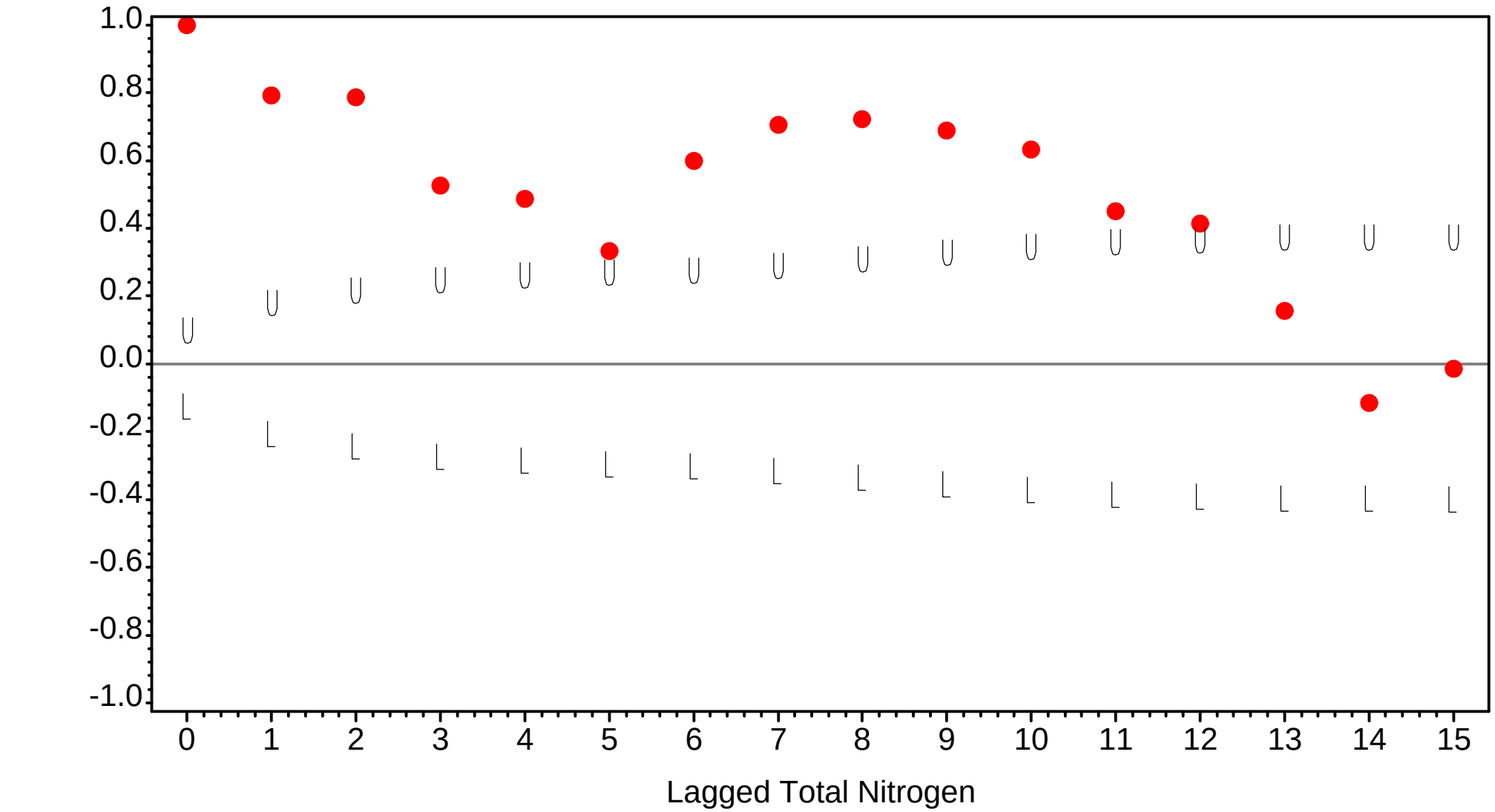
S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.791	0.096	0.192	-0.192
2	0.786	0.115	0.229	-0.229
3	0.525	0.130	0.260	-0.260
4	0.486	0.136	0.273	-0.273
5	0.334	0.142	0.283	-0.283
6	0.599	0.144	0.288	-0.288
7	0.704	0.152	0.303	-0.303
8	0.723	0.161	0.323	-0.323
9	0.689	0.171	0.342	-0.342
10	0.632	0.179	0.359	-0.359
11	0.450	0.186	0.372	-0.372
12	0.413	0.190	0.379	-0.379
13	0.157	0.192	0.385	-0.385
14	-0.115	0.193	0.385	-0.385
15	-0.014	0.193	0.386	-0.386

S_21FLVEMDHL08 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

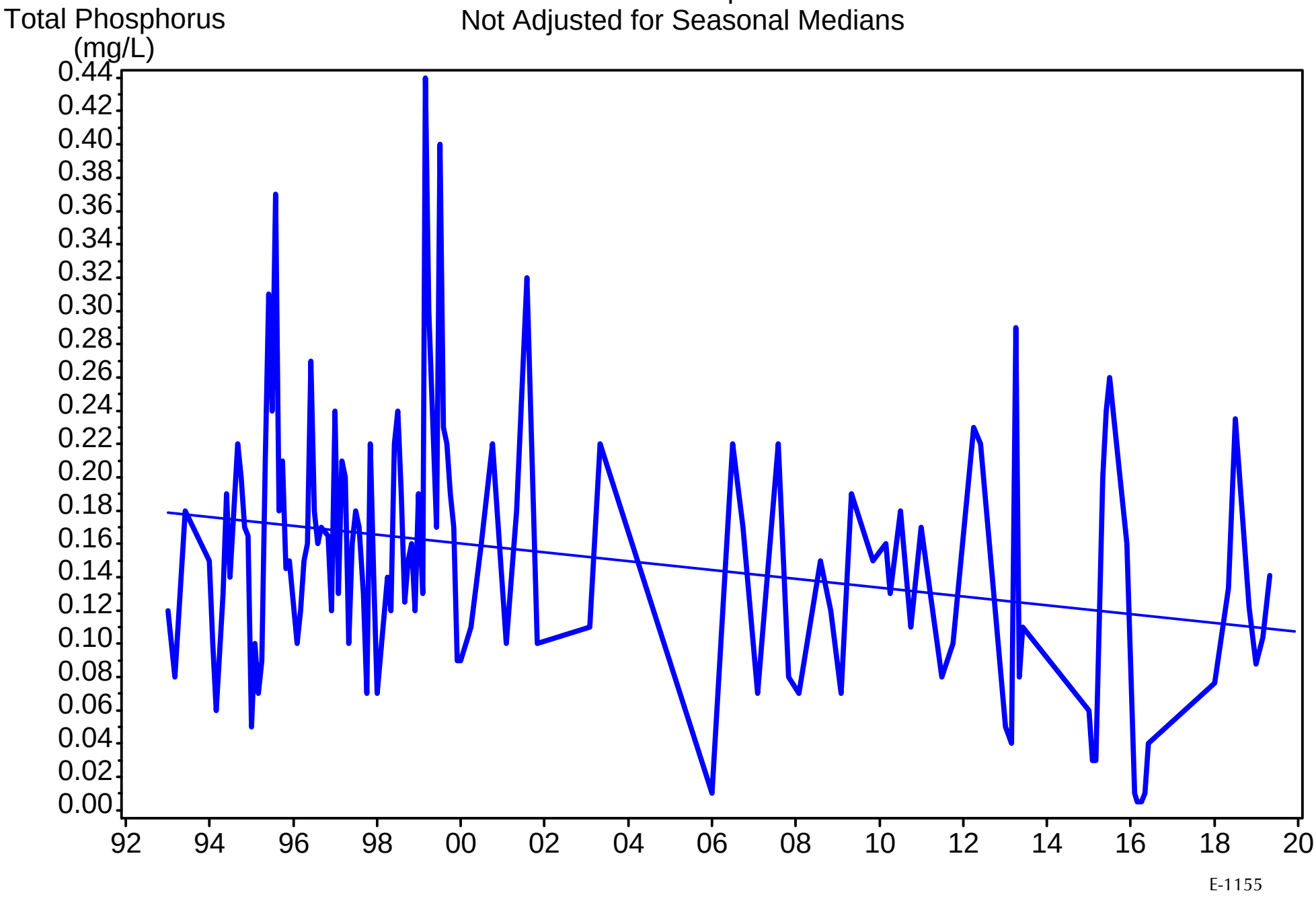


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

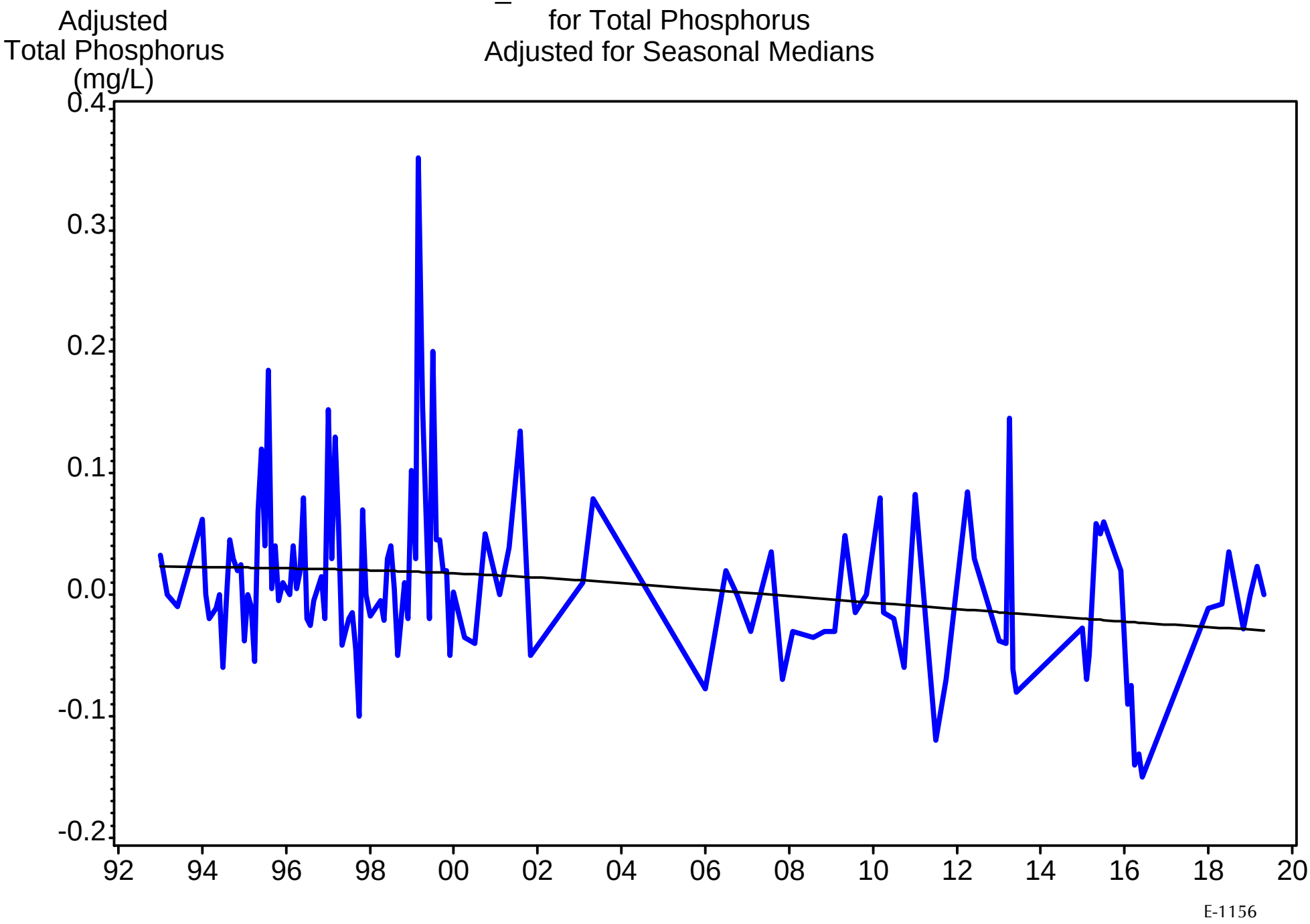
S_21FLVEMDHL08 Trends

S_21FLVEMDHL08 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



E-1155

S_21FLVEMDHL08 Trends

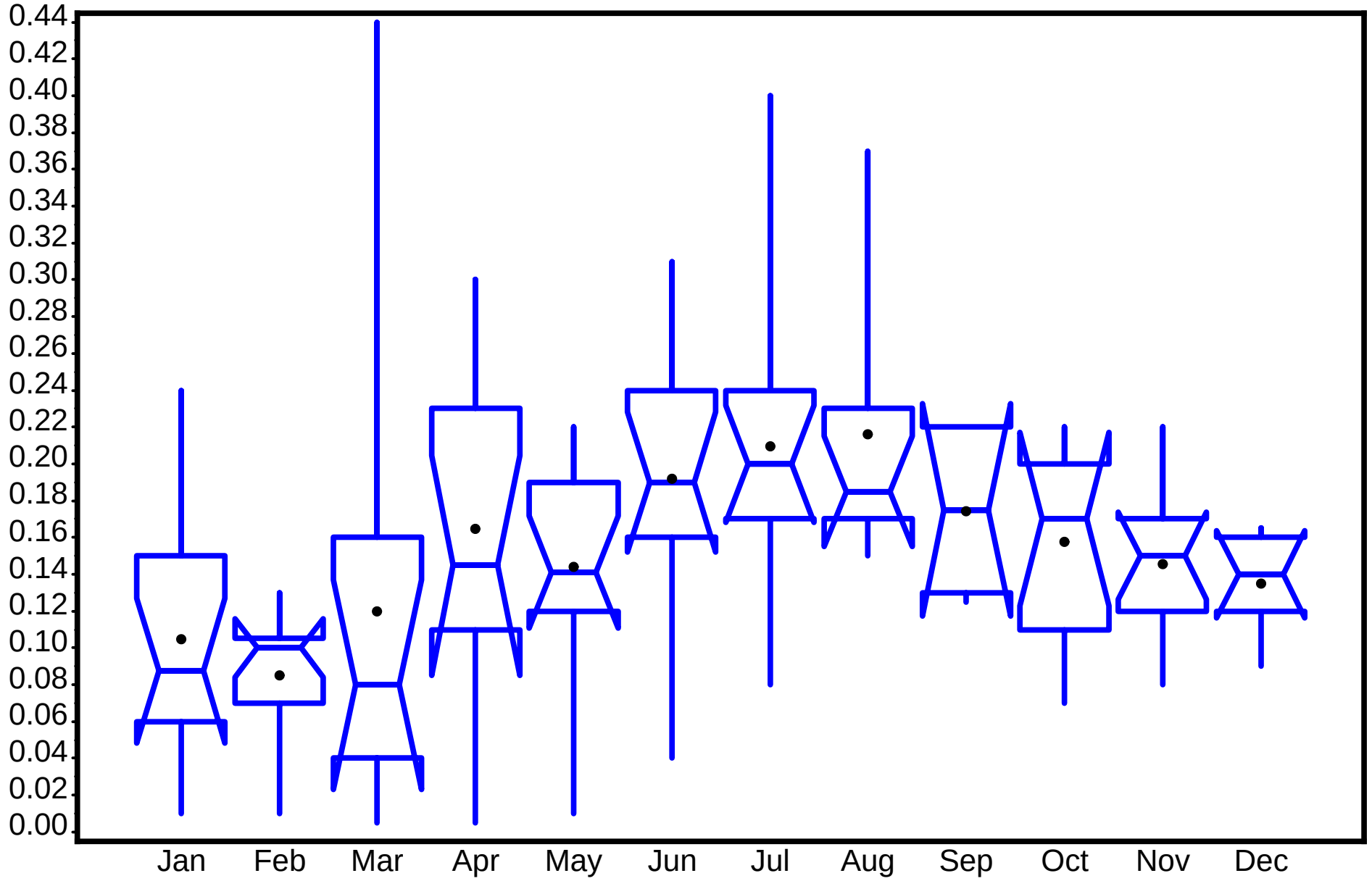


S_21FLVEMDHL08 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



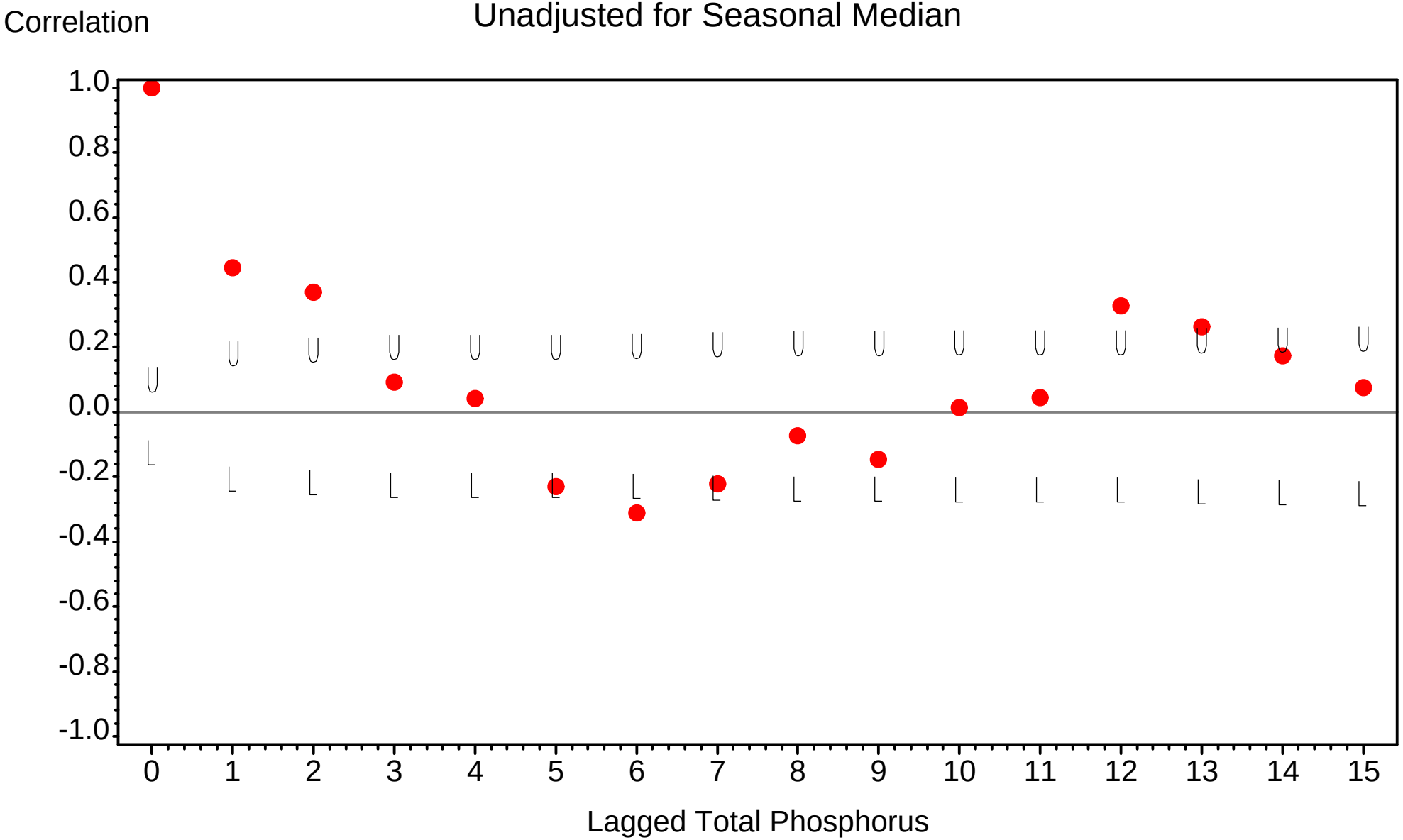
E-1157

S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.444	0.096	0.192	-0.192
2	0.368	0.102	0.205	-0.205
3	0.091	0.106	0.213	-0.213
4	0.042	0.107	0.213	-0.213
5	-0.229	0.107	0.213	-0.213
6	-0.311	0.108	0.216	-0.216
7	-0.222	0.111	0.222	-0.222
8	-0.072	0.112	0.224	-0.224
9	-0.146	0.112	0.225	-0.225
10	0.014	0.113	0.226	-0.226
11	0.045	0.113	0.226	-0.226
12	0.326	0.113	0.226	-0.226
13	0.262	0.116	0.232	-0.232
14	0.173	0.118	0.235	-0.235
15	0.074	0.118	0.237	-0.237

S_21FLVEMDHL08 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

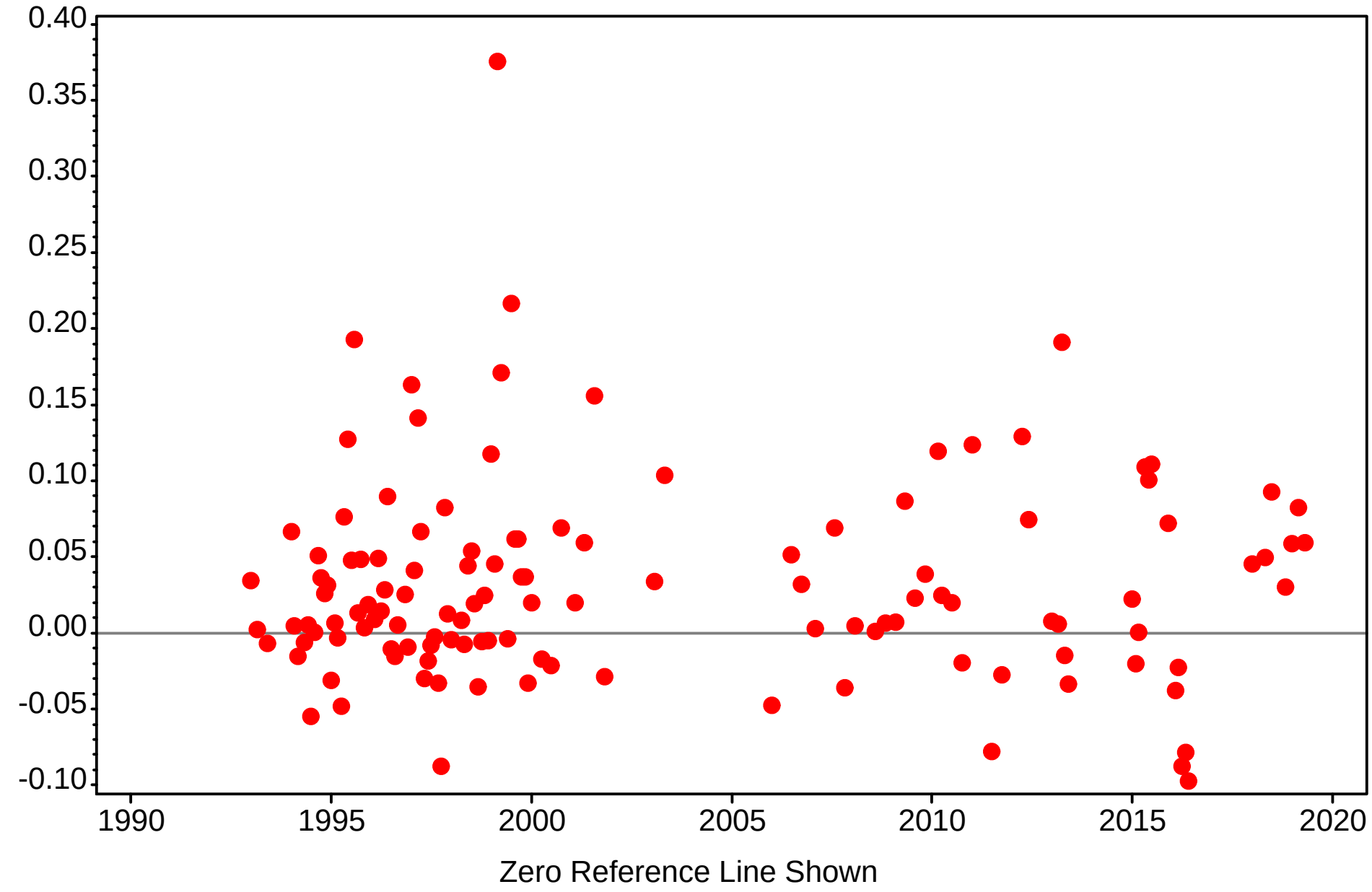
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.19	.007	0.042	-.002

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.19024	.00697212	0.042389	-.00216667

S_21FLVEMDHL08 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus



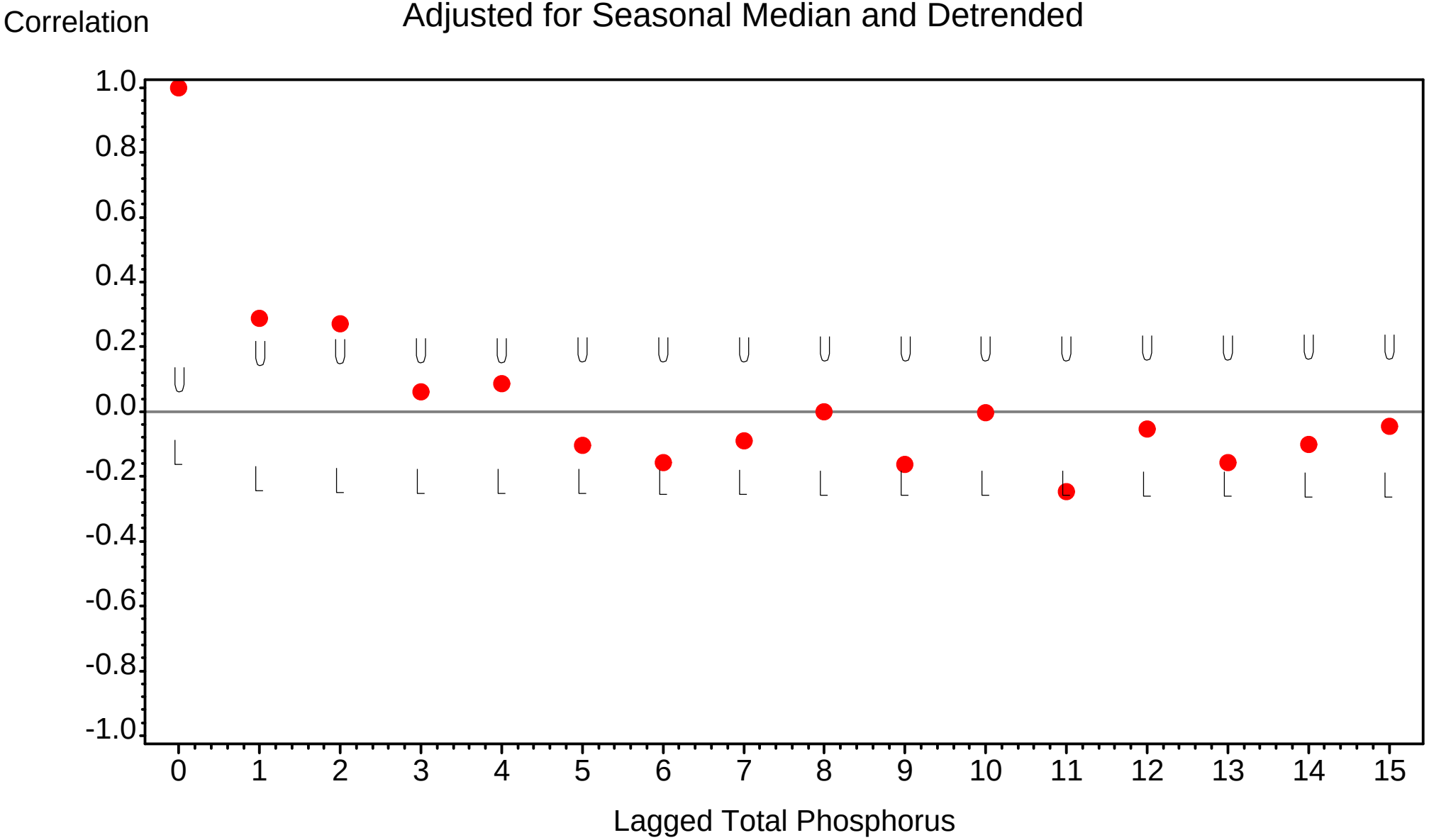
E-1162

S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.288	0.096	0.192	-0.192
2	0.272	0.099	0.198	-0.198
3	0.061	0.101	0.202	-0.202
4	0.085	0.101	0.202	-0.202
5	-0.103	0.101	0.203	-0.203
6	-0.158	0.102	0.204	-0.204
7	-0.089	0.103	0.205	-0.205
8	-0.001	0.103	0.206	-0.206
9	-0.163	0.103	0.206	-0.206
10	-0.004	0.104	0.207	-0.207
11	-0.246	0.104	0.207	-0.207
12	-0.055	0.105	0.211	-0.211
13	-0.157	0.105	0.211	-0.211
14	-0.101	0.106	0.212	-0.212
15	-0.044	0.106	0.213	-0.213

S_21FLVEMDHL08 Trends Appendix

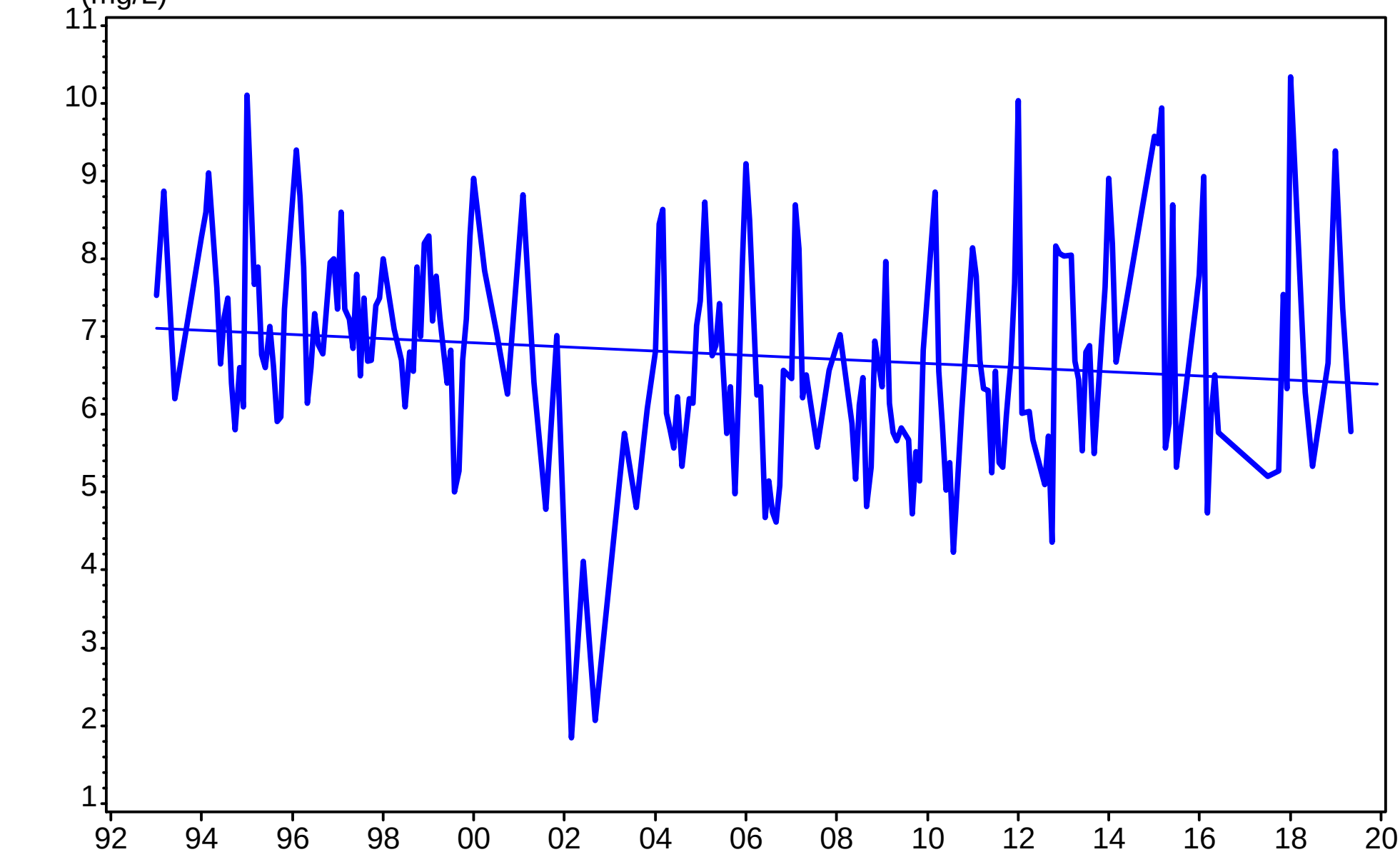
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

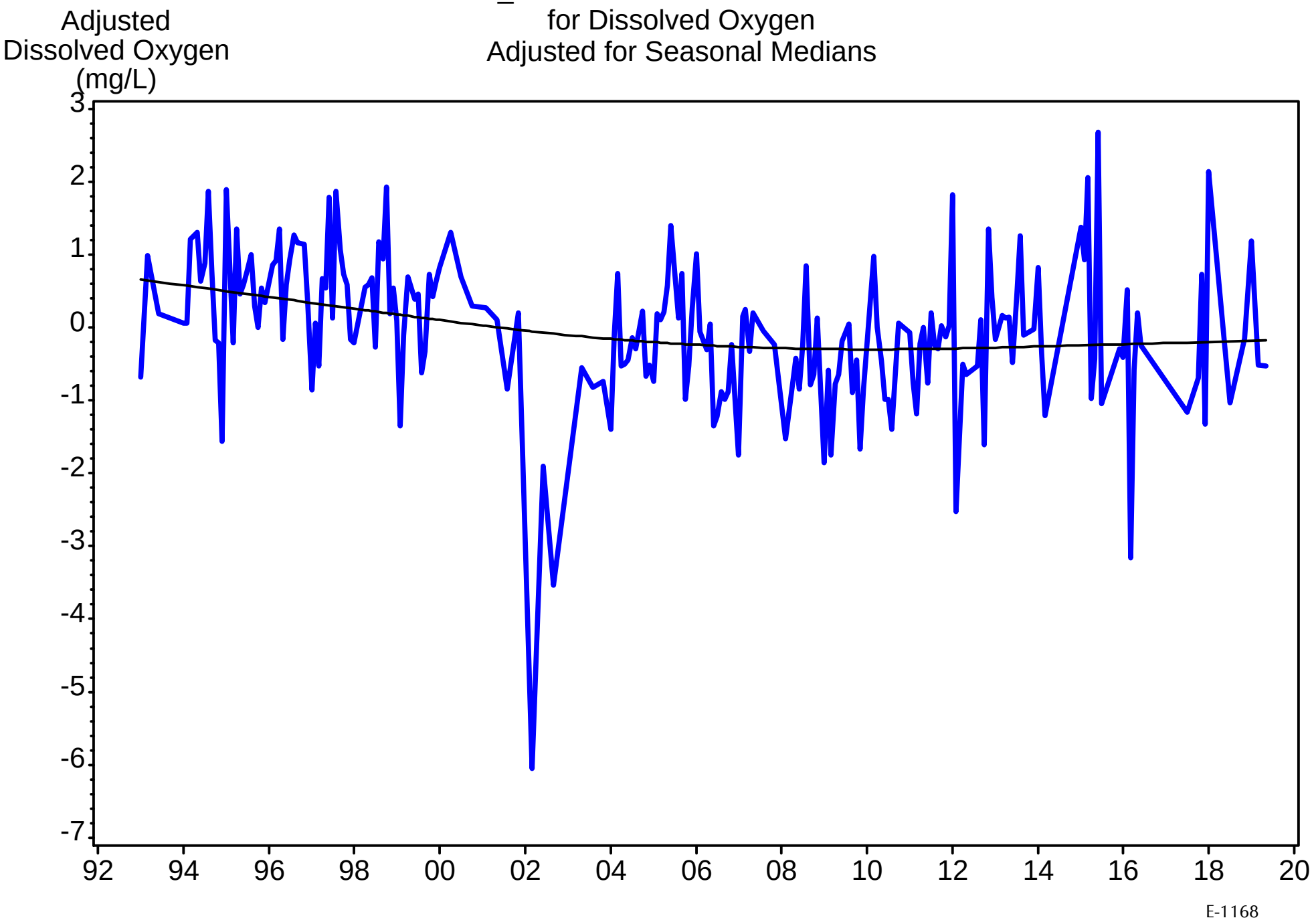
S_21FLVEMDHL08 Trends

S_21FLVEMDHL08 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1167

S_21FLVEMDHL08 Trends

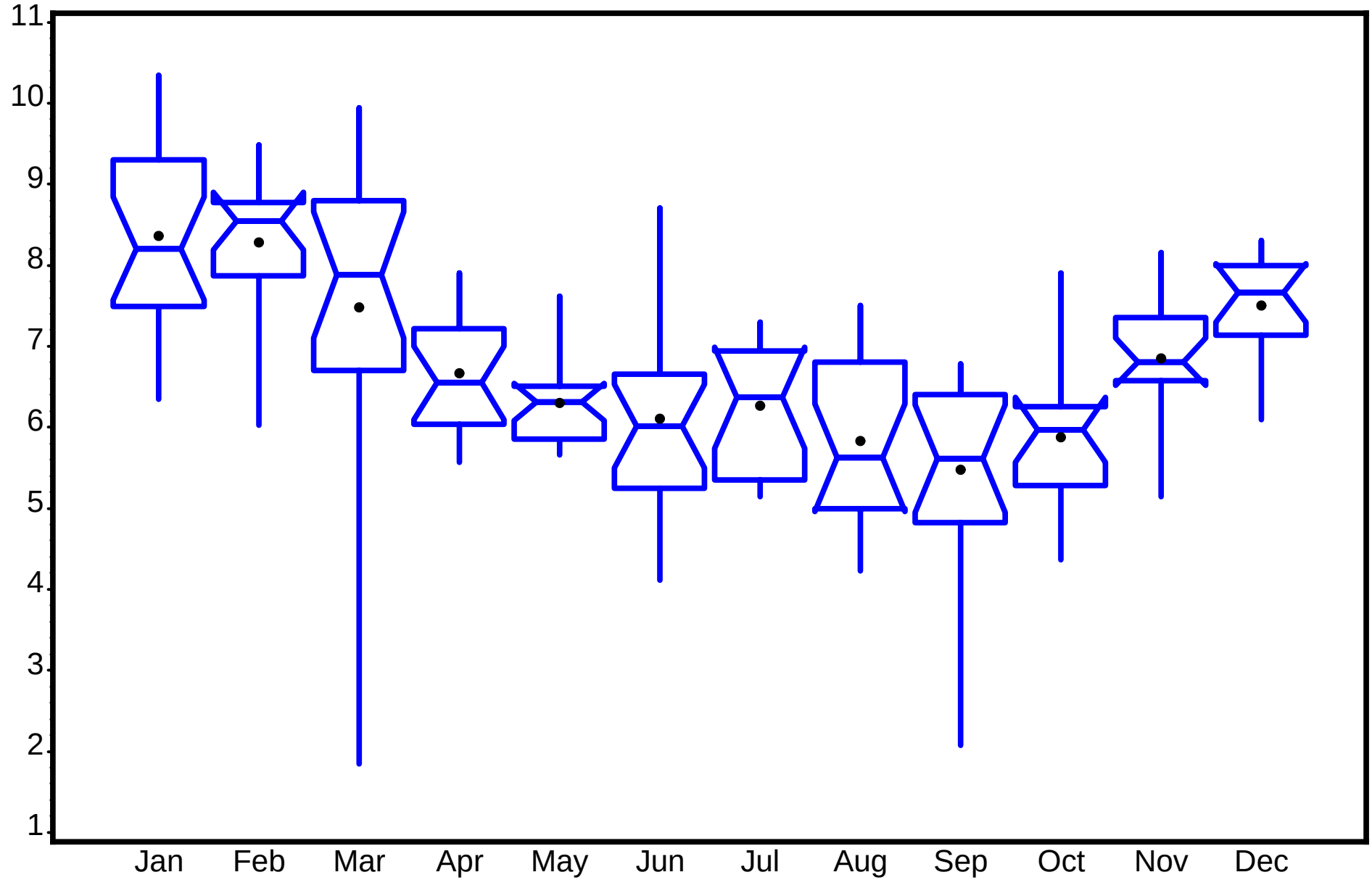


S_21FLVEMDHL08 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



E-1169

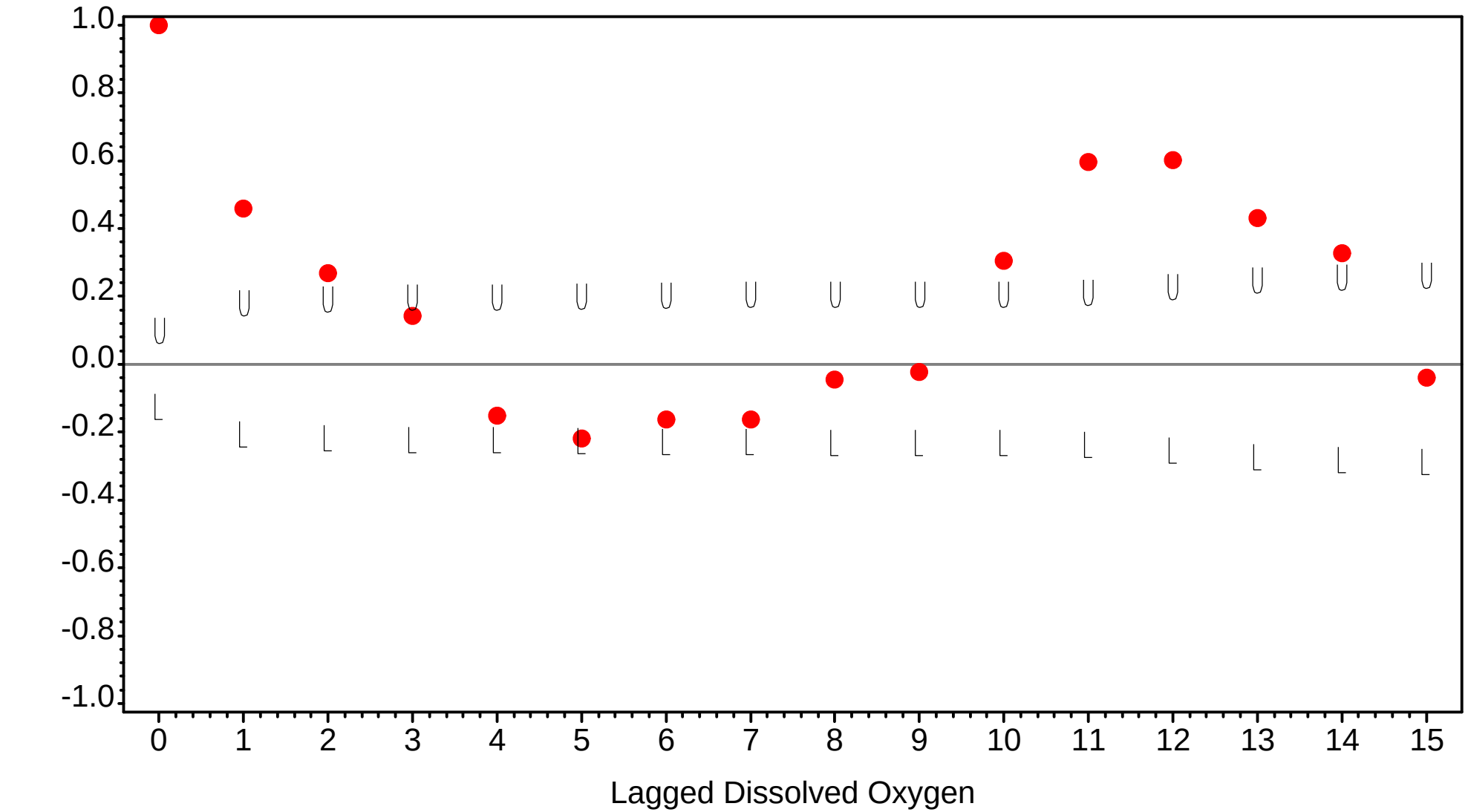
S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.459	0.096	0.192	-0.192
2	0.268	0.103	0.205	-0.205
3	0.141	0.105	0.210	-0.210
4	-0.152	0.105	0.211	-0.211
5	-0.219	0.106	0.212	-0.212
6	-0.162	0.108	0.215	-0.215
7	-0.163	0.108	0.217	-0.217
8	-0.044	0.109	0.218	-0.218
9	-0.023	0.109	0.218	-0.218
10	0.304	0.109	0.218	-0.218
11	0.597	0.112	0.223	-0.223
12	0.602	0.121	0.242	-0.242
13	0.432	0.130	0.260	-0.260
14	0.327	0.134	0.269	-0.269
15	-0.039	0.137	0.274	-0.274

S_21FLVEMDHL08 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

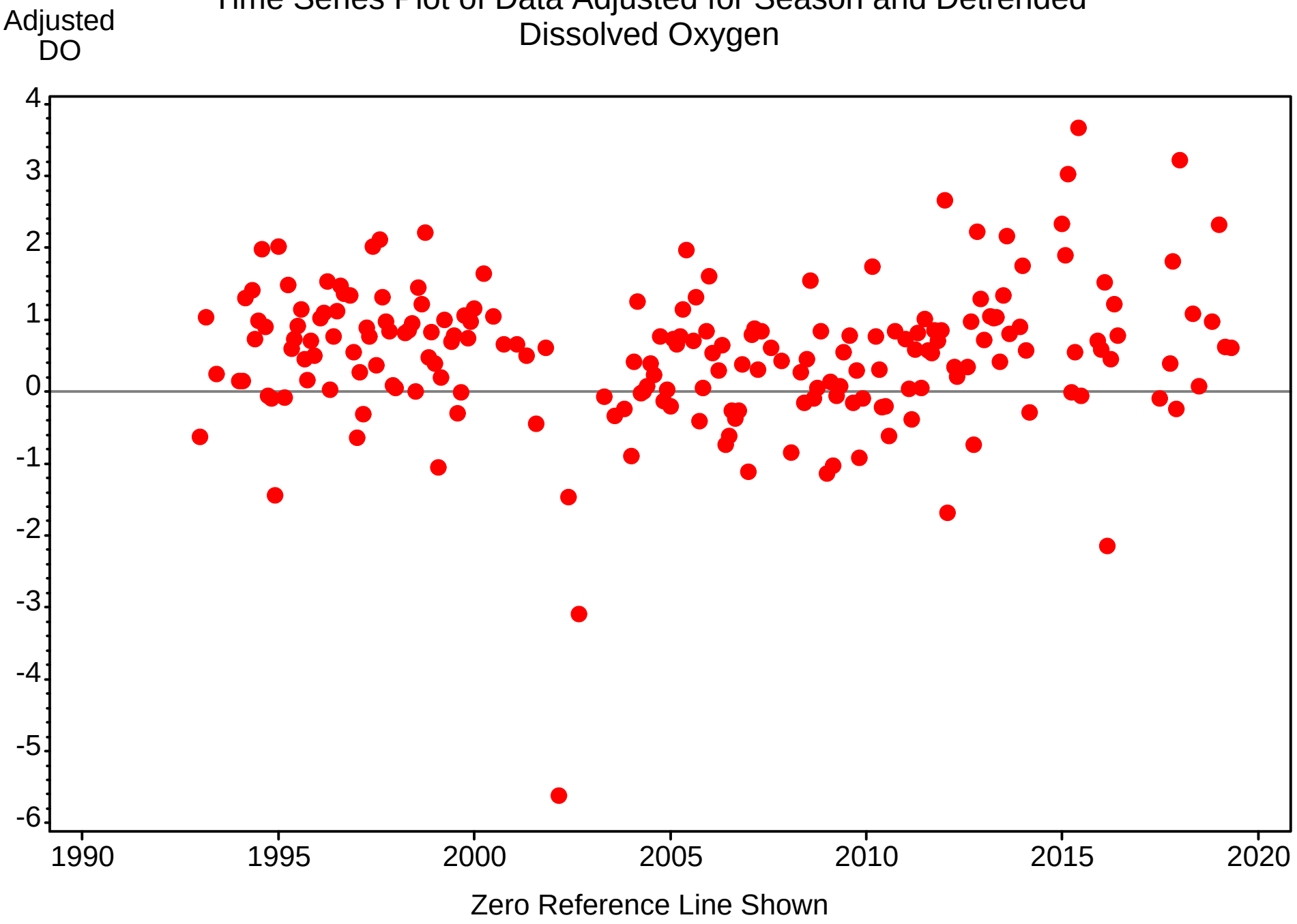
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.232	0	.009	-0.042

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.23164	.000007737	.00938735	-0.041875

S_21FLVEMDHL08 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

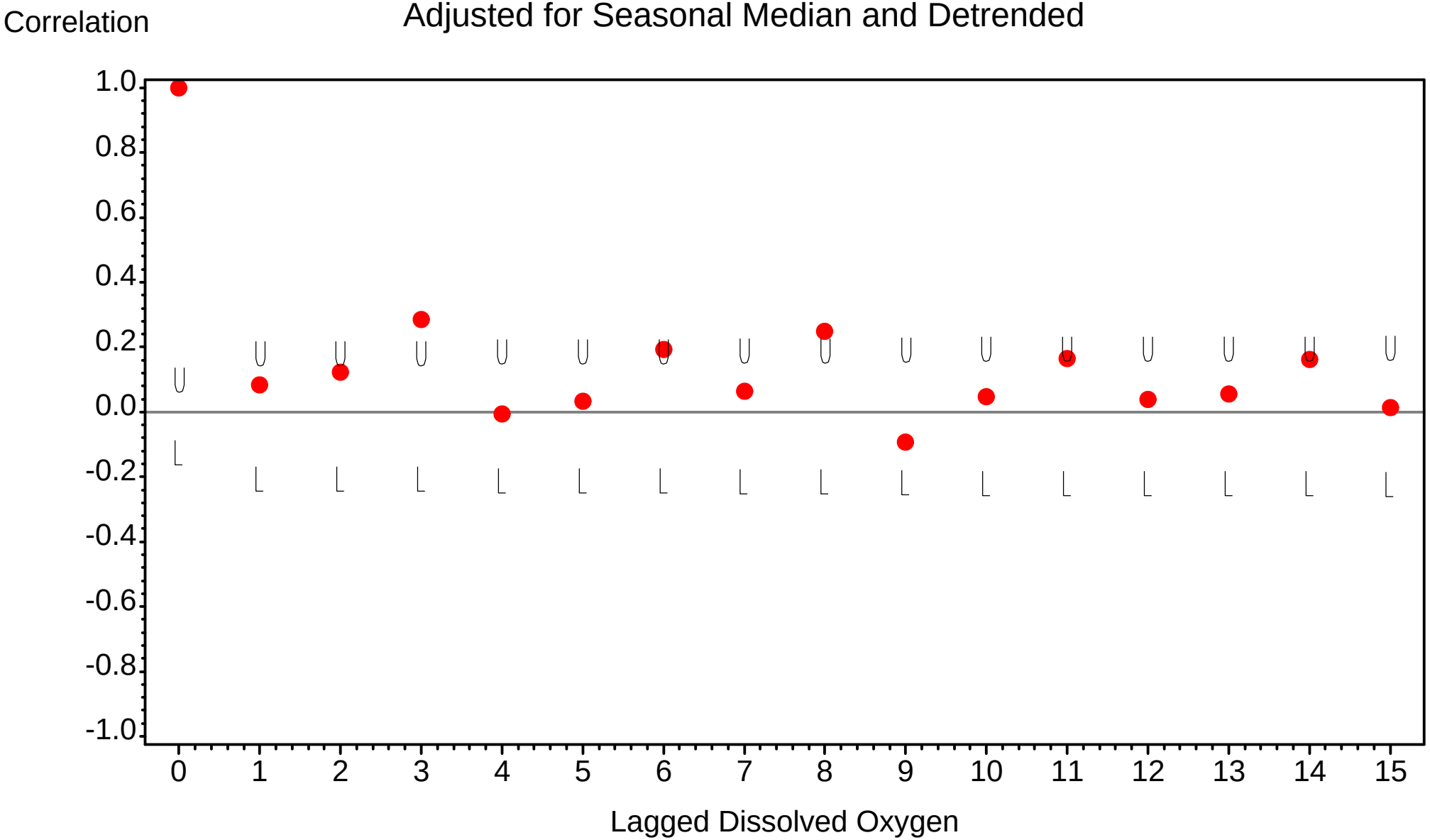


S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.083	0.096	0.192	-0.192
2	0.122	0.096	0.193	-0.193
3	0.284	0.097	0.194	-0.194
4	-0.007	0.099	0.199	-0.199
5	0.033	0.099	0.199	-0.199
6	0.193	0.099	0.199	-0.199
7	0.063	0.101	0.201	-0.201
8	0.248	0.101	0.202	-0.202
9	-0.092	0.103	0.205	-0.205
10	0.047	0.103	0.206	-0.206
11	0.165	0.103	0.206	-0.206
12	0.039	0.104	0.208	-0.208
13	0.055	0.104	0.208	-0.208
14	0.163	0.104	0.208	-0.208
15	0.014	0.105	0.209	-0.209

S_21FLVEMDHL08 Trends Appendix

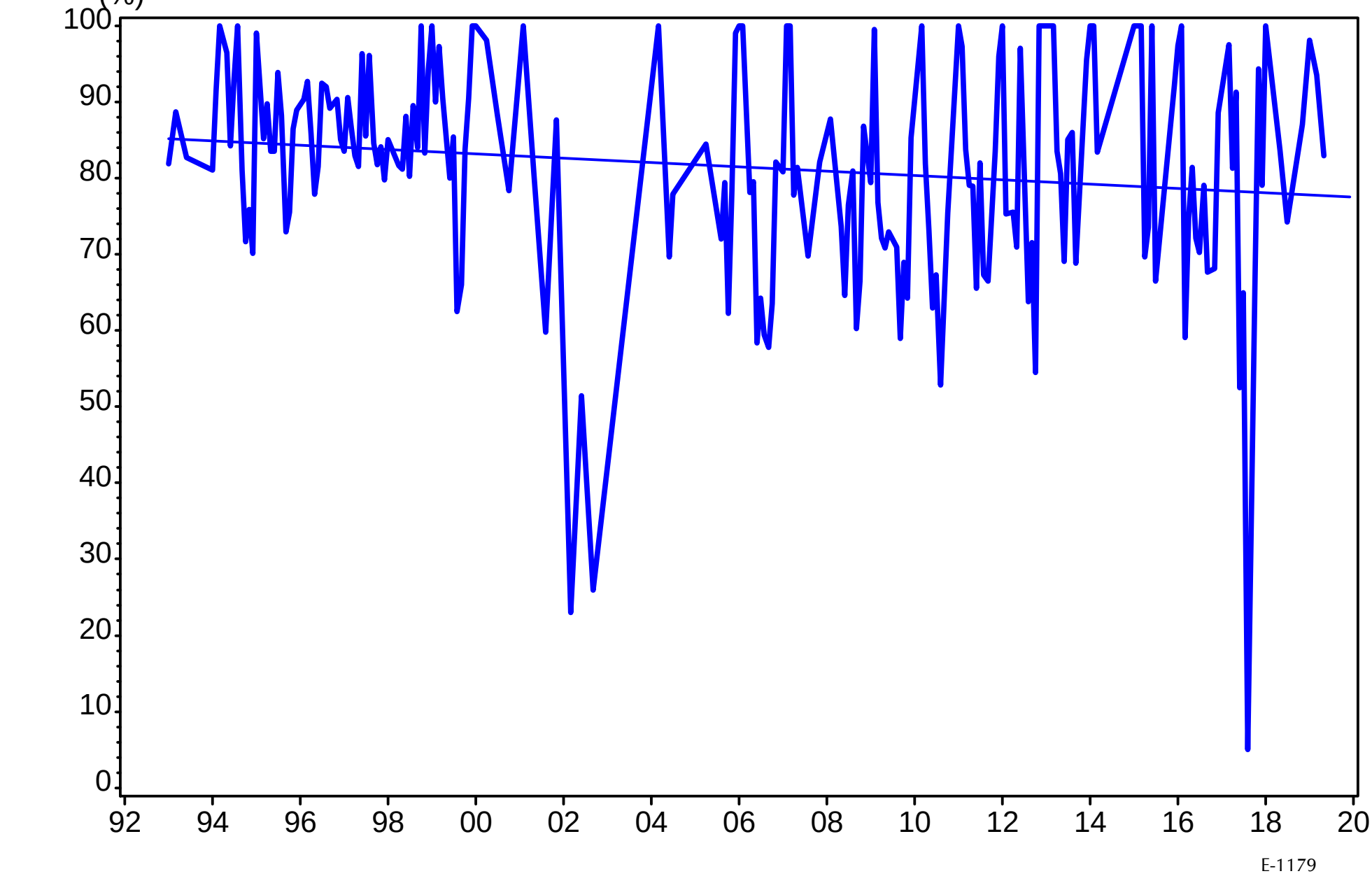
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

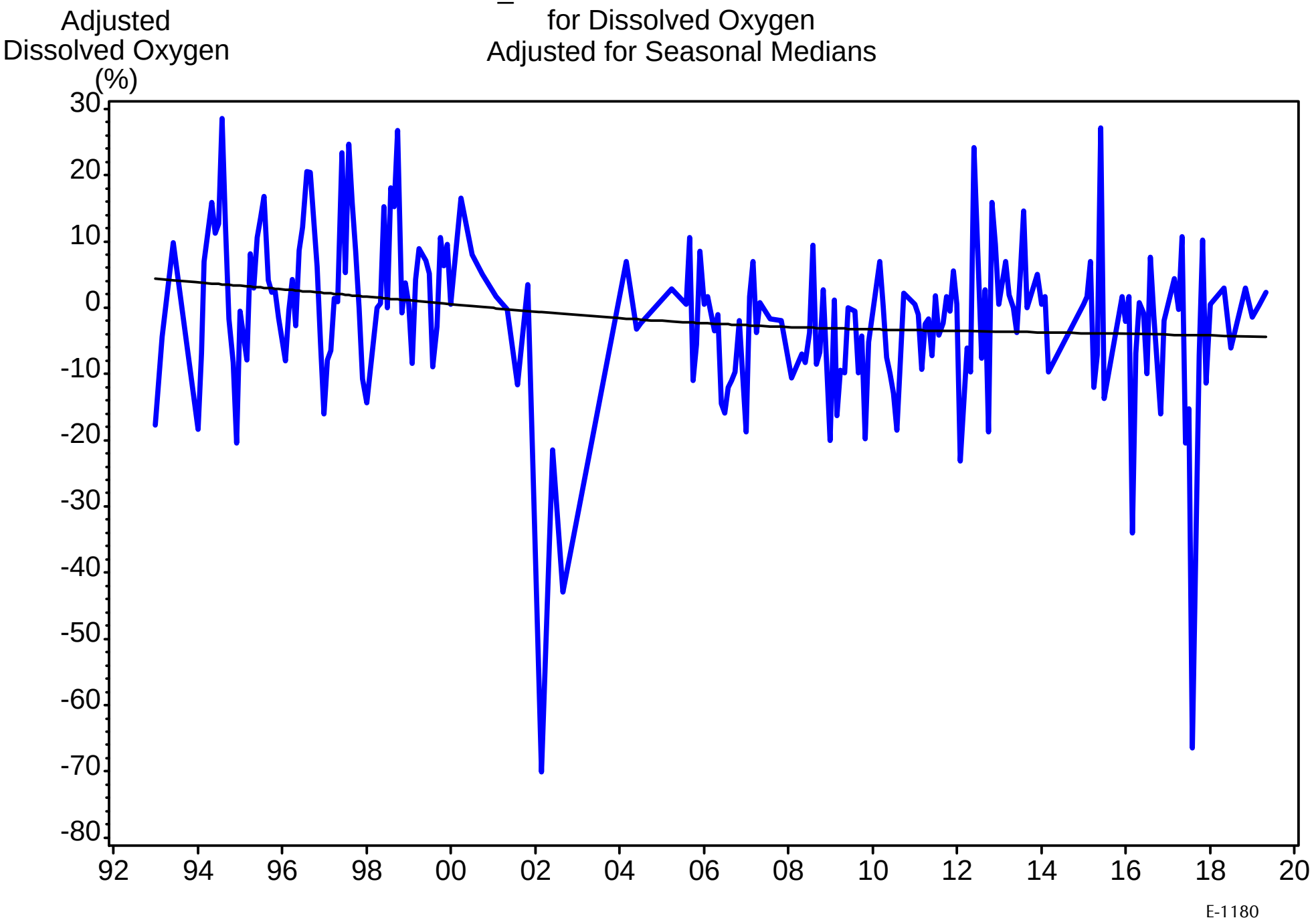
S_21FLVEMDHL08 Trends

S_21FLVEMDHL08 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1179

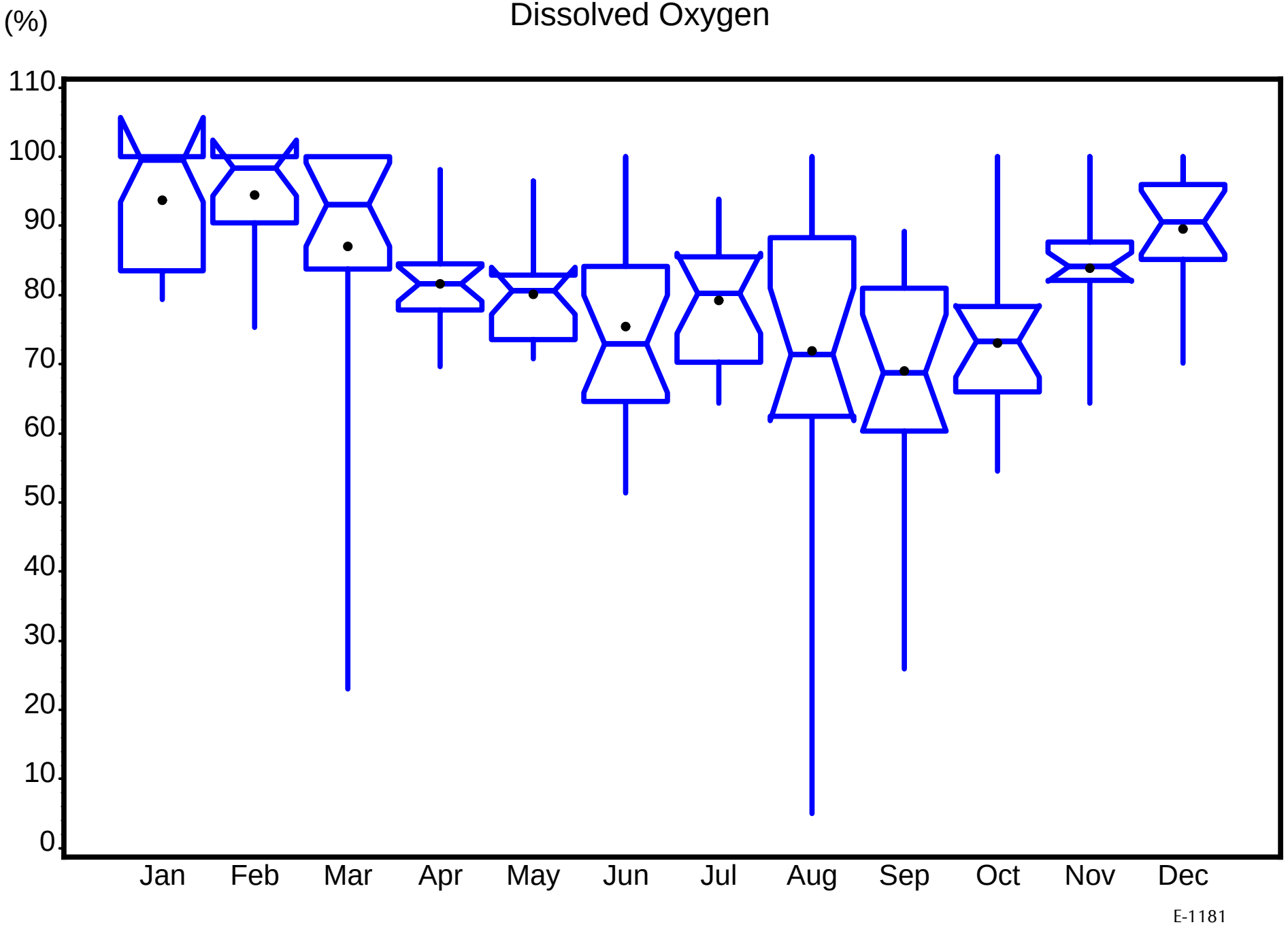
S_21FLVEMDHL08 Trends



S_21FLVEMDHL08 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



E-1181

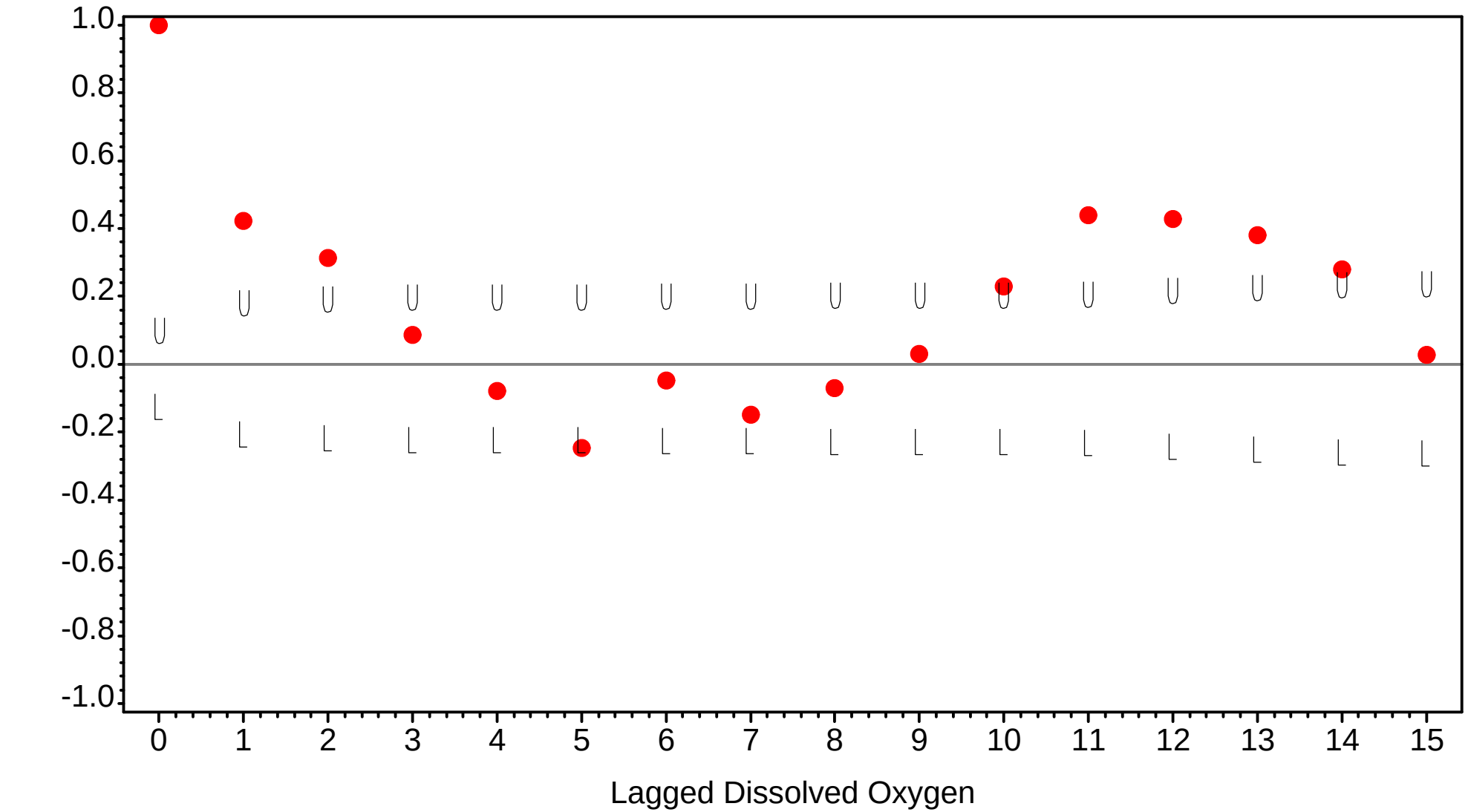
S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.422	0.096	0.192	-0.192
2	0.314	0.102	0.204	-0.204
3	0.087	0.105	0.209	-0.209
4	-0.078	0.105	0.210	-0.210
5	-0.246	0.105	0.210	-0.210
6	-0.048	0.107	0.214	-0.214
7	-0.148	0.107	0.214	-0.214
8	-0.071	0.108	0.215	-0.215
9	0.031	0.108	0.215	-0.215
10	0.229	0.108	0.216	-0.216
11	0.438	0.109	0.218	-0.218
12	0.429	0.115	0.229	-0.229
13	0.381	0.119	0.239	-0.239
14	0.279	0.123	0.246	-0.246
15	0.027	0.125	0.250	-0.250

S_21FLVEMDHL08 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1183

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

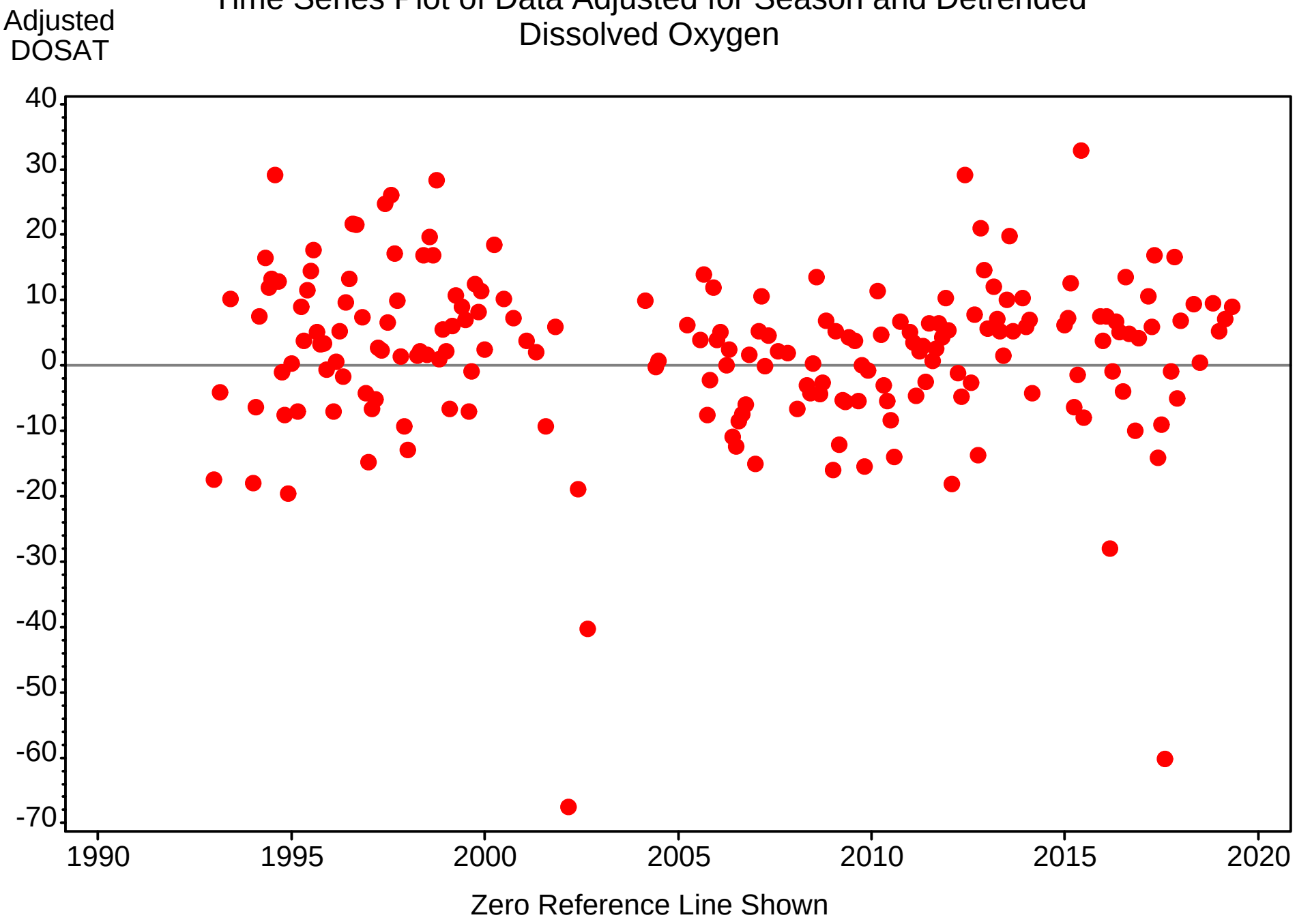
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.152	.003	0.037	-0.244

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.15249	.00335452	0.037151	-0.24445

S_21FLVEMDHL08 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



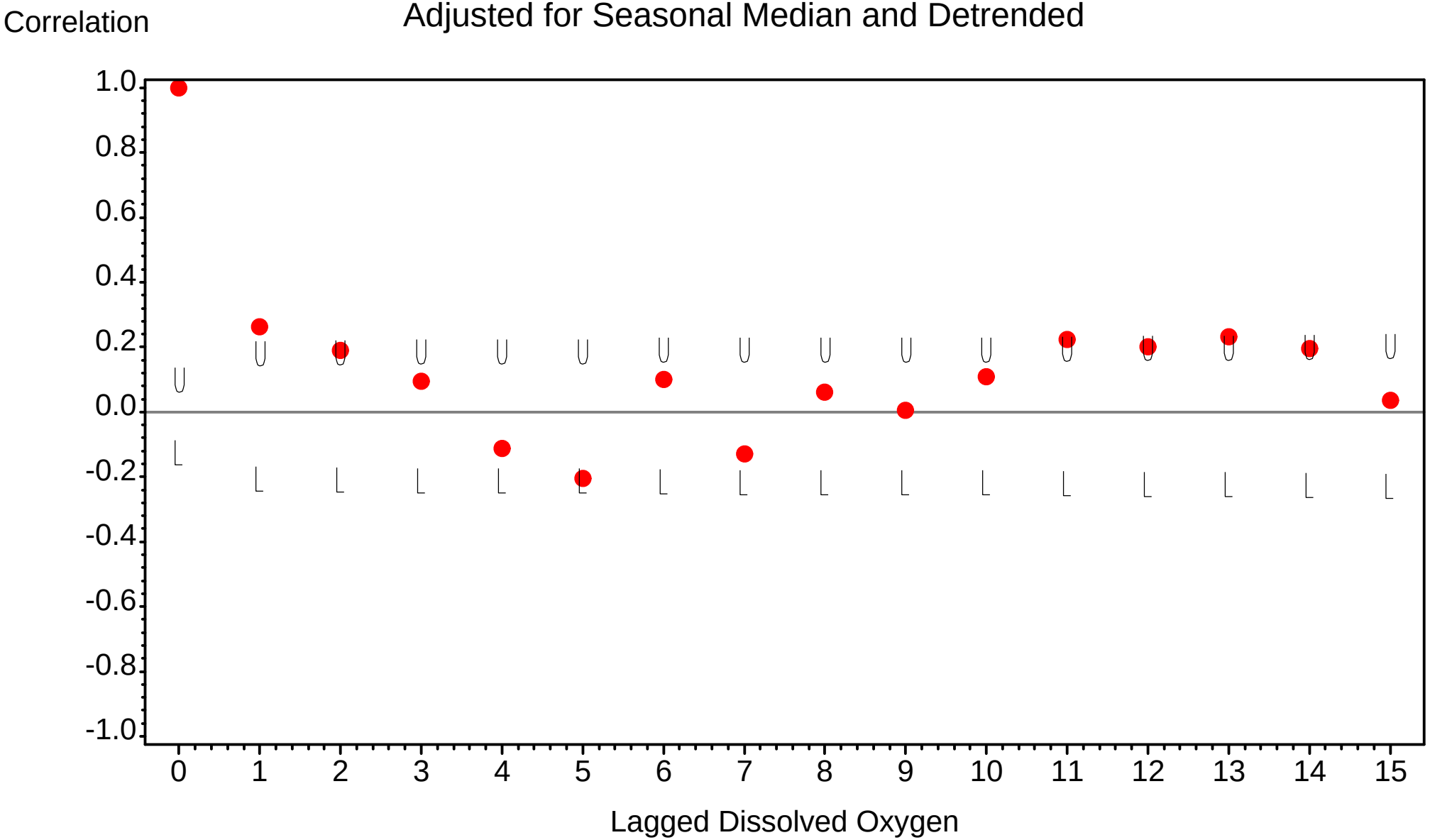
E-1186

S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.263	0.096	0.192	-0.192
2	0.191	0.098	0.197	-0.197
3	0.095	0.100	0.199	-0.199
4	-0.113	0.100	0.200	-0.200
5	-0.205	0.100	0.200	-0.200
6	0.100	0.102	0.203	-0.203
7	-0.129	0.102	0.204	-0.204
8	0.061	0.102	0.205	-0.205
9	0.005	0.102	0.205	-0.205
10	0.108	0.102	0.205	-0.205
11	0.223	0.103	0.206	-0.206
12	0.201	0.104	0.209	-0.209
13	0.231	0.105	0.211	-0.211
14	0.196	0.107	0.214	-0.214
15	0.036	0.108	0.216	-0.216

S_21FLVEMDHL08 Trends Appendix

Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended

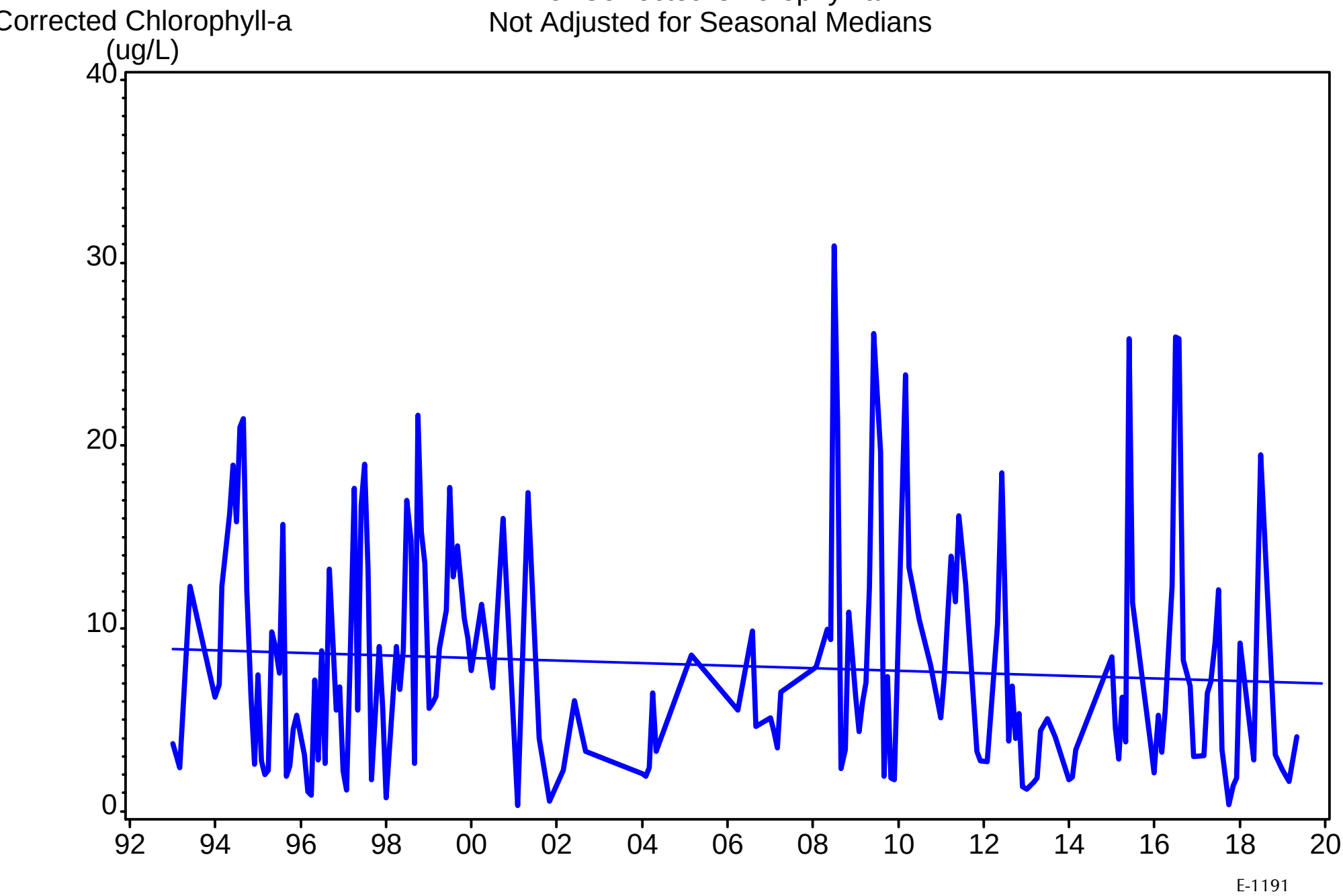


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1188

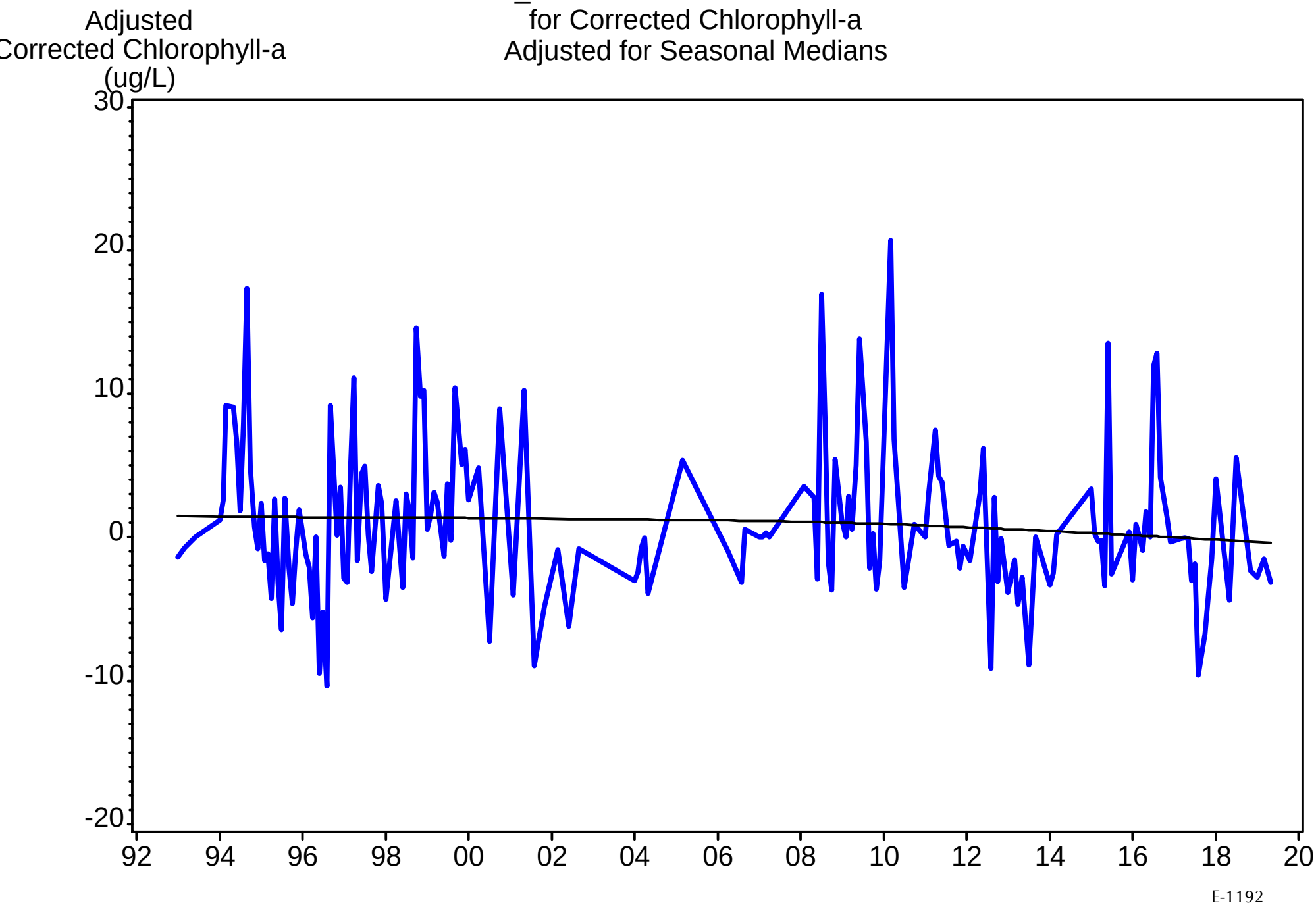
S_21FLVEMDHL08 Trends

S_21FLVEMDHL08 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



E-1191

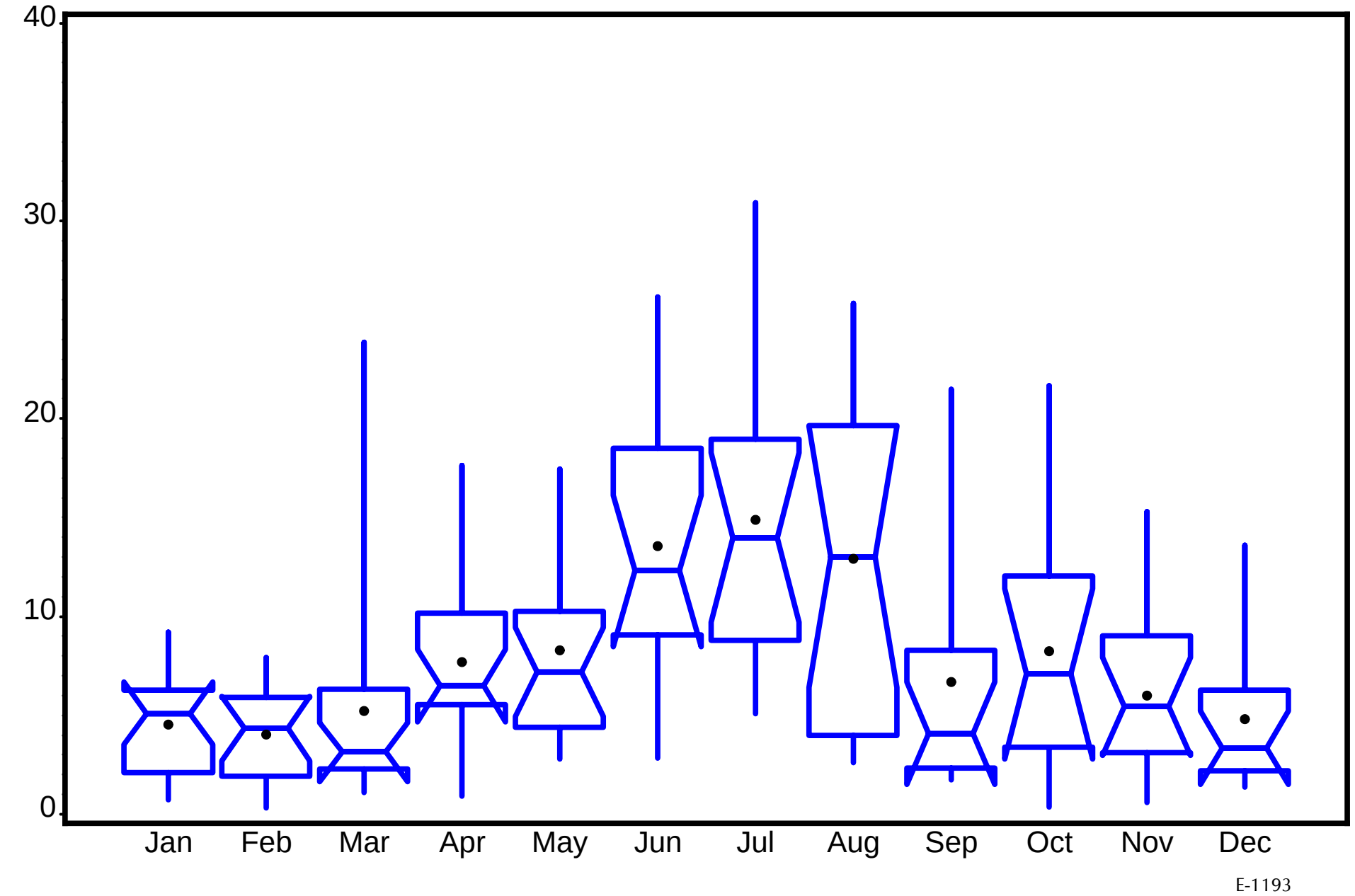
S_21FLVEMDHL08 Trends



S_21FLVEMDHL08 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a



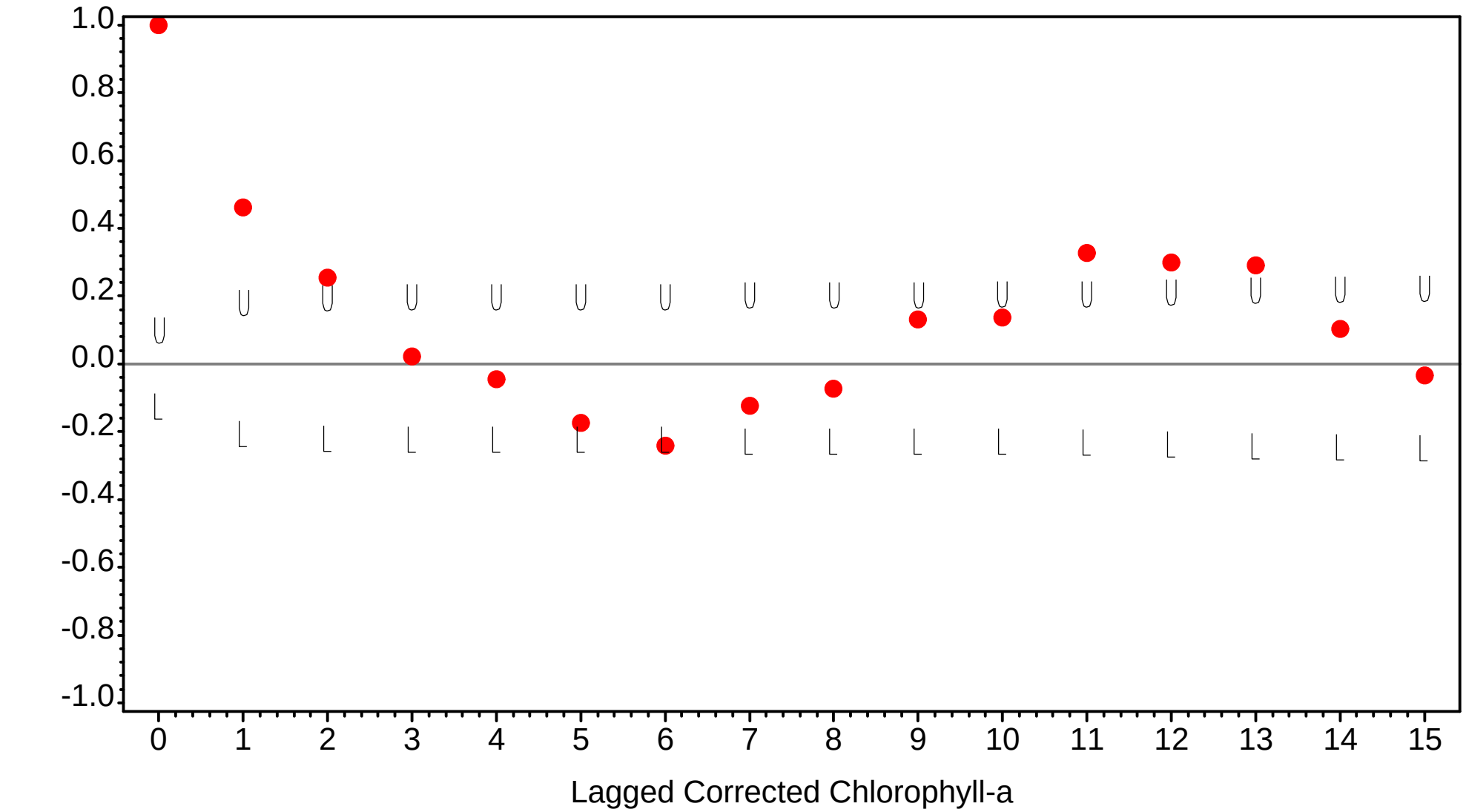
S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.461	0.096	0.192	-0.192
2	0.253	0.103	0.206	-0.206
3	0.021	0.105	0.209	-0.209
4	-0.044	0.105	0.209	-0.209
5	-0.175	0.105	0.210	-0.210
6	-0.240	0.106	0.211	-0.211
7	-0.124	0.107	0.215	-0.215
8	-0.074	0.108	0.216	-0.216
9	0.132	0.108	0.216	-0.216
10	0.138	0.108	0.217	-0.217
11	0.327	0.109	0.218	-0.218
12	0.300	0.112	0.224	-0.224
13	0.290	0.114	0.229	-0.229
14	0.103	0.117	0.233	-0.233
15	-0.033	0.117	0.234	-0.234

S_21FLVEMDHL08 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1195

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

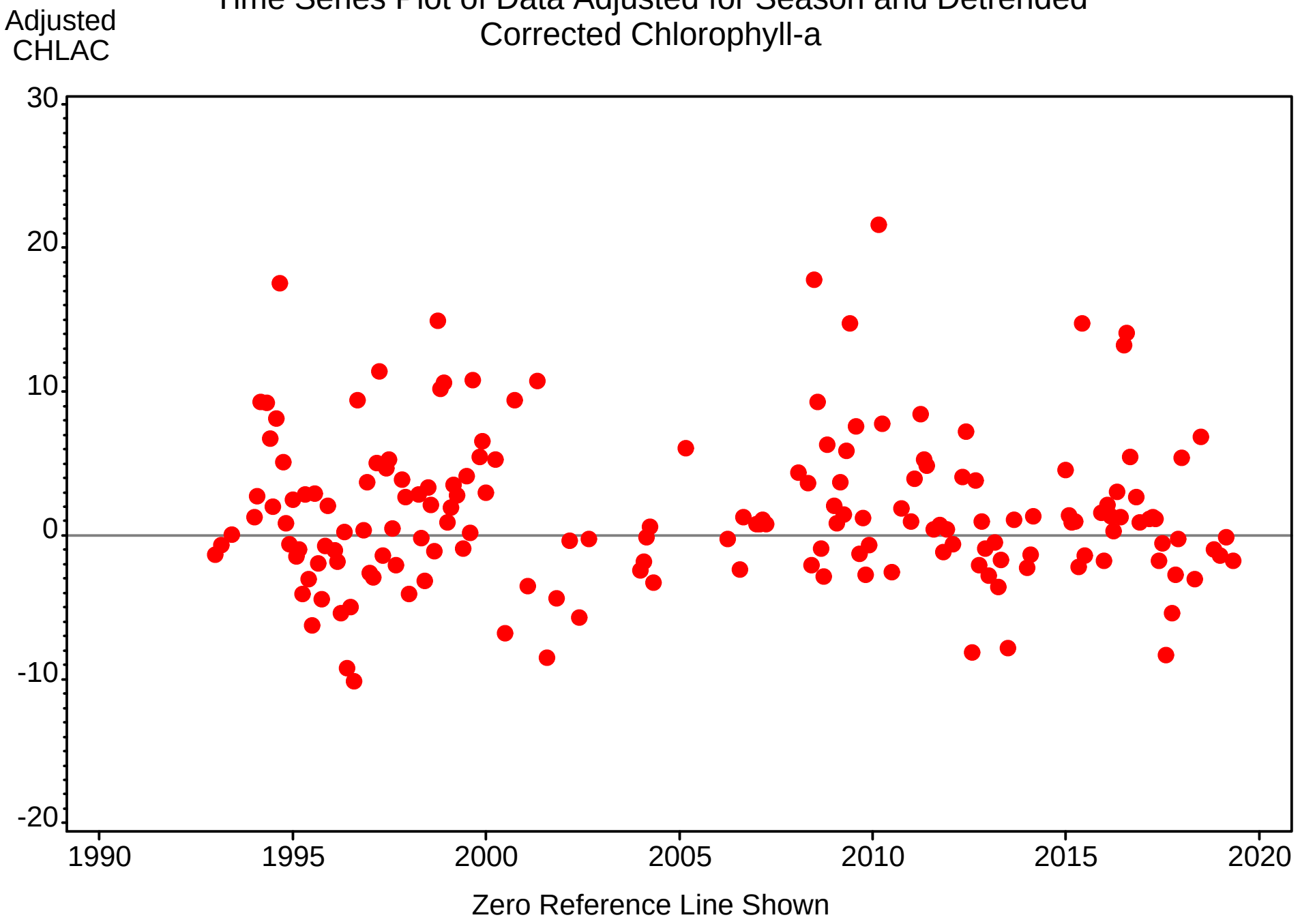
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.071	0.214	0.403	-0.051

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.071487	0.21416	0.40266	-0.050733

S_21FLVEMDHL08 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



E-1198

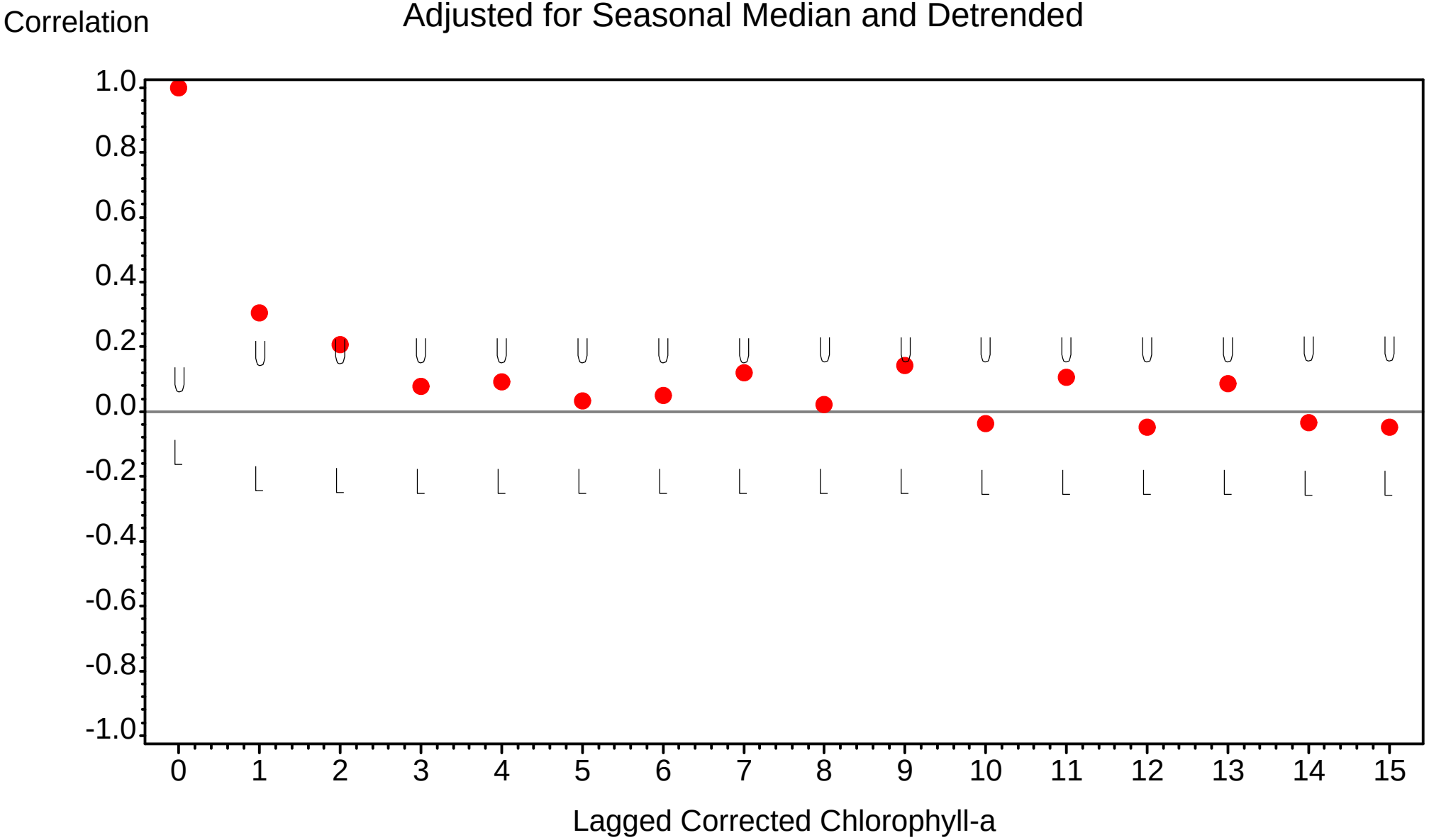
S_21FLVEMDHL08 Trends Appendix

Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.304	0.096	0.192	-0.192
2	0.208	0.099	0.198	-0.198
3	0.079	0.100	0.201	-0.201
4	0.093	0.101	0.201	-0.201
5	0.034	0.101	0.202	-0.202
6	0.051	0.101	0.202	-0.202
7	0.121	0.101	0.202	-0.202
8	0.021	0.102	0.203	-0.203
9	0.142	0.102	0.203	-0.203
10	-0.038	0.102	0.204	-0.204
11	0.107	0.102	0.204	-0.204
12	-0.048	0.103	0.205	-0.205
13	0.086	0.103	0.205	-0.205
14	-0.033	0.103	0.206	-0.206
15	-0.048	0.103	0.206	-0.206

S_21FLVEMDHL08 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended

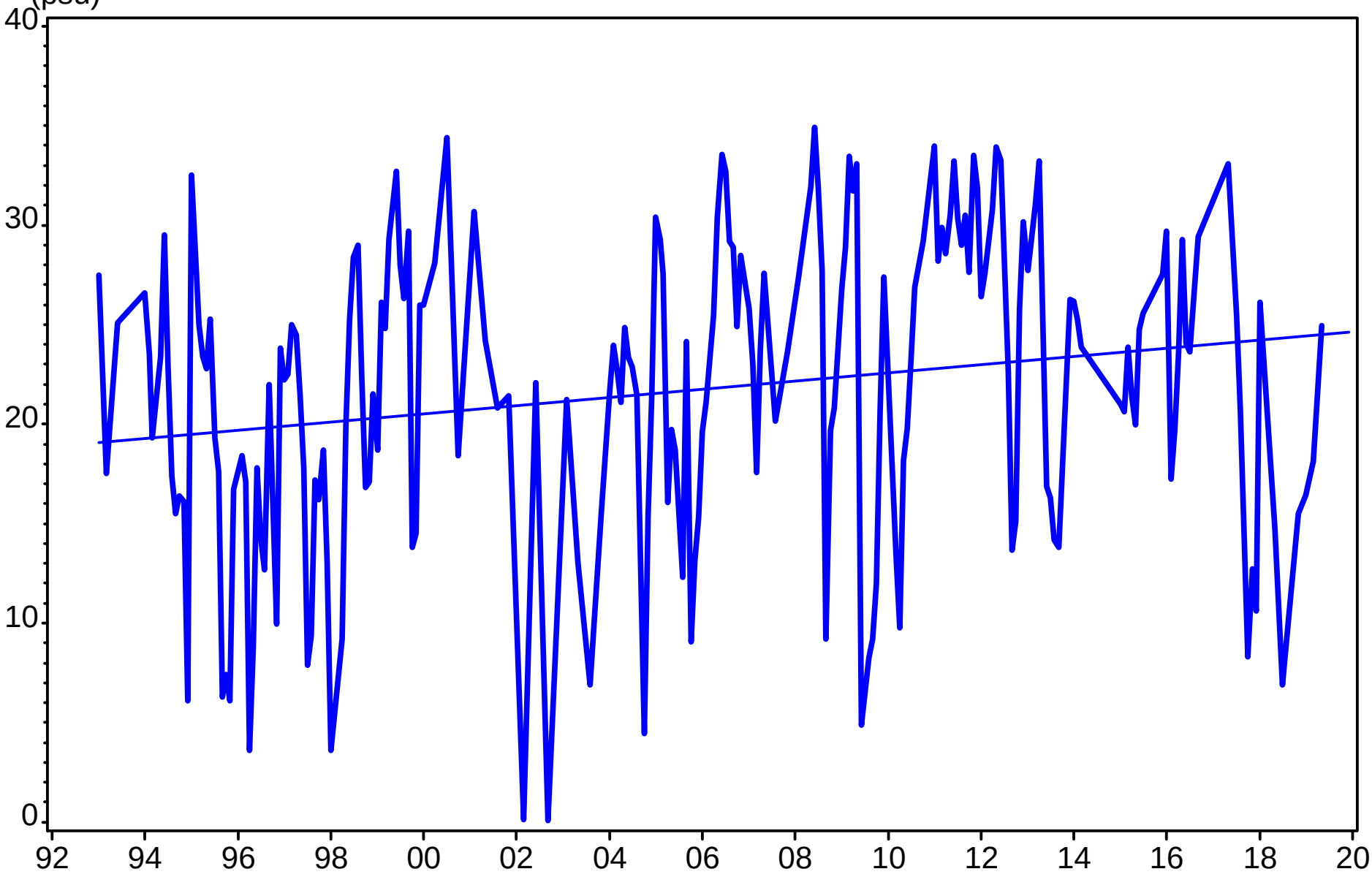


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1200

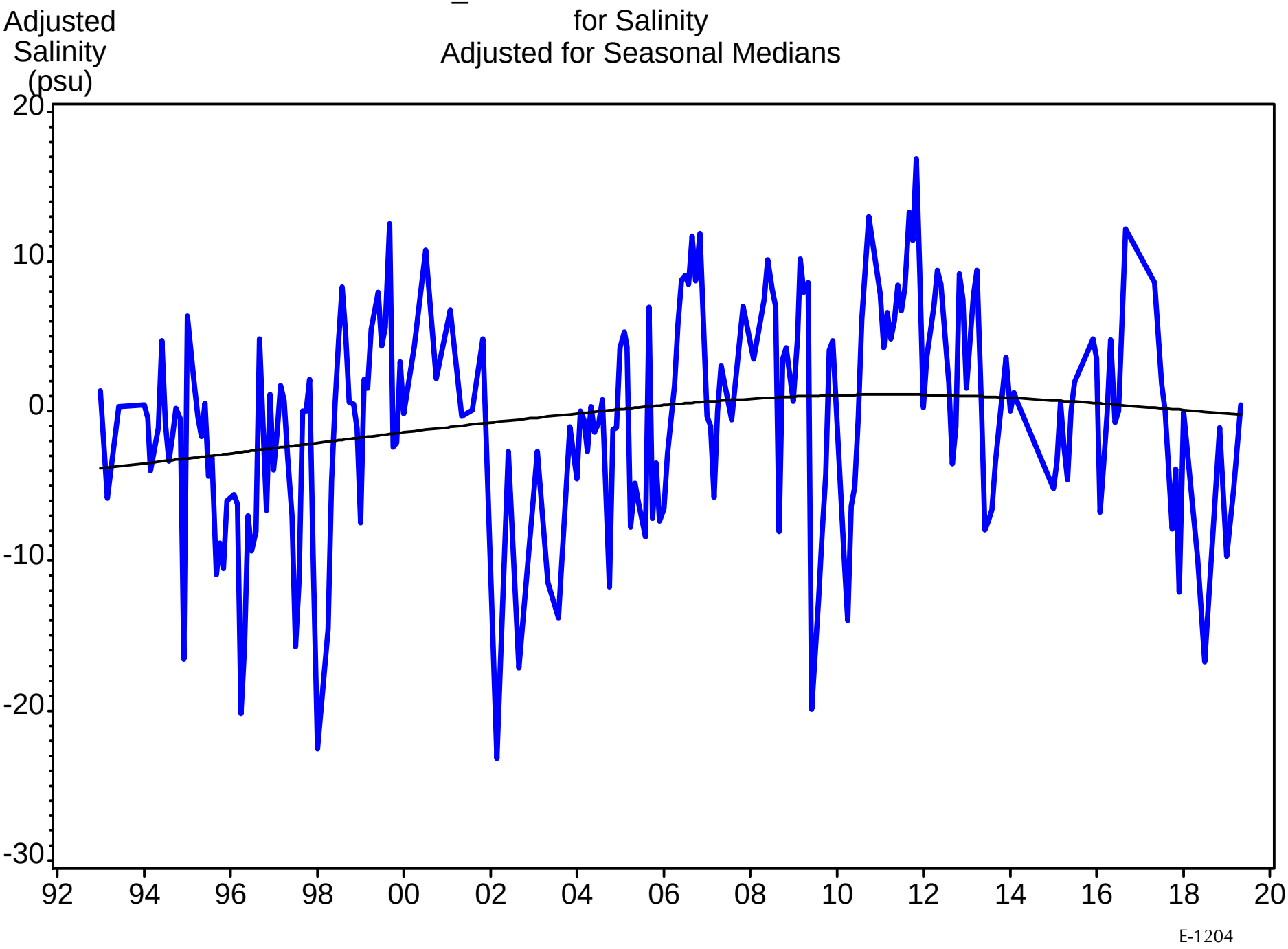
S_21FLVEMDHL08 Trends

S_21FLVEMDHL08 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



E-1203

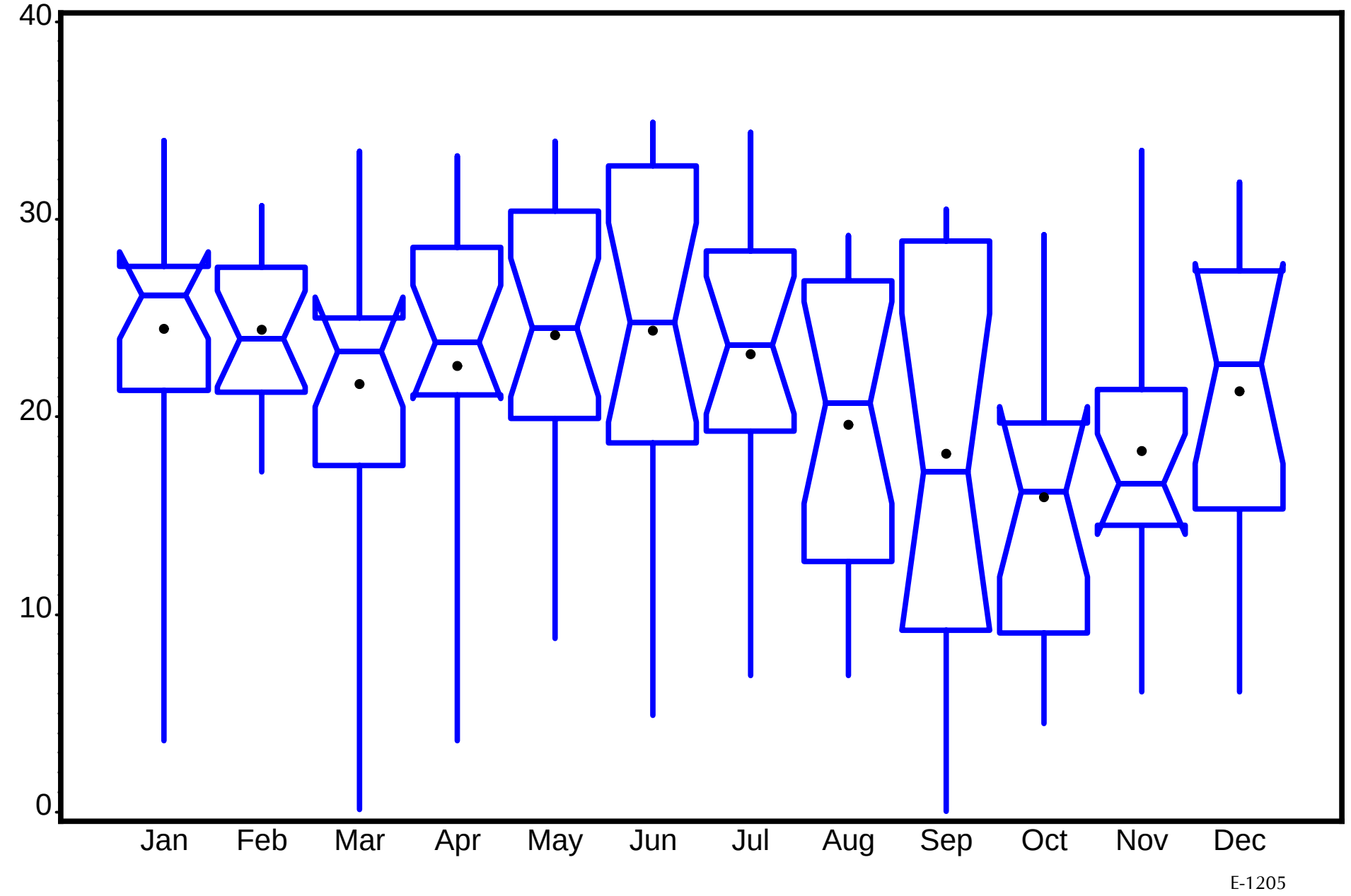
S_21FLVEMDHL08 Trends



S_21FLVEMDHL08 Trends Appendix

Seasonal Univariate Statistics

Salinity



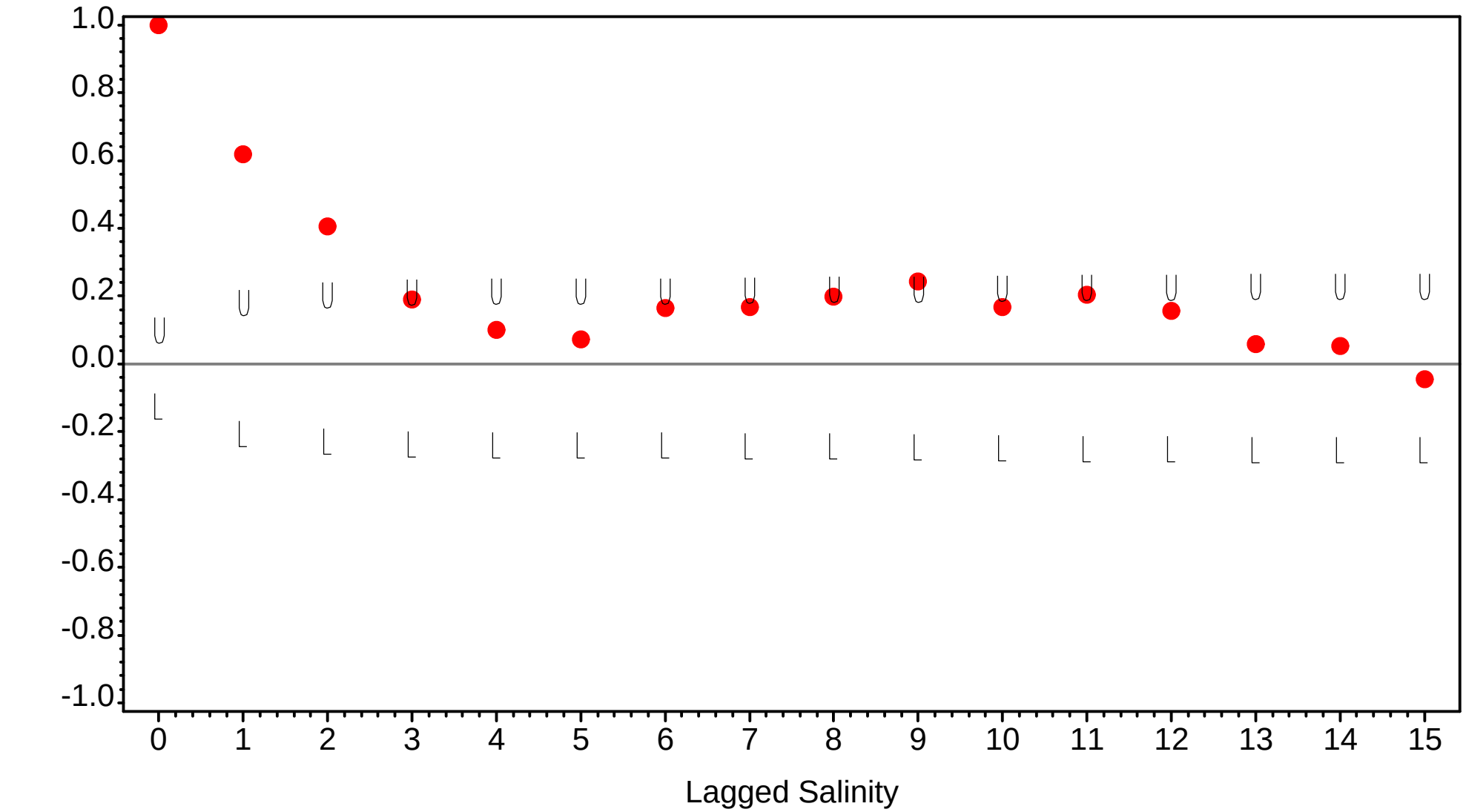
S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.619	0.096	0.192	-0.192
2	0.405	0.108	0.216	-0.216
3	0.189	0.112	0.225	-0.225
4	0.100	0.113	0.227	-0.227
5	0.072	0.114	0.227	-0.227
6	0.166	0.114	0.228	-0.228
7	0.167	0.115	0.229	-0.229
8	0.198	0.115	0.231	-0.231
9	0.243	0.116	0.233	-0.233
10	0.168	0.118	0.236	-0.236
11	0.203	0.119	0.237	-0.237
12	0.156	0.120	0.239	-0.239
13	0.057	0.120	0.241	-0.241
14	0.052	0.120	0.241	-0.241
15	-0.046	0.120	0.241	-0.241

S_21FLVEMDHL08 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

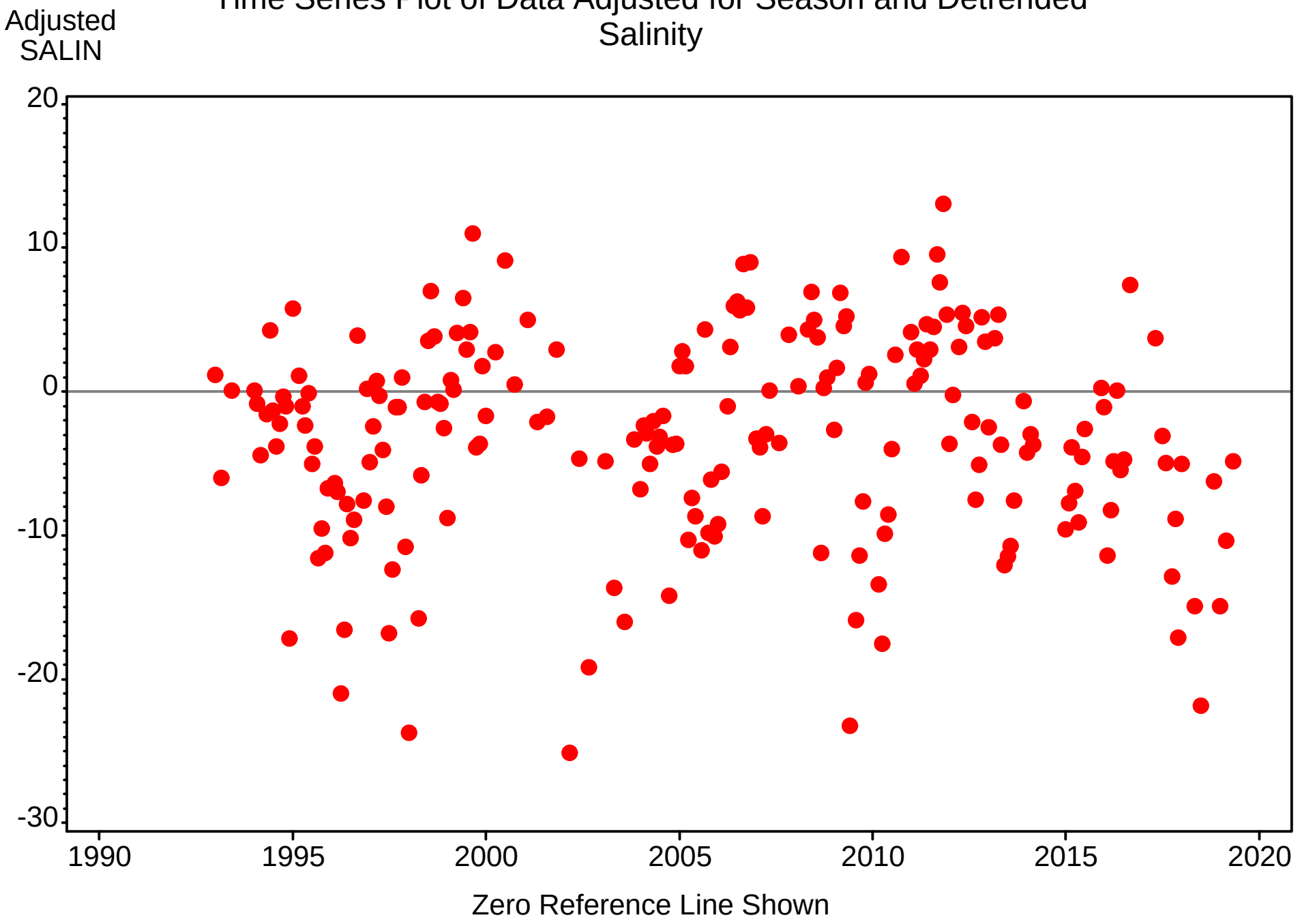
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.136	.008	0.129	0.193

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.13555	.00784552	0.12892	0.19307

S_21FLVEMDHL08 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



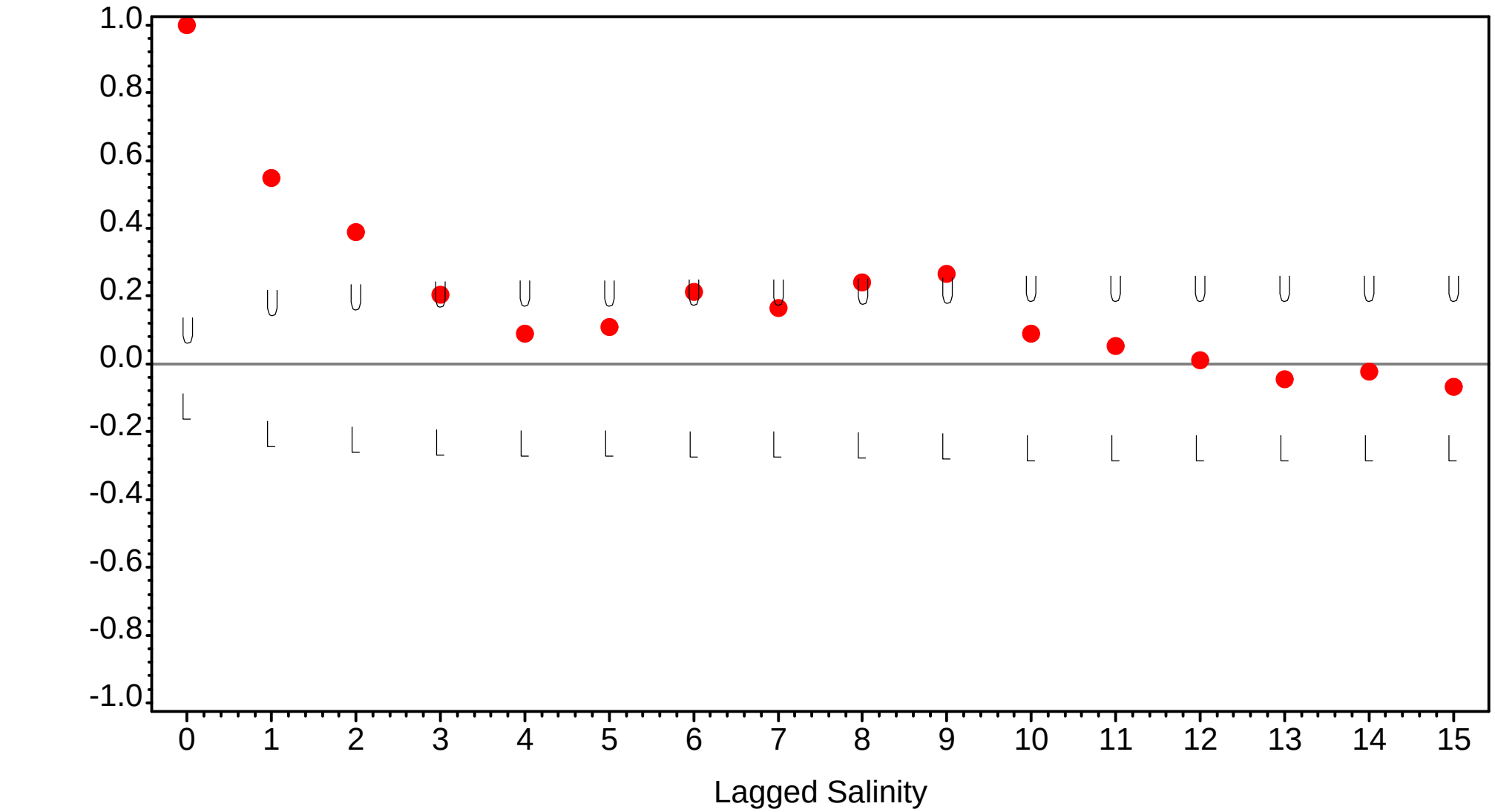
S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.547	0.096	0.192	-0.192
2	0.388	0.105	0.211	-0.211
3	0.204	0.110	0.219	-0.219
4	0.090	0.111	0.222	-0.222
5	0.108	0.111	0.222	-0.222
6	0.211	0.111	0.223	-0.223
7	0.166	0.113	0.225	-0.225
8	0.241	0.113	0.227	-0.227
9	0.265	0.115	0.230	-0.230
10	0.088	0.117	0.234	-0.234
11	0.052	0.117	0.234	-0.234
12	0.012	0.117	0.234	-0.234
13	-0.045	0.117	0.234	-0.234
14	-0.023	0.117	0.234	-0.234
15	-0.069	0.117	0.234	-0.234

S_21FLVEMDHL08 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

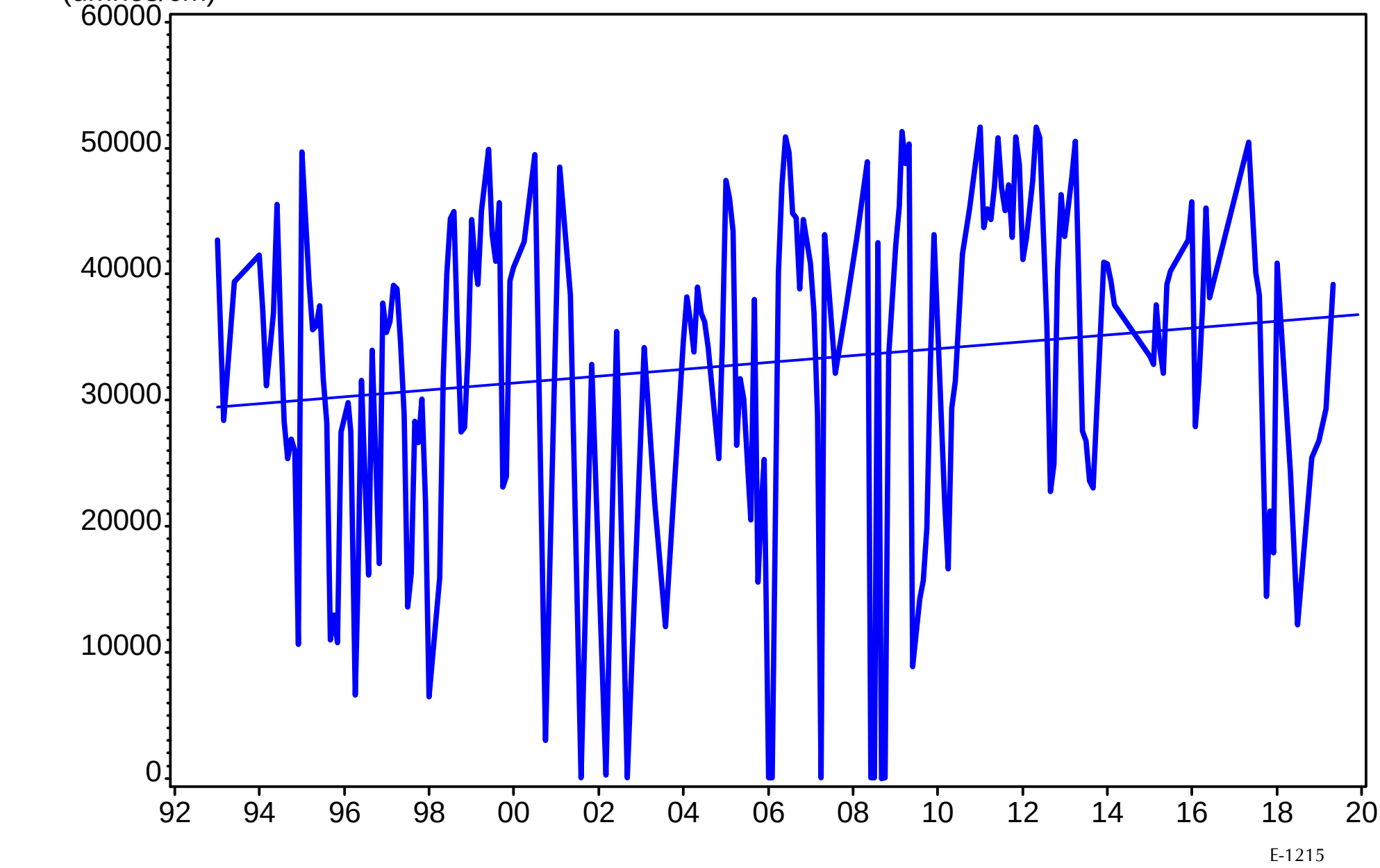


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL08 Trends

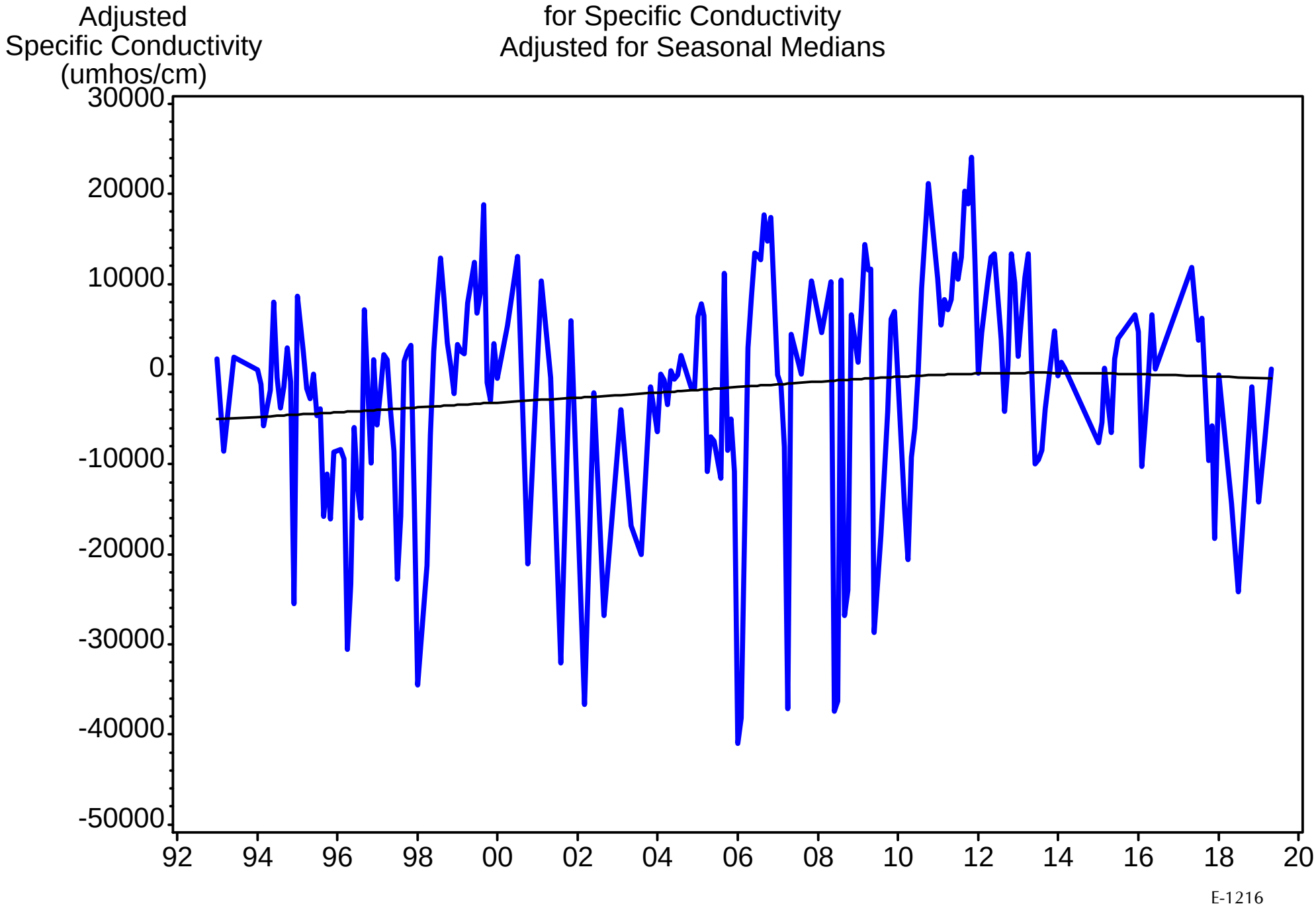
S_21FLVEMDHL08 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



E-1215

S_21FLVEMDHL08 Trends

S_21FLVEMDHL08 Time Series for Specific Conductivity Adjusted for Seasonal Medians



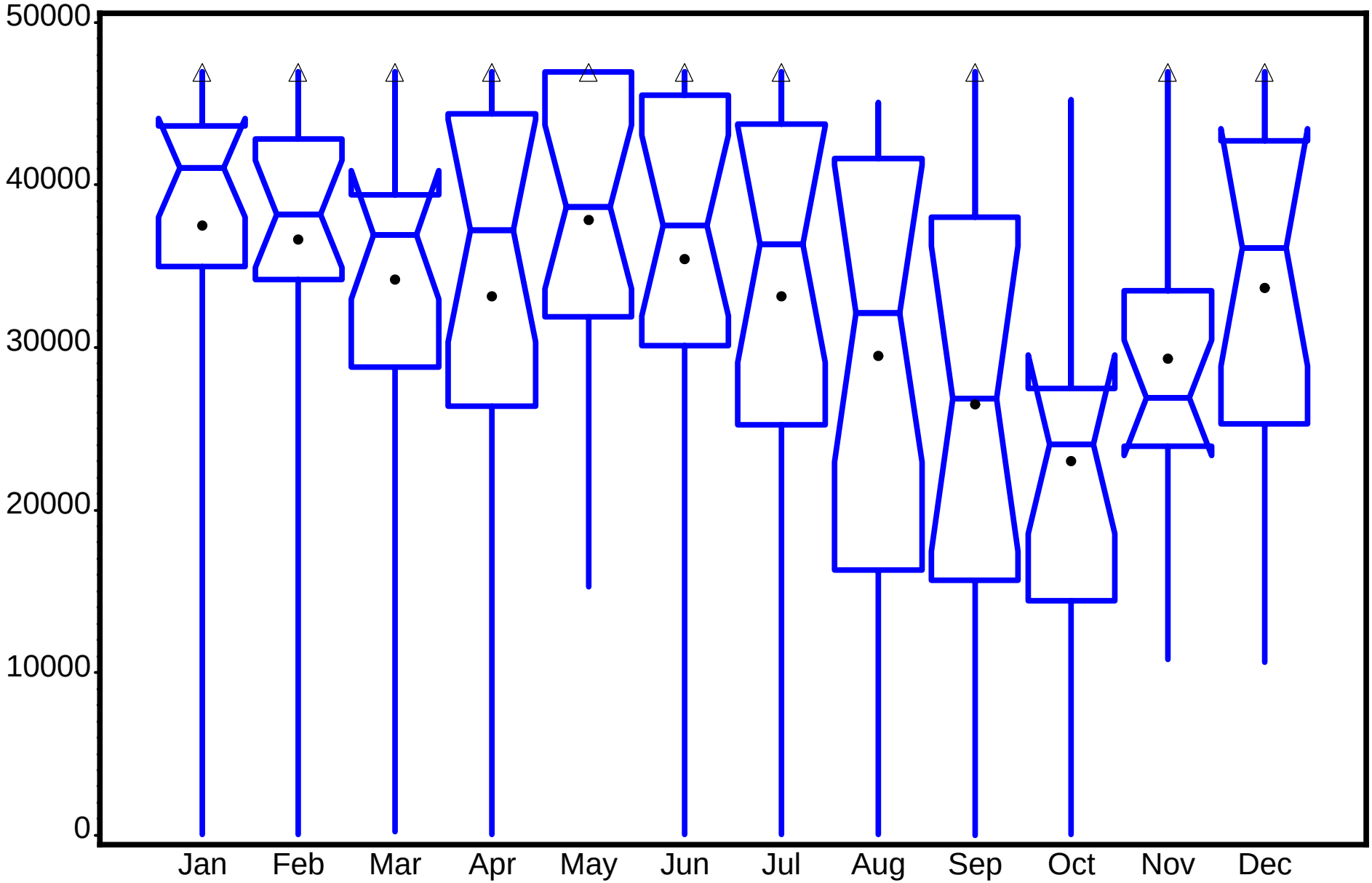
E-1216

S_21FLVEMDHL08 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



E-1217

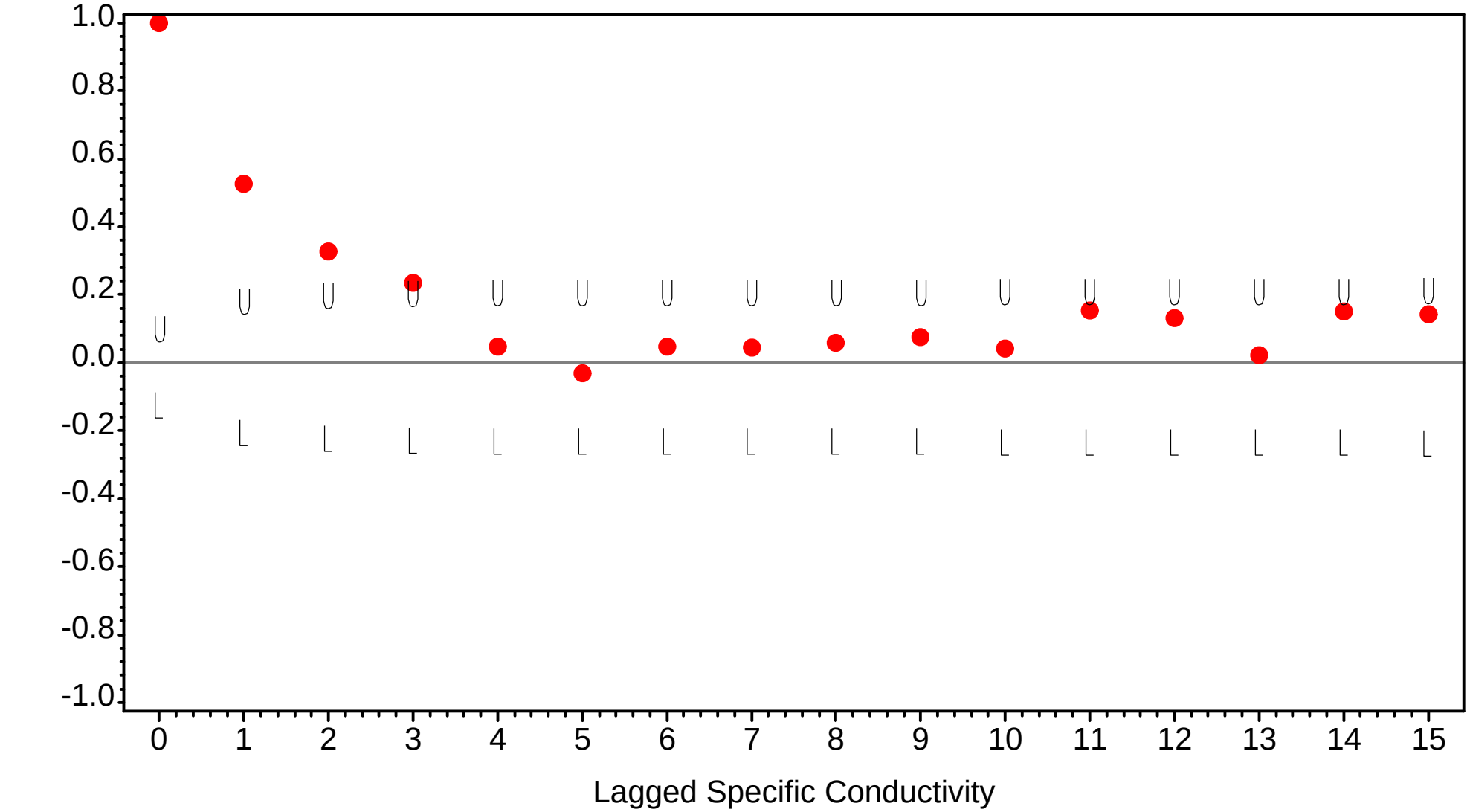
S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.527	0.096	0.192	-0.192
2	0.326	0.105	0.209	-0.209
3	0.234	0.108	0.216	-0.216
4	0.048	0.109	0.219	-0.219
5	-0.030	0.109	0.219	-0.219
6	0.047	0.109	0.219	-0.219
7	0.045	0.110	0.219	-0.219
8	0.057	0.110	0.219	-0.219
9	0.076	0.110	0.219	-0.219
10	0.042	0.110	0.220	-0.220
11	0.153	0.110	0.220	-0.220
12	0.131	0.111	0.221	-0.221
13	0.022	0.111	0.222	-0.222
14	0.151	0.111	0.222	-0.222
15	0.143	0.112	0.223	-0.223

S_21FLVEMDHL08 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

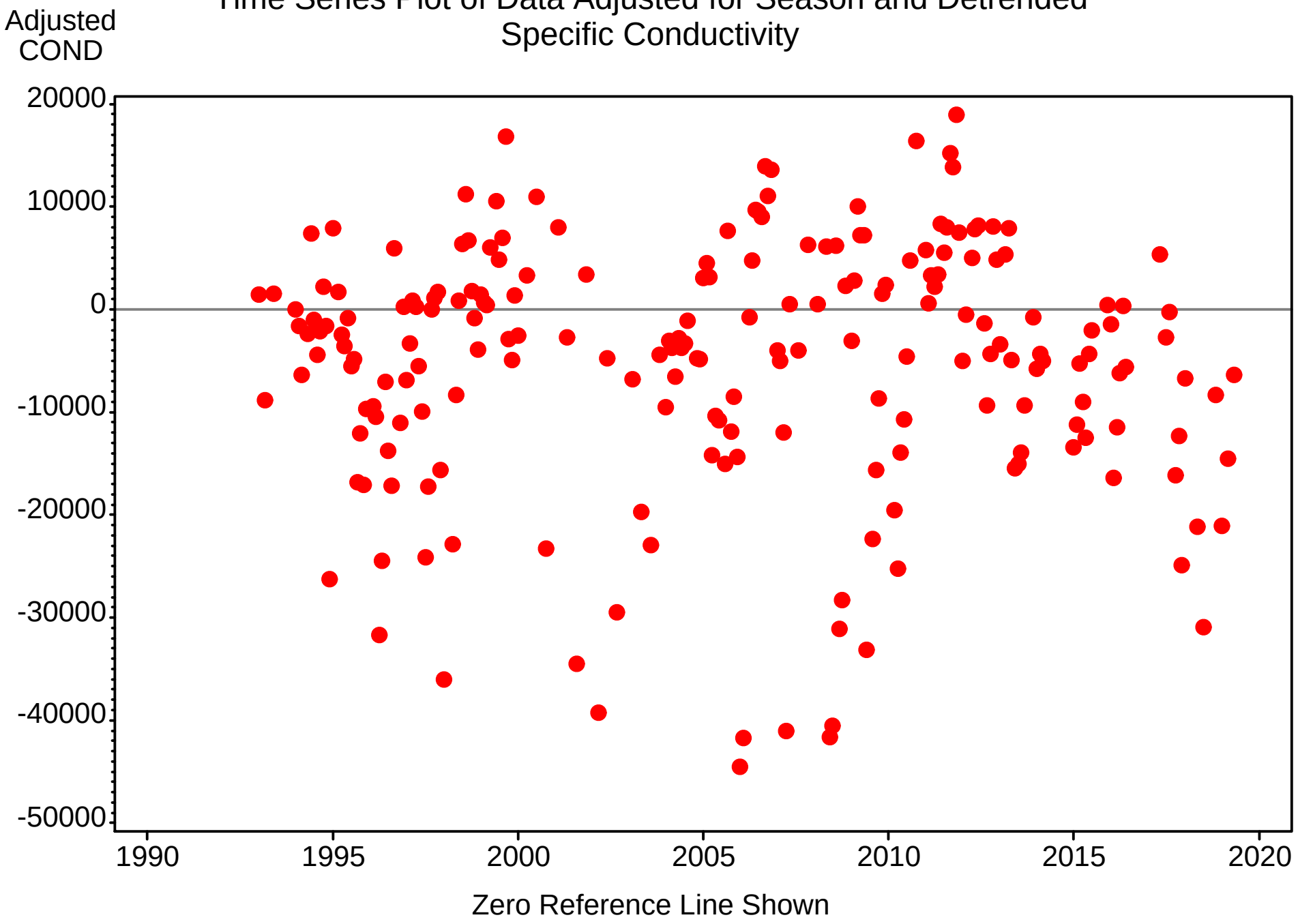
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.12	0.02	0.16	254.845

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.11995	0.019931	0.16007	254.845

S_21FLVEMDHL08 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

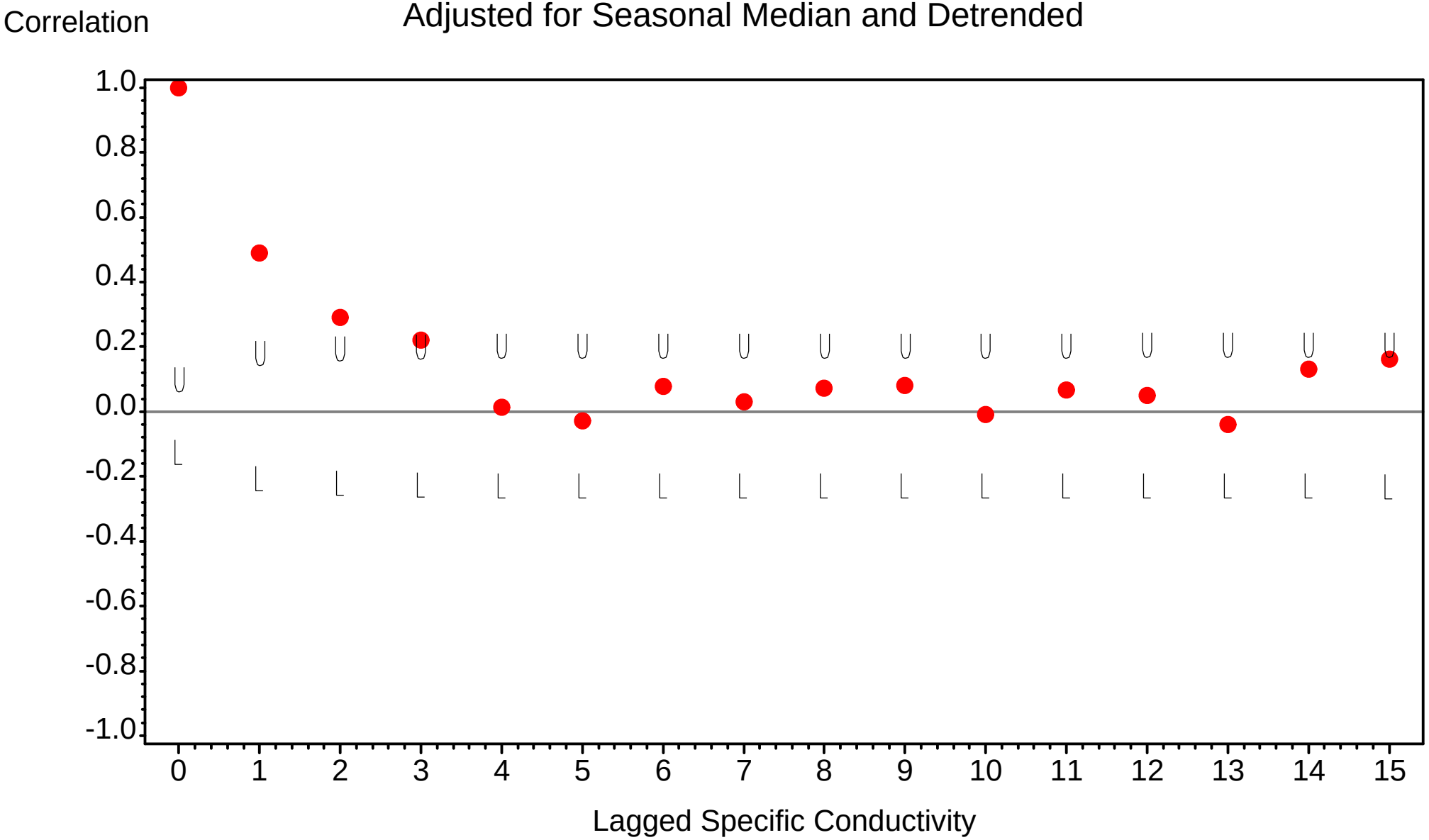


S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.490	0.096	0.192	-0.192
2	0.292	0.104	0.207	-0.207
3	0.221	0.106	0.212	-0.212
4	0.014	0.108	0.215	-0.215
5	-0.028	0.108	0.215	-0.215
6	0.078	0.108	0.215	-0.215
7	0.029	0.108	0.216	-0.216
8	0.071	0.108	0.216	-0.216
9	0.081	0.108	0.216	-0.216
10	-0.009	0.108	0.216	-0.216
11	0.066	0.108	0.216	-0.216
12	0.050	0.108	0.217	-0.217
13	-0.041	0.108	0.217	-0.217
14	0.131	0.108	0.217	-0.217
15	0.162	0.109	0.218	-0.218

S_21FLVEMDHL08 Trends Appendix

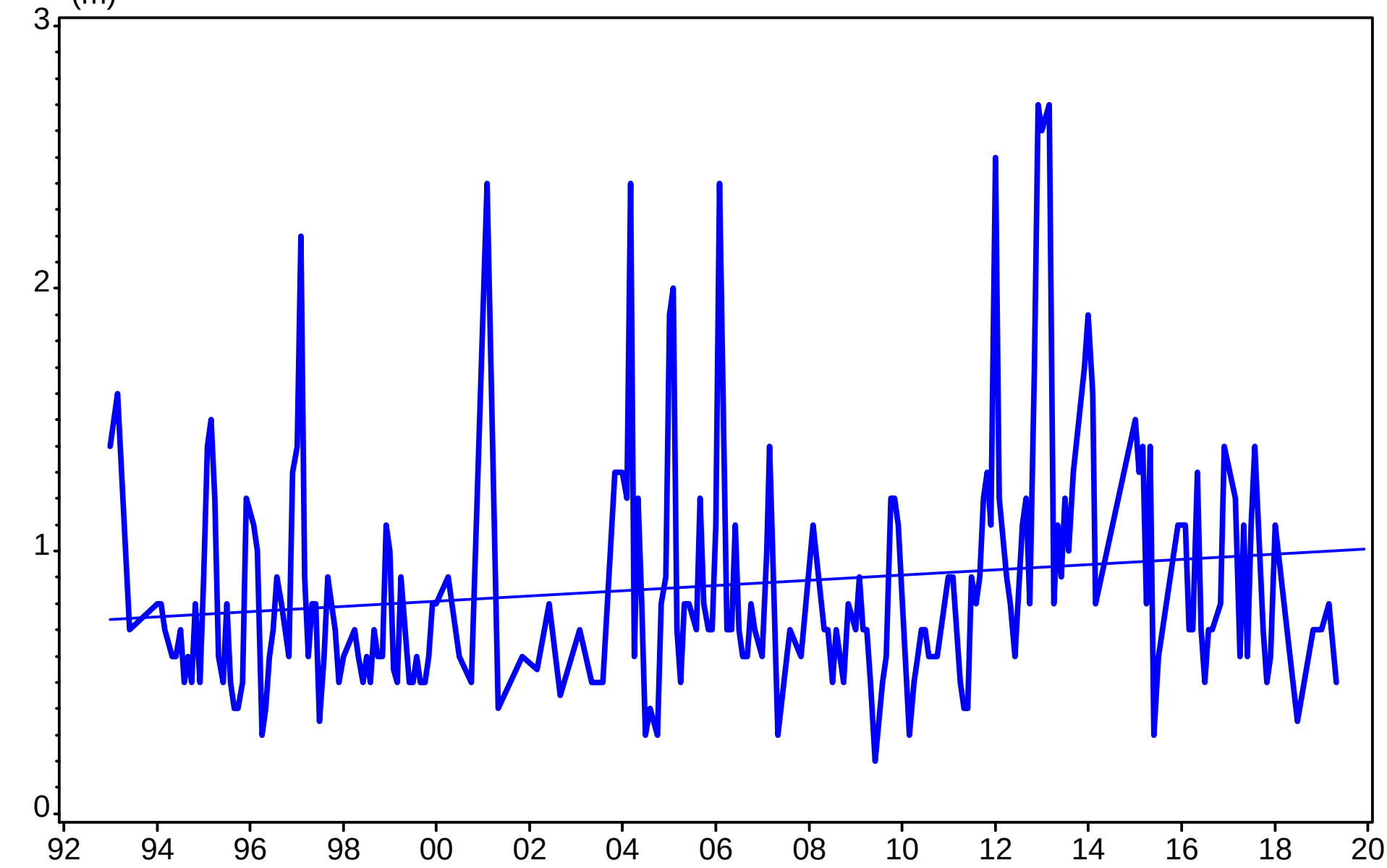
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

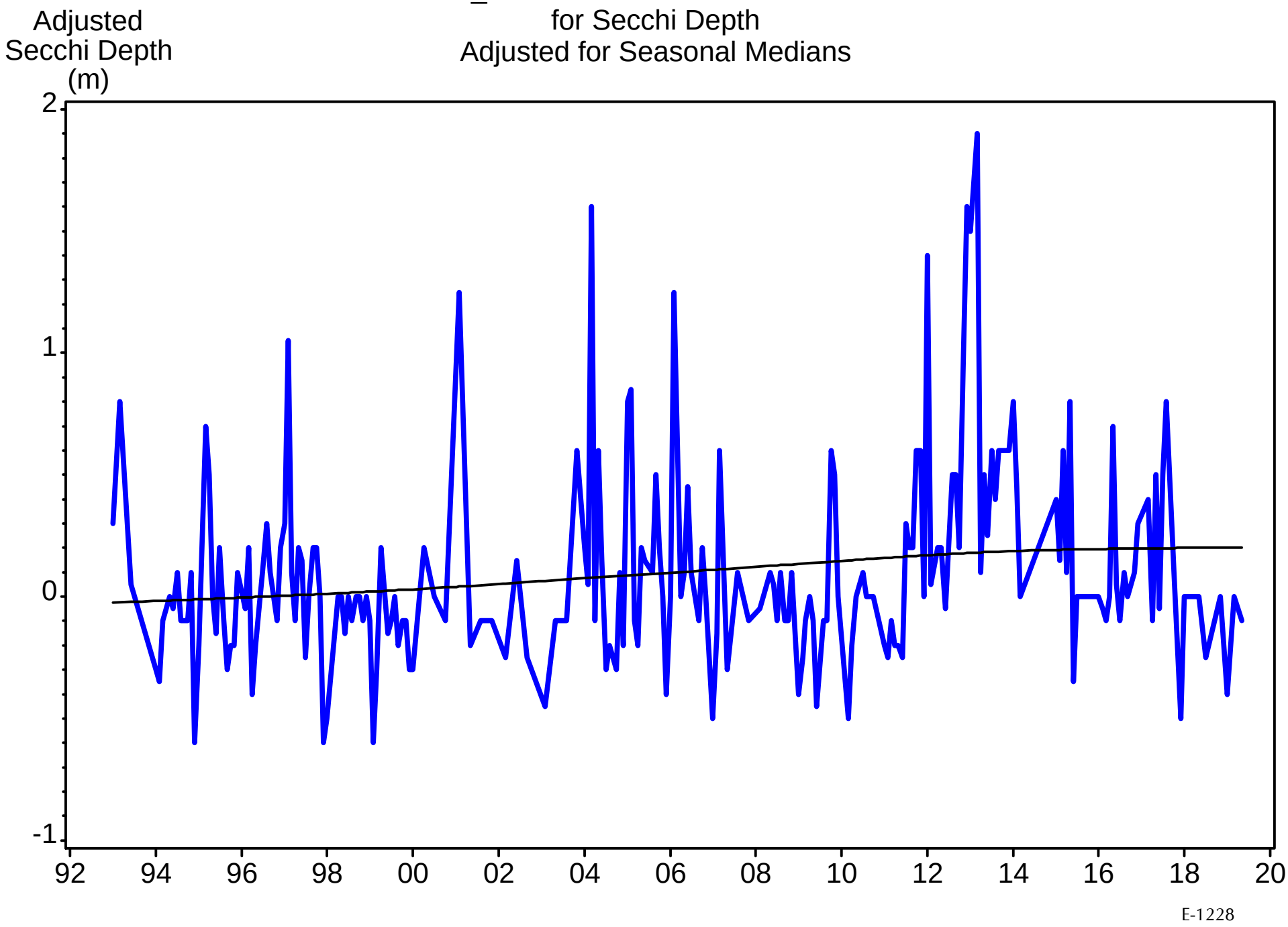
S_21FLVEMDHL08 Trends

S_21FLVEMDHL08 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



E-1227

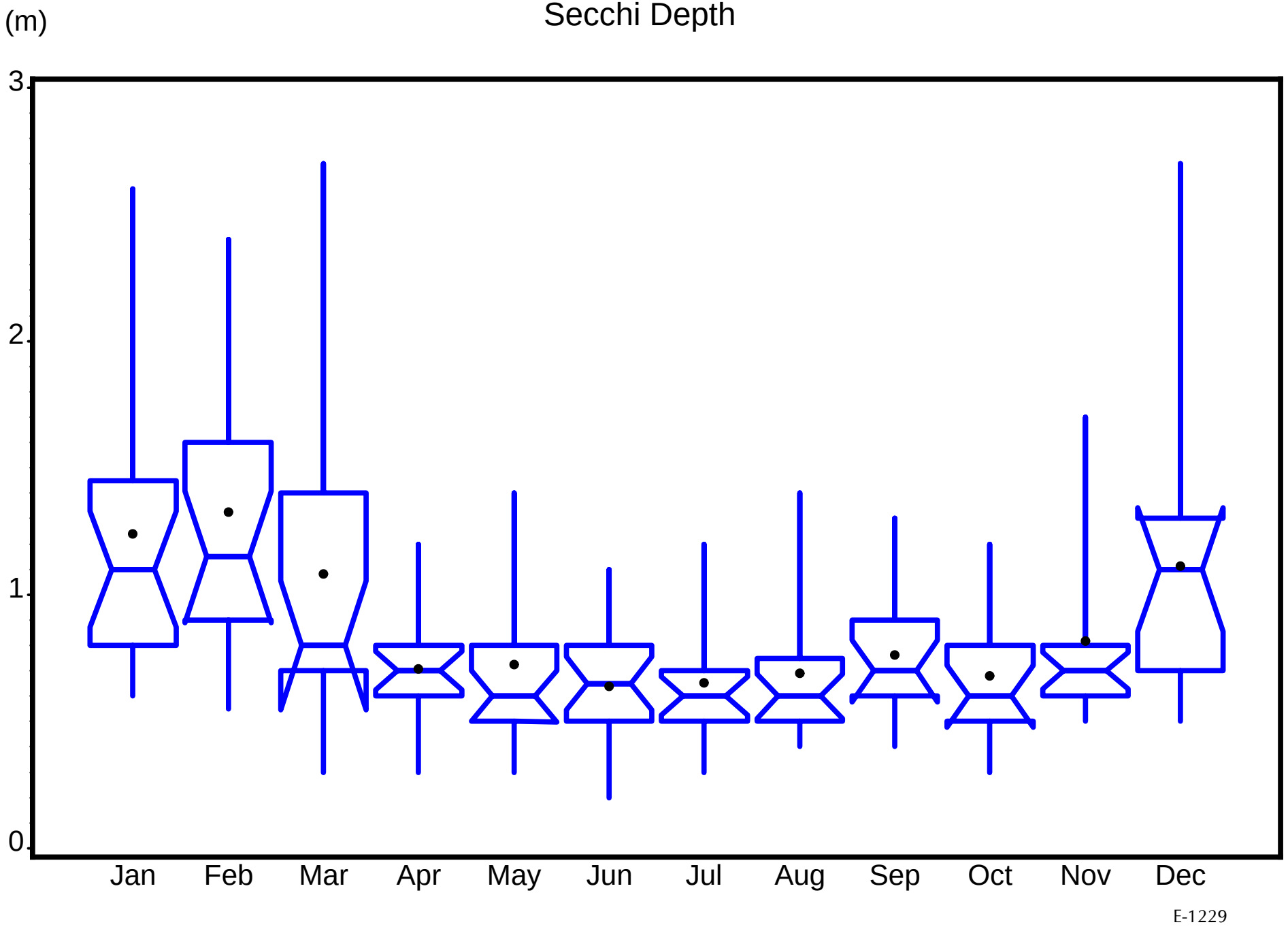
S_21FLVEMDHL08 Trends



S_21FLVEMDHL08 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



E-1229

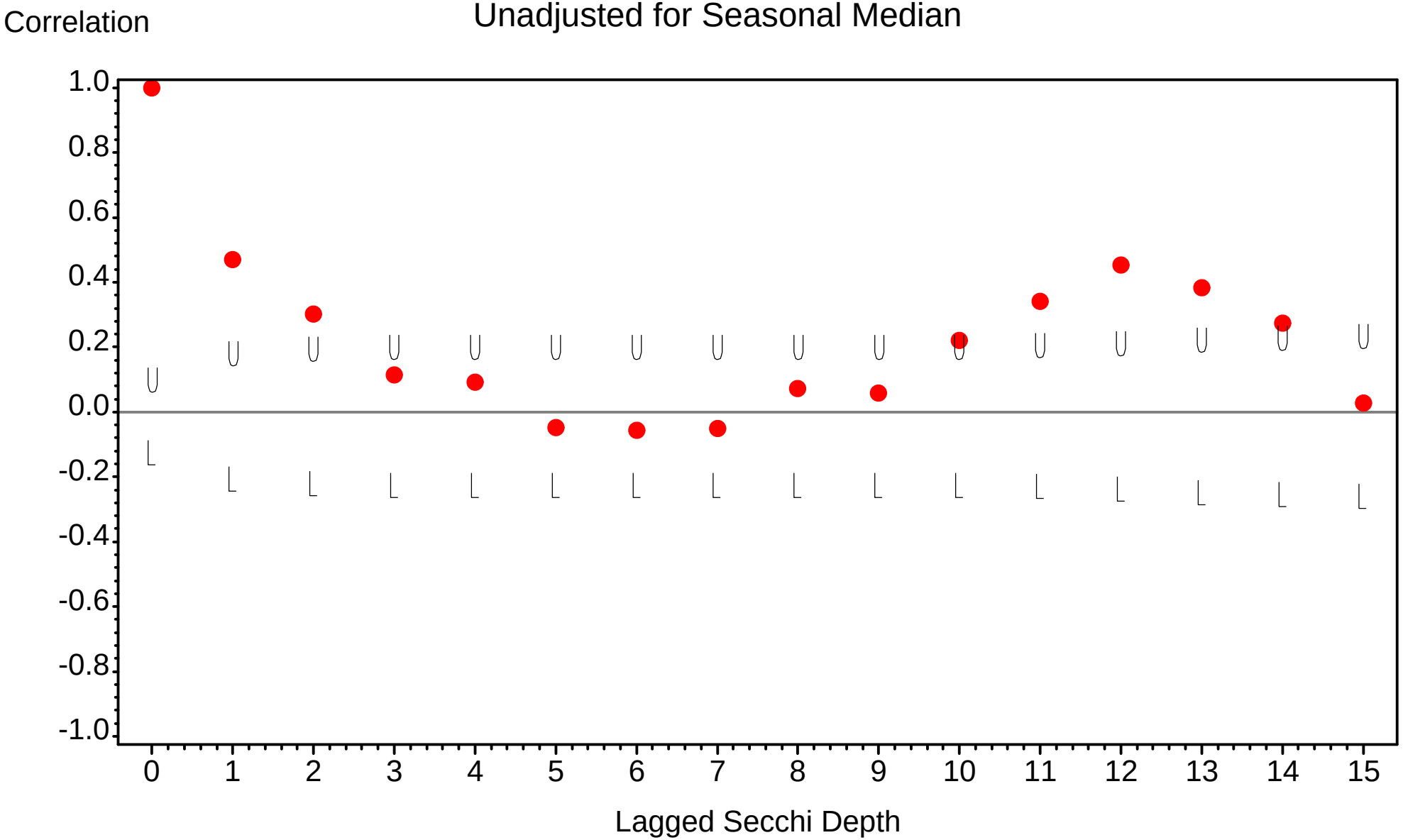
S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.469	0.096	0.192	-0.192
2	0.303	0.103	0.206	-0.206
3	0.115	0.106	0.212	-0.212
4	0.093	0.106	0.212	-0.212
5	-0.049	0.106	0.213	-0.213
6	-0.057	0.106	0.213	-0.213
7	-0.052	0.107	0.213	-0.213
8	0.072	0.107	0.213	-0.213
9	0.057	0.107	0.214	-0.214
10	0.222	0.107	0.214	-0.214
11	0.342	0.108	0.217	-0.217
12	0.452	0.112	0.223	-0.223
13	0.382	0.117	0.234	-0.234
14	0.274	0.121	0.242	-0.242
15	0.027	0.123	0.246	-0.246

S_21FLVEMDHL08 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

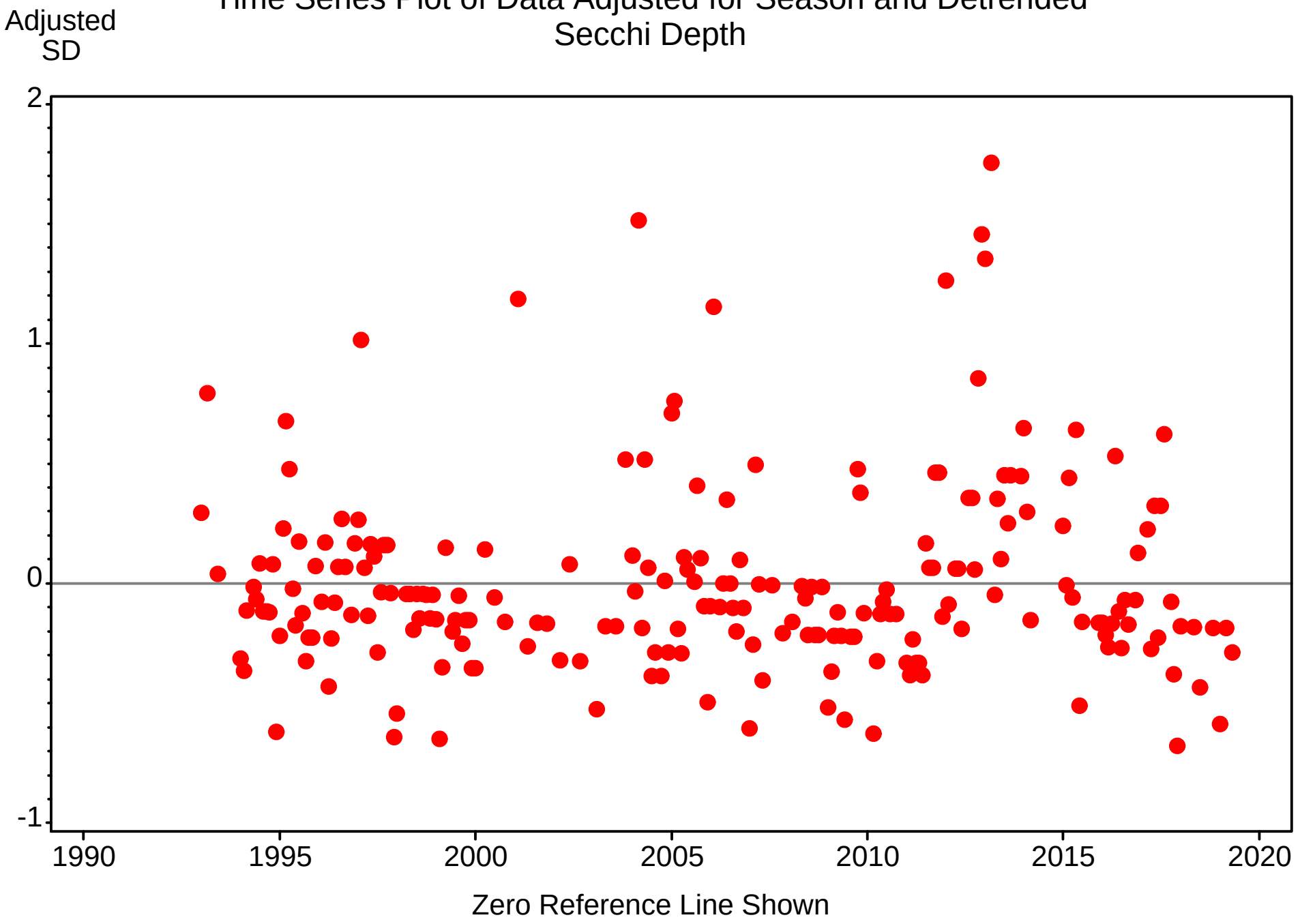
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.143	.004	0.056	.007

S_21FLVEMDHL08 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.14263	.00378084	0.055564	.00690476

S_21FLVEMDHL08 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth



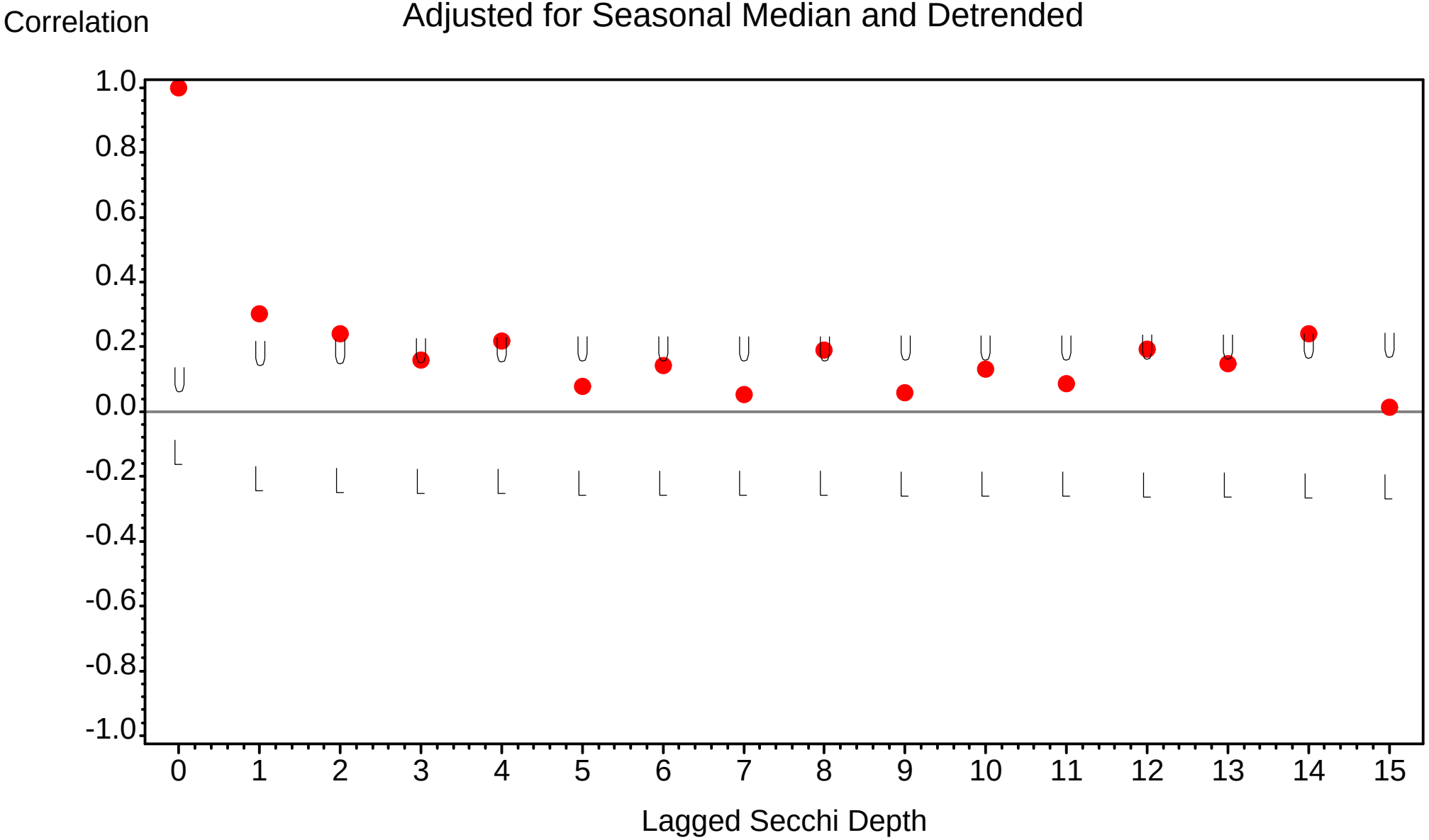
E-1234

S_21FLVEMDHL08 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.056	0.111	-0.111
1	0.303	0.096	0.192	-0.192
2	0.240	0.099	0.198	-0.198
3	0.158	0.101	0.202	-0.202
4	0.218	0.102	0.203	-0.203
5	0.077	0.103	0.206	-0.206
6	0.141	0.103	0.207	-0.207
7	0.054	0.104	0.208	-0.208
8	0.191	0.104	0.208	-0.208
9	0.059	0.105	0.210	-0.210
10	0.131	0.105	0.210	-0.210
11	0.086	0.106	0.211	-0.211
12	0.192	0.106	0.212	-0.212
13	0.147	0.107	0.214	-0.214
14	0.241	0.108	0.215	-0.215
15	0.013	0.109	0.218	-0.218

S_21FLVEMDHL08 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
17	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
18	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
19	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
20	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
21	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
17	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
18	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
19	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
20	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
21	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
17	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
18	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
19	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
20	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
21	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
22	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.15
23	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28	0.99
24	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67	1.60
25	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.27
26	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90	2.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
22	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017	-0.14839
23	Y	Y	N	N	-0.132	0.057	0.124	-0.001	-0.13170
24	Y	Y	N	N	0.150	0.038	0.109	0.103	0.15026
25	N	Y	Y	Y	0.141	0.033	0.135	357.337	0.14103
26	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014	-0.08367

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
23	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
24	0.03776	0.10869	0.103	0.15026	0.03776	0.103
25	0.03319	0.13465	357.337	0.14100	0.13500	357.337
26	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
27	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48	1.87
28	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00	0.20
29	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00	1.03
30	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.75
31	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43	1.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
27	Y	Y	Y	Y	0.090	0.188	0.382	0.156	0.08974
28	N	Y	Y	Y	0.153	0.020	0.128	0.254	0.15317
29	Y	Y	N	N	0.109	0.084	0.181	0.000	0.10913
30	Y	Y	Y	Y	0.015	0.858	0.907	0.001	0.01504
31	Y	Y	N	N	-0.115	0.116	0.160	-0.001	-0.12022

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
27	0.18759	0.38162	0.156	0.08974	0.38162	0.156
28	0.01994	0.12793	0.254	0.15300	0.12800	0.254
29	0.08403	0.18091	0.000	0.10913	0.08403	0.000
30	0.85776	0.90700	0.001	0.01504	0.90700	0.001
31	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
32	S_21FLVEMDHL05	S_21FLVEMDHL05	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.66	0.74
33	S_21FLVEMDHL05	S_21FLVEMDHL05	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.71
34	S_21FLVEMDHL05	S_21FLVEMDHL05	DO	Dissolved Oxygen	(mg/L)	22	30	2.01	2.54
35	S_21FLVEMDHL05	S_21FLVEMDHL05	DOSAT	Dissolved Oxygen	(%)	32	40	1.41	2.00
36	S_21FLVEMDHL05	S_21FLVEMDHL05	SALIN	Salinity	(psu)	52	60	-9999.00	0.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
32	Y	Y	Y	Y	0.145	0.032	0.115	0.086	0.14507
33	Y	Y	Y	Y	0.085	0.174	0.337	182.245	0.08502
34	Y	N	N	N	-0.149	0.017	0.110	-0.023	-0.14929
35	Y	Y	N	N	0.081	0.199	0.362	0.114	0.08126
36	Y	Y	N	N	0.060	0.339	0.502	0.082	0.05987

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
32	0.03182	0.11509	0.086	0.14507	0.11509	0.086
33	0.17411	0.33661	182.245	0.08502	0.33661	182.245
34	0.01704	0.11000	-0.023	-0.14929	0.01704	-0.023
35	0.19863	0.36237	0.114	0.08126	0.19863	0.114
36	0.33872	0.50152	0.082	0.05987	0.33872	0.082

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
37	S_21FLVEMDHL05	S_21FLVEMDHL05	SD	Secchi Depth	(m)	72	80	0.38	1.10
38	S_21FLVEMDHL05	S_21FLVEMDHL05	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.81
39	S_21FLVEMDHL05	S_21FLVEMDHL05	TP	Total Phosphorus	(mg/L)	12	20	0.80	0.83
40	S_21FLVEMDHL06	S_21FLVEMDHL06	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.28	0.01
41	S_21FLVEMDHL06	S_21FLVEMDHL06	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.76

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
37	Y	N	N	N	0.047	0.468	0.545	0.000	0.04654
38	Y	Y	Y	Y	-0.146	0.037	0.227	-0.009	-0.14590
39	Y	Y	N	N	-0.030	0.675	0.690	0.000	-0.02972
40	Y	N	N	N	0.024	0.729	0.758	0.016	0.02423
41	Y	Y	Y	Y	0.105	0.092	0.238	239.000	0.10454

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
37	0.46800	0.54466	0.000	0.04654	0.46800	0.000
38	0.03661	0.22687	-0.009	-0.14590	0.22687	-0.009
39	0.67549	0.68953	0.000	-0.02972	0.67549	0.000
40	0.72880	0.75791	0.016	0.02423	0.72880	0.016
41	0.09156	0.23833	239.000	0.10454	0.23833	239.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
42	S_21FLVEMDHL06	S_21FLVEMDHL06	DO	Dissolved Oxygen	(mg/L)	22	30	2.05	2.52
43	S_21FLVEMDHL06	S_21FLVEMDHL06	DOSAT	Dissolved Oxygen	(%)	32	40	1.25	1.99
44	S_21FLVEMDHL06	S_21FLVEMDHL06	SALIN	Salinity	(psu)	52	60	-9999.00	0.74
45	S_21FLVEMDHL06	S_21FLVEMDHL06	SD	Secchi Depth	(m)	72	80	0.69	0.94
46	S_21FLVEMDHL06	S_21FLVEMDHL06	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
42	Y	N	N	N	-0.116	0.062	0.197	-0.017	-0.11576
43	Y	Y	N	N	0.080	0.201	0.322	0.088	0.08045
44	Y	Y	Y	Y	0.090	0.143	0.319	0.138	0.09026
45	Y	Y	Y	Y	0.047	0.458	0.500	0.000	0.04707
46	Y	Y	Y	Y	-0.126	0.072	0.357	-0.011	-0.12577

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
42	0.06243	0.19679	-0.017	-0.11576	0.06243	-0.017
43	0.20088	0.32170	0.088	0.08045	0.20088	0.088
44	0.14300	0.31855	0.138	0.09026	0.31855	0.138
45	0.45795	0.50041	0.000	0.04707	0.50041	0.000
46	0.07193	0.35680	-0.011	-0.12577	0.35680	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
47	S_21FLVEMDHL06	S_21FLVEMDHL06	TP	Total Phosphorus	(mg/L)	12	20	1.37	0.87
48	S_21FLVEMDHL07	S_21FLVEMDHL07	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.63	0.86
49	S_21FLVEMDHL07	S_21FLVEMDHL07	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.63
50	S_21FLVEMDHL07	S_21FLVEMDHL07	DO	Dissolved Oxygen	(mg/L)	22	30	0.95	2.67
51	S_21FLVEMDHL07	S_21FLVEMDHL07	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	1.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
47	Y	Y	N	N	-0.070	0.311	0.352	-0.001	-0.07004
48	Y	Y	N	N	-0.072	0.299	0.400	-0.064	-0.07206
49	Y	Y	Y	Y	0.087	0.169	0.316	185.539	0.08720
50	Y	N	Y	N	-0.184	0.003	0.046	-0.029	-0.18418
51	Y	Y	N	N	0.008	0.910	0.929	0.000	0.00826

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
47	0.31141	0.35163	-0.001	-0.07004	0.31141	-0.001
48	0.29904	0.39997	-0.064	-0.07206	0.29904	-0.064
49	0.16902	0.31573	185.539	0.08720	0.31573	185.539
50	0.00342	0.04576	-0.029	-0.18418	0.00342	-0.029
51	0.91015	0.92863	0.000	0.00826	0.91015	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
52	S_21FLVEMDHL07	S_21FLVEMDHL07	SALIN	Salinity	(psu)	52	60	-9999.00	0.71
53	S_21FLVEMDHL07	S_21FLVEMDHL07	SD	Secchi Depth	(m)	72	80	0.57	1.17
54	S_21FLVEMDHL07	S_21FLVEMDHL07	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.36
55	S_21FLVEMDHL07	S_21FLVEMDHL07	TP	Total Phosphorus	(mg/L)	12	20	1.44	0.84
56	S_21FLVEMDHL08	S_21FLVEMDHL08	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.14	1.34

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
52	Y	Y	Y	Y	0.073	0.250	0.428	0.107	0.07253
53	Y	Y	N	N	0.025	0.714	0.742	0.000	0.02457
54	Y	Y	Y	Y	-0.185	0.009	0.183	-0.017	-0.18331
55	Y	Y	N	N	0.002	1.000	1.000	0.000	0.00159
56	Y	Y	Y	Y	-0.071	0.214	0.403	-0.051	-0.07149

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
52	0.25004	0.42819	0.107	0.07253	0.42819	0.107
53	0.71425	0.74214	0.000	0.02457	0.71425	0.000
54	0.00999	0.18667	-0.017	-0.18331	0.18667	-0.017
55	1.00000	1.00000	0.000	0.00159	1.00000	0.000
56	0.21416	0.40266	-0.051	-0.07149	0.40266	-0.051

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
57	S_21FLVEMDHL08	S_21FLVEMDHL08	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.59
58	S_21FLVEMDHL08	S_21FLVEMDHL08	DO	Dissolved Oxygen	(mg/L)	22	30	0.75	2.49
59	S_21FLVEMDHL08	S_21FLVEMDHL08	DOSAT	Dissolved Oxygen	(%)	32	40	0.22	1.87
60	S_21FLVEMDHL08	S_21FLVEMDHL08	SALIN	Salinity	(psu)	52	60	-9999.00	0.65
61	S_21FLVEMDHL08	S_21FLVEMDHL08	SD	Secchi Depth	(m)	72	80	0.27	2.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
57	Y	Y	Y	Y	0.120	0.020	0.160	254.845	0.11995
58	Y	N	N	N	-0.232	0.000	0.009	-0.042	-0.23164
59	Y	Y	N	N	-0.152	0.003	0.037	-0.244	-0.15249
60	Y	Y	Y	Y	0.136	0.008	0.129	0.193	0.13555
61	Y	Y	Y	Y	0.143	0.004	0.056	0.007	0.14263

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
57	0.01993	0.16007	254.845	0.11995	0.16007	254.845
58	0.00001	0.00939	-0.042	-0.23164	0.00001	-0.042
59	0.00335	0.03715	-0.244	-0.15249	0.00335	-0.244
60	0.00785	0.12892	0.193	0.13555	0.12892	0.193
61	0.00378	0.05556	0.007	0.14263	0.05556	0.007

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
62	S_21FLVEMDHL08	S_21FLVEMDHL08	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
63	S_21FLVEMDHL08	S_21FLVEMDHL08	TP	Total Phosphorus	(mg/L)	12	20	1.44	1.44
64	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	1.38
65	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23	0.08
66	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47	2.09

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
62	Y	Y	Y	Y	0.028	0.718	0.811	0.003	0.02768
63	Y	Y	Y	Y	-0.190	0.007	0.042	-0.002	-0.19024
64	Y	Y	Y	Y	0.074	0.356	0.527	0.052	0.07383
65	N	Y	Y	Y	0.090	0.212	0.347	225.098	0.08958
66	Y	N	N	N	-0.099	0.163	0.243	-0.023	-0.09906

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
62	0.71842	0.81125	0.003	0.02768	0.81125	0.003
63	0.00697	0.04239	-0.002	-0.19024	0.04239	-0.002
64	0.35568	0.52706	0.052	0.07383	0.52706	0.052
65	0.21156	0.34660	225.098	0.09000	0.34700	225.098
66	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
67	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56	2.11
68	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09	0.29
69	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00	-9999.00
70	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.04
71	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	0.45

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
67	Y	N	N	N	0.046	0.549	0.573	0.109	0.04571
68	N	Y	Y	Y	0.155	0.028	0.107	0.318	0.15482
69	N	Y	N	N	0.192	0.005	0.044	0.011	0.19225
70	Y	Y	N	N	-0.161	0.045	0.205	-0.029	-0.16145
71	N	N	N	N	0.021	0.810	0.860	0.000	0.02128

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
67	0.54949	0.57310	0.109	0.04571	0.54949	0.109
68	0.02802	0.10656	0.318	0.15500	0.10700	0.318
69	0.00486	0.04449	0.011	0.19200	0.00500	0.011
70	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
71	0.80954	0.86021	0.000	0.02100	0.81000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
72	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.33
73	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09	0.79
74	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16	2.35
75	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00	2.11
76	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00	0.98

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
72	N	Y	N	N	0.049	0.531	0.675	0.023	0.04851
73	Y	Y	Y	Y	0.017	0.821	0.864	6.873	0.01671
74	Y	Y	N	N	-0.022	0.763	0.834	-0.004	-0.02159
75	Y	Y	Y	Y	0.049	0.487	0.514	0.154	0.04892
76	Y	Y	Y	Y	0.070	0.304	0.474	0.025	0.06955

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
72	0.53077	0.67536	0.023	0.04900	0.53100	0.023
73	0.82111	0.86399	6.874	0.01671	0.86399	6.874
74	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
75	0.48687	0.51426	0.154	0.04892	0.51426	0.154
76	0.30398	0.47368	0.025	0.06955	0.47368	0.025

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
77	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61	1.08
78	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.88
79	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10	1.51
80	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	-9999.00
81	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82	1.12

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
77	Y	Y	N	N	0.064	0.330	0.509	0.000	0.06415
78	Y	Y	N	N	0.017	0.845	0.901	0.002	0.01724
79	Y	Y	Y	Y	0.050	0.519	0.695	0.000	0.05031
80	N	Y	N	N	0.078	0.299	0.360	0.020	0.07599
81	Y	N	Y	N	0.106	0.122	0.158	10.031	0.10598

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
77	0.32954	0.50893	0.000	0.06415	0.32954	0.000
78	0.84540	0.90084	0.002	0.01724	0.84540	0.002
79	0.51900	0.69540	0.000	0.05031	0.69540	0.000
80	0.31036	0.36979	0.020	0.07800	0.29900	0.020
81	0.12166	0.15796	10.031	0.10598	0.12166	10.031

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
82	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25	0.82
83	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	0.70
84	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73	1.54
85	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00	1.54
86	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.48
87	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
82	Y	Y	N	N	-0.170	0.012	0.092	-0.059	-0.16974
83	Y	Y	N	N	-0.175	0.011	0.082	-0.515	-0.17479
84	Y	N	Y	N	0.092	0.169	0.290	0.004	0.09207
85	Y	Y	Y	Y	0.094	0.155	0.427	0.007	0.09387
86	Y	Y	N	N	-0.031	0.706	0.812	-0.002	-0.03145
87	N	N	N	N	-0.023	0.786	0.871	0.000	-0.02254

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
82	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059
83	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
84	0.16857	0.29012	0.004	0.09207	0.16857	0.004
85	0.15479	0.42738	0.007	0.09387	0.42738	0.007
86	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
87	0.78614	0.87138	0.000	-0.02300	0.78600	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
88	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.44
89	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19	-9999.00
90	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42	2.33
91	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81	1.77
92	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00	-9999.00
93	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00	0.68

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
88	N	Y	N	N	-0.142	0.074	0.219	-0.011	-0.14223
89	N	N	Y	N	0.085	0.243	0.291	2.029	0.08500
90	Y	Y	N	N	-0.040	0.591	0.737	-0.008	-0.03968
91	Y	Y	N	N	0.027	0.725	0.823	0.034	0.02716
92	N	Y	Y	Y	0.123	0.076	0.159	0.001	0.12322
93	Y	Y	N	N	0.194	0.005	0.046	0.009	0.19383

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
88	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011
89	0.24287	0.29095	2.029	0.08500	0.24300	2.029
90	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008
91	0.72528	0.82342	0.034	0.02716	0.72528	0.034
92	0.07617	0.15857	0.001	0.12300	0.15900	0.001
93	0.00462	0.04647	0.009	0.19383	0.00462	0.009

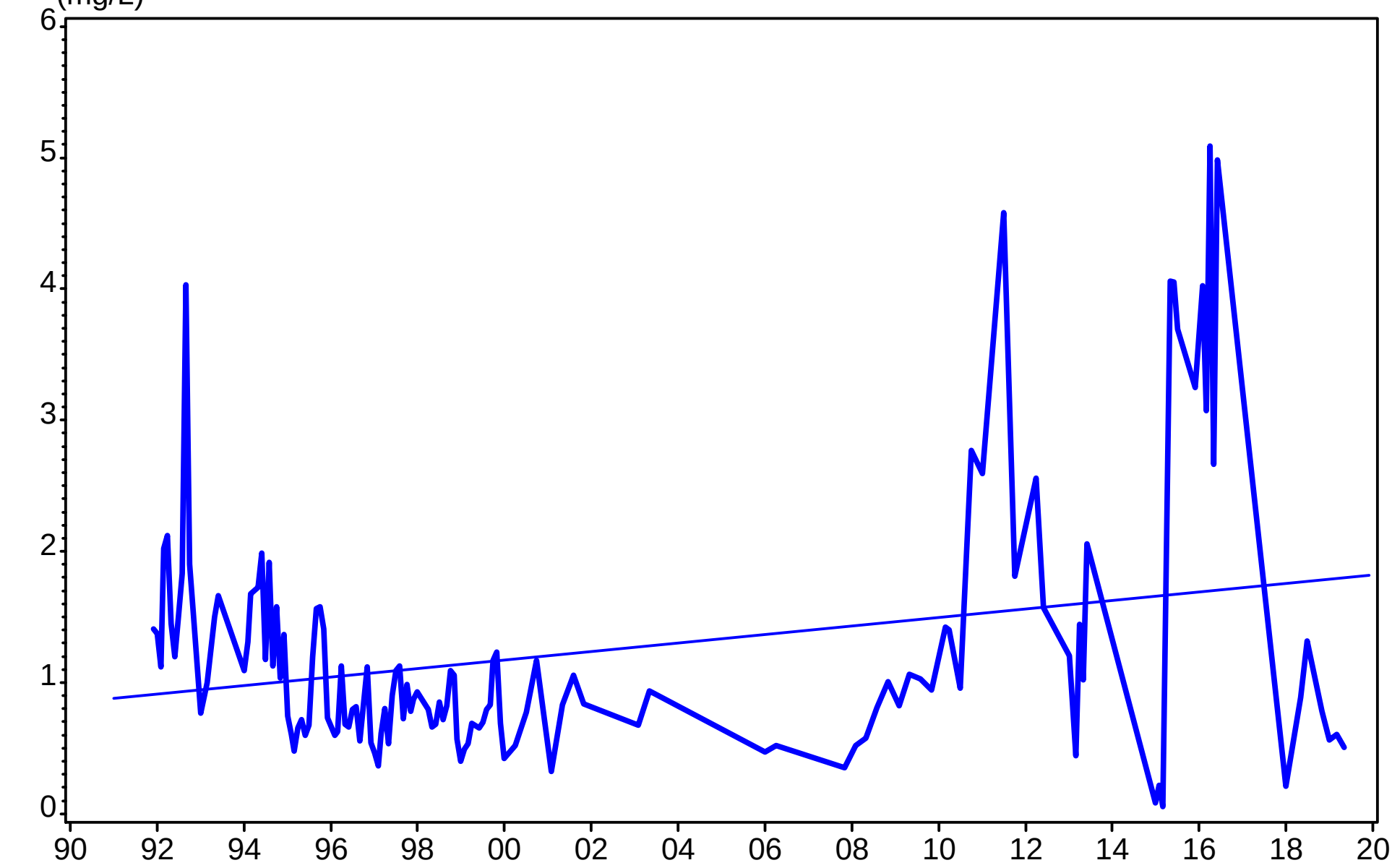
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
94	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.31
95	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
94	N	Y	N	N	-0.241	0.003	0.076	-0.016	-0.24070
95	N	N	N	N	0.040	0.632	0.786	0.000	0.04009

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
94	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
95	0.63152	0.78567	0.000	0.04000	0.63200	0.000

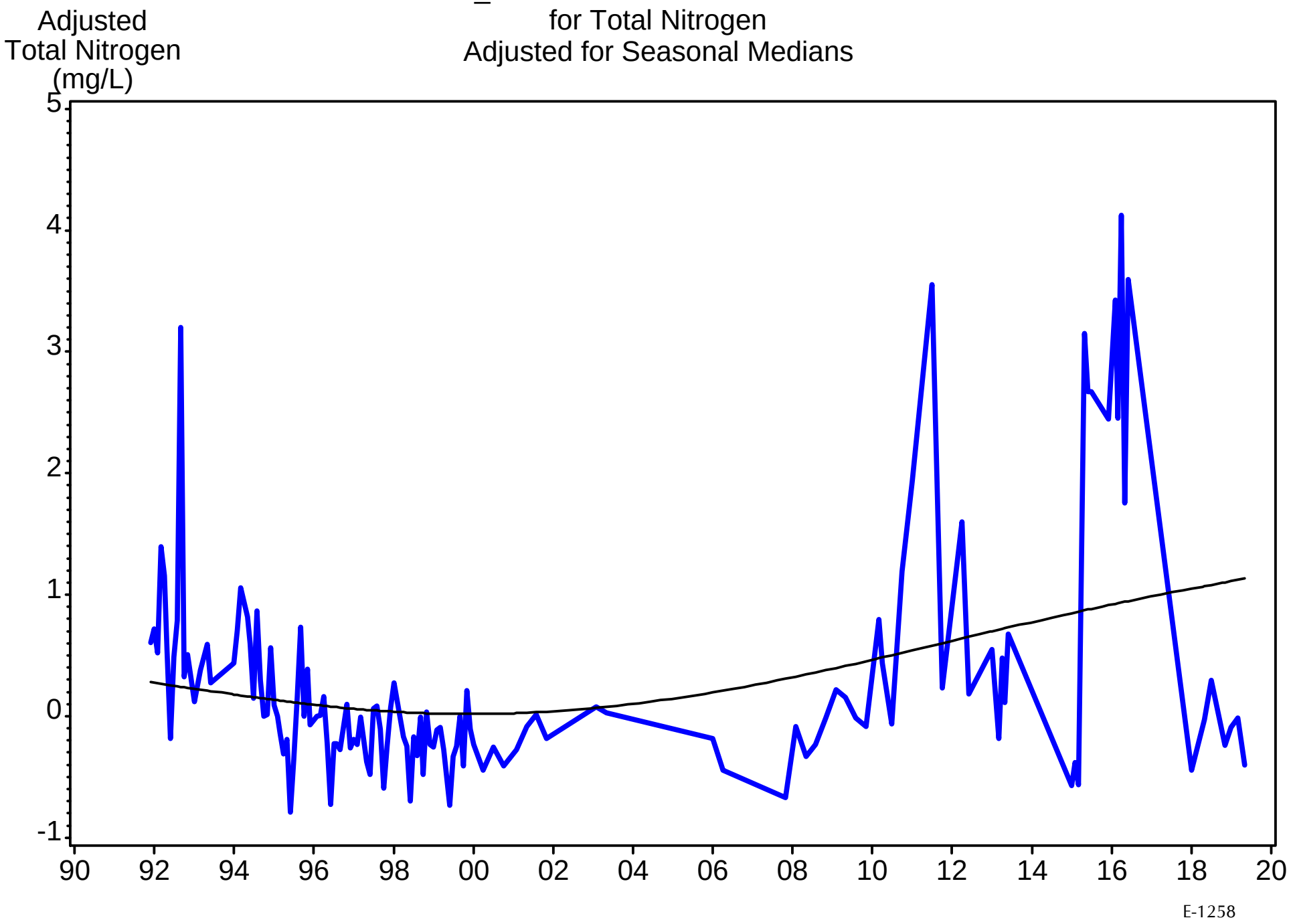
S_21FLVEMDHL09 Trends

S_21FLVEMDHL09 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



E-1257

S_21FLVEMDHL09 Trends

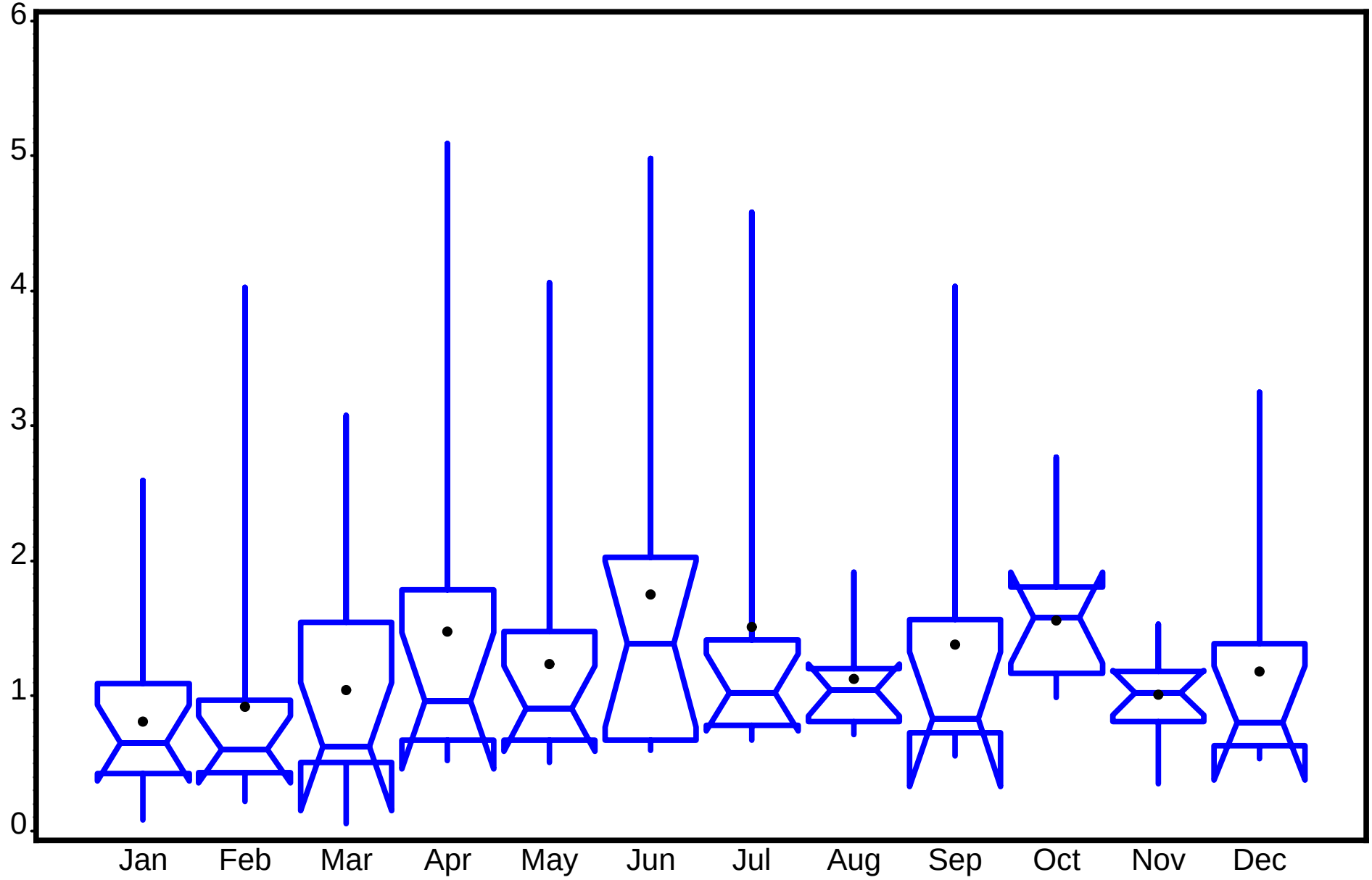


S_21FLVEMDHL09 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



E-1259

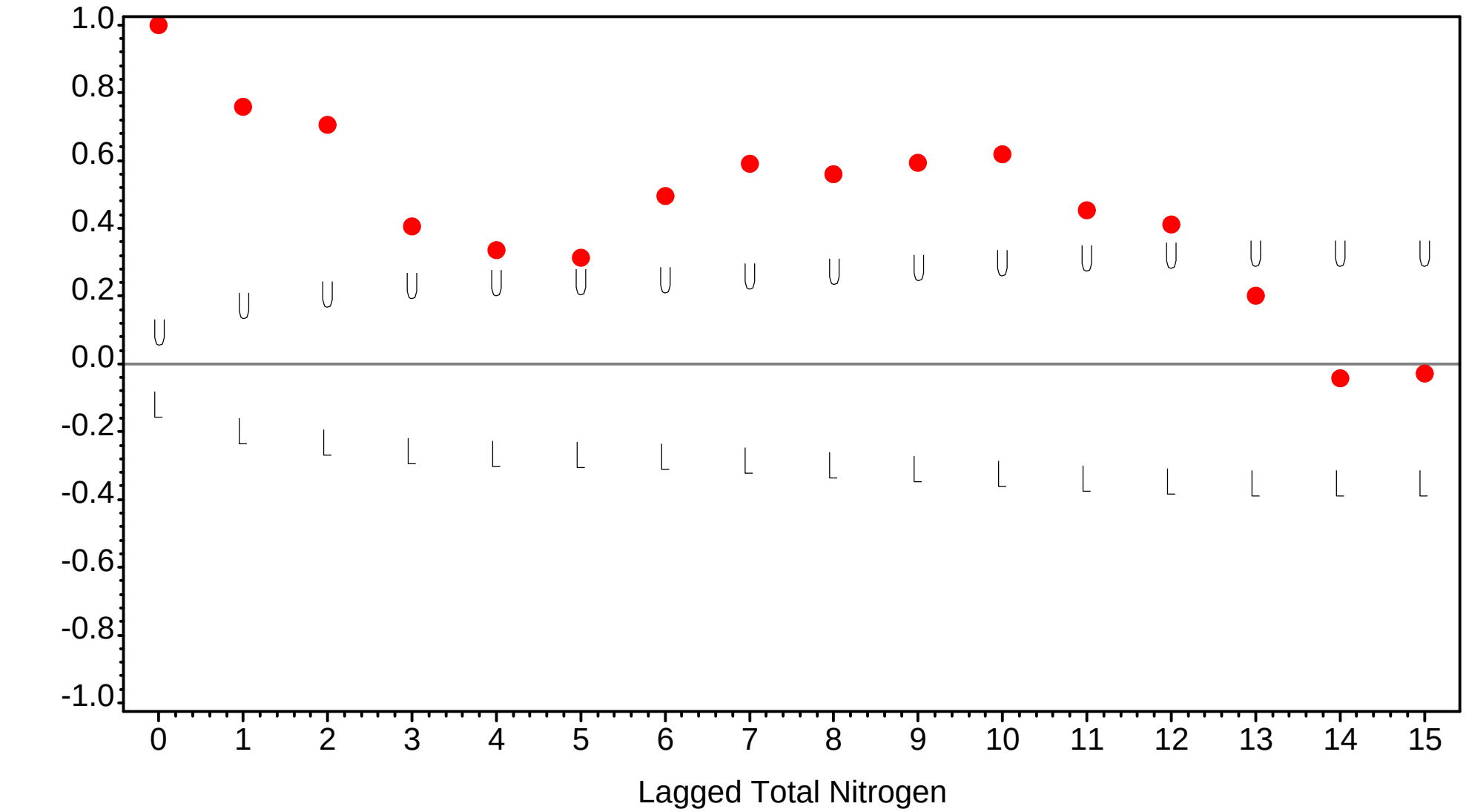
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.758	0.093	0.186	-0.186
2	0.704	0.109	0.218	-0.218
3	0.406	0.122	0.243	-0.243
4	0.335	0.125	0.251	-0.251
5	0.312	0.128	0.256	-0.256
6	0.494	0.130	0.260	-0.260
7	0.590	0.135	0.271	-0.271
8	0.560	0.143	0.285	-0.285
9	0.592	0.149	0.298	-0.298
10	0.619	0.155	0.311	-0.311
11	0.453	0.162	0.325	-0.325
12	0.410	0.166	0.332	-0.332
13	0.201	0.169	0.338	-0.338
14	-0.043	0.169	0.339	-0.339
15	-0.028	0.169	0.339	-0.339

S_21FLVEMDHL09 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

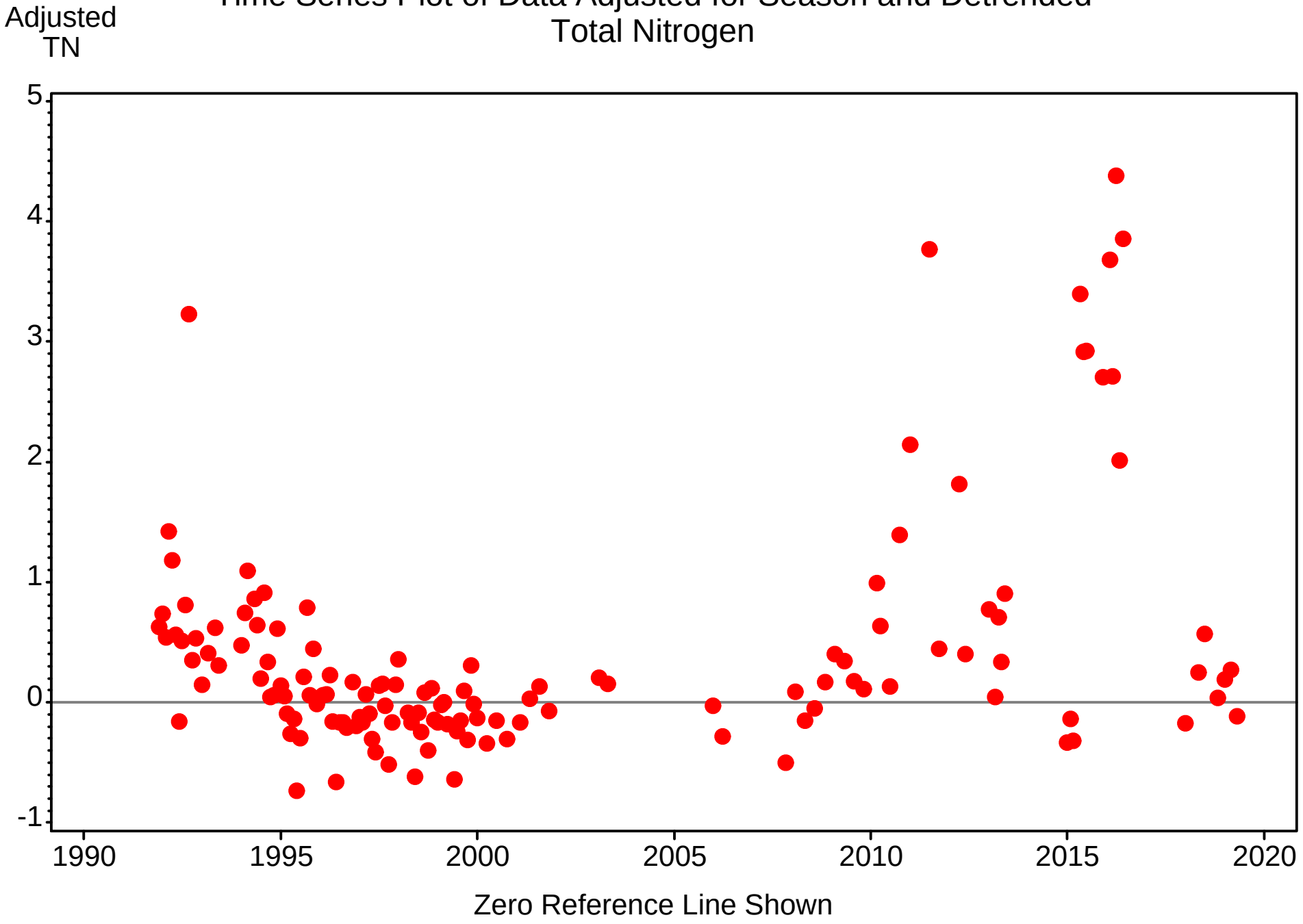
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.102	0.133	0.421	-0.01

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.10176	0.13329	0.42067	-.00975

S_21FLVEMDHL09 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



E-1264

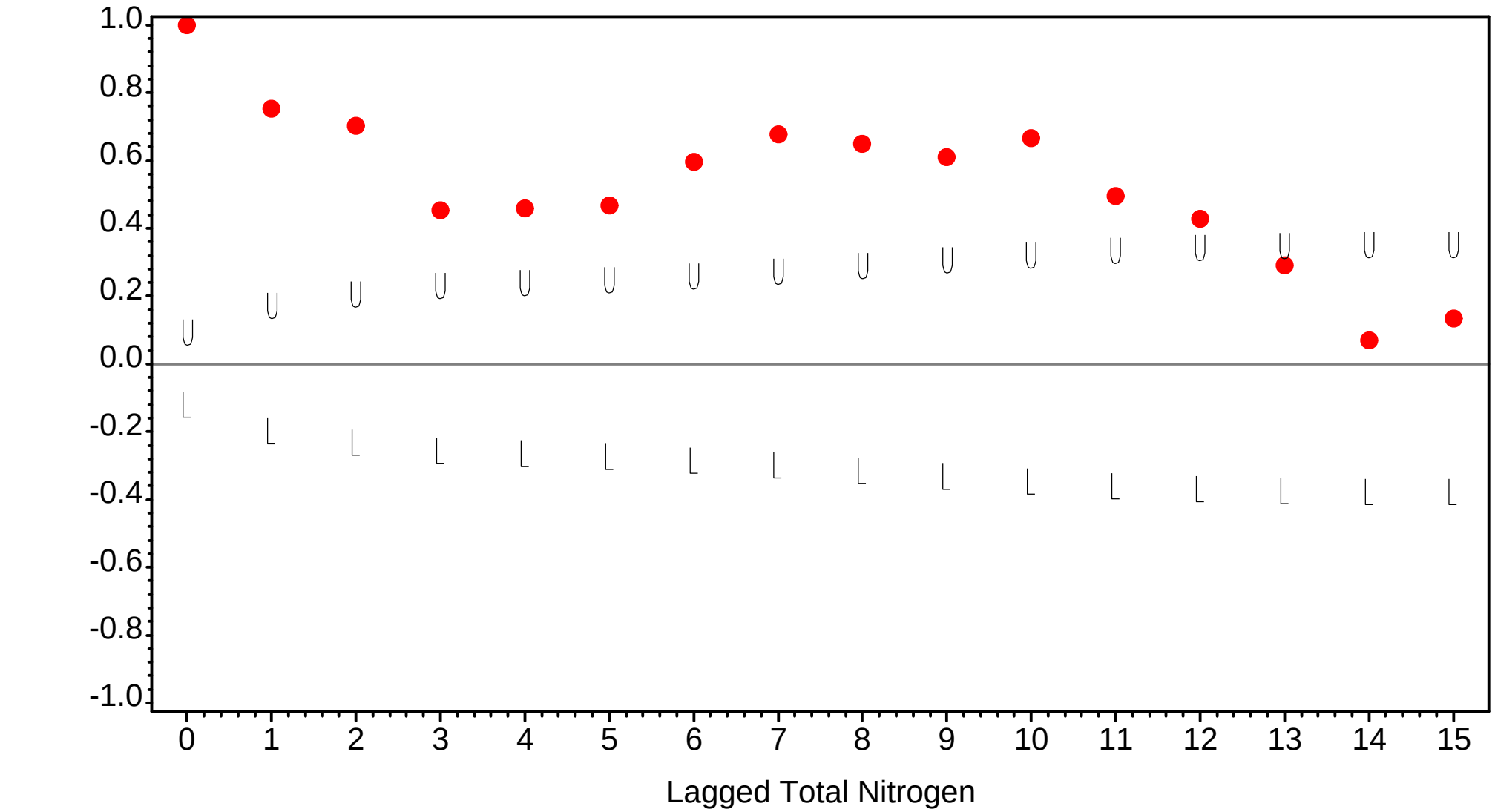
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.753	0.093	0.186	-0.186
2	0.702	0.109	0.218	-0.218
3	0.452	0.121	0.243	-0.243
4	0.459	0.126	0.252	-0.252
5	0.466	0.131	0.261	-0.261
6	0.596	0.135	0.271	-0.271
7	0.678	0.143	0.285	-0.285
8	0.649	0.152	0.303	-0.303
9	0.611	0.159	0.319	-0.319
10	0.665	0.166	0.332	-0.332
11	0.496	0.174	0.347	-0.347
12	0.428	0.178	0.355	-0.355
13	0.292	0.181	0.361	-0.361
14	0.069	0.182	0.364	-0.364
15	0.134	0.182	0.364	-0.364

S_21FLVEMDHL09 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

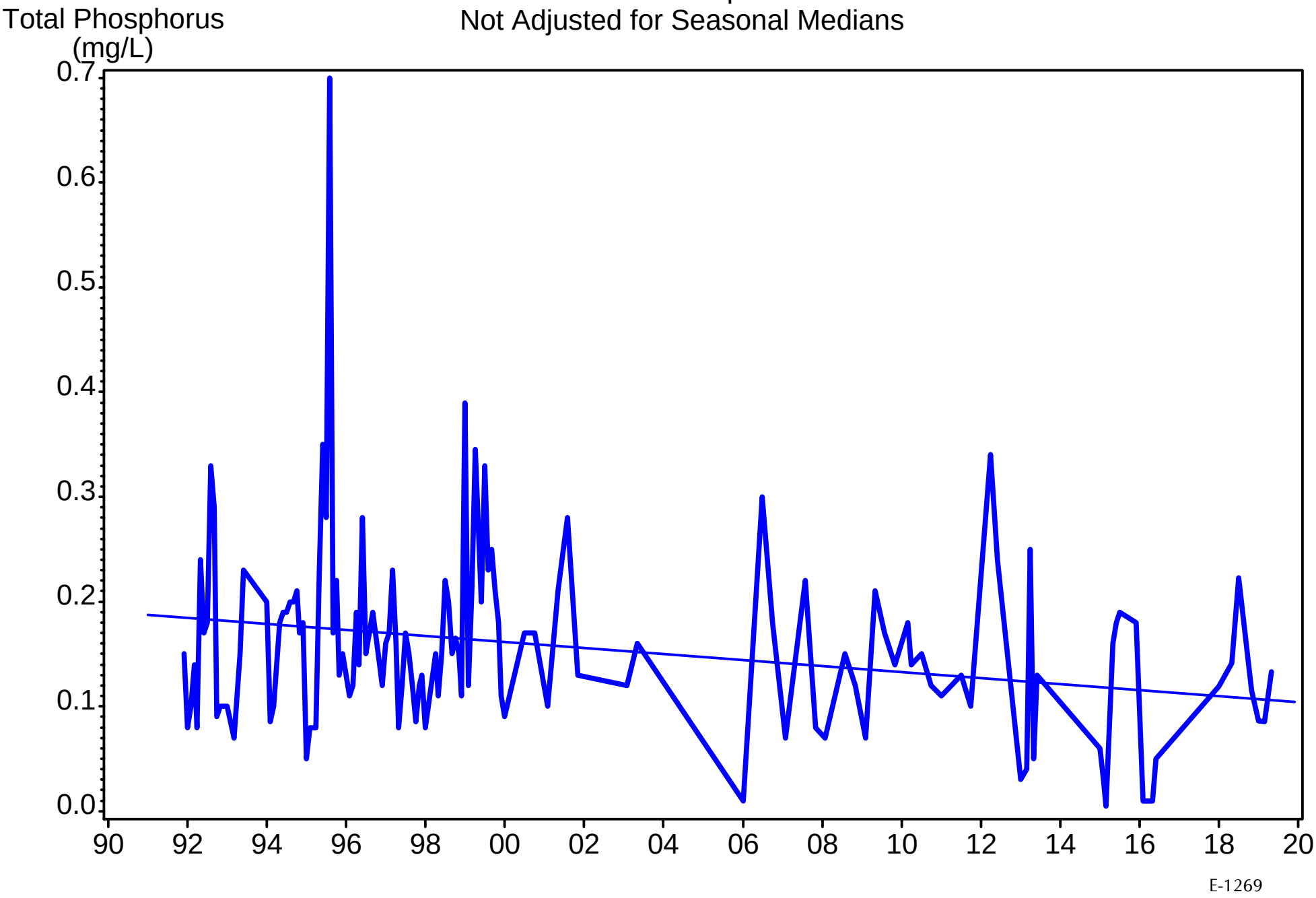


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

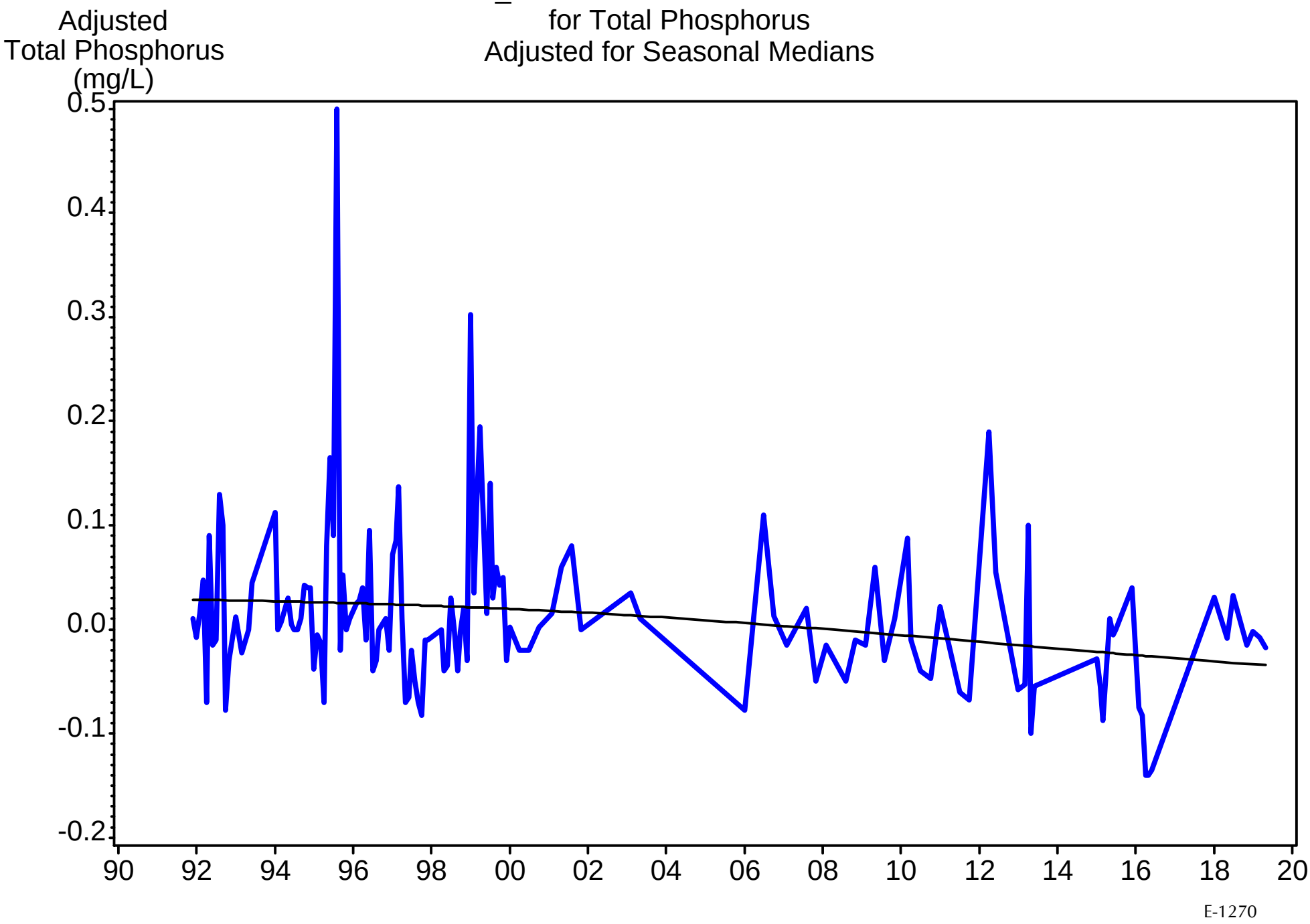
S_21FLVEMDHL09 Trends

S_21FLVEMDHL09 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



E-1269

S_21FLVEMDHL09 Trends

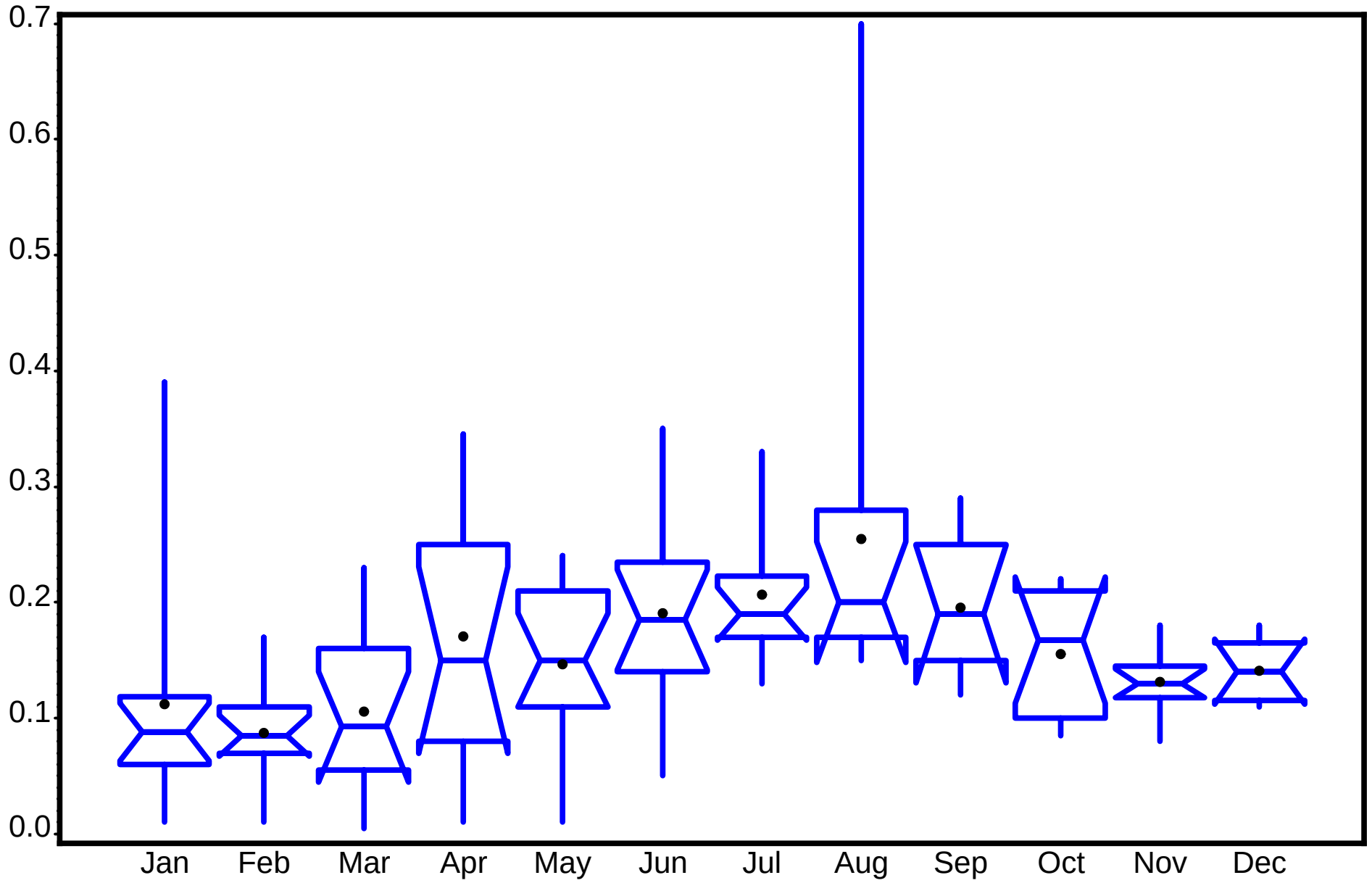


S_21FLVEMDHL09 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



E-1271

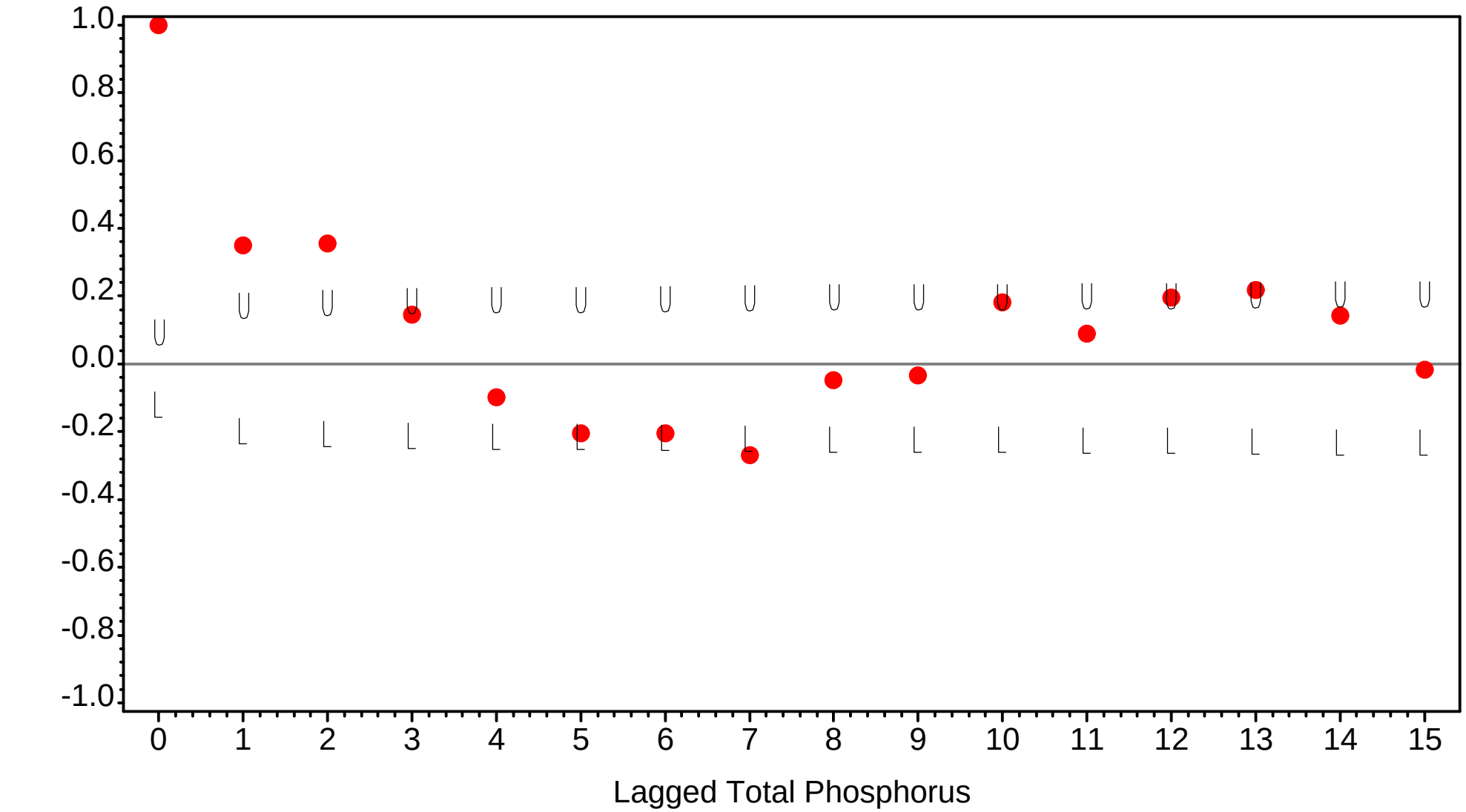
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.350	0.093	0.186	-0.186
2	0.355	0.097	0.193	-0.193
3	0.146	0.100	0.200	-0.200
4	-0.099	0.101	0.202	-0.202
5	-0.206	0.101	0.202	-0.202
6	-0.205	0.102	0.205	-0.205
7	-0.269	0.103	0.207	-0.207
8	-0.047	0.105	0.211	-0.211
9	-0.035	0.106	0.211	-0.211
10	0.182	0.106	0.211	-0.211
11	0.089	0.106	0.213	-0.213
12	0.196	0.107	0.213	-0.213
13	0.217	0.108	0.215	-0.215
14	0.143	0.109	0.218	-0.218
15	-0.017	0.110	0.219	-0.219

S_21FLVEMDHL09 Trends Appendix

Correlogram for Total Phosphorus

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

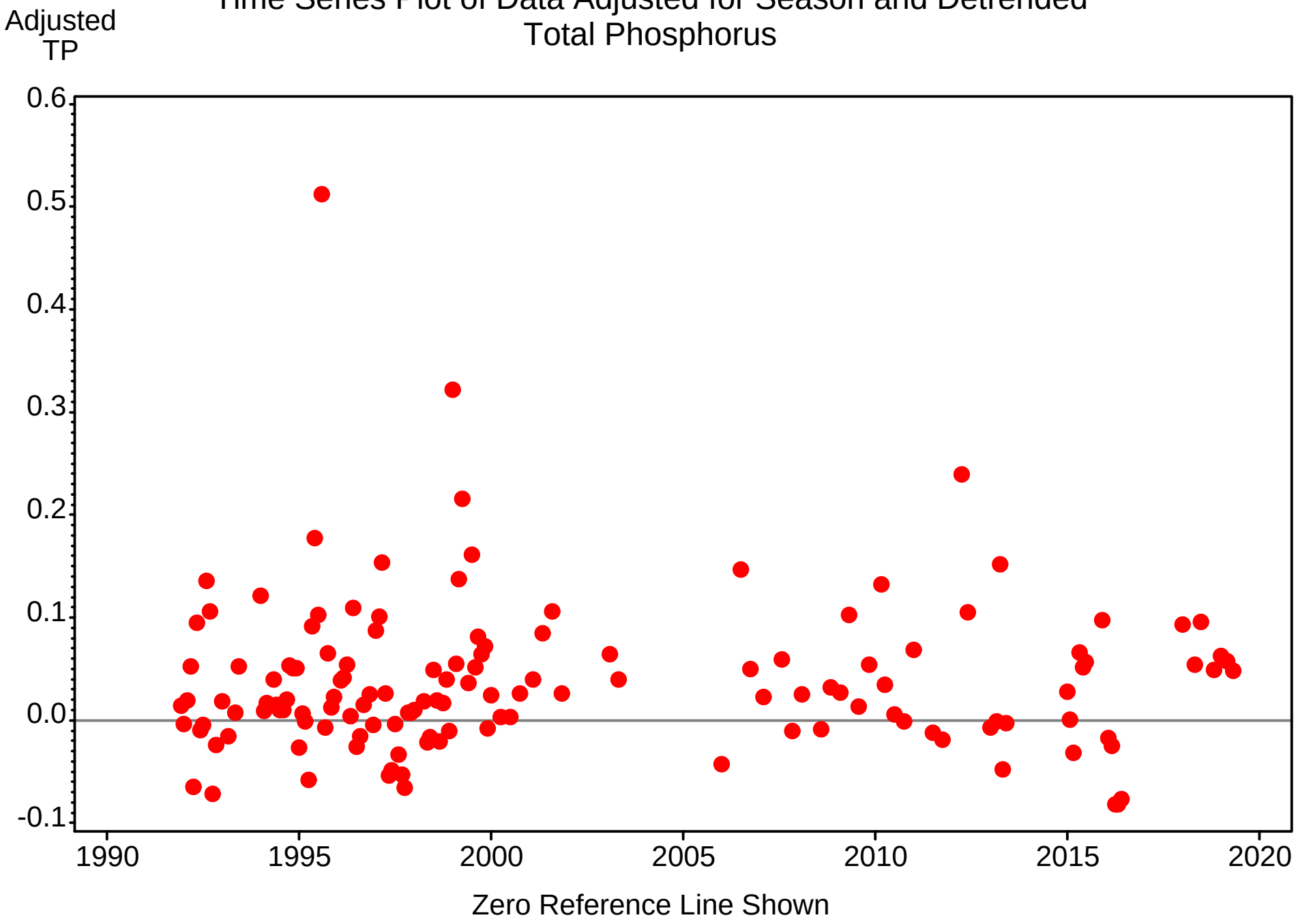
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.204	.002	0.037	-.002

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.20424	.00203407	0.037044	-.00222222

S_21FLVEMDHL09 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus



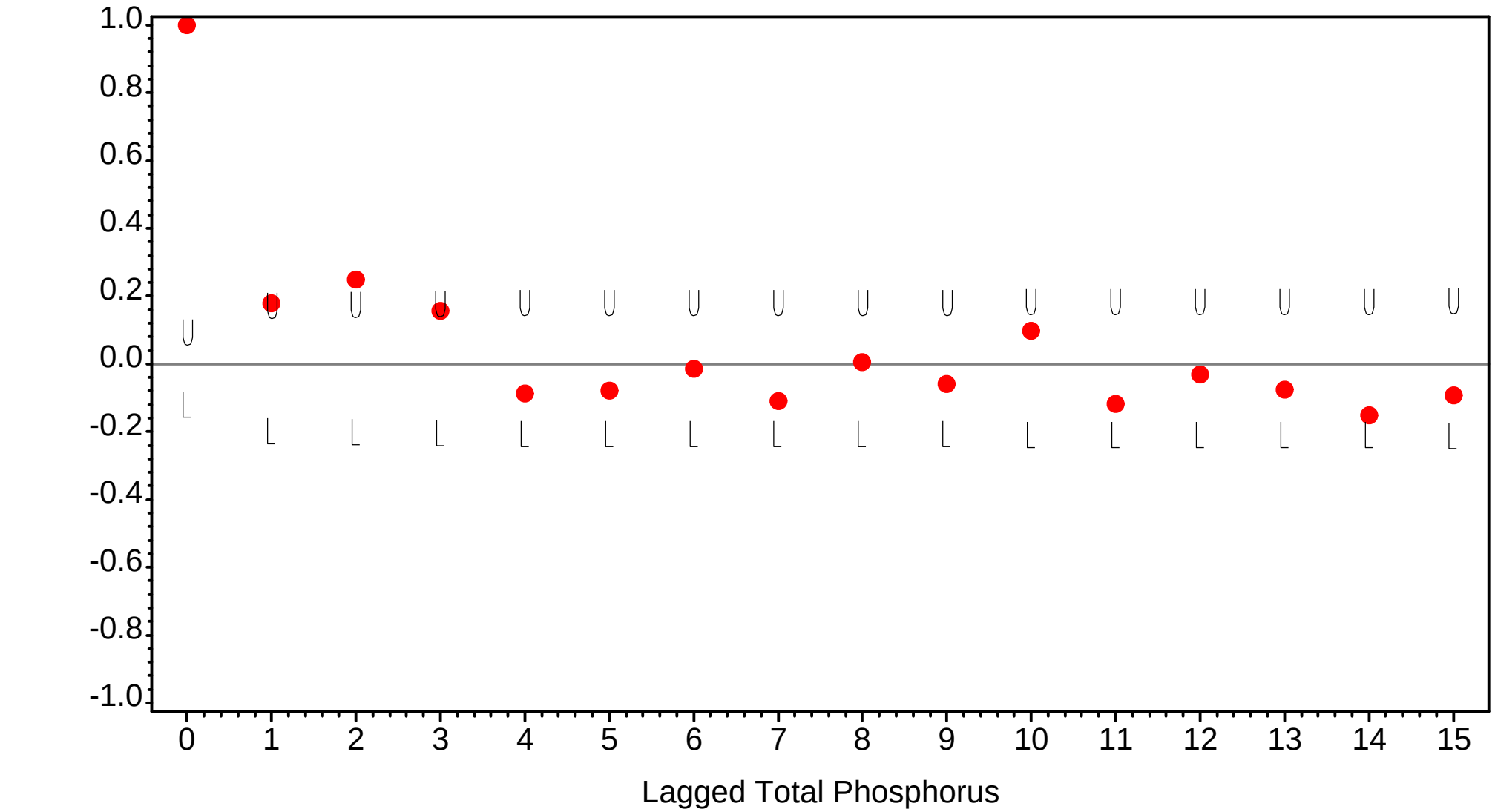
E-1276

S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.180	0.093	0.186	-0.186
2	0.249	0.094	0.188	-0.188
3	0.157	0.096	0.191	-0.191
4	-0.087	0.096	0.193	-0.193
5	-0.080	0.097	0.193	-0.193
6	-0.015	0.097	0.194	-0.194
7	-0.111	0.097	0.194	-0.194
8	0.006	0.097	0.194	-0.194
9	-0.058	0.097	0.194	-0.194
10	0.098	0.097	0.195	-0.195
11	-0.119	0.098	0.195	-0.195
12	-0.031	0.098	0.196	-0.196
13	-0.075	0.098	0.196	-0.196
14	-0.152	0.098	0.196	-0.196
15	-0.093	0.099	0.198	-0.198

S_21FLVEMDHL09 Trends Appendix

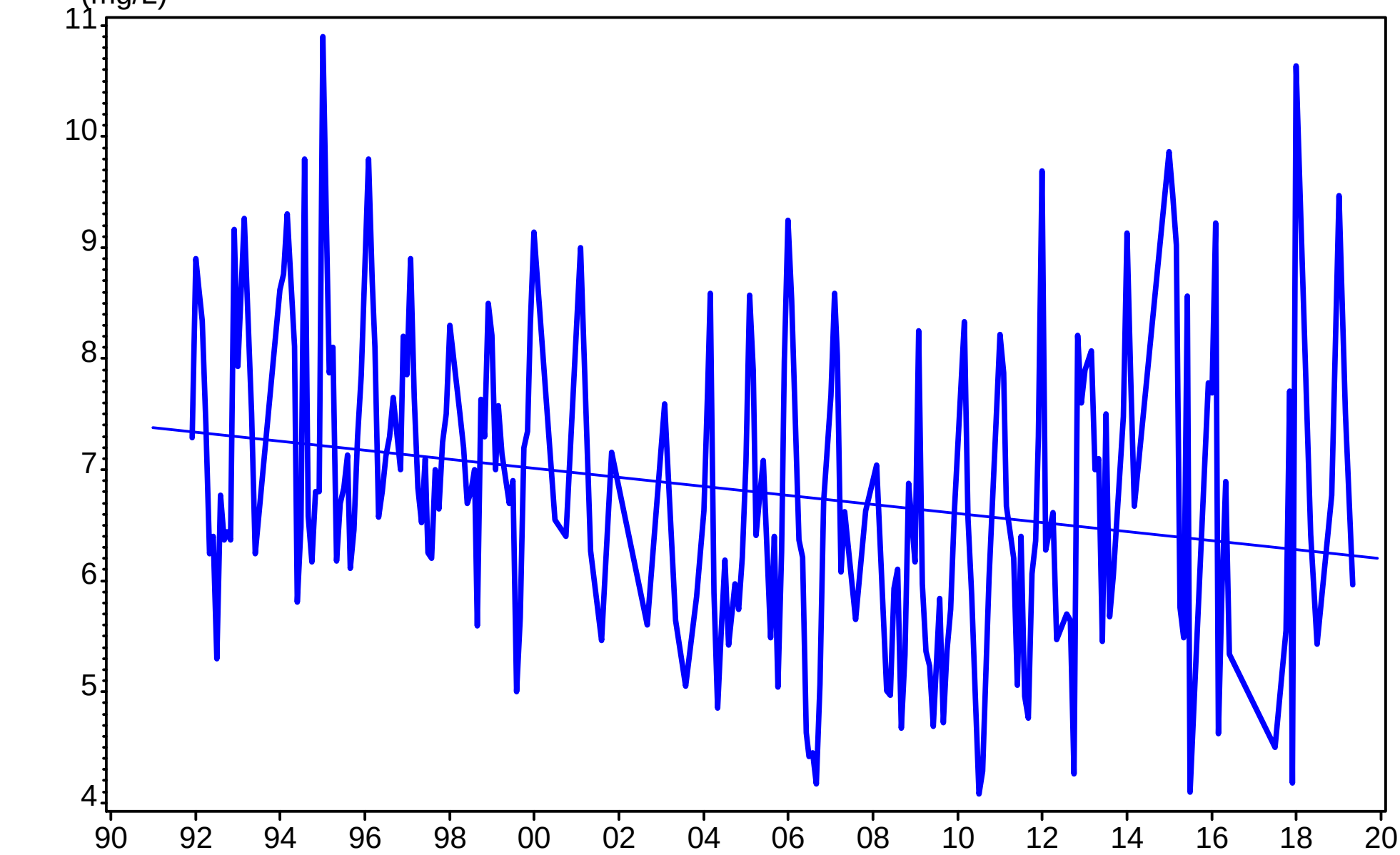
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

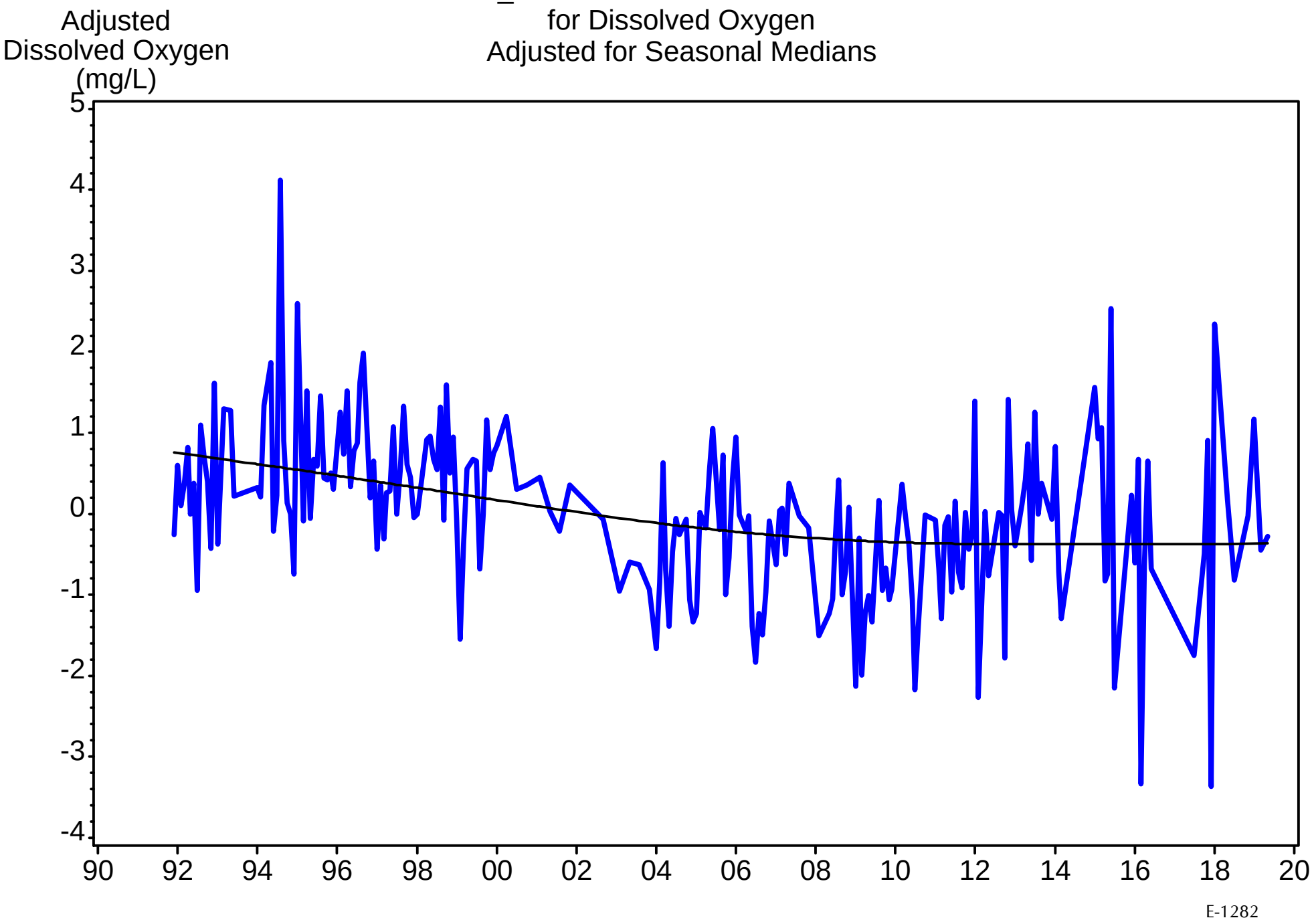
S_21FLVEMDHL09 Trends

S_21FLVEMDHL09 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1281

S_21FLVEMDHL09 Trends

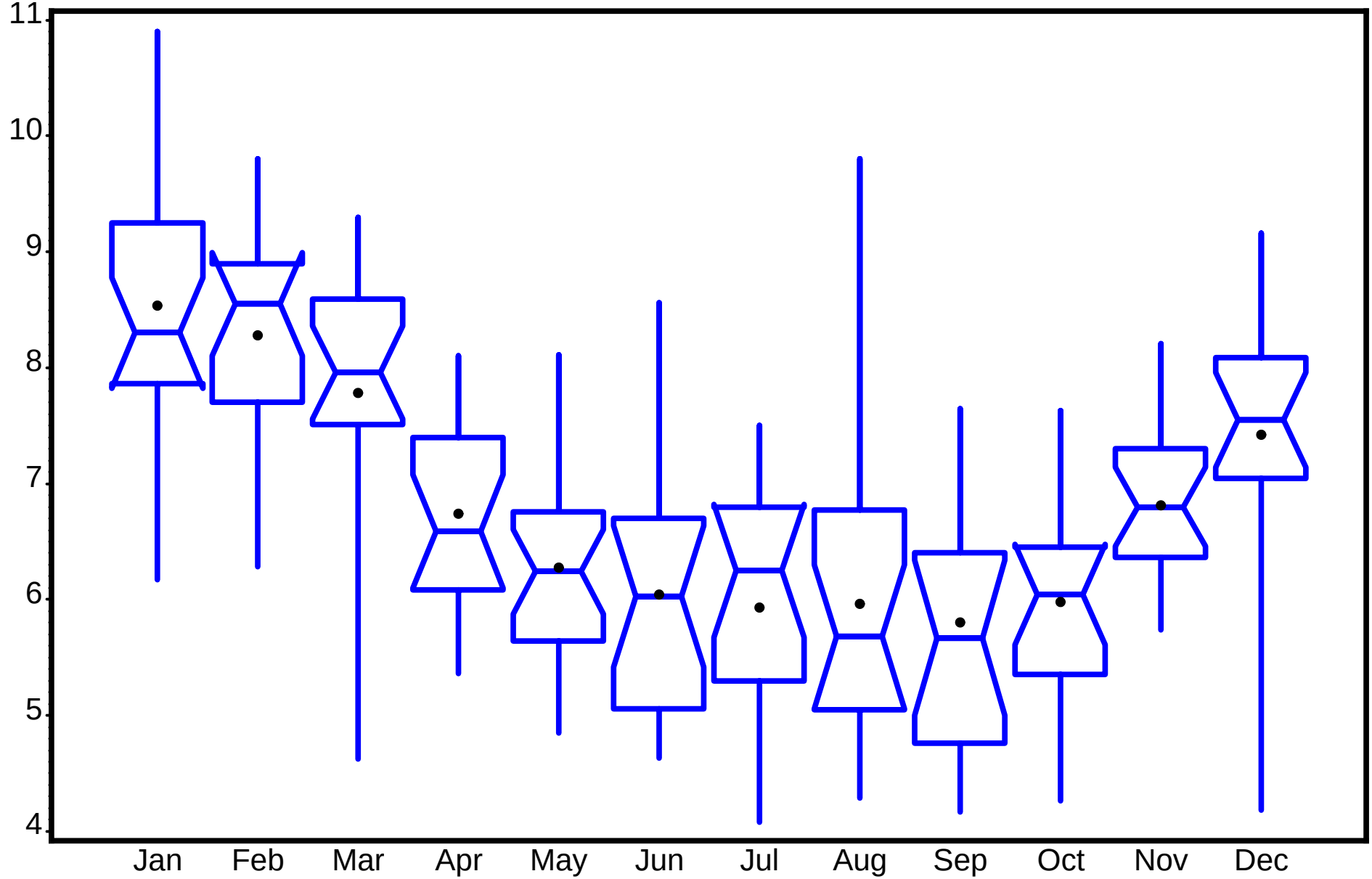


S_21FLVEMDHL09 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



E-1283

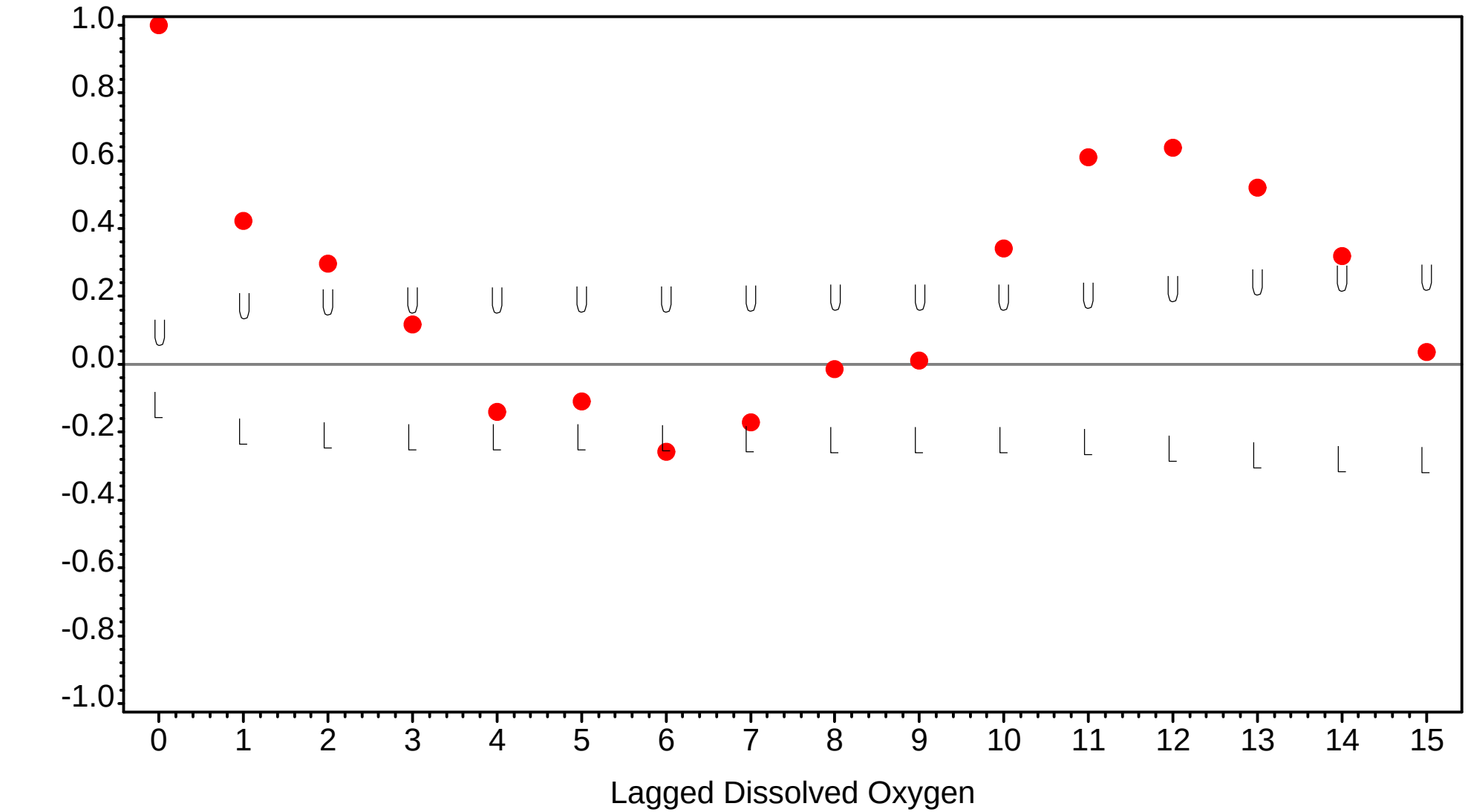
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.421	0.093	0.186	-0.186
2	0.297	0.098	0.196	-0.196
3	0.116	0.101	0.201	-0.201
4	-0.141	0.101	0.202	-0.202
5	-0.109	0.102	0.203	-0.203
6	-0.259	0.102	0.204	-0.204
7	-0.172	0.104	0.208	-0.208
8	-0.014	0.105	0.209	-0.209
9	0.012	0.105	0.209	-0.209
10	0.342	0.105	0.209	-0.209
11	0.610	0.108	0.216	-0.216
12	0.638	0.117	0.235	-0.235
13	0.519	0.127	0.254	-0.254
14	0.320	0.133	0.266	-0.266
15	0.035	0.135	0.270	-0.270

S_21FLVEMDHL09 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1285

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

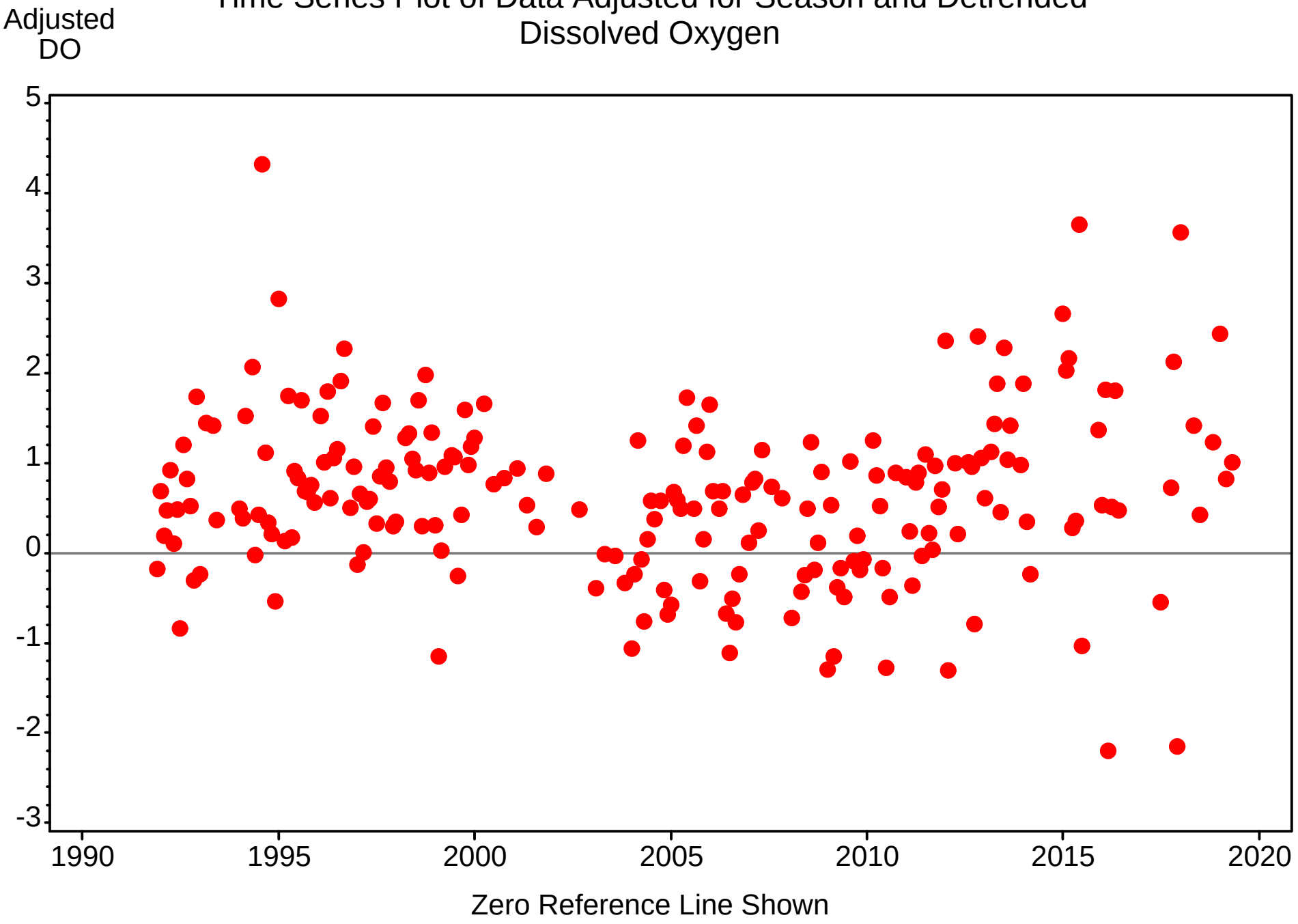
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.22	0	0.02	-0.044

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.21971	.000010835	0.020451	-0.043675

S_21FLVEMDHL09 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



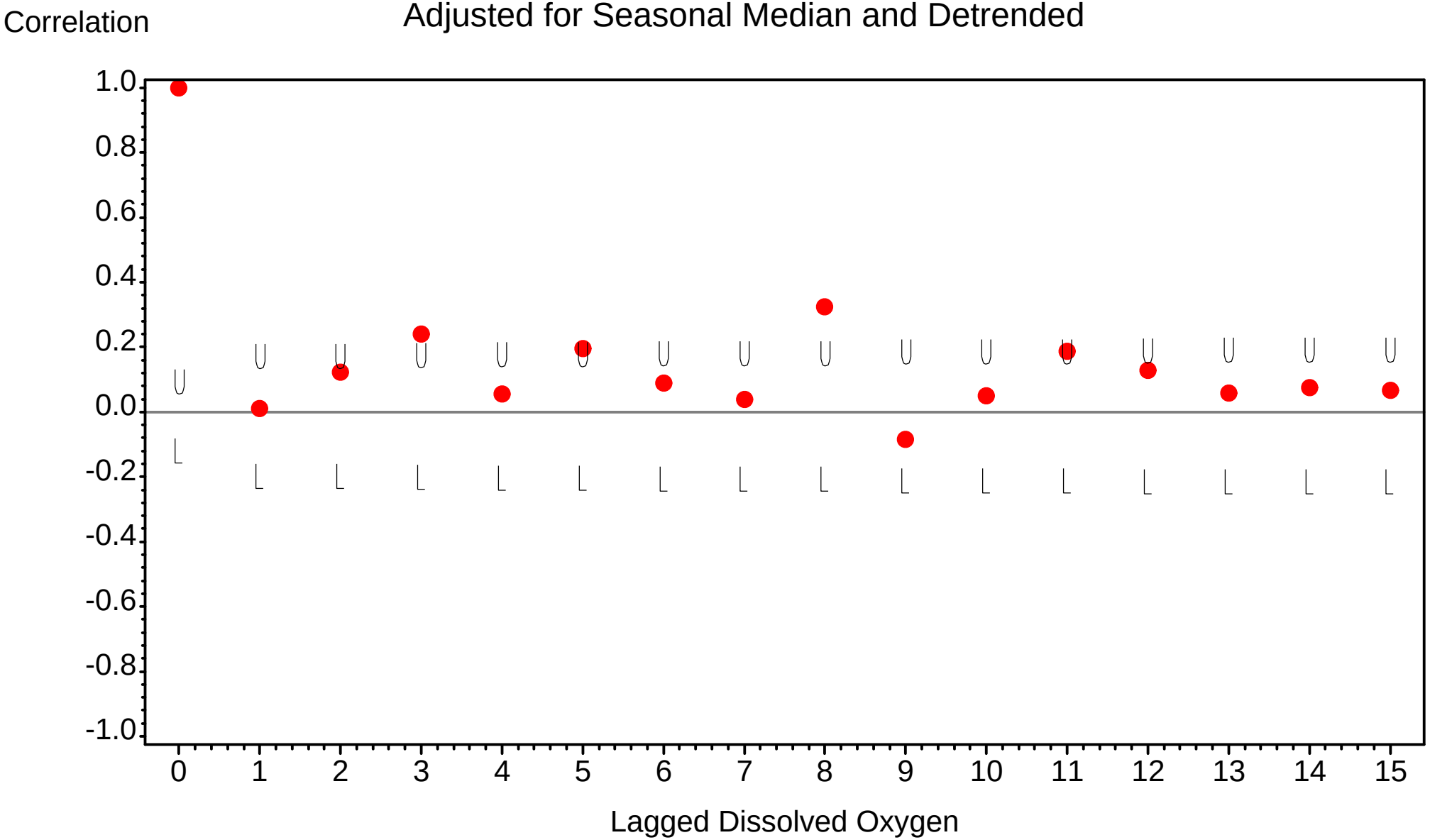
E-1288

S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.012	0.093	0.186	-0.186
2	0.122	0.093	0.186	-0.186
3	0.241	0.093	0.187	-0.187
4	0.056	0.095	0.190	-0.190
5	0.195	0.095	0.190	-0.190
6	0.090	0.096	0.193	-0.193
7	0.039	0.097	0.193	-0.193
8	0.324	0.097	0.193	-0.193
9	-0.084	0.100	0.199	-0.199
10	0.050	0.100	0.200	-0.200
11	0.186	0.100	0.200	-0.200
12	0.129	0.101	0.202	-0.202
13	0.059	0.101	0.203	-0.203
14	0.076	0.102	0.203	-0.203
15	0.068	0.102	0.203	-0.203

S_21FLVEMDHL09 Trends Appendix

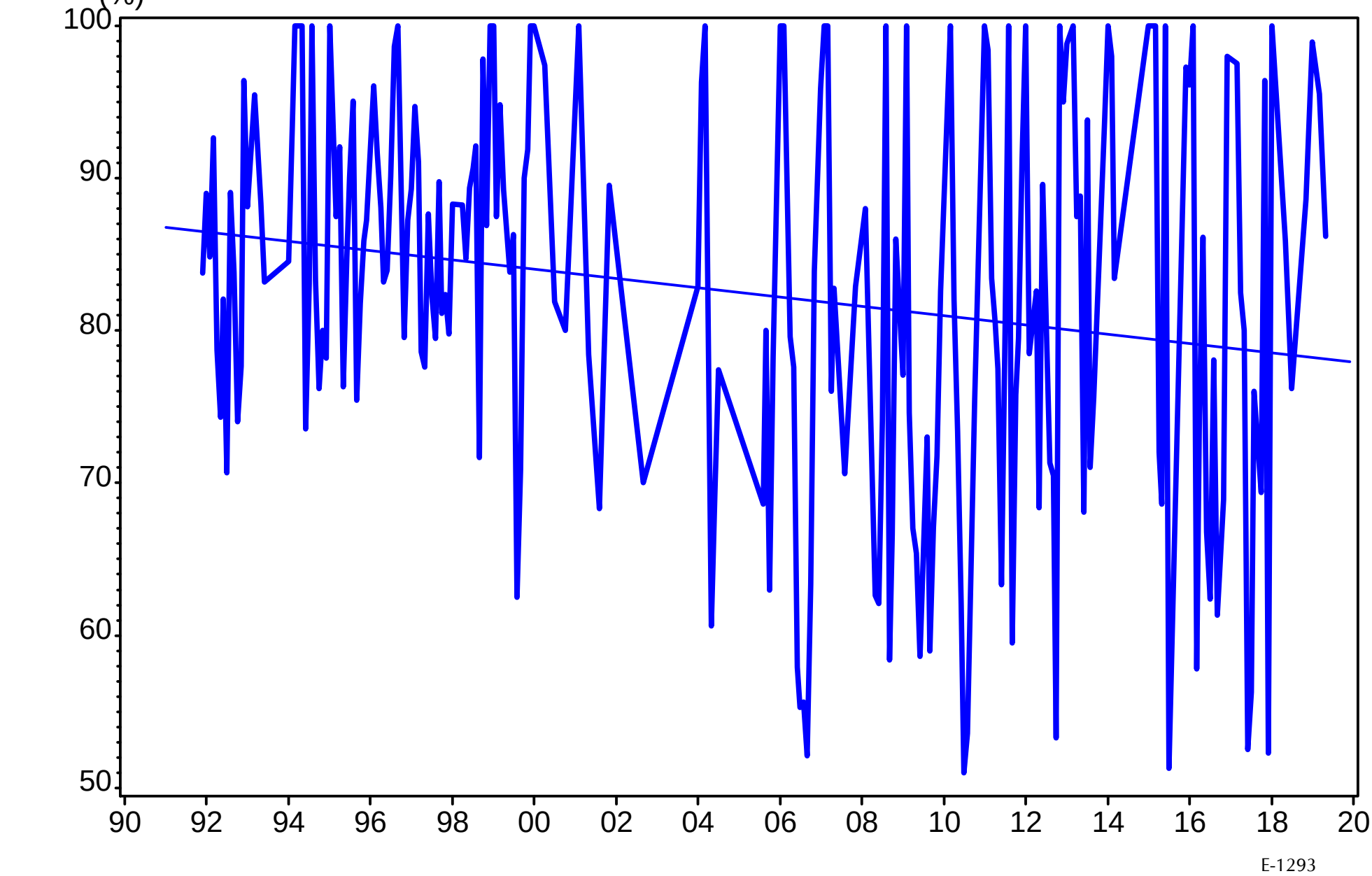
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

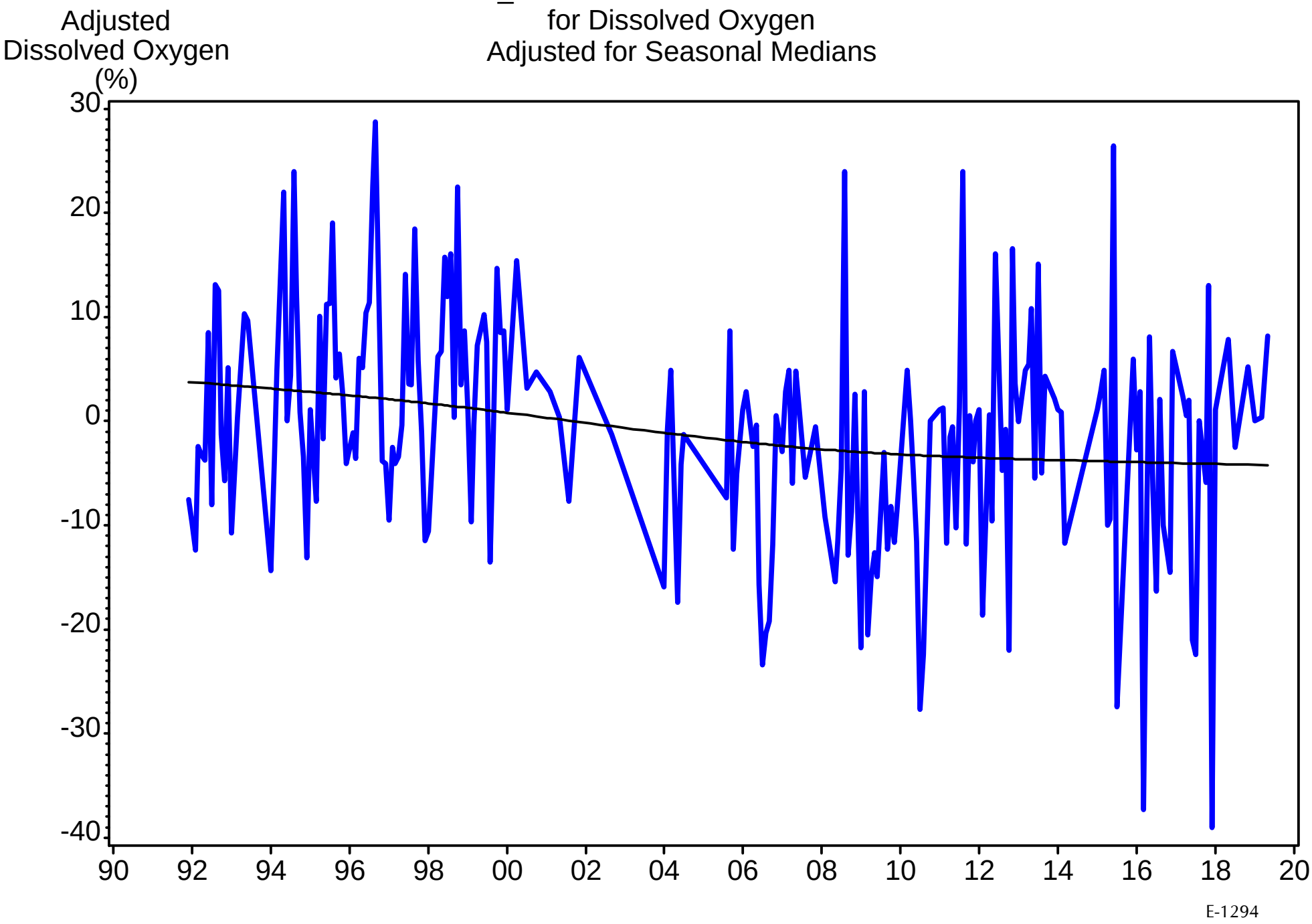
S_21FLVEMDHL09 Trends

S_21FLVEMDHL09 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1293

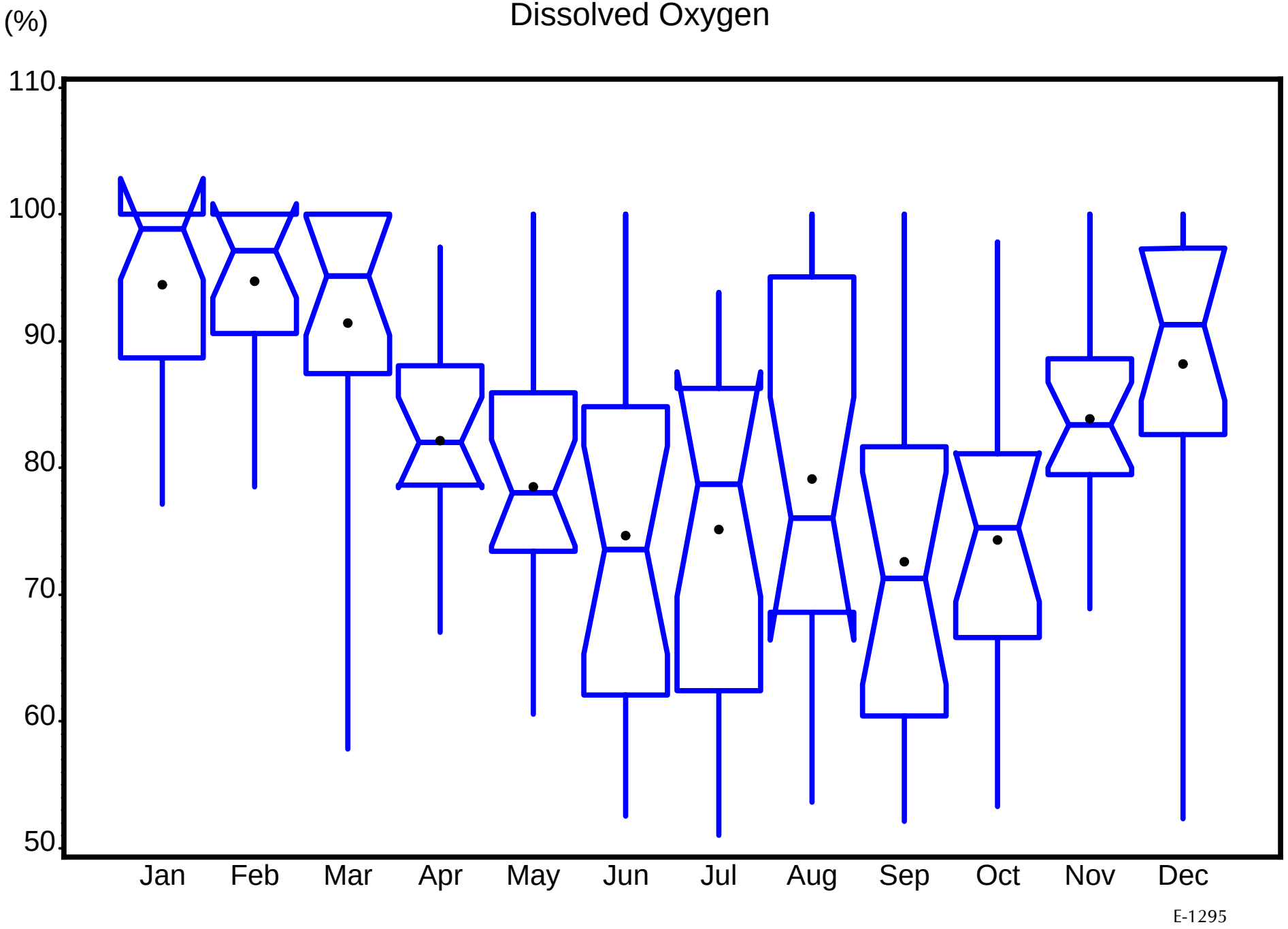
S_21FLVEMDHL09 Trends



S_21FLVEMDHL09 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



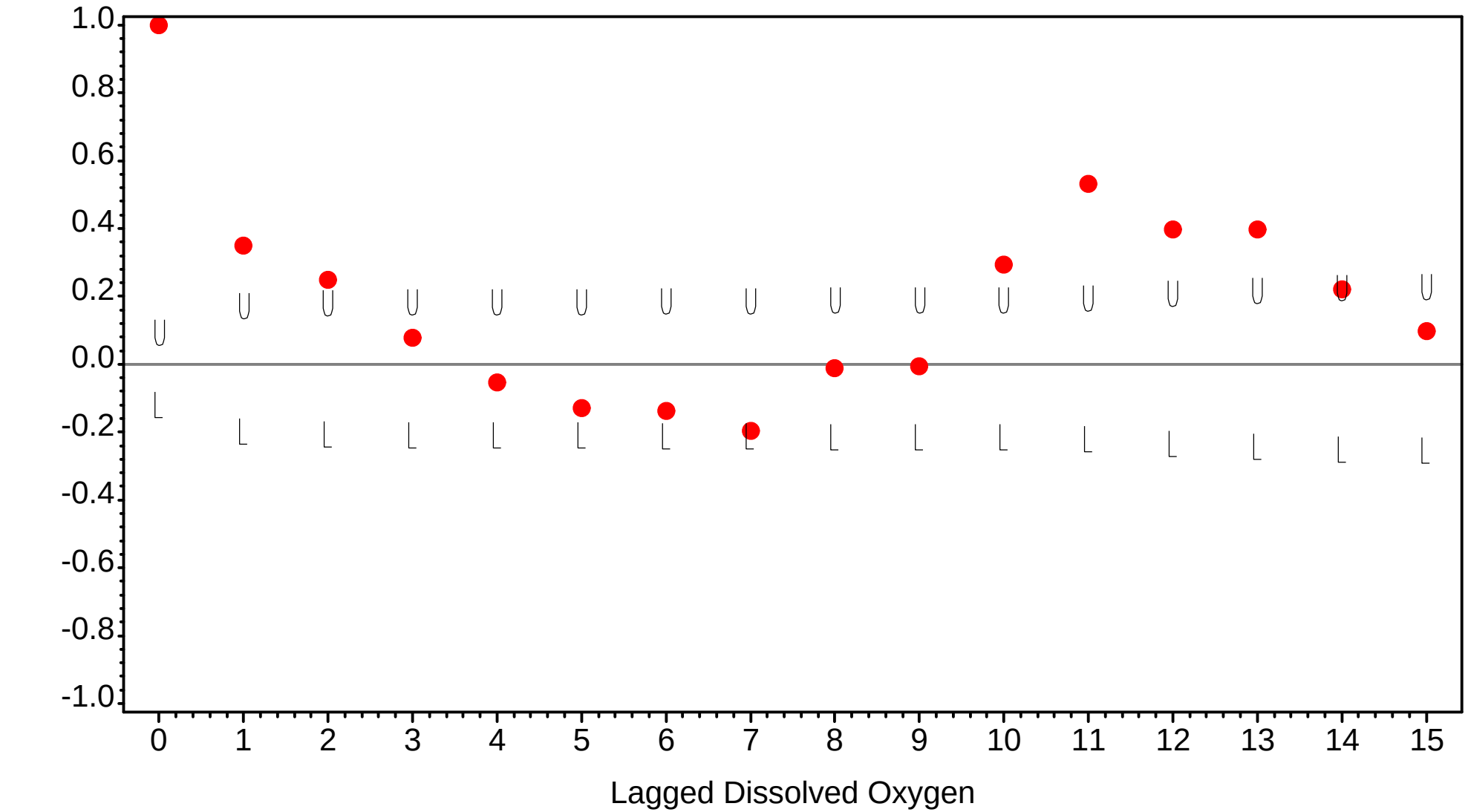
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.350	0.093	0.186	-0.186
2	0.248	0.097	0.193	-0.193
3	0.079	0.098	0.197	-0.197
4	-0.054	0.099	0.197	-0.197
5	-0.129	0.099	0.197	-0.197
6	-0.139	0.099	0.198	-0.198
7	-0.197	0.100	0.199	-0.199
8	-0.013	0.101	0.202	-0.202
9	-0.007	0.101	0.202	-0.202
10	0.294	0.101	0.202	-0.202
11	0.531	0.103	0.206	-0.206
12	0.397	0.111	0.222	-0.222
13	0.397	0.115	0.230	-0.230
14	0.221	0.119	0.237	-0.237
15	0.098	0.120	0.240	-0.240

S_21FLVEMDHL09 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

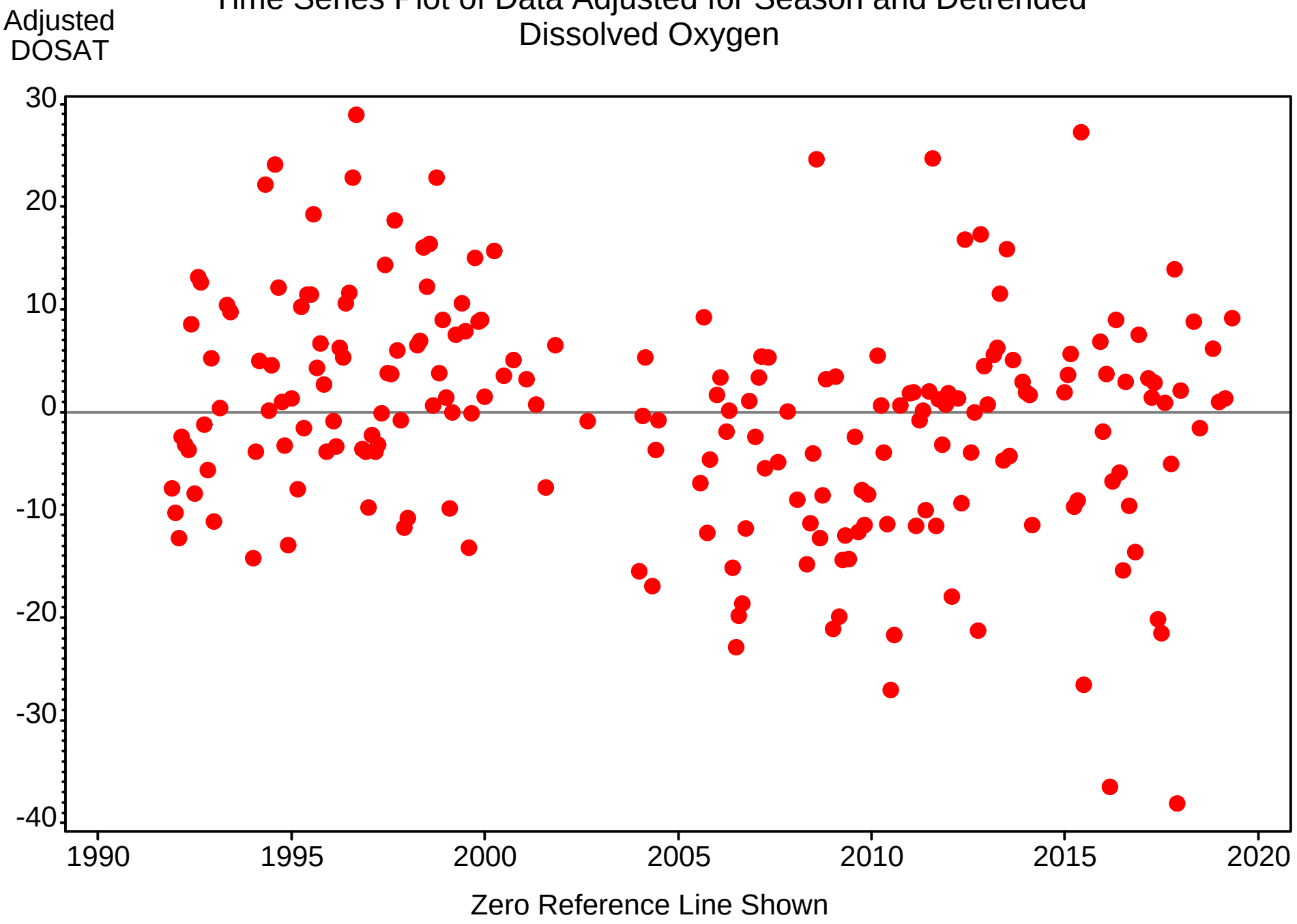
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.05	0.319	0.474	-0.033

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.050332	0.31942	0.47358	-0.032562

S_21FLVEMDHL09 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

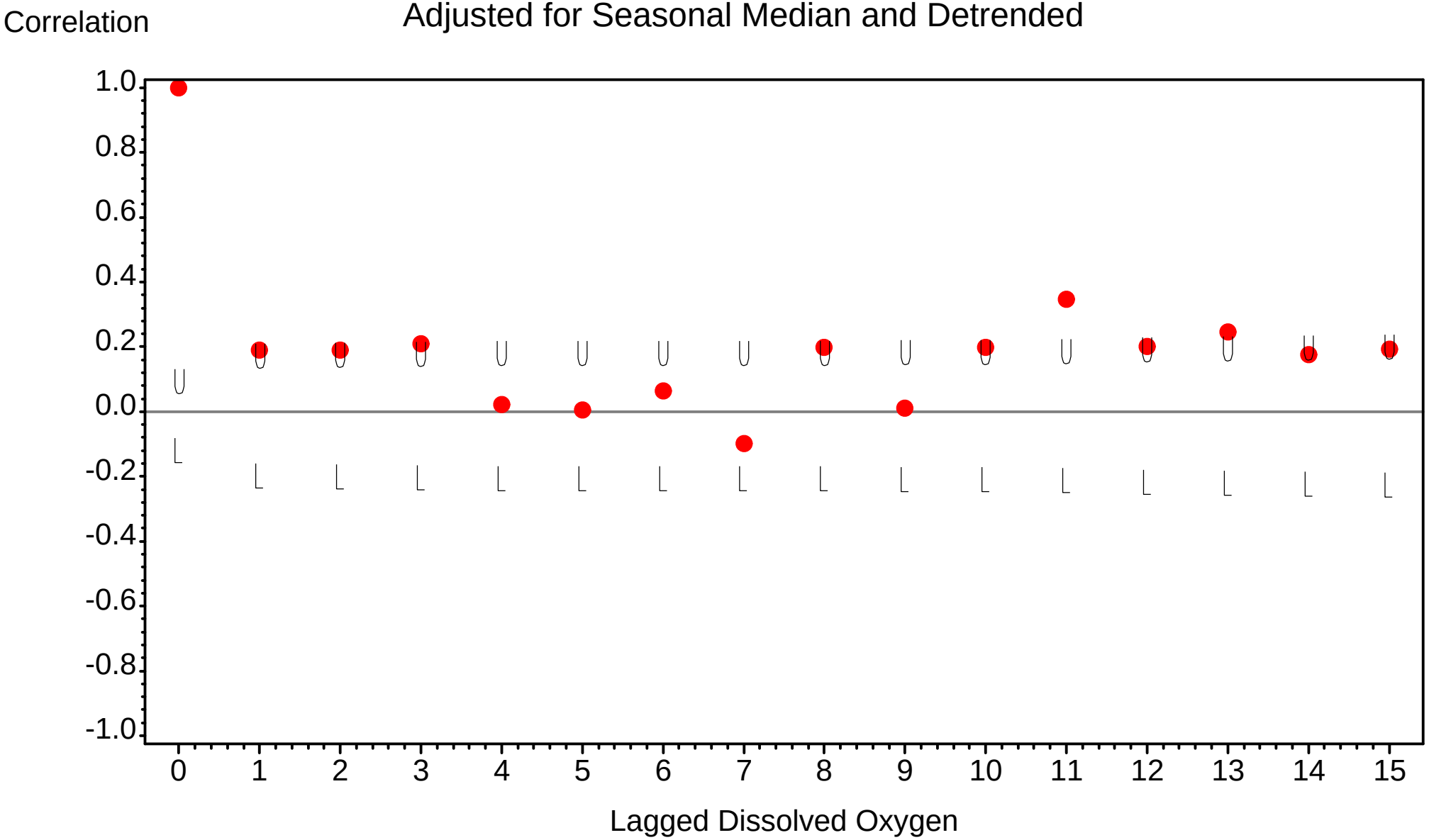


S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.190	0.093	0.186	-0.186
2	0.191	0.094	0.188	-0.188
3	0.209	0.095	0.190	-0.190
4	0.021	0.096	0.193	-0.193
5	0.006	0.096	0.193	-0.193
6	0.064	0.096	0.193	-0.193
7	-0.098	0.097	0.193	-0.193
8	0.199	0.097	0.194	-0.194
9	0.012	0.098	0.196	-0.196
10	0.197	0.098	0.196	-0.196
11	0.346	0.099	0.198	-0.198
12	0.201	0.103	0.205	-0.205
13	0.247	0.104	0.207	-0.207
14	0.175	0.105	0.211	-0.211
15	0.192	0.106	0.212	-0.212

S_21FLVEMDHL09 Trends Appendix

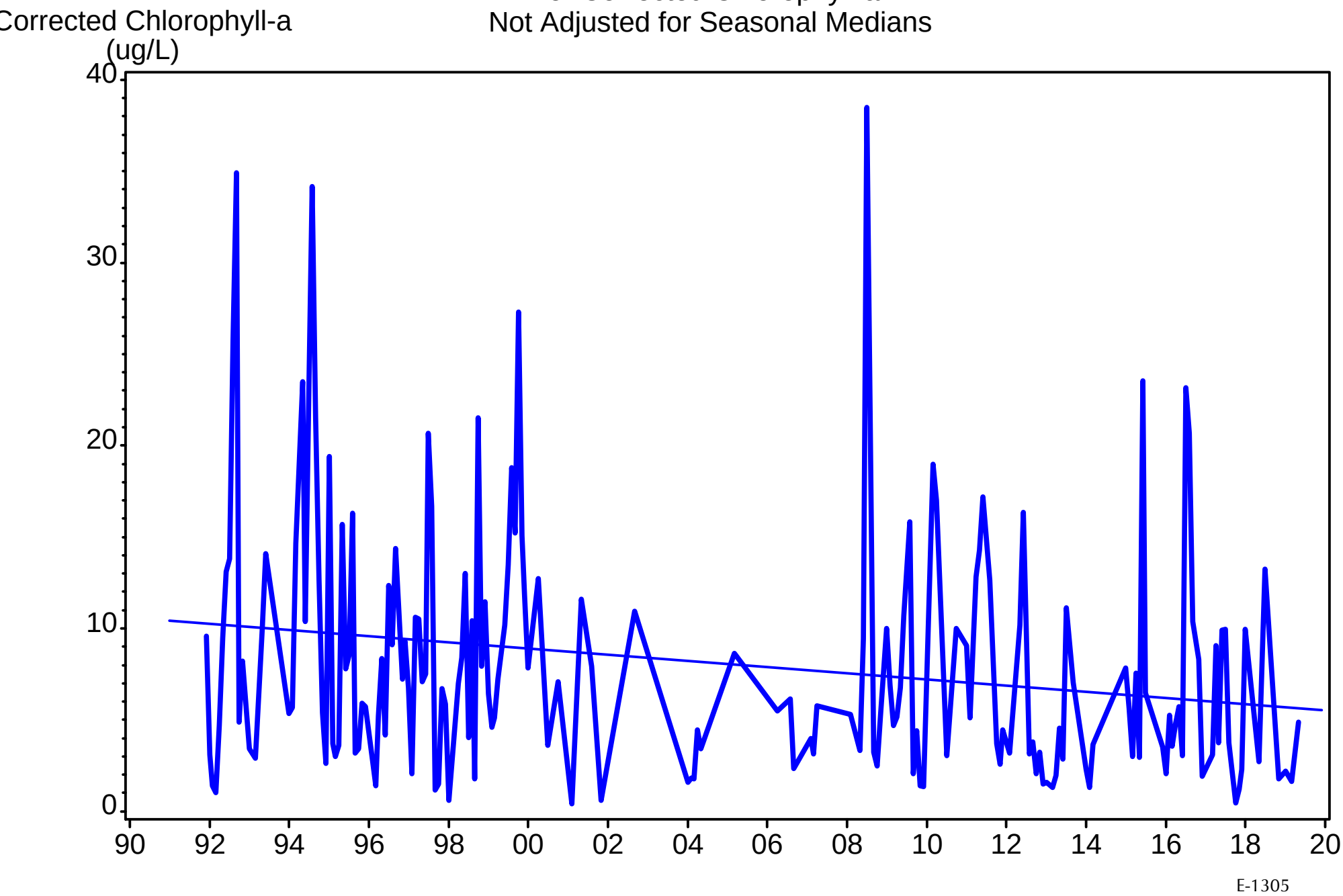
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

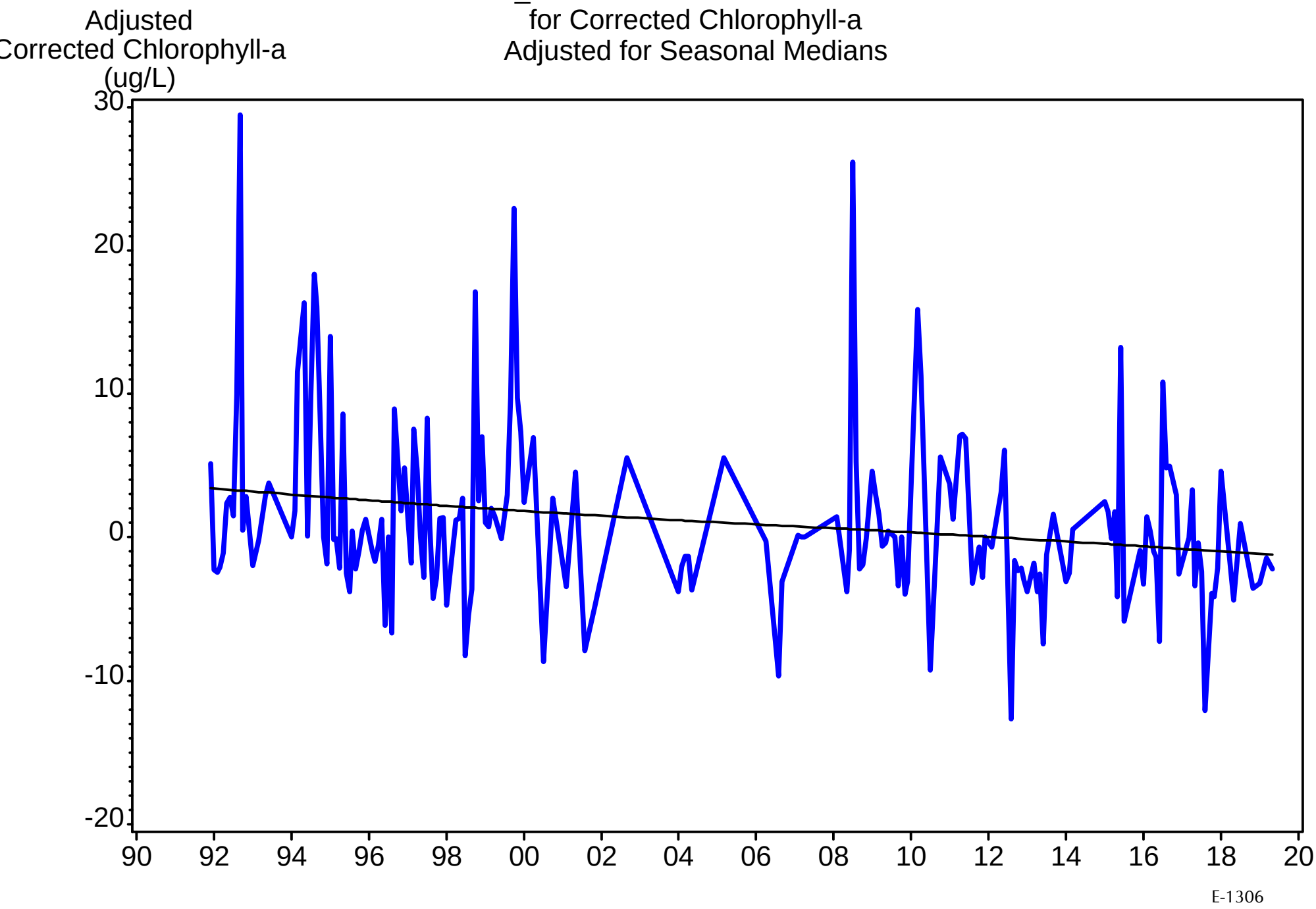
S_21FLVEMDHL09 Trends

S_21FLVEMDHL09 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



E-1305

S_21FLVEMDHL09 Trends

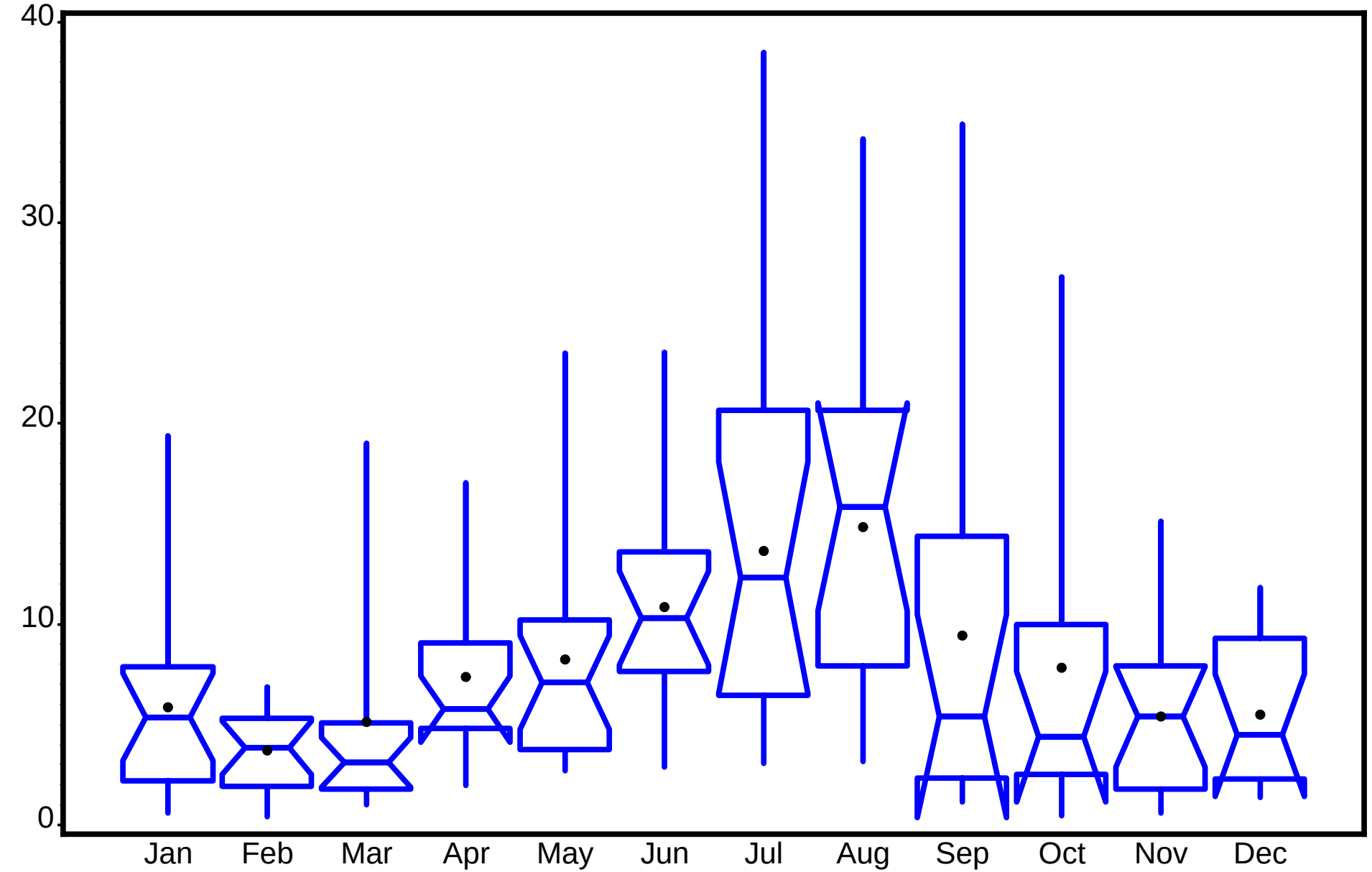


S_21FLVEMDHL09 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a

(ug/L)



E-1307

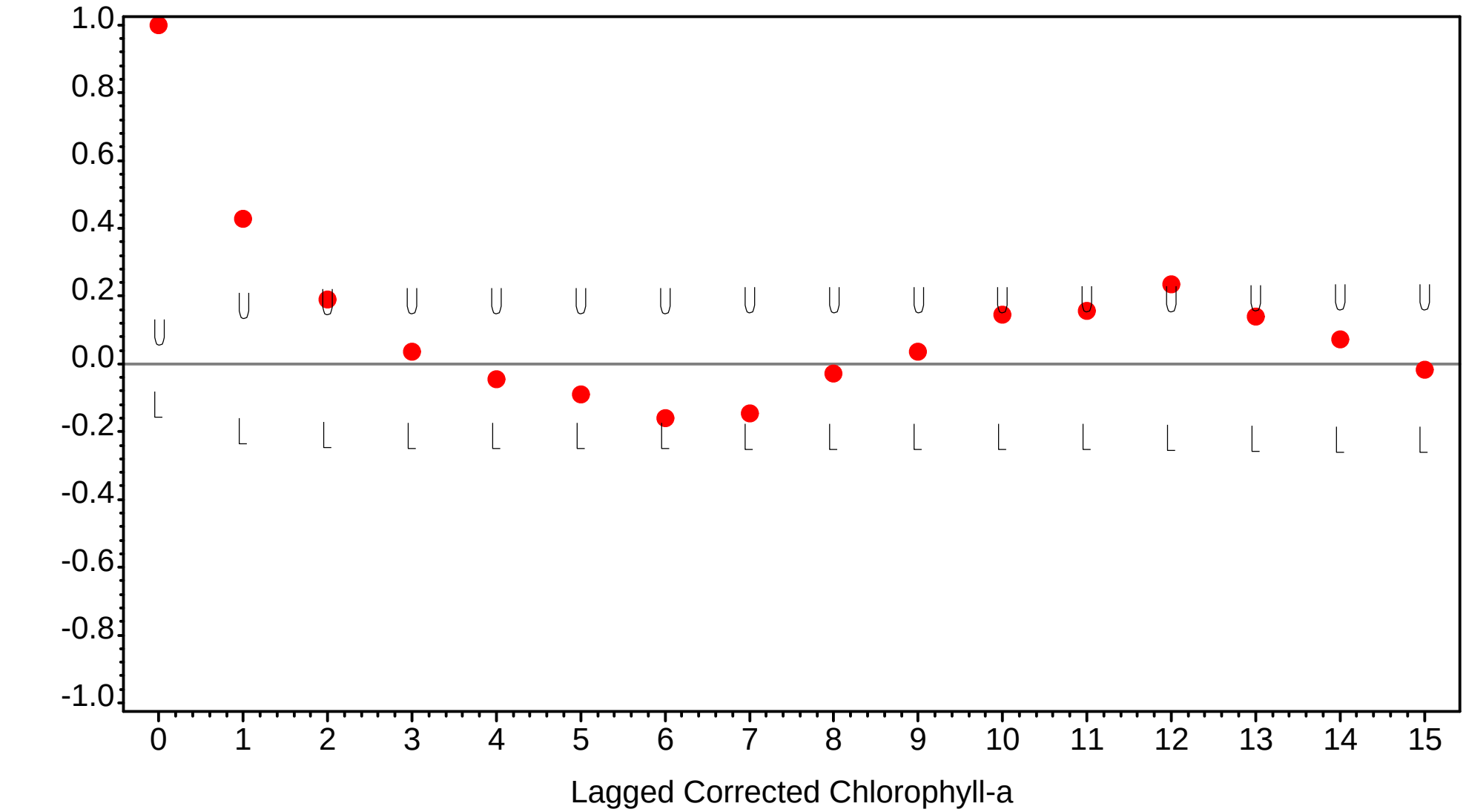
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.429	0.093	0.186	-0.186
2	0.189	0.098	0.197	-0.197
3	0.035	0.099	0.199	-0.199
4	-0.045	0.099	0.199	-0.199
5	-0.090	0.100	0.199	-0.199
6	-0.160	0.100	0.199	-0.199
7	-0.145	0.100	0.201	-0.201
8	-0.028	0.101	0.202	-0.202
9	0.037	0.101	0.202	-0.202
10	0.146	0.101	0.202	-0.202
11	0.156	0.102	0.203	-0.203
12	0.235	0.102	0.205	-0.205
13	0.140	0.104	0.208	-0.208
14	0.072	0.104	0.209	-0.209
15	-0.018	0.105	0.209	-0.209

S_21FLVEMDHL09 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1309

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

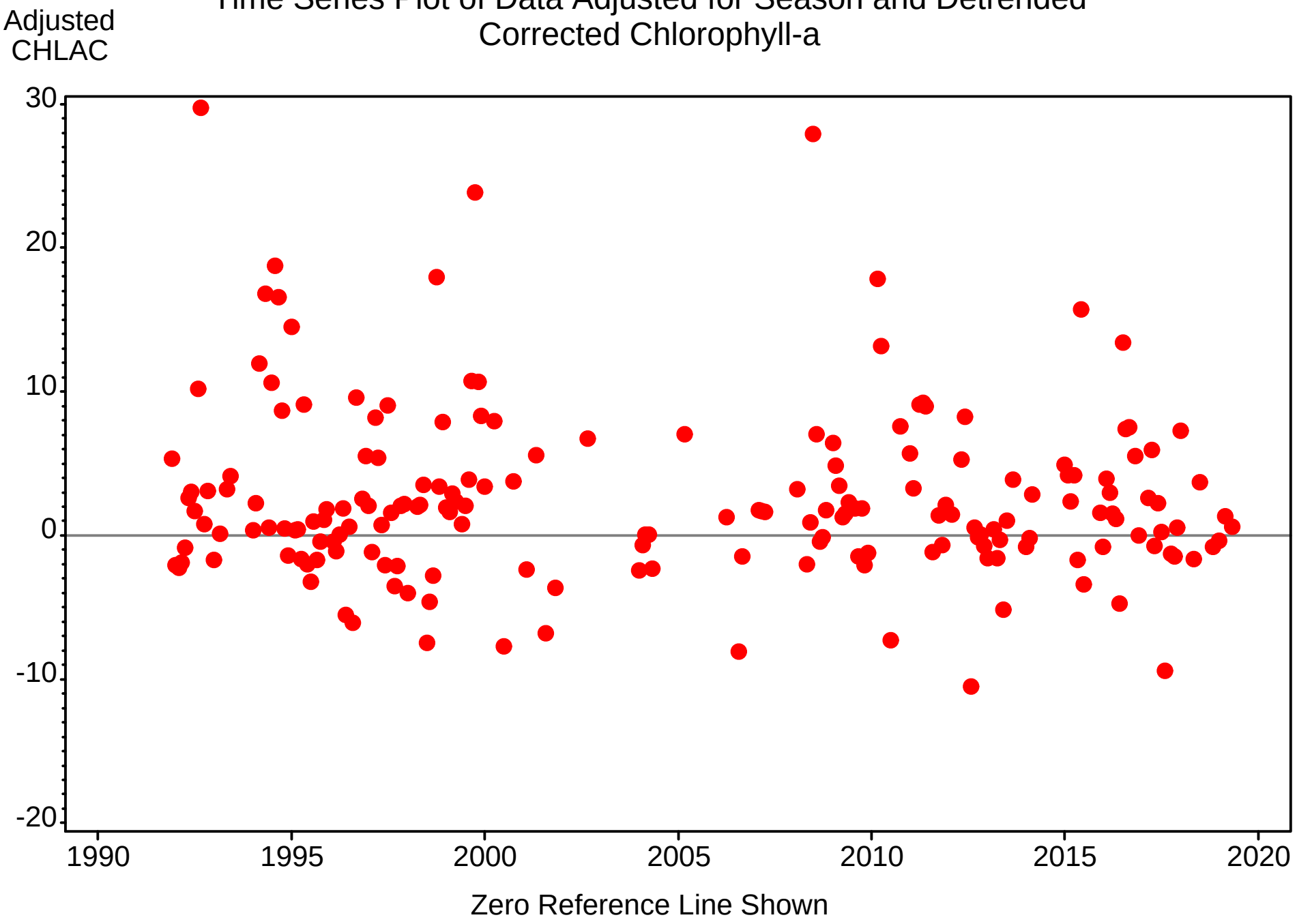
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.127	0.021	0.085	-0.096

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.12661	0.020552	0.085171	-0.096111

S_21FLVEMDHL09 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



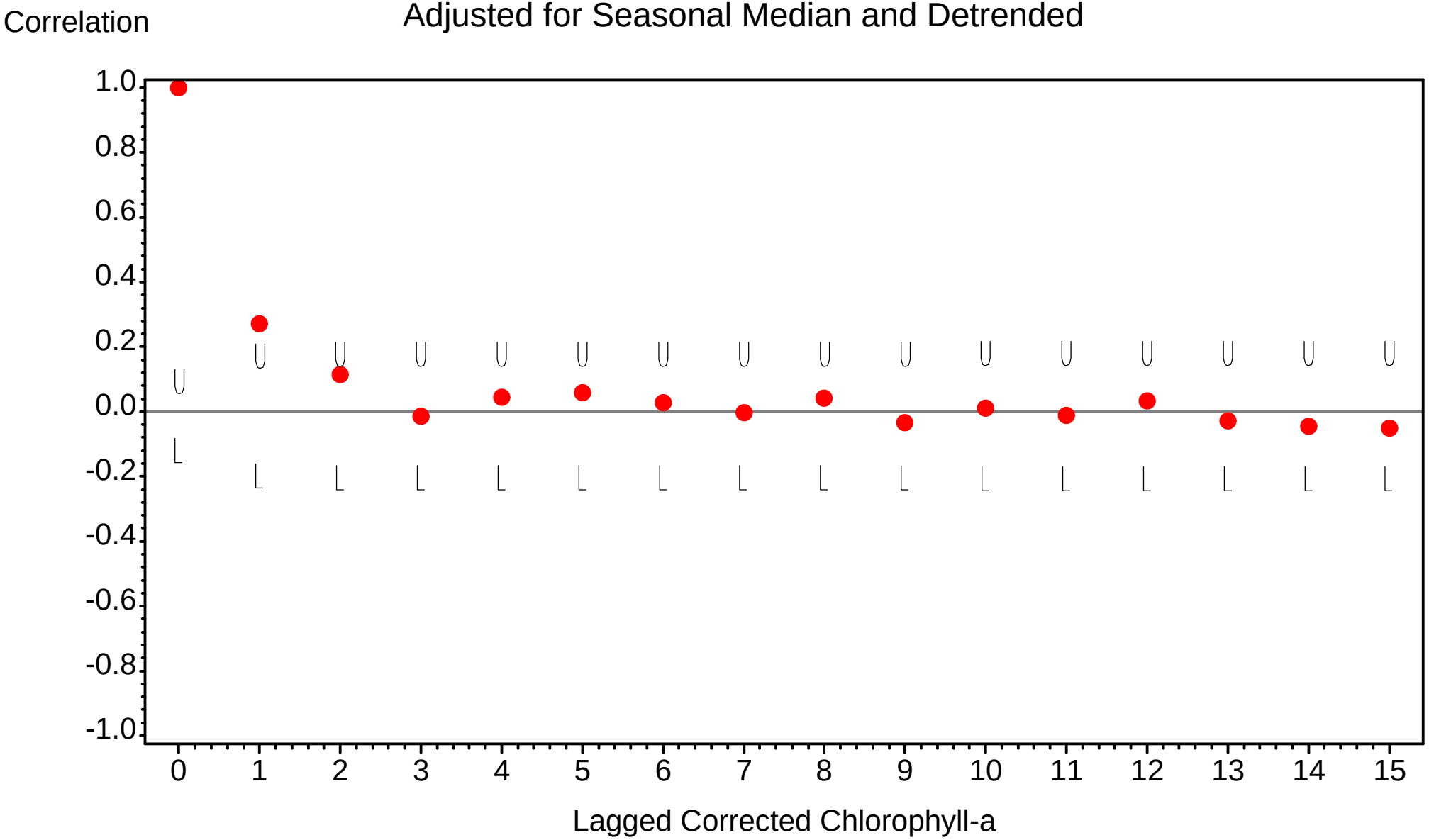
S_21FLVEMDHL09 Trends Appendix

Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.271	0.093	0.186	-0.186
2	0.115	0.095	0.190	-0.190
3	-0.015	0.095	0.191	-0.191
4	0.043	0.096	0.191	-0.191
5	0.057	0.096	0.191	-0.191
6	0.027	0.096	0.191	-0.191
7	-0.004	0.096	0.191	-0.191
8	0.042	0.096	0.191	-0.191
9	-0.035	0.096	0.191	-0.191
10	0.011	0.096	0.192	-0.192
11	-0.011	0.096	0.192	-0.192
12	0.033	0.096	0.192	-0.192
13	-0.028	0.096	0.192	-0.192
14	-0.046	0.096	0.192	-0.192
15	-0.051	0.096	0.192	-0.192

S_21FLVEMDHL09 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended

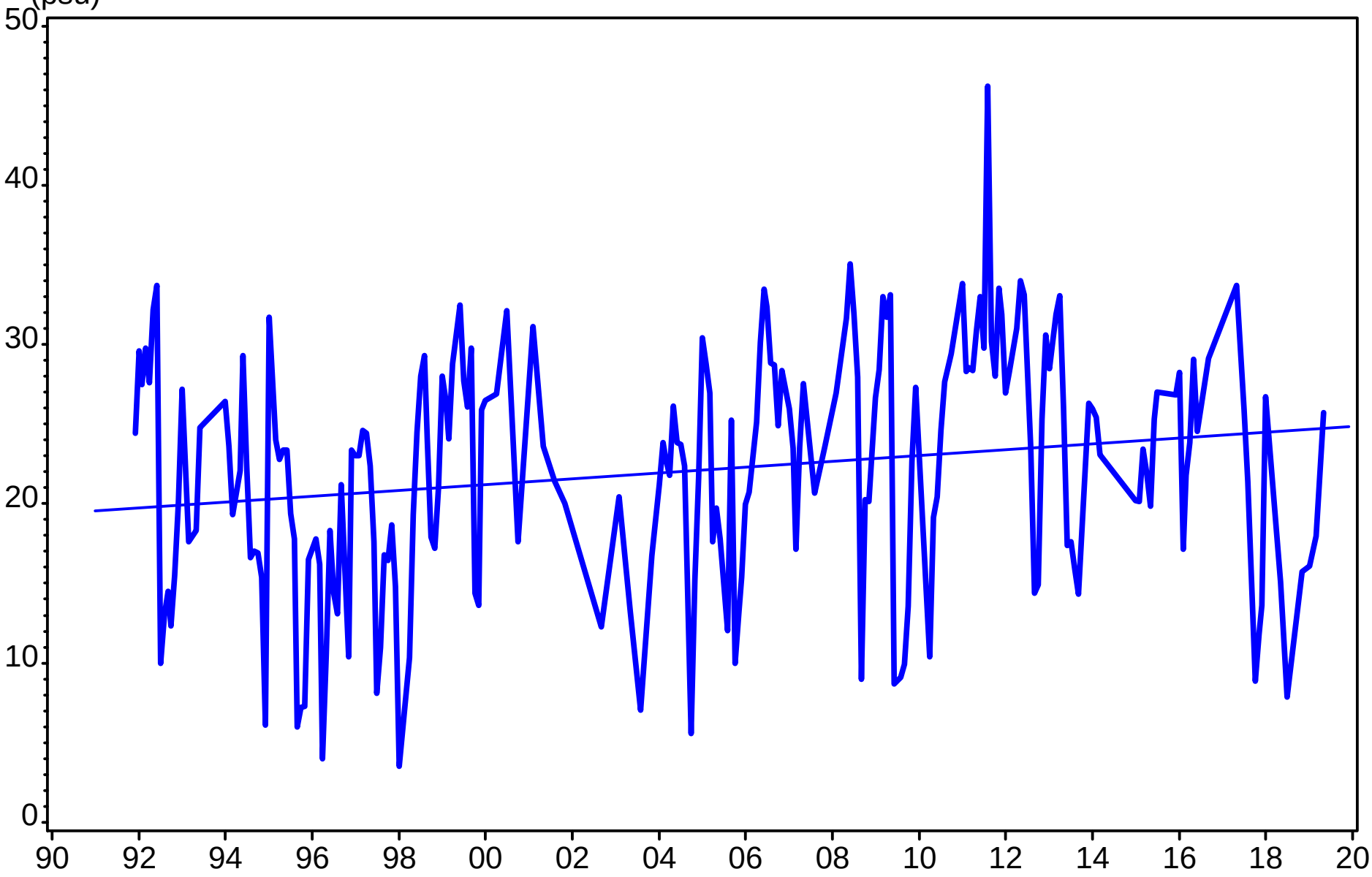


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1314

S_21FLVEMDHL09 Trends

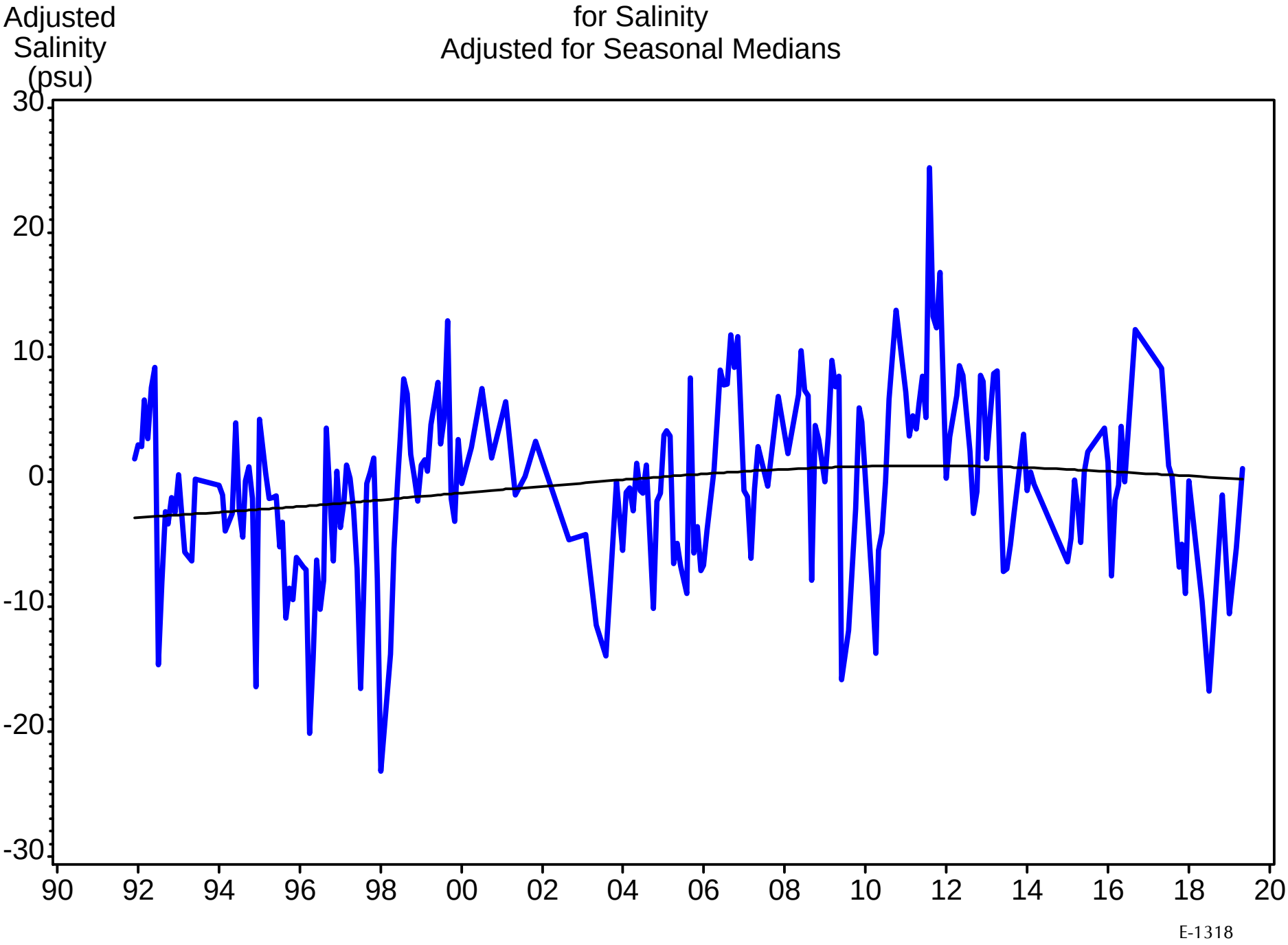
S_21FLVEMDHL09 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



E-1317

S_21FLVEMDHL09 Trends

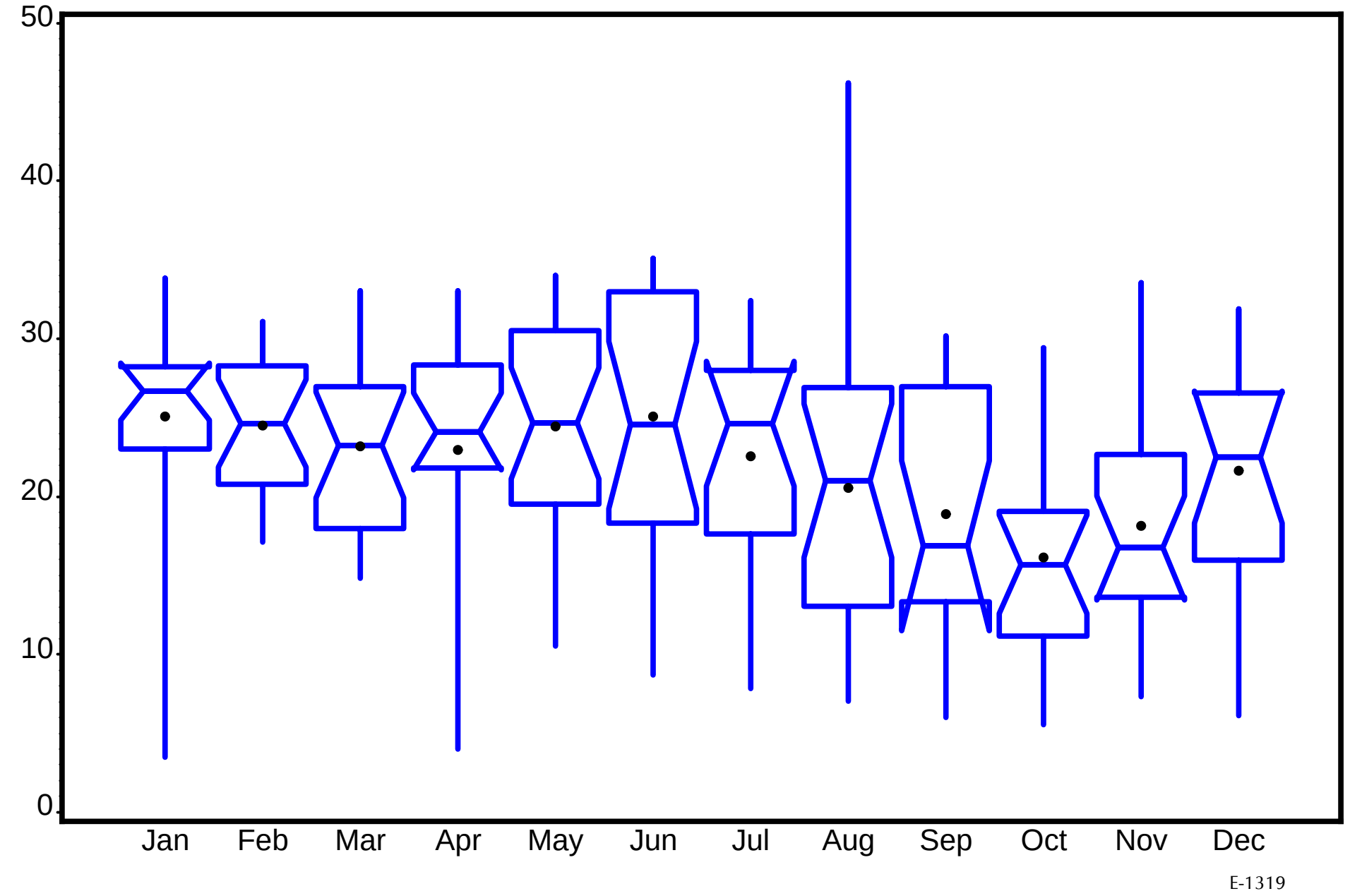
S_21FLVEMDHL09 Time Series for Salinity Adjusted for Seasonal Medians



S_21FLVEMDHL09 Trends Appendix

Seasonal Univariate Statistics

Salinity



E-1319

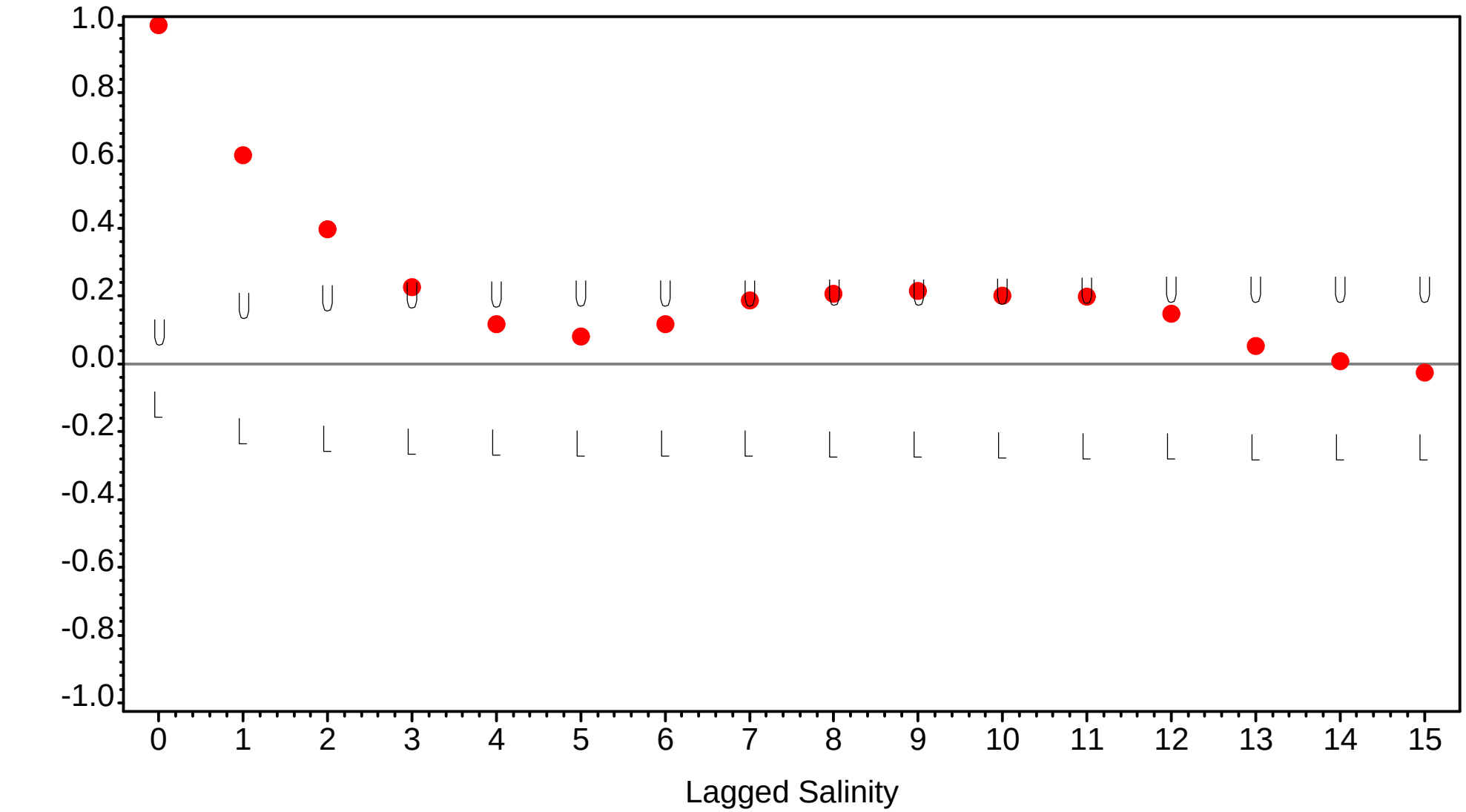
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.616	0.093	0.186	-0.186
2	0.397	0.104	0.208	-0.208
3	0.225	0.108	0.216	-0.216
4	0.117	0.110	0.219	-0.219
5	0.081	0.110	0.220	-0.220
6	0.118	0.110	0.220	-0.220
7	0.188	0.110	0.221	-0.221
8	0.206	0.111	0.223	-0.223
9	0.216	0.112	0.225	-0.225
10	0.201	0.114	0.227	-0.227
11	0.197	0.115	0.229	-0.229
12	0.147	0.116	0.231	-0.231
13	0.054	0.116	0.232	-0.232
14	0.008	0.116	0.232	-0.232
15	-0.025	0.116	0.232	-0.232

S_21FLVEMDHL09 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

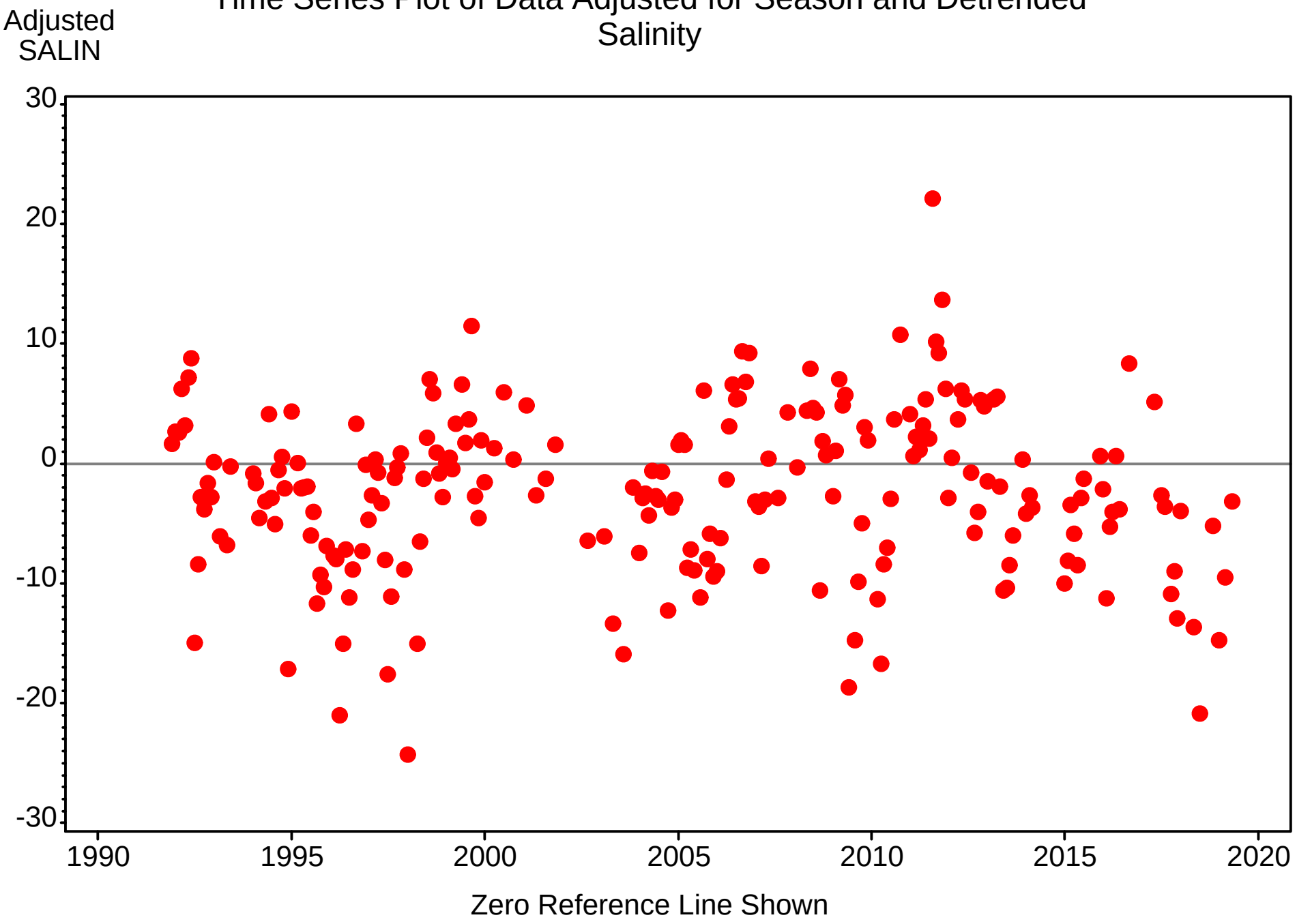
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.117	0.019	0.176	0.144

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.11657	0.018583	0.17621	0.14412

S_21FLVEMDHL09 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



E-1324

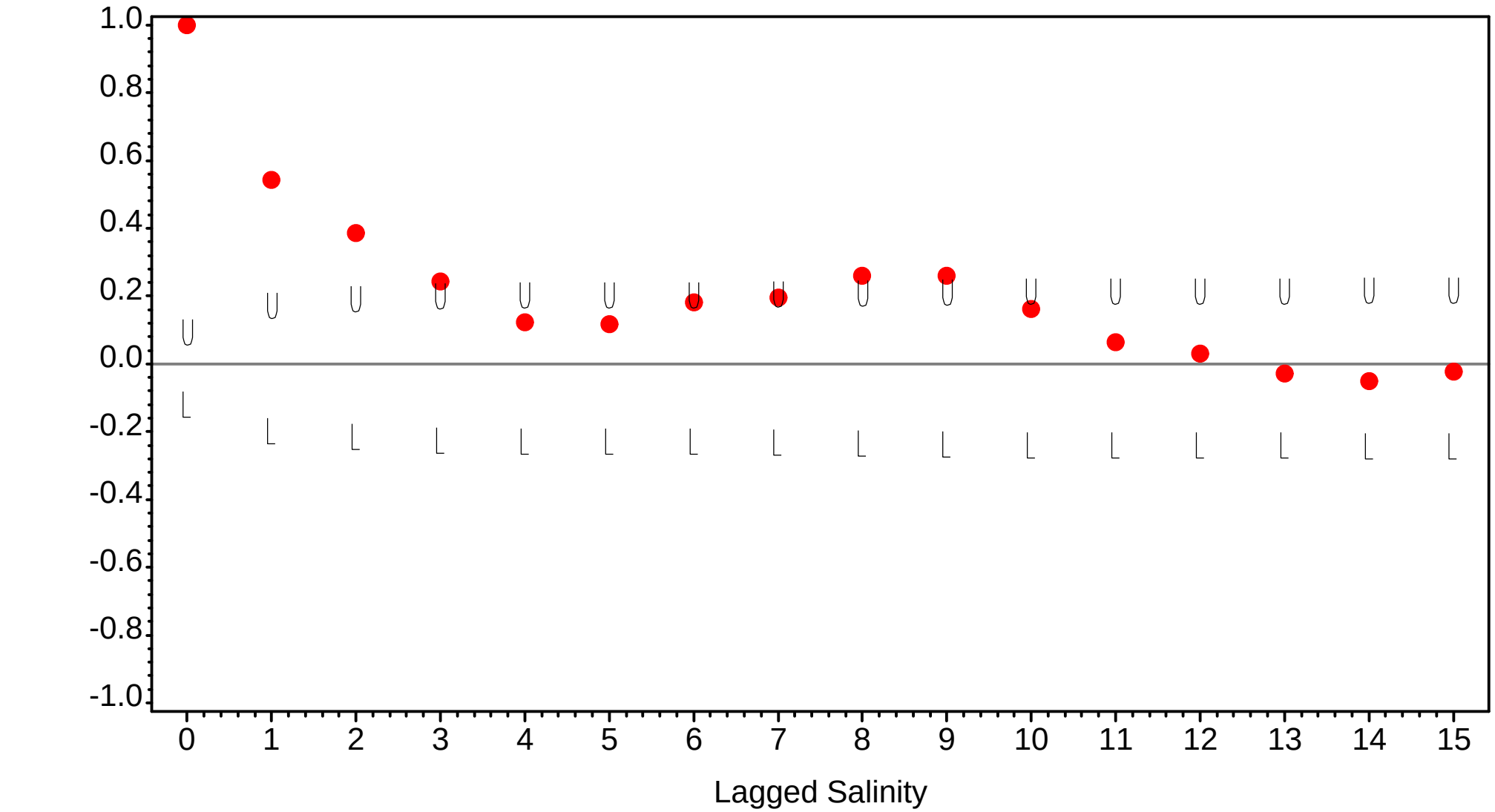
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.544	0.093	0.186	-0.186
2	0.387	0.102	0.203	-0.203
3	0.244	0.106	0.212	-0.212
4	0.124	0.107	0.215	-0.215
5	0.116	0.108	0.216	-0.216
6	0.182	0.108	0.216	-0.216
7	0.195	0.109	0.218	-0.218
8	0.260	0.110	0.220	-0.220
9	0.260	0.112	0.223	-0.223
10	0.162	0.113	0.227	-0.227
11	0.064	0.114	0.228	-0.228
12	0.029	0.114	0.228	-0.228
13	-0.028	0.114	0.228	-0.228
14	-0.051	0.114	0.229	-0.229
15	-0.023	0.114	0.229	-0.229

S_21FLVEMDHL09 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

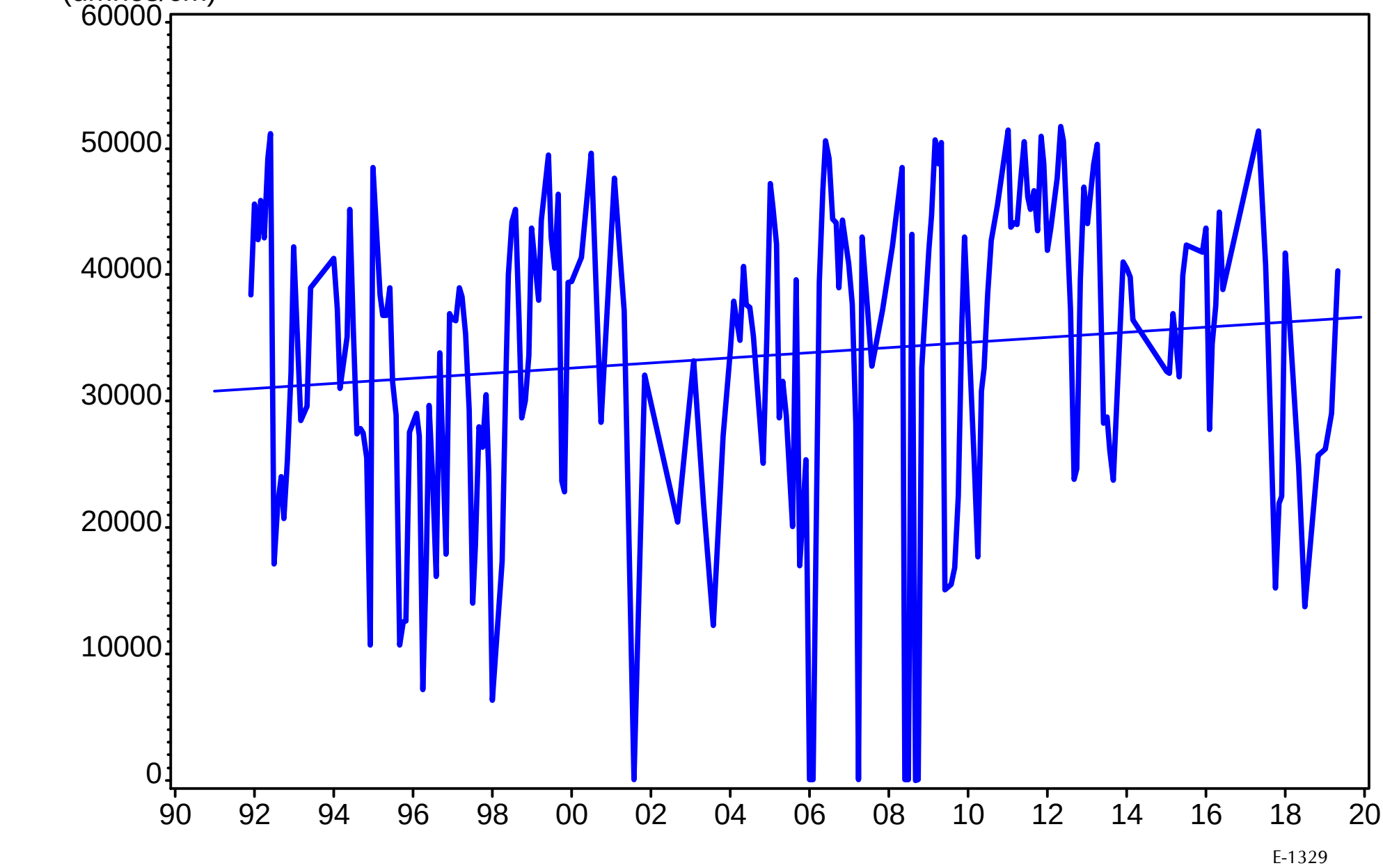


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL09 Trends

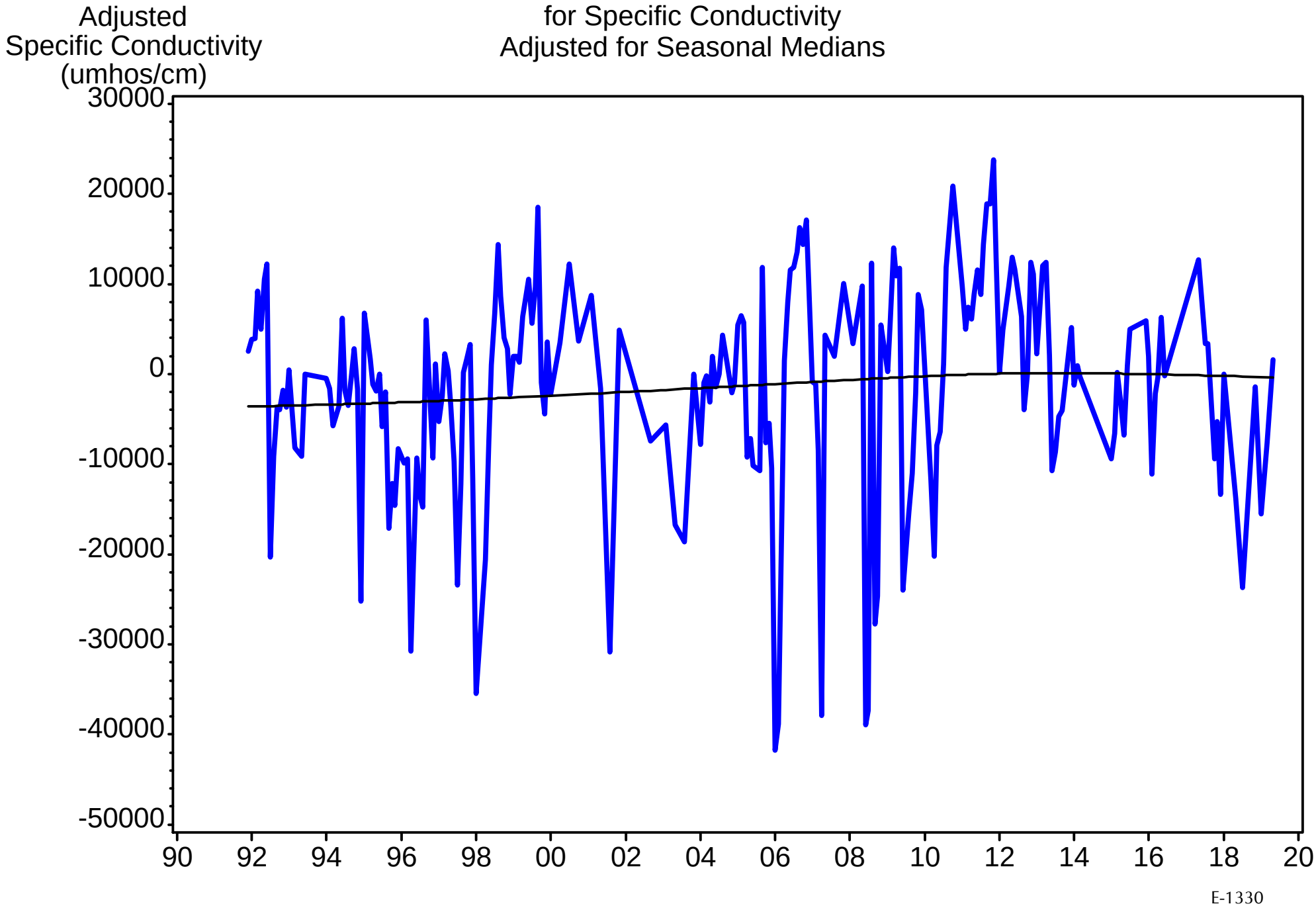
S_21FLVEMDHL09 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



E-1329

S_21FLVEMDHL09 Trends

S_21FLVEMDHL09 Time Series
for Specific Conductivity
Adjusted for Seasonal Medians



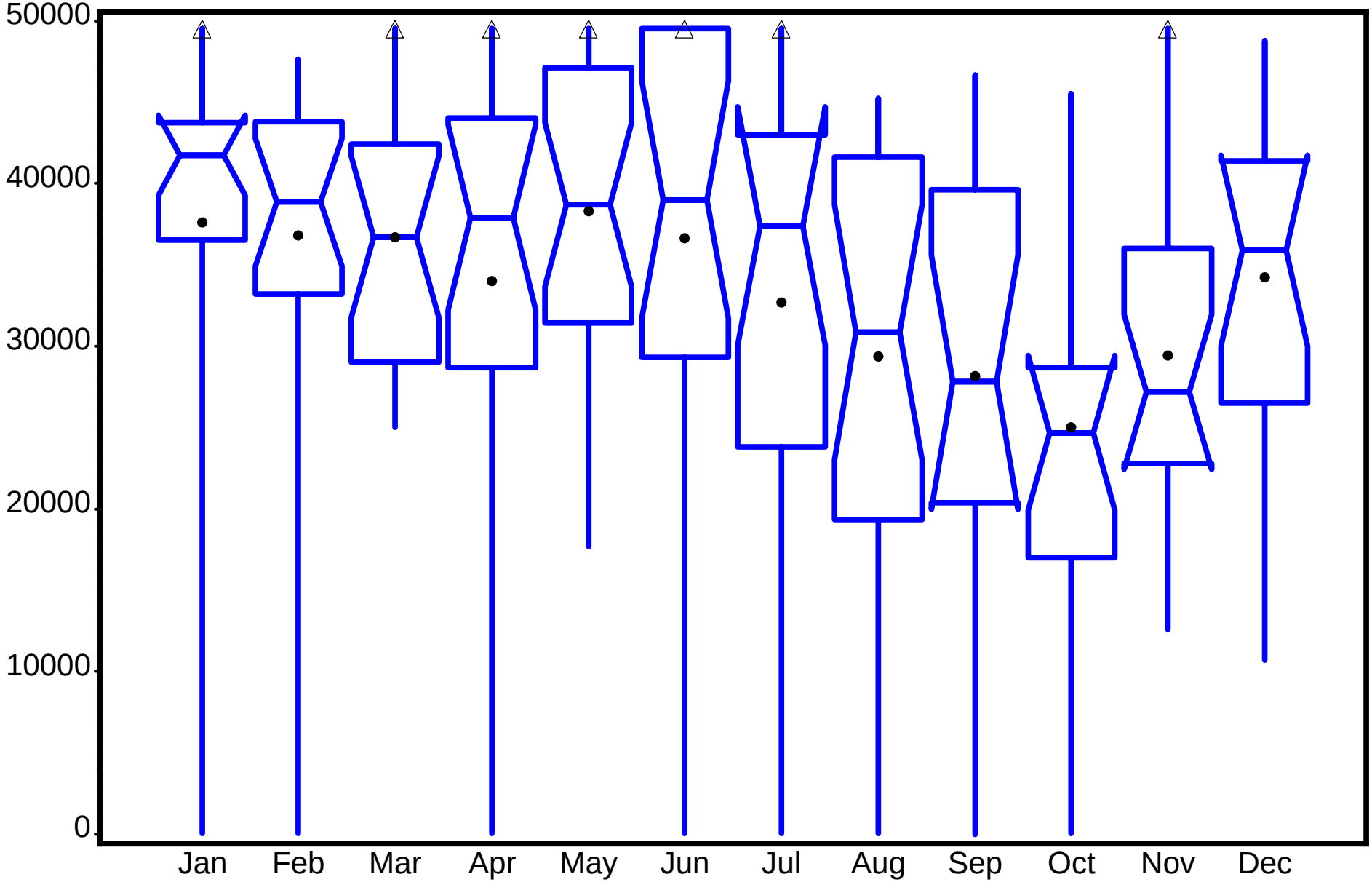
E-1330

S_21FLVEMDHL09 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



E-1331

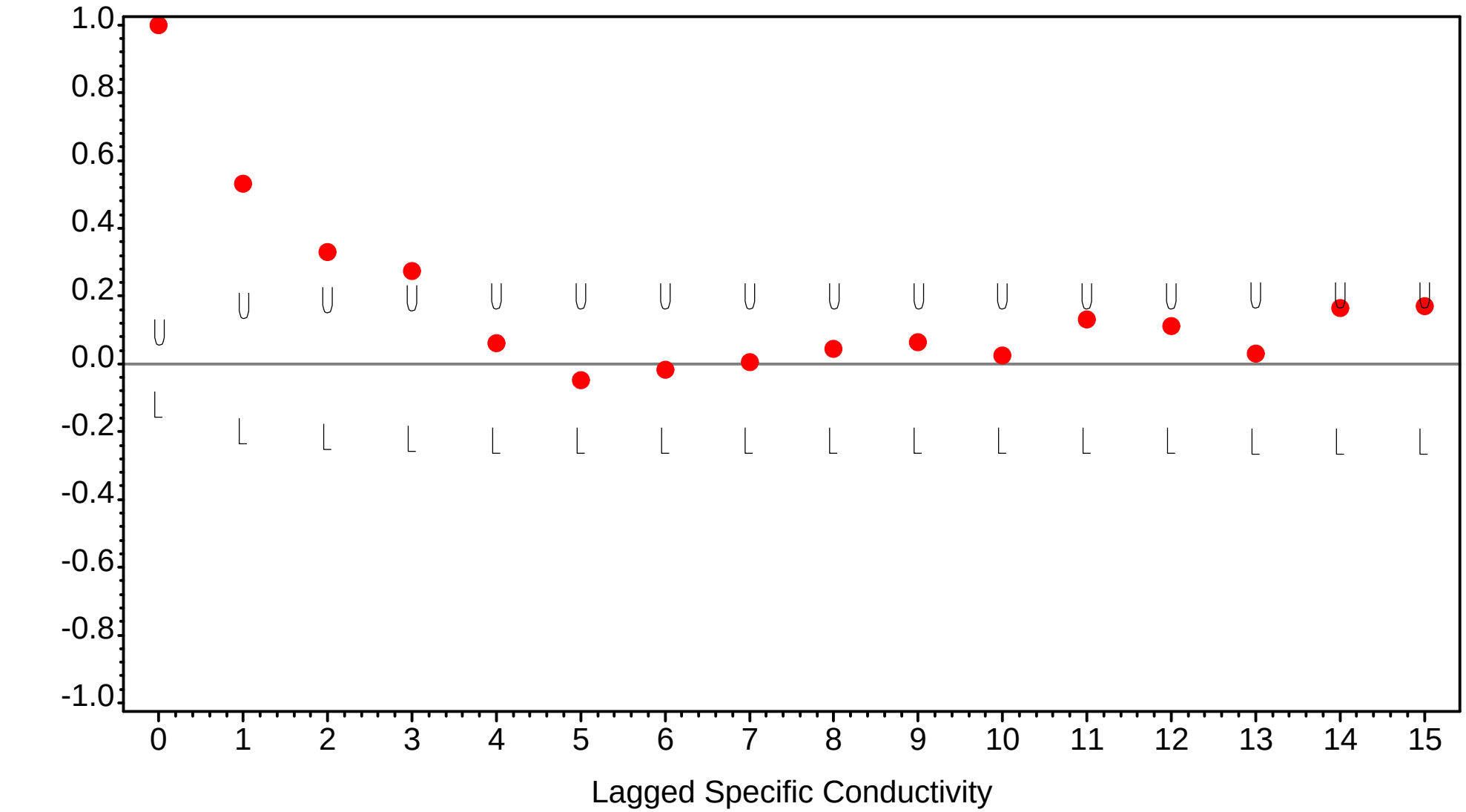
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.531	0.093	0.186	-0.186
2	0.329	0.101	0.202	-0.202
3	0.274	0.104	0.208	-0.208
4	0.061	0.106	0.213	-0.213
5	-0.049	0.106	0.213	-0.213
6	-0.017	0.106	0.213	-0.213
7	0.006	0.106	0.213	-0.213
8	0.043	0.106	0.213	-0.213
9	0.064	0.107	0.213	-0.213
10	0.024	0.107	0.213	-0.213
11	0.130	0.107	0.213	-0.213
12	0.112	0.107	0.214	-0.214
13	0.031	0.107	0.215	-0.215
14	0.165	0.107	0.215	-0.215
15	0.170	0.108	0.216	-0.216

S_21FLVEMDHL09 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

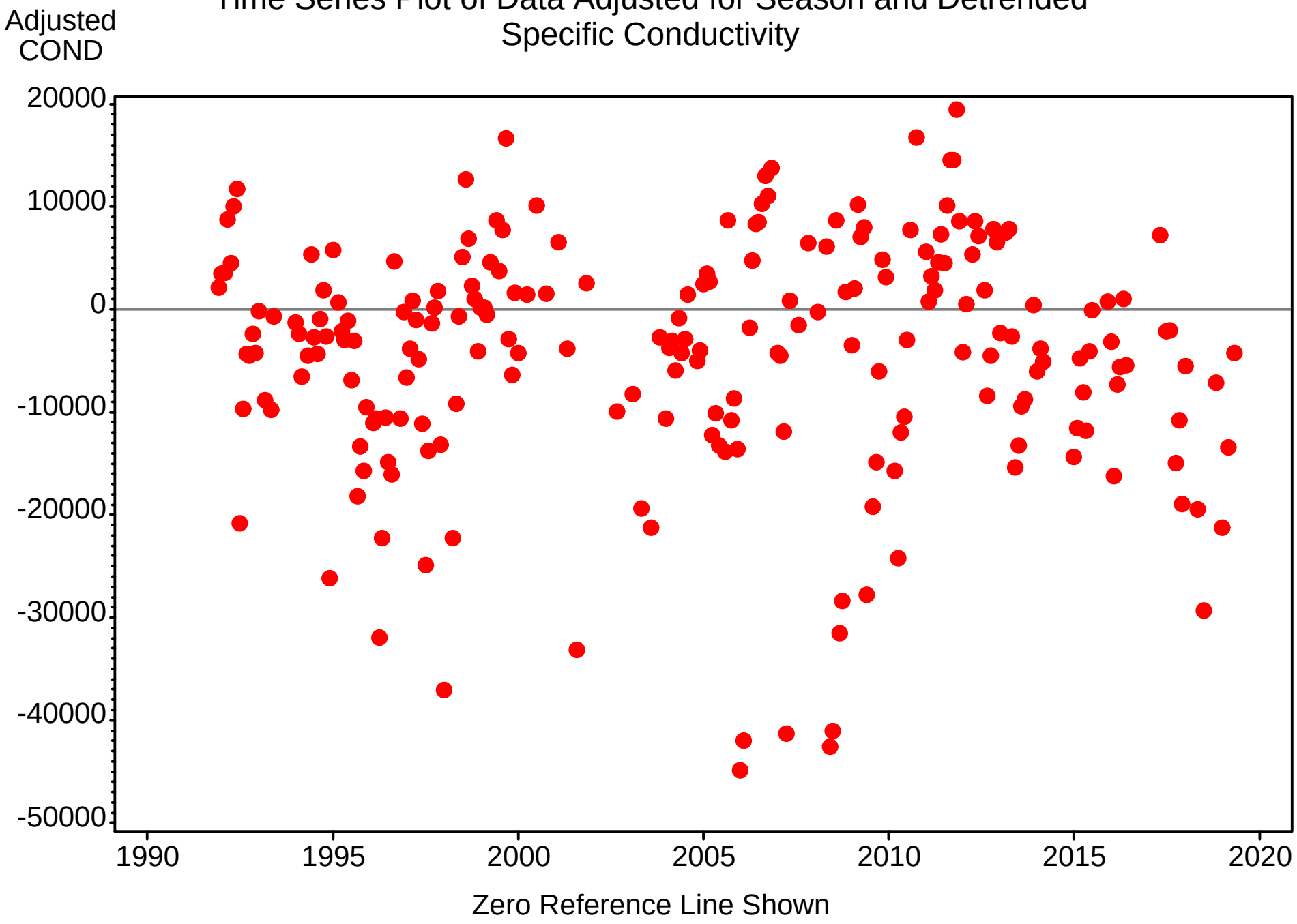
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.096	0.054	0.237	198

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.096243	0.053692	0.23662	198

S_21FLVEMDHL09 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity



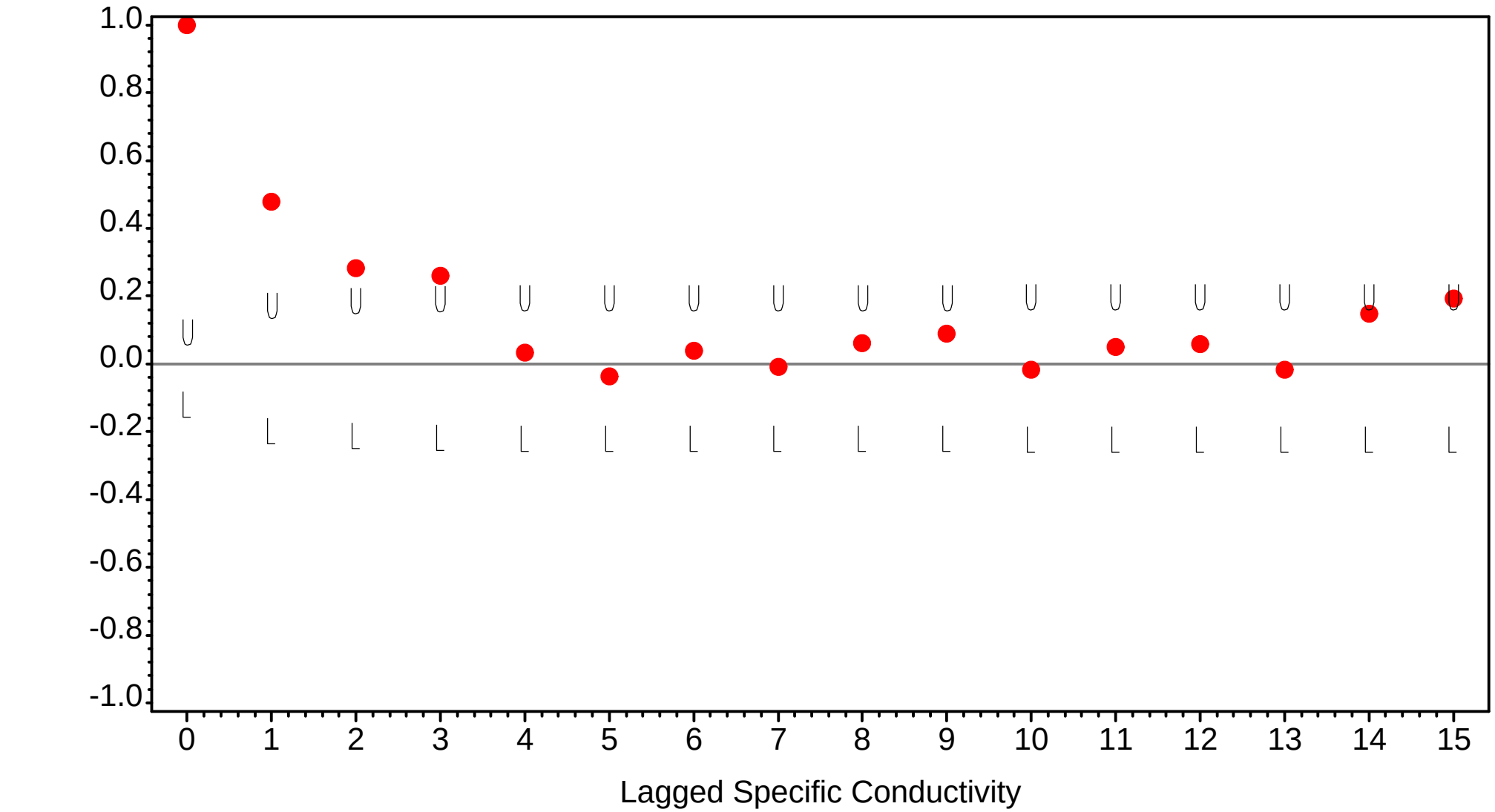
E-1336

S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.479	0.093	0.186	-0.186
2	0.282	0.100	0.199	-0.199
3	0.259	0.102	0.204	-0.204
4	0.034	0.104	0.208	-0.208
5	-0.037	0.104	0.208	-0.208
6	0.040	0.104	0.208	-0.208
7	-0.009	0.104	0.208	-0.208
8	0.061	0.104	0.208	-0.208
9	0.089	0.104	0.208	-0.208
10	-0.018	0.104	0.209	-0.209
11	0.050	0.104	0.209	-0.209
12	0.058	0.104	0.209	-0.209
13	-0.016	0.104	0.209	-0.209
14	0.147	0.104	0.209	-0.209
15	0.193	0.105	0.210	-0.210

S_21FLVEMDHL09 Trends Appendix

Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended

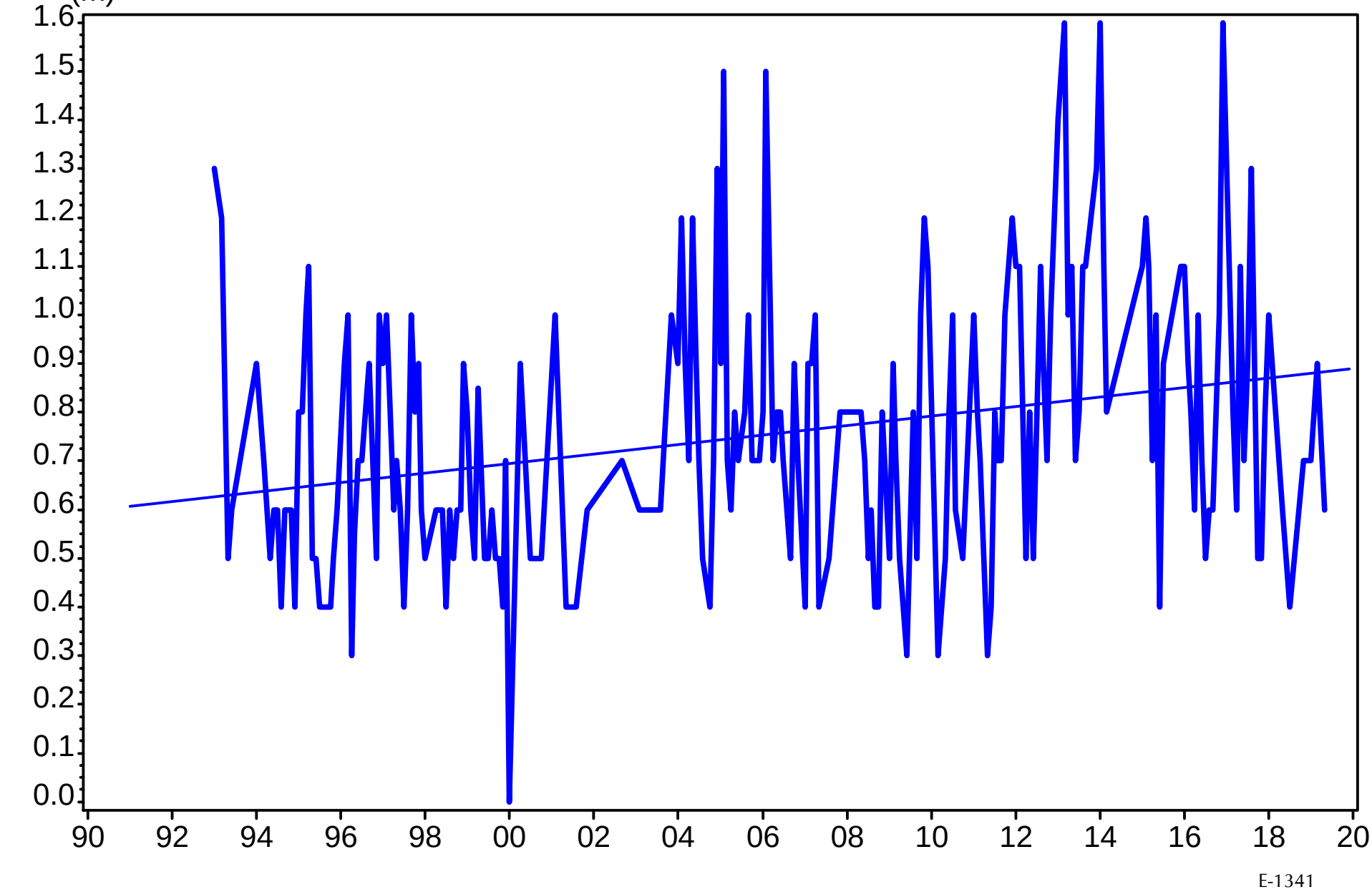


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1338

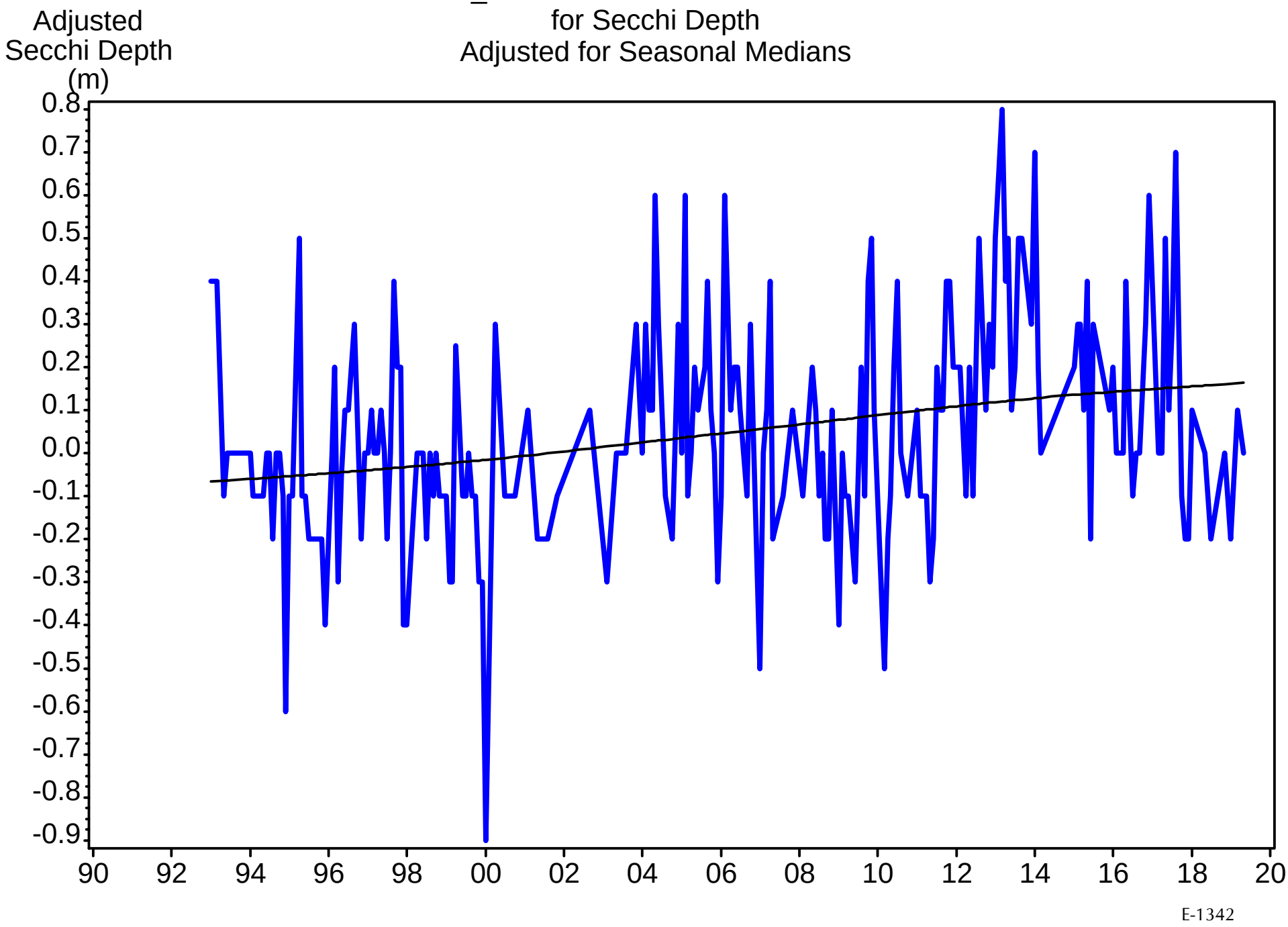
S_21FLVEMDHL09 Trends

S_21FLVEMDHL09 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



E-1341

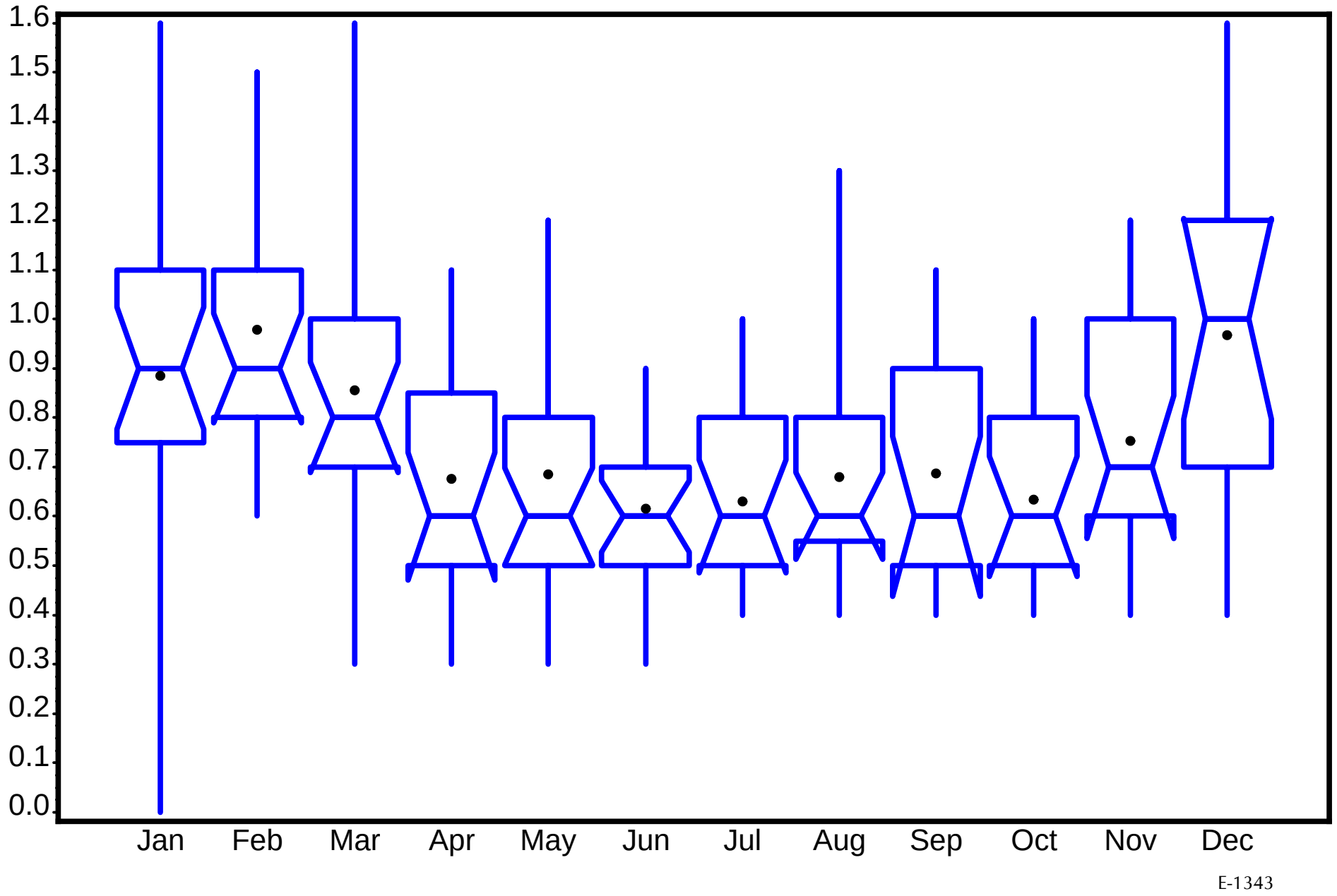
S_21FLVEMDHL09 Trends



S_21FLVEMDHL09 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



E-1343

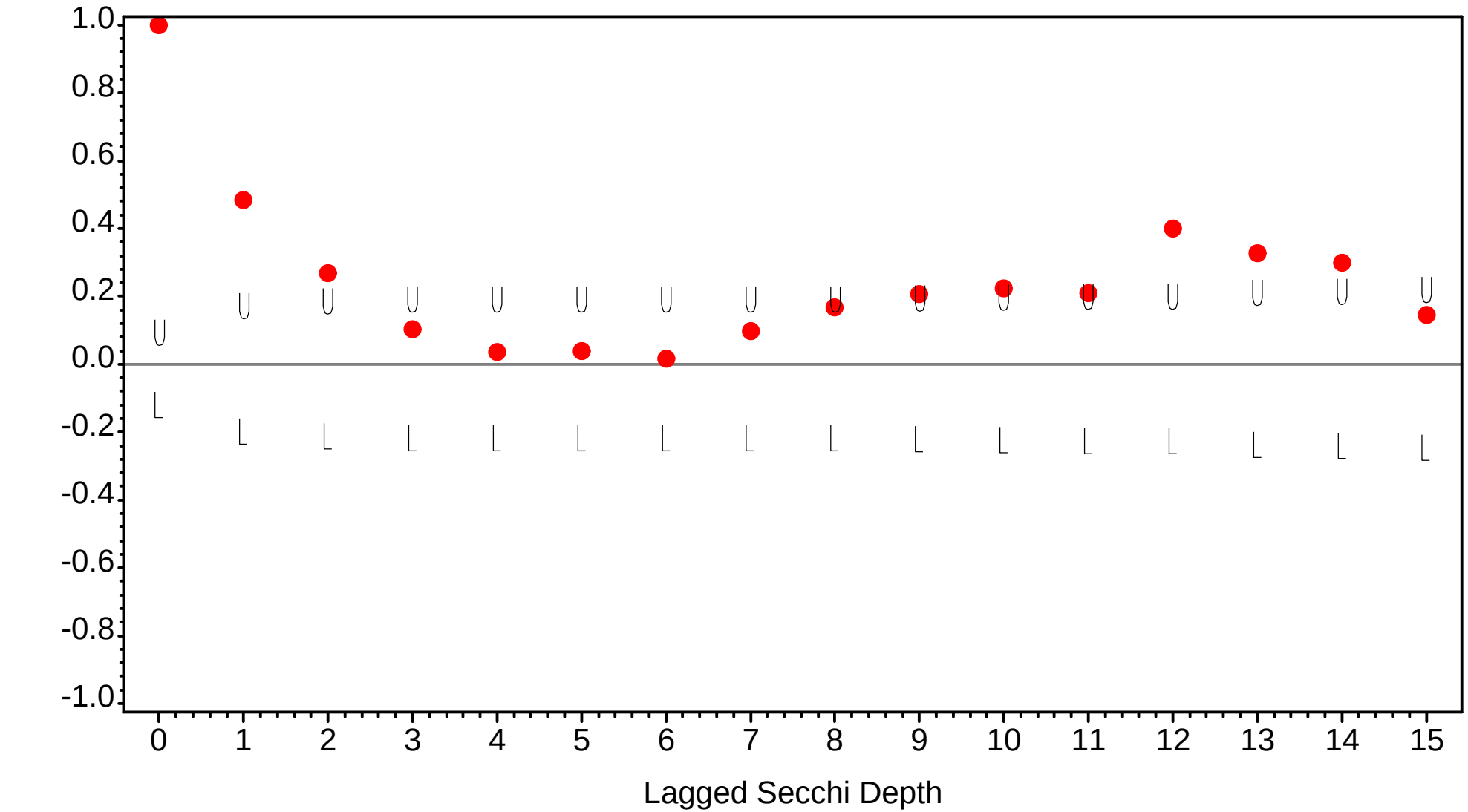
S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.483	0.093	0.186	-0.186
2	0.268	0.100	0.200	-0.200
3	0.103	0.102	0.204	-0.204
4	0.036	0.102	0.204	-0.204
5	0.039	0.102	0.204	-0.204
6	0.015	0.102	0.204	-0.204
7	0.097	0.102	0.205	-0.205
8	0.168	0.103	0.205	-0.205
9	0.207	0.103	0.207	-0.207
10	0.224	0.104	0.209	-0.209
11	0.209	0.106	0.212	-0.212
12	0.401	0.107	0.214	-0.214
13	0.327	0.111	0.223	-0.223
14	0.300	0.114	0.228	-0.228
15	0.145	0.116	0.232	-0.232

S_21FLVEMDHL09 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

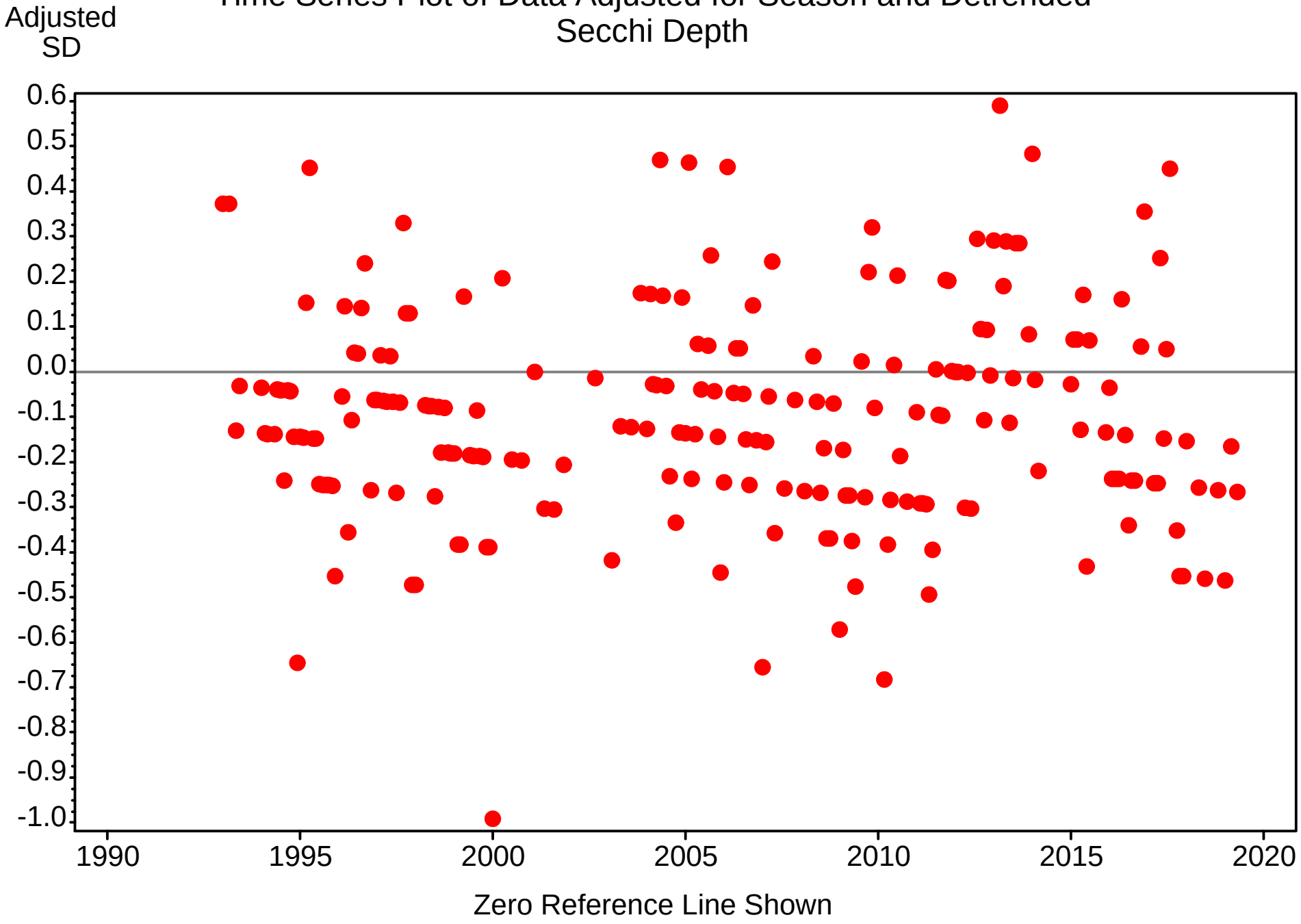
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.211	0	.006	.009

S_21FLVEMDHL09 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.21061	.000018835	.00602412	.00909091

S_21FLVEMDHL09 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth

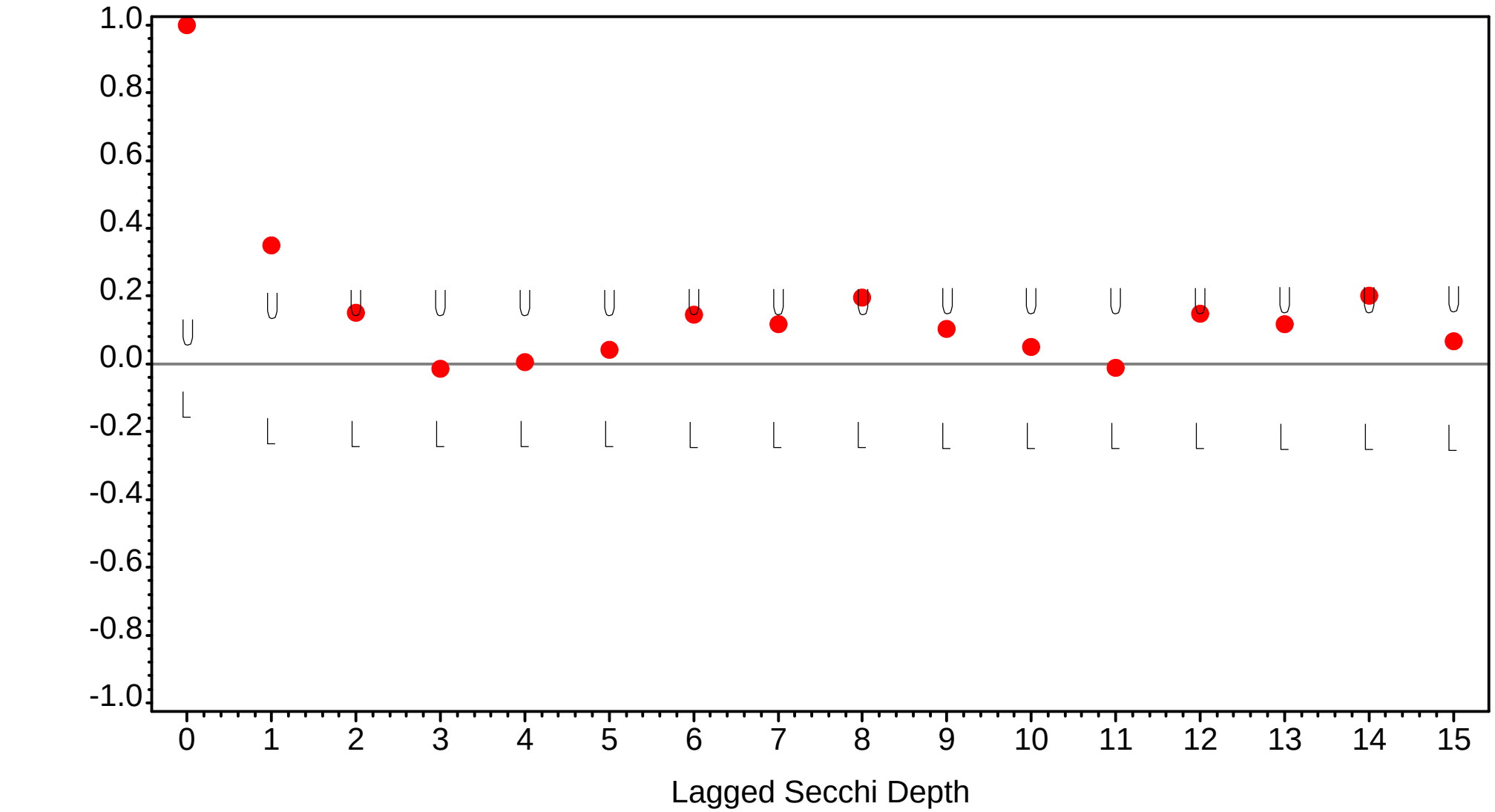


S_21FLVEMDHL09 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.349	0.093	0.186	-0.186
2	0.151	0.097	0.193	-0.193
3	-0.014	0.097	0.194	-0.194
4	0.005	0.097	0.194	-0.194
5	0.041	0.097	0.194	-0.194
6	0.144	0.097	0.195	-0.195
7	0.116	0.098	0.196	-0.196
8	0.195	0.098	0.197	-0.197
9	0.102	0.099	0.199	-0.199
10	0.050	0.100	0.199	-0.199
11	-0.011	0.100	0.200	-0.200
12	0.148	0.100	0.200	-0.200
13	0.116	0.100	0.201	-0.201
14	0.202	0.101	0.202	-0.202
15	0.066	0.102	0.204	-0.204

S_21FLVEMDHL09 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
17	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
18	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
19	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
20	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
21	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
17	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
18	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
19	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
20	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
21	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
17	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
18	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
19	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
20	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
21	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
22	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.15
23	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28	0.99
24	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67	1.60
25	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.27
26	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90	2.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
22	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017	-0.14839
23	Y	Y	N	N	-0.132	0.057	0.124	-0.001	-0.13170
24	Y	Y	N	N	0.150	0.038	0.109	0.103	0.15026
25	N	Y	Y	Y	0.141	0.033	0.135	357.337	0.14103
26	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014	-0.08367

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
23	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
24	0.03776	0.10869	0.103	0.15026	0.03776	0.103
25	0.03319	0.13465	357.337	0.14100	0.13500	357.337
26	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
27	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48	1.87
28	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00	0.20
29	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00	1.03
30	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.75
31	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43	1.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
27	Y	Y	Y	Y	0.090	0.188	0.382	0.156	0.08974
28	N	Y	Y	Y	0.153	0.020	0.128	0.254	0.15317
29	Y	Y	N	N	0.109	0.084	0.181	0.000	0.10913
30	Y	Y	Y	Y	0.015	0.858	0.907	0.001	0.01504
31	Y	Y	N	N	-0.115	0.116	0.160	-0.001	-0.12022

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
27	0.18759	0.38162	0.156	0.08974	0.38162	0.156
28	0.01994	0.12793	0.254	0.15300	0.12800	0.254
29	0.08403	0.18091	0.000	0.10913	0.08403	0.000
30	0.85776	0.90700	0.001	0.01504	0.90700	0.001
31	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
32	S_21FLVEMDHL05	S_21FLVEMDHL05	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.66	0.74
33	S_21FLVEMDHL05	S_21FLVEMDHL05	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.71
34	S_21FLVEMDHL05	S_21FLVEMDHL05	DO	Dissolved Oxygen	(mg/L)	22	30	2.01	2.54
35	S_21FLVEMDHL05	S_21FLVEMDHL05	DOSAT	Dissolved Oxygen	(%)	32	40	1.41	2.00
36	S_21FLVEMDHL05	S_21FLVEMDHL05	SALIN	Salinity	(psu)	52	60	-9999.00	0.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
32	Y	Y	Y	Y	0.145	0.032	0.115	0.086	0.14507
33	Y	Y	Y	Y	0.085	0.174	0.337	182.245	0.08502
34	Y	N	N	N	-0.149	0.017	0.110	-0.023	-0.14929
35	Y	Y	N	N	0.081	0.199	0.362	0.114	0.08126
36	Y	Y	N	N	0.060	0.339	0.502	0.082	0.05987

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
32	0.03182	0.11509	0.086	0.14507	0.11509	0.086
33	0.17411	0.33661	182.245	0.08502	0.33661	182.245
34	0.01704	0.11000	-0.023	-0.14929	0.01704	-0.023
35	0.19863	0.36237	0.114	0.08126	0.19863	0.114
36	0.33872	0.50152	0.082	0.05987	0.33872	0.082

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
37	S_21FLVEMDHL05	S_21FLVEMDHL05	SD	Secchi Depth	(m)	72	80	0.38	1.10
38	S_21FLVEMDHL05	S_21FLVEMDHL05	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.81
39	S_21FLVEMDHL05	S_21FLVEMDHL05	TP	Total Phosphorus	(mg/L)	12	20	0.80	0.83
40	S_21FLVEMDHL06	S_21FLVEMDHL06	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.28	0.01
41	S_21FLVEMDHL06	S_21FLVEMDHL06	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.76

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
37	Y	N	N	N	0.047	0.468	0.545	0.000	0.04654
38	Y	Y	Y	Y	-0.146	0.037	0.227	-0.009	-0.14590
39	Y	Y	N	N	-0.030	0.675	0.690	0.000	-0.02972
40	Y	N	N	N	0.024	0.729	0.758	0.016	0.02423
41	Y	Y	Y	Y	0.105	0.092	0.238	239.000	0.10454

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
37	0.46800	0.54466	0.000	0.04654	0.46800	0.000
38	0.03661	0.22687	-0.009	-0.14590	0.22687	-0.009
39	0.67549	0.68953	0.000	-0.02972	0.67549	0.000
40	0.72880	0.75791	0.016	0.02423	0.72880	0.016
41	0.09156	0.23833	239.000	0.10454	0.23833	239.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
42	S_21FLVEMDHL06	S_21FLVEMDHL06	DO	Dissolved Oxygen	(mg/L)	22	30	2.05	2.52
43	S_21FLVEMDHL06	S_21FLVEMDHL06	DOSAT	Dissolved Oxygen	(%)	32	40	1.25	1.99
44	S_21FLVEMDHL06	S_21FLVEMDHL06	SALIN	Salinity	(psu)	52	60	-9999.00	0.74
45	S_21FLVEMDHL06	S_21FLVEMDHL06	SD	Secchi Depth	(m)	72	80	0.69	0.94
46	S_21FLVEMDHL06	S_21FLVEMDHL06	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
42	Y	N	N	N	-0.116	0.062	0.197	-0.017	-0.11576
43	Y	Y	N	N	0.080	0.201	0.322	0.088	0.08045
44	Y	Y	Y	Y	0.090	0.143	0.319	0.138	0.09026
45	Y	Y	Y	Y	0.047	0.458	0.500	0.000	0.04707
46	Y	Y	Y	Y	-0.126	0.072	0.357	-0.011	-0.12577

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
42	0.06243	0.19679	-0.017	-0.11576	0.06243	-0.017
43	0.20088	0.32170	0.088	0.08045	0.20088	0.088
44	0.14300	0.31855	0.138	0.09026	0.31855	0.138
45	0.45795	0.50041	0.000	0.04707	0.50041	0.000
46	0.07193	0.35680	-0.011	-0.12577	0.35680	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
47	S_21FLVEMDHL06	S_21FLVEMDHL06	TP	Total Phosphorus	(mg/L)	12	20	1.37	0.87
48	S_21FLVEMDHL07	S_21FLVEMDHL07	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.63	0.86
49	S_21FLVEMDHL07	S_21FLVEMDHL07	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.63
50	S_21FLVEMDHL07	S_21FLVEMDHL07	DO	Dissolved Oxygen	(mg/L)	22	30	0.95	2.67
51	S_21FLVEMDHL07	S_21FLVEMDHL07	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	1.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
47	Y	Y	N	N	-0.070	0.311	0.352	-0.001	-0.07004
48	Y	Y	N	N	-0.072	0.299	0.400	-0.064	-0.07206
49	Y	Y	Y	Y	0.087	0.169	0.316	185.539	0.08720
50	Y	N	Y	N	-0.184	0.003	0.046	-0.029	-0.18418
51	Y	Y	N	N	0.008	0.910	0.929	0.000	0.00826

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
47	0.31141	0.35163	-0.001	-0.07004	0.31141	-0.001
48	0.29904	0.39997	-0.064	-0.07206	0.29904	-0.064
49	0.16902	0.31573	185.539	0.08720	0.31573	185.539
50	0.00342	0.04576	-0.029	-0.18418	0.00342	-0.029
51	0.91015	0.92863	0.000	0.00826	0.91015	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
52	S_21FLVEMDHL07	S_21FLVEMDHL07	SALIN	Salinity	(psu)	52	60	-9999.00	0.71
53	S_21FLVEMDHL07	S_21FLVEMDHL07	SD	Secchi Depth	(m)	72	80	0.57	1.17
54	S_21FLVEMDHL07	S_21FLVEMDHL07	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.36
55	S_21FLVEMDHL07	S_21FLVEMDHL07	TP	Total Phosphorus	(mg/L)	12	20	1.44	0.84
56	S_21FLVEMDHL08	S_21FLVEMDHL08	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.14	1.34

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
52	Y	Y	Y	Y	0.073	0.250	0.428	0.107	0.07253
53	Y	Y	N	N	0.025	0.714	0.742	0.000	0.02457
54	Y	Y	Y	Y	-0.185	0.009	0.183	-0.017	-0.18331
55	Y	Y	N	N	0.002	1.000	1.000	0.000	0.00159
56	Y	Y	Y	Y	-0.071	0.214	0.403	-0.051	-0.07149

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
52	0.25004	0.42819	0.107	0.07253	0.42819	0.107
53	0.71425	0.74214	0.000	0.02457	0.71425	0.000
54	0.00999	0.18667	-0.017	-0.18331	0.18667	-0.017
55	1.00000	1.00000	0.000	0.00159	1.00000	0.000
56	0.21416	0.40266	-0.051	-0.07149	0.40266	-0.051

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
57	S_21FLVEMDHL08	S_21FLVEMDHL08	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.59
58	S_21FLVEMDHL08	S_21FLVEMDHL08	DO	Dissolved Oxygen	(mg/L)	22	30	0.75	2.49
59	S_21FLVEMDHL08	S_21FLVEMDHL08	DOSAT	Dissolved Oxygen	(%)	32	40	0.22	1.87
60	S_21FLVEMDHL08	S_21FLVEMDHL08	SALIN	Salinity	(psu)	52	60	-9999.00	0.65
61	S_21FLVEMDHL08	S_21FLVEMDHL08	SD	Secchi Depth	(m)	72	80	0.27	2.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
57	Y	Y	Y	Y	0.120	0.020	0.160	254.845	0.11995
58	Y	N	N	N	-0.232	0.000	0.009	-0.042	-0.23164
59	Y	Y	N	N	-0.152	0.003	0.037	-0.244	-0.15249
60	Y	Y	Y	Y	0.136	0.008	0.129	0.193	0.13555
61	Y	Y	Y	Y	0.143	0.004	0.056	0.007	0.14263

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
57	0.01993	0.16007	254.845	0.11995	0.16007	254.845
58	0.00001	0.00939	-0.042	-0.23164	0.00001	-0.042
59	0.00335	0.03715	-0.244	-0.15249	0.00335	-0.244
60	0.00785	0.12892	0.193	0.13555	0.12892	0.193
61	0.00378	0.05556	0.007	0.14263	0.05556	0.007

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
62	S_21FLVEMDHL08	S_21FLVEMDHL08	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
63	S_21FLVEMDHL08	S_21FLVEMDHL08	TP	Total Phosphorus	(mg/L)	12	20	1.44	1.44
64	S_21FLVEMDHL09	S_21FLVEMDHL09	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.80	1.15
65	S_21FLVEMDHL09	S_21FLVEMDHL09	COND	Specific Conductivity	(umhos/cm)	62	70	0.08	0.52
66	S_21FLVEMDHL09	S_21FLVEMDHL09	DO	Dissolved Oxygen	(mg/L)	22	30	1.27	2.71
67	S_21FLVEMDHL09	S_21FLVEMDHL09	DOSAT	Dissolved Oxygen	(%)	32	40	0.70	1.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
62	Y	Y	Y	Y	0.028	0.718	0.811	0.003	0.02768
63	Y	Y	Y	Y	-0.190	0.007	0.042	-0.002	-0.19024
64	Y	Y	N	N	-0.127	0.021	0.085	-0.096	-0.12661
65	Y	Y	Y	Y	0.096	0.054	0.237	198.000	0.09624
66	Y	N	N	N	-0.220	0.000	0.020	-0.044	-0.21971
67	Y	Y	Y	Y	-0.050	0.319	0.474	-0.033	-0.05033

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
62	0.71842	0.81125	0.003	0.02768	0.81125	0.003
63	0.00697	0.04239	-0.002	-0.19024	0.04239	-0.002
64	0.02055	0.08517	-0.096	-0.12661	0.02055	-0.096
65	0.05369	0.23662	198.000	0.09624	0.23662	198.000
66	0.00001	0.02045	-0.044	-0.21971	0.00001	-0.044
67	0.31942	0.47358	-0.033	-0.05033	0.47358	-0.033

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
68	S_21FLVEMDHL09	S_21FLVEMDHL09	SALIN	Salinity	(psu)	52	60	-9999.00	0.64
69	S_21FLVEMDHL09	S_21FLVEMDHL09	SD	Secchi Depth	(m)	72	80	-9999.00	1.87
70	S_21FLVEMDHL09	S_21FLVEMDHL09	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
71	S_21FLVEMDHL09	S_21FLVEMDHL09	TP	Total Phosphorus	(mg/L)	12	20	1.00	0.92

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
68	Y	Y	Y	Y	0.117	0.019	0.176	0.144	0.11657
69	Y	Y	N	N	0.211	0.000	0.006	0.009	0.21061
70	Y	Y	Y	Y	-0.102	0.133	0.421	-0.010	-0.10176
71	Y	N	Y	N	-0.204	0.002	0.037	-0.002	-0.20424

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
68	0.01858	0.17621	0.144	0.11657	0.17621	0.144
69	0.00002	0.00602	0.009	0.21061	0.00002	0.009
70	0.13329	0.42067	-0.010	-0.10176	0.42067	-0.010
71	0.00203	0.03704	-0.002	-0.20424	0.00203	-0.002

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
72	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	1.38
73	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23	0.08
74	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47	2.09
75	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56	2.11
76	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09	0.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
72	Y	Y	Y	Y	0.074	0.356	0.527	0.052	0.07383
73	N	Y	Y	Y	0.090	0.212	0.347	225.098	0.08958
74	Y	N	N	N	-0.099	0.163	0.243	-0.023	-0.09906
75	Y	N	N	N	0.046	0.549	0.573	0.109	0.04571
76	N	Y	Y	Y	0.155	0.028	0.107	0.318	0.15482

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
72	0.35568	0.52706	0.052	0.07383	0.52706	0.052
73	0.21156	0.34660	225.098	0.09000	0.34700	225.098
74	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
75	0.54949	0.57310	0.109	0.04571	0.54949	0.109
76	0.02802	0.10656	0.318	0.15500	0.10700	0.318

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
77	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00	-9999.00
78	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.04
79	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	0.45
80	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.33

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
77	N	Y	N	N	0.192	0.005	0.044	0.011	0.19225
78	Y	Y	N	N	-0.161	0.045	0.205	-0.029	-0.16145
79	N	N	N	N	0.021	0.810	0.860	0.000	0.02128
80	N	Y	N	N	0.049	0.531	0.675	0.023	0.04851

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
77	0.00486	0.04449	0.011	0.19200	0.00500	0.011
78	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
79	0.80954	0.86021	0.000	0.02100	0.81000	0.000
80	0.53077	0.67536	0.023	0.04900	0.53100	0.023

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
81	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09	0.79
82	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16	2.35
83	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00	2.11
84	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00	0.98
85	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61	1.08
86	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.88

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
81	Y	Y	Y	Y	0.017	0.821	0.864	6.873	0.01671
82	Y	Y	N	N	-0.022	0.763	0.834	-0.004	-0.02159
83	Y	Y	Y	Y	0.049	0.487	0.514	0.154	0.04892
84	Y	Y	Y	Y	0.070	0.304	0.474	0.025	0.06955
85	Y	Y	N	N	0.064	0.330	0.509	0.000	0.06415
86	Y	Y	N	N	0.017	0.845	0.901	0.002	0.01724

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
81	0.82111	0.86399	6.874	0.01671	0.86399	6.874
82	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
83	0.48687	0.51426	0.154	0.04892	0.51426	0.154
84	0.30398	0.47368	0.025	0.06955	0.47368	0.025
85	0.32954	0.50893	0.000	0.06415	0.32954	0.000
86	0.84540	0.90084	0.002	0.01724	0.84540	0.002

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
87	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10	1.51
88	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	-9999.00
89	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82	1.12
90	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25	0.82
91	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	0.70
92	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73	1.54

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
87	Y	Y	Y	Y	0.050	0.519	0.695	0.000	0.05031
88	N	Y	N	N	0.078	0.299	0.360	0.020	0.07599
89	Y	N	Y	N	0.106	0.122	0.158	10.031	0.10598
90	Y	Y	N	N	-0.170	0.012	0.092	-0.059	-0.16974
91	Y	Y	N	N	-0.175	0.011	0.082	-0.515	-0.17479
92	Y	N	Y	N	0.092	0.169	0.290	0.004	0.09207

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
87	0.51900	0.69540	0.000	0.05031	0.69540	0.000
88	0.31036	0.36979	0.020	0.07800	0.29900	0.020
89	0.12166	0.15796	10.031	0.10598	0.12166	10.031
90	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059
91	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
92	0.16857	0.29012	0.004	0.09207	0.16857	0.004

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
93	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00	1.54
94	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.48
95	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00
96	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.44
97	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19	-9999.00
98	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42	2.33

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
93	Y	Y	Y	Y	0.094	0.155	0.427	0.007	0.09387
94	Y	Y	N	N	-0.031	0.706	0.812	-0.002	-0.03145
95	N	N	N	N	-0.023	0.786	0.871	0.000	-0.02254
96	N	Y	N	N	-0.142	0.074	0.219	-0.011	-0.14223
97	N	N	Y	N	0.085	0.243	0.291	2.029	0.08500
98	Y	Y	N	N	-0.040	0.591	0.737	-0.008	-0.03968

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
93	0.15479	0.42738	0.007	0.09387	0.42738	0.007
94	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
95	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
96	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011
97	0.24287	0.29095	2.029	0.08500	0.24300	2.029
98	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008

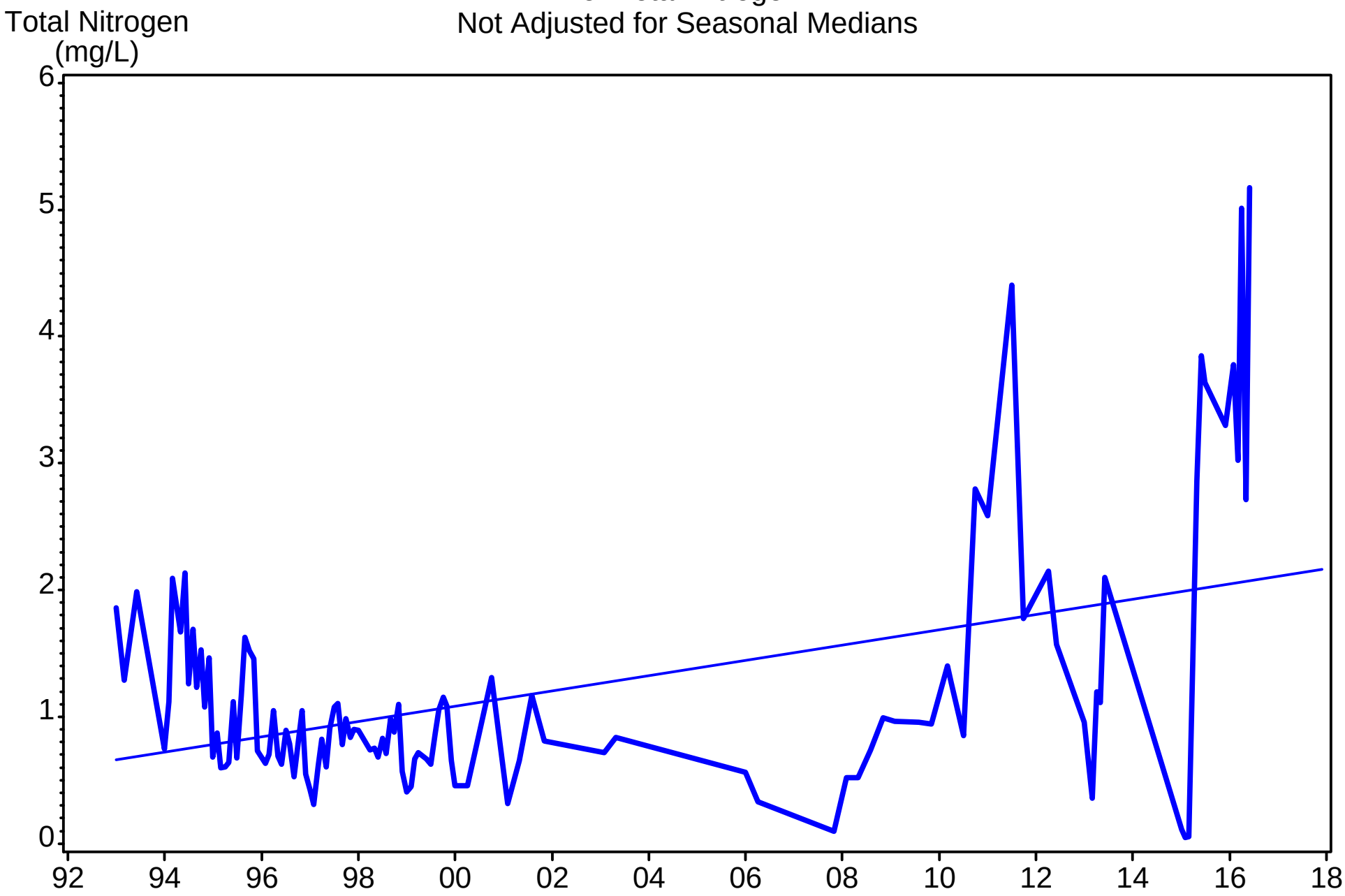
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
99	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81	1.77
100	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00	-9999.00
101	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00	0.68
102	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.31
103	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
99	Y	Y	N	N	0.027	0.725	0.823	0.034	0.02716
100	N	Y	Y	Y	0.123	0.076	0.159	0.001	0.12322
101	Y	Y	N	N	0.194	0.005	0.046	0.009	0.19383
102	N	Y	N	N	-0.241	0.003	0.076	-0.016	-0.24070
103	N	N	N	N	0.040	0.632	0.786	0.000	0.04009

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
99	0.72528	0.82342	0.034	0.02716	0.72528	0.034
100	0.07617	0.15857	0.001	0.12300	0.15900	0.001
101	0.00462	0.04647	0.009	0.19383	0.00462	0.009
102	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
103	0.63152	0.78567	0.000	0.04000	0.63200	0.000

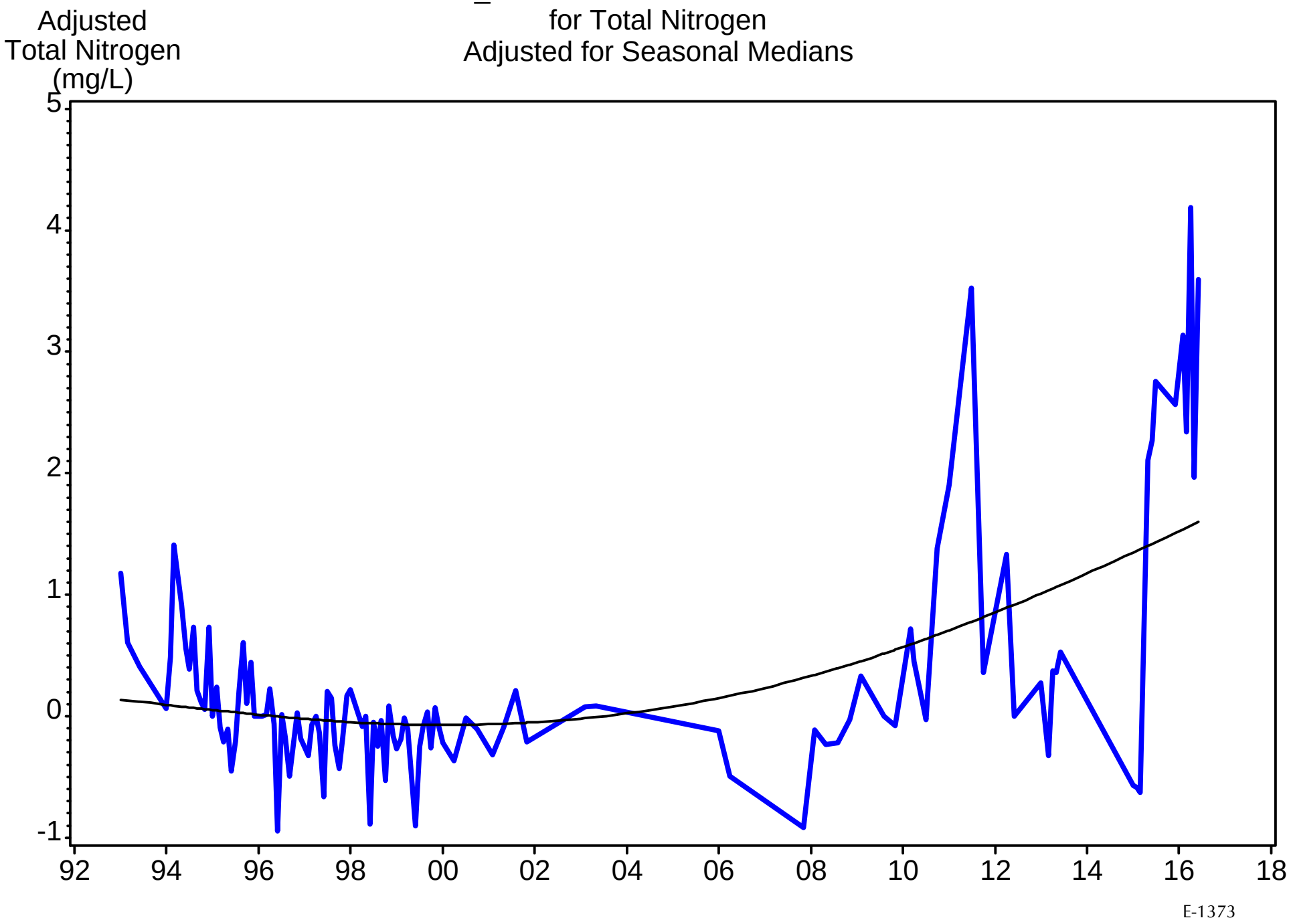
S_21FLVEMDHL10 Trends

S_21FLVEMDHL10 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



E-1372

S_21FLVEMDHL10 Trends

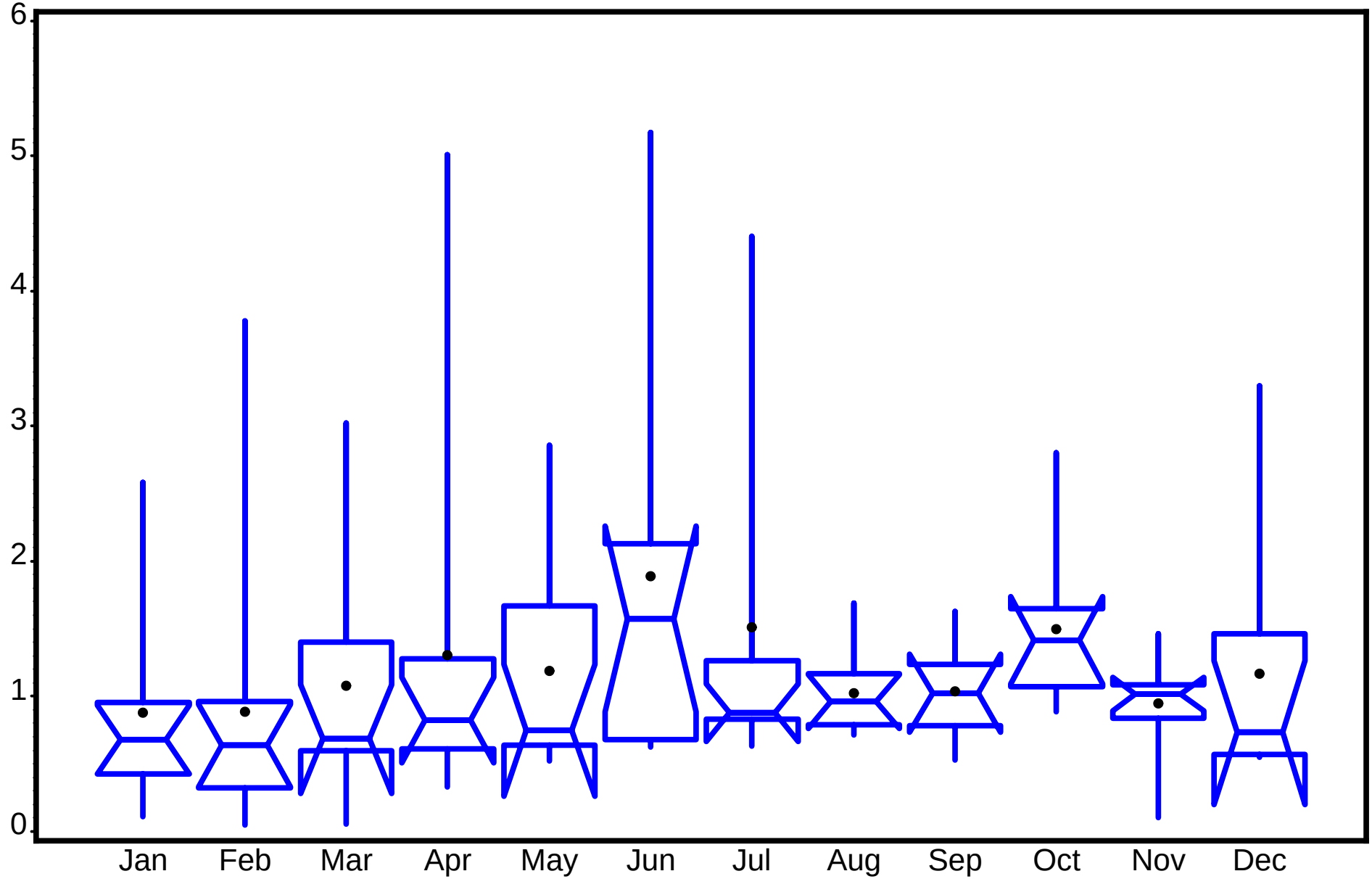


S_21FLVEMDHL10 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



E-1374

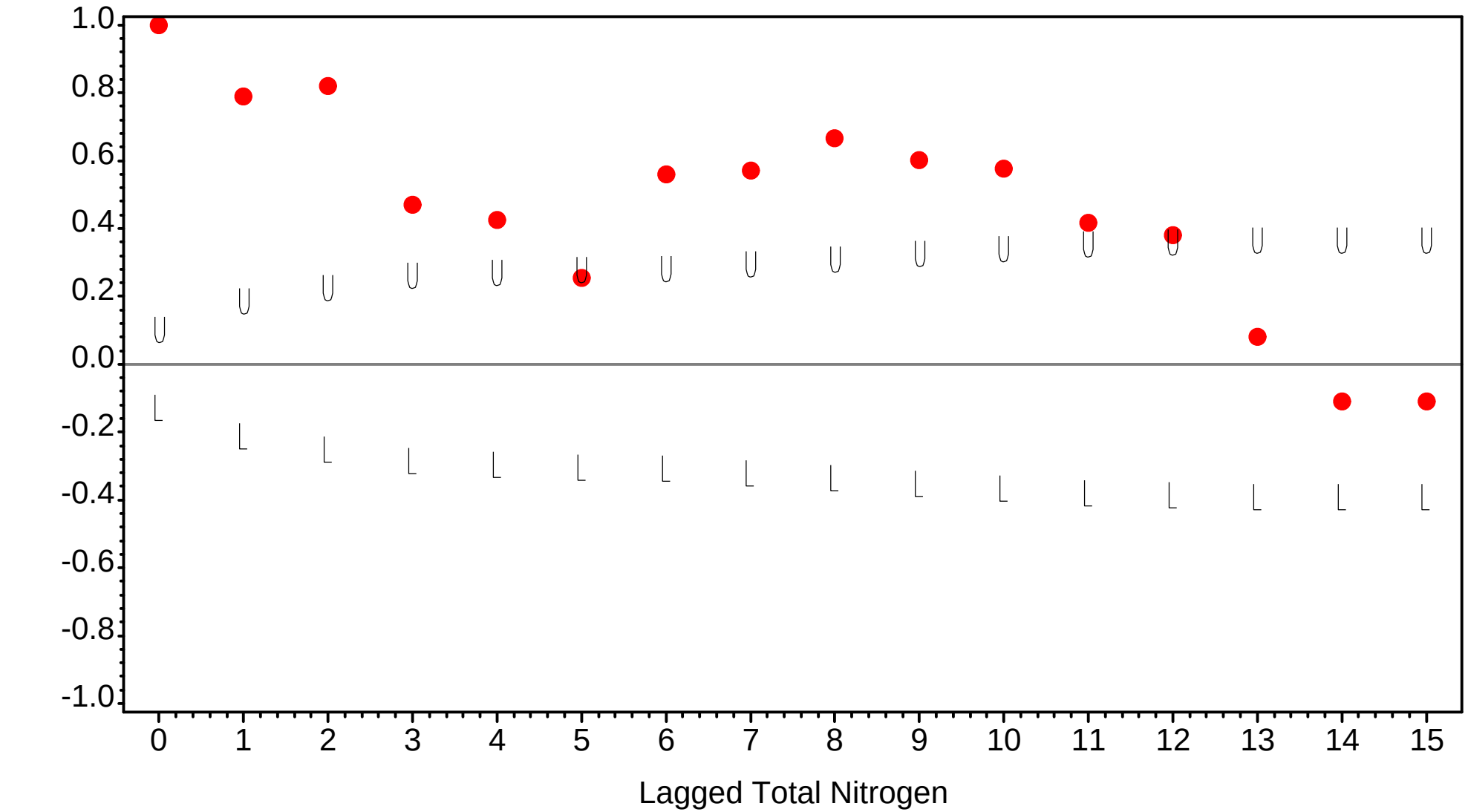
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.790	0.100	0.200	-0.200
2	0.819	0.119	0.238	-0.238
3	0.469	0.136	0.273	-0.273
4	0.426	0.142	0.283	-0.283
5	0.253	0.146	0.292	-0.292
6	0.560	0.147	0.295	-0.295
7	0.570	0.154	0.309	-0.309
8	0.667	0.161	0.322	-0.322
9	0.602	0.170	0.340	-0.340
10	0.576	0.177	0.354	-0.354
11	0.416	0.183	0.366	-0.366
12	0.379	0.186	0.373	-0.373
13	0.081	0.189	0.378	-0.378
14	-0.111	0.189	0.378	-0.378
15	-0.110	0.189	0.378	-0.378

S_21FLVEMDHL10 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

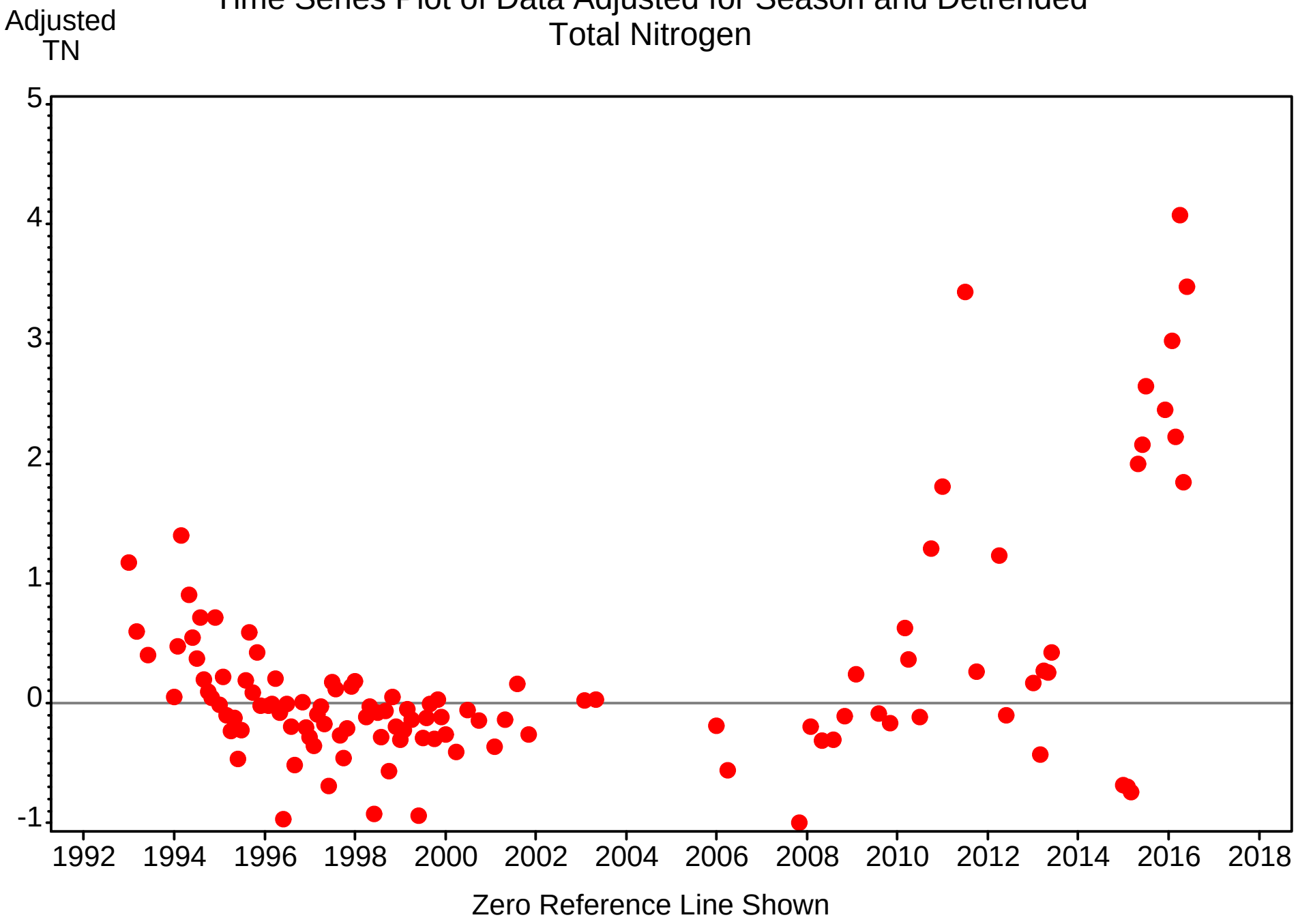
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.027	0.731	0.835	.005

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.027451	0.73102	0.83542	.0049

S_21FLVEMDHL10 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



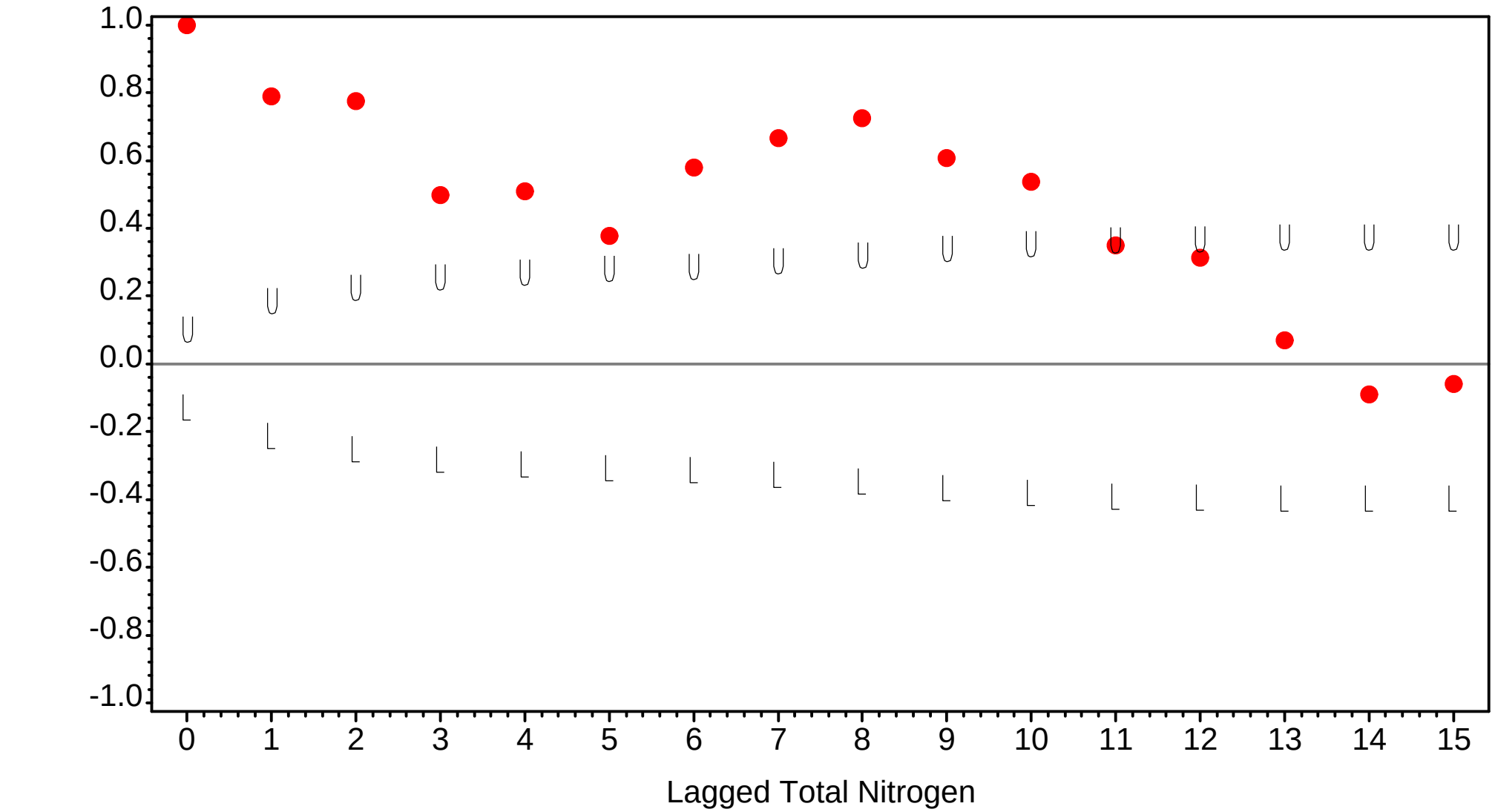
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.789	0.100	0.200	-0.200
2	0.776	0.119	0.238	-0.238
3	0.498	0.135	0.270	-0.270
4	0.509	0.141	0.282	-0.282
5	0.377	0.147	0.294	-0.294
6	0.580	0.150	0.300	-0.300
7	0.667	0.157	0.315	-0.315
8	0.725	0.166	0.333	-0.333
9	0.608	0.177	0.353	-0.353
10	0.536	0.183	0.367	-0.367
11	0.350	0.189	0.377	-0.377
12	0.313	0.191	0.382	-0.382
13	0.069	0.192	0.385	-0.385
14	-0.090	0.193	0.385	-0.385
15	-0.059	0.193	0.385	-0.385

S_21FLVEMDHL10 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended



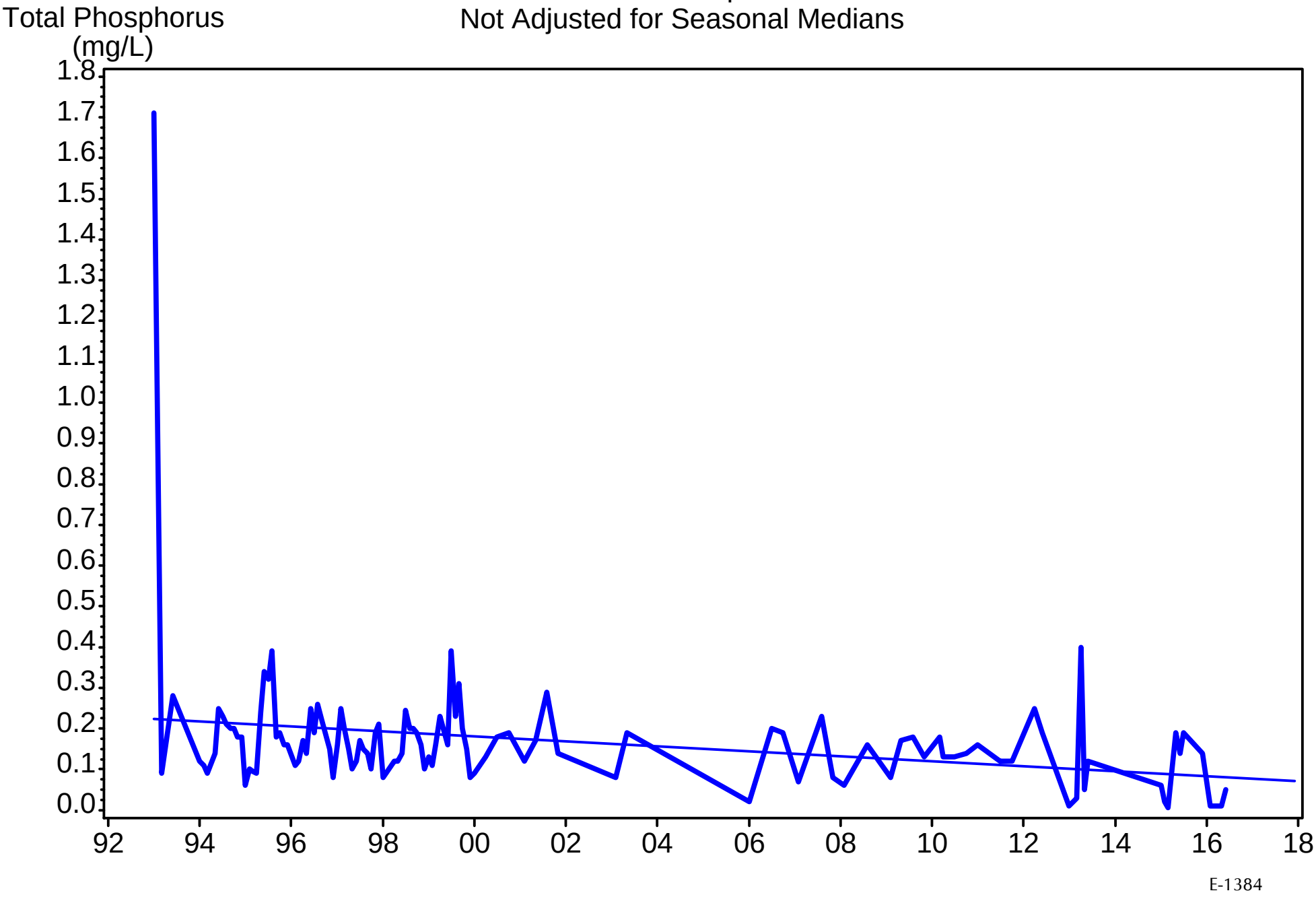
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1381

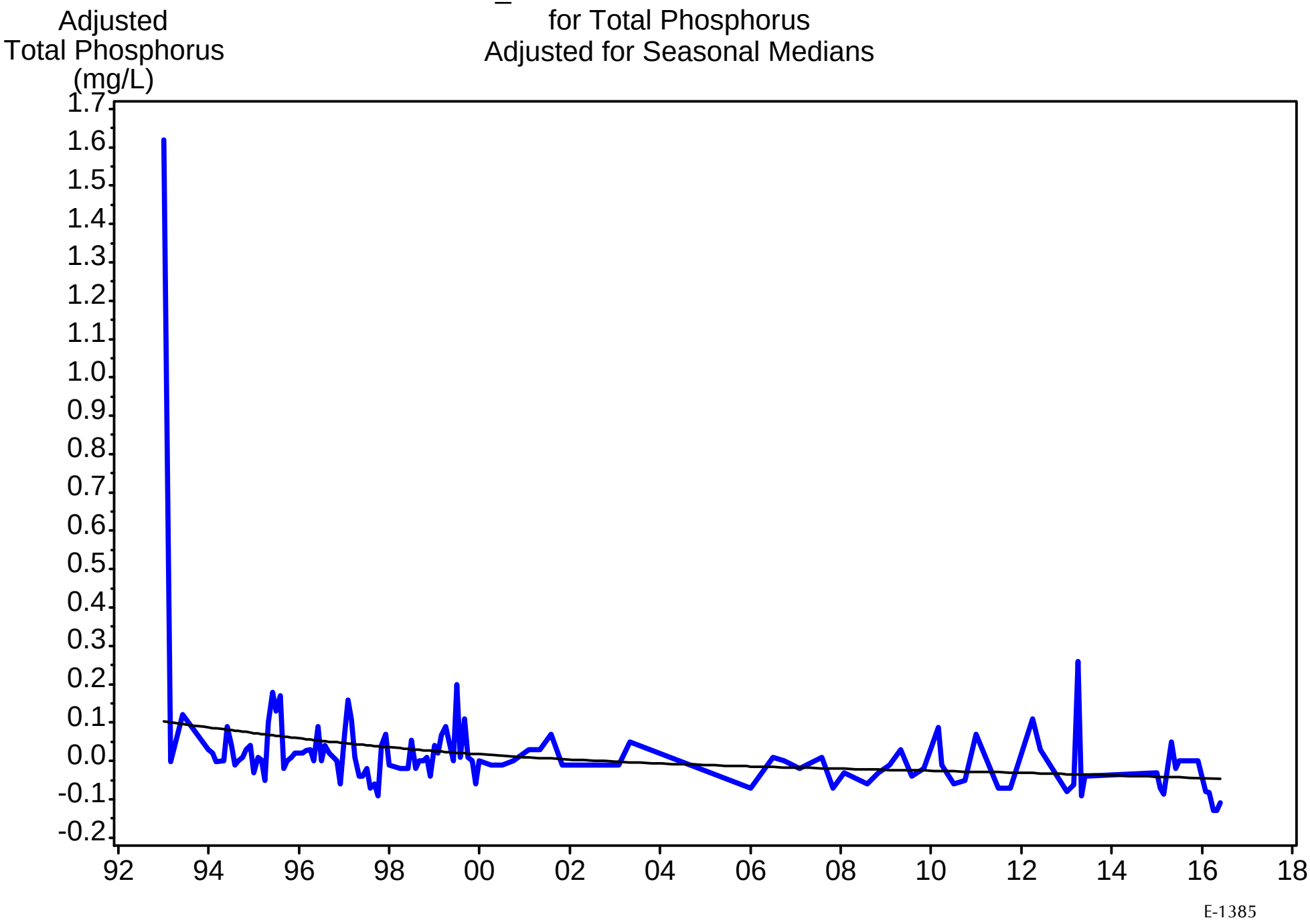
S_21FLVEMDHL10 Trends

S_21FLVEMDHL10 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



E-1384

S_21FLVEMDHL10 Trends

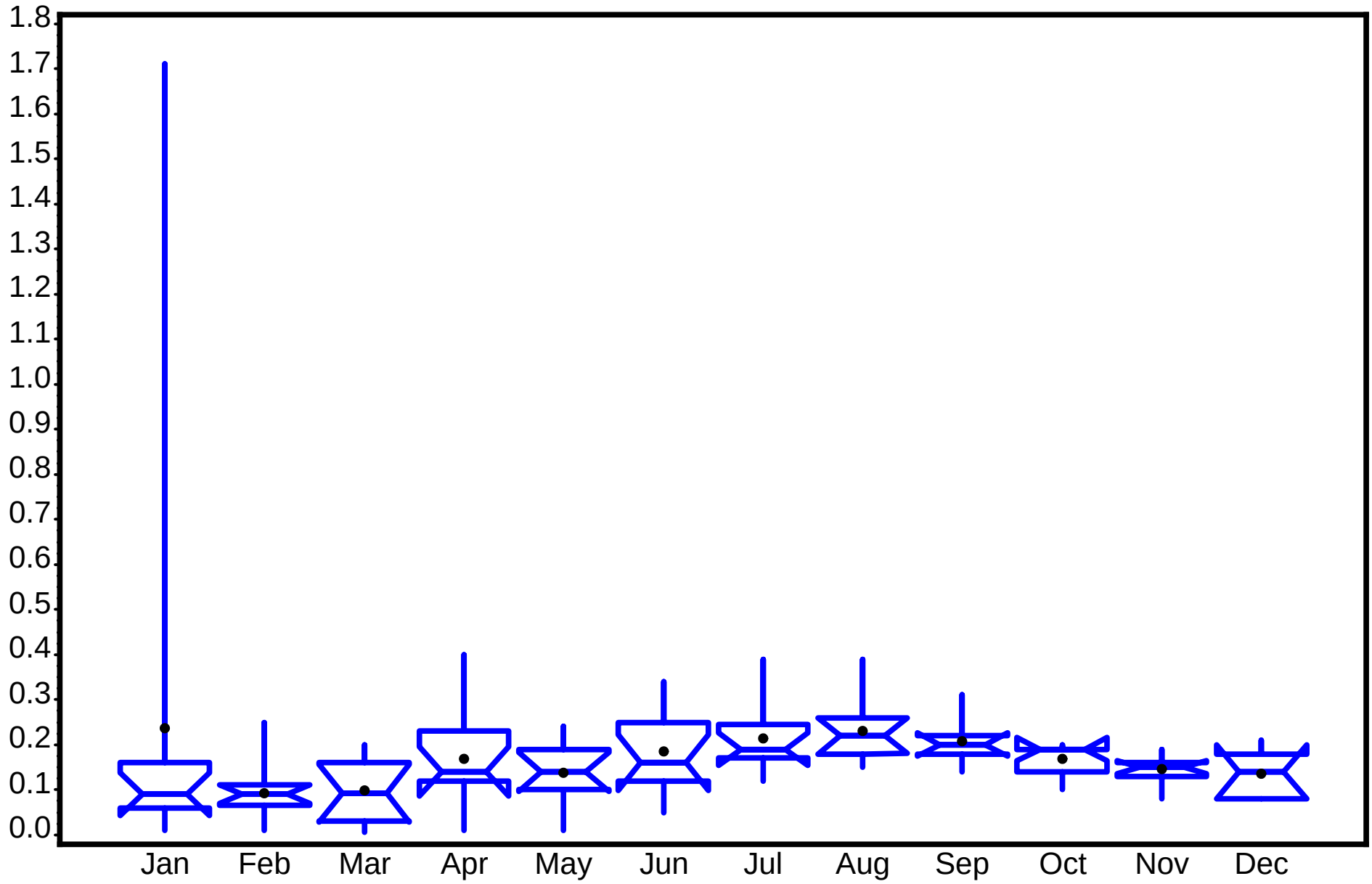


S_21FLVEMDHL10 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



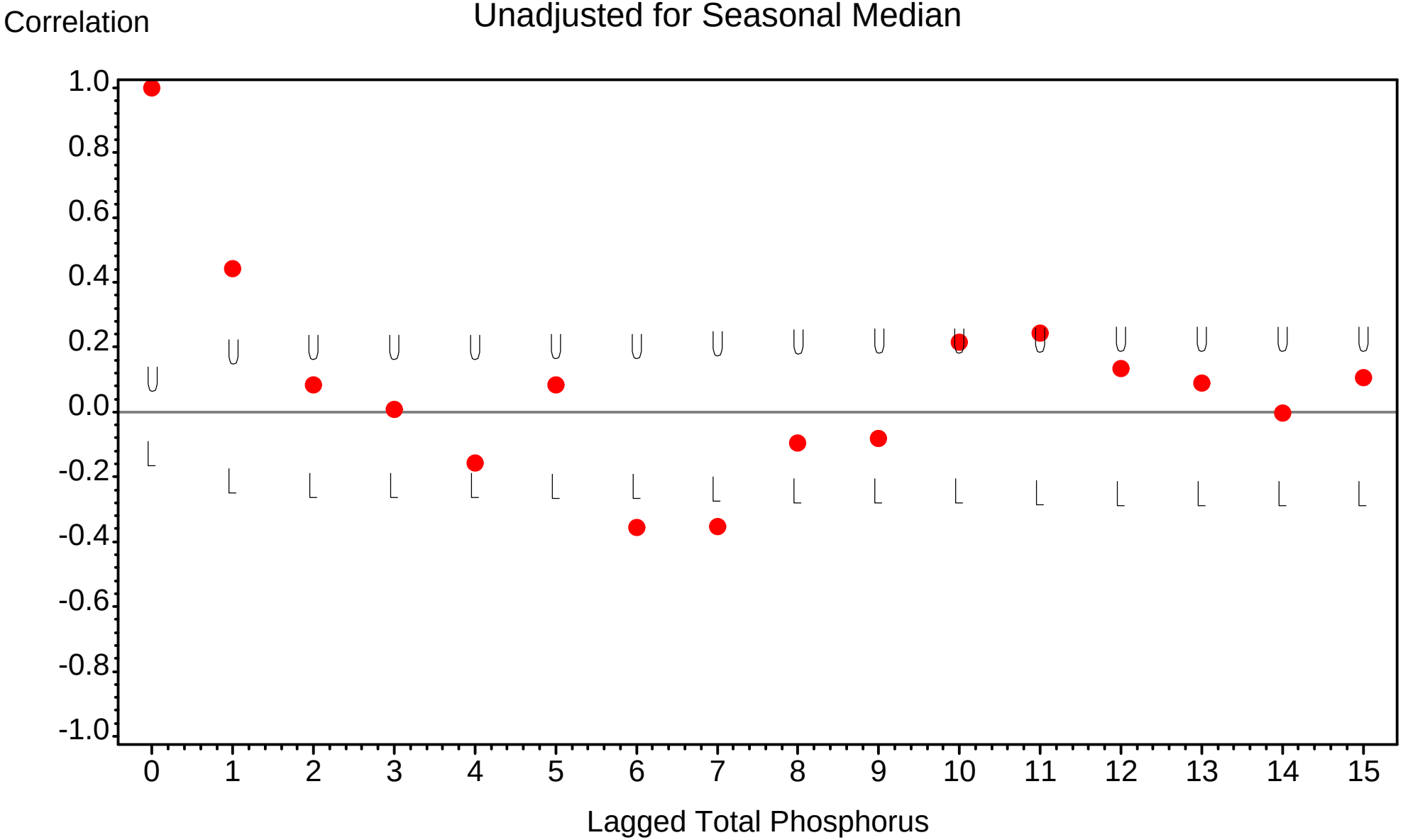
E-1386

S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.441	0.100	0.200	-0.200
2	0.083	0.106	0.213	-0.213
3	0.008	0.107	0.213	-0.213
4	-0.157	0.107	0.213	-0.213
5	0.084	0.107	0.215	-0.215
6	-0.357	0.107	0.215	-0.215
7	-0.353	0.111	0.223	-0.223
8	-0.096	0.115	0.230	-0.230
9	-0.081	0.115	0.231	-0.231
10	0.216	0.115	0.231	-0.231
11	0.242	0.117	0.234	-0.234
12	0.133	0.118	0.237	-0.237
13	0.089	0.119	0.238	-0.238
14	-0.003	0.119	0.238	-0.238
15	0.106	0.119	0.238	-0.238

S_21FLVEMDHL10 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

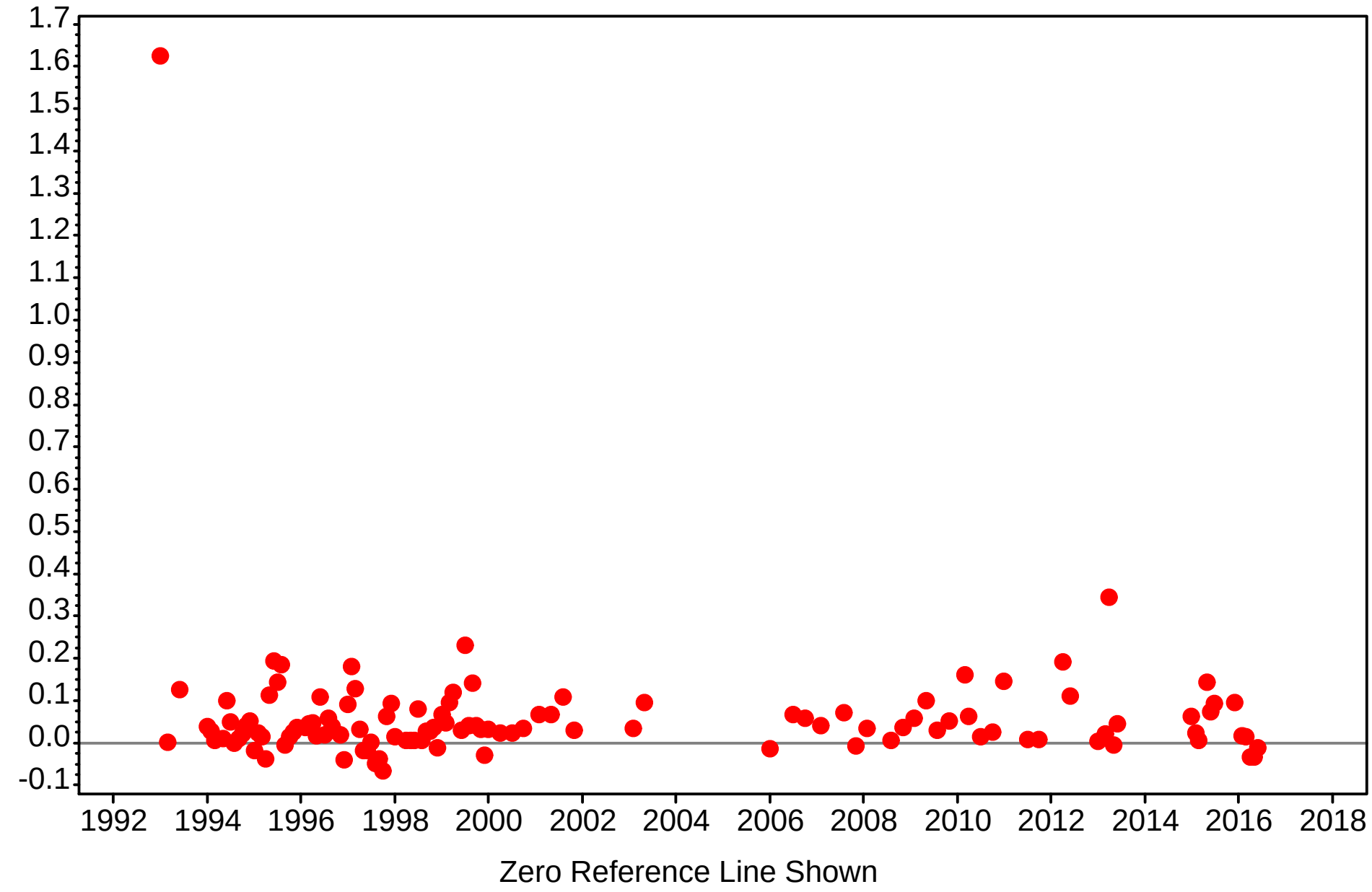
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.322	0	.002	-.004

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.32156	.000009516	.00156134	-.004

S_21FLVEMDHL10 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus



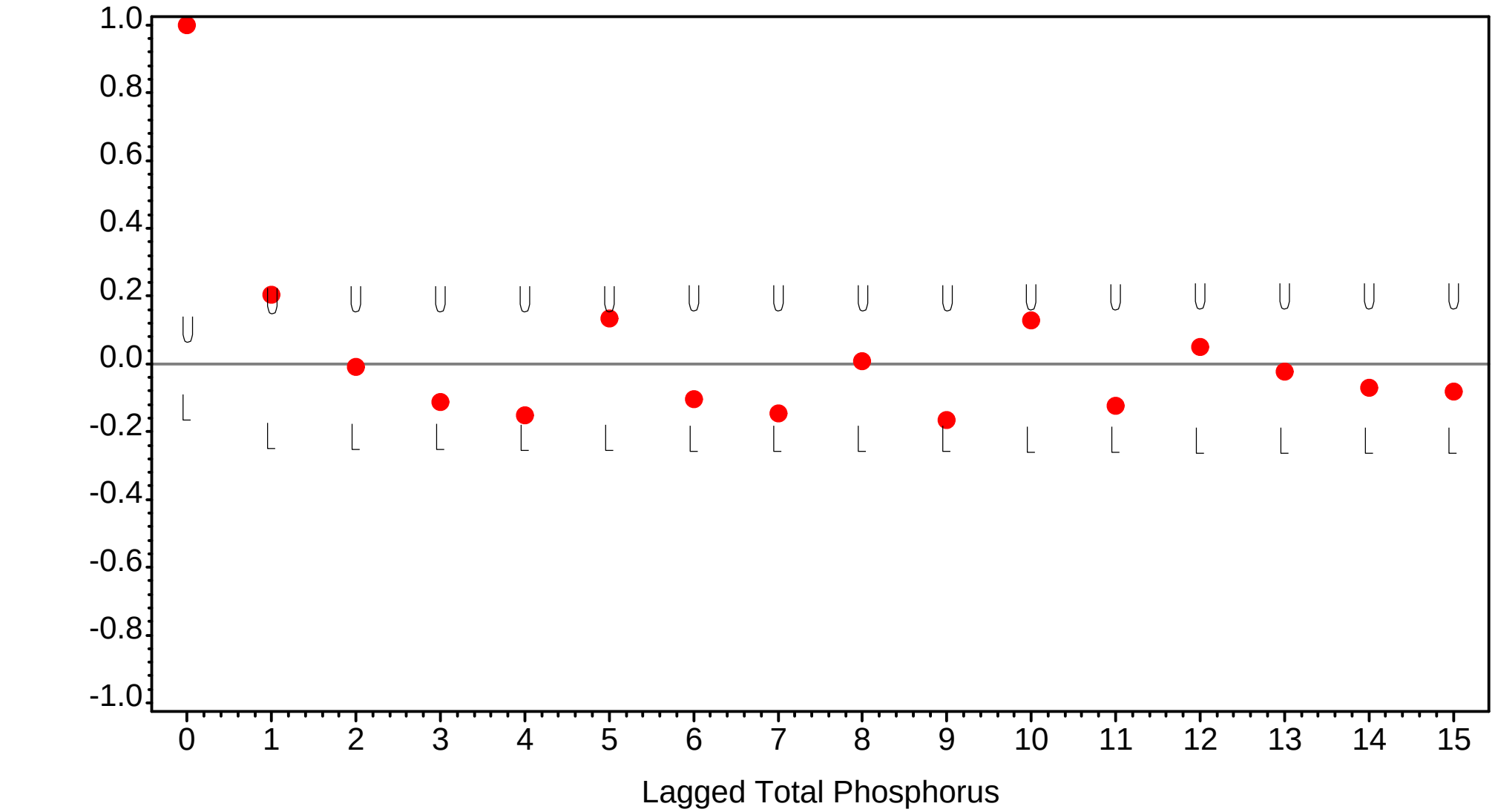
E-1391

S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.203	0.100	0.200	-0.200
2	-0.008	0.101	0.203	-0.203
3	-0.112	0.101	0.203	-0.203
4	-0.152	0.102	0.204	-0.204
5	0.133	0.103	0.205	-0.205
6	-0.104	0.103	0.206	-0.206
7	-0.147	0.103	0.207	-0.207
8	0.009	0.104	0.208	-0.208
9	-0.167	0.104	0.208	-0.208
10	0.128	0.105	0.210	-0.210
11	-0.125	0.106	0.211	-0.211
12	0.050	0.106	0.212	-0.212
13	-0.024	0.106	0.212	-0.212
14	-0.071	0.106	0.212	-0.212
15	-0.081	0.106	0.213	-0.213

S_21FLVEMDHL10 Trends Appendix

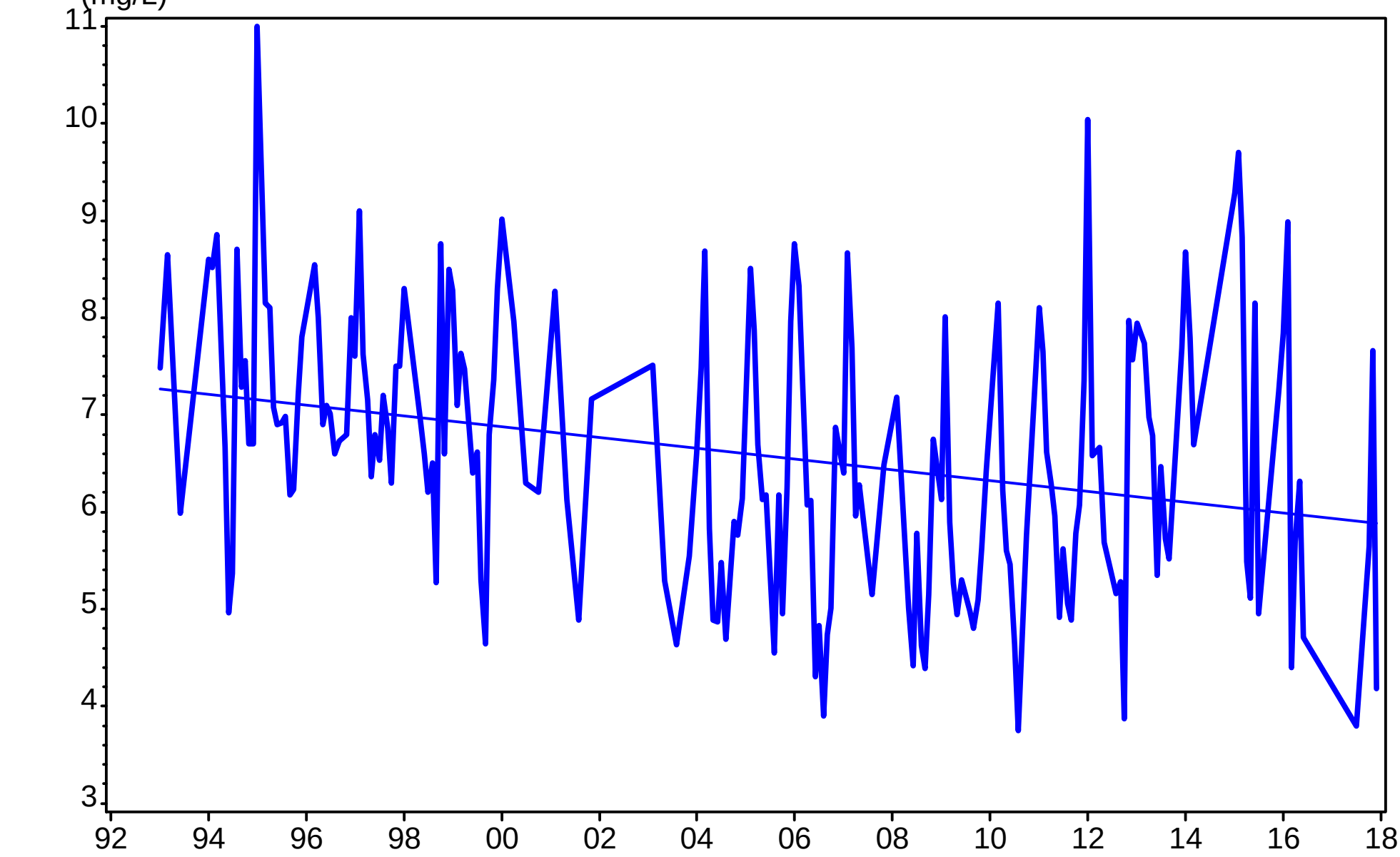
Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

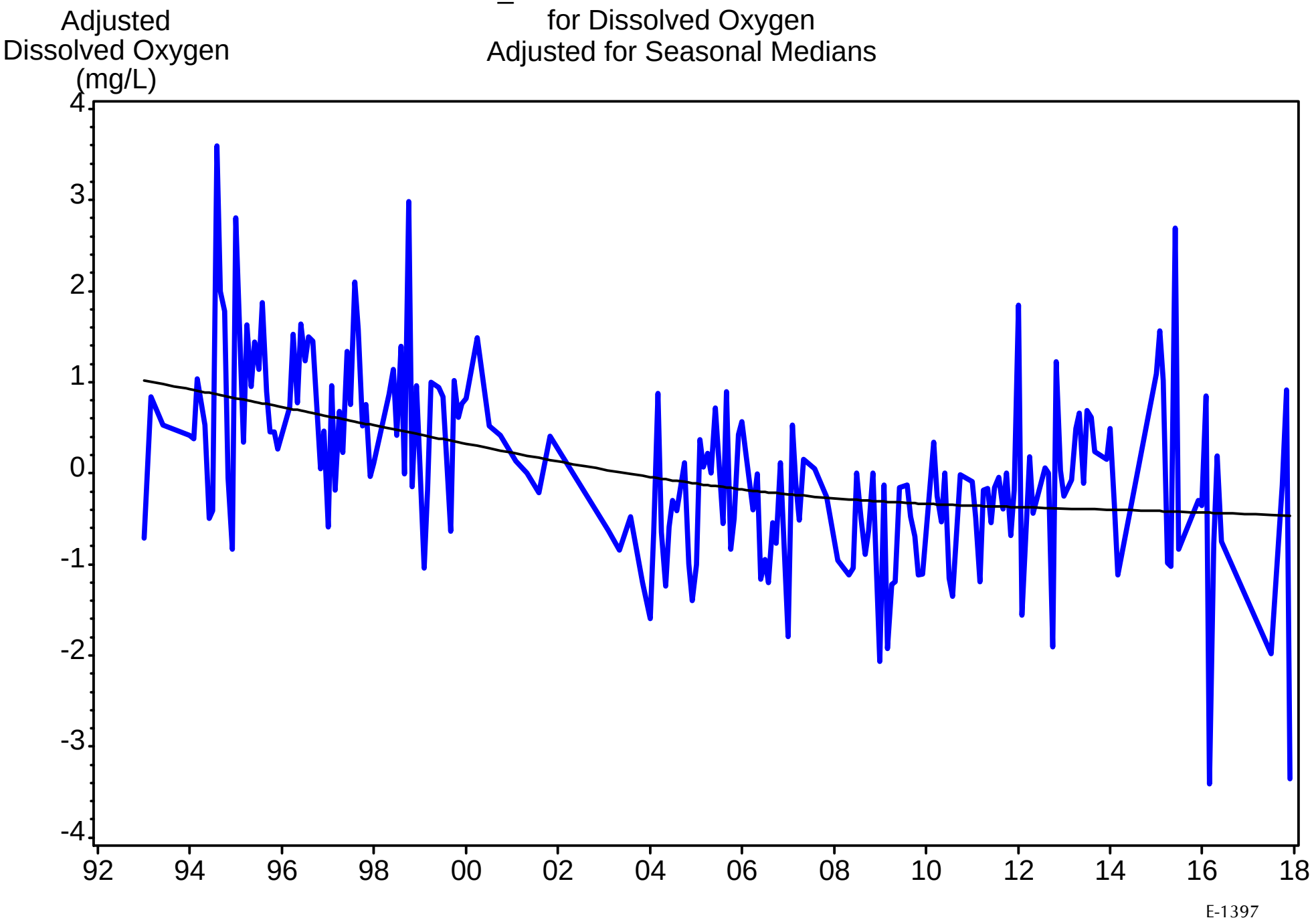
S_21FLVEMDHL10 Trends

S_21FLVEMDHL10 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1396

S_21FLVEMDHL10 Trends

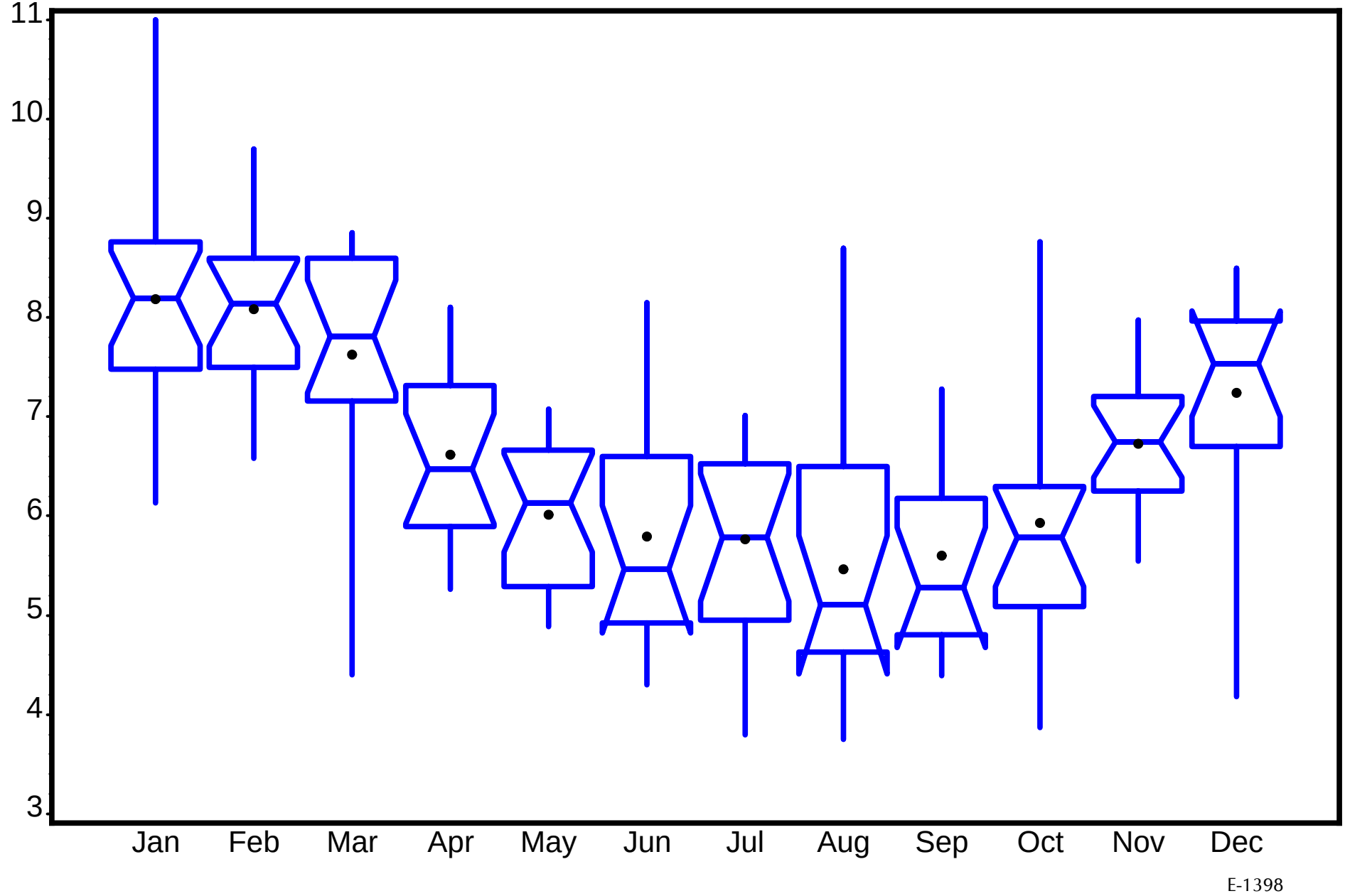


S_21FLVEMDHL10 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



E-1398

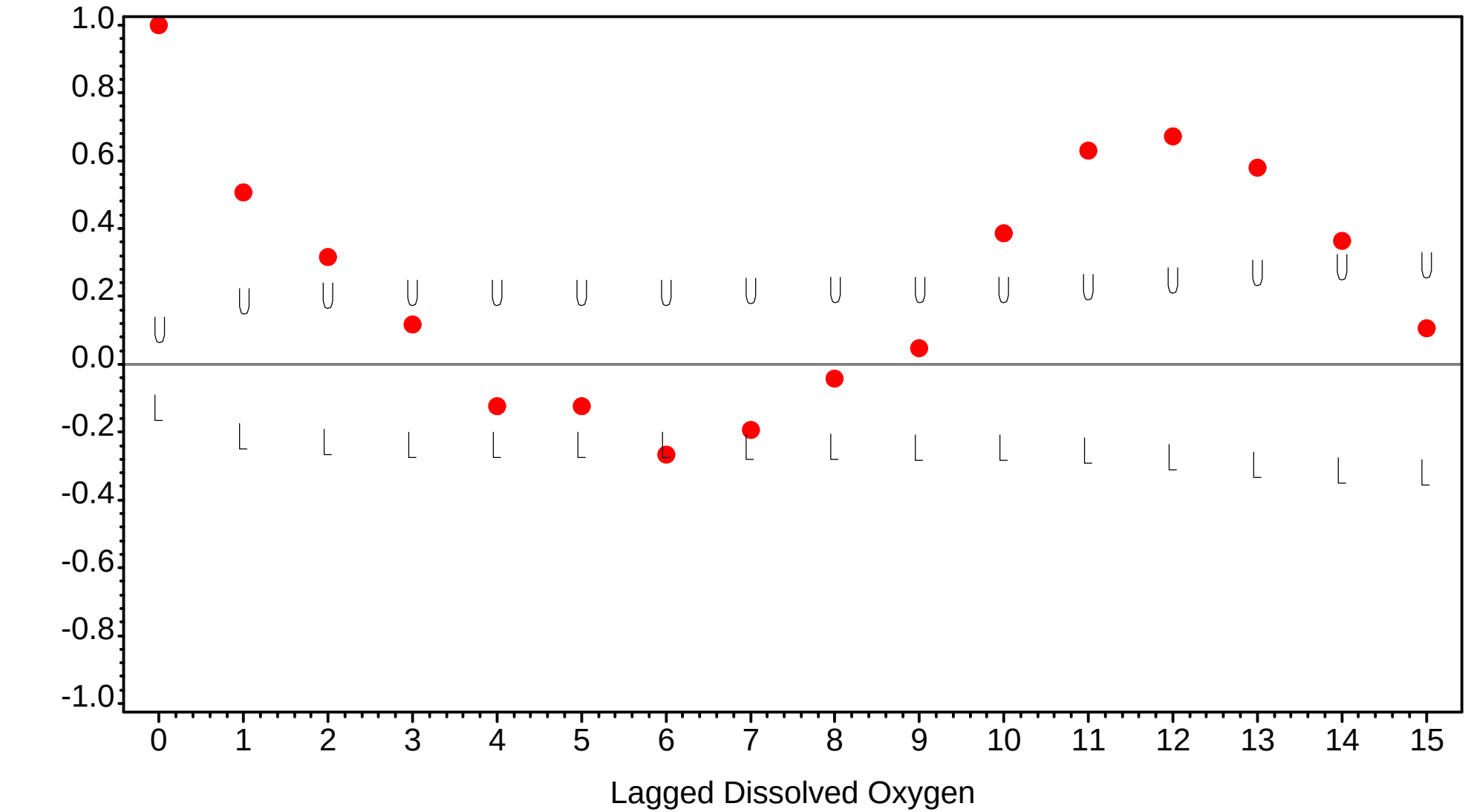
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.506	0.100	0.200	-0.200
2	0.317	0.108	0.216	-0.216
3	0.116	0.111	0.223	-0.223
4	-0.125	0.112	0.223	-0.223
5	-0.124	0.112	0.224	-0.224
6	-0.266	0.113	0.225	-0.225
7	-0.193	0.115	0.229	-0.229
8	-0.043	0.116	0.231	-0.231
9	0.047	0.116	0.232	-0.232
10	0.386	0.116	0.232	-0.232
11	0.629	0.120	0.240	-0.240
12	0.672	0.131	0.261	-0.261
13	0.578	0.142	0.283	-0.283
14	0.364	0.149	0.299	-0.299
15	0.105	0.152	0.304	-0.304

S_21FLVEMDHL10 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

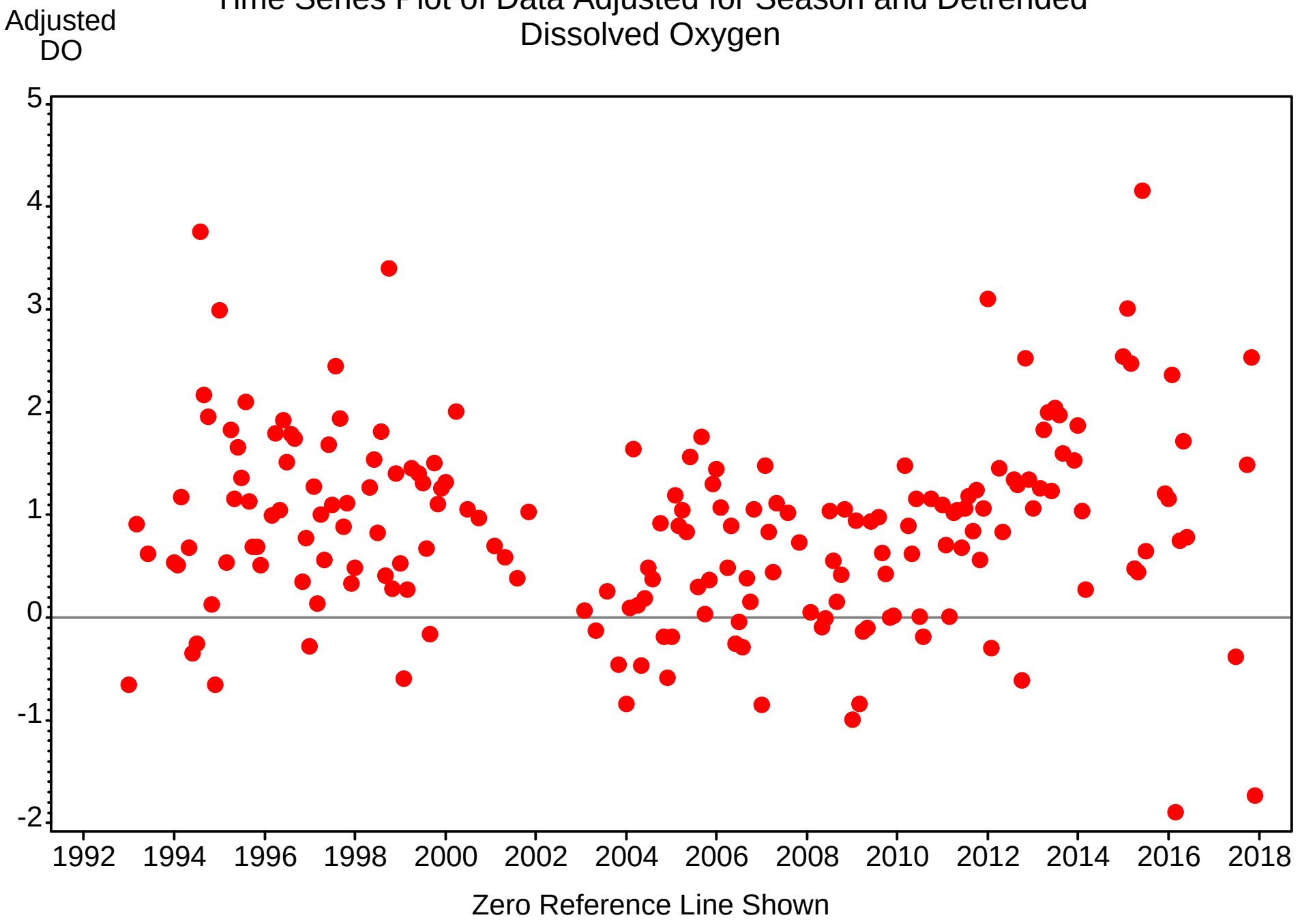
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.275	0	.009	-0.063

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.27487	.000000283	.00913402	-0.062722

S_21FLVEMDHL10 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



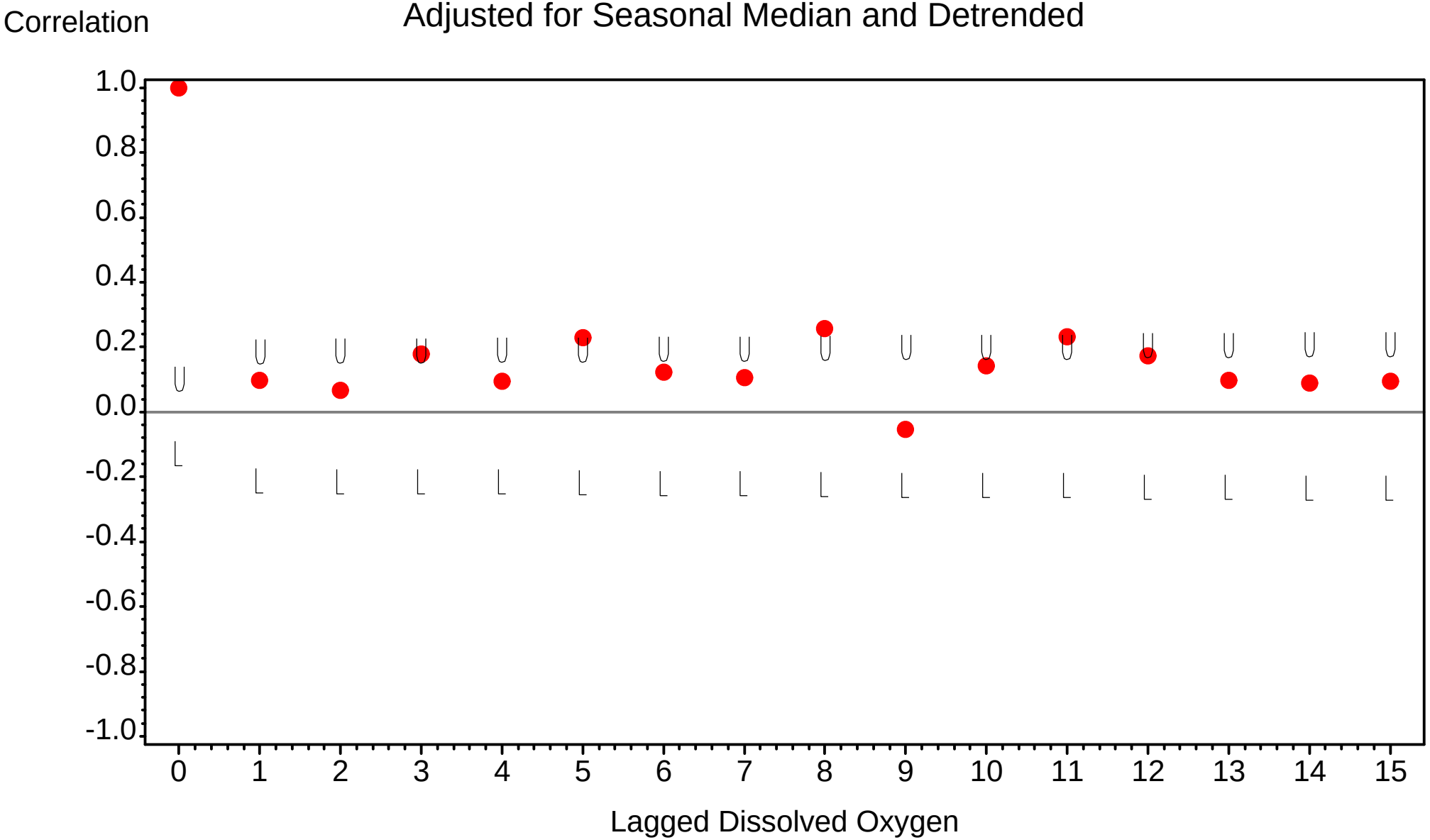
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.098	0.100	0.200	-0.200
2	0.068	0.100	0.201	-0.201
3	0.178	0.100	0.201	-0.201
4	0.095	0.102	0.203	-0.203
5	0.229	0.102	0.204	-0.204
6	0.124	0.104	0.207	-0.207
7	0.105	0.104	0.208	-0.208
8	0.256	0.104	0.209	-0.209
9	-0.053	0.106	0.213	-0.213
10	0.141	0.107	0.213	-0.213
11	0.232	0.107	0.214	-0.214
12	0.173	0.109	0.218	-0.218
13	0.098	0.110	0.219	-0.219
14	0.088	0.110	0.220	-0.220
15	0.095	0.110	0.221	-0.221

S_21FLVEMDHL10 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended

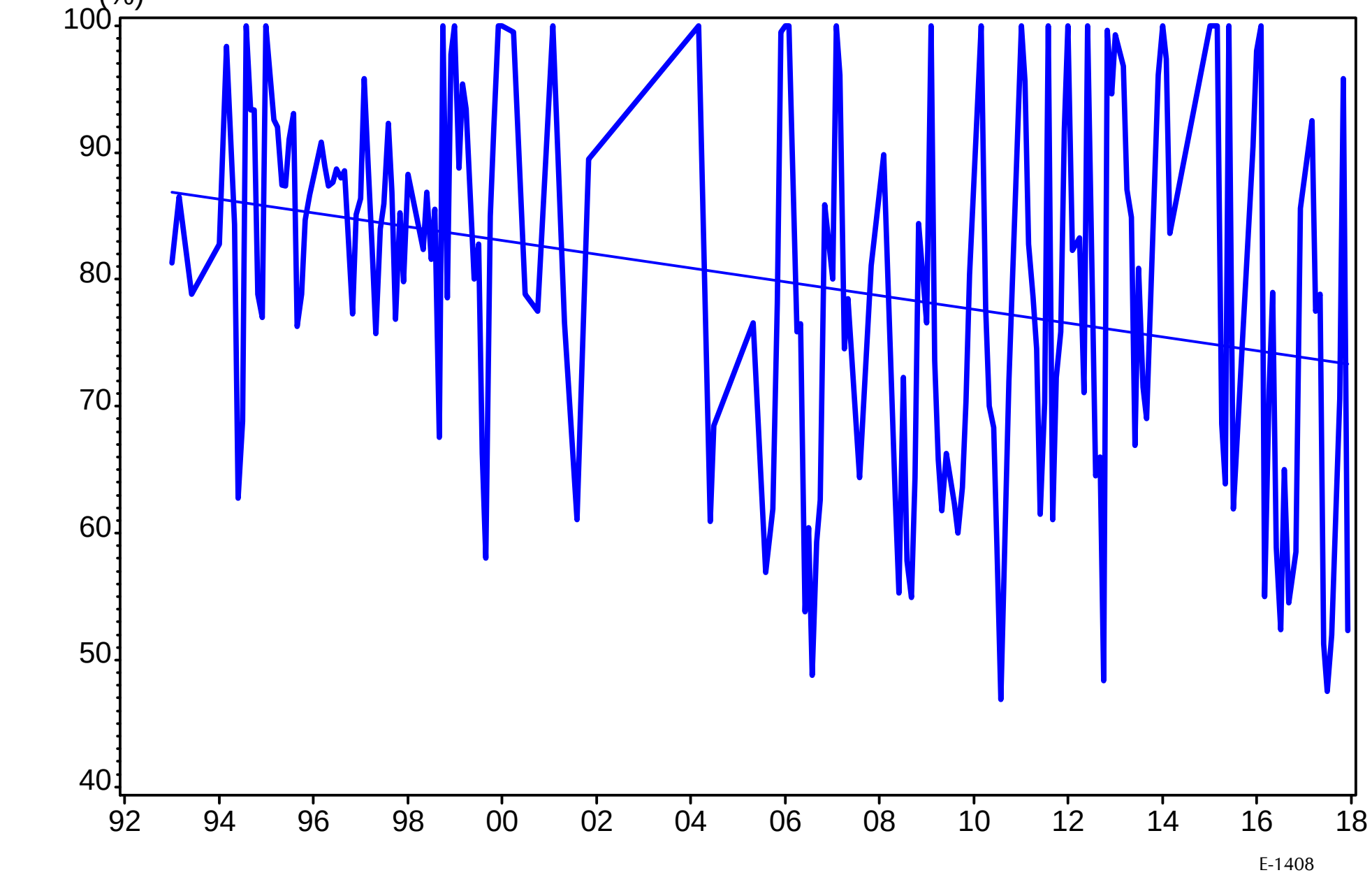


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

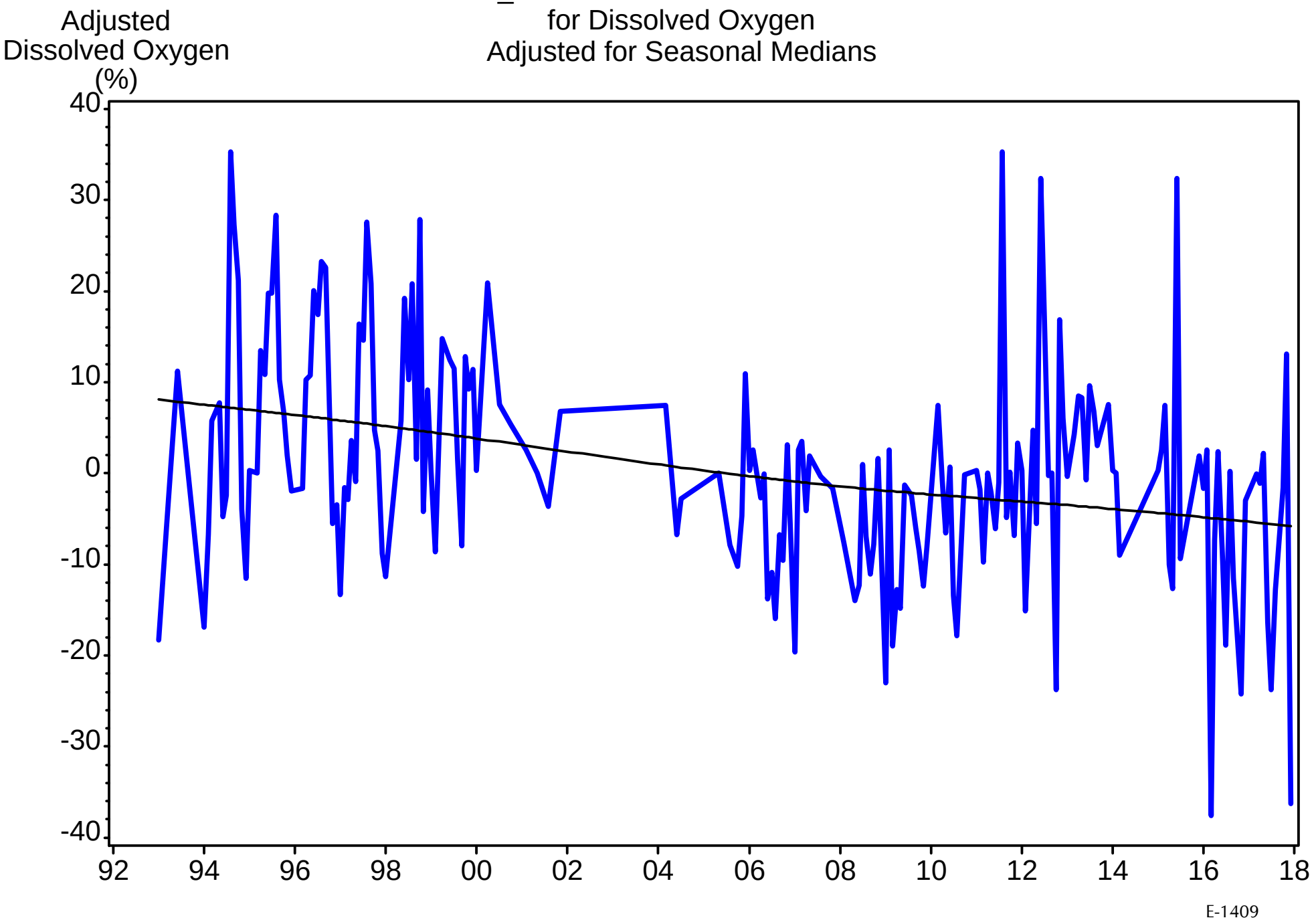
S_21FLVEMDHL10 Trends

S_21FLVEMDHL10 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1408

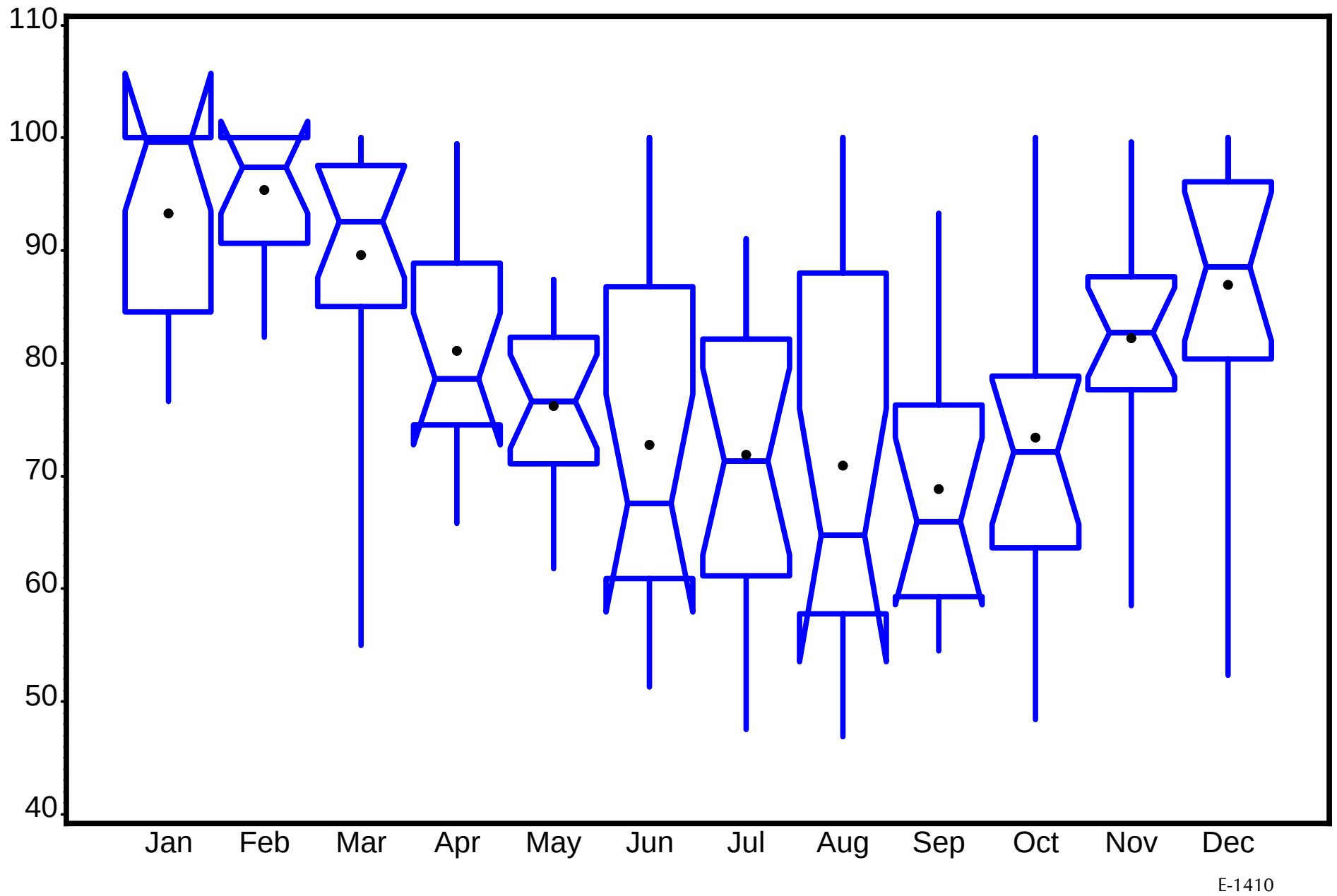
S_21FLVEMDHL10 Trends



S_21FLVEMDHL10 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



E-1410

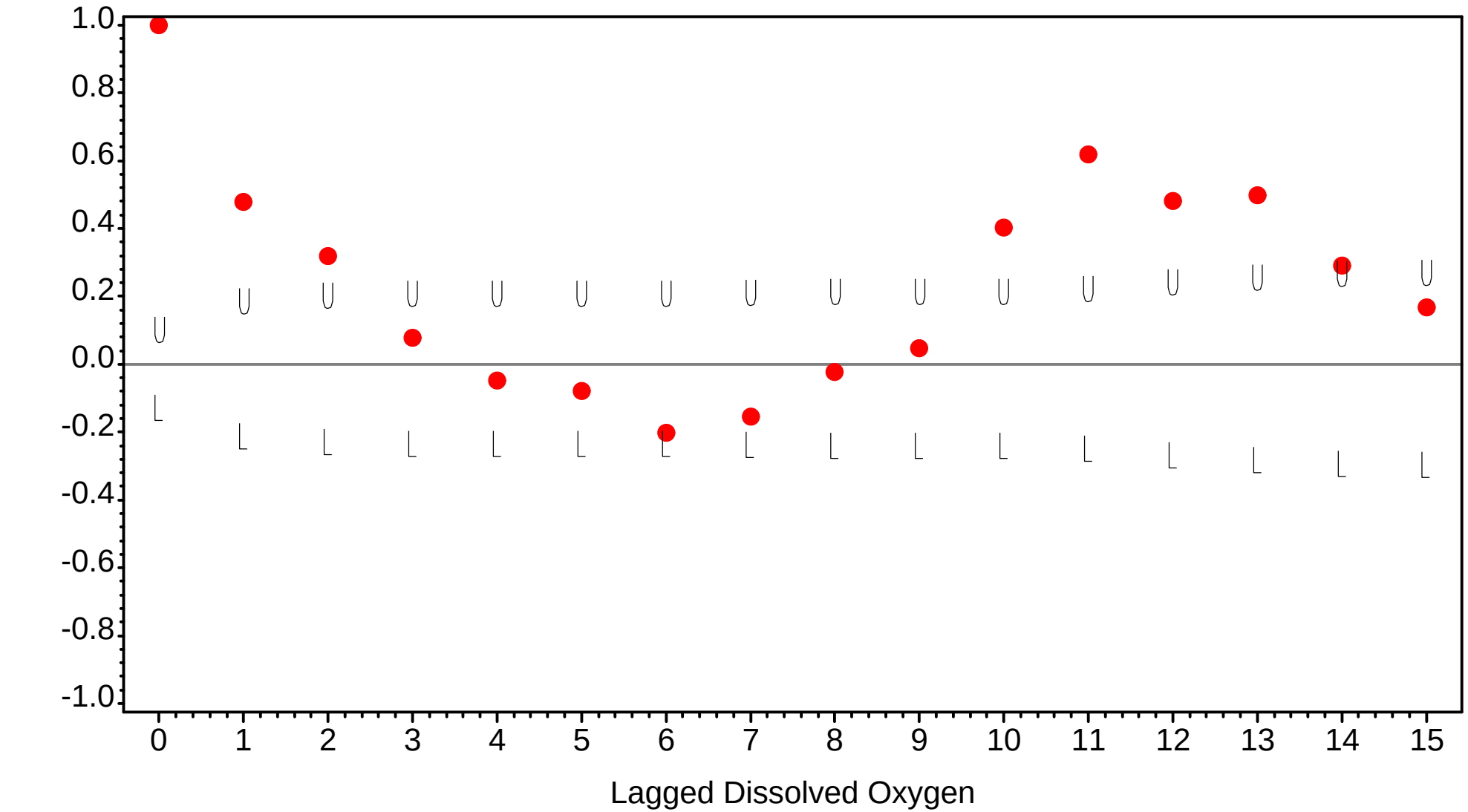
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.479	0.100	0.200	-0.200
2	0.320	0.107	0.215	-0.215
3	0.078	0.111	0.221	-0.221
4	-0.047	0.111	0.221	-0.221
5	-0.078	0.111	0.222	-0.222
6	-0.203	0.111	0.222	-0.222
7	-0.154	0.112	0.224	-0.224
8	-0.022	0.113	0.226	-0.226
9	0.046	0.113	0.226	-0.226
10	0.404	0.113	0.226	-0.226
11	0.617	0.118	0.235	-0.235
12	0.480	0.128	0.256	-0.256
13	0.497	0.134	0.268	-0.268
14	0.291	0.140	0.280	-0.280
15	0.167	0.142	0.284	-0.284

S_21FLVEMDHL10 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

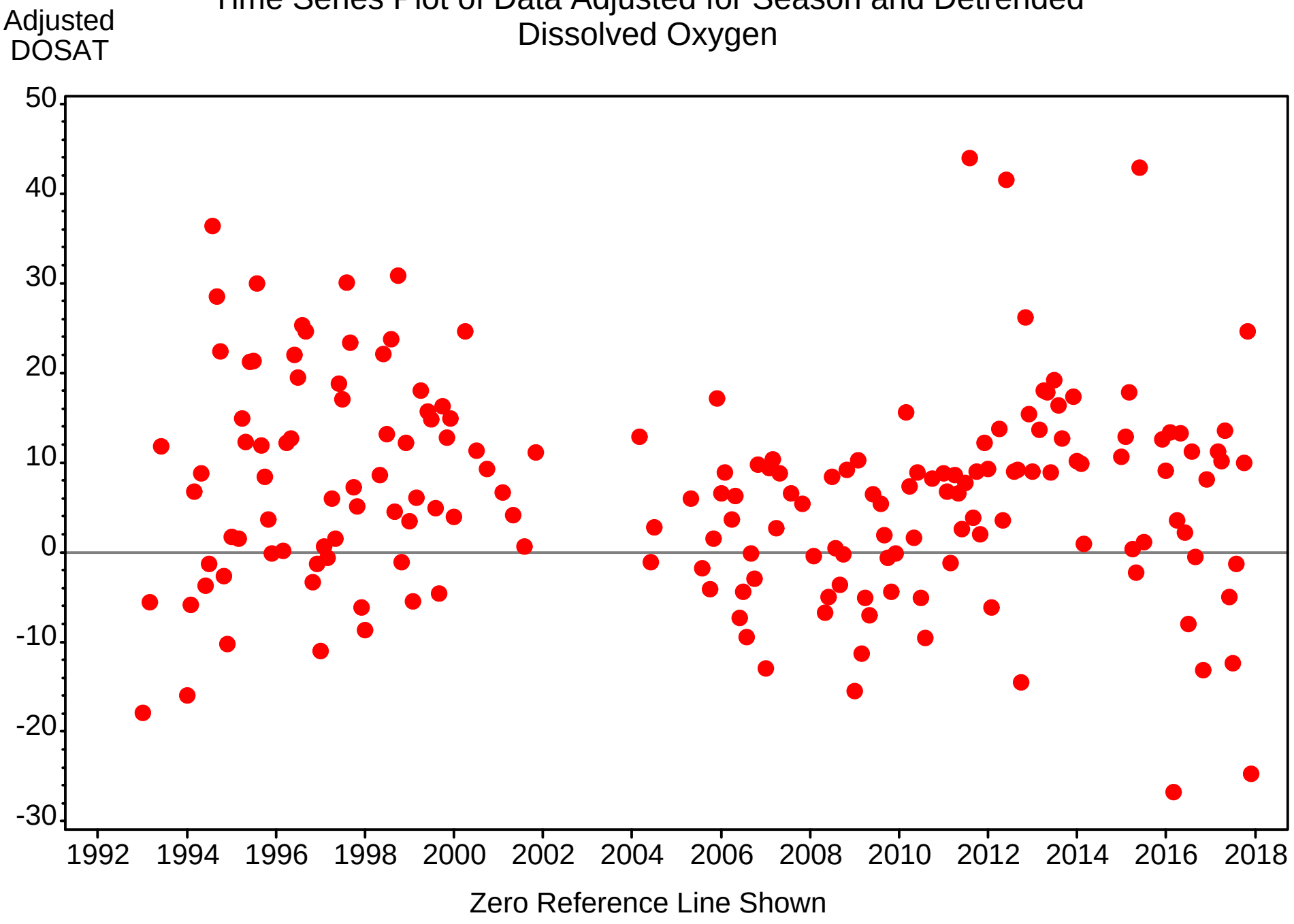
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.206	0	0.02	-0.446

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.20622	.000143255	0.019567	-0.44635

S_21FLVEMDHL10 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen

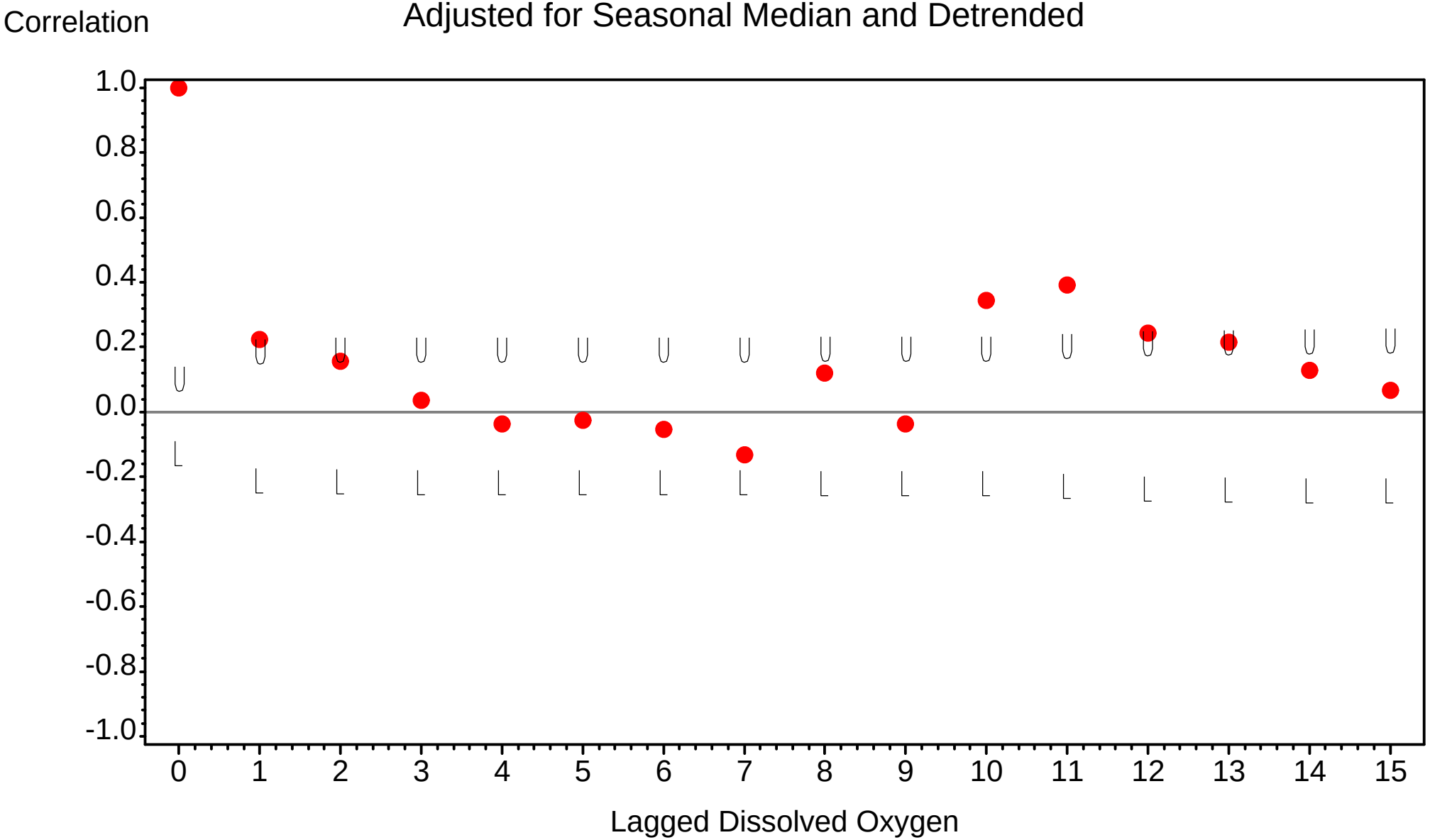


S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.223	0.100	0.200	-0.200
2	0.157	0.102	0.203	-0.203
3	0.035	0.102	0.205	-0.205
4	-0.036	0.102	0.205	-0.205
5	-0.026	0.103	0.205	-0.205
6	-0.053	0.103	0.205	-0.205
7	-0.131	0.103	0.205	-0.205
8	0.119	0.103	0.206	-0.206
9	-0.037	0.104	0.207	-0.207
10	0.344	0.104	0.207	-0.207
11	0.391	0.107	0.215	-0.215
12	0.243	0.112	0.224	-0.224
13	0.216	0.114	0.228	-0.228
14	0.128	0.115	0.230	-0.230
15	0.068	0.116	0.231	-0.231

S_21FLVEMDHL10 Trends Appendix

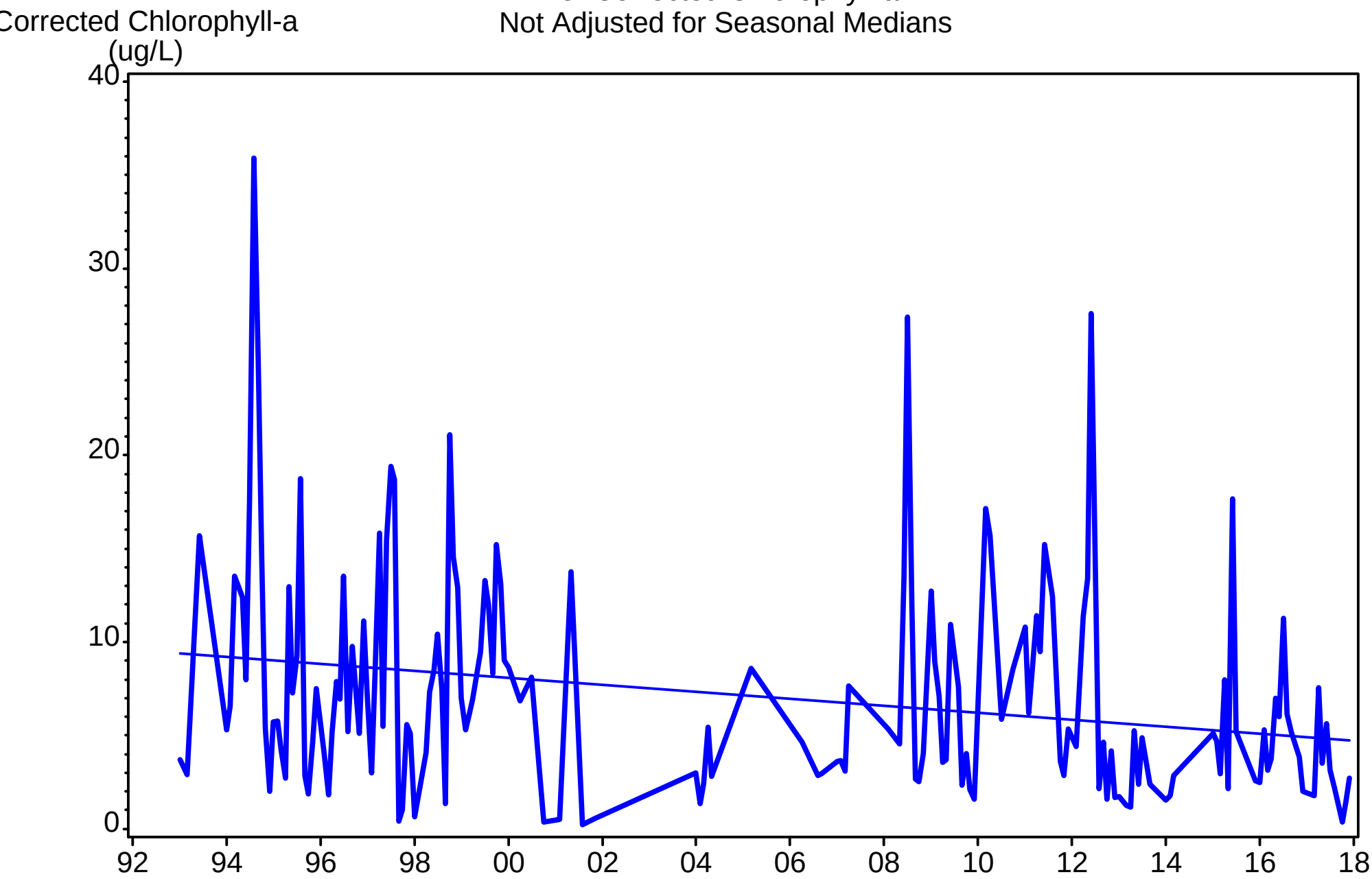
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

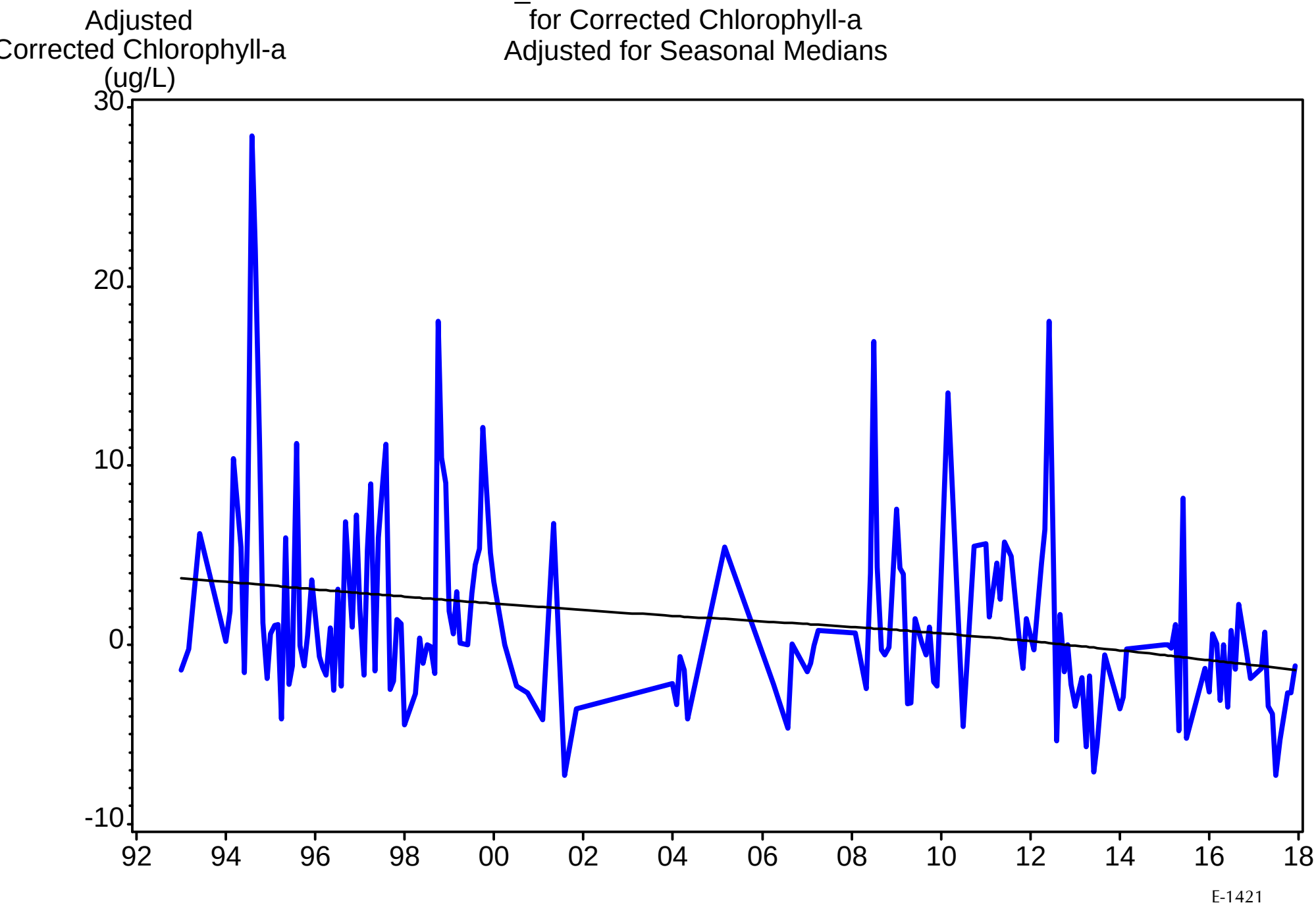
S_21FLVEMDHL10 Trends

S_21FLVEMDHL10 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



E-1420

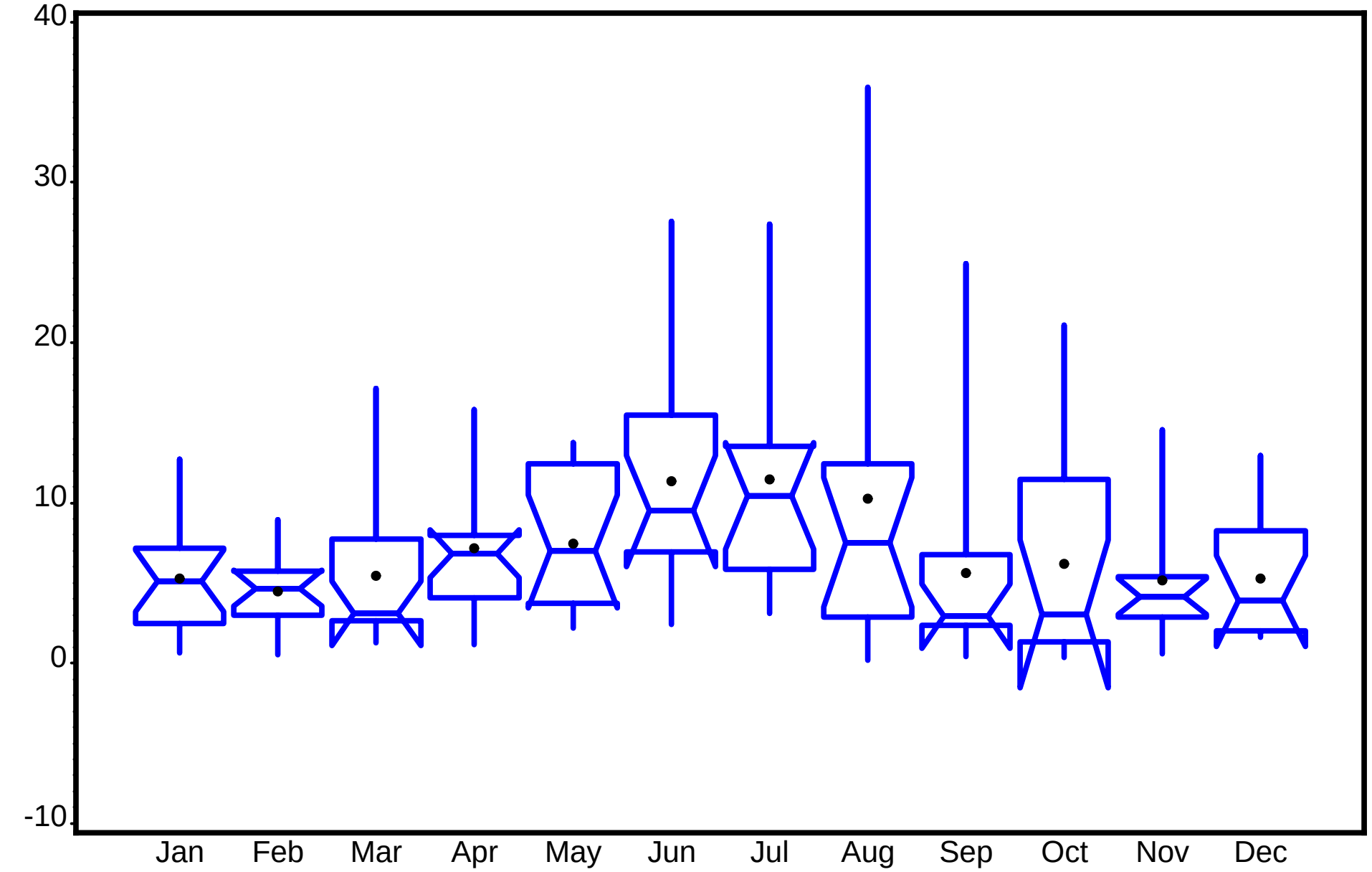
S_21FLVEMDHL10 Trends



S_21FLVEMDHL10 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a



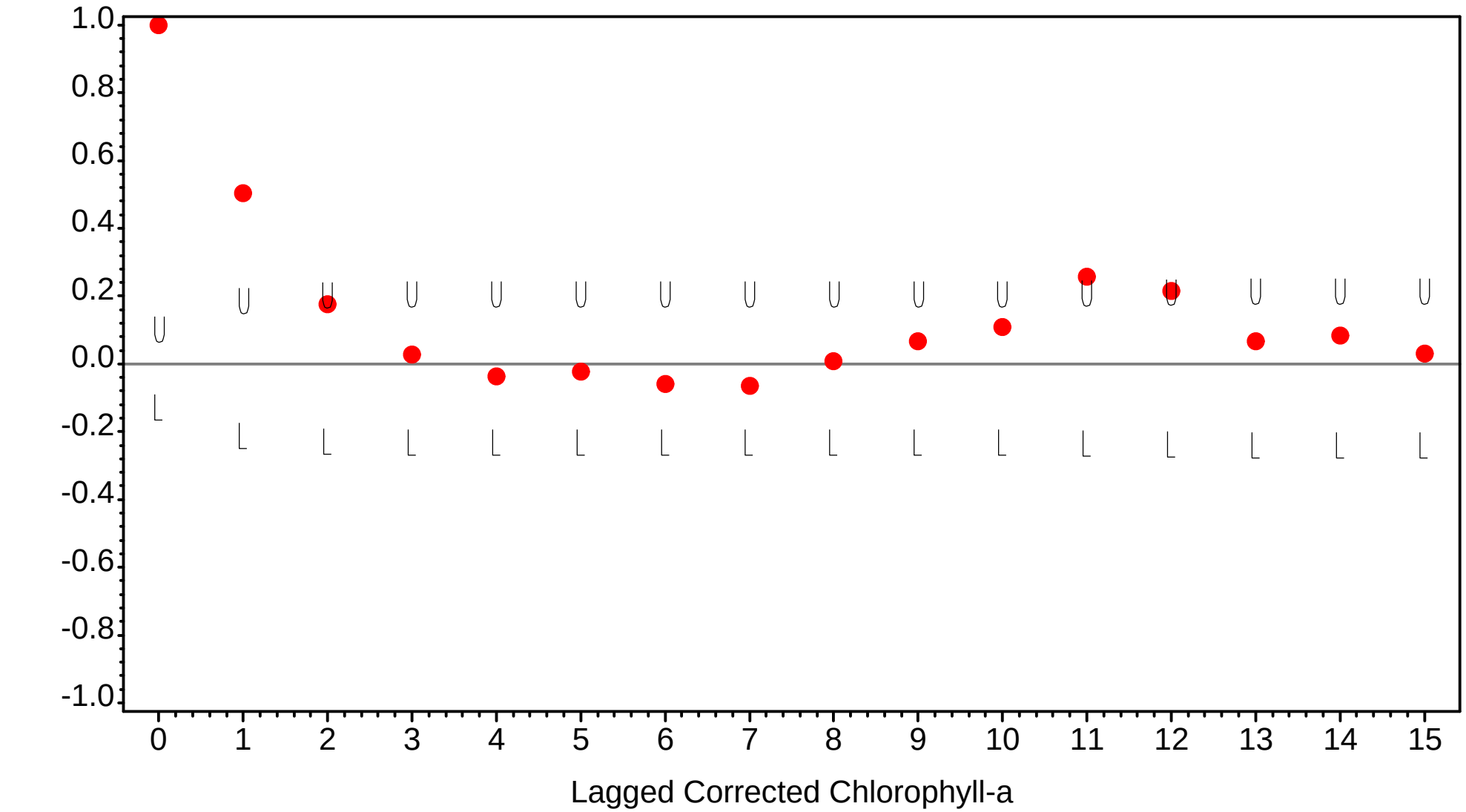
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.504	0.100	0.200	-0.200
2	0.176	0.108	0.216	-0.216
3	0.028	0.109	0.218	-0.218
4	-0.038	0.109	0.218	-0.218
5	-0.023	0.109	0.218	-0.218
6	-0.059	0.109	0.218	-0.218
7	-0.065	0.109	0.219	-0.219
8	0.009	0.109	0.219	-0.219
9	0.068	0.109	0.219	-0.219
10	0.108	0.110	0.219	-0.219
11	0.258	0.110	0.220	-0.220
12	0.215	0.112	0.224	-0.224
13	0.067	0.113	0.227	-0.227
14	0.083	0.113	0.227	-0.227
15	0.030	0.114	0.227	-0.227

S_21FLVEMDHL10 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1424

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

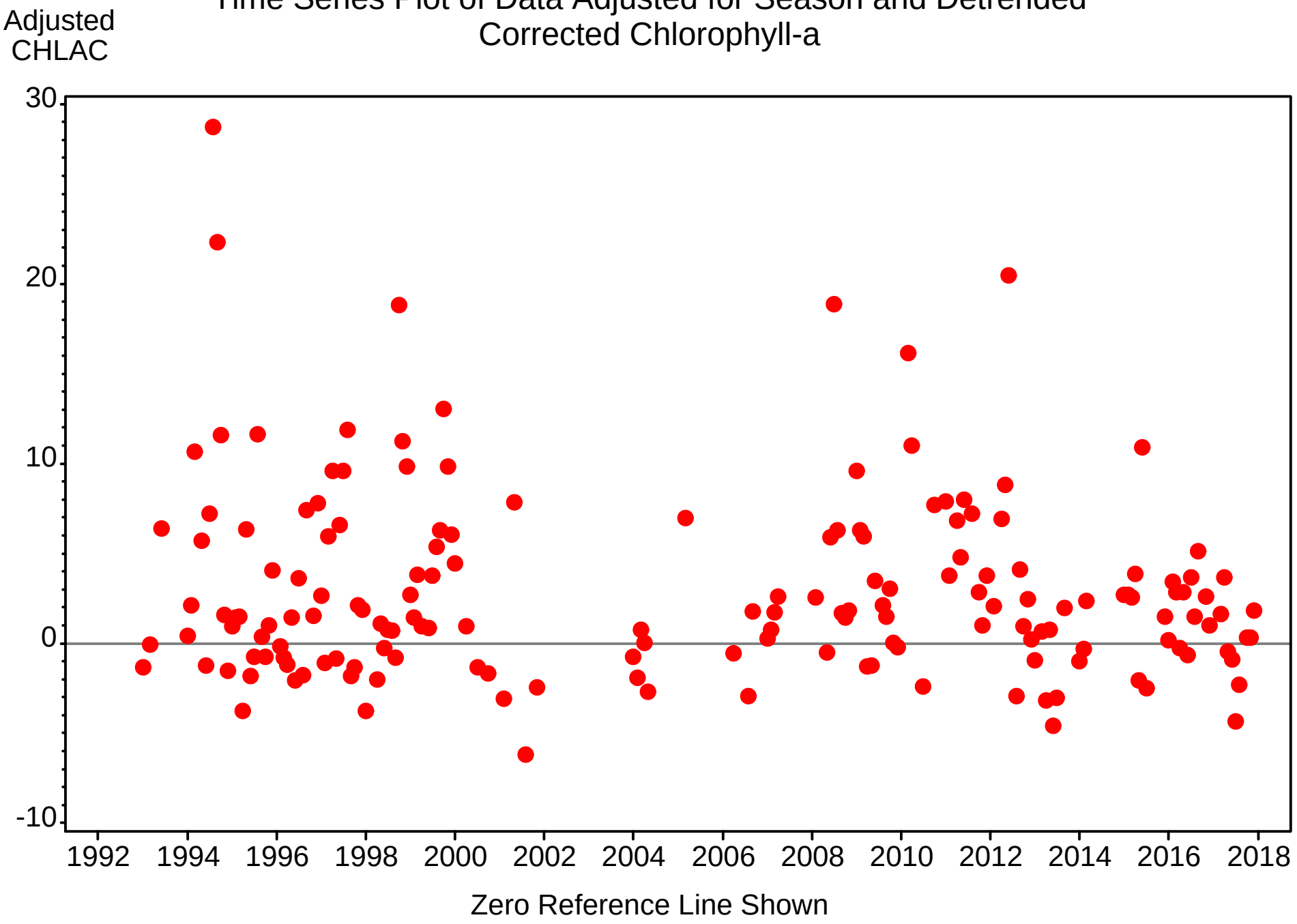
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.182	.002	0.046	-0.117

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.18198	.00178739	0.046478	-0.11667

S_21FLVEMDHL10 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



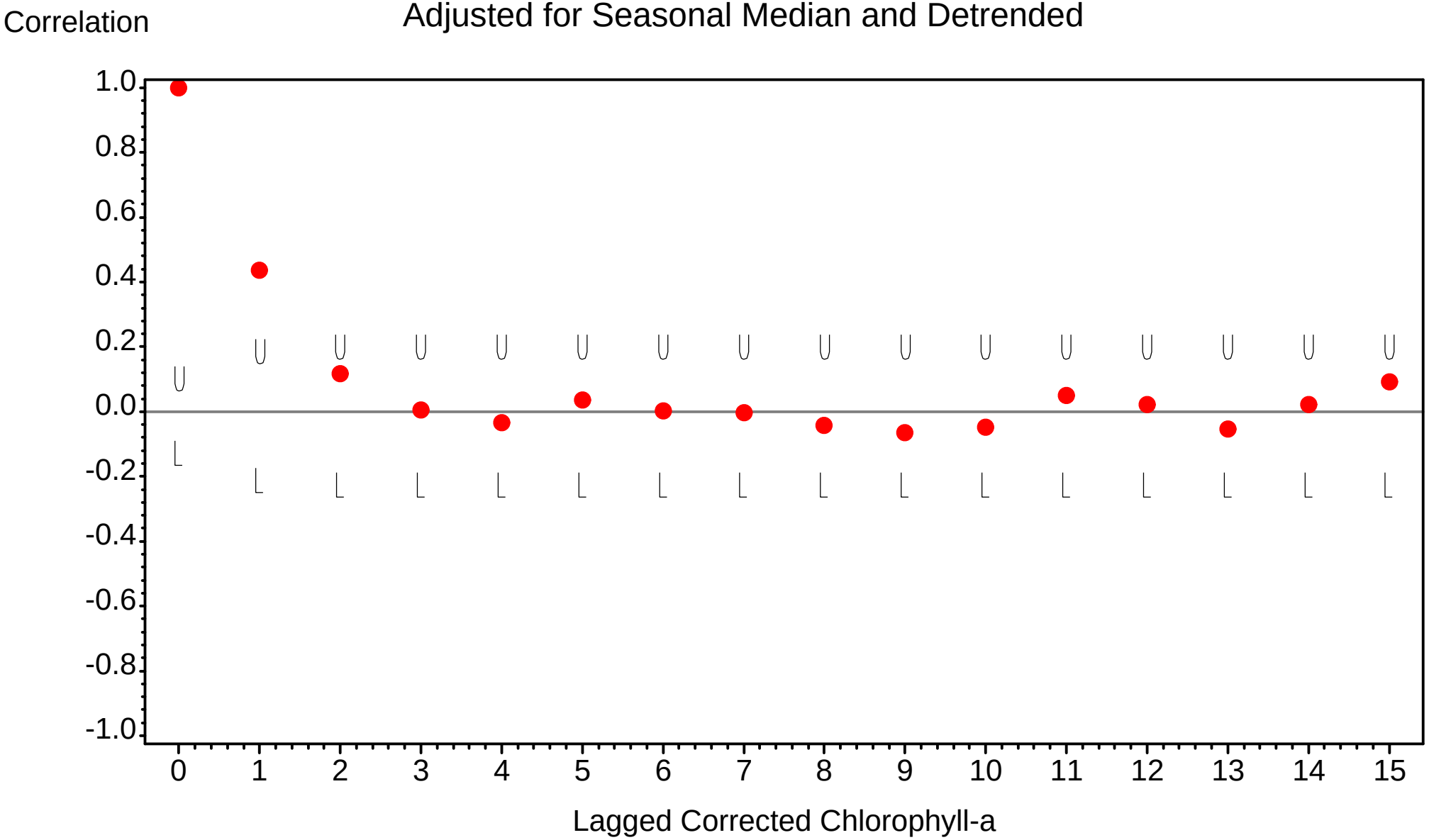
S_21FLVEMDHL10 Trends Appendix

Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.436	0.100	0.200	-0.200
2	0.118	0.106	0.212	-0.212
3	0.006	0.107	0.213	-0.213
4	-0.035	0.107	0.213	-0.213
5	0.037	0.107	0.213	-0.213
6	0.001	0.107	0.213	-0.213
7	-0.002	0.107	0.213	-0.213
8	-0.043	0.107	0.213	-0.213
9	-0.065	0.107	0.213	-0.213
10	-0.047	0.107	0.214	-0.214
11	0.050	0.107	0.214	-0.214
12	0.021	0.107	0.214	-0.214
13	-0.055	0.107	0.214	-0.214
14	0.022	0.107	0.214	-0.214
15	0.091	0.107	0.214	-0.214

S_21FLVEMDHL10 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended

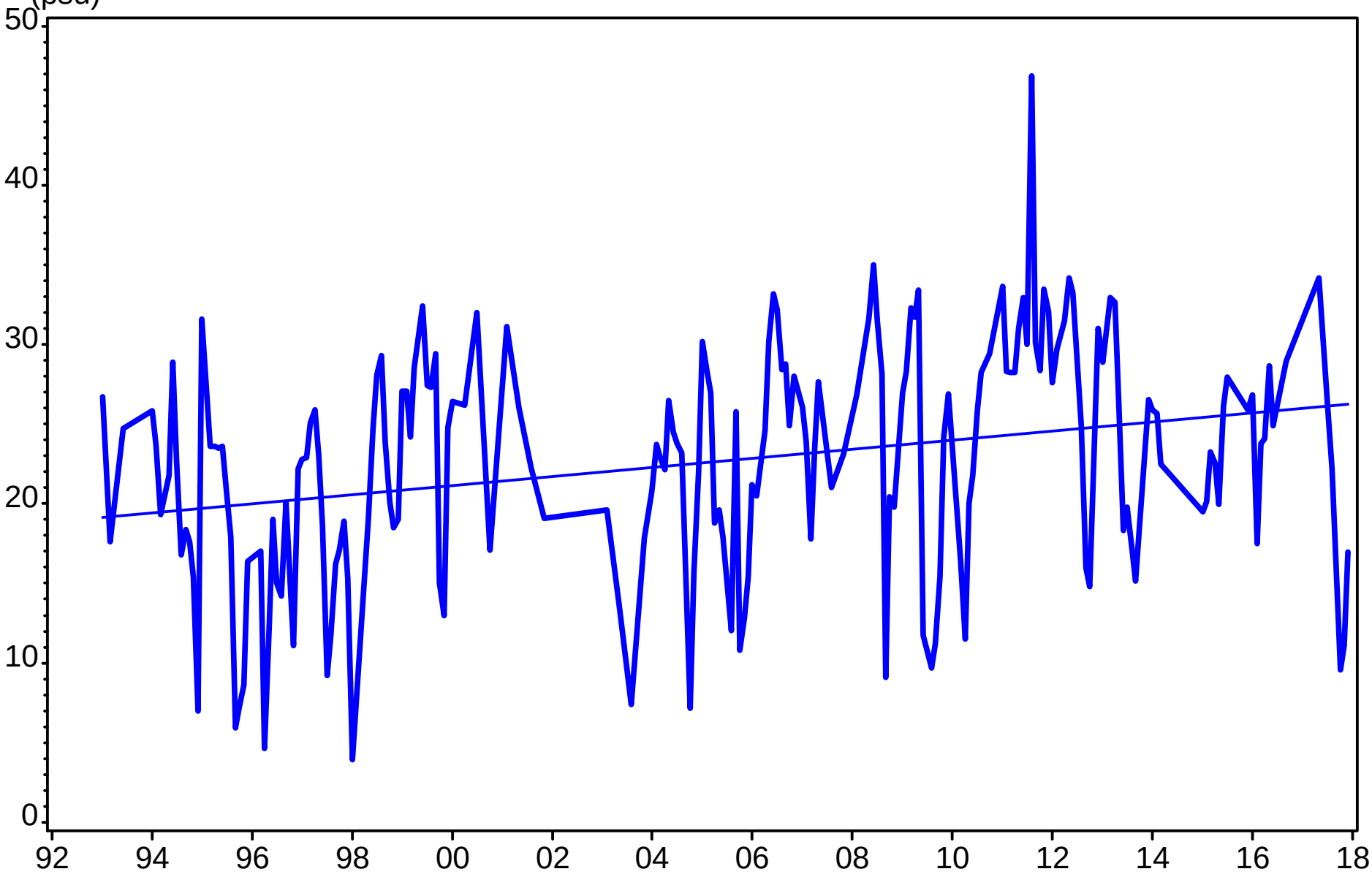


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1429

S_21FLVEMDHL10 Trends

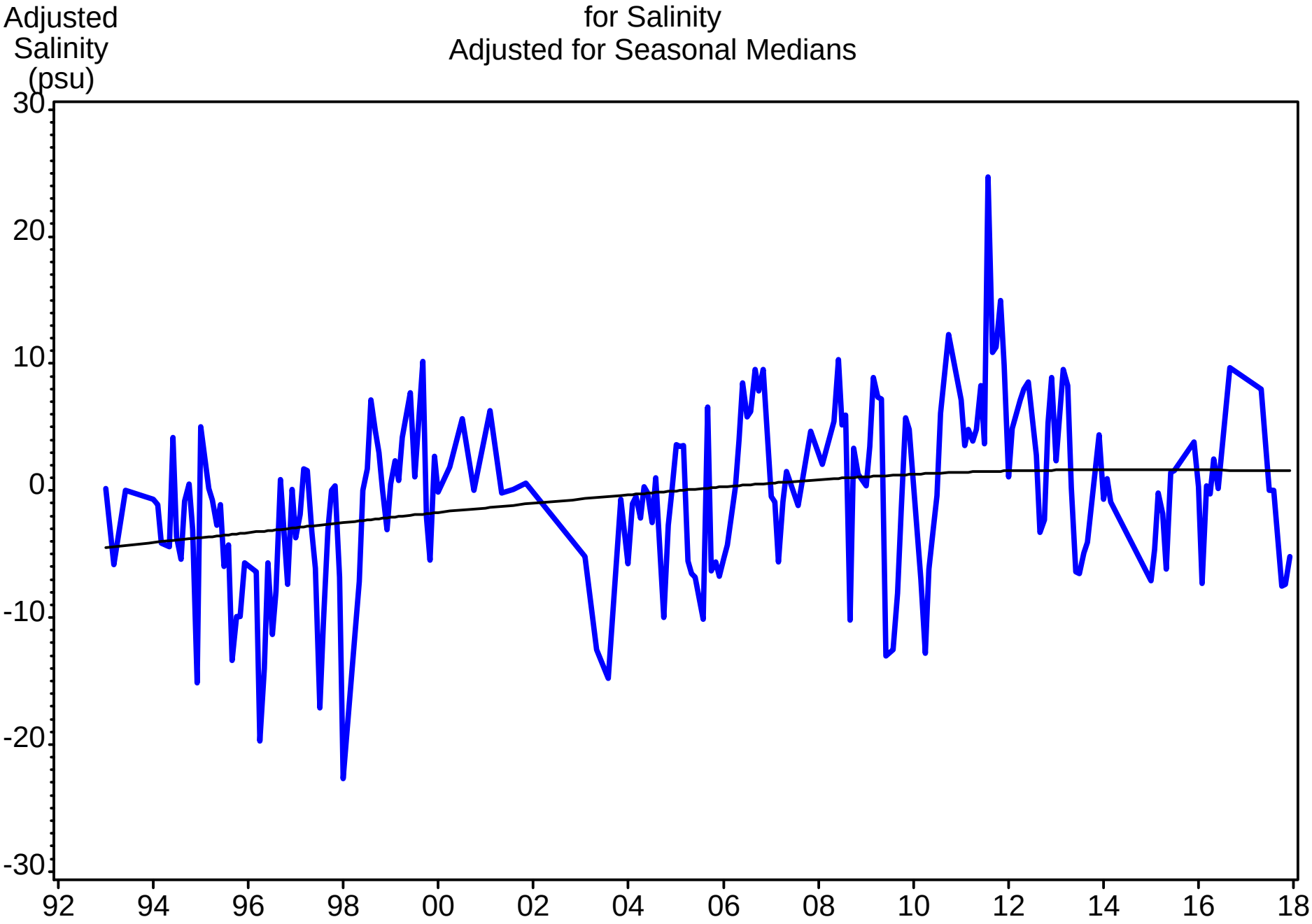
S_21FLVEMDHL10 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



E-1432

S_21FLVEMDHL10 Trends

S_21FLVEMDHL10 Time Series for Salinity Adjusted for Seasonal Medians

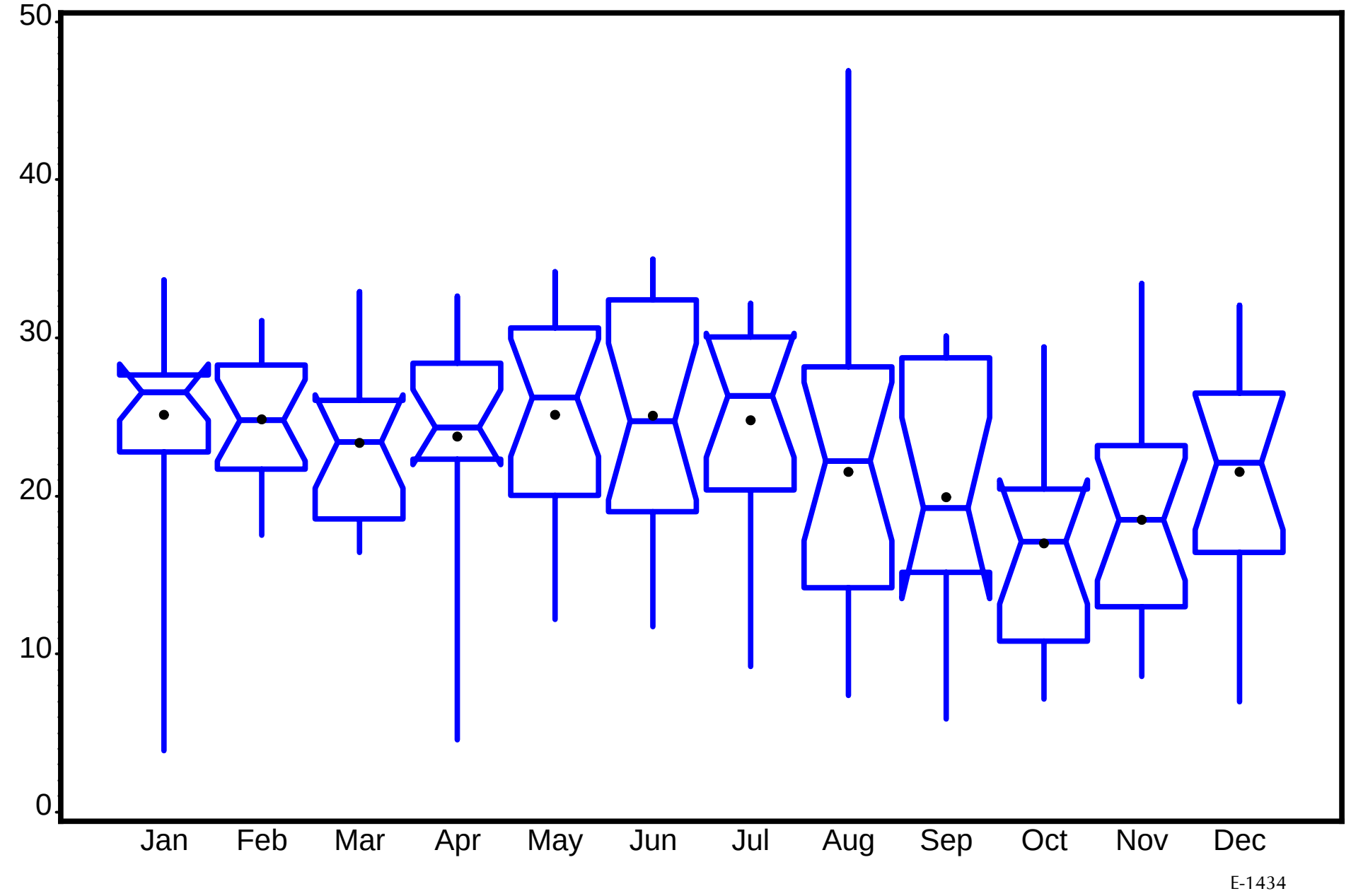


E-1433

S_21FLVEMDHL10 Trends Appendix

Seasonal Univariate Statistics

Salinity



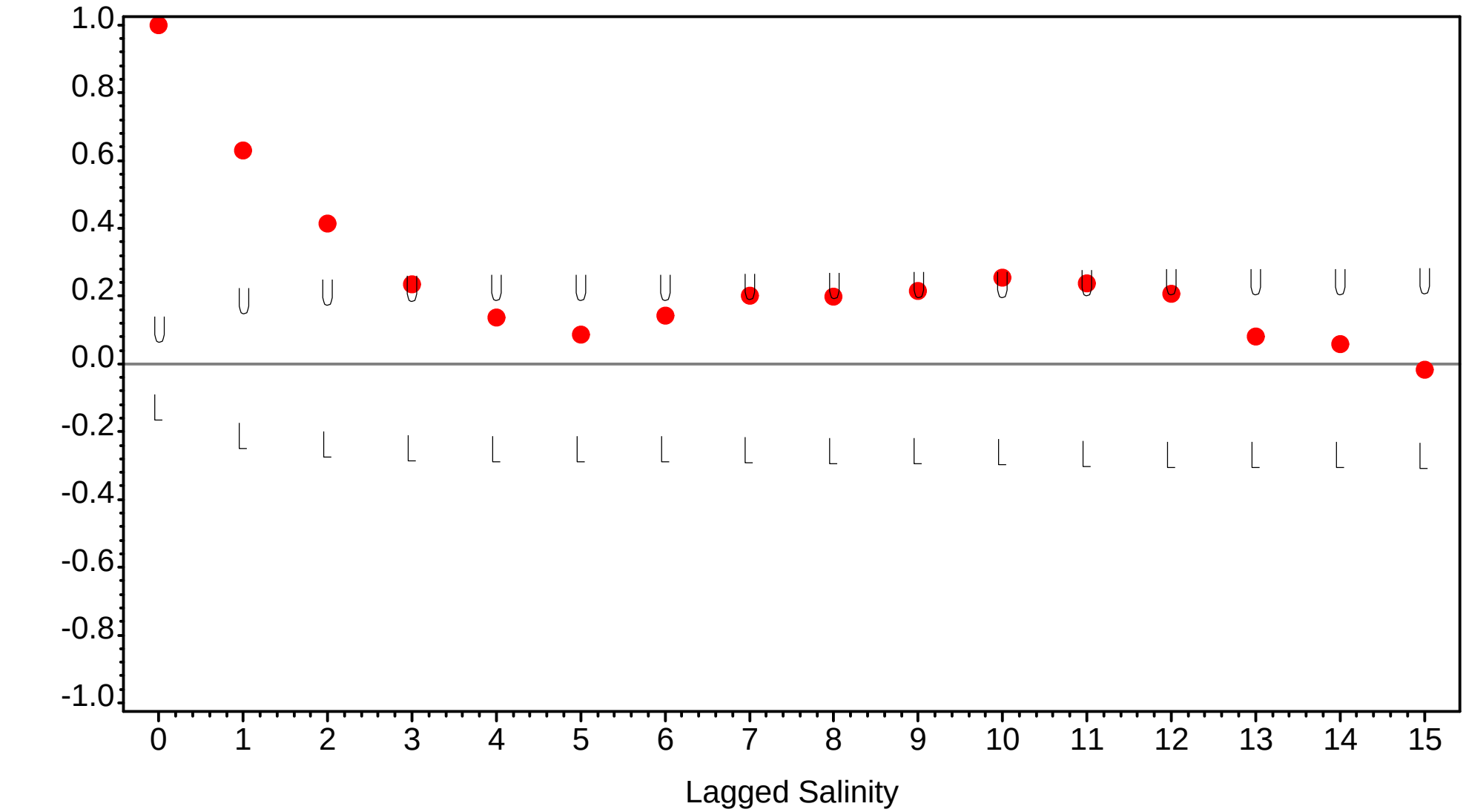
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.630	0.100	0.200	-0.200
2	0.415	0.112	0.225	-0.225
3	0.234	0.117	0.235	-0.235
4	0.138	0.119	0.238	-0.238
5	0.086	0.120	0.239	-0.239
6	0.143	0.120	0.239	-0.239
7	0.201	0.120	0.241	-0.241
8	0.197	0.121	0.243	-0.243
9	0.216	0.122	0.245	-0.245
10	0.255	0.124	0.247	-0.247
11	0.237	0.125	0.251	-0.251
12	0.206	0.127	0.254	-0.254
13	0.081	0.128	0.256	-0.256
14	0.057	0.128	0.256	-0.256
15	-0.017	0.128	0.257	-0.257

S_21FLVEMDHL10 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.206	0	0.036	0.271

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.20579	.000098944	0.035581	0.27118

S_21FLVEMDHL10 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



E-1439

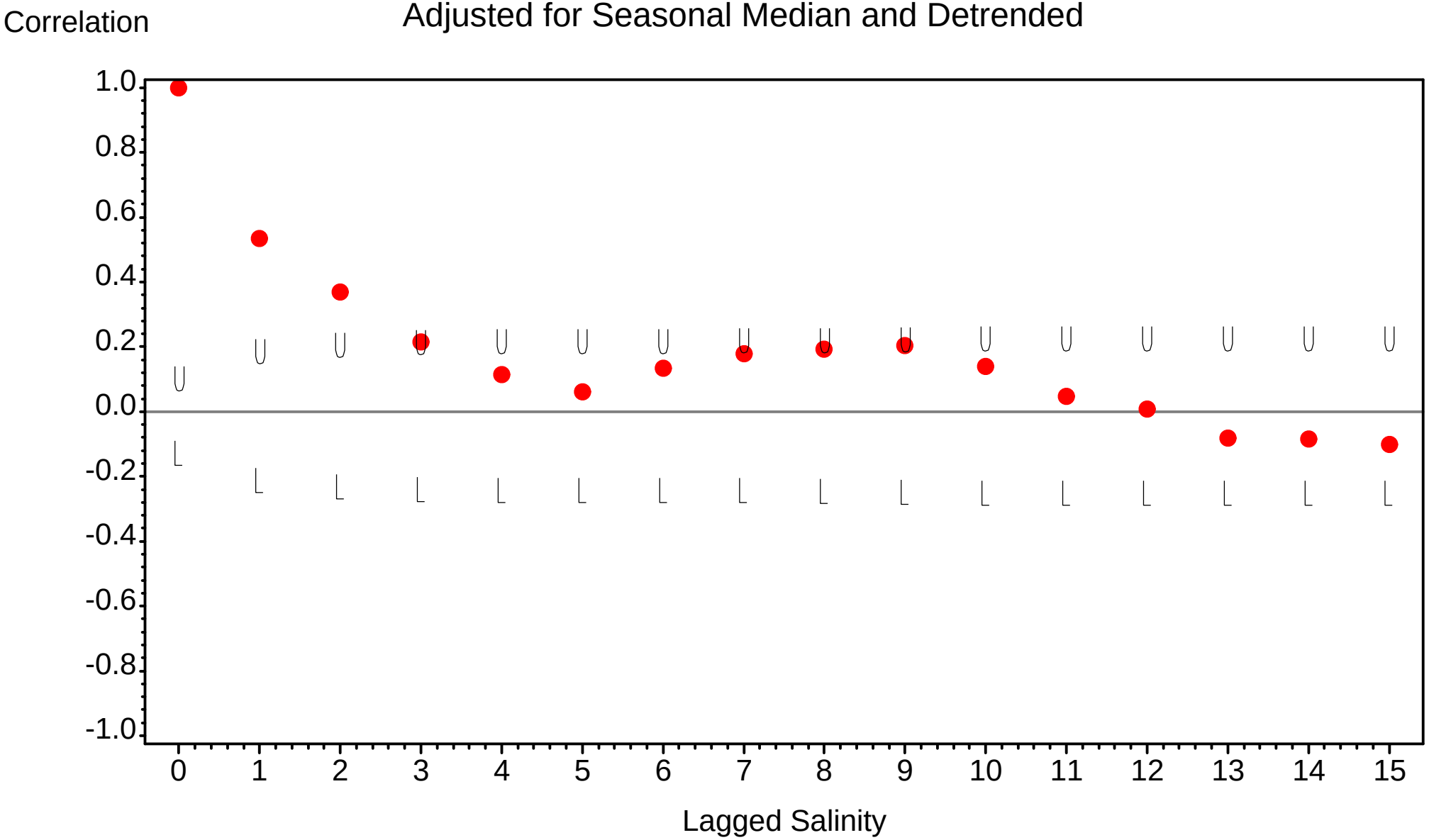
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.535	0.100	0.200	-0.200
2	0.369	0.109	0.218	-0.218
3	0.214	0.113	0.226	-0.226
4	0.115	0.115	0.229	-0.229
5	0.061	0.115	0.230	-0.230
6	0.134	0.115	0.230	-0.230
7	0.179	0.116	0.231	-0.231
8	0.192	0.116	0.233	-0.233
9	0.204	0.118	0.235	-0.235
10	0.139	0.119	0.237	-0.237
11	0.046	0.119	0.238	-0.238
12	0.007	0.119	0.239	-0.239
13	-0.083	0.119	0.239	-0.239
14	-0.085	0.119	0.239	-0.239
15	-0.100	0.120	0.239	-0.239

S_21FLVEMDHL10 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended

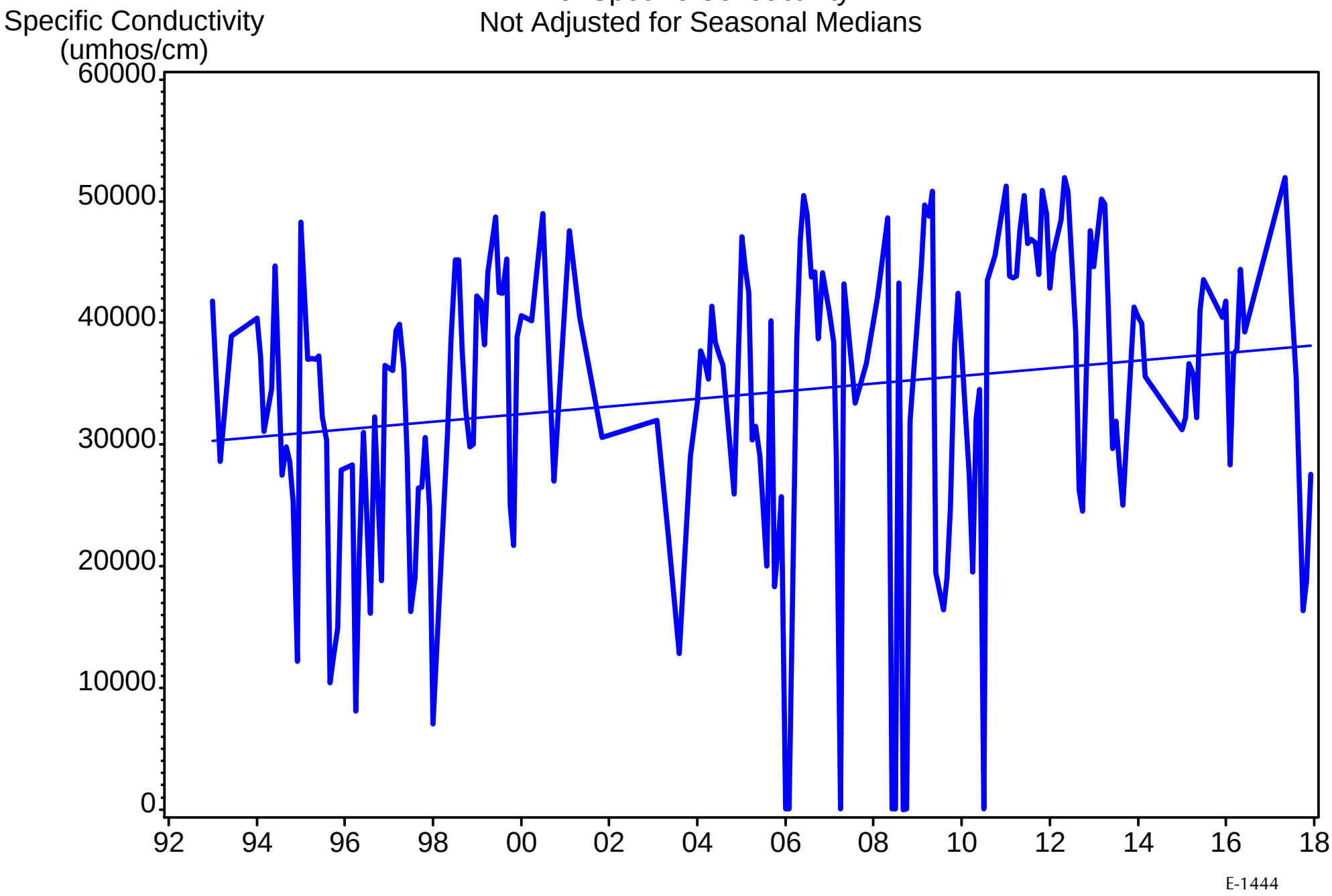


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

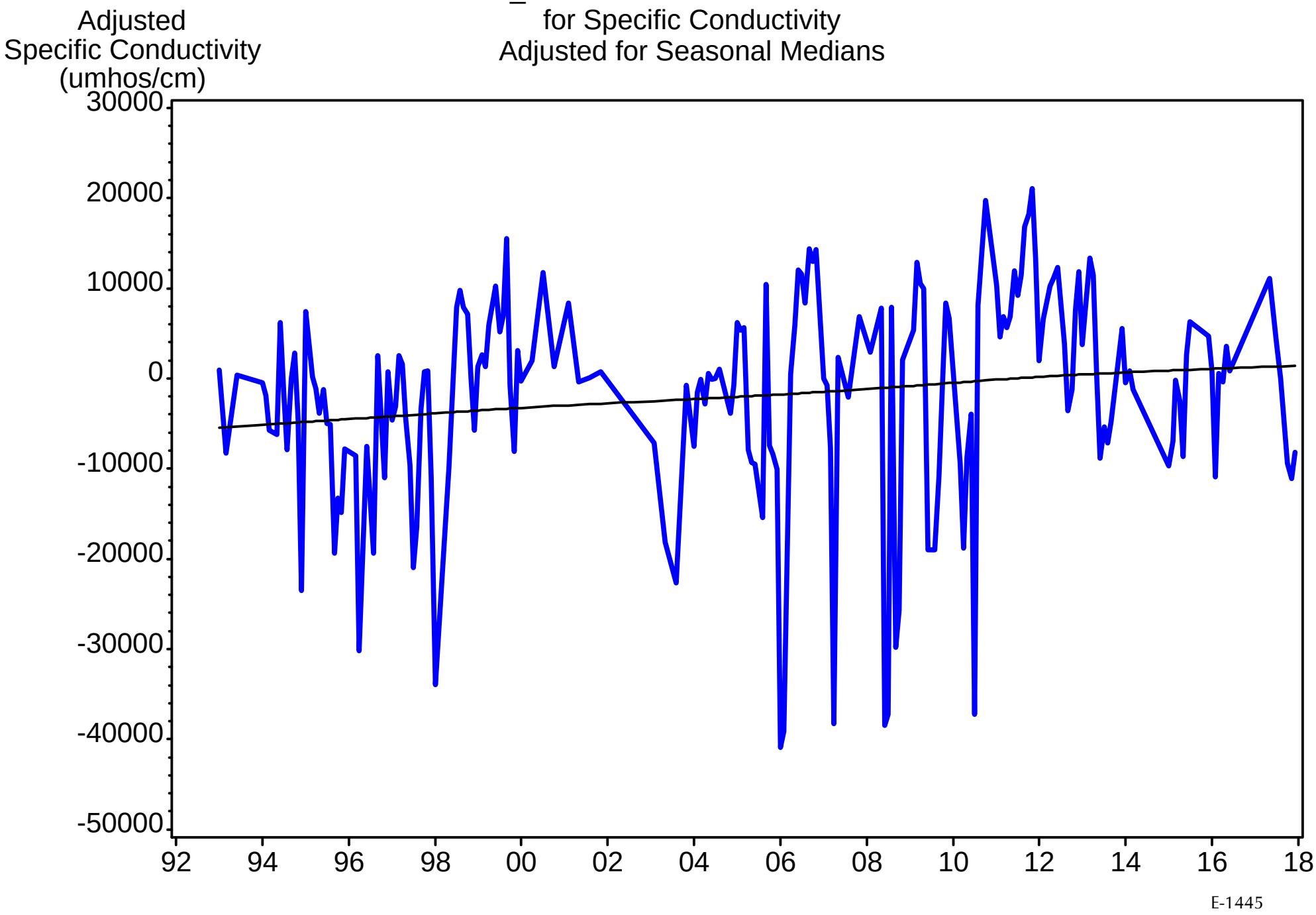
S_21FLVEMDHL10 Trends

S_21FLVEMDHL10 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



E-1444

S_21FLVEMDHL10 Trends

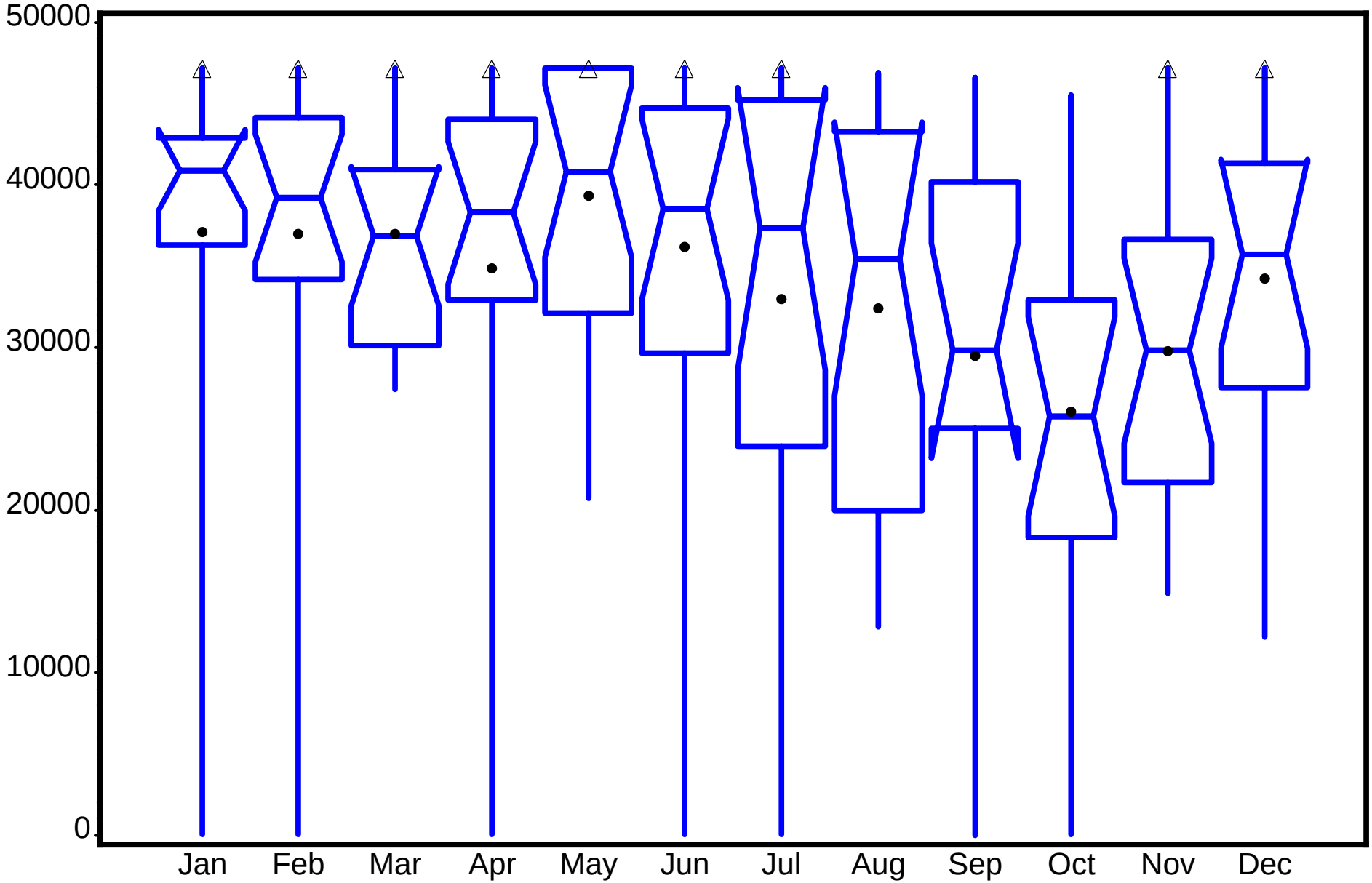


S_21FLVEMDHL10 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity

(umhos/cm)



E-1446

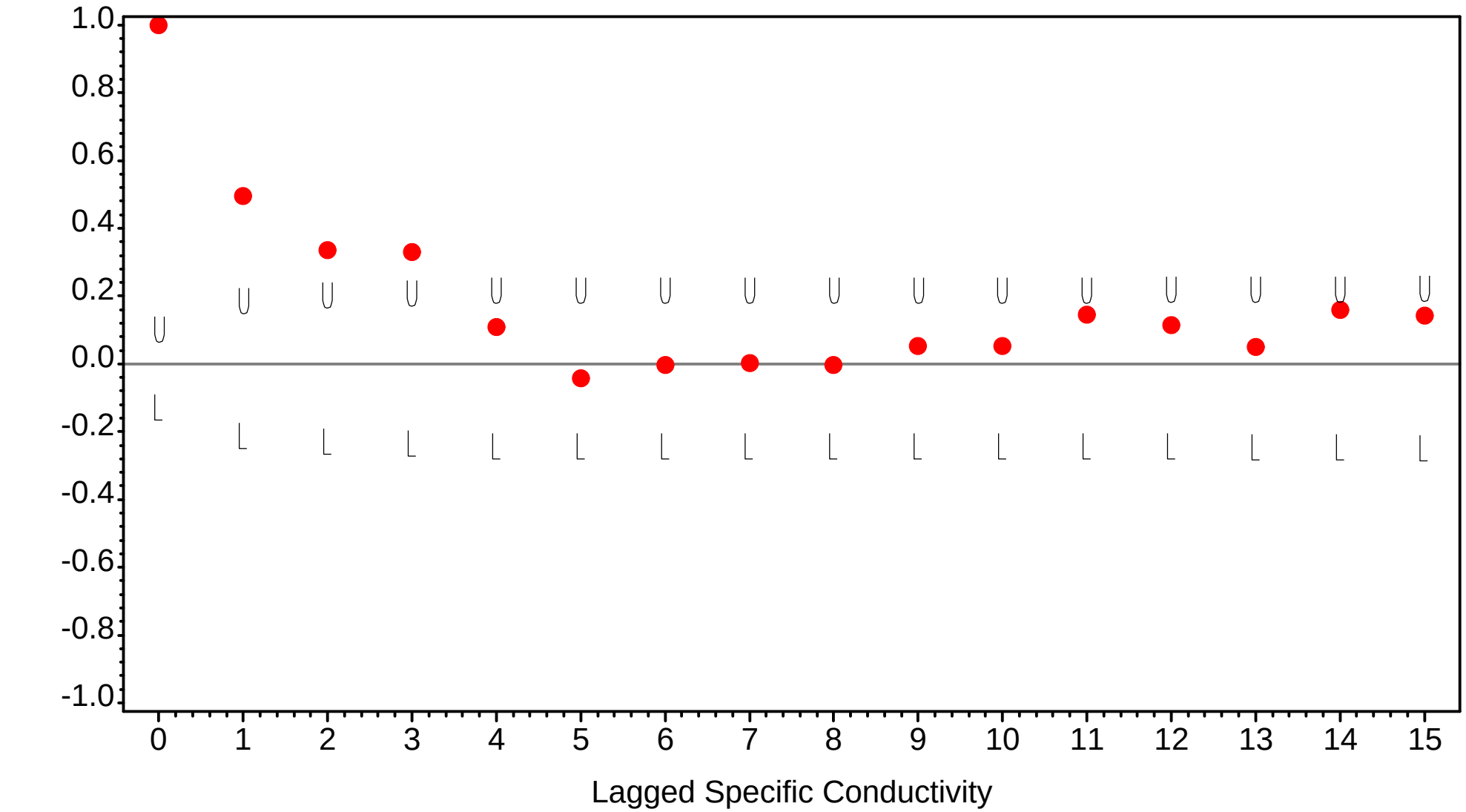
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.494	0.100	0.200	-0.200
2	0.335	0.108	0.216	-0.216
3	0.331	0.111	0.222	-0.222
4	0.110	0.114	0.229	-0.229
5	-0.043	0.115	0.230	-0.230
6	-0.003	0.115	0.230	-0.230
7	0.001	0.115	0.230	-0.230
8	-0.003	0.115	0.230	-0.230
9	0.054	0.115	0.230	-0.230
10	0.054	0.115	0.230	-0.230
11	0.146	0.115	0.230	-0.230
12	0.115	0.116	0.231	-0.231
13	0.049	0.116	0.232	-0.232
14	0.158	0.116	0.232	-0.232
15	0.142	0.117	0.234	-0.234

S_21FLVEMDHL10 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

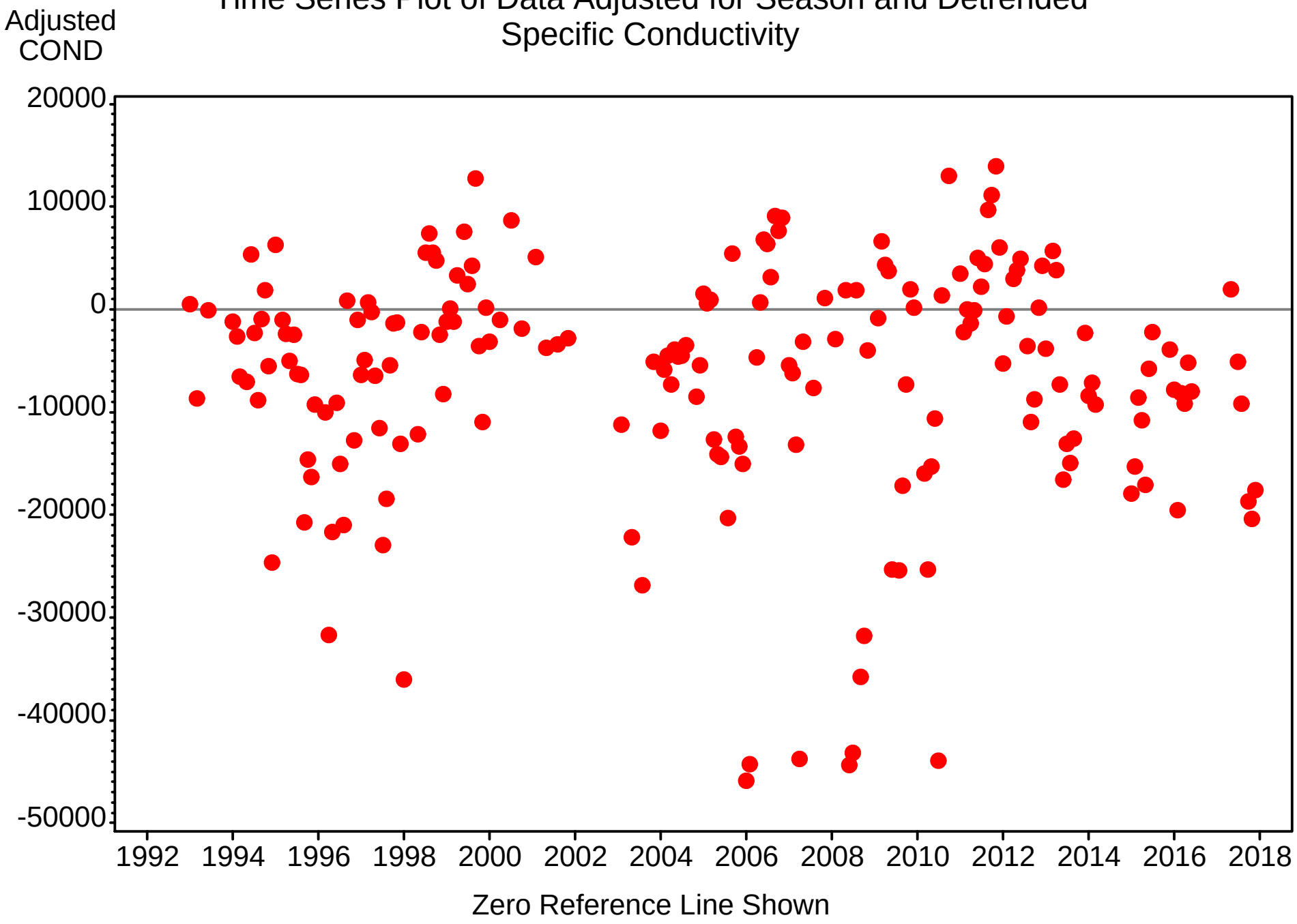
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.179	.001	0.054	360

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.17869	.000822067	0.054049	360

S_21FLVEMDHL10 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity

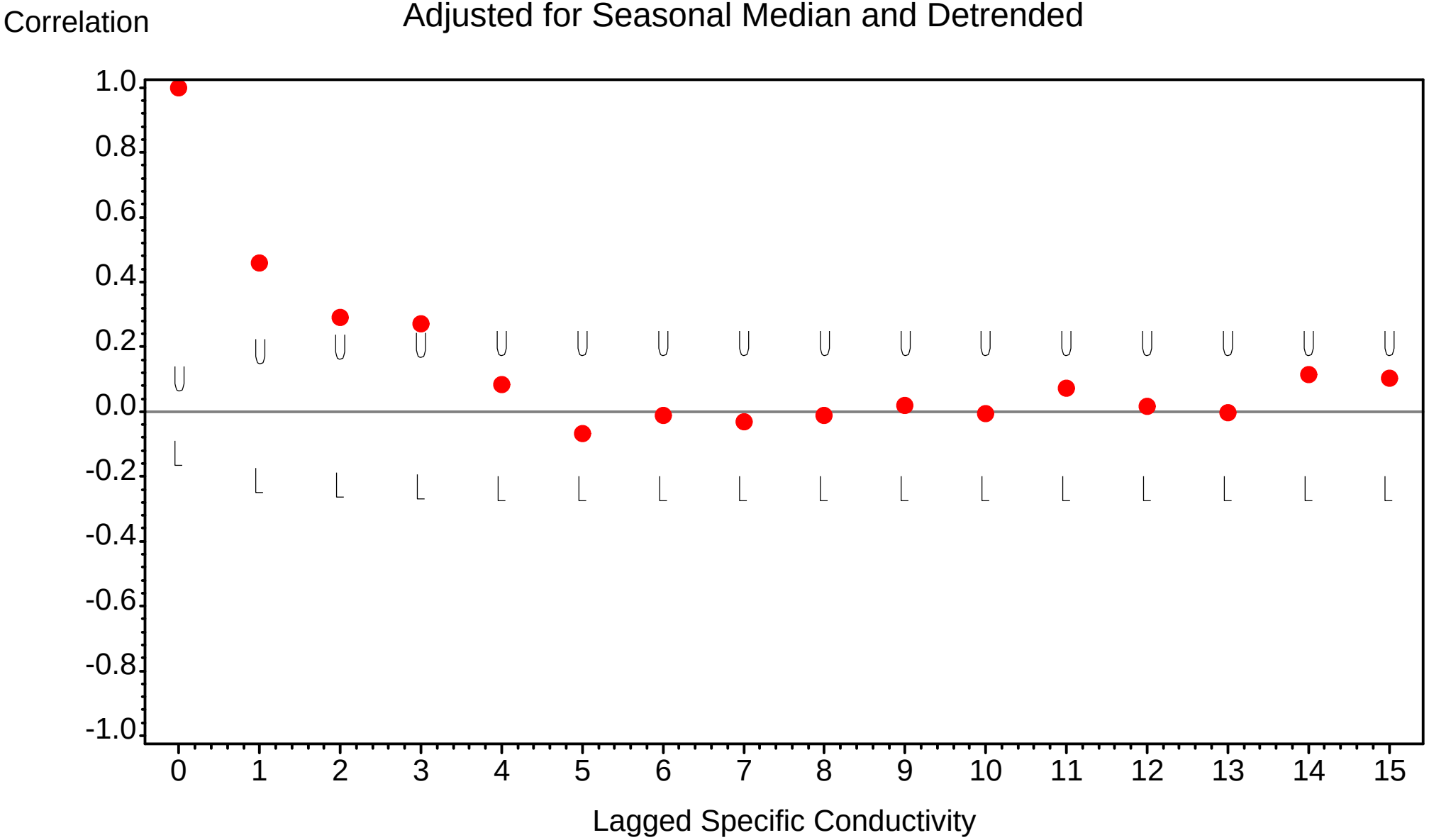


S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.459	0.100	0.200	-0.200
2	0.291	0.107	0.214	-0.214
3	0.272	0.109	0.219	-0.219
4	0.083	0.112	0.223	-0.223
5	-0.068	0.112	0.224	-0.224
6	-0.011	0.112	0.224	-0.224
7	-0.030	0.112	0.224	-0.224
8	-0.013	0.112	0.224	-0.224
9	0.019	0.112	0.224	-0.224
10	-0.007	0.112	0.224	-0.224
11	0.071	0.112	0.224	-0.224
12	0.017	0.112	0.224	-0.224
13	-0.003	0.112	0.224	-0.224
14	0.113	0.112	0.224	-0.224
15	0.103	0.113	0.225	-0.225

S_21FLVEMDHL10 Trends Appendix

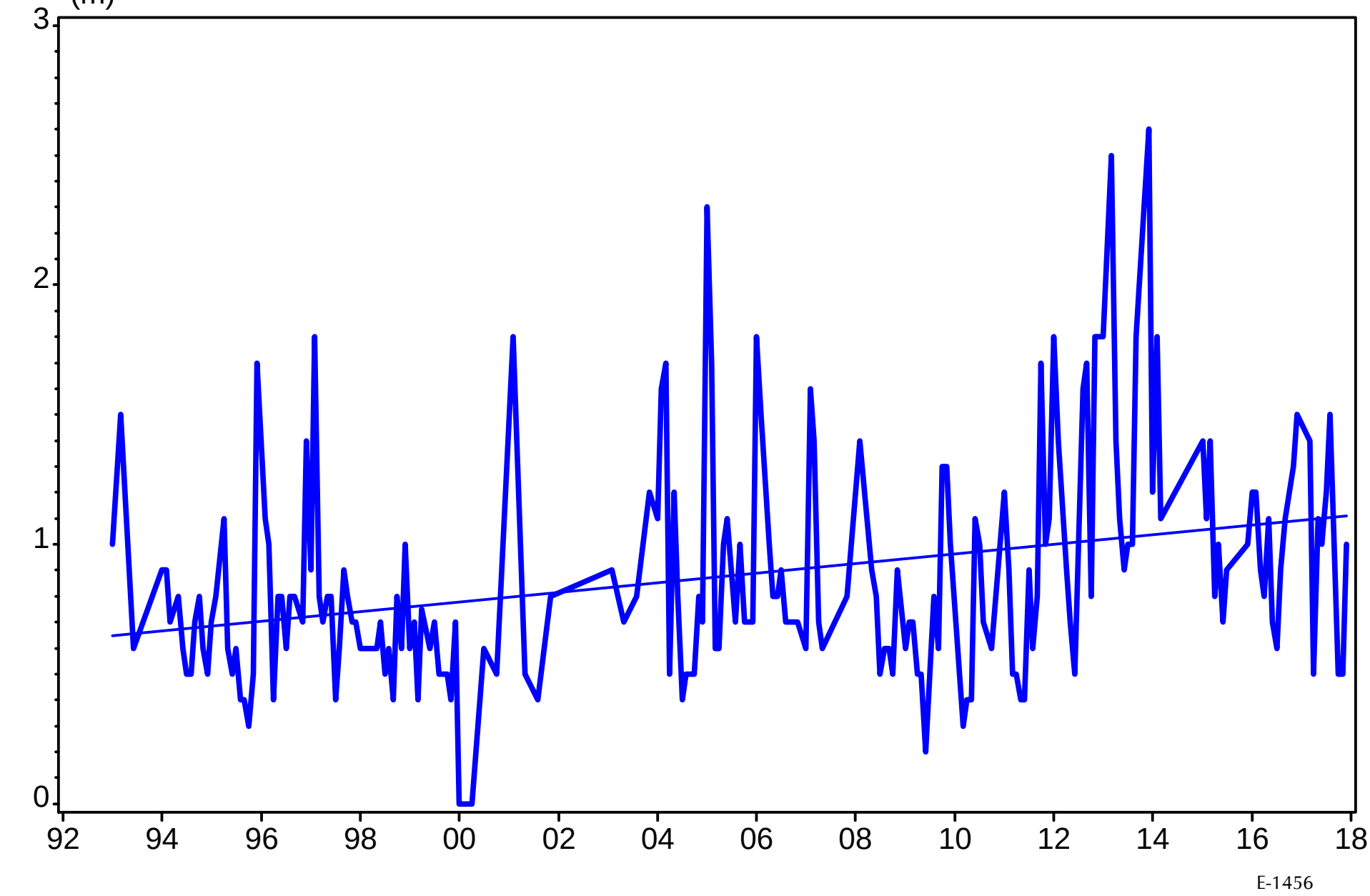
Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

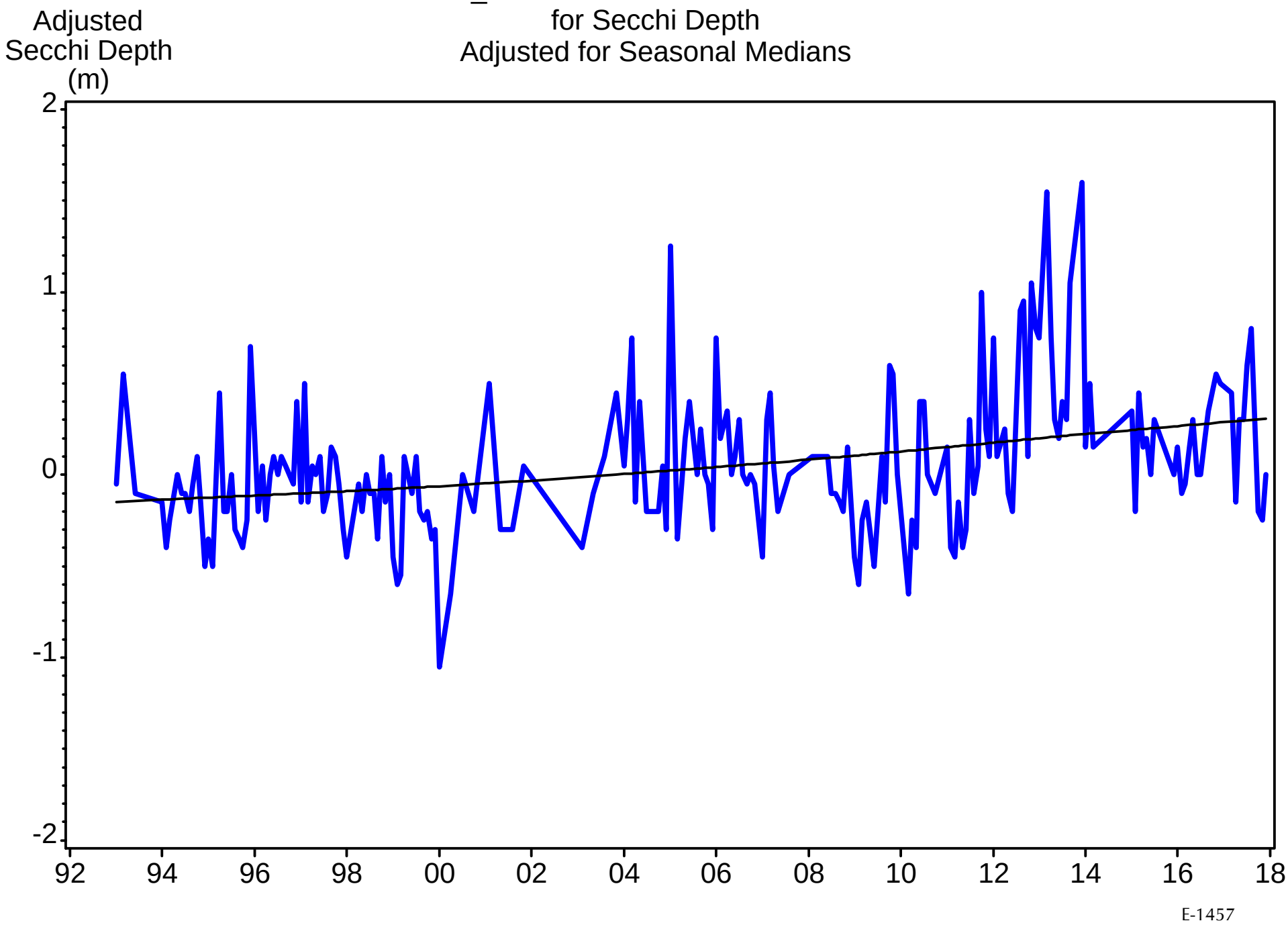
S_21FLVEMDHL10 Trends

S_21FLVEMDHL10 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



E-1456

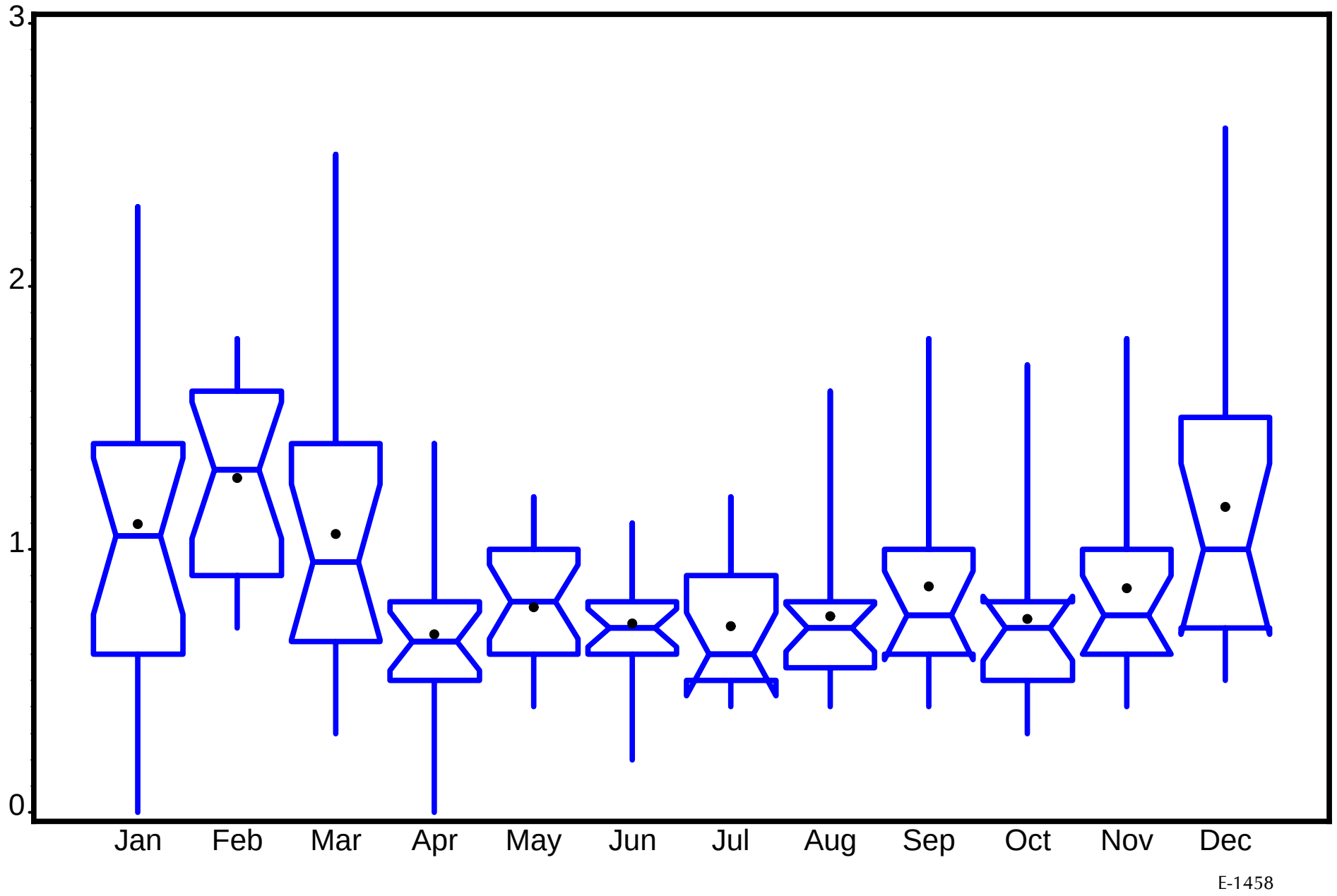
S_21FLVEMDHL10 Trends



S_21FLVEMDHL10 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



E-1458

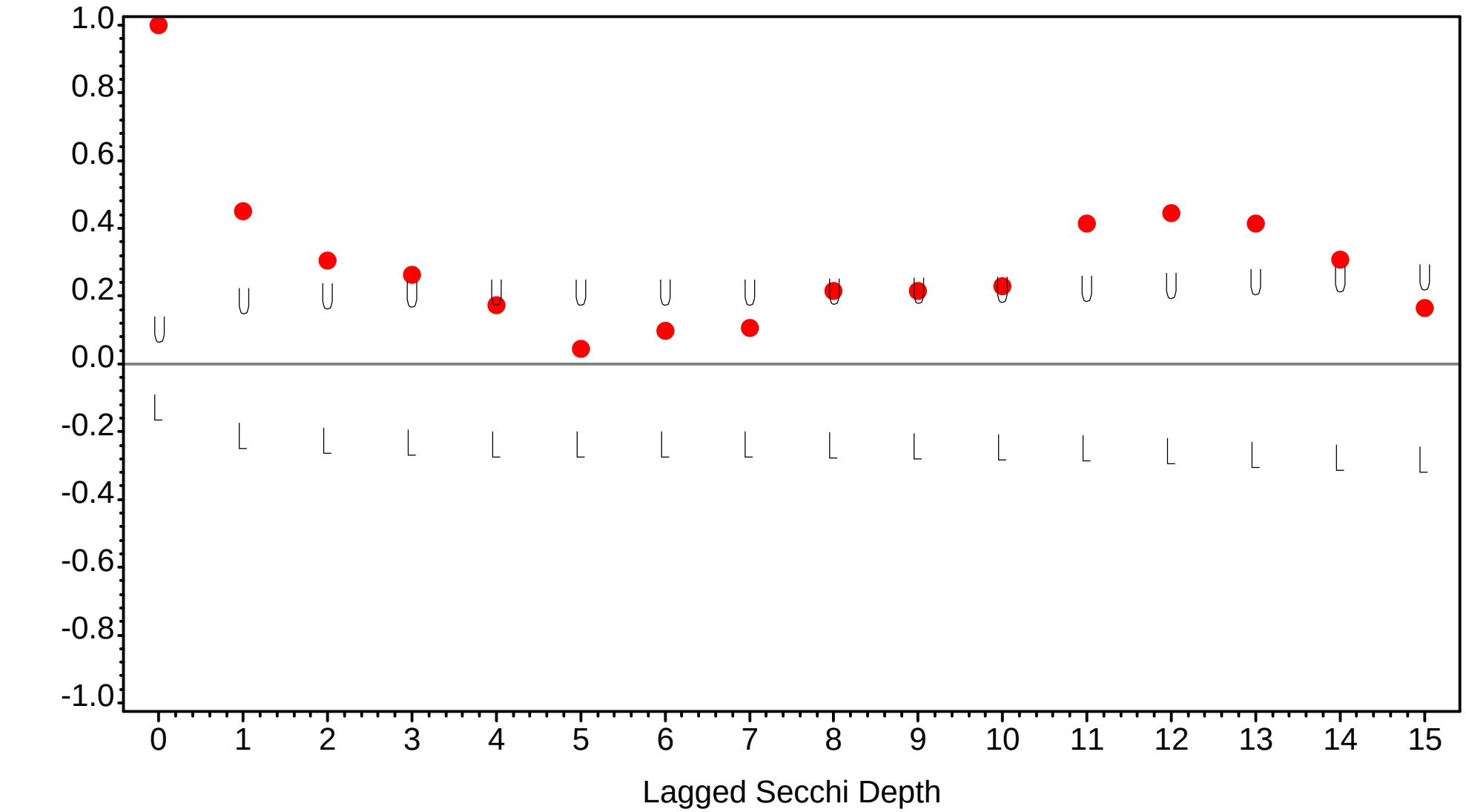
S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.450	0.100	0.200	-0.200
2	0.306	0.107	0.213	-0.213
3	0.262	0.109	0.219	-0.219
4	0.174	0.111	0.223	-0.223
5	0.044	0.112	0.225	-0.225
6	0.098	0.112	0.225	-0.225
7	0.107	0.113	0.225	-0.225
8	0.214	0.113	0.226	-0.226
9	0.214	0.114	0.229	-0.229
10	0.230	0.116	0.232	-0.232
11	0.414	0.117	0.235	-0.235
12	0.446	0.122	0.244	-0.244
13	0.415	0.127	0.255	-0.255
14	0.307	0.132	0.264	-0.264
15	0.166	0.134	0.268	-0.268

S_21FLVEMDHL10 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

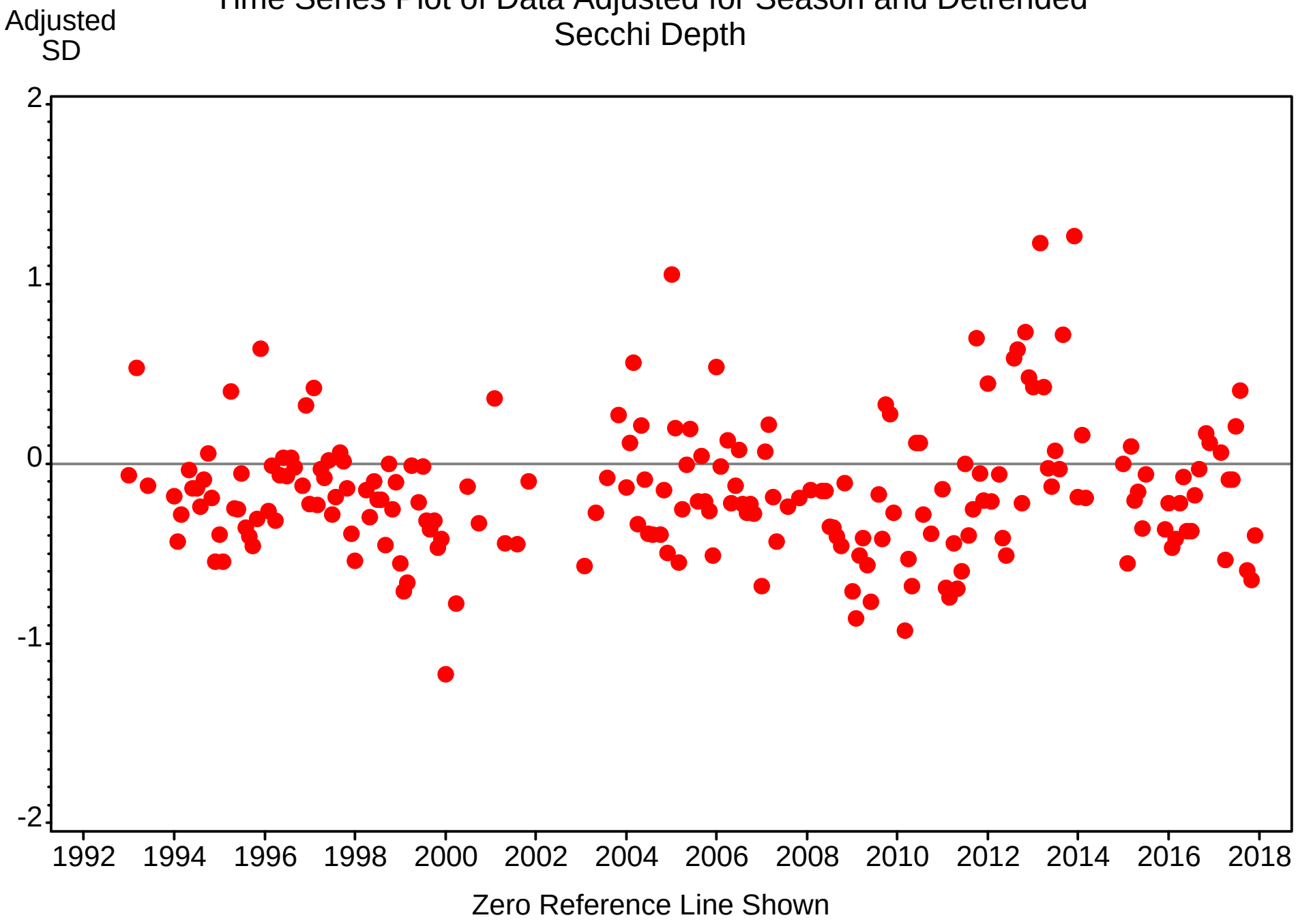
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.246	0	.004	0.015

S_21FLVEMDHL10 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.24589	.000001311	.00428641	0.015385

S_21FLVEMDHL10 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth



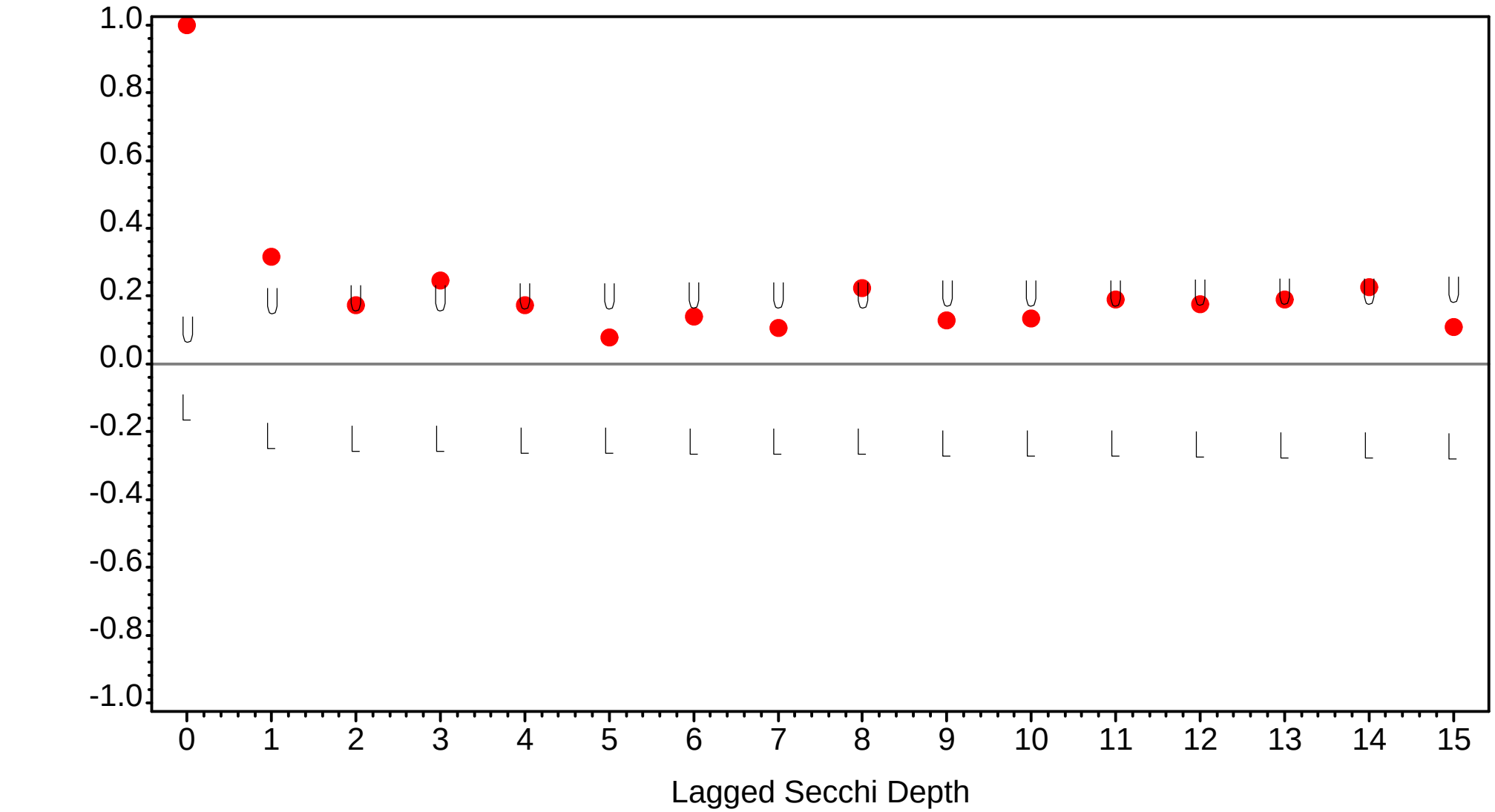
E-1463

S_21FLVEMDHL10 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.058	0.115	-0.115
1	0.315	0.100	0.200	-0.200
2	0.172	0.103	0.207	-0.207
3	0.247	0.104	0.208	-0.208
4	0.173	0.106	0.212	-0.212
5	0.079	0.107	0.214	-0.214
6	0.139	0.107	0.215	-0.215
7	0.107	0.108	0.216	-0.216
8	0.224	0.108	0.216	-0.216
9	0.127	0.110	0.220	-0.220
10	0.135	0.110	0.221	-0.221
11	0.191	0.111	0.222	-0.222
12	0.175	0.112	0.224	-0.224
13	0.189	0.113	0.226	-0.226
14	0.227	0.114	0.228	-0.228
15	0.110	0.115	0.231	-0.231

S_21FLVEMDHL10 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
17	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
18	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
19	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
20	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
21	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
17	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
18	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
19	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
20	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
21	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
17	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
18	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
19	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
20	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
21	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
22	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.15
23	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28	0.99
24	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67	1.60
25	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.27
26	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90	2.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope	adj_Tau
22	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017	-0.14839
23	Y	Y	N	N	-0.132	0.057	0.124	-0.001	-0.13170
24	Y	Y	N	N	0.150	0.038	0.109	0.103	0.15026
25	N	Y	Y	Y	0.141	0.033	0.135	357.337	0.14103
26	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014	-0.08367

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
23	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
24	0.03776	0.10869	0.103	0.15026	0.03776	0.103
25	0.03319	0.13465	357.337	0.14100	0.13500	357.337
26	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
27	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48	1.87
28	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00	0.20
29	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00	1.03
30	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.75
31	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43	1.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
27	Y	Y	Y	Y	0.090	0.188	0.382	0.156	0.08974
28	N	Y	Y	Y	0.153	0.020	0.128	0.254	0.15317
29	Y	Y	N	N	0.109	0.084	0.181	0.000	0.10913
30	Y	Y	Y	Y	0.015	0.858	0.907	0.001	0.01504
31	Y	Y	N	N	-0.115	0.116	0.160	-0.001	-0.12022

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
27	0.18759	0.38162	0.156	0.08974	0.38162	0.156
28	0.01994	0.12793	0.254	0.15300	0.12800	0.254
29	0.08403	0.18091	0.000	0.10913	0.08403	0.000
30	0.85776	0.90700	0.001	0.01504	0.90700	0.001
31	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
32	S_21FLVEMDHL05	S_21FLVEMDHL05	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.66	0.74
33	S_21FLVEMDHL05	S_21FLVEMDHL05	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.71
34	S_21FLVEMDHL05	S_21FLVEMDHL05	DO	Dissolved Oxygen	(mg/L)	22	30	2.01	2.54
35	S_21FLVEMDHL05	S_21FLVEMDHL05	DOSAT	Dissolved Oxygen	(%)	32	40	1.41	2.00
36	S_21FLVEMDHL05	S_21FLVEMDHL05	SALIN	Salinity	(psu)	52	60	-9999.00	0.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
32	Y	Y	Y	Y	0.145	0.032	0.115	0.086	0.14507
33	Y	Y	Y	Y	0.085	0.174	0.337	182.245	0.08502
34	Y	N	N	N	-0.149	0.017	0.110	-0.023	-0.14929
35	Y	Y	N	N	0.081	0.199	0.362	0.114	0.08126
36	Y	Y	N	N	0.060	0.339	0.502	0.082	0.05987

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
32	0.03182	0.11509	0.086	0.14507	0.11509	0.086
33	0.17411	0.33661	182.245	0.08502	0.33661	182.245
34	0.01704	0.11000	-0.023	-0.14929	0.01704	-0.023
35	0.19863	0.36237	0.114	0.08126	0.19863	0.114
36	0.33872	0.50152	0.082	0.05987	0.33872	0.082

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
37	S_21FLVEMDHL05	S_21FLVEMDHL05	SD	Secchi Depth	(m)	72	80	0.38	1.10
38	S_21FLVEMDHL05	S_21FLVEMDHL05	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.81
39	S_21FLVEMDHL05	S_21FLVEMDHL05	TP	Total Phosphorus	(mg/L)	12	20	0.80	0.83
40	S_21FLVEMDHL06	S_21FLVEMDHL06	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.28	0.01
41	S_21FLVEMDHL06	S_21FLVEMDHL06	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.76

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
37	Y	N	N	N	0.047	0.468	0.545	0.000	0.04654
38	Y	Y	Y	Y	-0.146	0.037	0.227	-0.009	-0.14590
39	Y	Y	N	N	-0.030	0.675	0.690	0.000	-0.02972
40	Y	N	N	N	0.024	0.729	0.758	0.016	0.02423
41	Y	Y	Y	Y	0.105	0.092	0.238	239.000	0.10454

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
37	0.46800	0.54466	0.000	0.04654	0.46800	0.000
38	0.03661	0.22687	-0.009	-0.14590	0.22687	-0.009
39	0.67549	0.68953	0.000	-0.02972	0.67549	0.000
40	0.72880	0.75791	0.016	0.02423	0.72880	0.016
41	0.09156	0.23833	239.000	0.10454	0.23833	239.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
42	S_21FLVEMDHL06	S_21FLVEMDHL06	DO	Dissolved Oxygen	(mg/L)	22	30	2.05	2.52
43	S_21FLVEMDHL06	S_21FLVEMDHL06	DOSAT	Dissolved Oxygen	(%)	32	40	1.25	1.99
44	S_21FLVEMDHL06	S_21FLVEMDHL06	SALIN	Salinity	(psu)	52	60	-9999.00	0.74
45	S_21FLVEMDHL06	S_21FLVEMDHL06	SD	Secchi Depth	(m)	72	80	0.69	0.94
46	S_21FLVEMDHL06	S_21FLVEMDHL06	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
42	Y	N	N	N	-0.116	0.062	0.197	-0.017	-0.11576
43	Y	Y	N	N	0.080	0.201	0.322	0.088	0.08045
44	Y	Y	Y	Y	0.090	0.143	0.319	0.138	0.09026
45	Y	Y	Y	Y	0.047	0.458	0.500	0.000	0.04707
46	Y	Y	Y	Y	-0.126	0.072	0.357	-0.011	-0.12577

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
42	0.06243	0.19679	-0.017	-0.11576	0.06243	-0.017
43	0.20088	0.32170	0.088	0.08045	0.20088	0.088
44	0.14300	0.31855	0.138	0.09026	0.31855	0.138
45	0.45795	0.50041	0.000	0.04707	0.50041	0.000
46	0.07193	0.35680	-0.011	-0.12577	0.35680	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
47	S_21FLVEMDHL06	S_21FLVEMDHL06	TP	Total Phosphorus	(mg/L)	12	20	1.37	0.87
48	S_21FLVEMDHL07	S_21FLVEMDHL07	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.63	0.86
49	S_21FLVEMDHL07	S_21FLVEMDHL07	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.63
50	S_21FLVEMDHL07	S_21FLVEMDHL07	DO	Dissolved Oxygen	(mg/L)	22	30	0.95	2.67
51	S_21FLVEMDHL07	S_21FLVEMDHL07	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	1.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
47	Y	Y	N	N	-0.070	0.311	0.352	-0.001	-0.07004
48	Y	Y	N	N	-0.072	0.299	0.400	-0.064	-0.07206
49	Y	Y	Y	Y	0.087	0.169	0.316	185.539	0.08720
50	Y	N	Y	N	-0.184	0.003	0.046	-0.029	-0.18418
51	Y	Y	N	N	0.008	0.910	0.929	0.000	0.00826

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
47	0.31141	0.35163	-0.001	-0.07004	0.31141	-0.001
48	0.29904	0.39997	-0.064	-0.07206	0.29904	-0.064
49	0.16902	0.31573	185.539	0.08720	0.31573	185.539
50	0.00342	0.04576	-0.029	-0.18418	0.00342	-0.029
51	0.91015	0.92863	0.000	0.00826	0.91015	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
52	S_21FLVEMDHL07	S_21FLVEMDHL07	SALIN	Salinity	(psu)	52	60	-9999.00	0.71
53	S_21FLVEMDHL07	S_21FLVEMDHL07	SD	Secchi Depth	(m)	72	80	0.57	1.17
54	S_21FLVEMDHL07	S_21FLVEMDHL07	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.36
55	S_21FLVEMDHL07	S_21FLVEMDHL07	TP	Total Phosphorus	(mg/L)	12	20	1.44	0.84
56	S_21FLVEMDHL08	S_21FLVEMDHL08	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.14	1.34

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
52	Y	Y	Y	Y	0.073	0.250	0.428	0.107	0.07253
53	Y	Y	N	N	0.025	0.714	0.742	0.000	0.02457
54	Y	Y	Y	Y	-0.185	0.009	0.183	-0.017	-0.18331
55	Y	Y	N	N	0.002	1.000	1.000	0.000	0.00159
56	Y	Y	Y	Y	-0.071	0.214	0.403	-0.051	-0.07149

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
52	0.25004	0.42819	0.107	0.07253	0.42819	0.107
53	0.71425	0.74214	0.000	0.02457	0.71425	0.000
54	0.00999	0.18667	-0.017	-0.18331	0.18667	-0.017
55	1.00000	1.00000	0.000	0.00159	1.00000	0.000
56	0.21416	0.40266	-0.051	-0.07149	0.40266	-0.051

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
57	S_21FLVEMDHL08	S_21FLVEMDHL08	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.59
58	S_21FLVEMDHL08	S_21FLVEMDHL08	DO	Dissolved Oxygen	(mg/L)	22	30	0.75	2.49
59	S_21FLVEMDHL08	S_21FLVEMDHL08	DOSAT	Dissolved Oxygen	(%)	32	40	0.22	1.87
60	S_21FLVEMDHL08	S_21FLVEMDHL08	SALIN	Salinity	(psu)	52	60	-9999.00	0.65
61	S_21FLVEMDHL08	S_21FLVEMDHL08	SD	Secchi Depth	(m)	72	80	0.27	2.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
57	Y	Y	Y	Y	0.120	0.020	0.160	254.845	0.11995
58	Y	N	N	N	-0.232	0.000	0.009	-0.042	-0.23164
59	Y	Y	N	N	-0.152	0.003	0.037	-0.244	-0.15249
60	Y	Y	Y	Y	0.136	0.008	0.129	0.193	0.13555
61	Y	Y	Y	Y	0.143	0.004	0.056	0.007	0.14263

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
57	0.01993	0.16007	254.845	0.11995	0.16007	254.845
58	0.00001	0.00939	-0.042	-0.23164	0.00001	-0.042
59	0.00335	0.03715	-0.244	-0.15249	0.00335	-0.244
60	0.00785	0.12892	0.193	0.13555	0.12892	0.193
61	0.00378	0.05556	0.007	0.14263	0.05556	0.007

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
62	S_21FLVEMDHL08	S_21FLVEMDHL08	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
63	S_21FLVEMDHL08	S_21FLVEMDHL08	TP	Total Phosphorus	(mg/L)	12	20	1.44	1.44
64	S_21FLVEMDHL09	S_21FLVEMDHL09	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.80	1.15
65	S_21FLVEMDHL09	S_21FLVEMDHL09	COND	Specific Conductivity	(umhos/cm)	62	70	0.08	0.52
66	S_21FLVEMDHL09	S_21FLVEMDHL09	DO	Dissolved Oxygen	(mg/L)	22	30	1.27	2.71
67	S_21FLVEMDHL09	S_21FLVEMDHL09	DOSAT	Dissolved Oxygen	(%)	32	40	0.70	1.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
62	Y	Y	Y	Y	0.028	0.718	0.811	0.003	0.02768
63	Y	Y	Y	Y	-0.190	0.007	0.042	-0.002	-0.19024
64	Y	Y	N	N	-0.127	0.021	0.085	-0.096	-0.12661
65	Y	Y	Y	Y	0.096	0.054	0.237	198.000	0.09624
66	Y	N	N	N	-0.220	0.000	0.020	-0.044	-0.21971
67	Y	Y	Y	Y	-0.050	0.319	0.474	-0.033	-0.05033

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
62	0.71842	0.81125	0.003	0.02768	0.81125	0.003
63	0.00697	0.04239	-0.002	-0.19024	0.04239	-0.002
64	0.02055	0.08517	-0.096	-0.12661	0.02055	-0.096
65	0.05369	0.23662	198.000	0.09624	0.23662	198.000
66	0.00001	0.02045	-0.044	-0.21971	0.00001	-0.044
67	0.31942	0.47358	-0.033	-0.05033	0.47358	-0.033

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
68	S_21FLVEMDHL09	S_21FLVEMDHL09	SALIN	Salinity	(psu)	52	60	-9999.00	0.64
69	S_21FLVEMDHL09	S_21FLVEMDHL09	SD	Secchi Depth	(m)	72	80	-9999.00	1.87
70	S_21FLVEMDHL09	S_21FLVEMDHL09	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
71	S_21FLVEMDHL09	S_21FLVEMDHL09	TP	Total Phosphorus	(mg/L)	12	20	1.00	0.92
72	S_21FLVEMDHL10	S_21FLVEMDHL10	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.27	0.96

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
68	Y	Y	Y	Y	0.117	0.019	0.176	0.144	0.11657
69	Y	Y	N	N	0.211	0.000	0.006	0.009	0.21061
70	Y	Y	Y	Y	-0.102	0.133	0.421	-0.010	-0.10176
71	Y	N	Y	N	-0.204	0.002	0.037	-0.002	-0.20424
72	Y	Y	N	N	-0.182	0.002	0.046	-0.117	-0.18198

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
68	0.01858	0.17621	0.144	0.11657	0.17621	0.144
69	0.00002	0.00602	0.009	0.21061	0.00002	0.009
70	0.13329	0.42067	-0.010	-0.10176	0.42067	-0.010
71	0.00203	0.03704	-0.002	-0.20424	0.00203	-0.002
72	0.00179	0.04648	-0.117	-0.18198	0.00179	-0.117

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
73	S_21FLVEMDHL10	S_21FLVEMDHL10	COND	Specific Conductivity	(umhos/cm)	62	70	0.01	0.50
74	S_21FLVEMDHL10	S_21FLVEMDHL10	DO	Dissolved Oxygen	(mg/L)	22	30	1.18	2.57
75	S_21FLVEMDHL10	S_21FLVEMDHL10	DOSAT	Dissolved Oxygen	(%)	32	40	0.91	1.88
76	S_21FLVEMDHL10	S_21FLVEMDHL10	SALIN	Salinity	(psu)	52	60	-9999.00	0.81
77	S_21FLVEMDHL10	S_21FLVEMDHL10	SD	Secchi Depth	(m)	72	80	-9999.00	1.83

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
73	N	Y	Y	Y	0.179	0.001	0.054	360.000	0.17869
74	Y	N	N	N	-0.275	0.000	0.009	-0.063	-0.27487
75	Y	Y	N	N	-0.206	0.000	0.020	-0.446	-0.20622
76	Y	Y	Y	Y	0.206	0.000	0.036	0.271	0.20579
77	Y	Y	N	N	0.246	0.000	0.004	0.015	0.24589

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
73	0.00082	0.05405	360.000	0.17900	0.05400	360.000
74	0.00000	0.00913	-0.063	-0.27487	0.00000	-0.063
75	0.00014	0.01957	-0.446	-0.20622	0.00014	-0.446
76	0.00010	0.03558	0.271	0.20579	0.03558	0.271
77	0.00000	0.00429	0.015	0.24589	0.00000	0.015

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
78	S_21FLVEMDHL10	S_21FLVEMDHL10	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.02
79	S_21FLVEMDHL10	S_21FLVEMDHL10	TP	Total Phosphorus	(mg/L)	12	20	1.66	0.56
80	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	1.38
81	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23	0.08
82	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47	2.09

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
78	Y	Y	Y	Y	0.027	0.731	0.835	0.005	0.02745
79	Y	Y	N	N	-0.322	0.000	0.002	-0.004	-0.32156
80	Y	Y	Y	Y	0.074	0.356	0.527	0.052	0.07383
81	N	Y	Y	Y	0.090	0.212	0.347	225.098	0.08958
82	Y	N	N	N	-0.099	0.163	0.243	-0.023	-0.09906

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
78	0.73102	0.83542	0.005	0.02745	0.83542	0.005
79	0.00001	0.00156	-0.004	-0.32156	0.00001	-0.004
80	0.35568	0.52706	0.052	0.07383	0.52706	0.052
81	0.21156	0.34660	225.098	0.09000	0.34700	225.098
82	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
83	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56	2.11
84	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09	0.29
85	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00	-9999.00
86	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.04
87	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	0.45
88	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.33

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
83	Y	N	N	N	0.046	0.549	0.573	0.109	0.04571
84	N	Y	Y	Y	0.155	0.028	0.107	0.318	0.15482
85	N	Y	N	N	0.192	0.005	0.044	0.011	0.19225
86	Y	Y	N	N	-0.161	0.045	0.205	-0.029	-0.16145
87	N	N	N	N	0.021	0.810	0.860	0.000	0.02128
88	N	Y	N	N	0.049	0.531	0.675	0.023	0.04851

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
83	0.54949	0.57310	0.109	0.04571	0.54949	0.109
84	0.02802	0.10656	0.318	0.15500	0.10700	0.318
85	0.00486	0.04449	0.011	0.19200	0.00500	0.011
86	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
87	0.80954	0.86021	0.000	0.02100	0.81000	0.000
88	0.53077	0.67536	0.023	0.04900	0.53100	0.023

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
89	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09	0.79
90	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16	2.35
91	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00	2.11
92	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00	0.98
93	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61	1.08
94	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.88

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
89	Y	Y	Y	Y	0.017	0.821	0.864	6.873	0.01671
90	Y	Y	N	N	-0.022	0.763	0.834	-0.004	-0.02159
91	Y	Y	Y	Y	0.049	0.487	0.514	0.154	0.04892
92	Y	Y	Y	Y	0.070	0.304	0.474	0.025	0.06955
93	Y	Y	N	N	0.064	0.330	0.509	0.000	0.06415
94	Y	Y	N	N	0.017	0.845	0.901	0.002	0.01724

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
89	0.82111	0.86399	6.874	0.01671	0.86399	6.874
90	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
91	0.48687	0.51426	0.154	0.04892	0.51426	0.154
92	0.30398	0.47368	0.025	0.06955	0.47368	0.025
93	0.32954	0.50893	0.000	0.06415	0.32954	0.000
94	0.84540	0.90084	0.002	0.01724	0.84540	0.002

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
95	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10	1.51
96	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	-9999.00
97	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82	1.12
98	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25	0.82
99	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	0.70
100	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73	1.54

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
95	Y	Y	Y	Y	0.050	0.519	0.695	0.000	0.05031
96	N	Y	N	N	0.078	0.299	0.360	0.020	0.07599
97	Y	N	Y	N	0.106	0.122	0.158	10.031	0.10598
98	Y	Y	N	N	-0.170	0.012	0.092	-0.059	-0.16974
99	Y	Y	N	N	-0.175	0.011	0.082	-0.515	-0.17479
100	Y	N	Y	N	0.092	0.169	0.290	0.004	0.09207

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
95	0.51900	0.69540	0.000	0.05031	0.69540	0.000
96	0.31036	0.36979	0.020	0.07800	0.29900	0.020
97	0.12166	0.15796	10.031	0.10598	0.12166	10.031
98	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059
99	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
100	0.16857	0.29012	0.004	0.09207	0.16857	0.004

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
101	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00	1.54
102	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.48
103	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00
104	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.44
105	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19	-9999.00
106	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42	2.33

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
101	Y	Y	Y	Y	0.094	0.155	0.427	0.007	0.09387
102	Y	Y	N	N	-0.031	0.706	0.812	-0.002	-0.03145
103	N	N	N	N	-0.023	0.786	0.871	0.000	-0.02254
104	N	Y	N	N	-0.142	0.074	0.219	-0.011	-0.14223
105	N	N	Y	N	0.085	0.243	0.291	2.029	0.08500
106	Y	Y	N	N	-0.040	0.591	0.737	-0.008	-0.03968

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
101	0.15479	0.42738	0.007	0.09387	0.42738	0.007
102	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
103	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
104	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011
105	0.24287	0.29095	2.029	0.08500	0.24300	2.029
106	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008

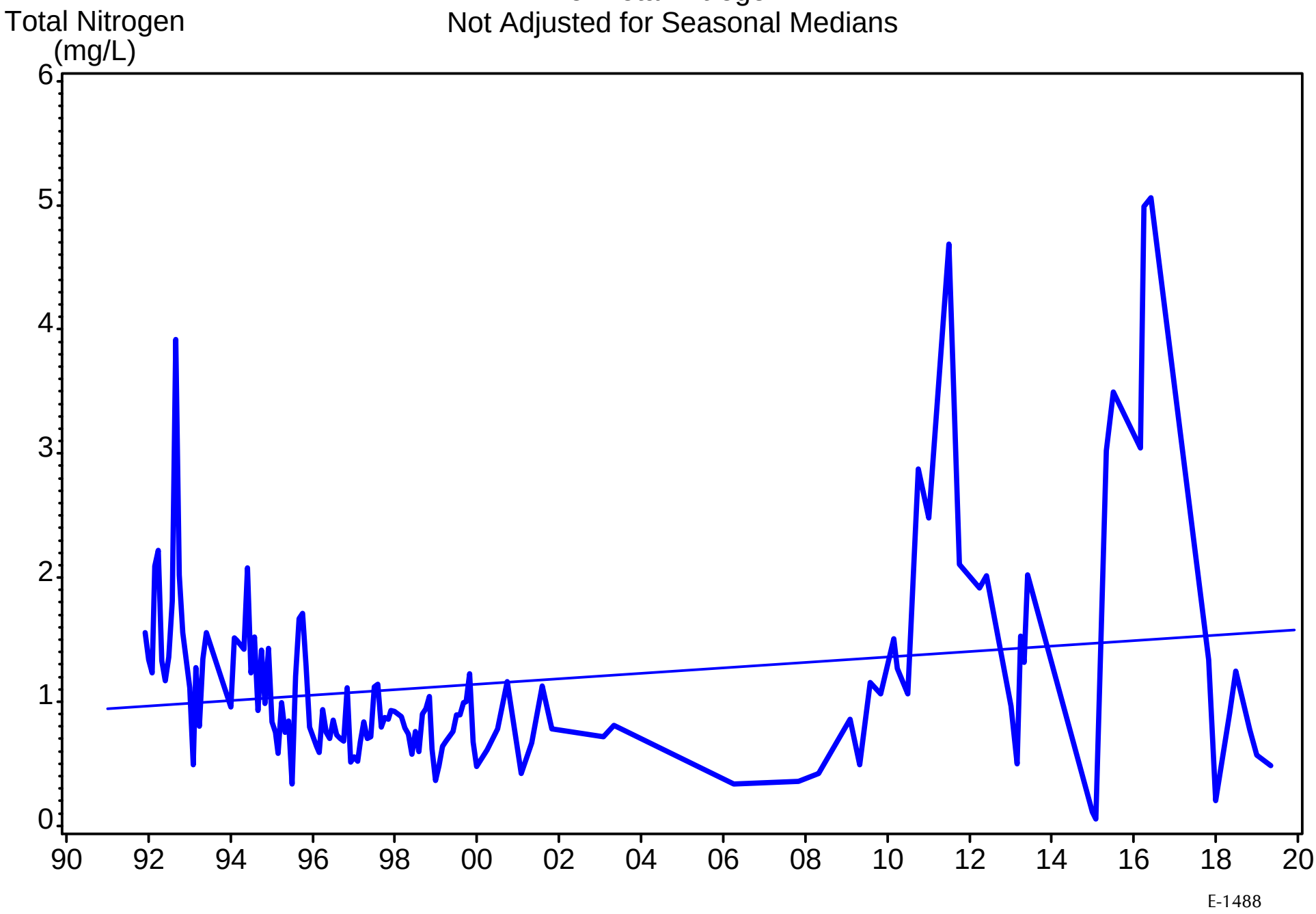
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
107	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81	1.77
108	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00	-9999.00
109	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00	0.68
110	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.31
111	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
107	Y	Y	N	N	0.027	0.725	0.823	0.034	0.02716
108	N	Y	Y	Y	0.123	0.076	0.159	0.001	0.12322
109	Y	Y	N	N	0.194	0.005	0.046	0.009	0.19383
110	N	Y	N	N	-0.241	0.003	0.076	-0.016	-0.24070
111	N	N	N	N	0.040	0.632	0.786	0.000	0.04009

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
107	0.72528	0.82342	0.034	0.02716	0.72528	0.034
108	0.07617	0.15857	0.001	0.12300	0.15900	0.001
109	0.00462	0.04647	0.009	0.19383	0.00462	0.009
110	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
111	0.63152	0.78567	0.000	0.04000	0.63200	0.000

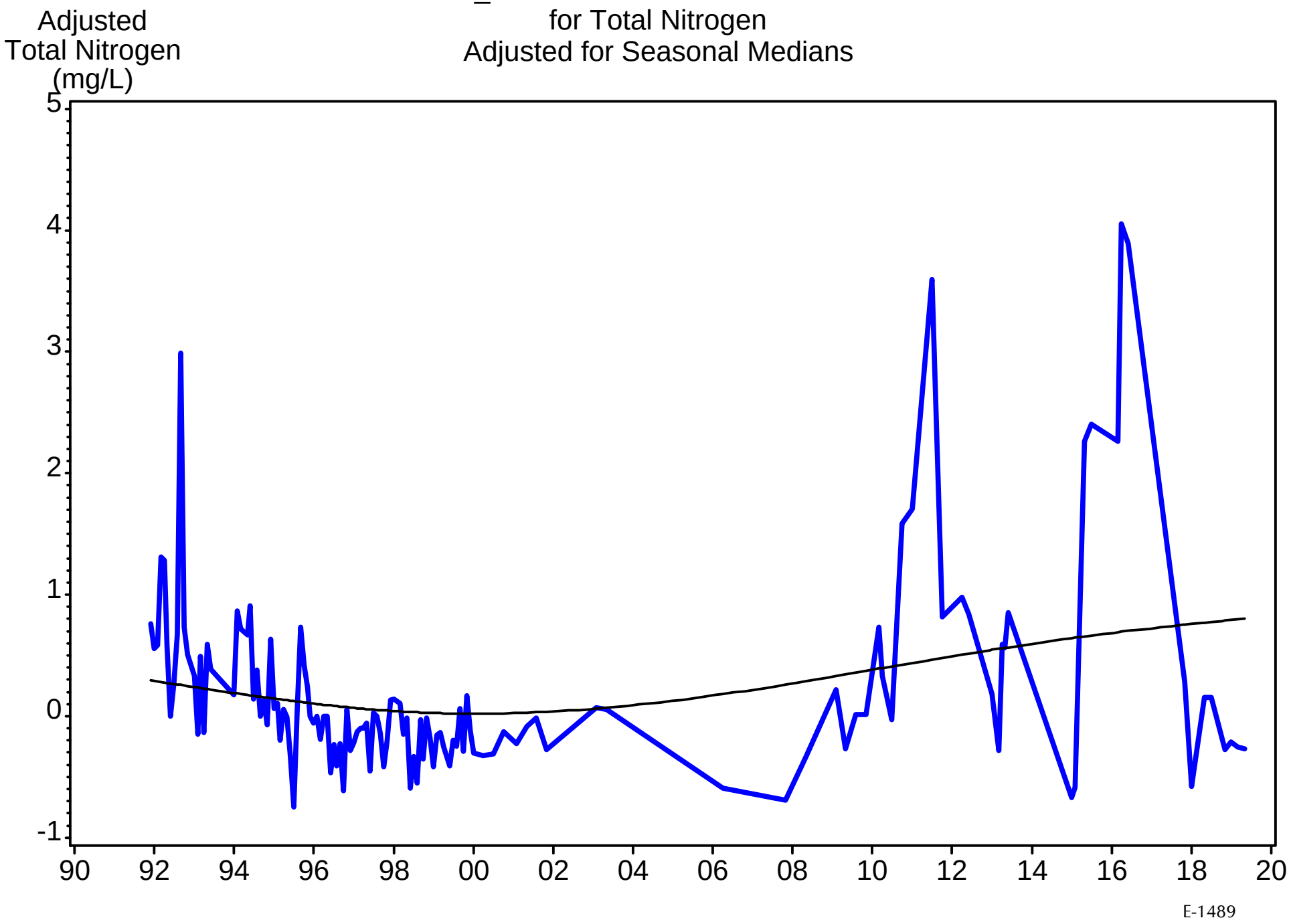
S_21FLVEMDHL11 Trends

S_21FLVEMDHL11 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



E-1488

S_21FLVEMDHL11 Trends

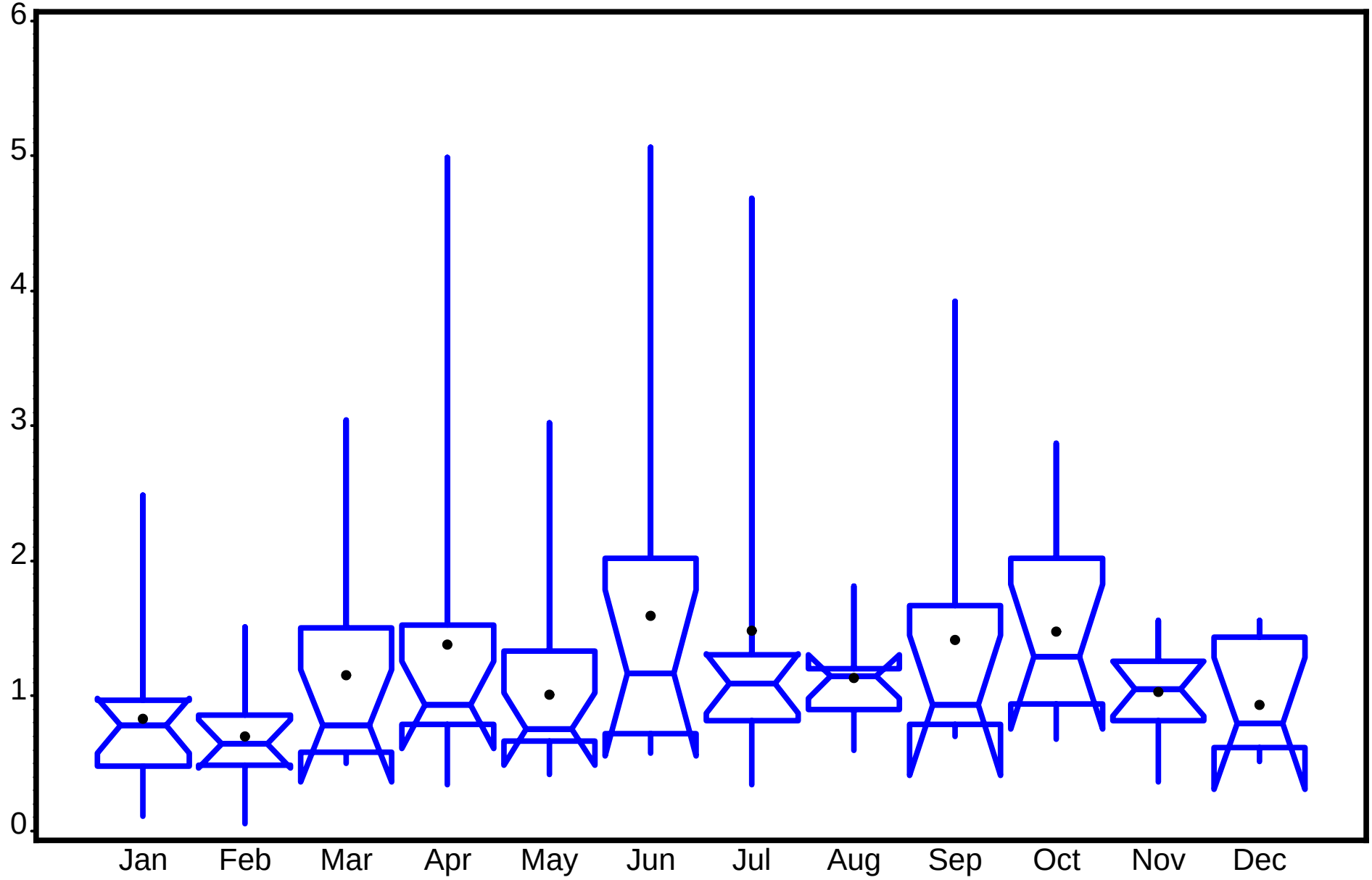


S_21FLVEMDHL11 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



E-1490

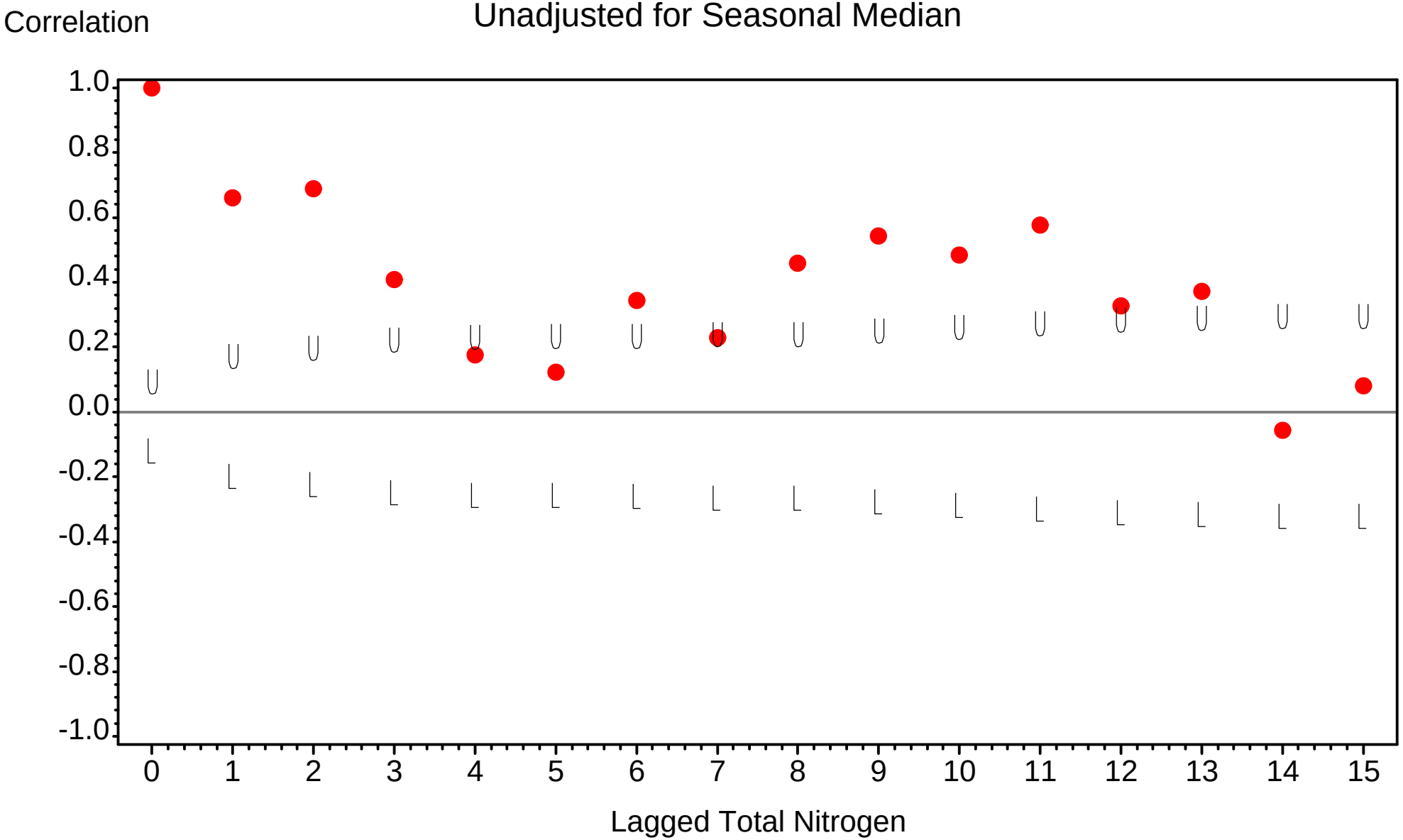
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.660	0.093	0.186	-0.186
2	0.689	0.105	0.211	-0.211
3	0.407	0.118	0.235	-0.235
4	0.175	0.122	0.243	-0.243
5	0.124	0.122	0.245	-0.245
6	0.344	0.123	0.246	-0.246
7	0.229	0.125	0.251	-0.251
8	0.460	0.127	0.253	-0.253
9	0.544	0.131	0.263	-0.263
10	0.483	0.138	0.275	-0.275
11	0.575	0.143	0.285	-0.285
12	0.327	0.149	0.298	-0.298
13	0.373	0.151	0.302	-0.302
14	-0.056	0.154	0.307	-0.307
15	0.080	0.154	0.307	-0.307

S_21FLVEMDHL11 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

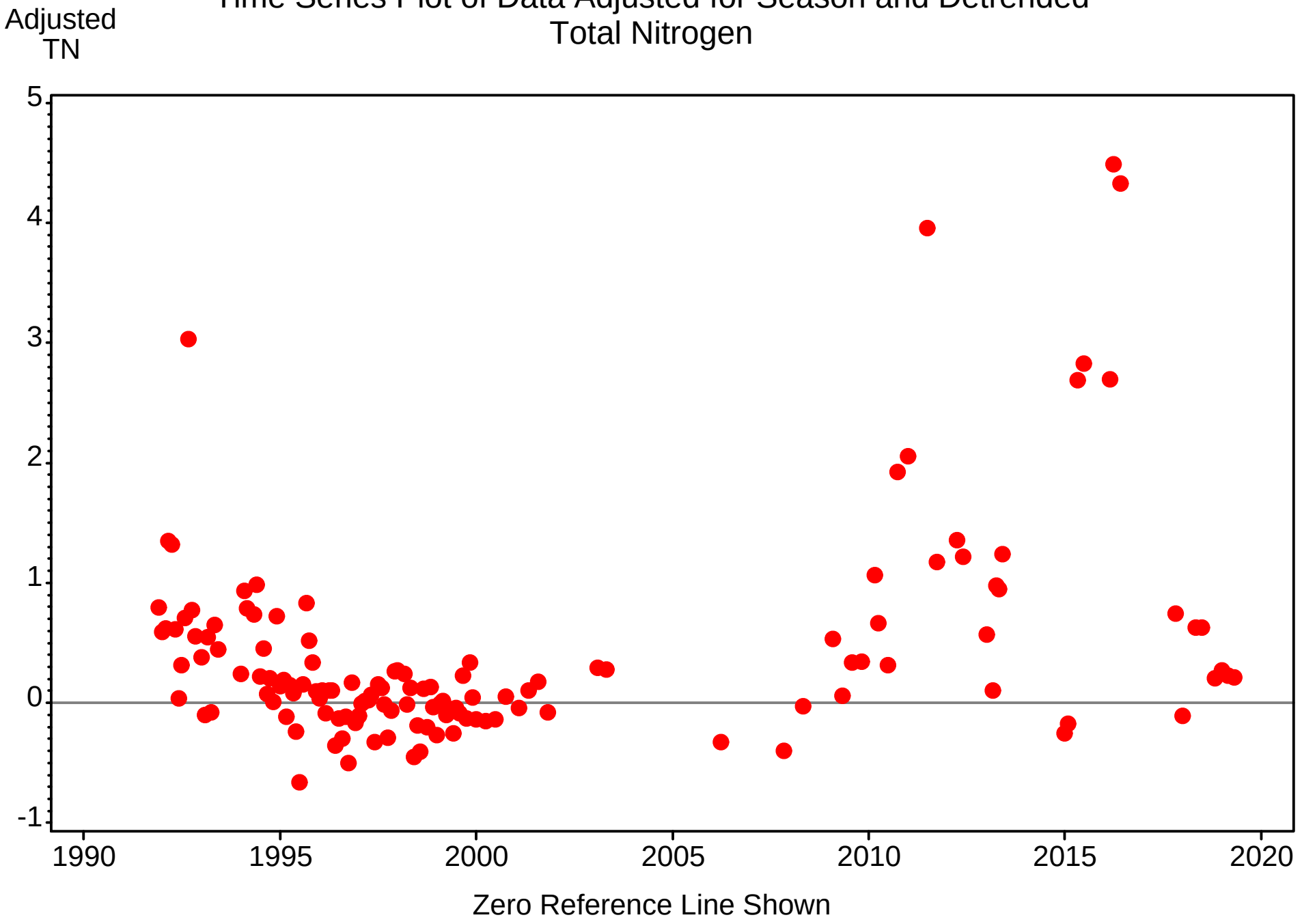
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.157	0.021	0.211	-0.017

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.15603	0.022543	0.21566	-0.016619

S_21FLVEMDHL11 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



E-1495

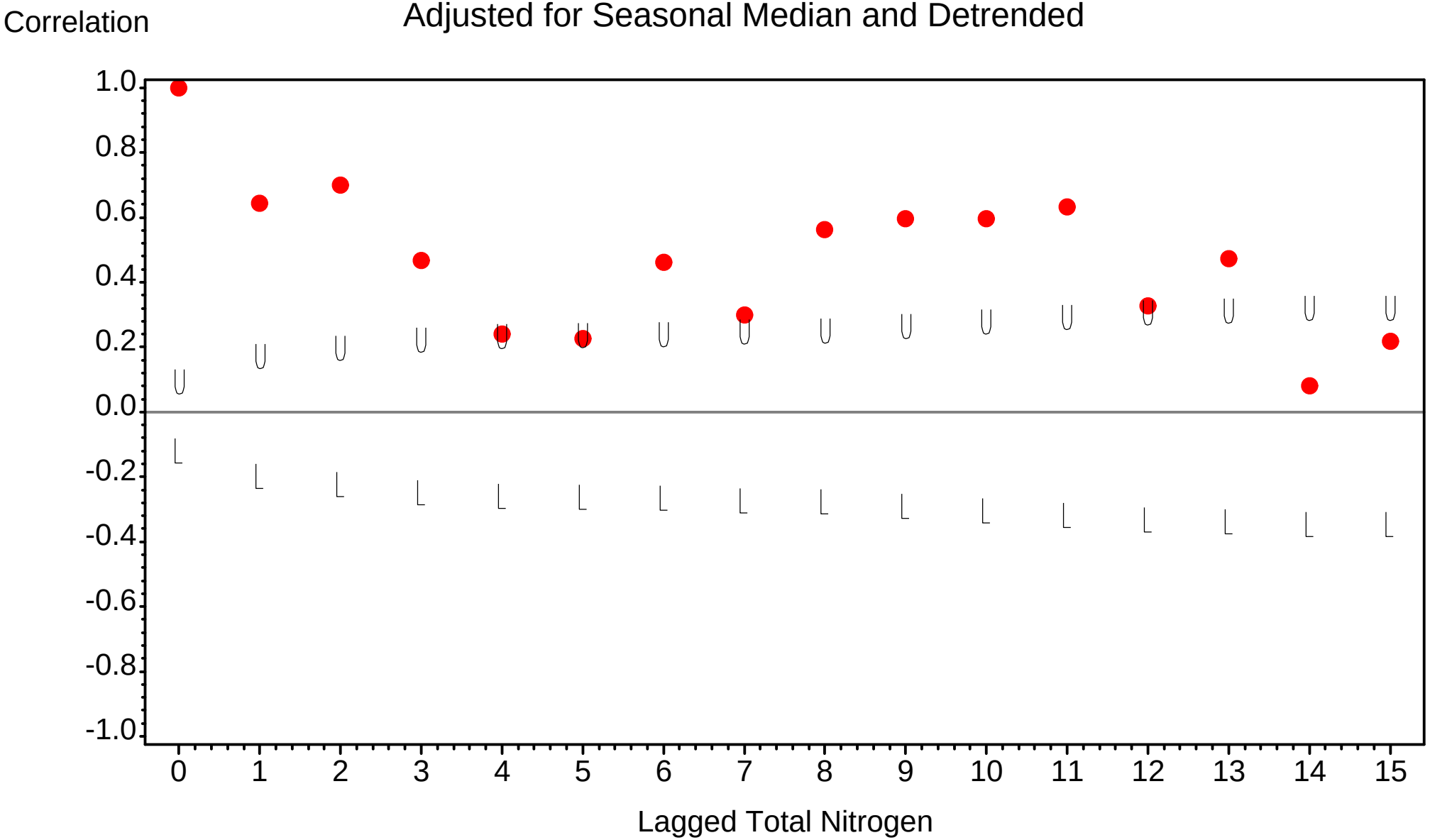
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.643	0.093	0.186	-0.186
2	0.700	0.105	0.210	-0.210
3	0.467	0.118	0.235	-0.235
4	0.240	0.123	0.246	-0.246
5	0.226	0.124	0.248	-0.248
6	0.462	0.125	0.251	-0.251
7	0.299	0.130	0.260	-0.260
8	0.561	0.132	0.264	-0.264
9	0.595	0.139	0.277	-0.277
10	0.595	0.146	0.292	-0.292
11	0.631	0.153	0.305	-0.305
12	0.328	0.160	0.320	-0.320
13	0.472	0.162	0.324	-0.324
14	0.082	0.166	0.332	-0.332
15	0.217	0.166	0.332	-0.332

S_21FLVEMDHL11 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

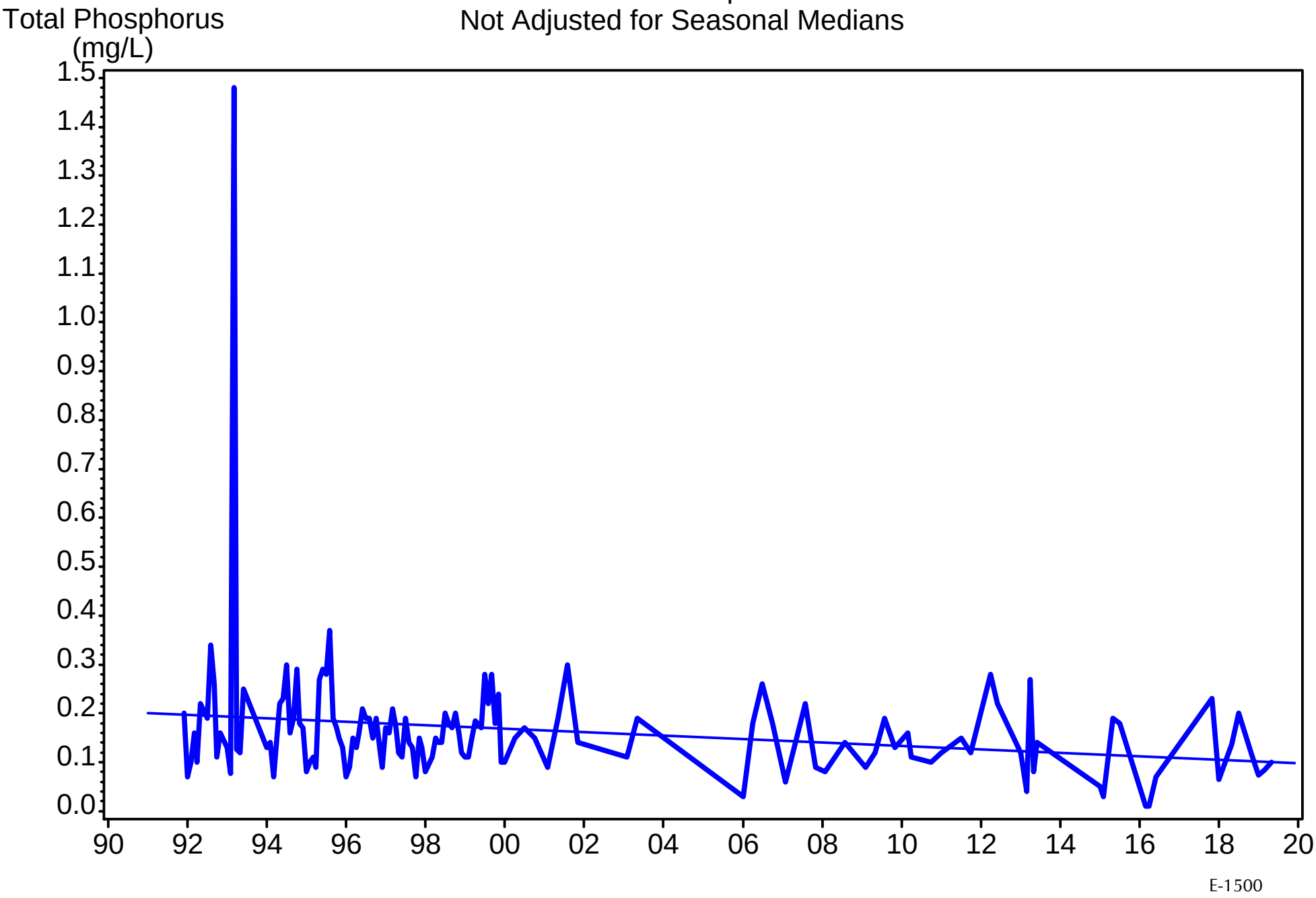


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

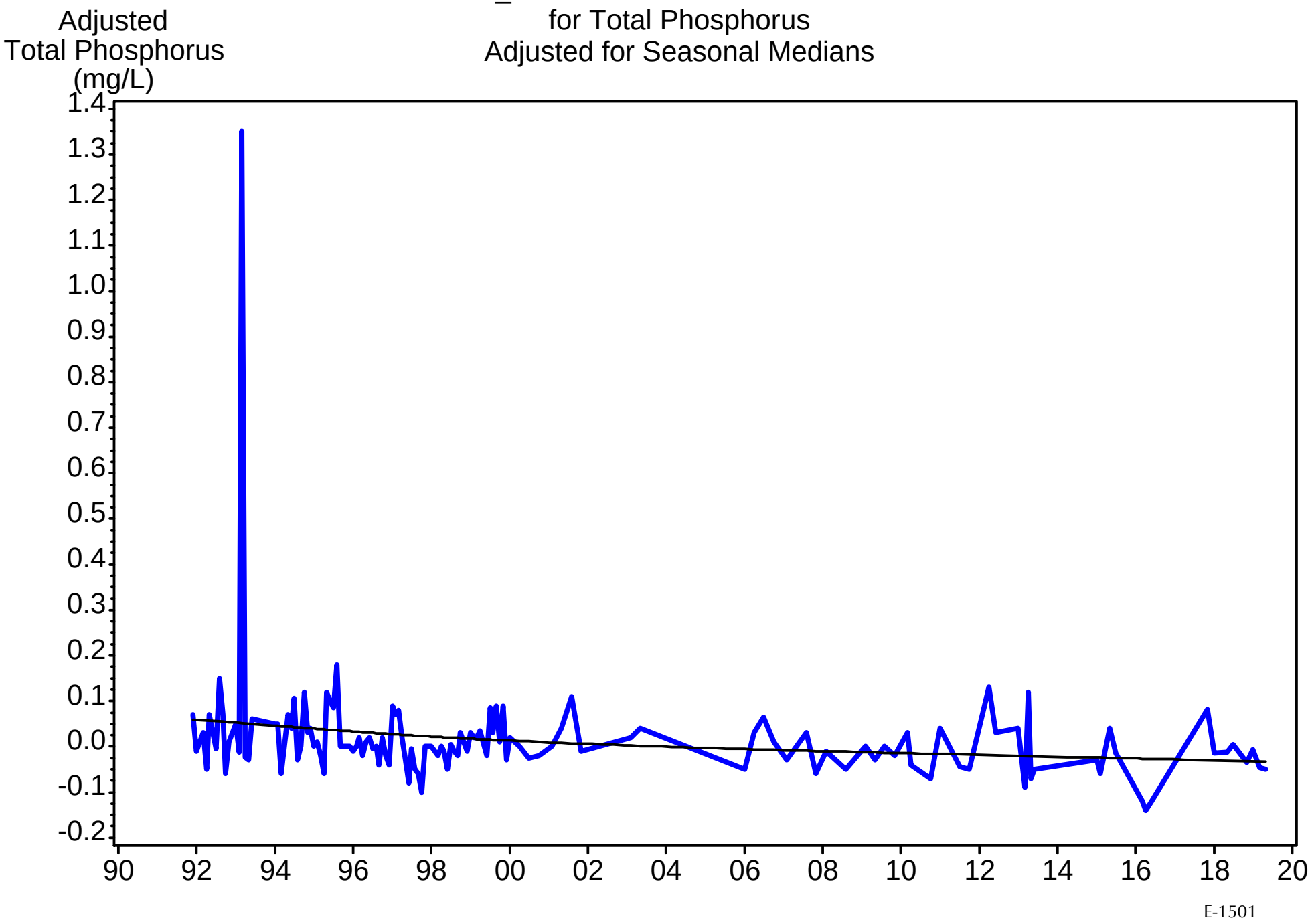
S_21FLVEMDHL11 Trends

S_21FLVEMDHL11 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



E-1500

S_21FLVEMDHL11 Trends

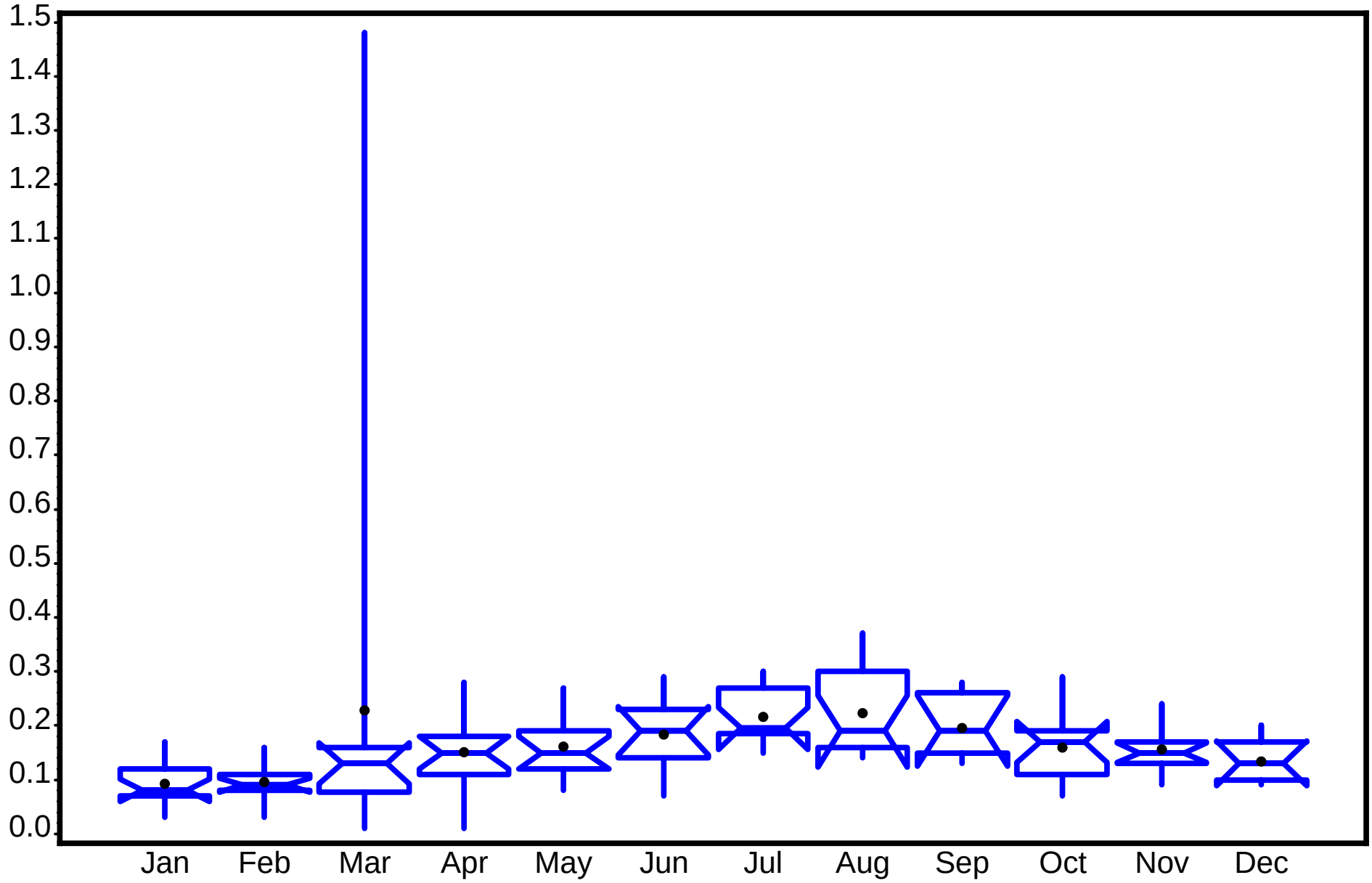


S_21FLVEMDHL11 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)

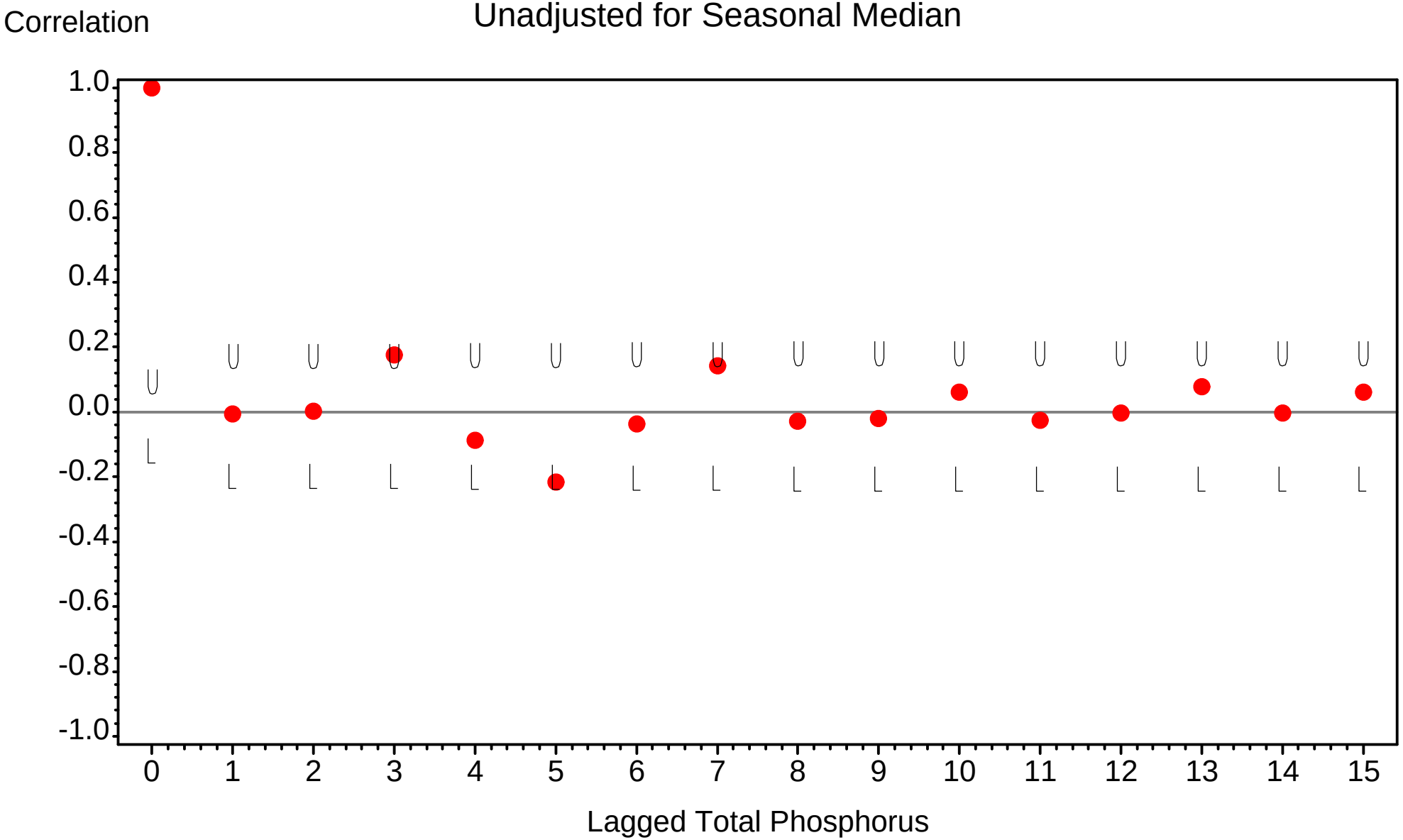


S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	-0.006	0.093	0.186	-0.186
2	0.002	0.093	0.186	-0.186
3	0.176	0.093	0.186	-0.186
4	-0.088	0.094	0.188	-0.188
5	-0.217	0.094	0.188	-0.188
6	-0.038	0.095	0.191	-0.191
7	0.141	0.096	0.191	-0.191
8	-0.028	0.096	0.192	-0.192
9	-0.019	0.096	0.192	-0.192
10	0.060	0.096	0.192	-0.192
11	-0.027	0.096	0.192	-0.192
12	-0.002	0.096	0.193	-0.193
13	0.079	0.096	0.193	-0.193
14	-0.002	0.096	0.193	-0.193
15	0.061	0.096	0.193	-0.193

S_21FLVEMDHL11 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1504

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

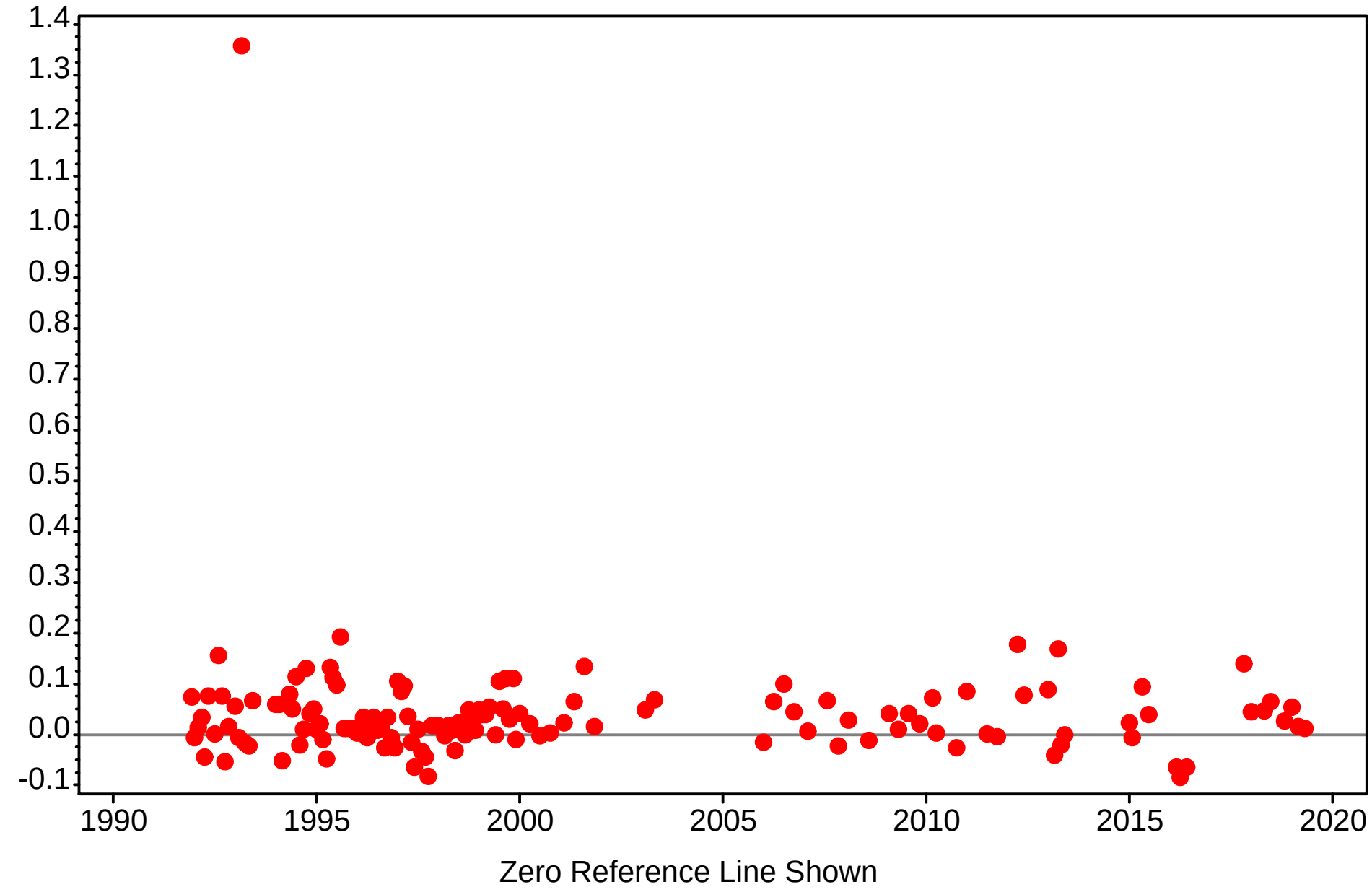
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.23	.001	.007	-.002

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.23025	.000513555	.00712841	-.00210526

S_21FLVEMDHL11 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus

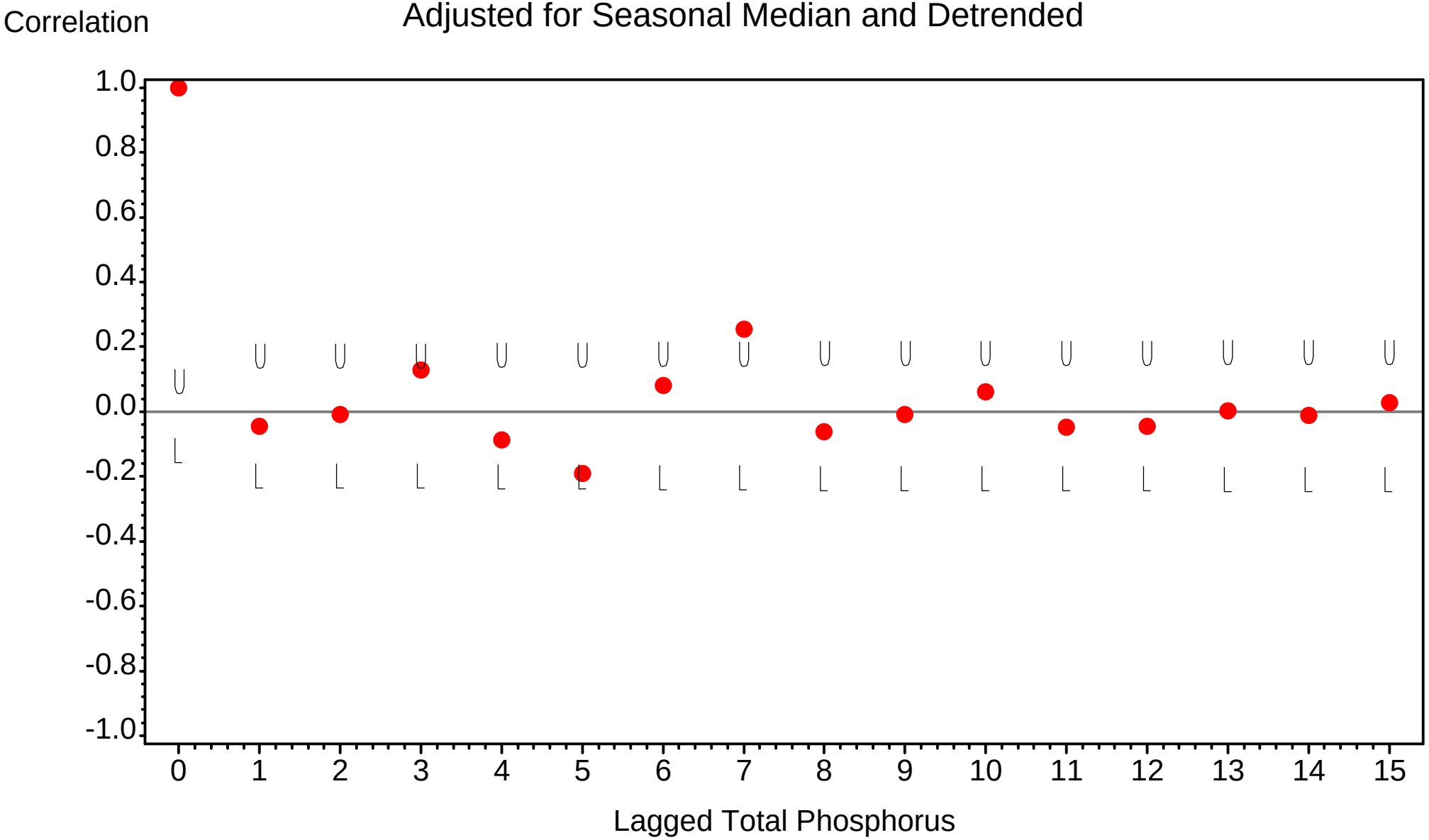


S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	-0.045	0.093	0.186	-0.186
2	-0.008	0.093	0.186	-0.186
3	0.129	0.093	0.186	-0.186
4	-0.088	0.093	0.187	-0.187
5	-0.192	0.094	0.187	-0.187
6	0.082	0.095	0.190	-0.190
7	0.255	0.095	0.190	-0.190
8	-0.063	0.097	0.194	-0.194
9	-0.008	0.097	0.194	-0.194
10	0.062	0.097	0.194	-0.194
11	-0.048	0.097	0.194	-0.194
12	-0.046	0.097	0.194	-0.194
13	0.003	0.097	0.195	-0.195
14	-0.011	0.097	0.195	-0.195
15	0.028	0.097	0.195	-0.195

S_21FLVEMDHL11 Trends Appendix

Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended

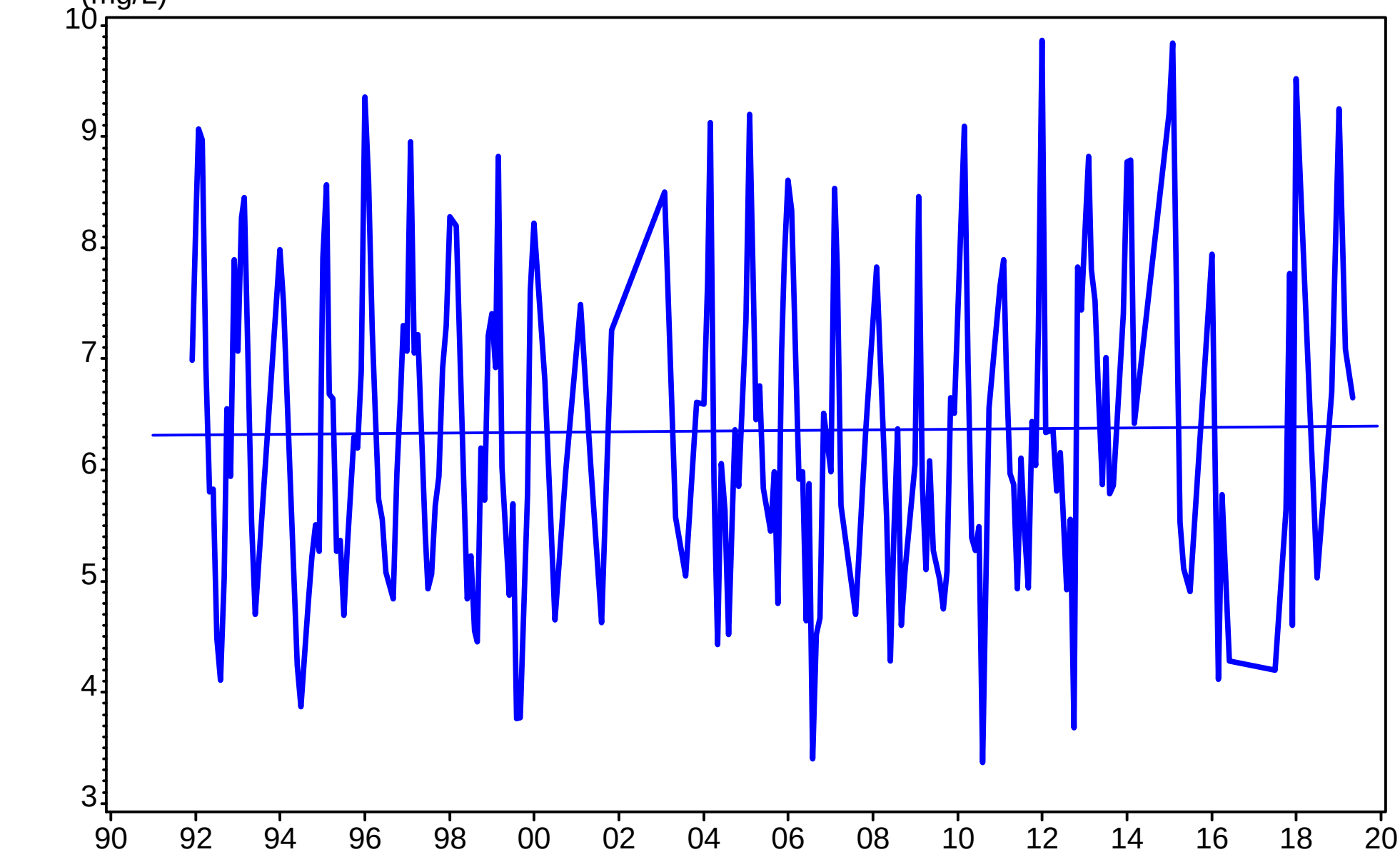


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1509

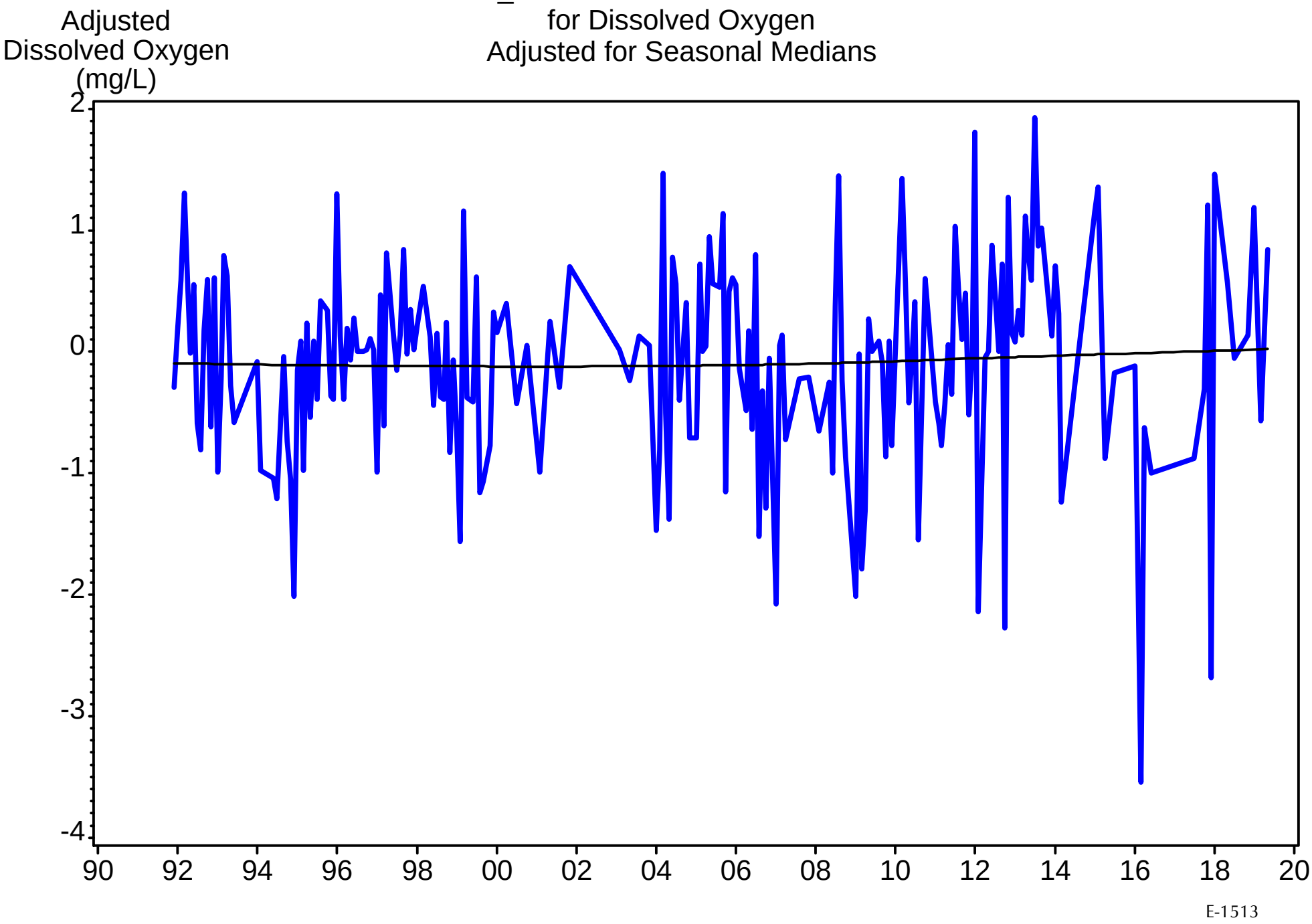
S_21FLVEMDHL11 Trends

S_21FLVEMDHL11 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1512

S_21FLVEMDHL11 Trends

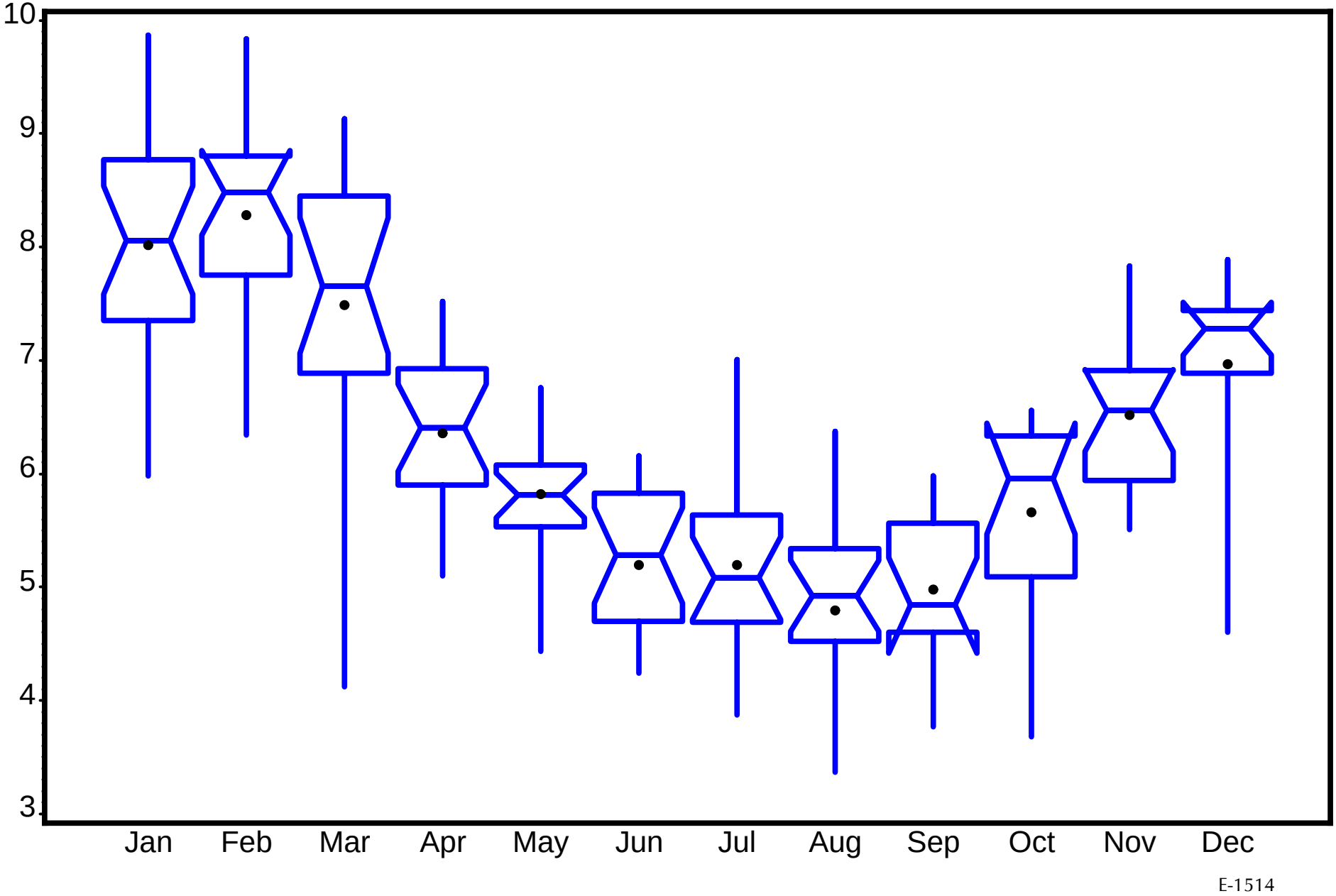


S_21FLVEMDHL11 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen

(mg/L)



E-1514

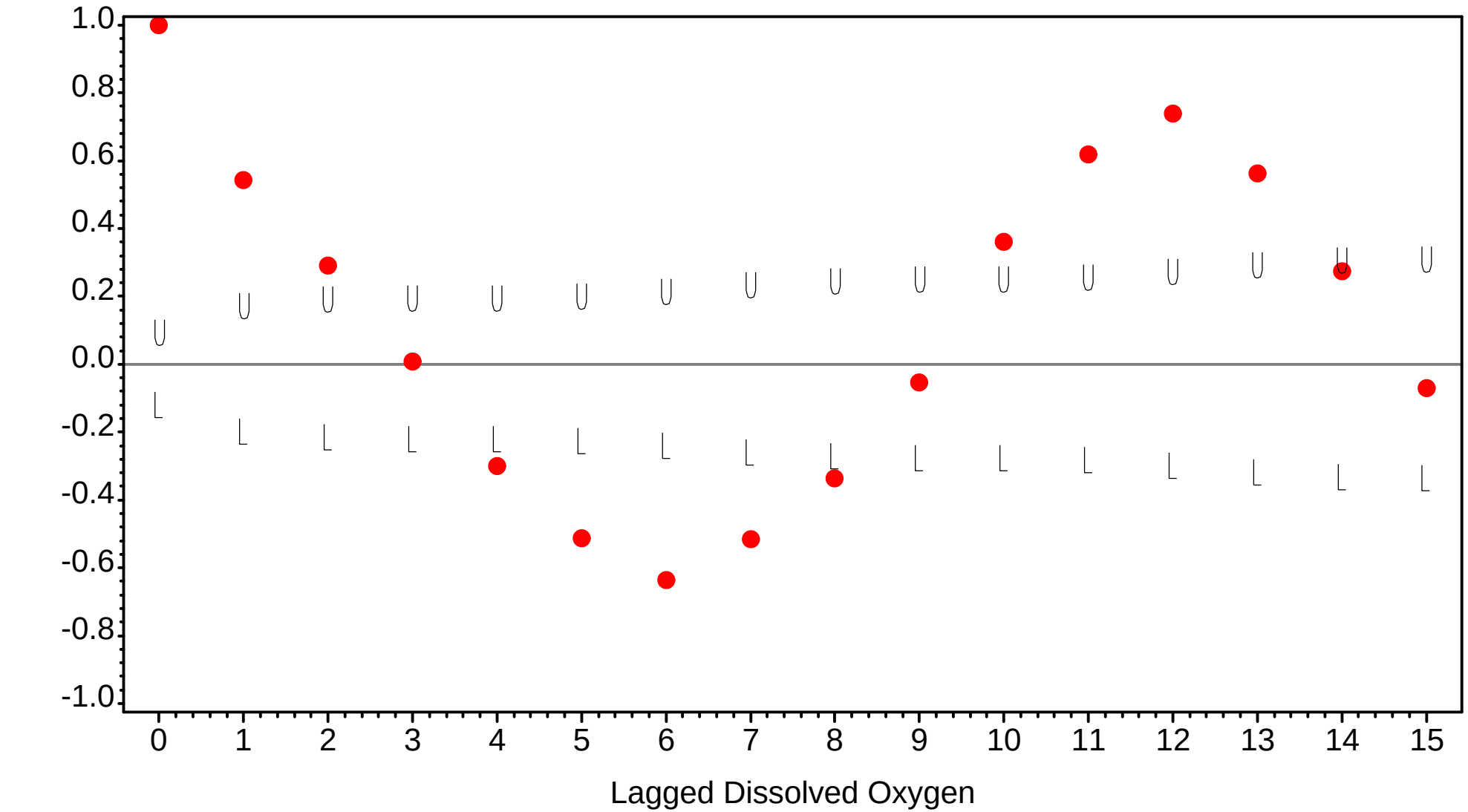
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.543	0.093	0.186	-0.186
2	0.290	0.102	0.203	-0.203
3	0.009	0.104	0.208	-0.208
4	-0.299	0.104	0.208	-0.208
5	-0.514	0.106	0.213	-0.213
6	-0.635	0.113	0.227	-0.227
7	-0.517	0.123	0.246	-0.246
8	-0.336	0.129	0.258	-0.258
9	-0.054	0.132	0.263	-0.263
10	0.361	0.132	0.263	-0.263
11	0.618	0.135	0.269	-0.269
12	0.740	0.142	0.285	-0.285
13	0.561	0.153	0.306	-0.306
14	0.273	0.159	0.318	-0.318
15	-0.071	0.160	0.321	-0.321

S_21FLVEMDHL11 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

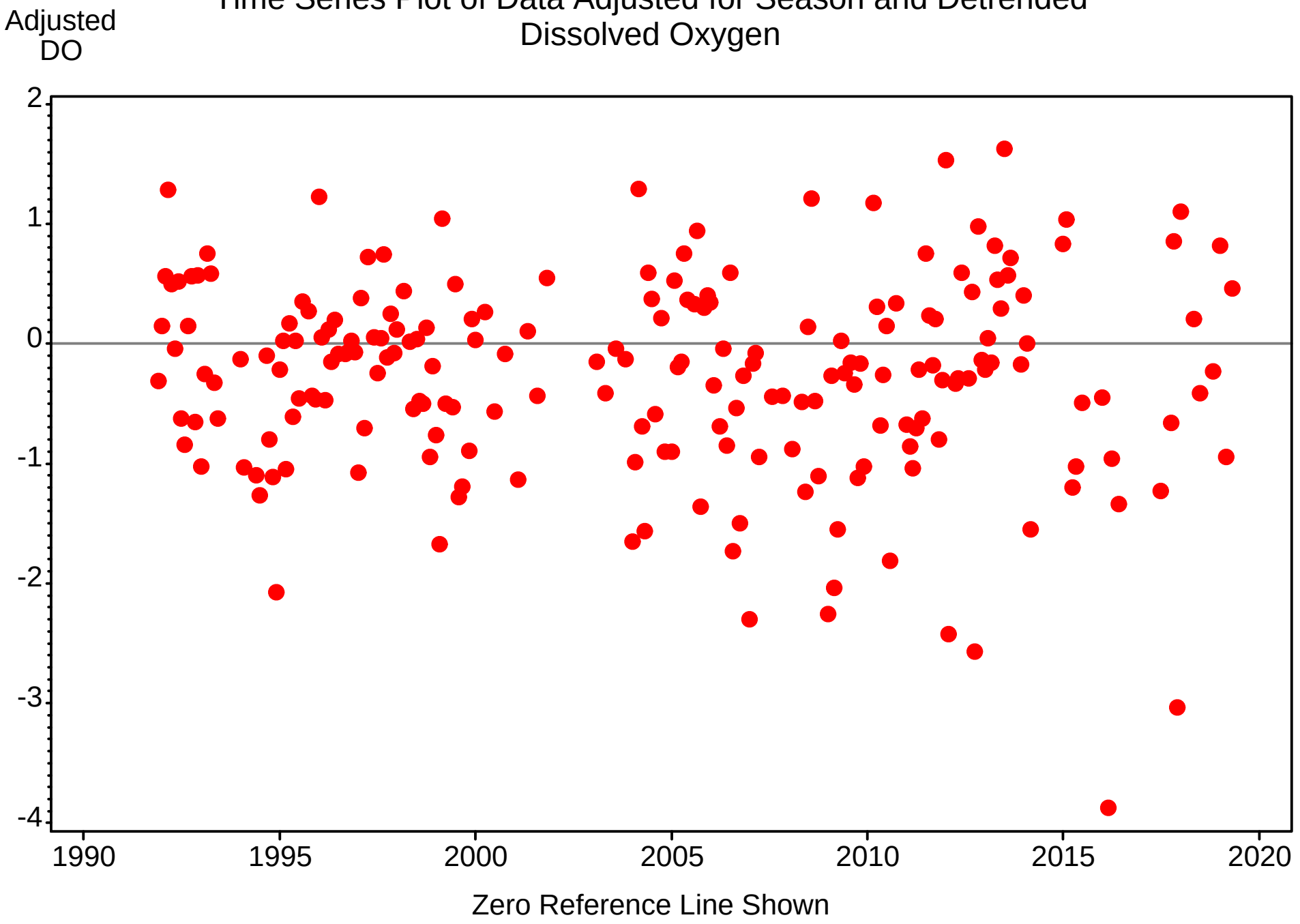
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.078	0.128	0.267	0.013

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.078375	0.12772	0.26689	0.012818

S_21FLVEMDHL11 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



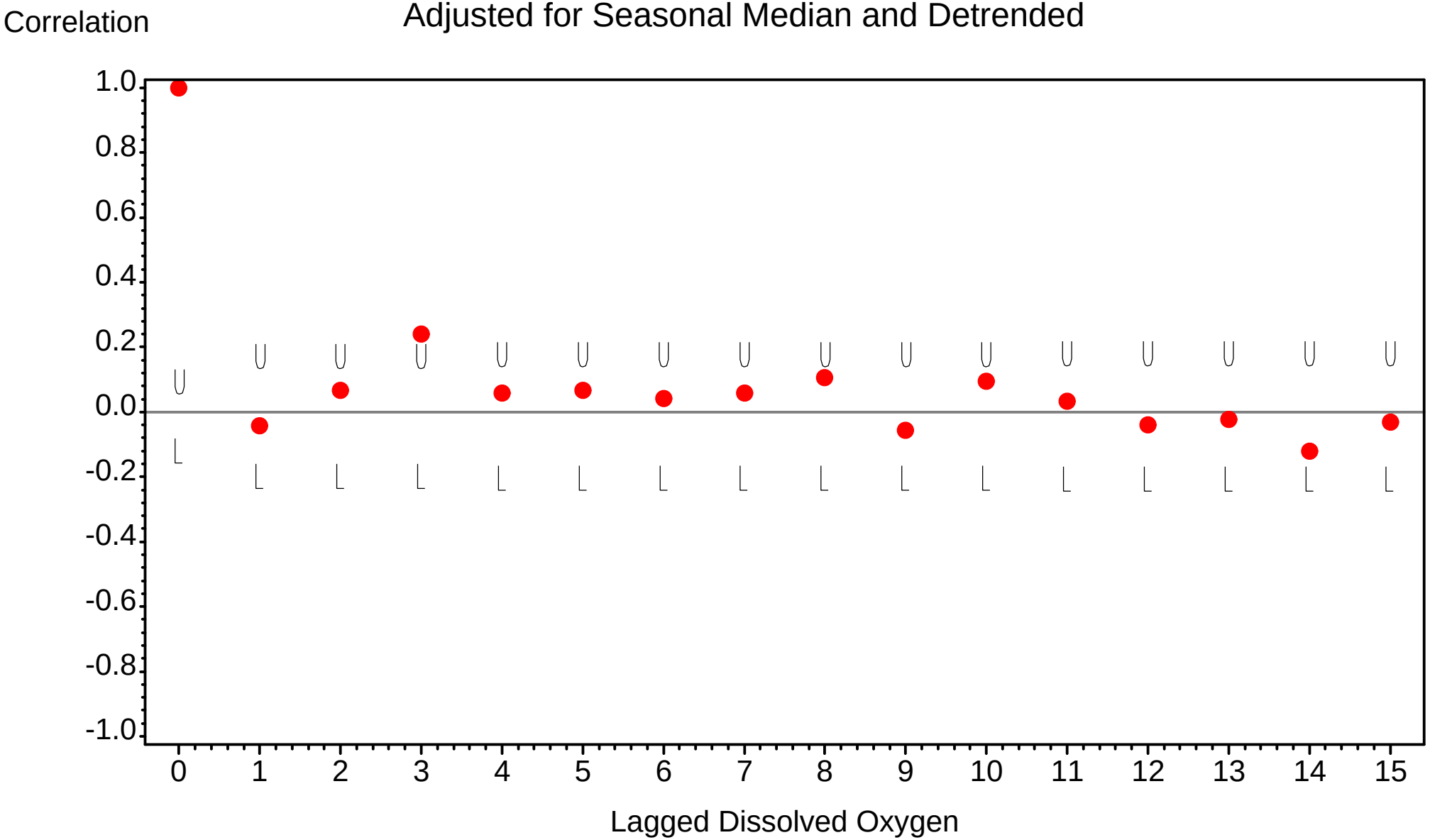
E-1519

S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	-0.043	0.093	0.186	-0.186
2	0.067	0.093	0.186	-0.186
3	0.240	0.093	0.186	-0.186
4	0.057	0.095	0.190	-0.190
5	0.067	0.095	0.190	-0.190
6	0.041	0.095	0.190	-0.190
7	0.059	0.095	0.190	-0.190
8	0.107	0.095	0.190	-0.190
9	-0.057	0.096	0.191	-0.191
10	0.096	0.096	0.191	-0.191
11	0.033	0.096	0.192	-0.192
12	-0.041	0.096	0.192	-0.192
13	-0.023	0.096	0.192	-0.192
14	-0.120	0.096	0.192	-0.192
15	-0.031	0.096	0.193	-0.193

S_21FLVEMDHL11 Trends Appendix

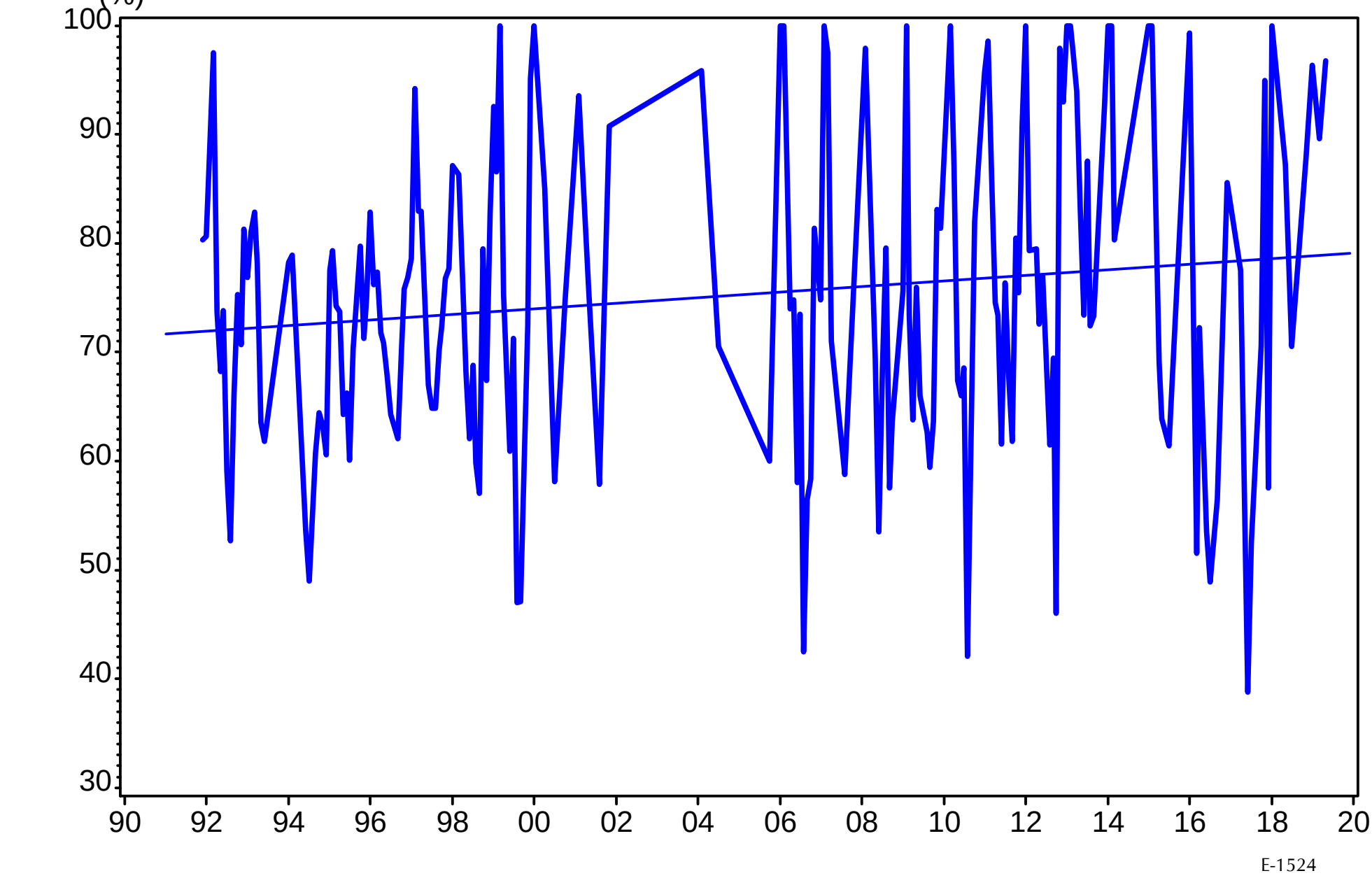
Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

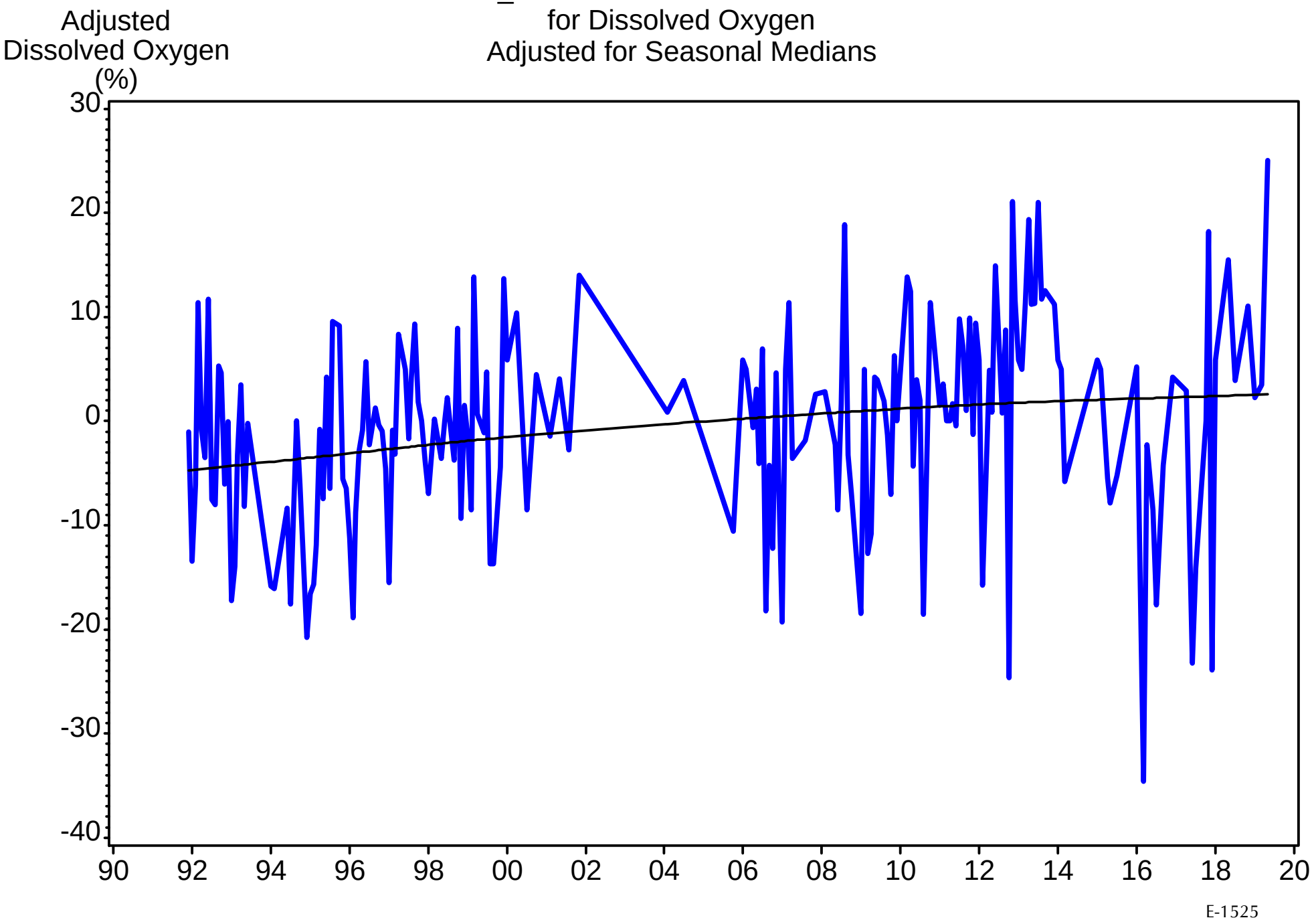
S_21FLVEMDHL11 Trends

S_21FLVEMDHL11 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1524

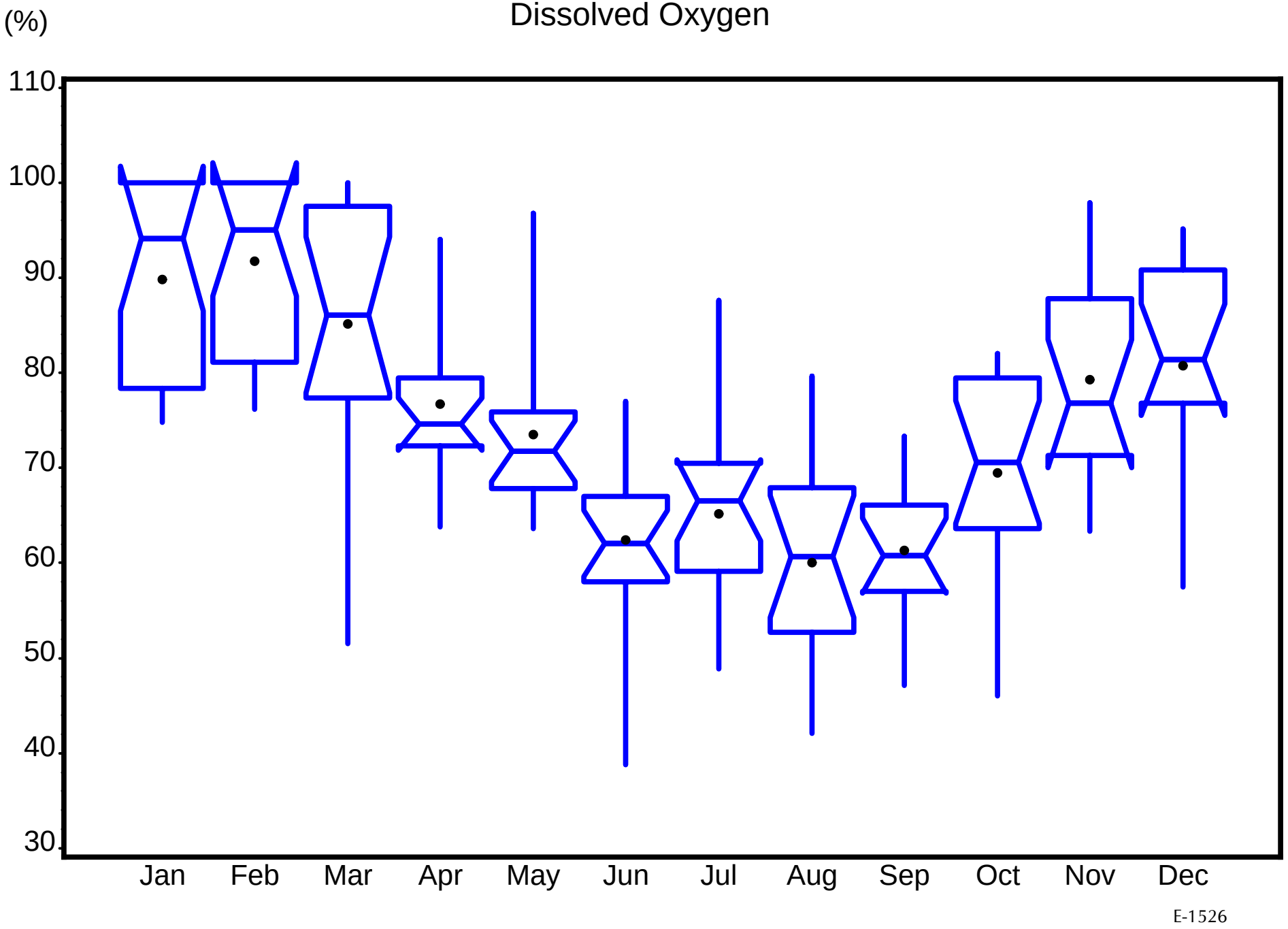
S_21FLVEMDHL11 Trends



S_21FLVEMDHL11 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



E-1526

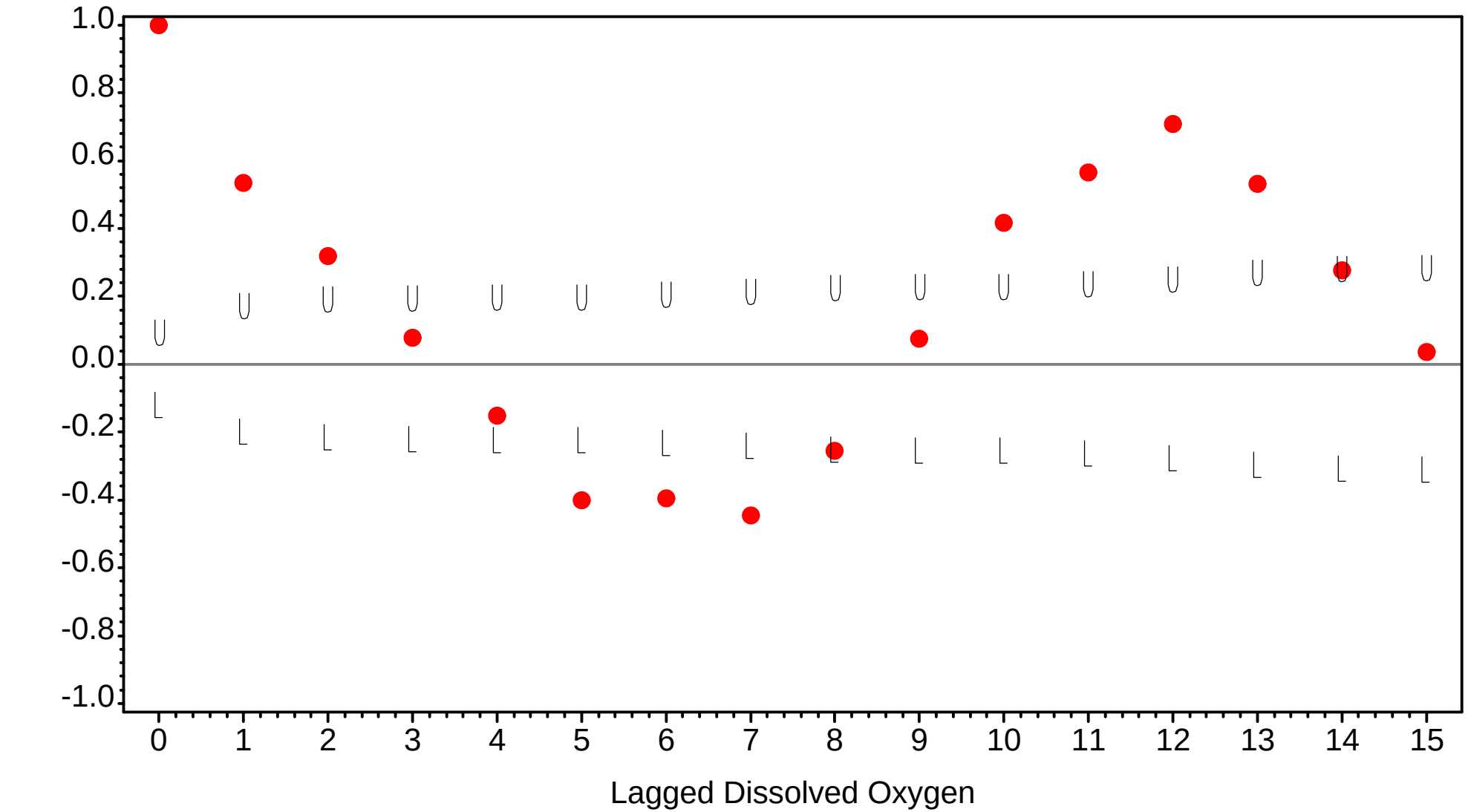
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.535	0.093	0.186	-0.186
2	0.320	0.101	0.203	-0.203
3	0.077	0.104	0.208	-0.208
4	-0.151	0.104	0.209	-0.209
5	-0.402	0.105	0.210	-0.210
6	-0.394	0.109	0.219	-0.219
7	-0.446	0.113	0.227	-0.227
8	-0.255	0.118	0.237	-0.237
9	0.074	0.120	0.240	-0.240
10	0.416	0.120	0.240	-0.240
11	0.564	0.124	0.248	-0.248
12	0.707	0.131	0.262	-0.262
13	0.532	0.142	0.283	-0.283
14	0.277	0.147	0.295	-0.295
15	0.035	0.149	0.298	-0.298

S_21FLVEMDHL11 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

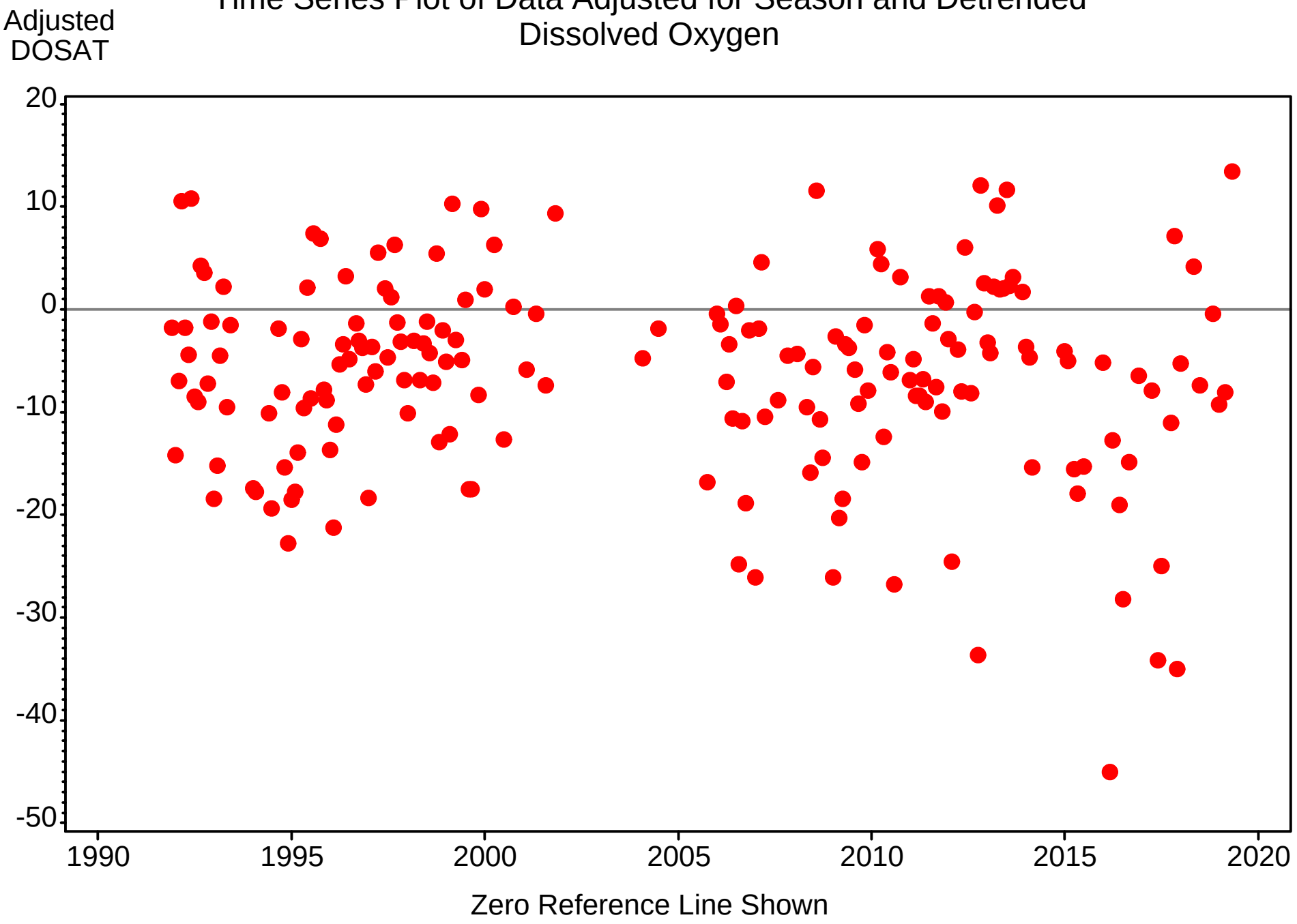
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.219	0	.007	0.398

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.21873	.000044107	.00671327	0.39769

S_21FLVEMDHL11 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



E-1531

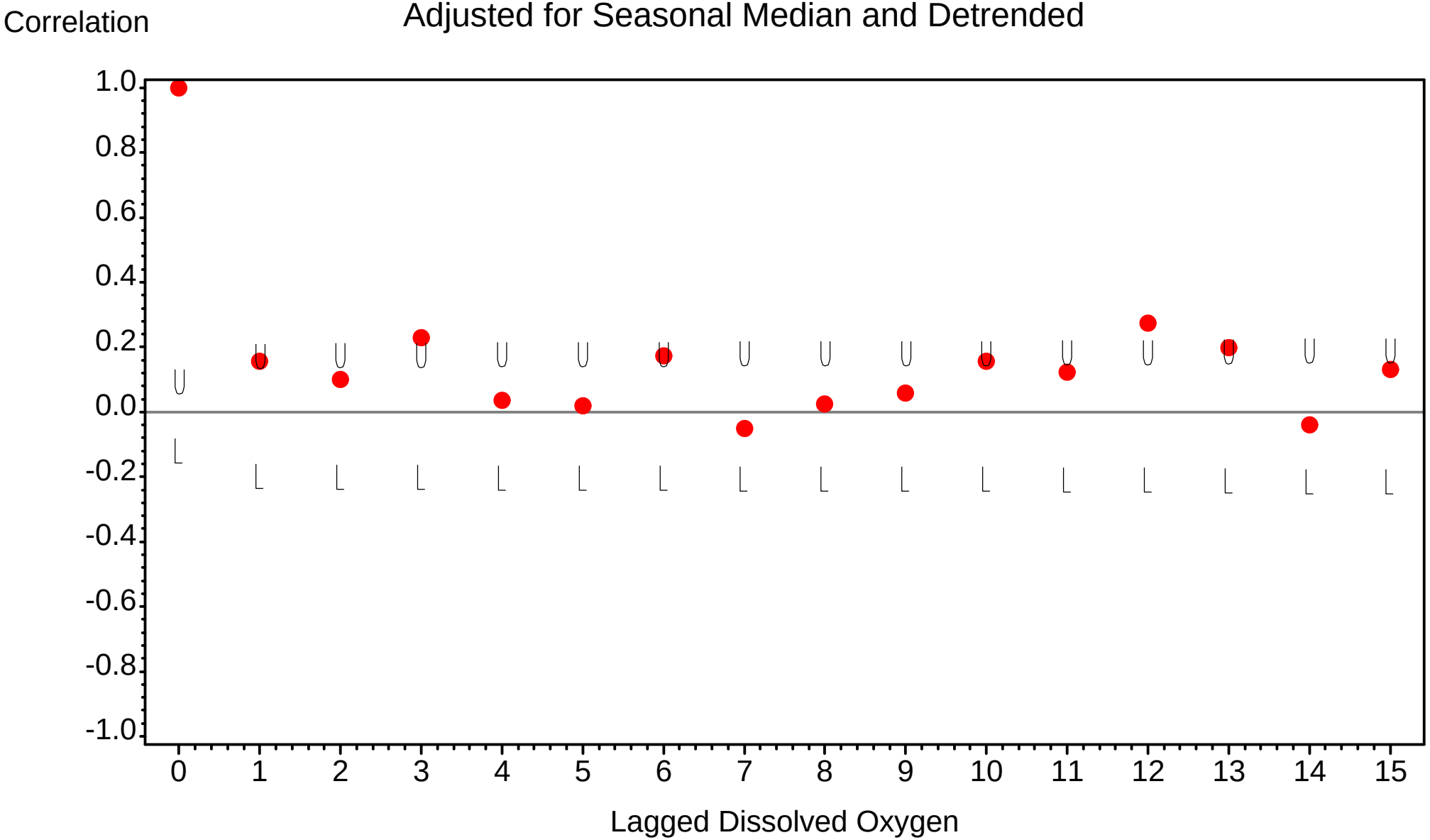
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.156	0.093	0.186	-0.186
2	0.099	0.094	0.187	-0.187
3	0.228	0.094	0.188	-0.188
4	0.036	0.095	0.191	-0.191
5	0.018	0.096	0.191	-0.191
6	0.174	0.096	0.191	-0.191
7	-0.050	0.096	0.193	-0.193
8	0.026	0.096	0.193	-0.193
9	0.059	0.097	0.193	-0.193
10	0.156	0.097	0.193	-0.193
11	0.123	0.097	0.195	-0.195
12	0.274	0.098	0.196	-0.196
13	0.198	0.100	0.200	-0.200
14	-0.039	0.101	0.202	-0.202
15	0.131	0.101	0.202	-0.202

S_21FLVEMDHL11 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended

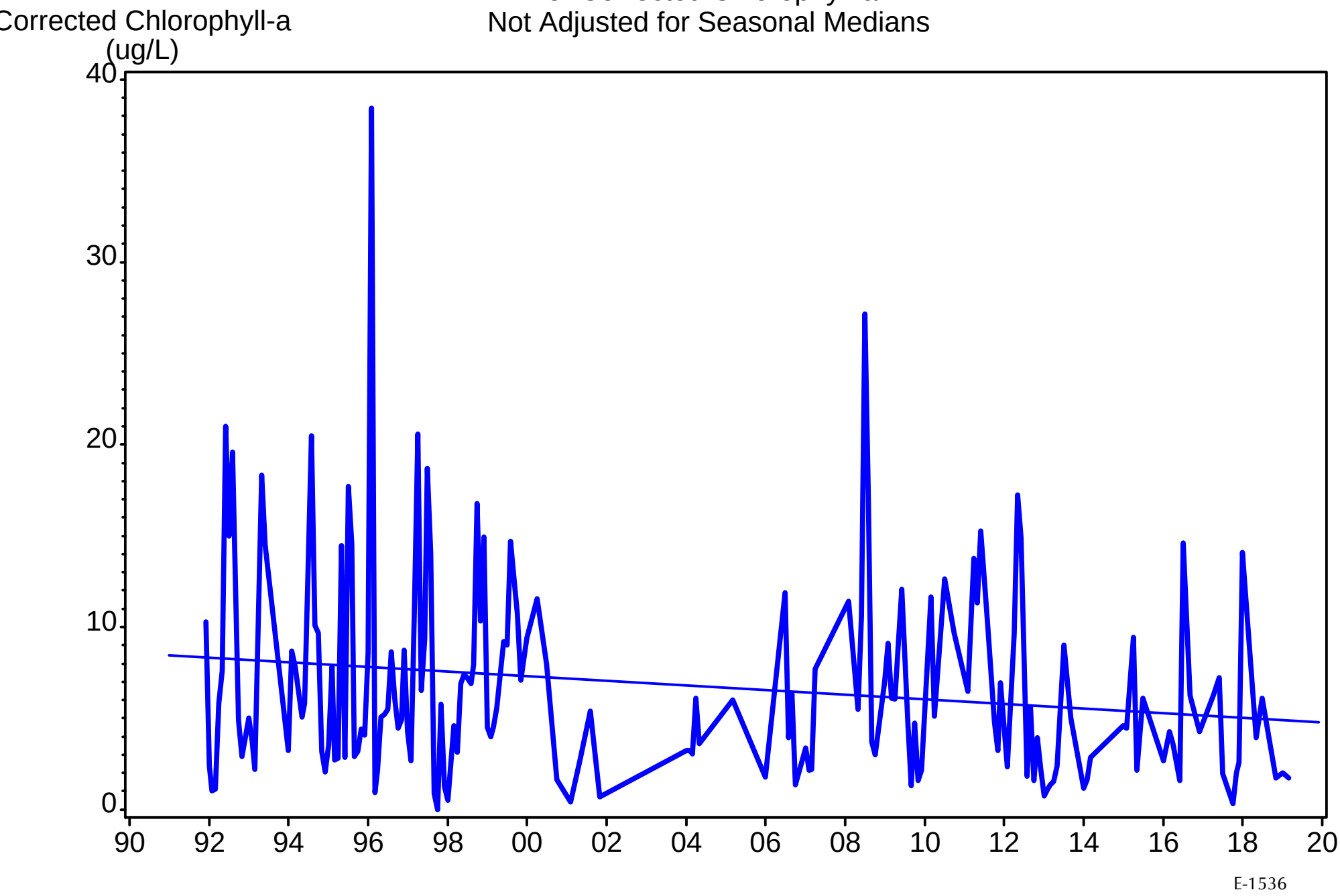


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

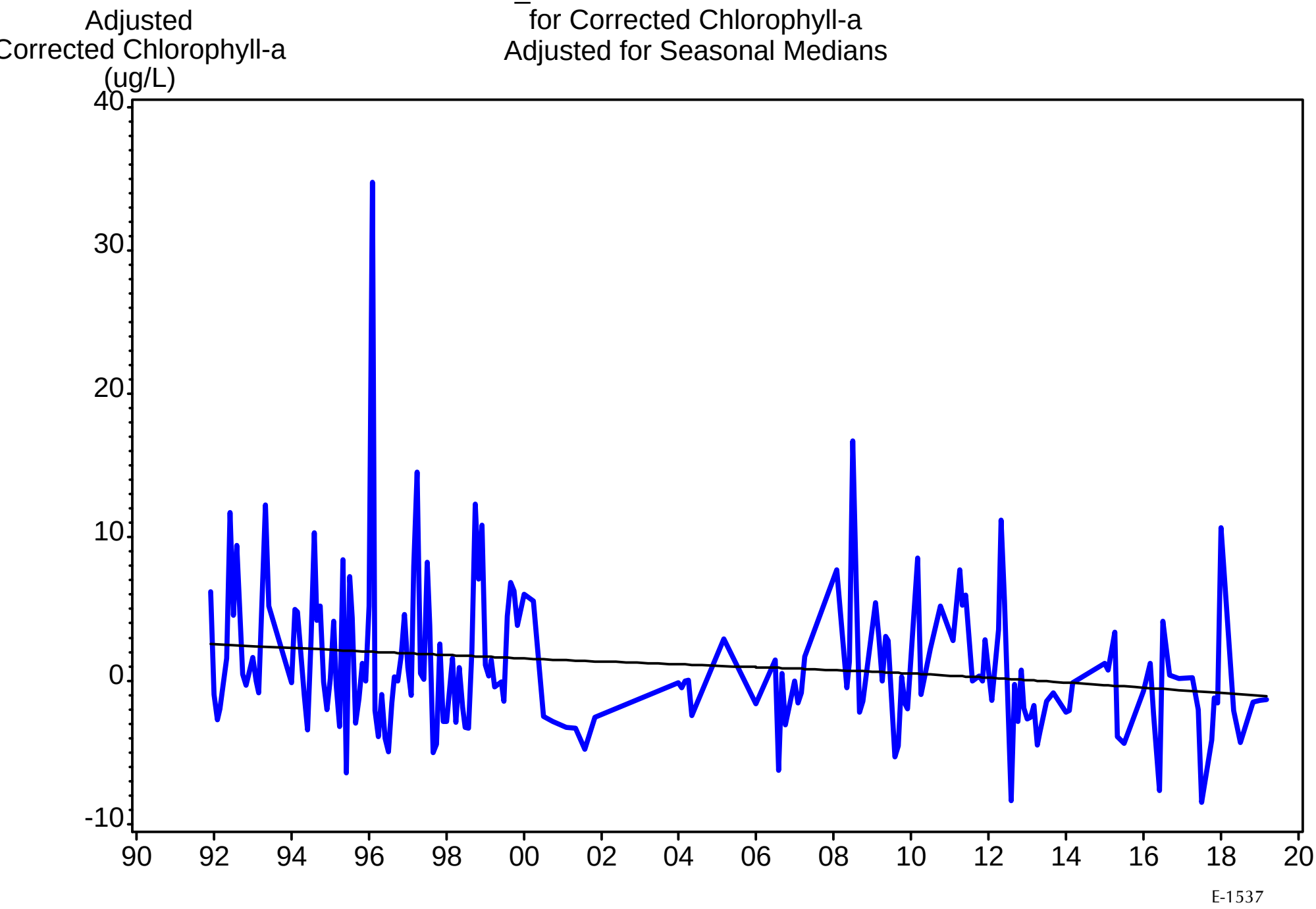
S_21FLVEMDHL11 Trends

S_21FLVEMDHL11 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



E-1536

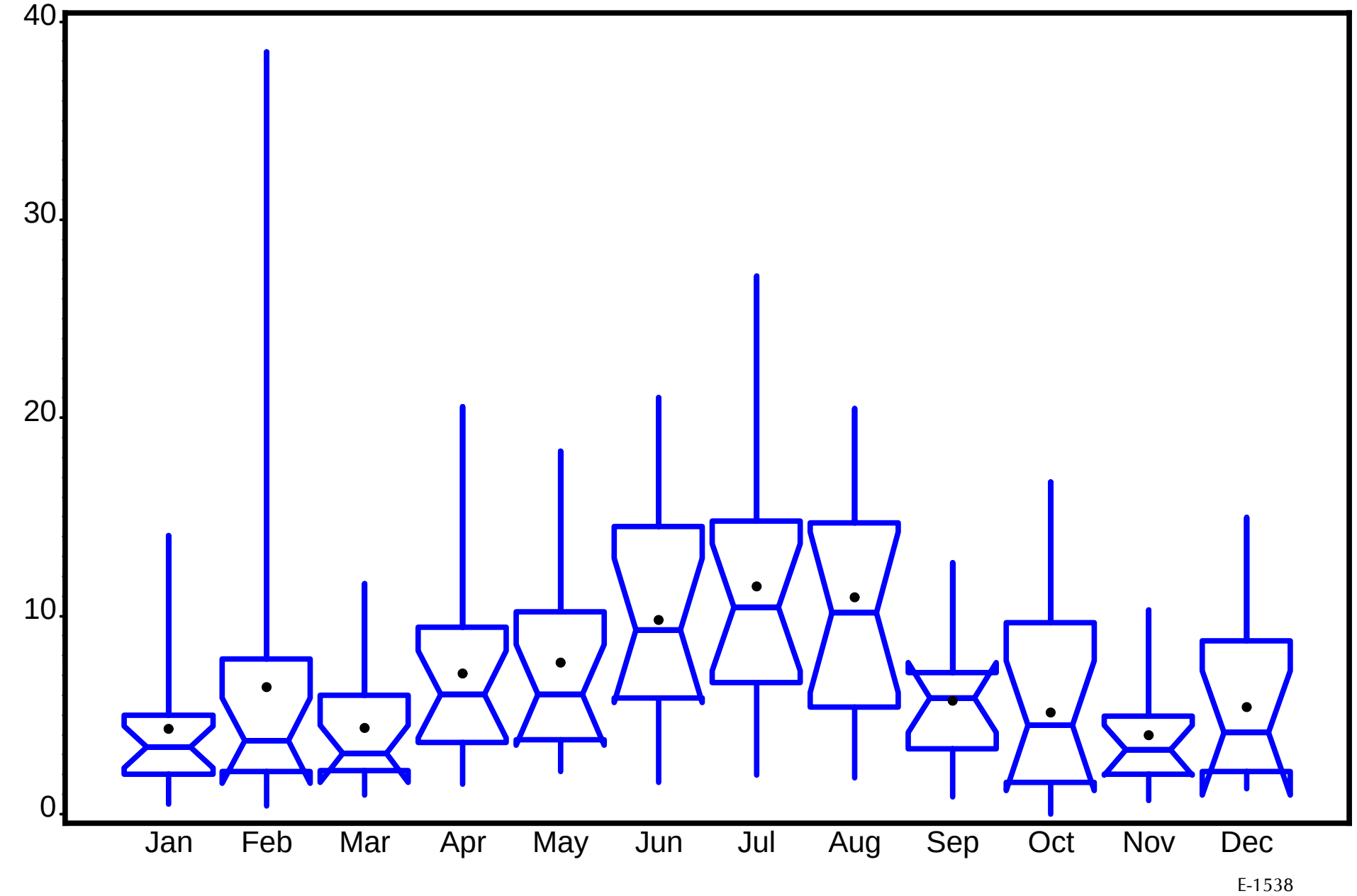
S_21FLVEMDHL11 Trends



S_21FLVEMDHL11 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a

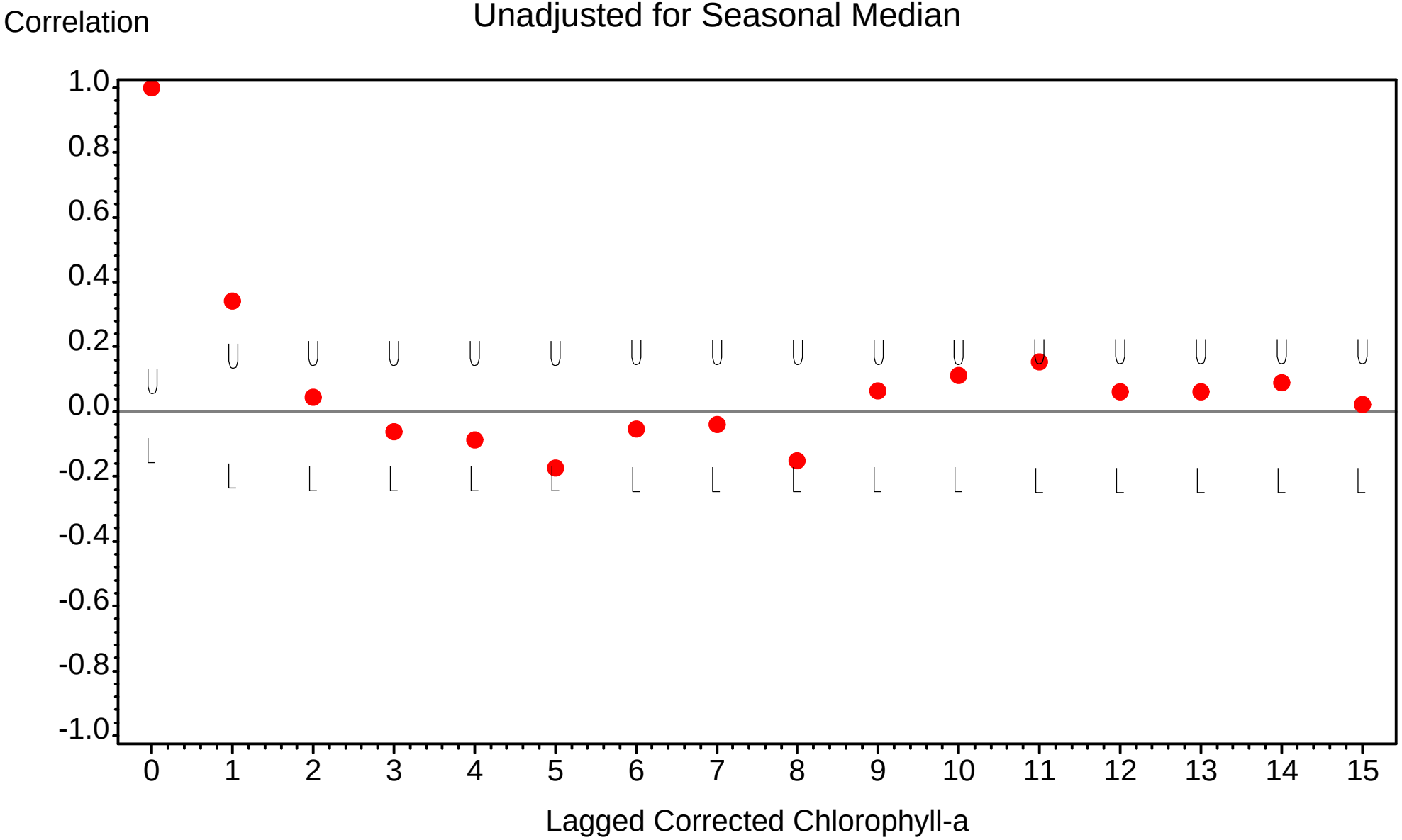


S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.342	0.093	0.186	-0.186
2	0.045	0.096	0.193	-0.193
3	-0.061	0.096	0.193	-0.193
4	-0.086	0.097	0.193	-0.193
5	-0.174	0.097	0.194	-0.194
6	-0.054	0.098	0.195	-0.195
7	-0.040	0.098	0.196	-0.196
8	-0.151	0.098	0.196	-0.196
9	0.064	0.098	0.197	-0.197
10	0.111	0.099	0.197	-0.197
11	0.154	0.099	0.198	-0.198
12	0.060	0.100	0.199	-0.199
13	0.060	0.100	0.200	-0.200
14	0.089	0.100	0.200	-0.200
15	0.022	0.100	0.200	-0.200

S_21FLVEMDHL11 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1540

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

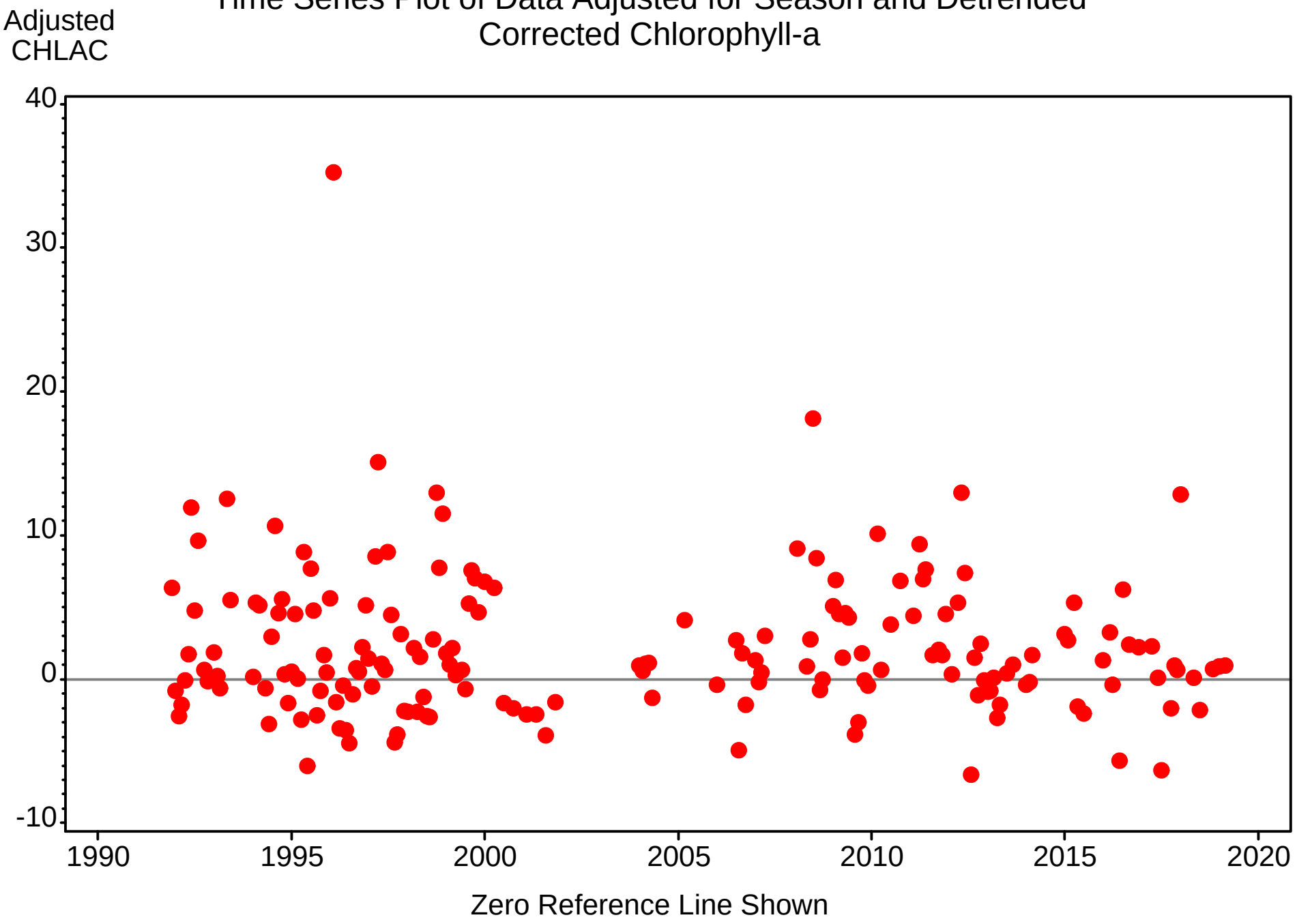
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.105	0.062	0.106	-0.078

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.10526	0.061905	0.10624	-0.077662

S_21FLVEMDHL11 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



E-1543

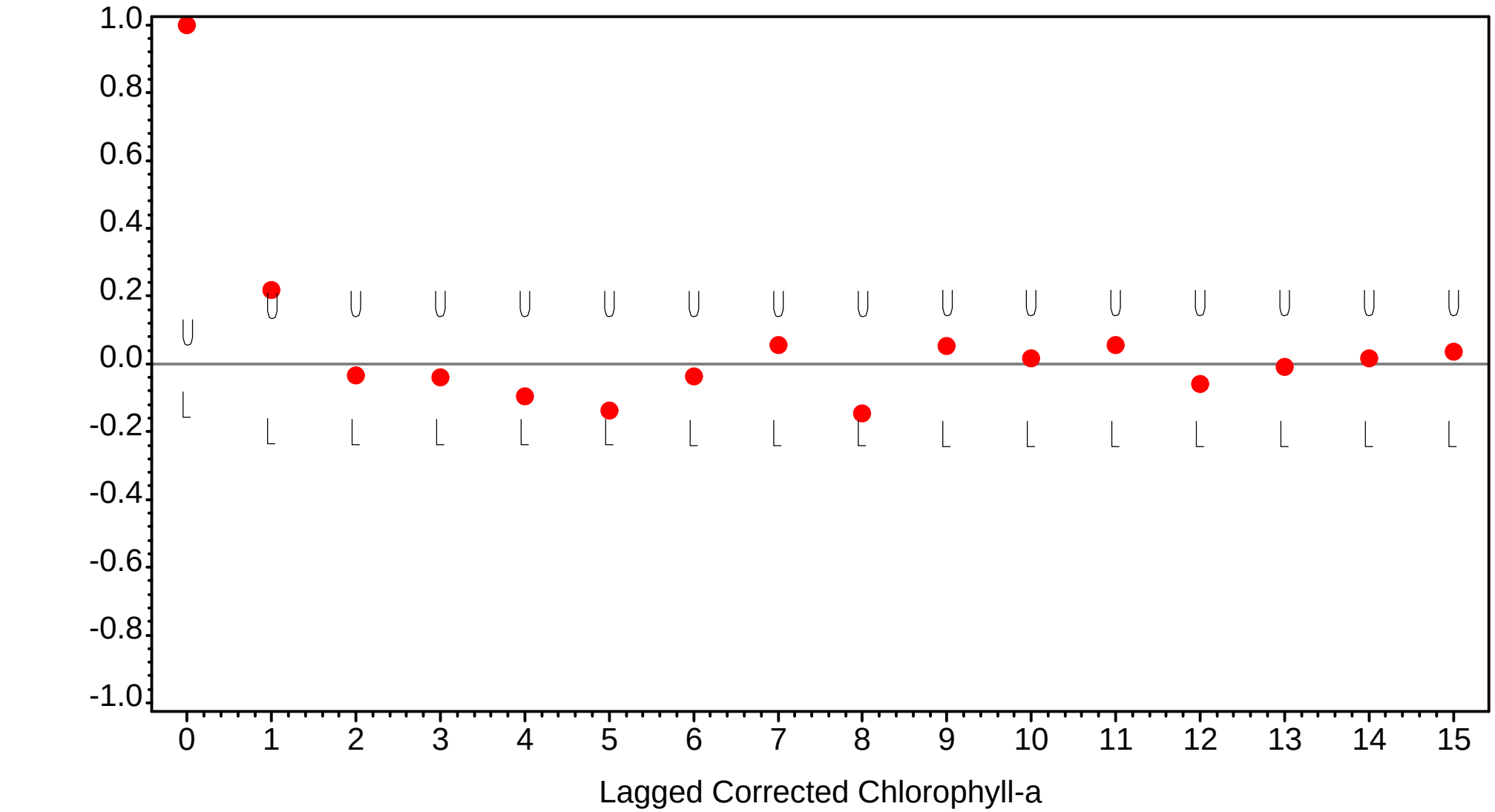
S_21FLVEMDHL11 Trends Appendix

Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.217	0.093	0.186	-0.186
2	-0.035	0.094	0.189	-0.189
3	-0.040	0.094	0.189	-0.189
4	-0.096	0.094	0.189	-0.189
5	-0.137	0.095	0.189	-0.189
6	-0.037	0.095	0.190	-0.190
7	0.055	0.095	0.191	-0.191
8	-0.147	0.095	0.191	-0.191
9	0.054	0.096	0.192	-0.192
10	0.017	0.096	0.192	-0.192
11	0.056	0.096	0.192	-0.192
12	-0.059	0.096	0.192	-0.192
13	-0.008	0.096	0.193	-0.193
14	0.016	0.096	0.193	-0.193
15	0.035	0.096	0.193	-0.193

S_21FLVEMDHL11 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended

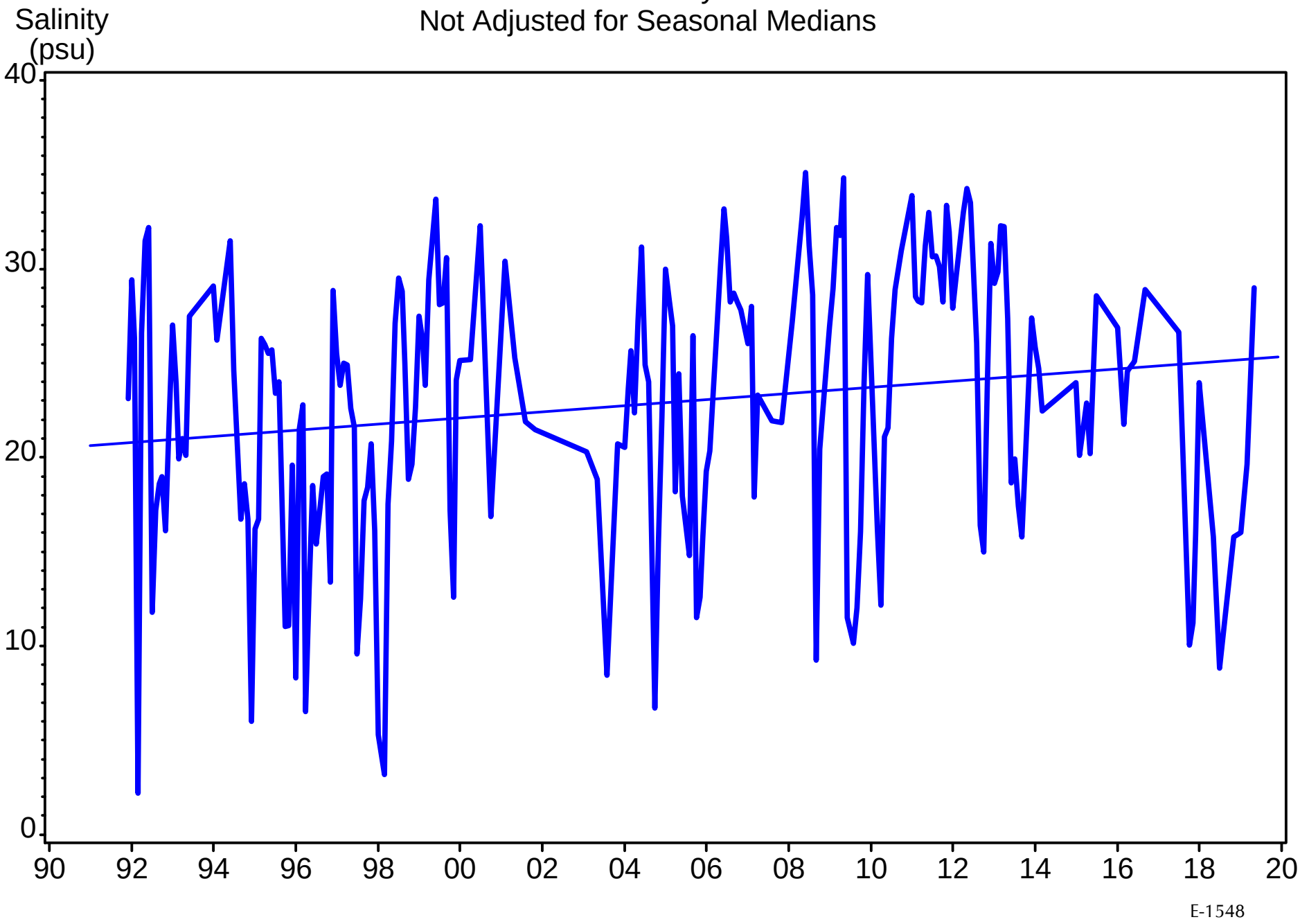


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1545

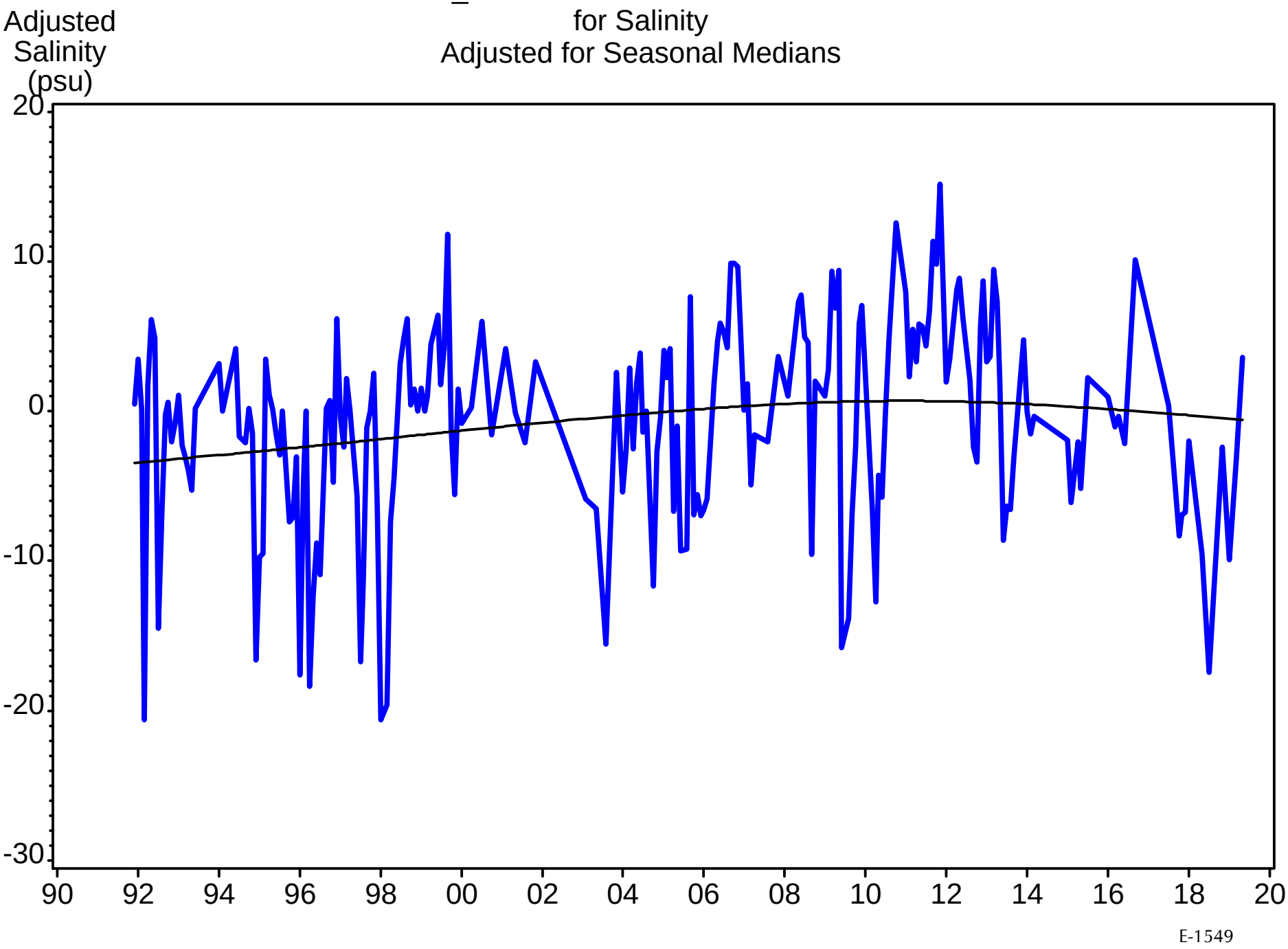
S_21FLVEMDHL11 Trends

S_21FLVEMDHL11 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



E-1548

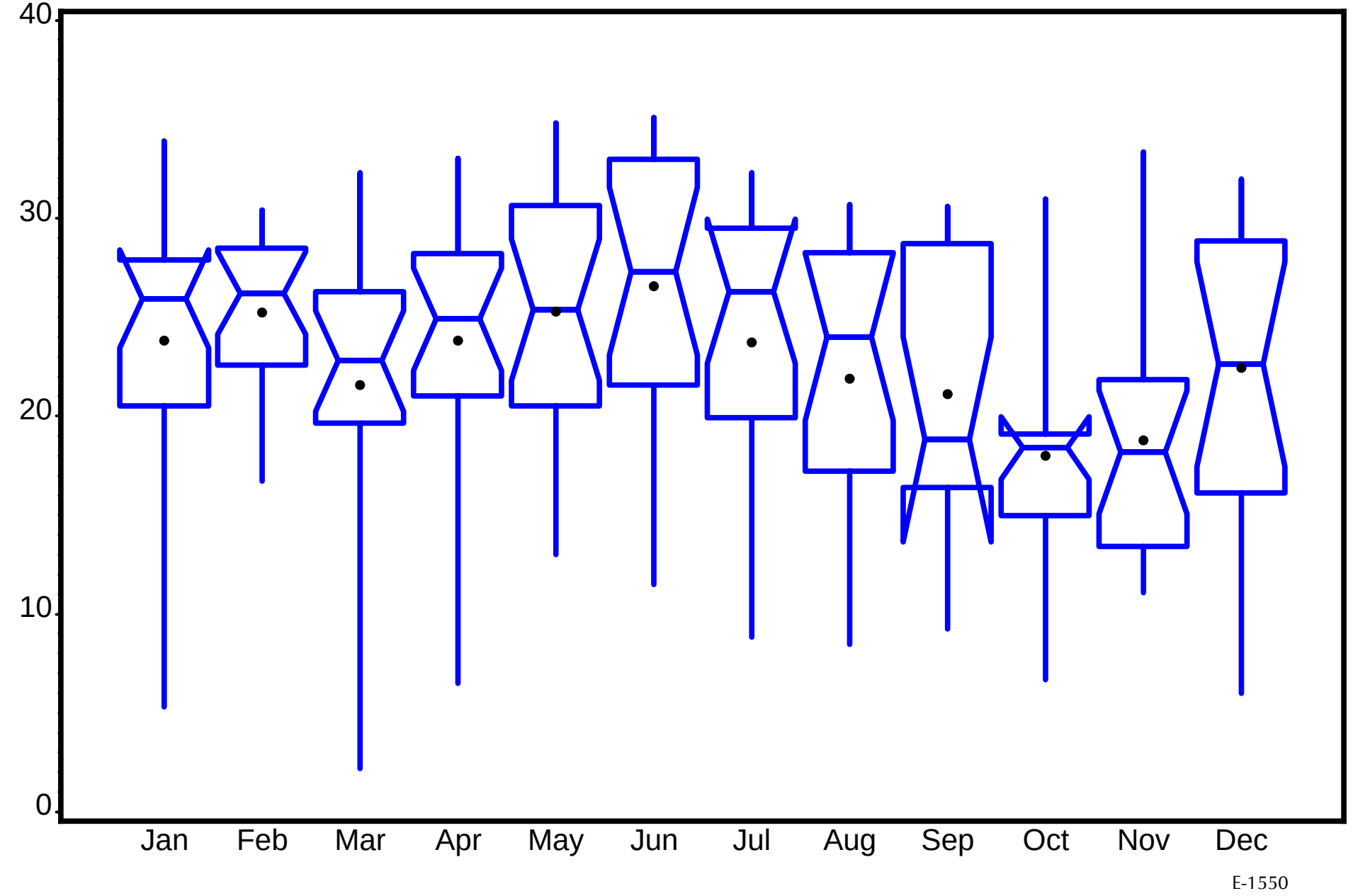
S_21FLVEMDHL11 Trends



S_21FLVEMDHL11 Trends Appendix

Seasonal Univariate Statistics

Salinity



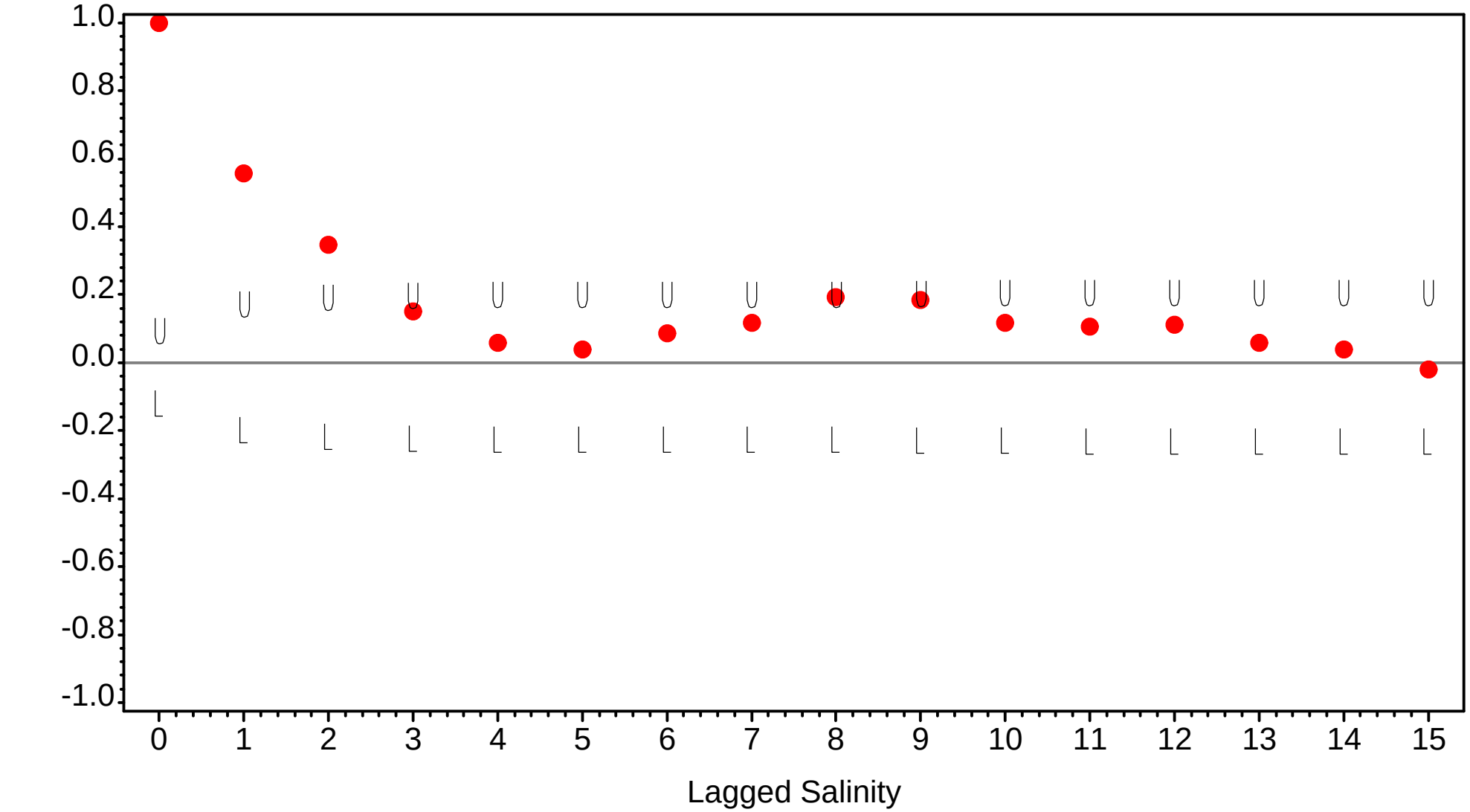
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.556	0.093	0.186	-0.186
2	0.348	0.102	0.204	-0.204
3	0.152	0.105	0.211	-0.211
4	0.059	0.106	0.212	-0.212
5	0.039	0.106	0.212	-0.212
6	0.086	0.106	0.212	-0.212
7	0.117	0.106	0.213	-0.213
8	0.193	0.107	0.213	-0.213
9	0.185	0.108	0.215	-0.215
10	0.116	0.109	0.217	-0.217
11	0.105	0.109	0.218	-0.218
12	0.112	0.109	0.218	-0.218
13	0.057	0.110	0.219	-0.219
14	0.038	0.110	0.219	-0.219
15	-0.020	0.110	0.219	-0.219

S_21FLVEMDHL11 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

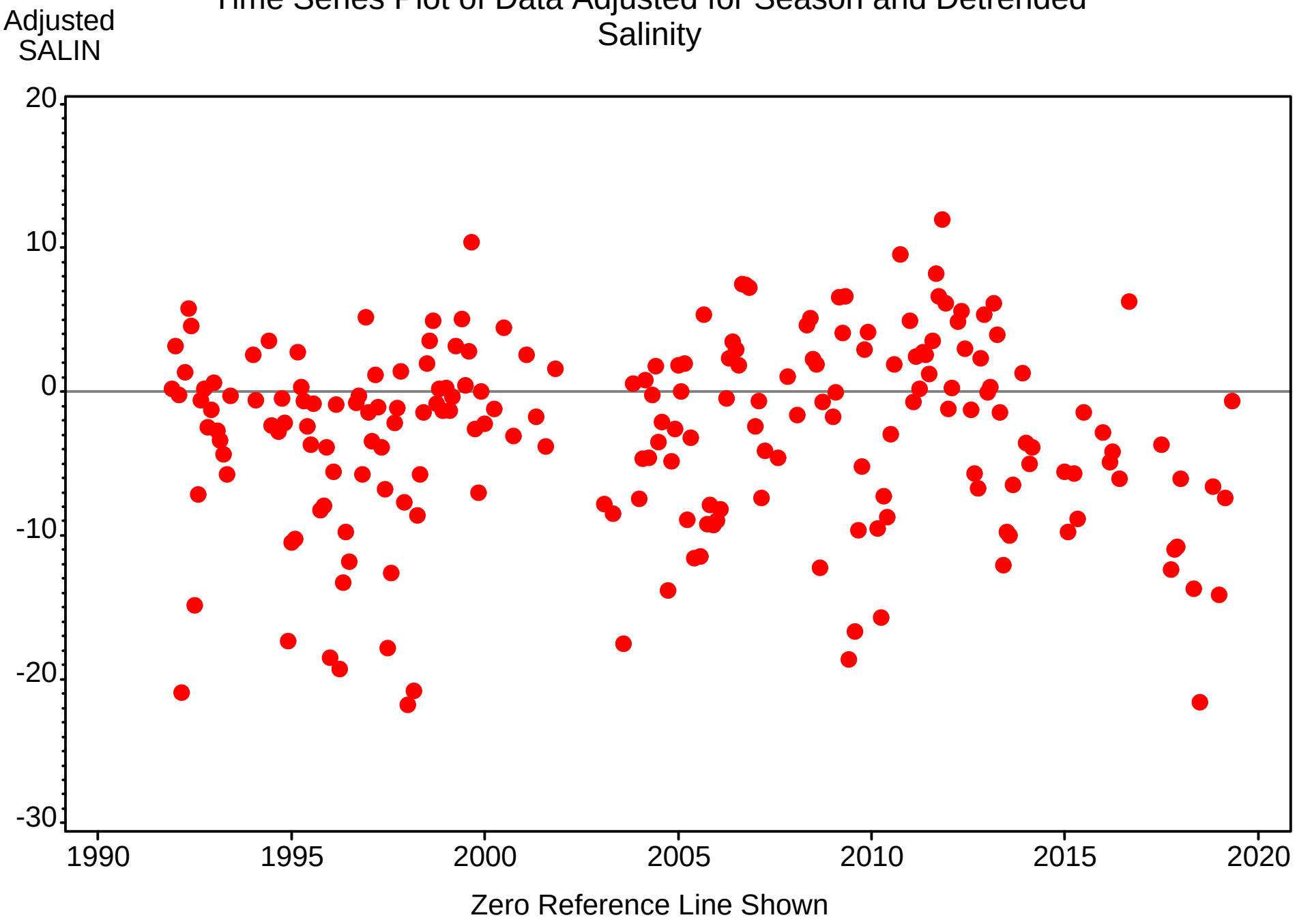
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.112	0.027	0.192	0.146

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.11214	0.026623	0.19155	0.14563

S_21FLVEMDHL11 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



E-1555

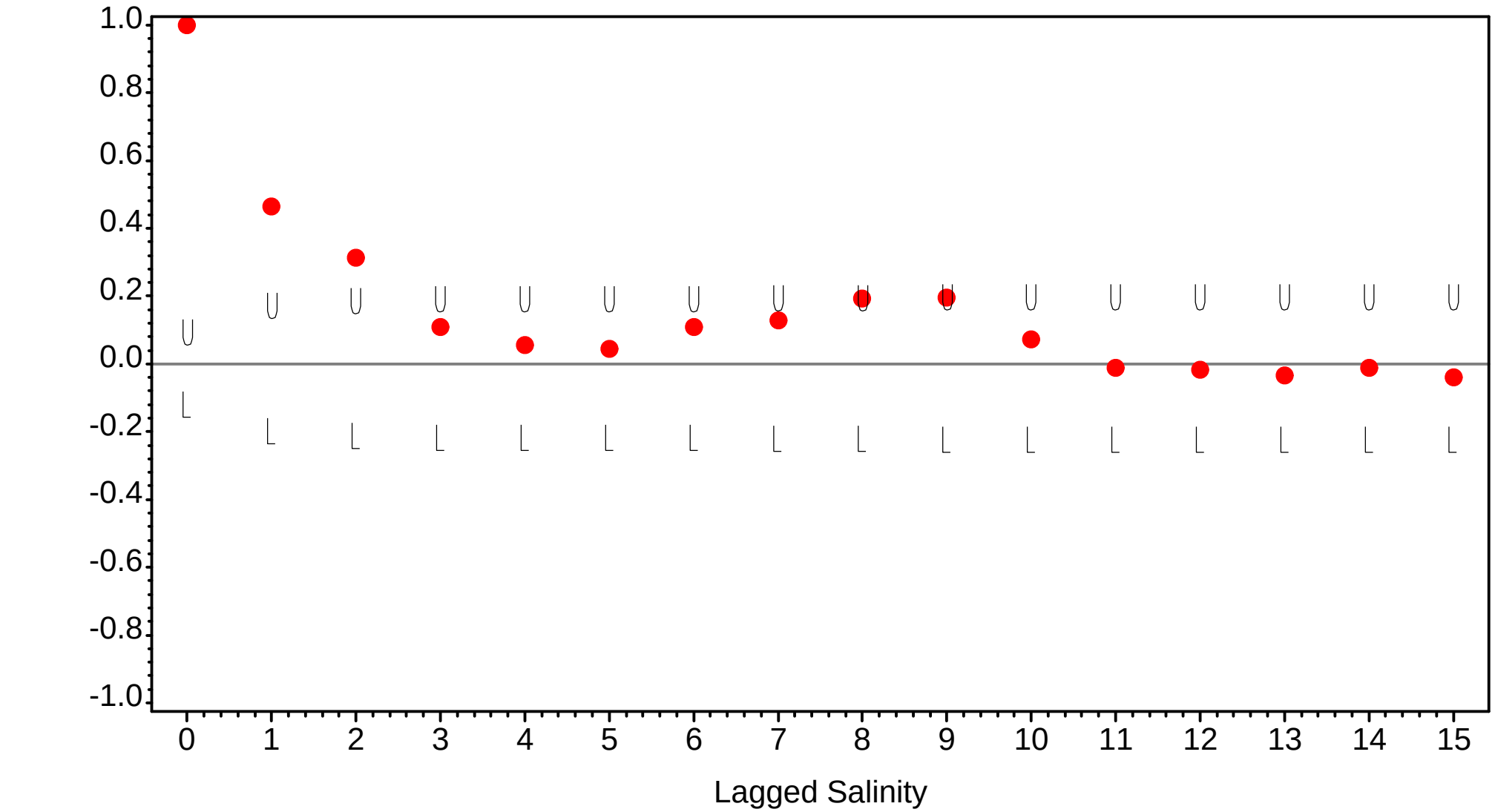
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.463	0.093	0.186	-0.186
2	0.314	0.099	0.199	-0.199
3	0.110	0.102	0.204	-0.204
4	0.056	0.102	0.205	-0.205
5	0.043	0.103	0.205	-0.205
6	0.108	0.103	0.205	-0.205
7	0.127	0.103	0.206	-0.206
8	0.192	0.103	0.207	-0.207
9	0.196	0.104	0.209	-0.209
10	0.071	0.105	0.211	-0.211
11	-0.012	0.106	0.211	-0.211
12	-0.016	0.106	0.211	-0.211
13	-0.035	0.106	0.211	-0.211
14	-0.011	0.106	0.211	-0.211
15	-0.041	0.106	0.211	-0.211

S_21FLVEMDHL11 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended



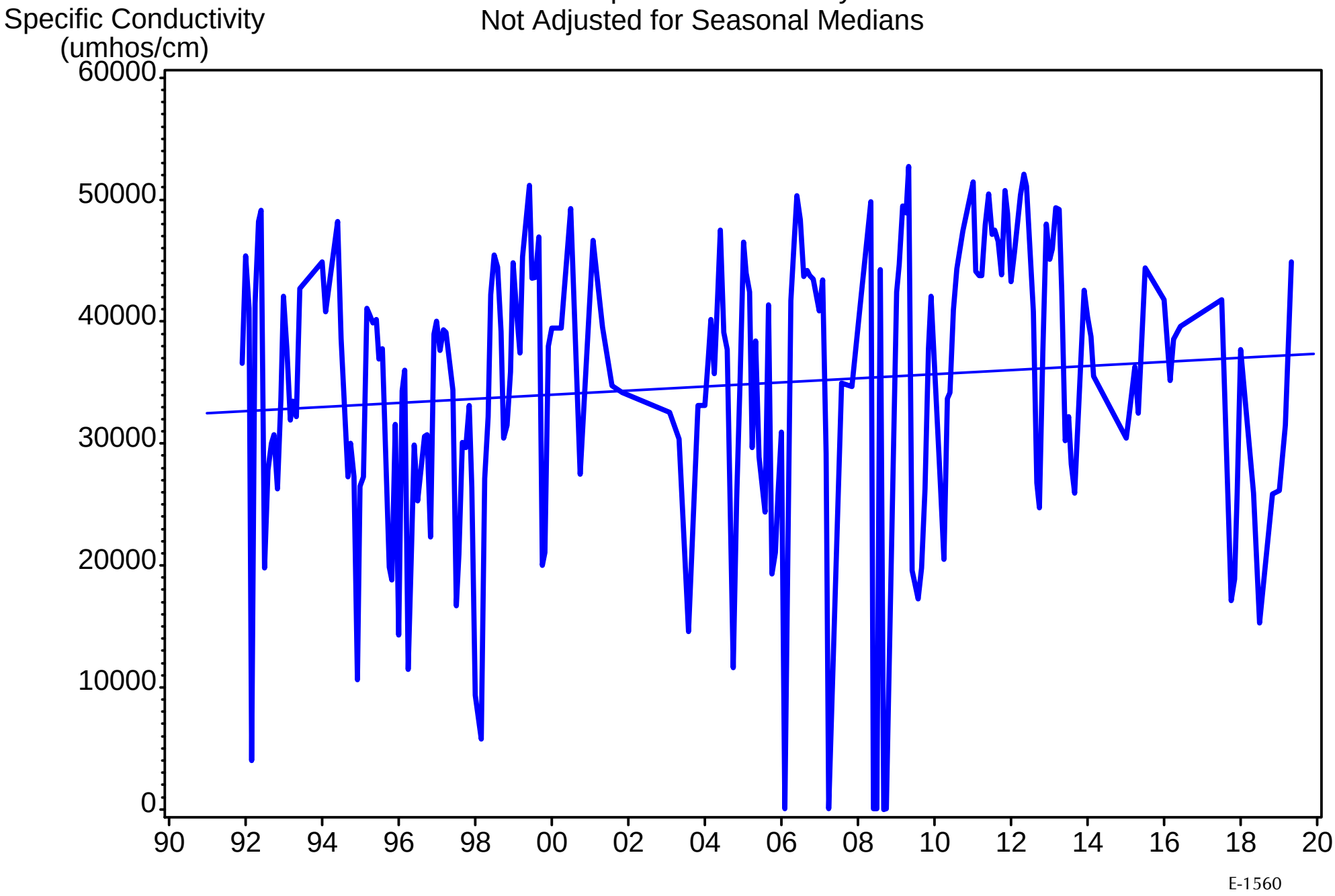
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1557

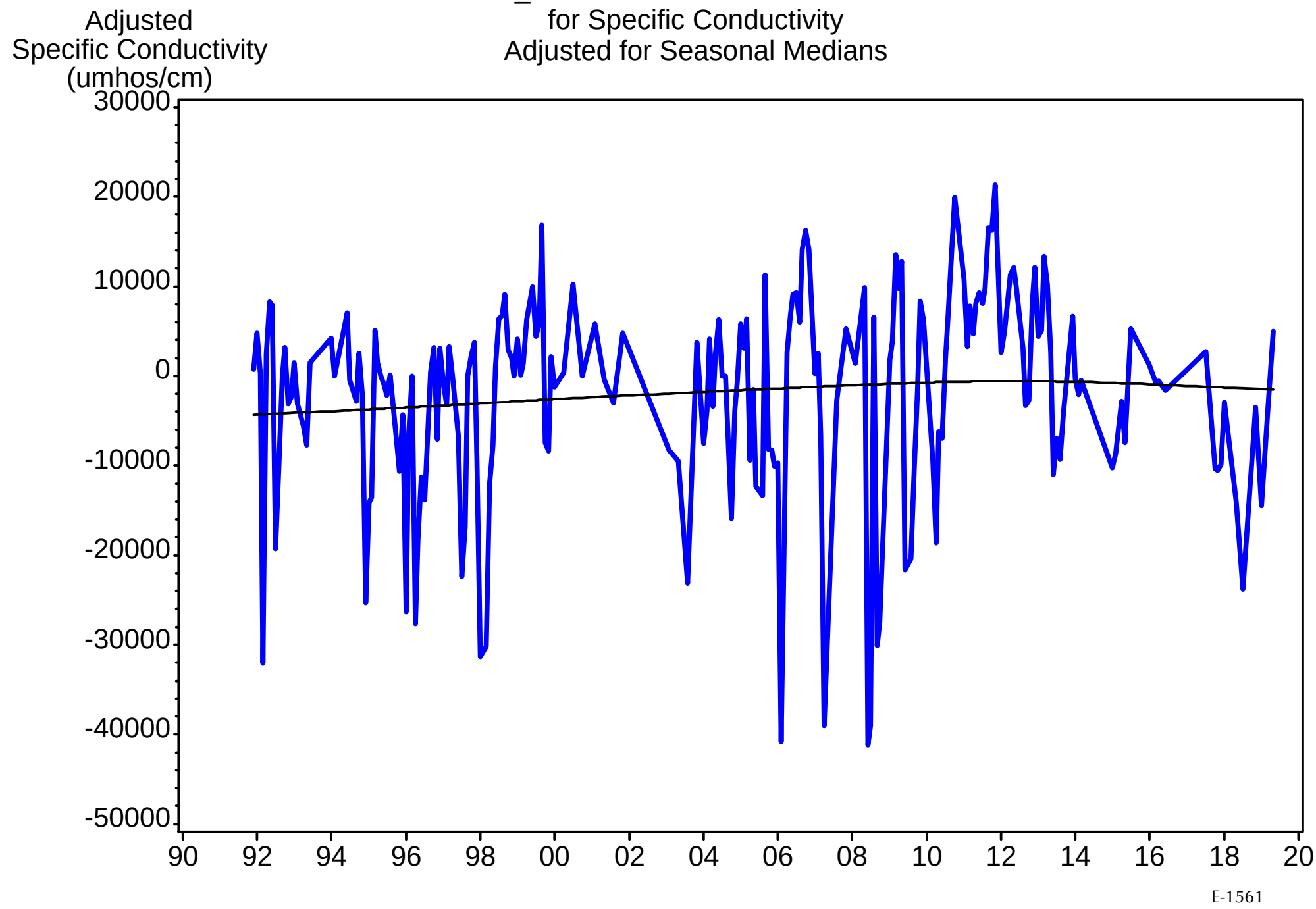
S_21FLVEMDHL11 Trends

S_21FLVEMDHL11 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



E-1560

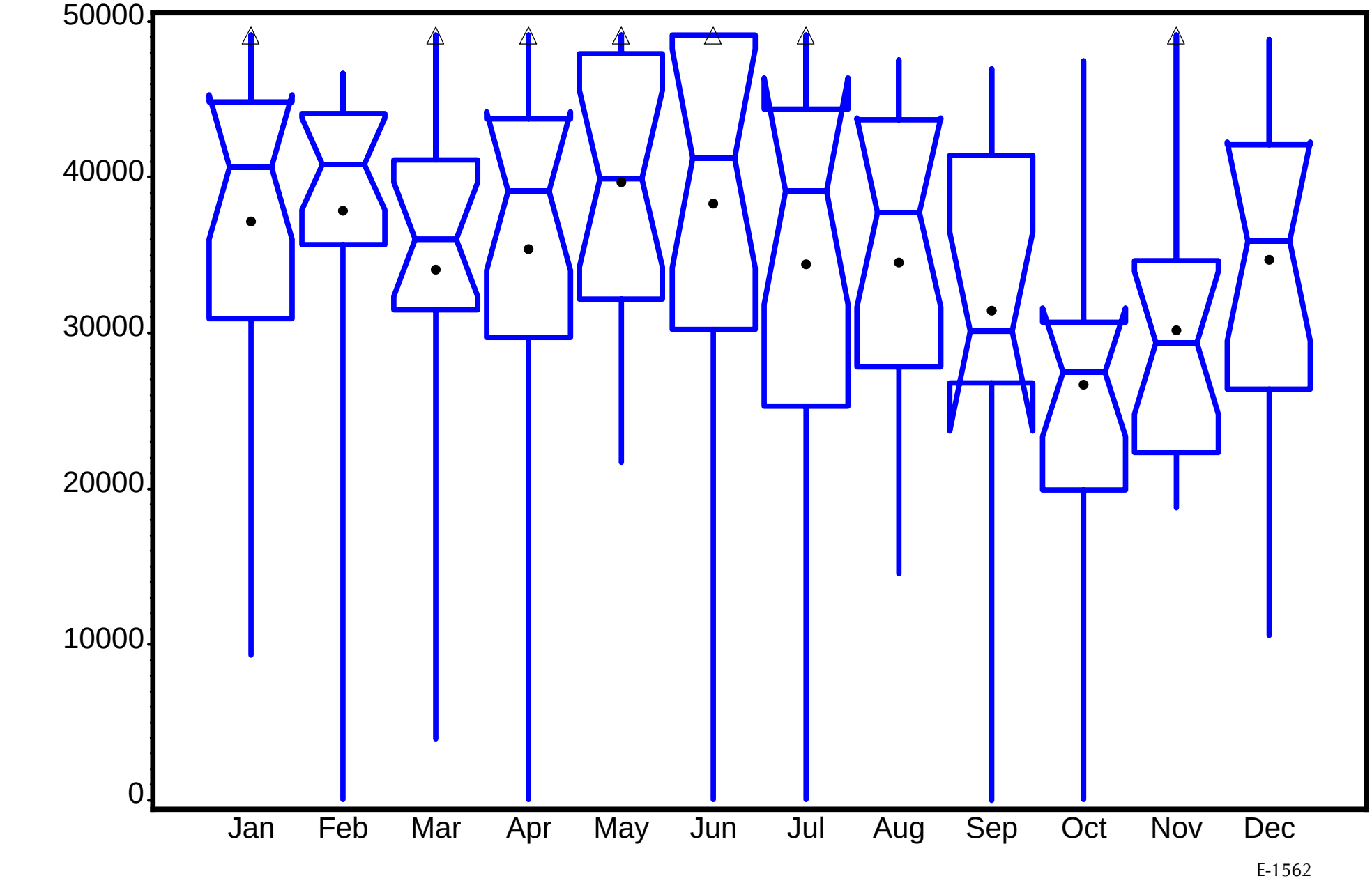
S_21FLVEMDHL11 Trends



S_21FLVEMDHL11 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity



E-1562

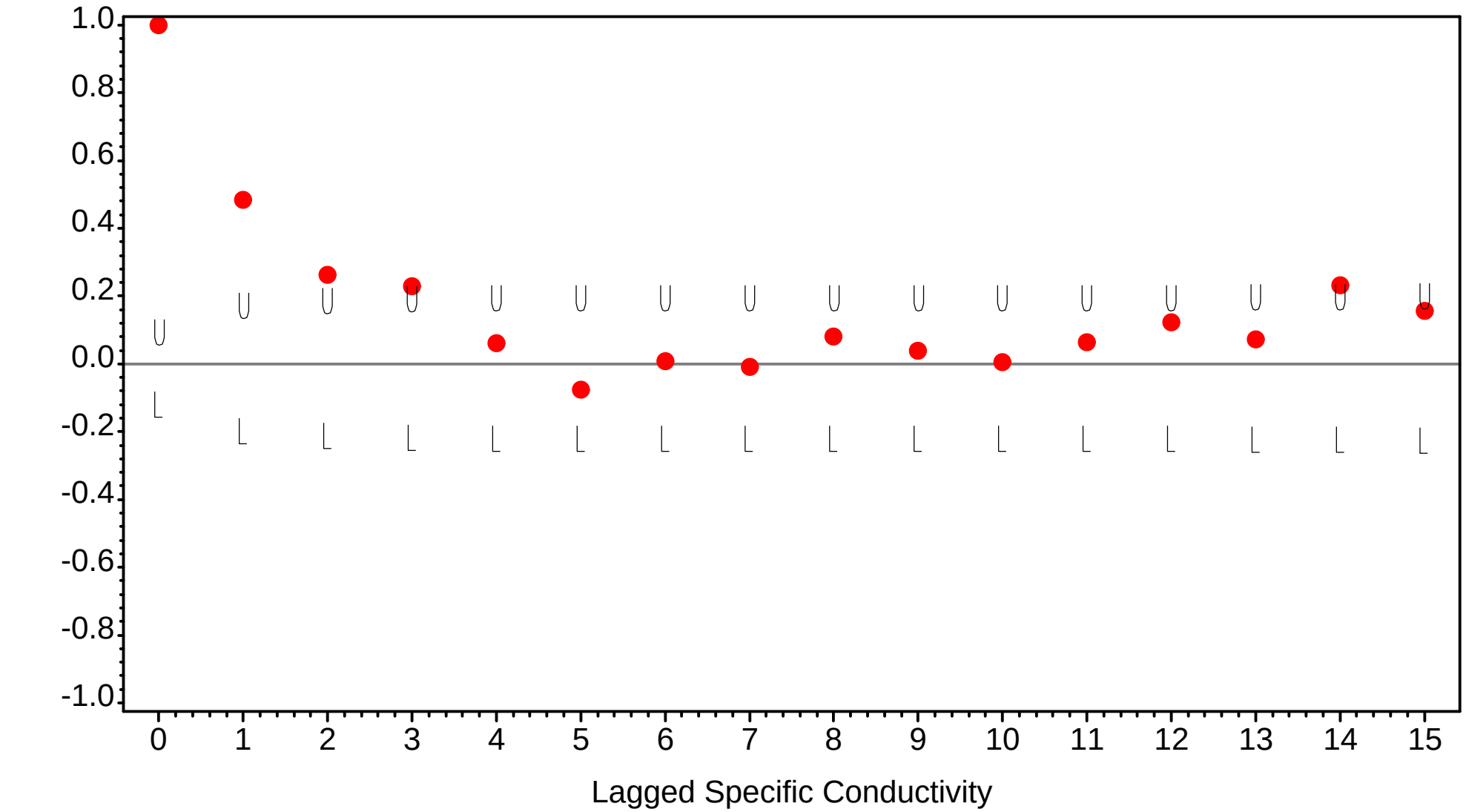
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.485	0.093	0.186	-0.186
2	0.262	0.100	0.200	-0.200
3	0.229	0.102	0.204	-0.204
4	0.061	0.103	0.207	-0.207
5	-0.076	0.103	0.207	-0.207
6	0.009	0.104	0.207	-0.207
7	-0.009	0.104	0.207	-0.207
8	0.080	0.104	0.207	-0.207
9	0.038	0.104	0.208	-0.208
10	0.006	0.104	0.208	-0.208
11	0.065	0.104	0.208	-0.208
12	0.122	0.104	0.208	-0.208
13	0.072	0.104	0.209	-0.209
14	0.231	0.104	0.209	-0.209
15	0.156	0.106	0.212	-0.212

S_21FLVEMDHL11 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1564

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

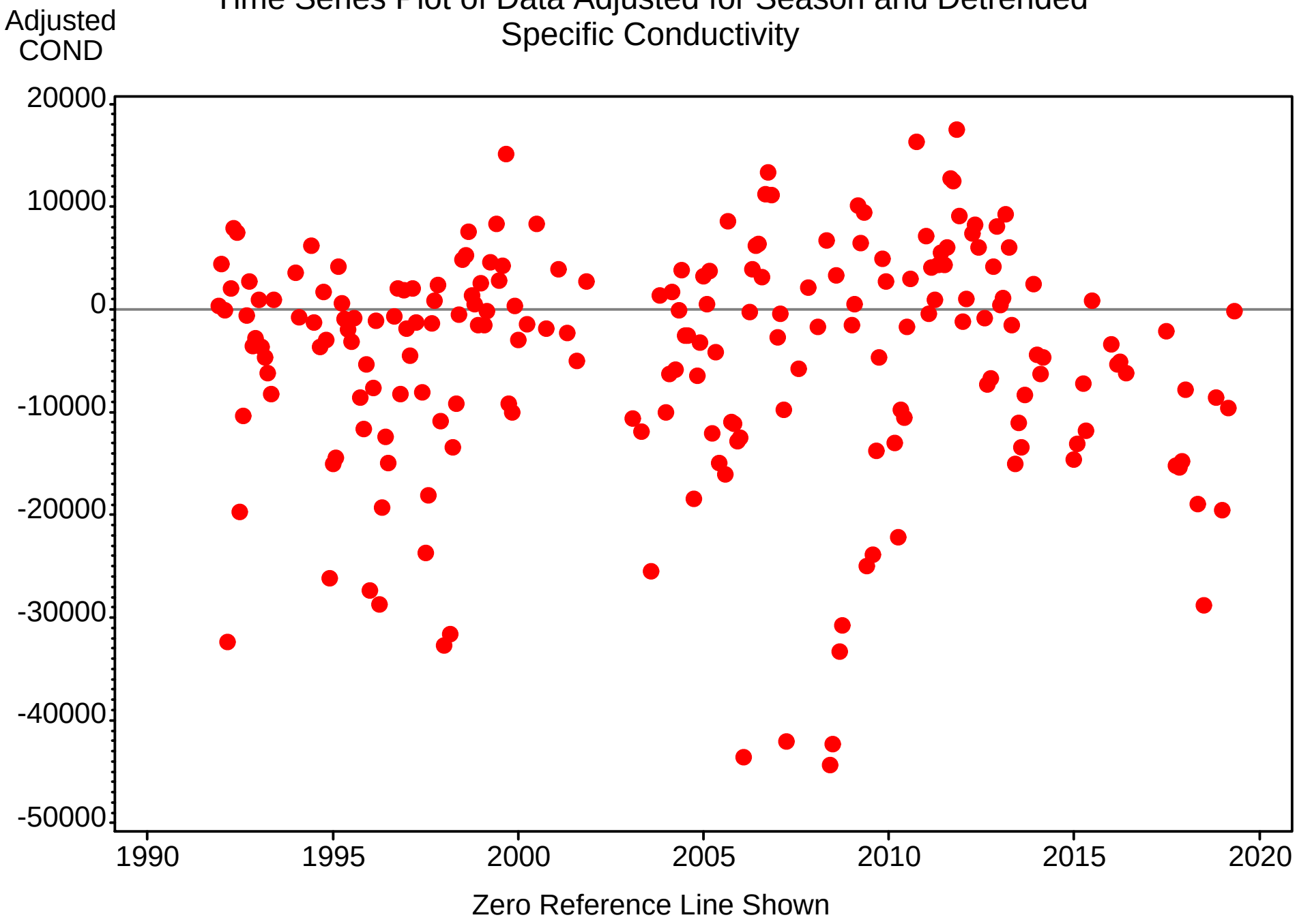
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.091	0.075	0.282	174.688

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.090757	0.074829	0.28160	174.688

S_21FLVEMDHL11 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity



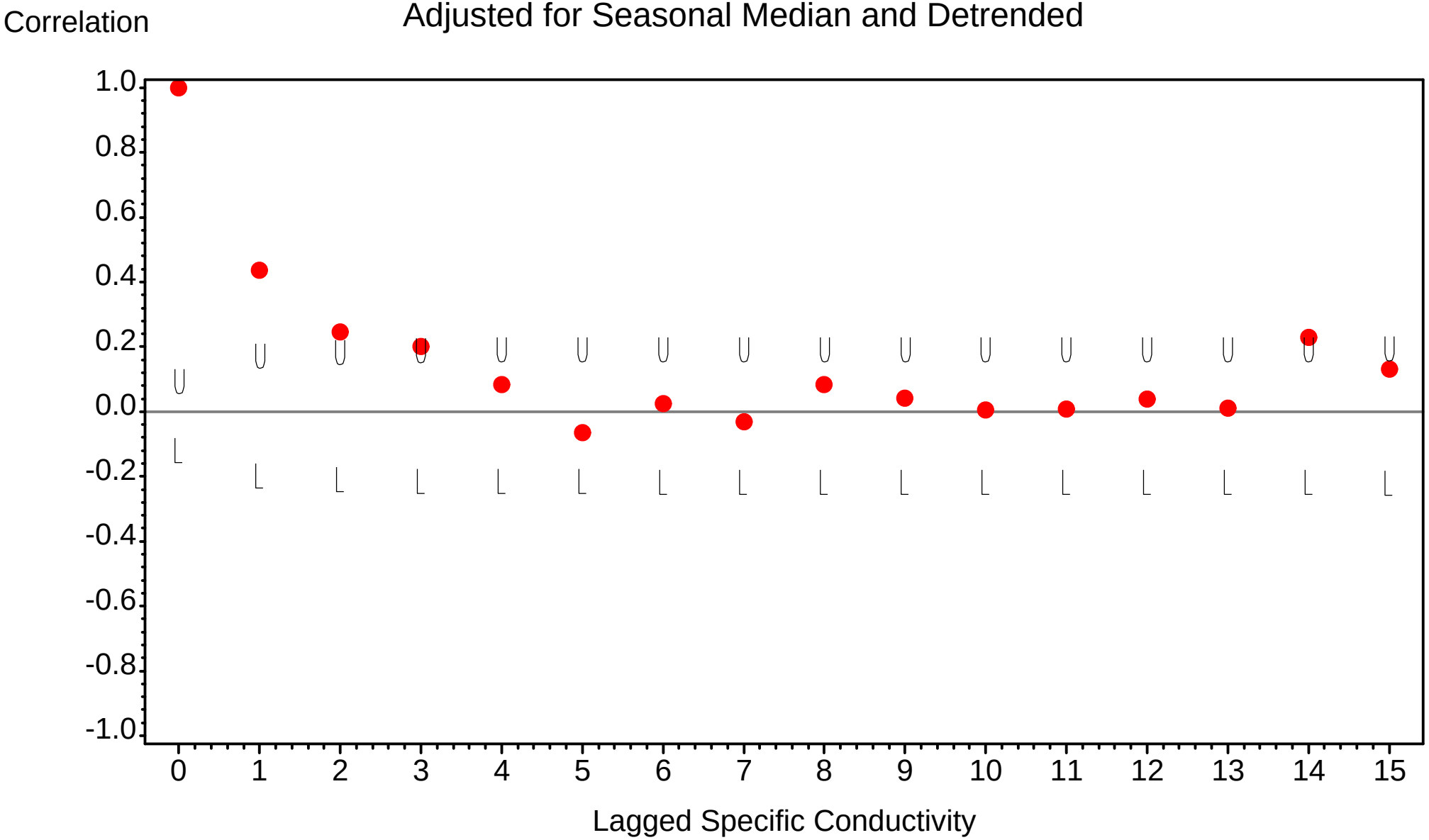
E-1567

S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.437	0.093	0.186	-0.186
2	0.246	0.099	0.197	-0.197
3	0.200	0.100	0.201	-0.201
4	0.084	0.101	0.203	-0.203
5	-0.065	0.102	0.203	-0.203
6	0.024	0.102	0.204	-0.204
7	-0.032	0.102	0.204	-0.204
8	0.084	0.102	0.204	-0.204
9	0.041	0.102	0.204	-0.204
10	0.006	0.102	0.204	-0.204
11	0.007	0.102	0.204	-0.204
12	0.040	0.102	0.204	-0.204
13	0.010	0.102	0.204	-0.204
14	0.228	0.102	0.204	-0.204
15	0.131	0.104	0.207	-0.207

S_21FLVEMDHL11 Trends Appendix

Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended

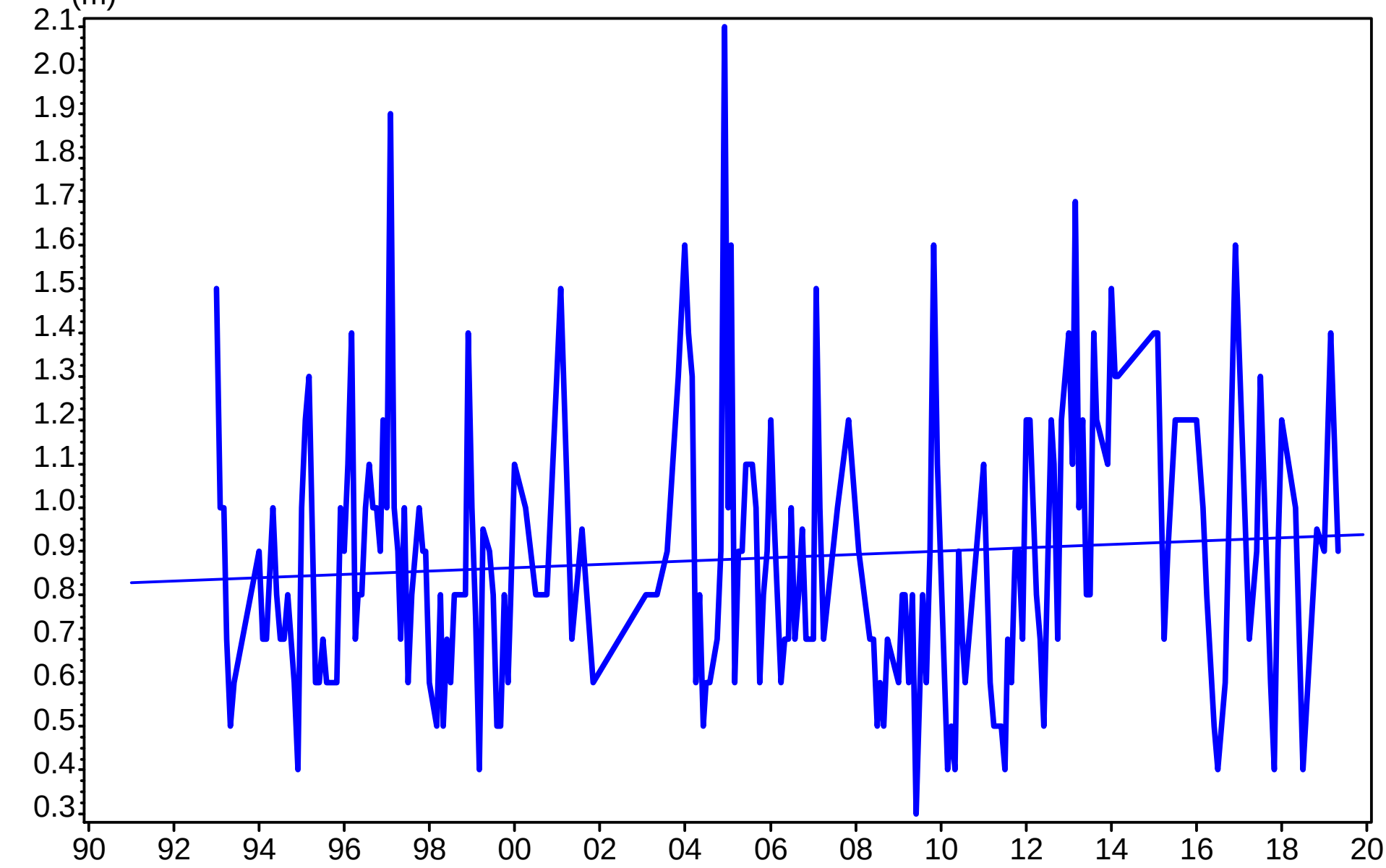


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1569

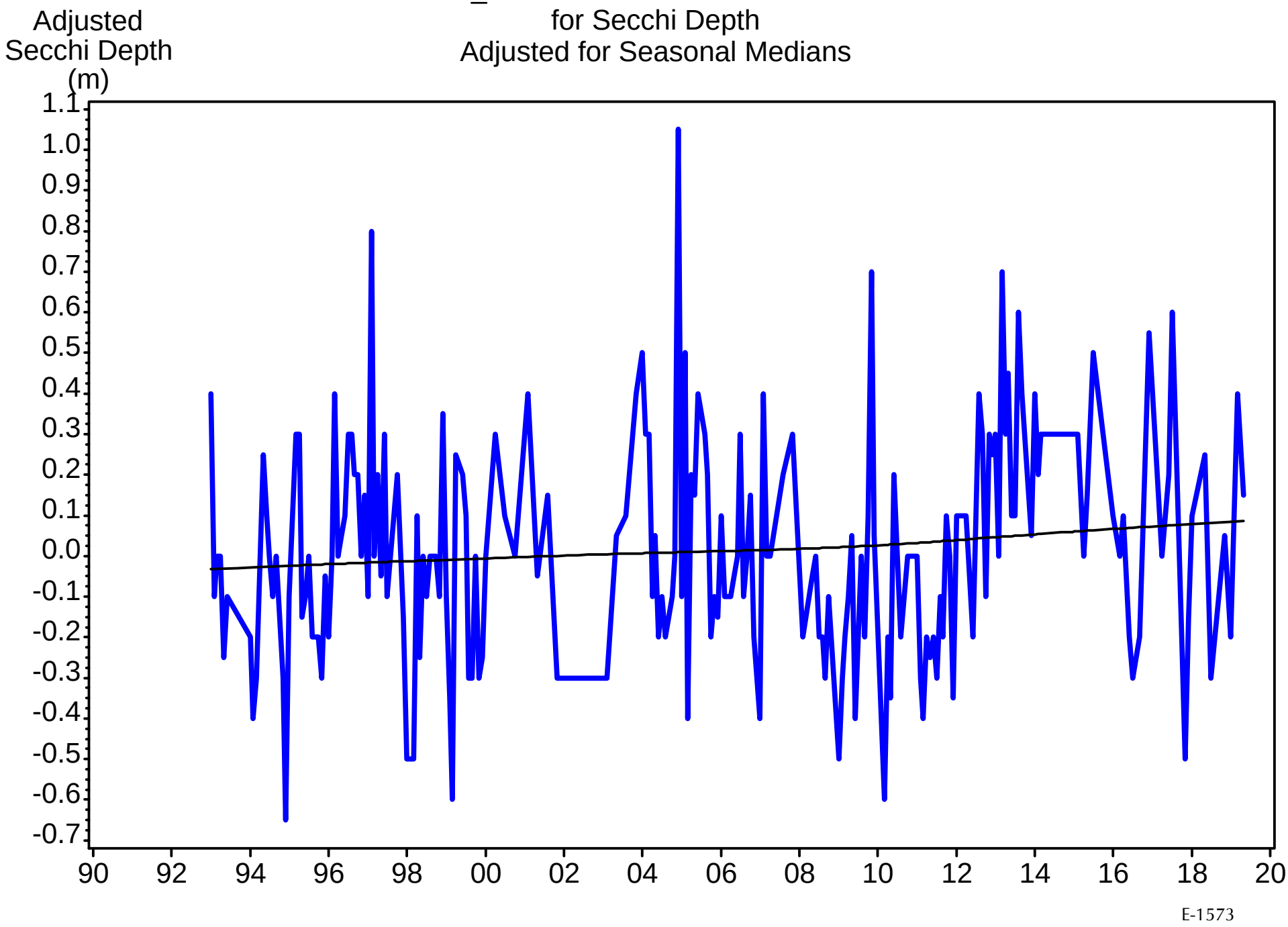
S_21FLVEMDHL11 Trends

S_21FLVEMDHL11 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



E-1572

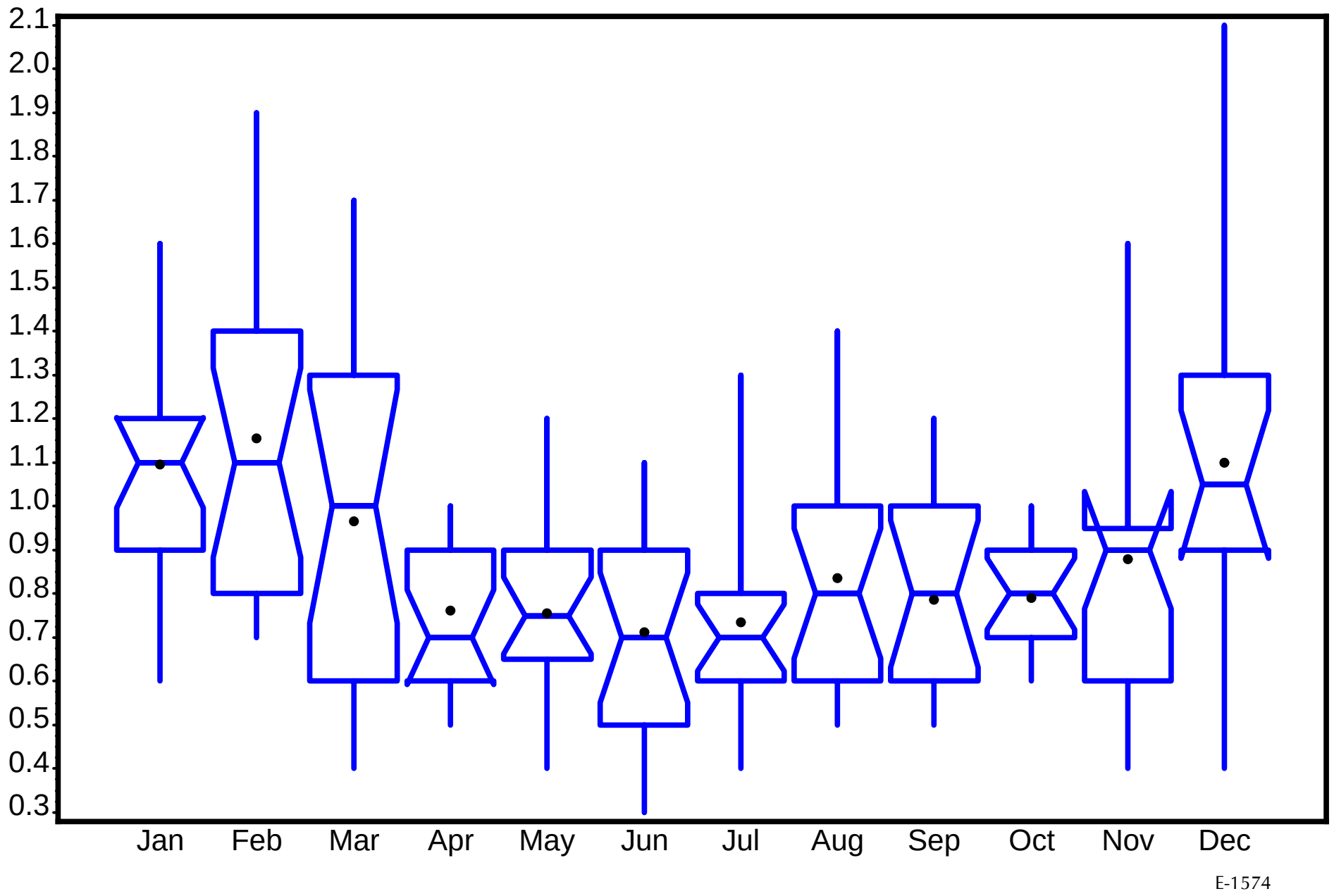
S_21FLVEMDHL11 Trends



S_21FLVEMDHL11 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



E-1574

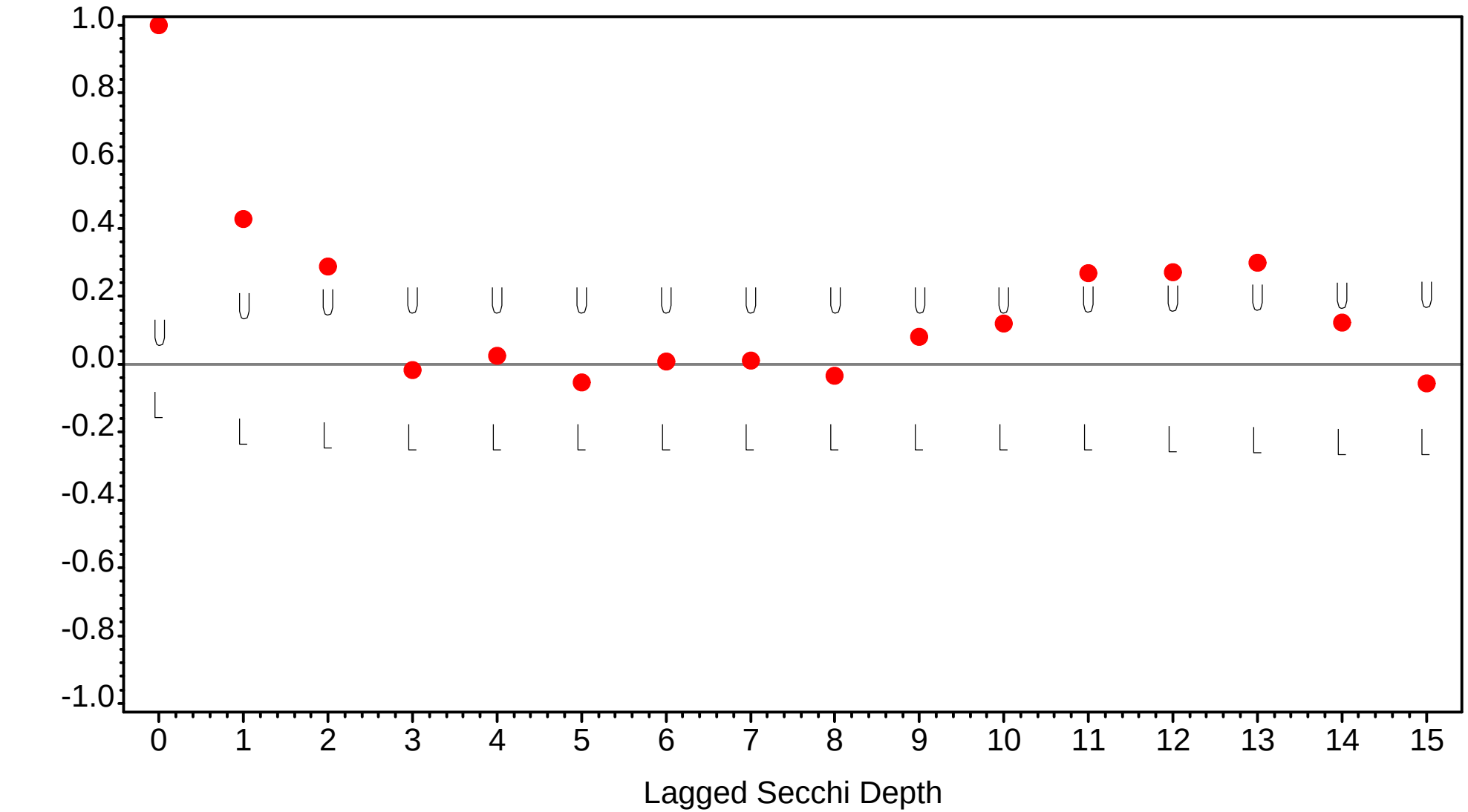
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.428	0.093	0.186	-0.186
2	0.287	0.098	0.197	-0.197
3	-0.018	0.101	0.201	-0.201
4	0.024	0.101	0.201	-0.201
5	-0.053	0.101	0.201	-0.201
6	0.007	0.101	0.202	-0.202
7	0.010	0.101	0.202	-0.202
8	-0.033	0.101	0.202	-0.202
9	0.082	0.101	0.202	-0.202
10	0.121	0.101	0.202	-0.202
11	0.269	0.101	0.203	-0.203
12	0.271	0.103	0.207	-0.207
13	0.300	0.106	0.211	-0.211
14	0.122	0.108	0.216	-0.216
15	-0.056	0.108	0.217	-0.217

S_21FLVEMDHL11 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

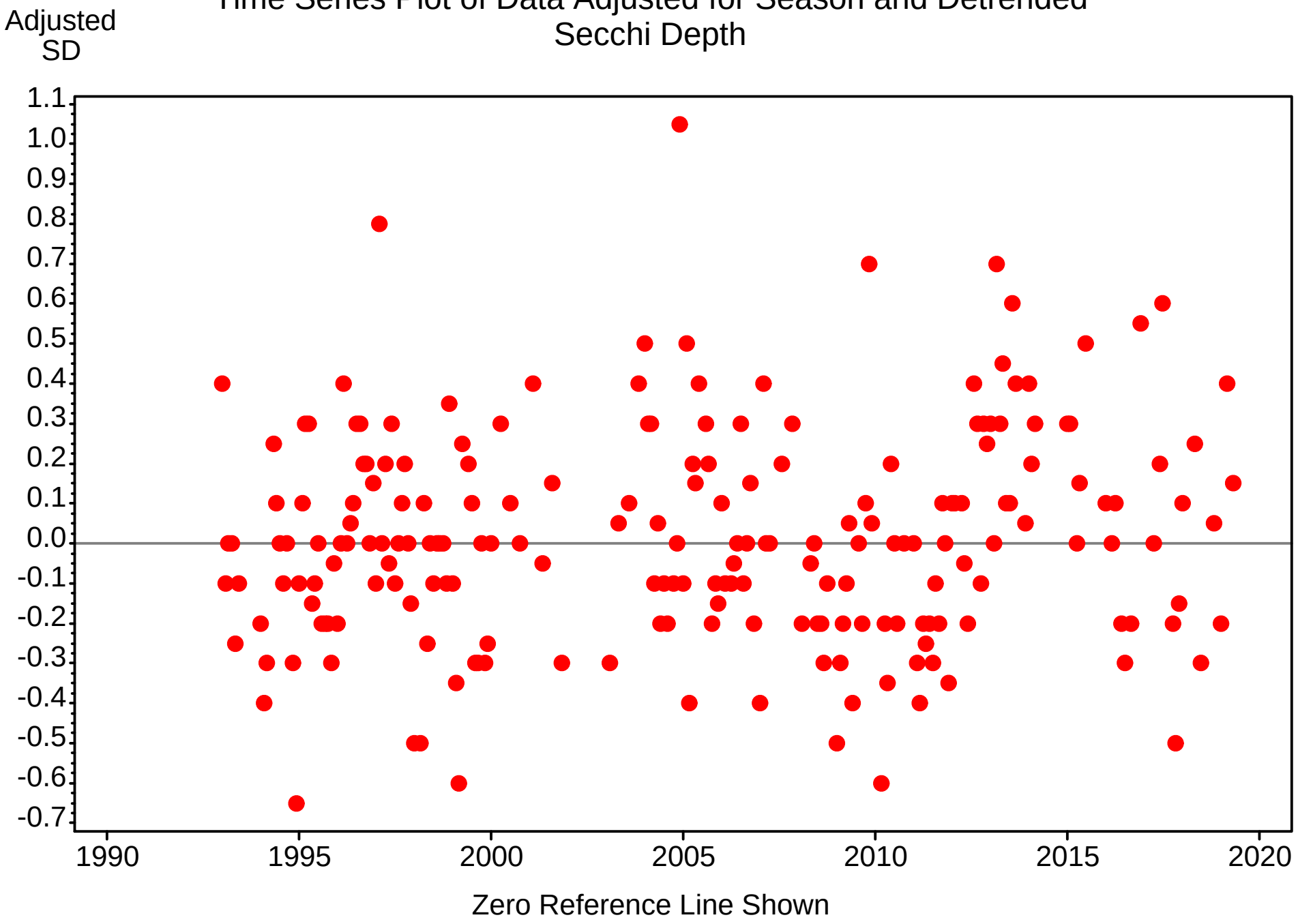
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.069	0.171	0.351	0

S_21FLVEMDHL11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.069421	0.17136	0.35079	0

S_21FLVEMDHL11 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth



E-1579

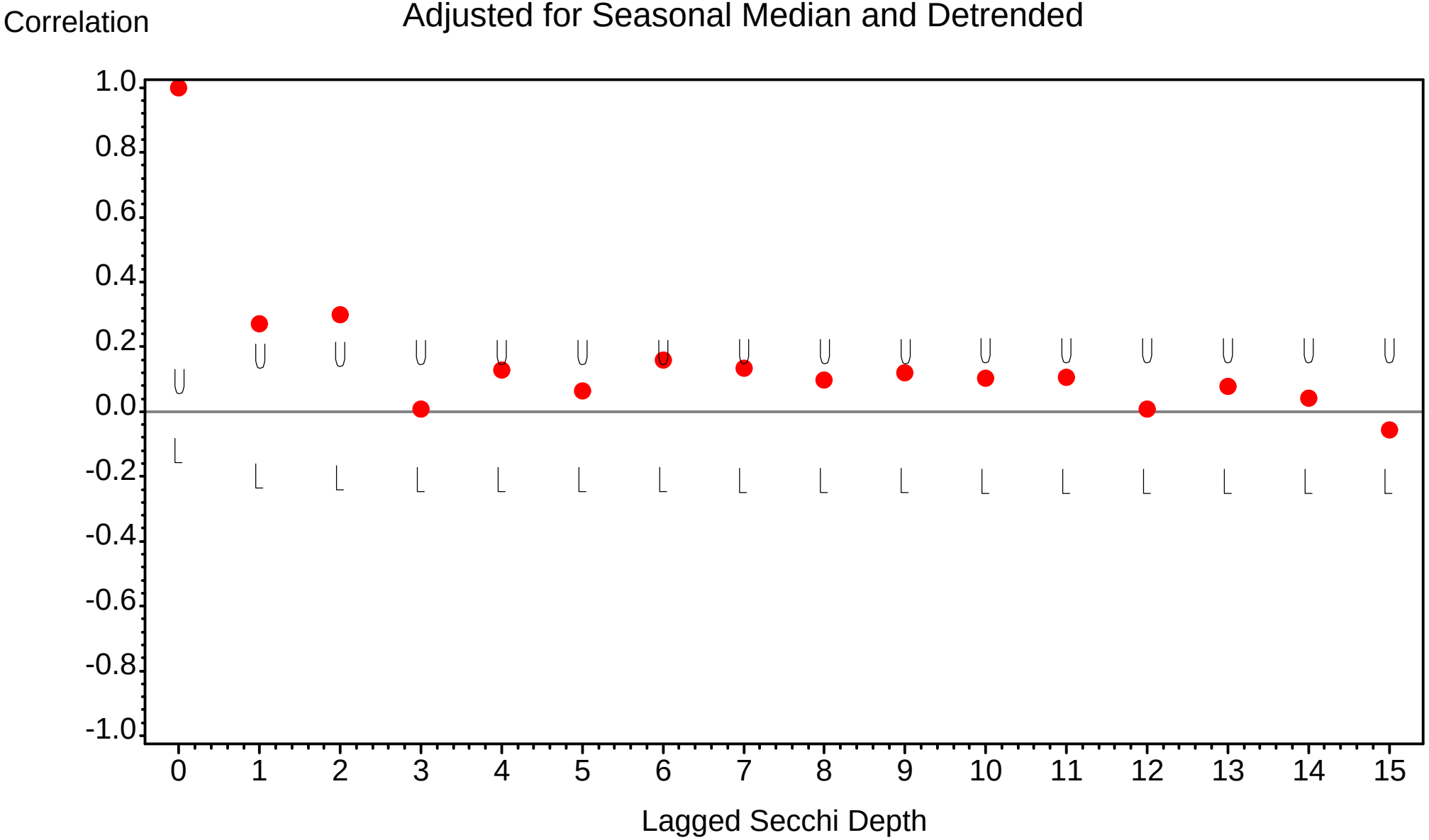
S_21FLVEMDHL11 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.271	0.093	0.186	-0.186
2	0.299	0.095	0.190	-0.190
3	0.007	0.098	0.196	-0.196
4	0.128	0.098	0.196	-0.196
5	0.065	0.098	0.196	-0.196
6	0.159	0.098	0.197	-0.197
7	0.134	0.099	0.198	-0.198
8	0.098	0.100	0.199	-0.199
9	0.120	0.100	0.200	-0.200
10	0.104	0.100	0.201	-0.201
11	0.107	0.101	0.201	-0.201
12	0.007	0.101	0.202	-0.202
13	0.077	0.101	0.202	-0.202
14	0.042	0.101	0.202	-0.202
15	-0.057	0.101	0.202	-0.202

S_21FLVEMDHL11 Trends Appendix

Correlogram for Secchi Depth

Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1581

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
9	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
11	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
12	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
13	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
14	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
9	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
10	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
11	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
12	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
13	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
14	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
9	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
10	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
11	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
12	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
13	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
14	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
16	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
17	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
18	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
19	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
20	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
21	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
16	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
17	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
18	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
19	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
20	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
21	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
16	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
17	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
18	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
19	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
20	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
21	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
22	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.15
23	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28	0.99
24	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67	1.60
25	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.27
26	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90	2.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
22	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017	-0.14839
23	Y	Y	N	N	-0.132	0.057	0.124	-0.001	-0.13170
24	Y	Y	N	N	0.150	0.038	0.109	0.103	0.15026
25	N	Y	Y	Y	0.141	0.033	0.135	357.337	0.14103
26	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014	-0.08367

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
23	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
24	0.03776	0.10869	0.103	0.15026	0.03776	0.103
25	0.03319	0.13465	357.337	0.14100	0.13500	357.337
26	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
27	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48	1.87
28	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00	0.20
29	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00	1.03
30	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.75
31	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43	1.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
27	Y	Y	Y	Y	0.090	0.188	0.382	0.156	0.08974
28	N	Y	Y	Y	0.153	0.020	0.128	0.254	0.15317
29	Y	Y	N	N	0.109	0.084	0.181	0.000	0.10913
30	Y	Y	Y	Y	0.015	0.858	0.907	0.001	0.01504
31	Y	Y	N	N	-0.115	0.116	0.160	-0.001	-0.12022

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
27	0.18759	0.38162	0.156	0.08974	0.38162	0.156
28	0.01994	0.12793	0.254	0.15300	0.12800	0.254
29	0.08403	0.18091	0.000	0.10913	0.08403	0.000
30	0.85776	0.90700	0.001	0.01504	0.90700	0.001
31	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
32	S_21FLVEMDHL05	S_21FLVEMDHL05	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.66	0.74
33	S_21FLVEMDHL05	S_21FLVEMDHL05	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.71
34	S_21FLVEMDHL05	S_21FLVEMDHL05	DO	Dissolved Oxygen	(mg/L)	22	30	2.01	2.54
35	S_21FLVEMDHL05	S_21FLVEMDHL05	DOSAT	Dissolved Oxygen	(%)	32	40	1.41	2.00
36	S_21FLVEMDHL05	S_21FLVEMDHL05	SALIN	Salinity	(psu)	52	60	-9999.00	0.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
32	Y	Y	Y	Y	0.145	0.032	0.115	0.086	0.14507
33	Y	Y	Y	Y	0.085	0.174	0.337	182.245	0.08502
34	Y	N	N	N	-0.149	0.017	0.110	-0.023	-0.14929
35	Y	Y	N	N	0.081	0.199	0.362	0.114	0.08126
36	Y	Y	N	N	0.060	0.339	0.502	0.082	0.05987

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
32	0.03182	0.11509	0.086	0.14507	0.11509	0.086
33	0.17411	0.33661	182.245	0.08502	0.33661	182.245
34	0.01704	0.11000	-0.023	-0.14929	0.01704	-0.023
35	0.19863	0.36237	0.114	0.08126	0.19863	0.114
36	0.33872	0.50152	0.082	0.05987	0.33872	0.082

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
37	S_21FLVEMDHL05	S_21FLVEMDHL05	SD	Secchi Depth	(m)	72	80	0.38	1.10
38	S_21FLVEMDHL05	S_21FLVEMDHL05	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.81
39	S_21FLVEMDHL05	S_21FLVEMDHL05	TP	Total Phosphorus	(mg/L)	12	20	0.80	0.83
40	S_21FLVEMDHL06	S_21FLVEMDHL06	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.28	0.01
41	S_21FLVEMDHL06	S_21FLVEMDHL06	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.76

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
37	Y	N	N	N	0.047	0.468	0.545	0.000	0.04654
38	Y	Y	Y	Y	-0.146	0.037	0.227	-0.009	-0.14590
39	Y	Y	N	N	-0.030	0.675	0.690	0.000	-0.02972
40	Y	N	N	N	0.024	0.729	0.758	0.016	0.02423
41	Y	Y	Y	Y	0.105	0.092	0.238	239.000	0.10454

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
37	0.46800	0.54466	0.000	0.04654	0.46800	0.000
38	0.03661	0.22687	-0.009	-0.14590	0.22687	-0.009
39	0.67549	0.68953	0.000	-0.02972	0.67549	0.000
40	0.72880	0.75791	0.016	0.02423	0.72880	0.016
41	0.09156	0.23833	239.000	0.10454	0.23833	239.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
42	S_21FLVEMDHL06	S_21FLVEMDHL06	DO	Dissolved Oxygen	(mg/L)	22	30	2.05	2.52
43	S_21FLVEMDHL06	S_21FLVEMDHL06	DOSAT	Dissolved Oxygen	(%)	32	40	1.25	1.99
44	S_21FLVEMDHL06	S_21FLVEMDHL06	SALIN	Salinity	(psu)	52	60	-9999.00	0.74
45	S_21FLVEMDHL06	S_21FLVEMDHL06	SD	Secchi Depth	(m)	72	80	0.69	0.94
46	S_21FLVEMDHL06	S_21FLVEMDHL06	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
42	Y	N	N	N	-0.116	0.062	0.197	-0.017	-0.11576
43	Y	Y	N	N	0.080	0.201	0.322	0.088	0.08045
44	Y	Y	Y	Y	0.090	0.143	0.319	0.138	0.09026
45	Y	Y	Y	Y	0.047	0.458	0.500	0.000	0.04707
46	Y	Y	Y	Y	-0.126	0.072	0.357	-0.011	-0.12577

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
42	0.06243	0.19679	-0.017	-0.11576	0.06243	-0.017
43	0.20088	0.32170	0.088	0.08045	0.20088	0.088
44	0.14300	0.31855	0.138	0.09026	0.31855	0.138
45	0.45795	0.50041	0.000	0.04707	0.50041	0.000
46	0.07193	0.35680	-0.011	-0.12577	0.35680	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
47	S_21FLVEMDHL06	S_21FLVEMDHL06	TP	Total Phosphorus	(mg/L)	12	20	1.37	0.87
48	S_21FLVEMDHL07	S_21FLVEMDHL07	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.63	0.86
49	S_21FLVEMDHL07	S_21FLVEMDHL07	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.63
50	S_21FLVEMDHL07	S_21FLVEMDHL07	DO	Dissolved Oxygen	(mg/L)	22	30	0.95	2.67
51	S_21FLVEMDHL07	S_21FLVEMDHL07	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	1.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
47	Y	Y	N	N	-0.070	0.311	0.352	-0.001	-0.07004
48	Y	Y	N	N	-0.072	0.299	0.400	-0.064	-0.07206
49	Y	Y	Y	Y	0.087	0.169	0.316	185.539	0.08720
50	Y	N	Y	N	-0.184	0.003	0.046	-0.029	-0.18418
51	Y	Y	N	N	0.008	0.910	0.929	0.000	0.00826

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
47	0.31141	0.35163	-0.001	-0.07004	0.31141	-0.001
48	0.29904	0.39997	-0.064	-0.07206	0.29904	-0.064
49	0.16902	0.31573	185.539	0.08720	0.31573	185.539
50	0.00342	0.04576	-0.029	-0.18418	0.00342	-0.029
51	0.91015	0.92863	0.000	0.00826	0.91015	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
52	S_21FLVEMDHL07	S_21FLVEMDHL07	SALIN	Salinity	(psu)	52	60	-9999.00	0.71
53	S_21FLVEMDHL07	S_21FLVEMDHL07	SD	Secchi Depth	(m)	72	80	0.57	1.17
54	S_21FLVEMDHL07	S_21FLVEMDHL07	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.36
55	S_21FLVEMDHL07	S_21FLVEMDHL07	TP	Total Phosphorus	(mg/L)	12	20	1.44	0.84
56	S_21FLVEMDHL08	S_21FLVEMDHL08	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.14	1.34

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
52	Y	Y	Y	Y	0.073	0.250	0.428	0.107	0.07253
53	Y	Y	N	N	0.025	0.714	0.742	0.000	0.02457
54	Y	Y	Y	Y	-0.185	0.009	0.183	-0.017	-0.18331
55	Y	Y	N	N	0.002	1.000	1.000	0.000	0.00159
56	Y	Y	Y	Y	-0.071	0.214	0.403	-0.051	-0.07149

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
52	0.25004	0.42819	0.107	0.07253	0.42819	0.107
53	0.71425	0.74214	0.000	0.02457	0.71425	0.000
54	0.00999	0.18667	-0.017	-0.18331	0.18667	-0.017
55	1.00000	1.00000	0.000	0.00159	1.00000	0.000
56	0.21416	0.40266	-0.051	-0.07149	0.40266	-0.051

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
57	S_21FLVEMDHL08	S_21FLVEMDHL08	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.59
58	S_21FLVEMDHL08	S_21FLVEMDHL08	DO	Dissolved Oxygen	(mg/L)	22	30	0.75	2.49
59	S_21FLVEMDHL08	S_21FLVEMDHL08	DOSAT	Dissolved Oxygen	(%)	32	40	0.22	1.87
60	S_21FLVEMDHL08	S_21FLVEMDHL08	SALIN	Salinity	(psu)	52	60	-9999.00	0.65
61	S_21FLVEMDHL08	S_21FLVEMDHL08	SD	Secchi Depth	(m)	72	80	0.27	2.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
57	Y	Y	Y	Y	0.120	0.020	0.160	254.845	0.11995
58	Y	N	N	N	-0.232	0.000	0.009	-0.042	-0.23164
59	Y	Y	N	N	-0.152	0.003	0.037	-0.244	-0.15249
60	Y	Y	Y	Y	0.136	0.008	0.129	0.193	0.13555
61	Y	Y	Y	Y	0.143	0.004	0.056	0.007	0.14263

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
57	0.01993	0.16007	254.845	0.11995	0.16007	254.845
58	0.00001	0.00939	-0.042	-0.23164	0.00001	-0.042
59	0.00335	0.03715	-0.244	-0.15249	0.00335	-0.244
60	0.00785	0.12892	0.193	0.13555	0.12892	0.193
61	0.00378	0.05556	0.007	0.14263	0.05556	0.007

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
62	S_21FLVEMDHL08	S_21FLVEMDHL08	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
63	S_21FLVEMDHL08	S_21FLVEMDHL08	TP	Total Phosphorus	(mg/L)	12	20	1.44	1.44
64	S_21FLVEMDHL09	S_21FLVEMDHL09	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.80	1.15
65	S_21FLVEMDHL09	S_21FLVEMDHL09	COND	Specific Conductivity	(umhos/cm)	62	70	0.08	0.52
66	S_21FLVEMDHL09	S_21FLVEMDHL09	DO	Dissolved Oxygen	(mg/L)	22	30	1.27	2.71
67	S_21FLVEMDHL09	S_21FLVEMDHL09	DOSAT	Dissolved Oxygen	(%)	32	40	0.70	1.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
62	Y	Y	Y	Y	0.028	0.718	0.811	0.003	0.02768
63	Y	Y	Y	Y	-0.190	0.007	0.042	-0.002	-0.19024
64	Y	Y	N	N	-0.127	0.021	0.085	-0.096	-0.12661
65	Y	Y	Y	Y	0.096	0.054	0.237	198.000	0.09624
66	Y	N	N	N	-0.220	0.000	0.020	-0.044	-0.21971
67	Y	Y	Y	Y	-0.050	0.319	0.474	-0.033	-0.05033

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
62	0.71842	0.81125	0.003	0.02768	0.81125	0.003
63	0.00697	0.04239	-0.002	-0.19024	0.04239	-0.002
64	0.02055	0.08517	-0.096	-0.12661	0.02055	-0.096
65	0.05369	0.23662	198.000	0.09624	0.23662	198.000
66	0.00001	0.02045	-0.044	-0.21971	0.00001	-0.044
67	0.31942	0.47358	-0.033	-0.05033	0.47358	-0.033

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
68	S_21FLVEMDHL09	S_21FLVEMDHL09	SALIN	Salinity	(psu)	52	60	-9999.00	0.64
69	S_21FLVEMDHL09	S_21FLVEMDHL09	SD	Secchi Depth	(m)	72	80	-9999.00	1.87
70	S_21FLVEMDHL09	S_21FLVEMDHL09	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
71	S_21FLVEMDHL09	S_21FLVEMDHL09	TP	Total Phosphorus	(mg/L)	12	20	1.00	0.92
72	S_21FLVEMDHL10	S_21FLVEMDHL10	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.27	0.96

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
68	Y	Y	Y	Y	0.117	0.019	0.176	0.144	0.11657
69	Y	Y	N	N	0.211	0.000	0.006	0.009	0.21061
70	Y	Y	Y	Y	-0.102	0.133	0.421	-0.010	-0.10176
71	Y	N	Y	N	-0.204	0.002	0.037	-0.002	-0.20424
72	Y	Y	N	N	-0.182	0.002	0.046	-0.117	-0.18198

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
68	0.01858	0.17621	0.144	0.11657	0.17621	0.144
69	0.00002	0.00602	0.009	0.21061	0.00002	0.009
70	0.13329	0.42067	-0.010	-0.10176	0.42067	-0.010
71	0.00203	0.03704	-0.002	-0.20424	0.00203	-0.002
72	0.00179	0.04648	-0.117	-0.18198	0.00179	-0.117

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
73	S_21FLVEMDHL10	S_21FLVEMDHL10	COND	Specific Conductivity	(umhos/cm)	62	70	0.01	0.50
74	S_21FLVEMDHL10	S_21FLVEMDHL10	DO	Dissolved Oxygen	(mg/L)	22	30	1.18	2.57
75	S_21FLVEMDHL10	S_21FLVEMDHL10	DOSAT	Dissolved Oxygen	(%)	32	40	0.91	1.88
76	S_21FLVEMDHL10	S_21FLVEMDHL10	SALIN	Salinity	(psu)	52	60	-9999.00	0.81
77	S_21FLVEMDHL10	S_21FLVEMDHL10	SD	Secchi Depth	(m)	72	80	-9999.00	1.83

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
73	N	Y	Y	Y	0.179	0.001	0.054	360.000	0.17869
74	Y	N	N	N	-0.275	0.000	0.009	-0.063	-0.27487
75	Y	Y	N	N	-0.206	0.000	0.020	-0.446	-0.20622
76	Y	Y	Y	Y	0.206	0.000	0.036	0.271	0.20579
77	Y	Y	N	N	0.246	0.000	0.004	0.015	0.24589

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
73	0.00082	0.05405	360.000	0.17900	0.05400	360.000
74	0.00000	0.00913	-0.063	-0.27487	0.00000	-0.063
75	0.00014	0.01957	-0.446	-0.20622	0.00014	-0.446
76	0.00010	0.03558	0.271	0.20579	0.03558	0.271
77	0.00000	0.00429	0.015	0.24589	0.00000	0.015

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
78	S_21FLVEMDHL10	S_21FLVEMDHL10	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.02
79	S_21FLVEMDHL10	S_21FLVEMDHL10	TP	Total Phosphorus	(mg/L)	12	20	1.66	0.56
80	S_21FLVEMDHL11	S_21FLVEMDHL11	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.28	0.30
81	S_21FLVEMDHL11	S_21FLVEMDHL11	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.59
82	S_21FLVEMDHL11	S_21FLVEMDHL11	DO	Dissolved Oxygen	(mg/L)	22	30	2.80	2.60

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
78	Y	Y	Y	Y	0.027	0.731	0.835	0.005	0.02745
79	Y	Y	N	N	-0.322	0.000	0.002	-0.004	-0.32156
80	N	Y	N	N	-0.105	0.062	0.106	-0.078	-0.10526
81	Y	Y	Y	Y	0.091	0.075	0.282	174.688	0.09076
82	Y	N	N	N	0.078	0.128	0.267	0.013	0.07838

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
78	0.73102	0.83542	0.005	0.02745	0.83542	0.005
79	0.00001	0.00156	-0.004	-0.32156	0.00001	-0.004
80	0.06191	0.10624	-0.078	-0.10500	0.06200	-0.078
81	0.07483	0.28160	174.688	0.09076	0.28160	174.688
82	0.12772	0.26689	0.013	0.07838	0.12772	0.013

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
83	S_21FLVEMDHL11	S_21FLVEMDHL11	DOSAT	Dissolved Oxygen	(%)	32	40	1.80	2.70
84	S_21FLVEMDHL11	S_21FLVEMDHL11	SALIN	Salinity	(psu)	52	60	-9999.00	0.51
85	S_21FLVEMDHL11	S_21FLVEMDHL11	SD	Secchi Depth	(m)	72	80	-9999.00	1.31
86	S_21FLVEMDHL11	S_21FLVEMDHL11	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.10
87	S_21FLVEMDHL11	S_21FLVEMDHL11	TP	Total Phosphorus	(mg/L)	12	20	0.20	-9999.00
88	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	1.38

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
83	Y	N	N	N	0.219	0.000	0.007	0.398	0.21873
84	Y	Y	Y	Y	0.112	0.027	0.192	0.146	0.11214
85	Y	Y	Y	Y	0.069	0.171	0.351	0.000	0.06942
86	Y	Y	Y	Y	-0.157	0.021	0.211	-0.017	-0.15603
87	N	N	N	N	-0.230	0.001	0.007	-0.002	-0.23025
88	Y	Y	Y	Y	0.074	0.356	0.527	0.052	0.07383

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
83	0.00004	0.00671	0.398	0.21873	0.00004	0.398
84	0.02662	0.19155	0.146	0.11214	0.19155	0.146
85	0.17136	0.35079	0.000	0.06942	0.35079	0.000
86	0.02254	0.21566	-0.017	-0.15603	0.21566	-0.017
87	0.00051	0.00713	-0.002	-0.23000	0.00100	-0.002
88	0.35568	0.52706	0.052	0.07383	0.52706	0.052

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
89	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23	0.08
90	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47	2.09
91	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56	2.11
92	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09	0.29
93	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00	-9999.00
94	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.04

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
89	N	Y	Y	Y	0.090	0.212	0.347	225.098	0.08958
90	Y	N	N	N	-0.099	0.163	0.243	-0.023	-0.09906
91	Y	N	N	N	0.046	0.549	0.573	0.109	0.04571
92	N	Y	Y	Y	0.155	0.028	0.107	0.318	0.15482
93	N	Y	N	N	0.192	0.005	0.044	0.011	0.19225
94	Y	Y	N	N	-0.161	0.045	0.205	-0.029	-0.16145

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
89	0.21156	0.34660	225.098	0.09000	0.34700	225.098
90	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
91	0.54949	0.57310	0.109	0.04571	0.54949	0.109
92	0.02802	0.10656	0.318	0.15500	0.10700	0.318
93	0.00486	0.04449	0.011	0.19200	0.00500	0.011
94	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
95	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	0.45
96	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.33
97	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09	0.79
98	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16	2.35
99	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00	2.11
100	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00	0.98

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
95	N	N	N	N	0.021	0.810	0.860	0.000	0.02128
96	N	Y	N	N	0.049	0.531	0.675	0.023	0.04851
97	Y	Y	Y	Y	0.017	0.821	0.864	6.873	0.01671
98	Y	Y	N	N	-0.022	0.763	0.834	-0.004	-0.02159
99	Y	Y	Y	Y	0.049	0.487	0.514	0.154	0.04892
100	Y	Y	Y	Y	0.070	0.304	0.474	0.025	0.06955

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
95	0.80954	0.86021	0.000	0.02100	0.81000	0.000
96	0.53077	0.67536	0.023	0.04900	0.53100	0.023
97	0.82111	0.86399	6.874	0.01671	0.86399	6.874
98	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
99	0.48687	0.51426	0.154	0.04892	0.51426	0.154
100	0.30398	0.47368	0.025	0.06955	0.47368	0.025

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
101	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61	1.08
102	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.88
103	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10	1.51
104	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	-9999.00
105	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82	1.12
106	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25	0.82

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
101	Y	Y	N	N	0.064	0.330	0.509	0.000	0.06415
102	Y	Y	N	N	0.017	0.845	0.901	0.002	0.01724
103	Y	Y	Y	Y	0.050	0.519	0.695	0.000	0.05031
104	N	Y	N	N	0.078	0.299	0.360	0.020	0.07599
105	Y	N	Y	N	0.106	0.122	0.158	10.031	0.10598
106	Y	Y	N	N	-0.170	0.012	0.092	-0.059	-0.16974

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
101	0.32954	0.50893	0.000	0.06415	0.32954	0.000
102	0.84540	0.90084	0.002	0.01724	0.84540	0.002
103	0.51900	0.69540	0.000	0.05031	0.69540	0.000
104	0.31036	0.36979	0.020	0.07800	0.29900	0.020
105	0.12166	0.15796	10.031	0.10598	0.12166	10.031
106	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
107	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	0.70
108	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73	1.54
109	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00	1.54
110	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.48
111	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00
112	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
107	Y	Y	N	N	-0.175	0.011	0.082	-0.515	-0.17479
108	Y	N	Y	N	0.092	0.169	0.290	0.004	0.09207
109	Y	Y	Y	Y	0.094	0.155	0.427	0.007	0.09387
110	Y	Y	N	N	-0.031	0.706	0.812	-0.002	-0.03145
111	N	N	N	N	-0.023	0.786	0.871	0.000	-0.02254
112	N	Y	N	N	-0.142	0.074	0.219	-0.011	-0.14223

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
107	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
108	0.16857	0.29012	0.004	0.09207	0.16857	0.004
109	0.15479	0.42738	0.007	0.09387	0.42738	0.007
110	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
111	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
112	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
113	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19	-9999.00
114	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42	2.33
115	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81	1.77
116	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00	-9999.00
117	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00	0.68

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
113	N	N	Y	N	0.085	0.243	0.291	2.029	0.08500
114	Y	Y	N	N	-0.040	0.591	0.737	-0.008	-0.03968
115	Y	Y	N	N	0.027	0.725	0.823	0.034	0.02716
116	N	Y	Y	Y	0.123	0.076	0.159	0.001	0.12322
117	Y	Y	N	N	0.194	0.005	0.046	0.009	0.19383

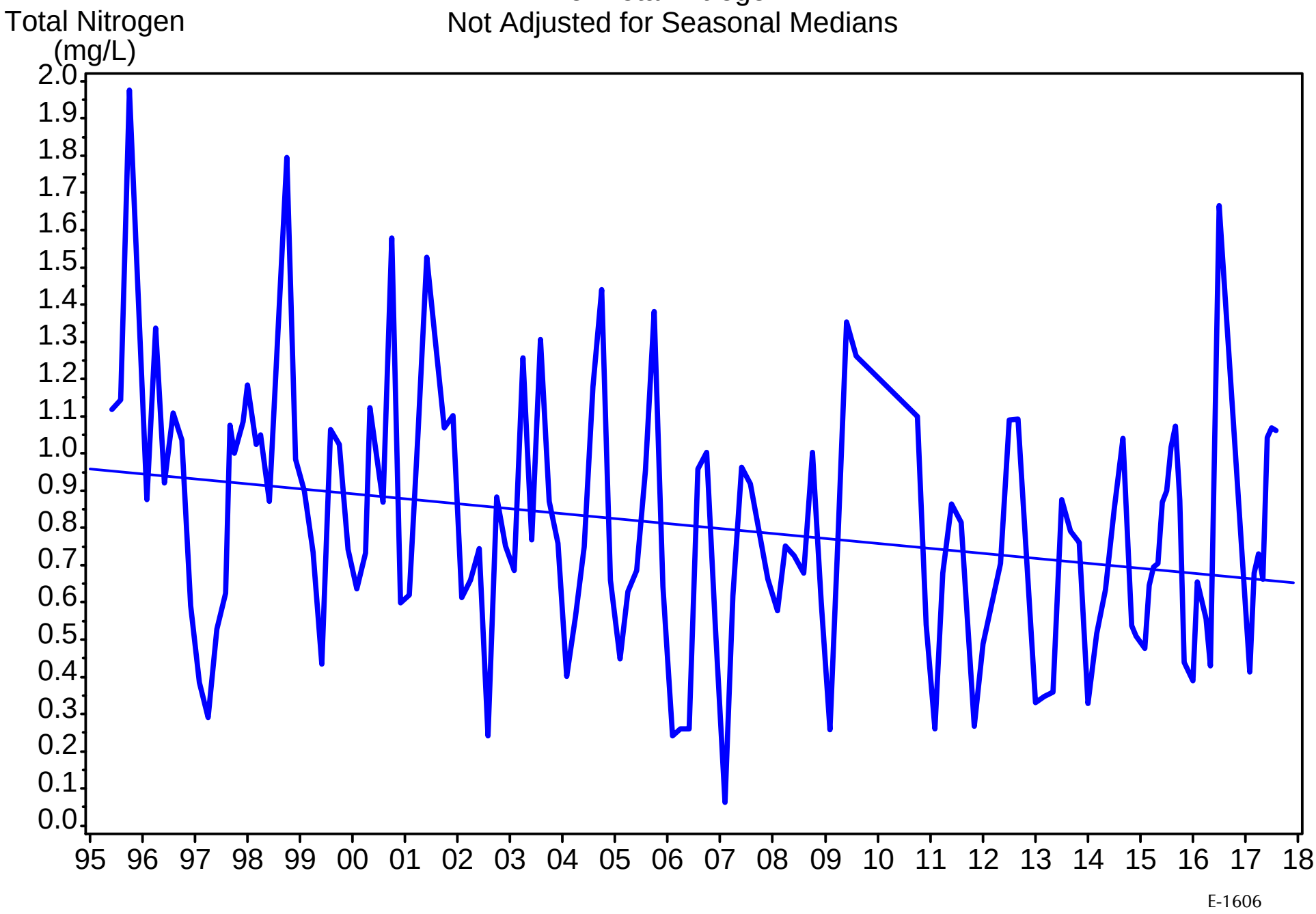
Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
113	0.24287	0.29095	2.029	0.08500	0.24300	2.029
114	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008
115	0.72528	0.82342	0.034	0.02716	0.72528	0.034
116	0.07617	0.15857	0.001	0.12300	0.15900	0.001
117	0.00462	0.04647	0.009	0.19383	0.00462	0.009

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
118	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.31
119	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
118	N	Y	N	N	-0.241	0.003	0.076	-0.016	-0.24070
119	N	N	N	N	0.040	0.632	0.786	0.000	0.04009

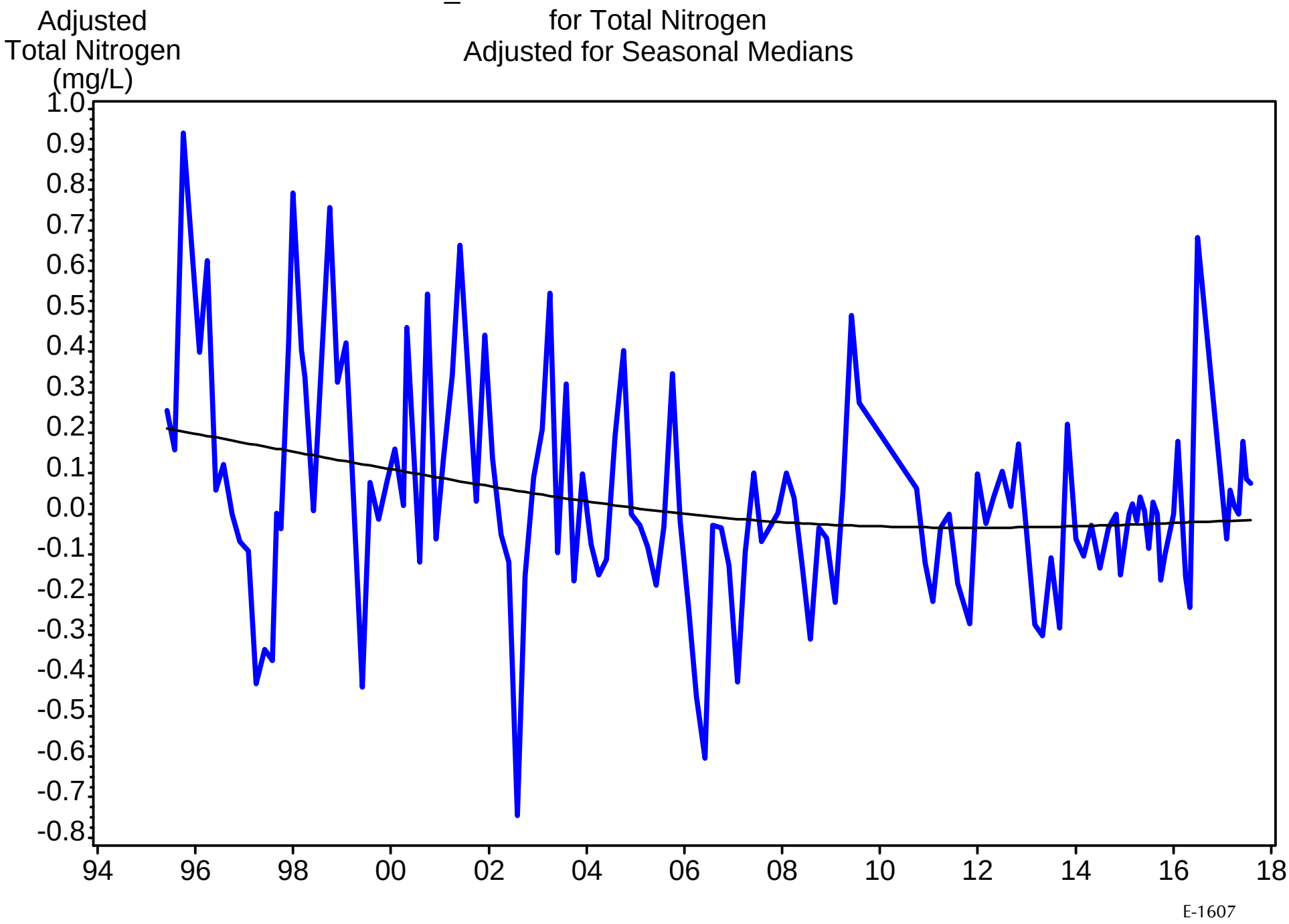
Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
118	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
119	0.63152	0.78567	0.000	0.04000	0.63200	0.000

S_21FLSJWM27010037 Trends



E-1606

S_21FLSJWM27010037 Trends

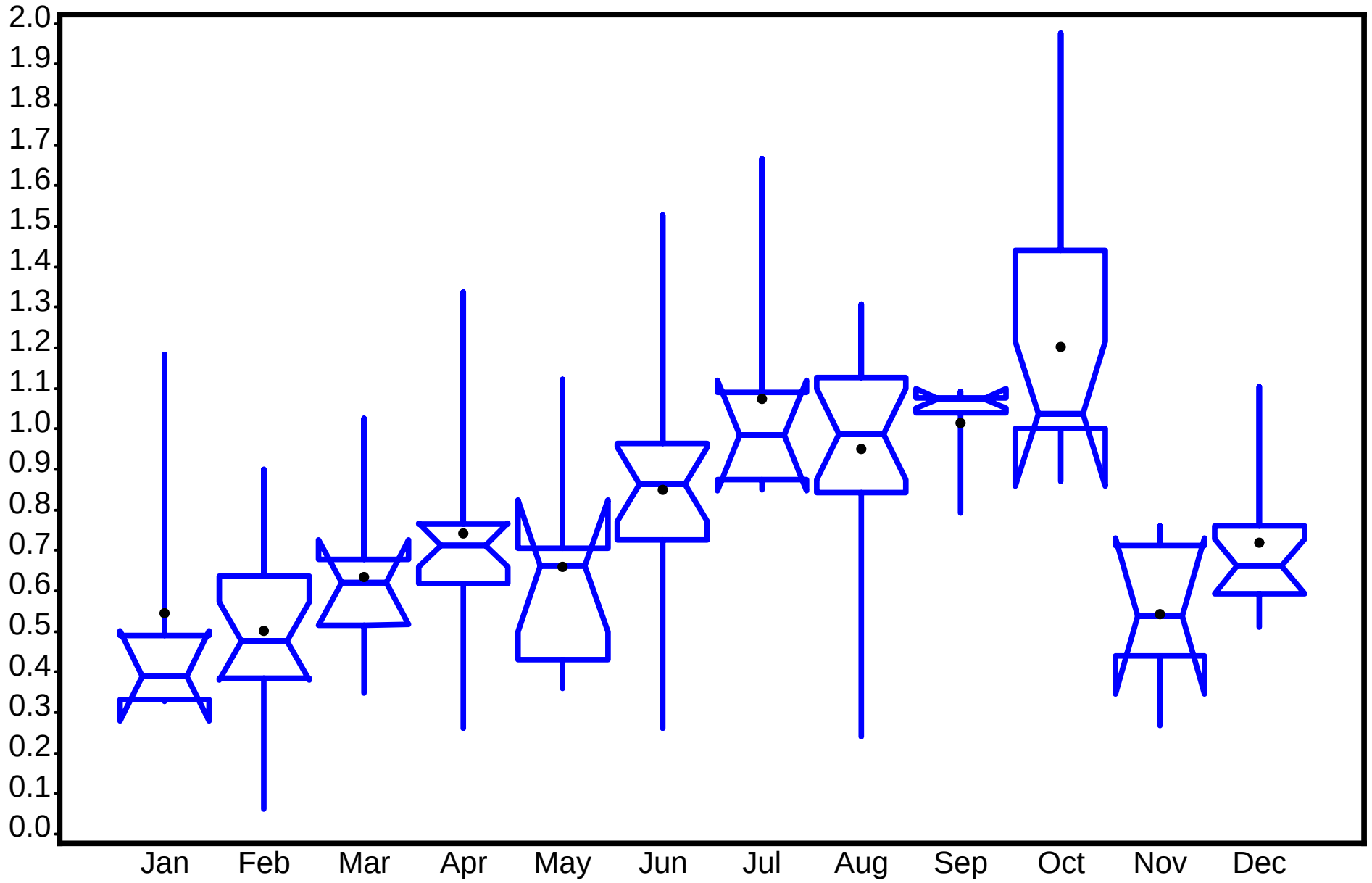


S_21FLSJWM27010037 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



E-1608

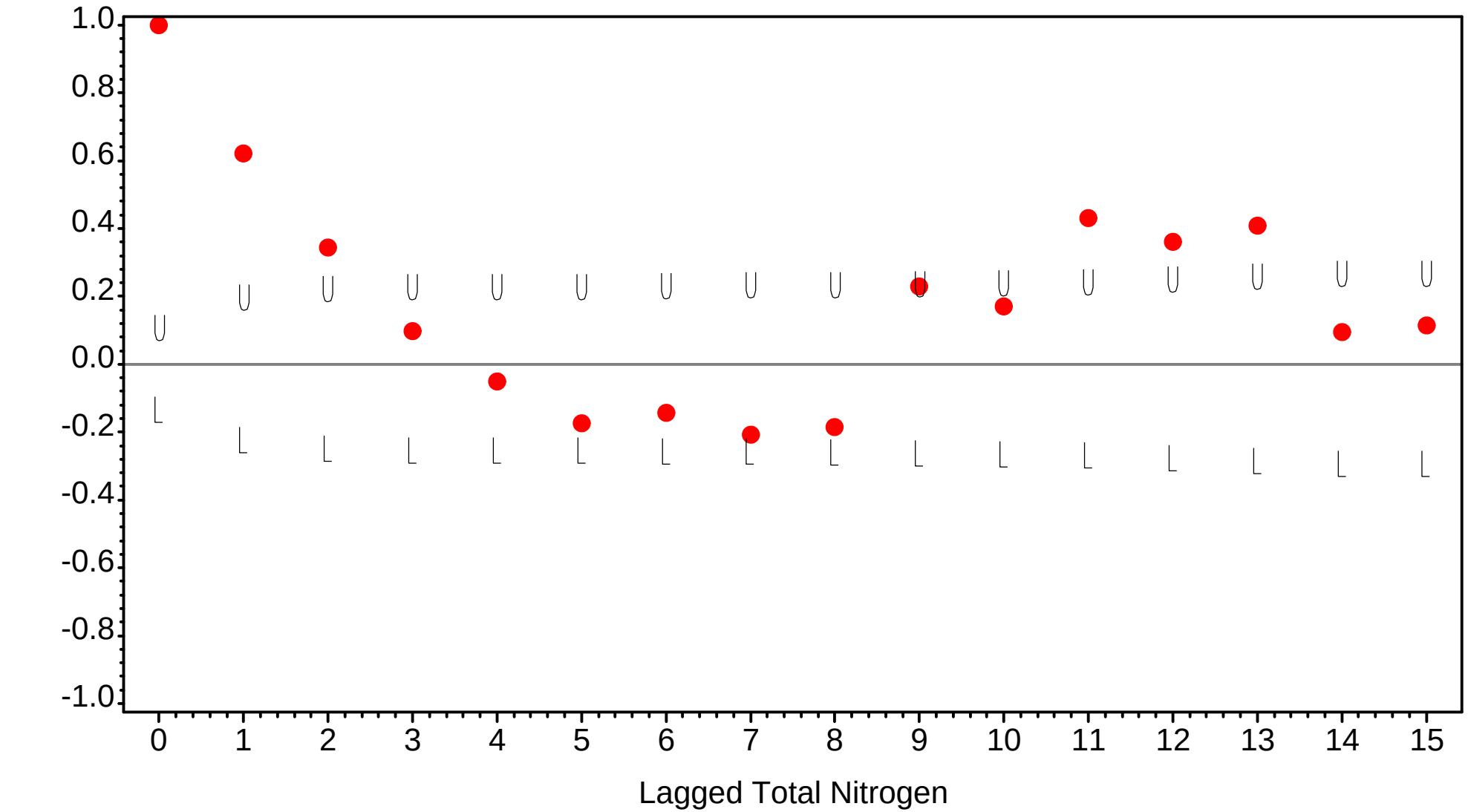
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.622	0.104	0.209	-0.209
2	0.343	0.117	0.234	-0.234
3	0.098	0.121	0.241	-0.241
4	-0.051	0.121	0.242	-0.242
5	-0.173	0.121	0.242	-0.242
6	-0.143	0.122	0.244	-0.244
7	-0.209	0.122	0.245	-0.245
8	-0.184	0.124	0.247	-0.247
9	0.230	0.125	0.249	-0.249
10	0.169	0.126	0.252	-0.252
11	0.431	0.127	0.254	-0.254
12	0.360	0.132	0.264	-0.264
13	0.408	0.136	0.271	-0.271
14	0.095	0.140	0.280	-0.280
15	0.114	0.140	0.281	-0.281

S_21FLSJWM27010037 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

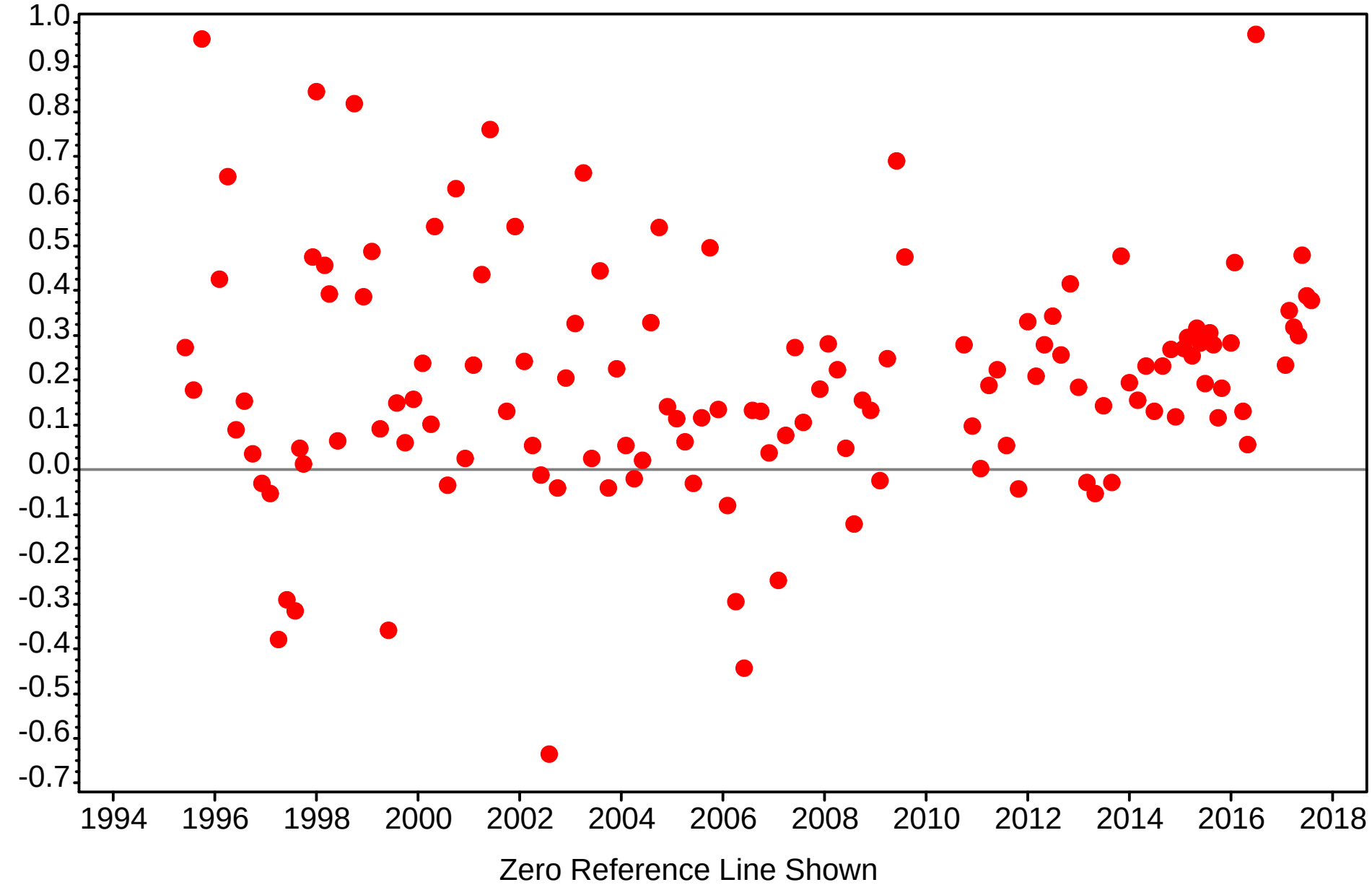
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.194	.005	0.053	-0.013

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.19378	.00530247	0.053226	-0.012865

S_21FLSJWM27010037 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



Zero Reference Line Shown

E-1613

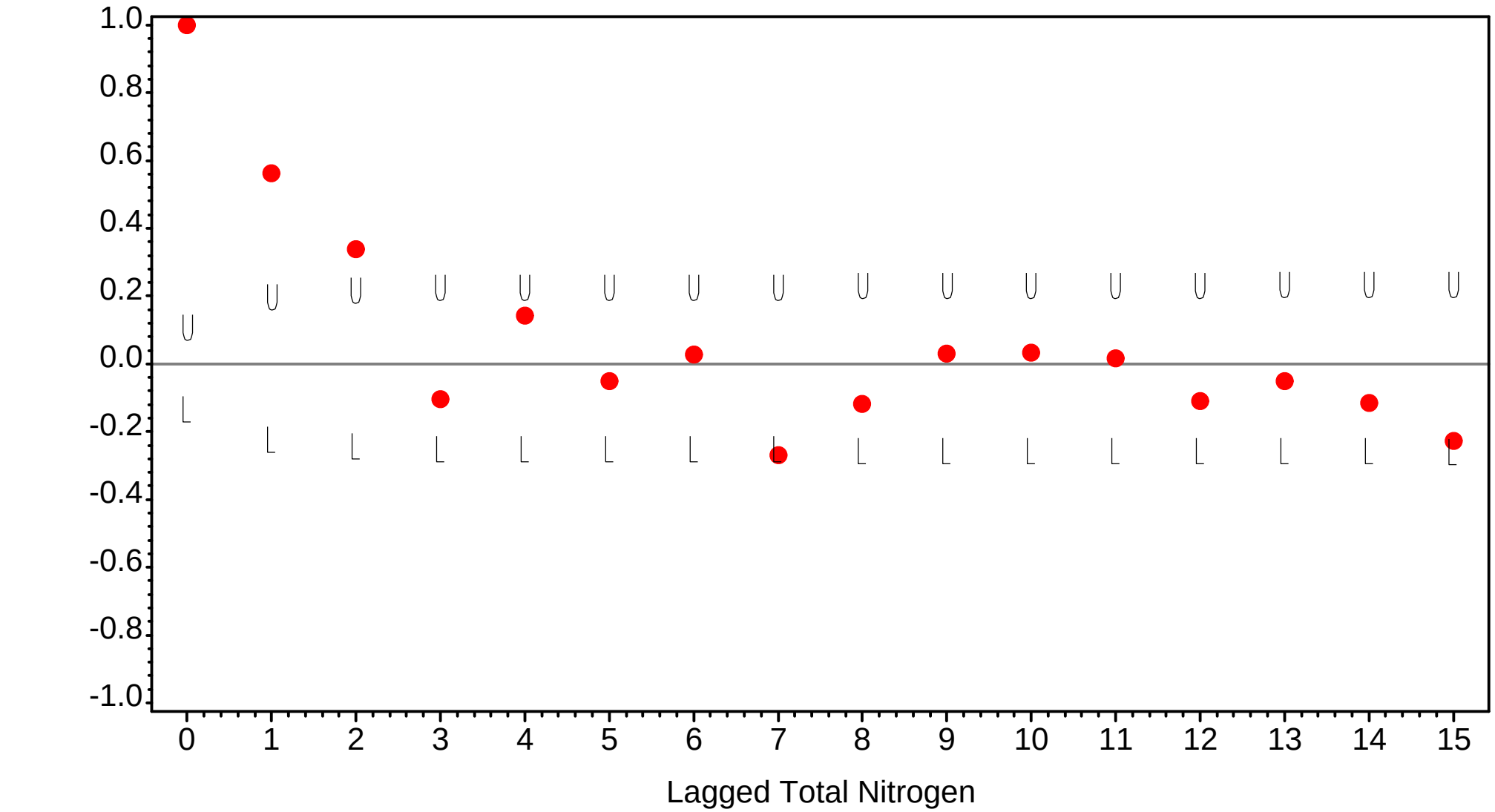
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.563	0.104	0.209	-0.209
2	0.338	0.115	0.230	-0.230
3	-0.105	0.118	0.237	-0.237
4	0.141	0.119	0.237	-0.237
5	-0.051	0.119	0.239	-0.239
6	0.027	0.119	0.239	-0.239
7	-0.268	0.119	0.239	-0.239
8	-0.119	0.122	0.243	-0.243
9	0.029	0.122	0.244	-0.244
10	0.033	0.122	0.244	-0.244
11	0.015	0.122	0.244	-0.244
12	-0.111	0.122	0.244	-0.244
13	-0.051	0.122	0.245	-0.245
14	-0.115	0.122	0.245	-0.245
15	-0.228	0.123	0.246	-0.246

S_21FLSJWM27010037 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended



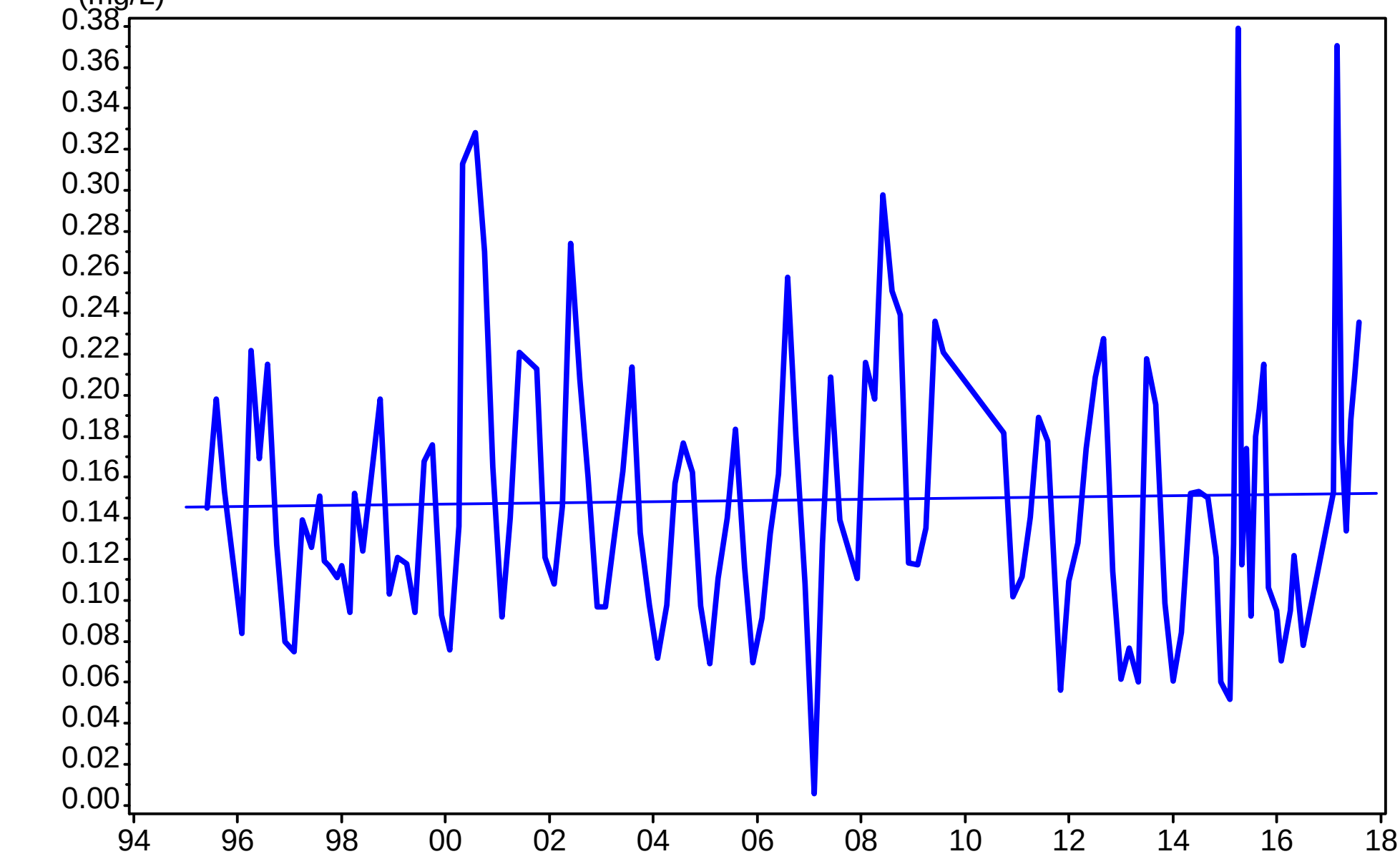
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1615

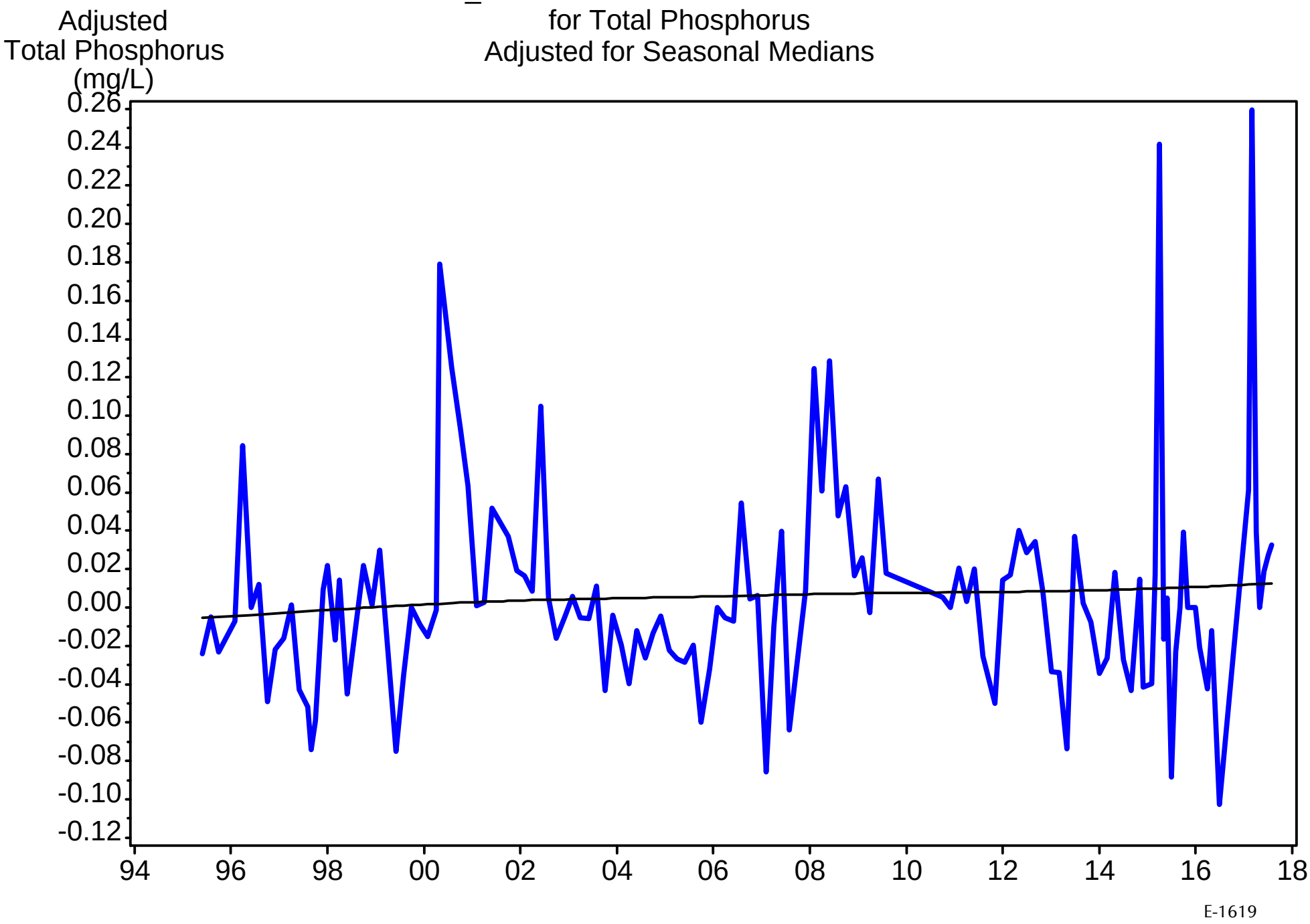
S_21FLSJWM27010037 Trends

S_21FLSJWM27010037 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



E-1618

S_21FLSJWM27010037 Trends

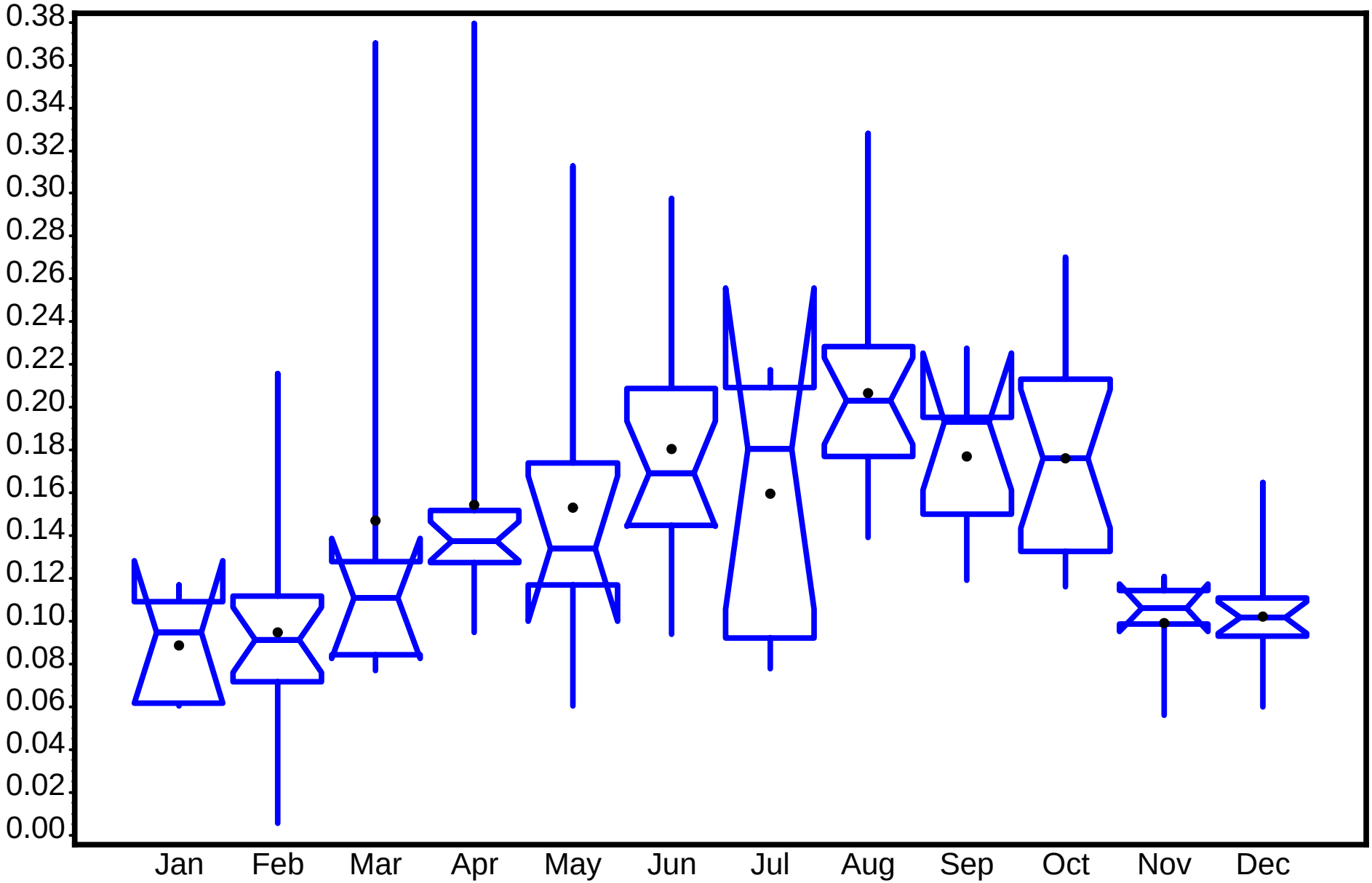


S_21FLSJWM27010037 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



E-1620

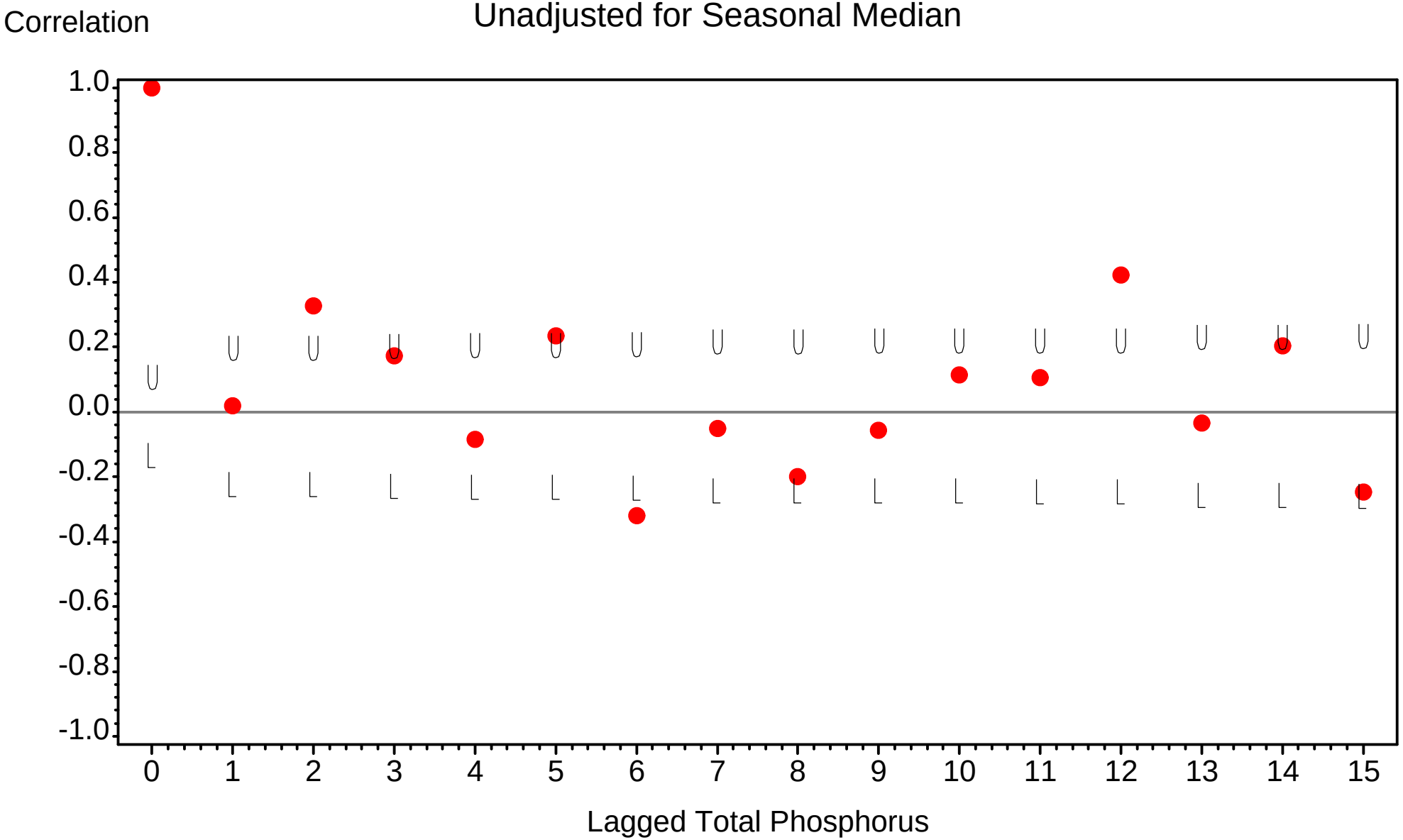
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.018	0.104	0.209	-0.209
2	0.327	0.104	0.209	-0.209
3	0.172	0.108	0.216	-0.216
4	-0.084	0.109	0.218	-0.218
5	0.235	0.109	0.218	-0.218
6	-0.320	0.111	0.222	-0.222
7	-0.051	0.114	0.229	-0.229
8	-0.199	0.114	0.229	-0.229
9	-0.056	0.116	0.231	-0.231
10	0.114	0.116	0.231	-0.231
11	0.105	0.116	0.232	-0.232
12	0.423	0.116	0.233	-0.233
13	-0.034	0.122	0.244	-0.244
14	0.205	0.122	0.244	-0.244
15	-0.246	0.123	0.246	-0.246

S_21FLSJWM27010037 Trends Appendix

Correlogram for Total Phosphorus

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

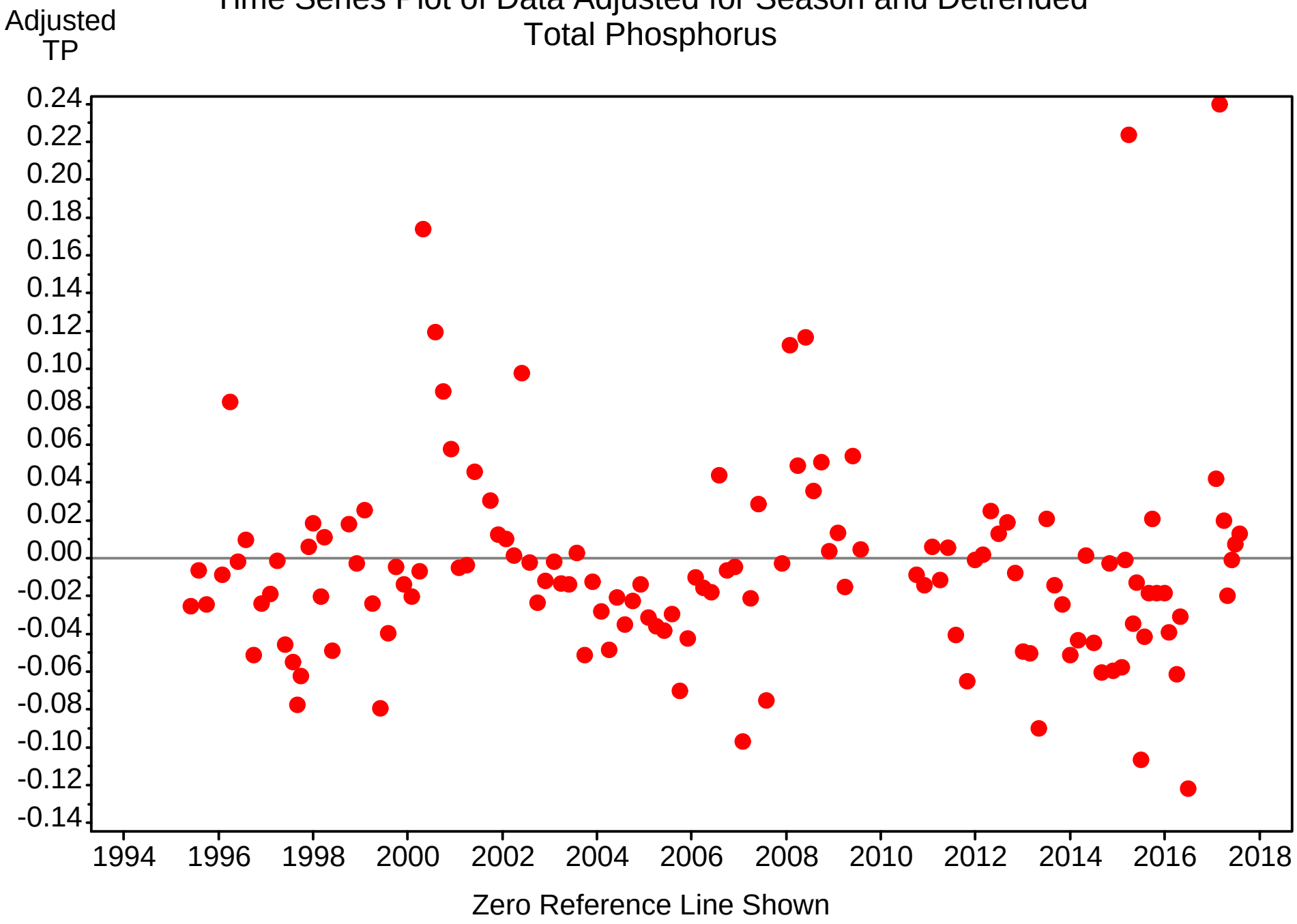
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.071	0.315	0.53	.001

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.070574	0.31497	0.53036	.000845238

S_21FLSJWM27010037 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus



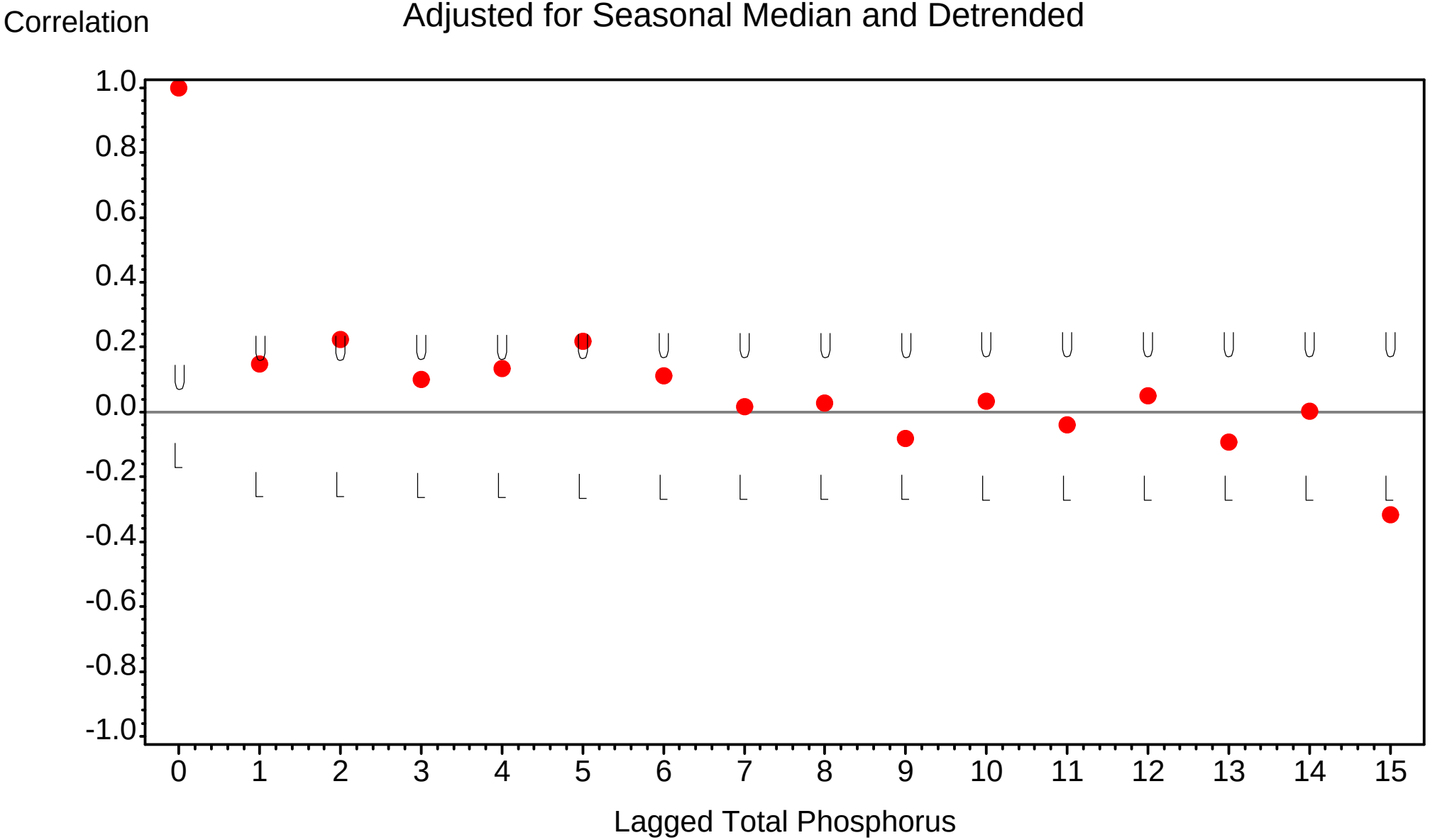
E-1625

S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.149	0.104	0.209	-0.209
2	0.223	0.105	0.210	-0.210
3	0.099	0.107	0.213	-0.213
4	0.133	0.107	0.214	-0.214
5	0.219	0.108	0.215	-0.215
6	0.112	0.109	0.219	-0.219
7	0.016	0.110	0.219	-0.219
8	0.028	0.110	0.219	-0.219
9	-0.083	0.110	0.219	-0.219
10	0.034	0.110	0.220	-0.220
11	-0.039	0.110	0.220	-0.220
12	0.049	0.110	0.220	-0.220
13	-0.093	0.110	0.220	-0.220
14	0.002	0.110	0.221	-0.221
15	-0.316	0.110	0.221	-0.221

S_21FLSJWM27010037 Trends Appendix

Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended

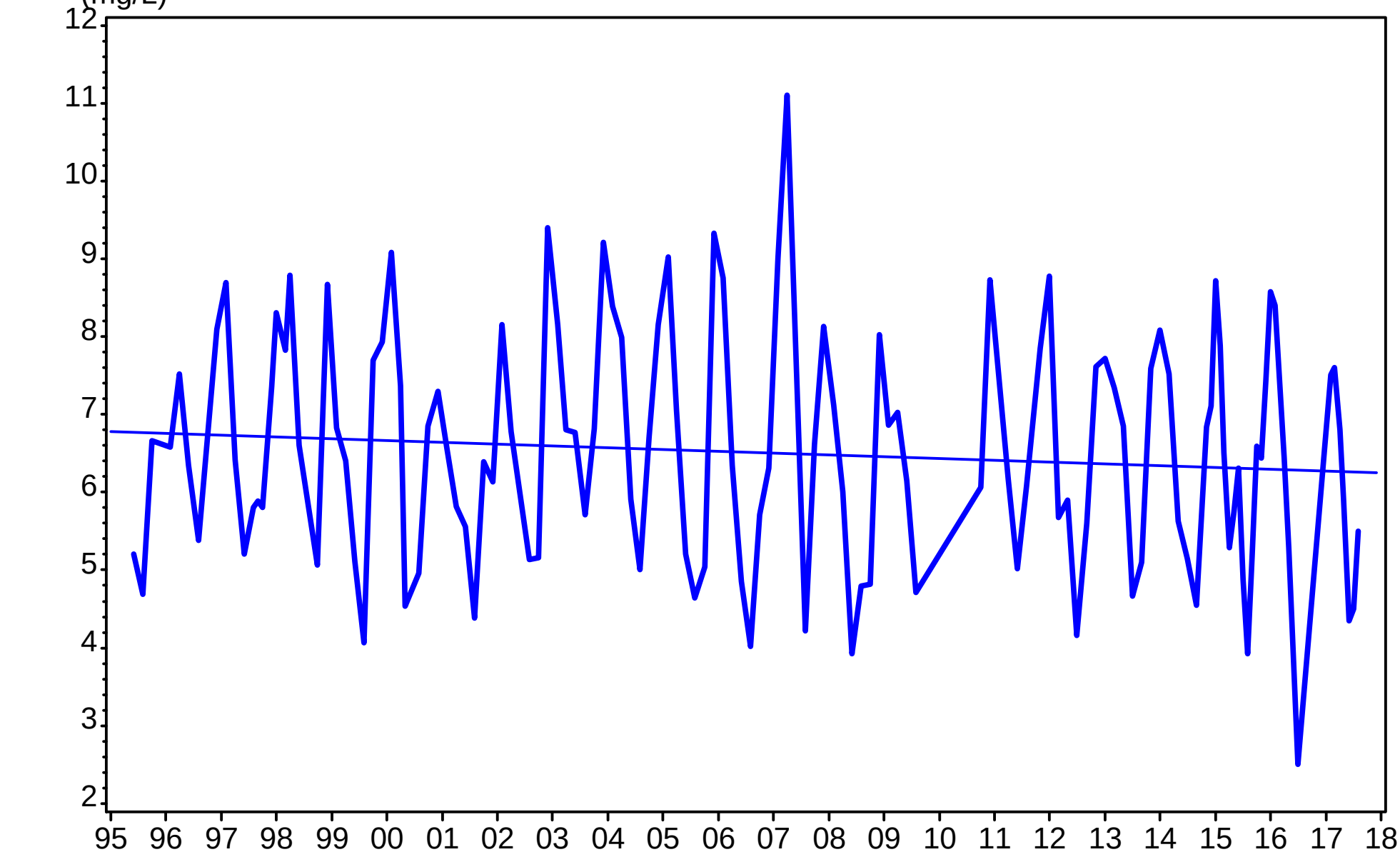


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1627

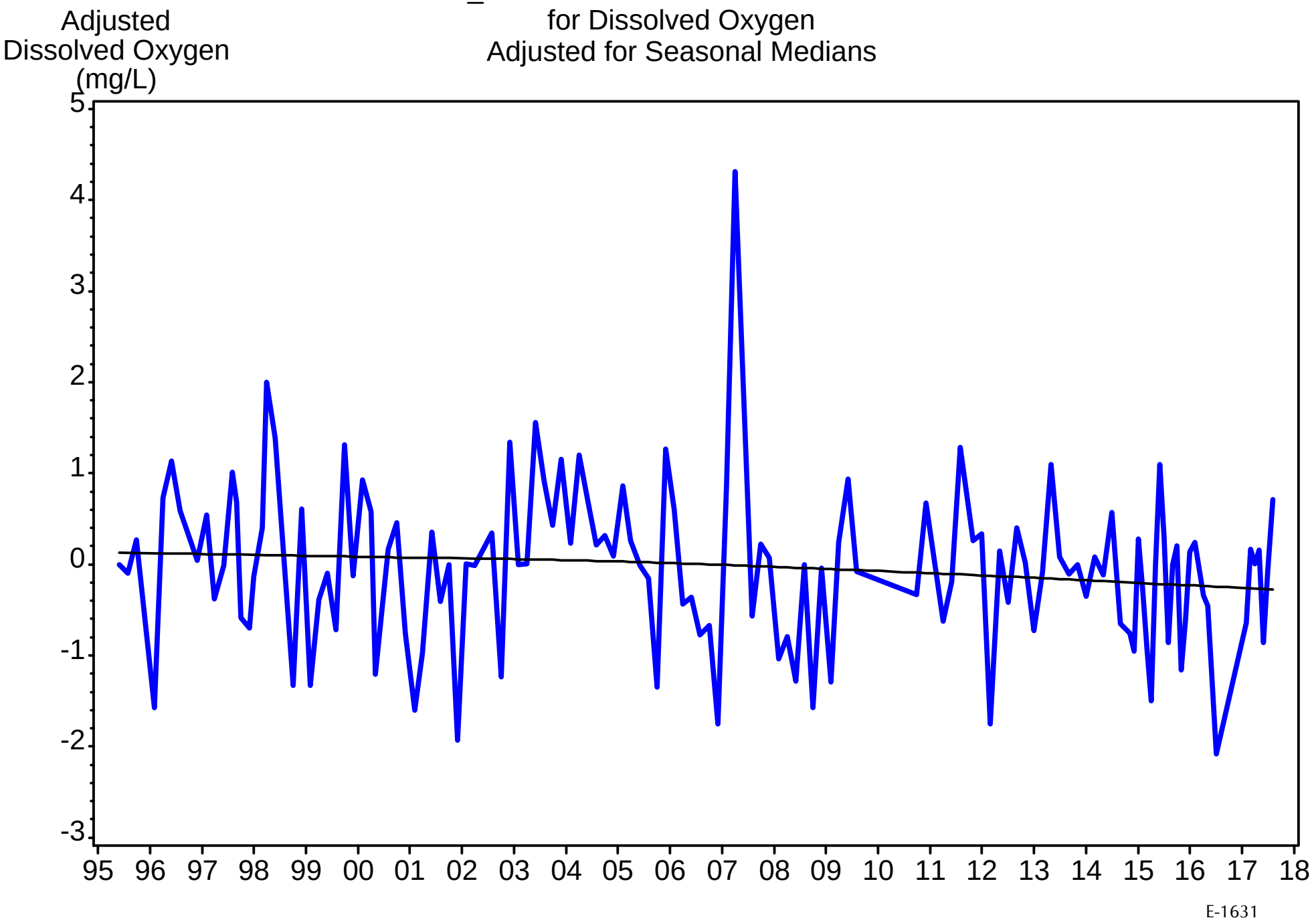
S_21FLSJWM27010037 Trends

S_21FLSJWM27010037 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1630

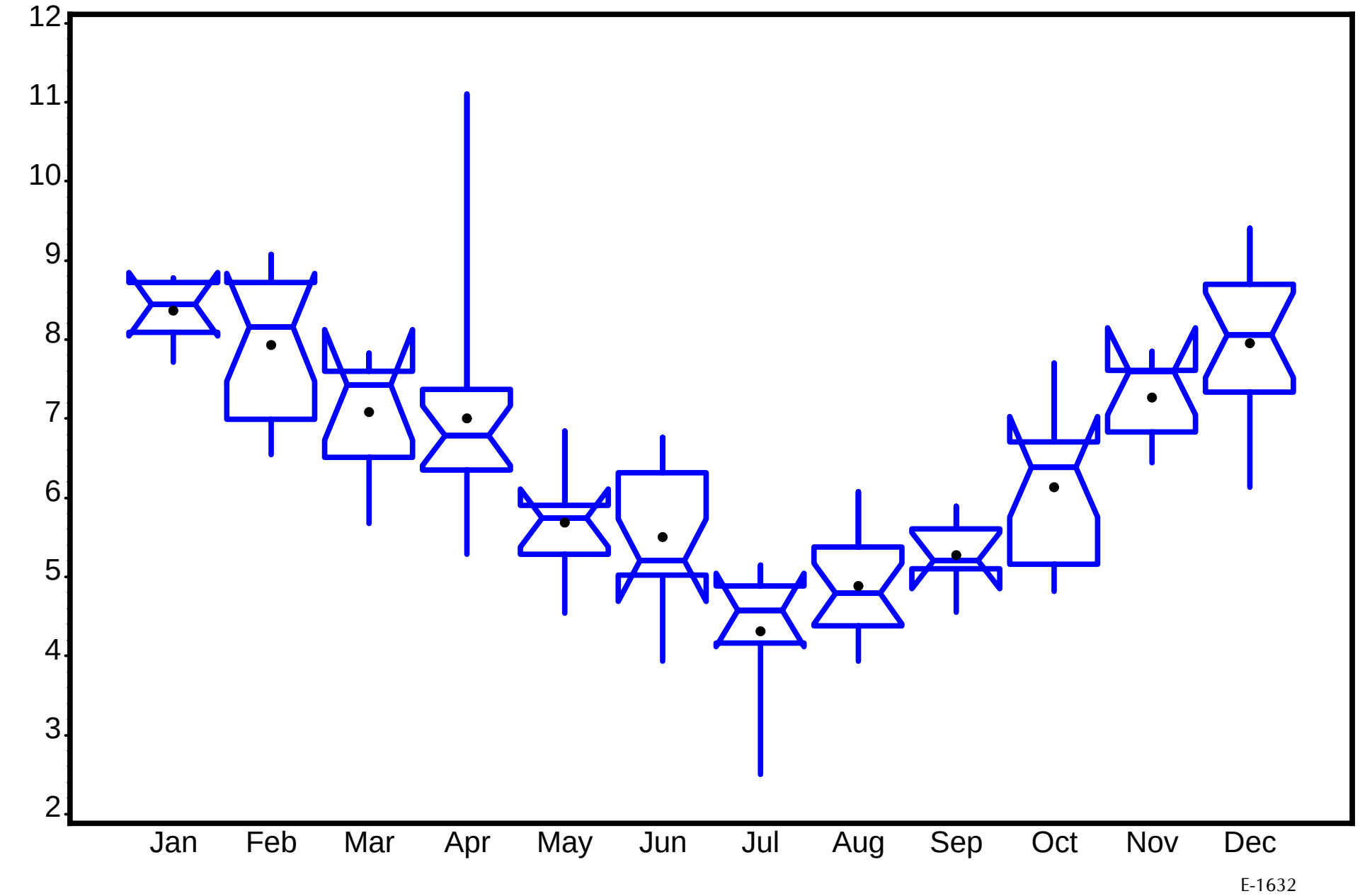
S_21FLSJWM27010037 Trends



S_21FLSJWM27010037 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



E-1632

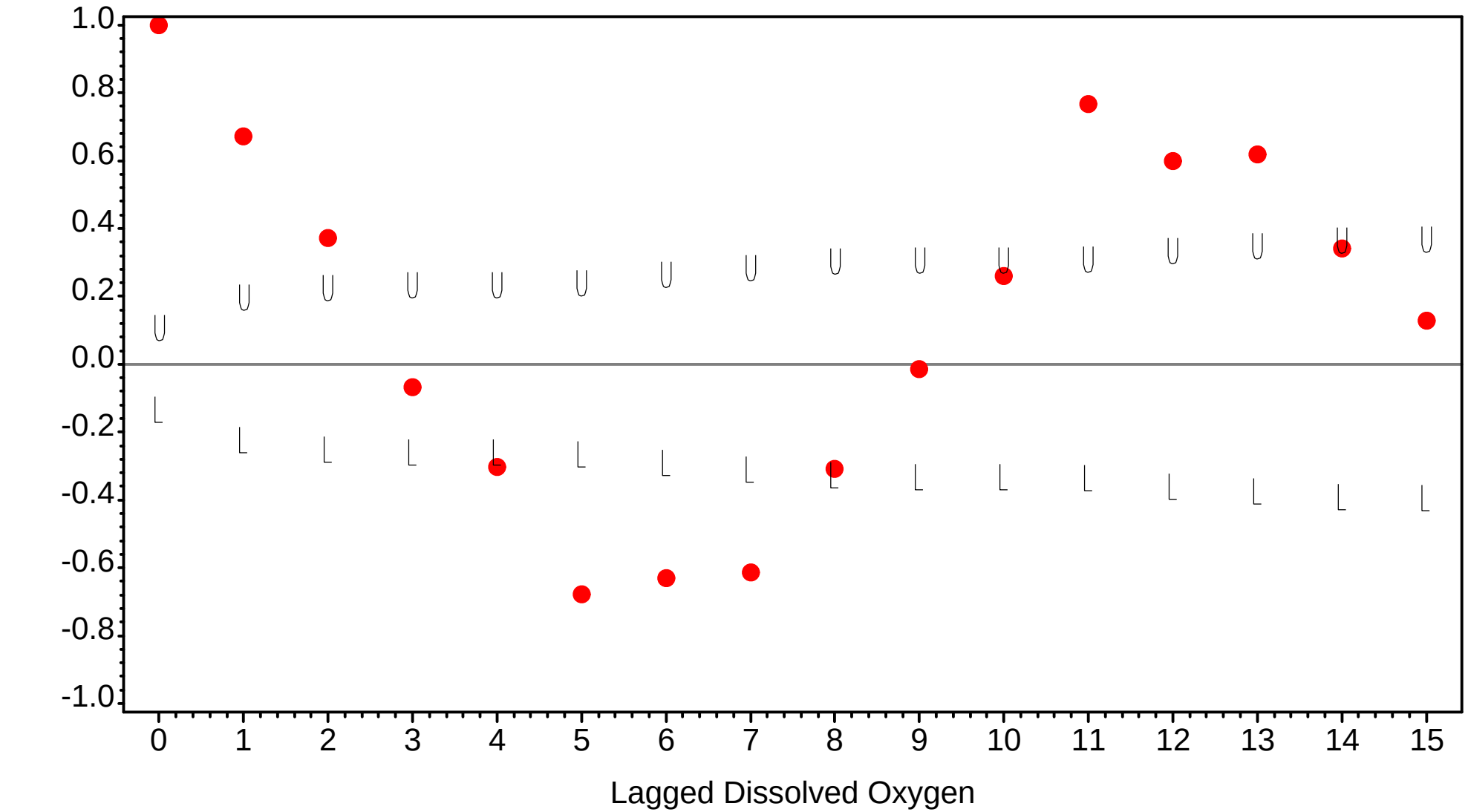
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.672	0.104	0.209	-0.209
2	0.372	0.119	0.238	-0.238
3	-0.069	0.123	0.246	-0.246
4	-0.304	0.123	0.246	-0.246
5	-0.678	0.126	0.252	-0.252
6	-0.630	0.139	0.277	-0.277
7	-0.613	0.149	0.297	-0.297
8	-0.308	0.157	0.315	-0.315
9	-0.015	0.160	0.319	-0.319
10	0.260	0.160	0.319	-0.319
11	0.766	0.161	0.322	-0.322
12	0.600	0.174	0.348	-0.348
13	0.618	0.181	0.362	-0.362
14	0.342	0.189	0.377	-0.377
15	0.127	0.191	0.382	-0.382

S_21FLSJWM27010037 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1634

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

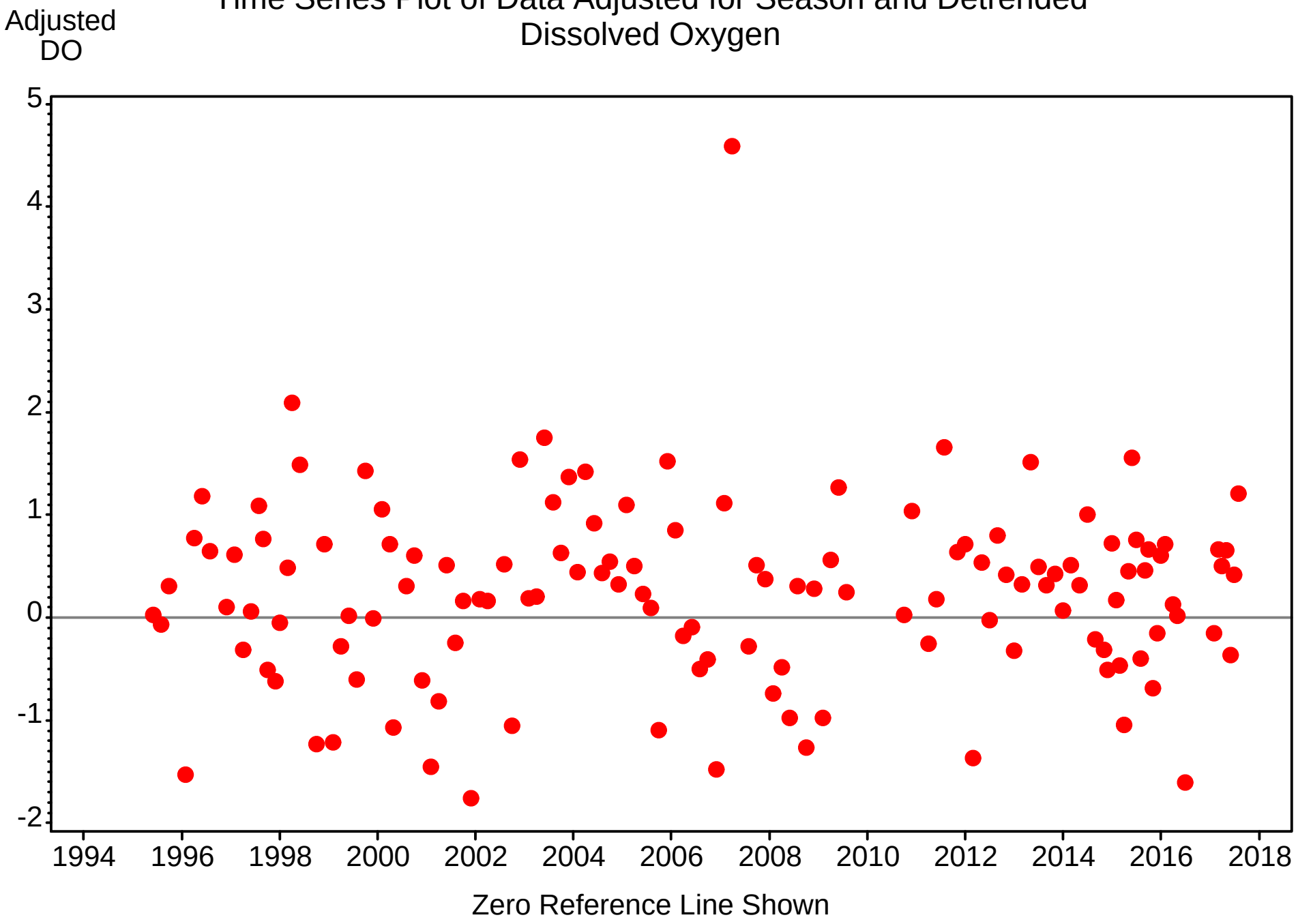
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.12	0.086	0.182	-0.021

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.12	0.085624	0.18235	-0.02125

S_21FLSJWM27010037 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



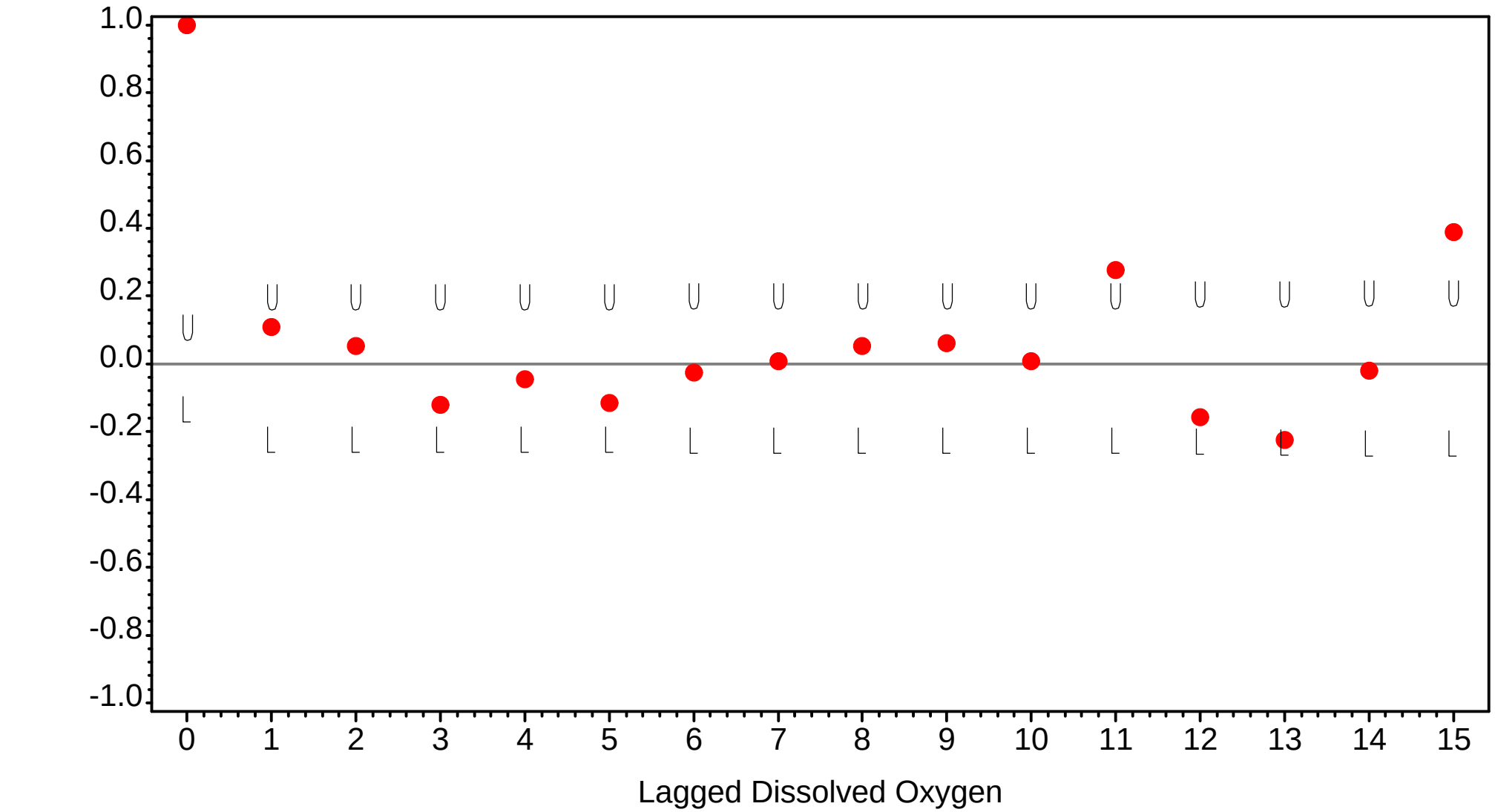
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.110	0.104	0.209	-0.209
2	0.053	0.105	0.209	-0.209
3	-0.121	0.105	0.210	-0.210
4	-0.044	0.105	0.211	-0.211
5	-0.114	0.105	0.211	-0.211
6	-0.025	0.106	0.212	-0.212
7	0.007	0.106	0.212	-0.212
8	0.052	0.106	0.212	-0.212
9	0.061	0.106	0.212	-0.212
10	0.007	0.106	0.212	-0.212
11	0.277	0.106	0.212	-0.212
12	-0.158	0.109	0.217	-0.217
13	-0.225	0.109	0.219	-0.219
14	-0.019	0.111	0.222	-0.222
15	0.389	0.111	0.222	-0.222

S_21FLSJWM27010037 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended



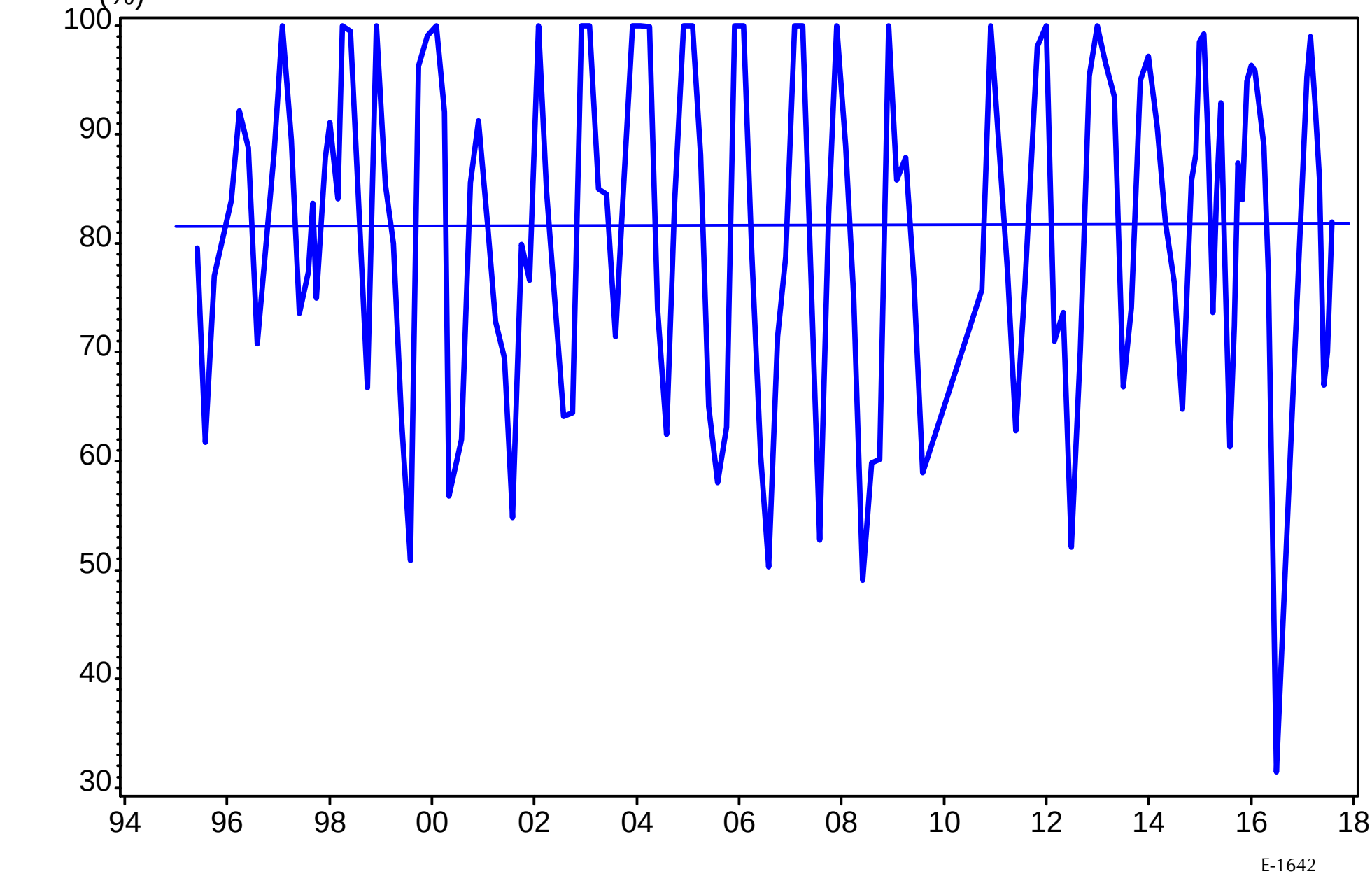
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1639

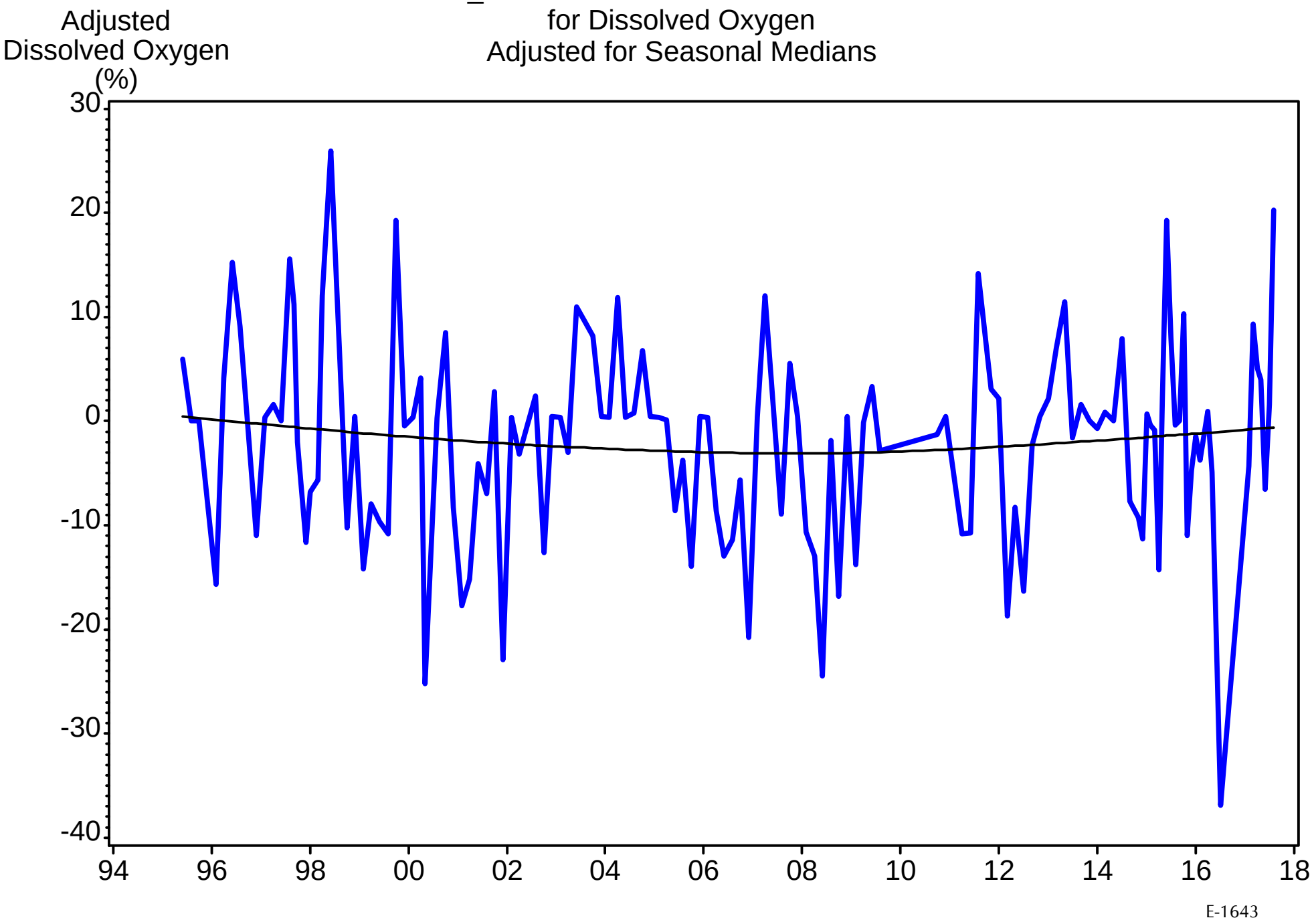
S_21FLSJWM27010037 Trends

S_21FLSJWM27010037 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1642

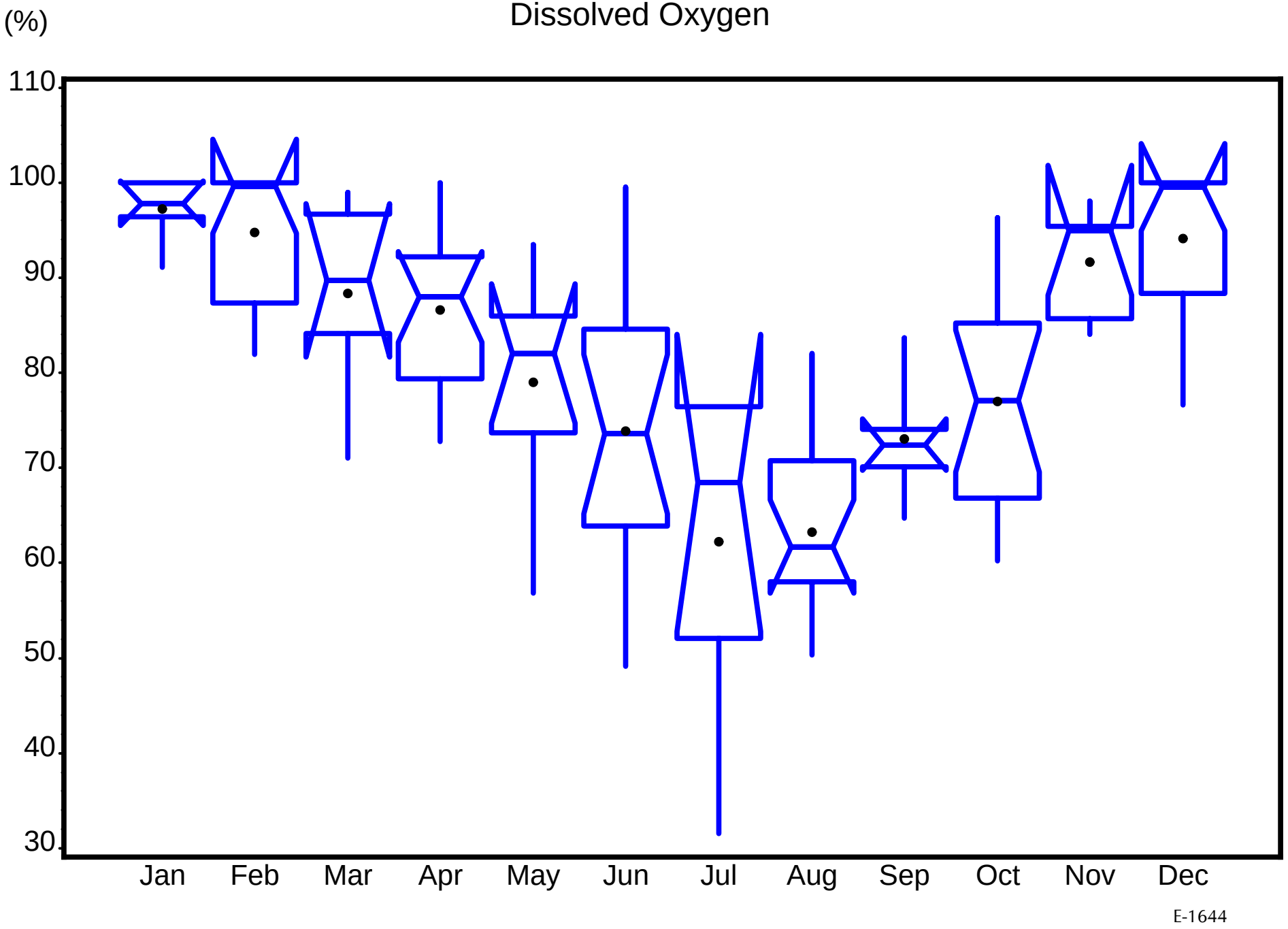
S_21FLSJWM27010037 Trends



S_21FLSJWM27010037 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



E-1644

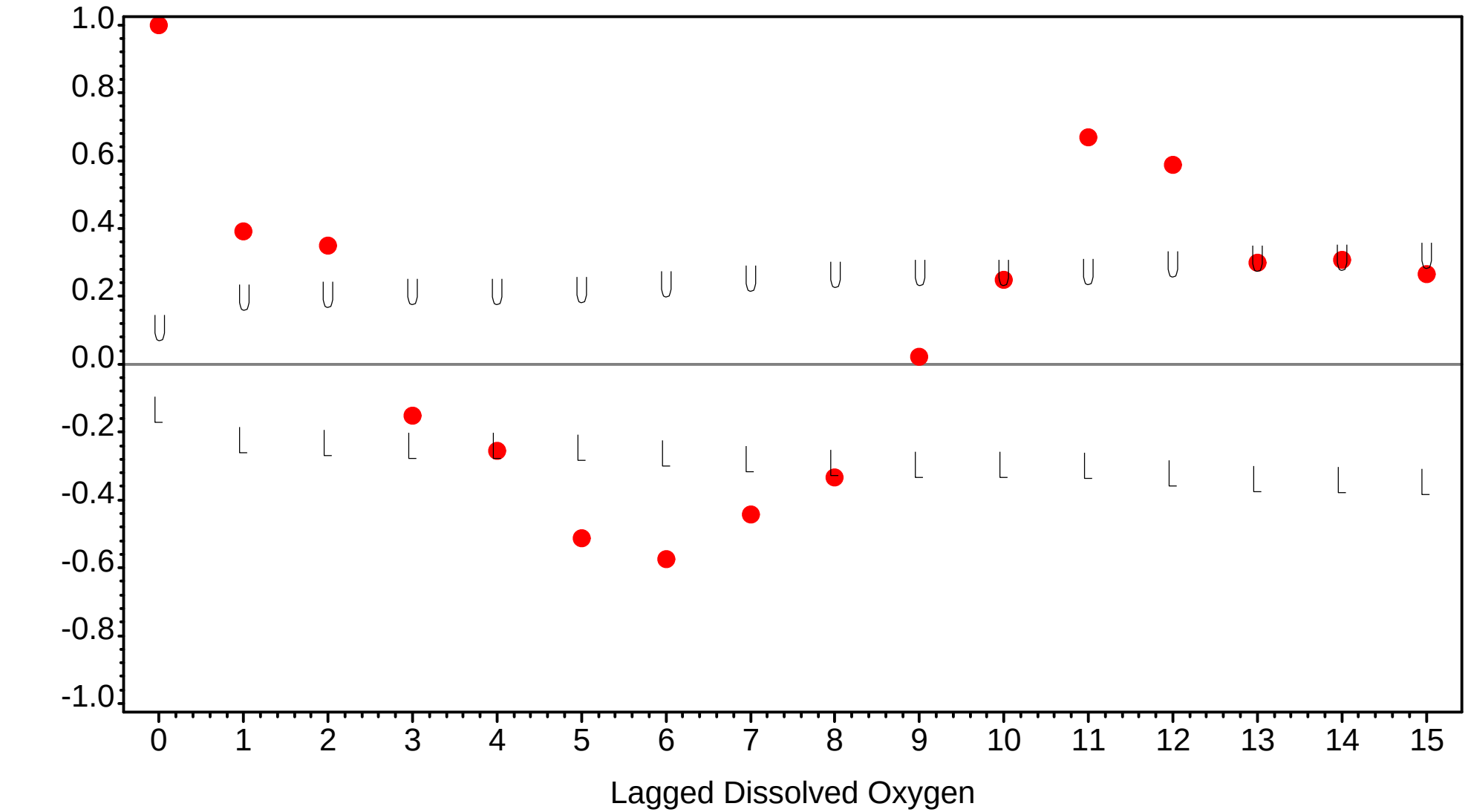
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.392	0.104	0.209	-0.209
2	0.349	0.109	0.219	-0.219
3	-0.153	0.113	0.227	-0.227
4	-0.256	0.114	0.228	-0.228
5	-0.514	0.116	0.232	-0.232
6	-0.574	0.124	0.248	-0.248
7	-0.444	0.133	0.267	-0.267
8	-0.334	0.139	0.277	-0.277
9	0.021	0.142	0.283	-0.283
10	0.250	0.142	0.283	-0.283
11	0.670	0.143	0.286	-0.286
12	0.587	0.154	0.308	-0.308
13	0.299	0.162	0.324	-0.324
14	0.307	0.164	0.328	-0.328
15	0.266	0.166	0.332	-0.332

S_21FLSJWM27010037 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1646

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

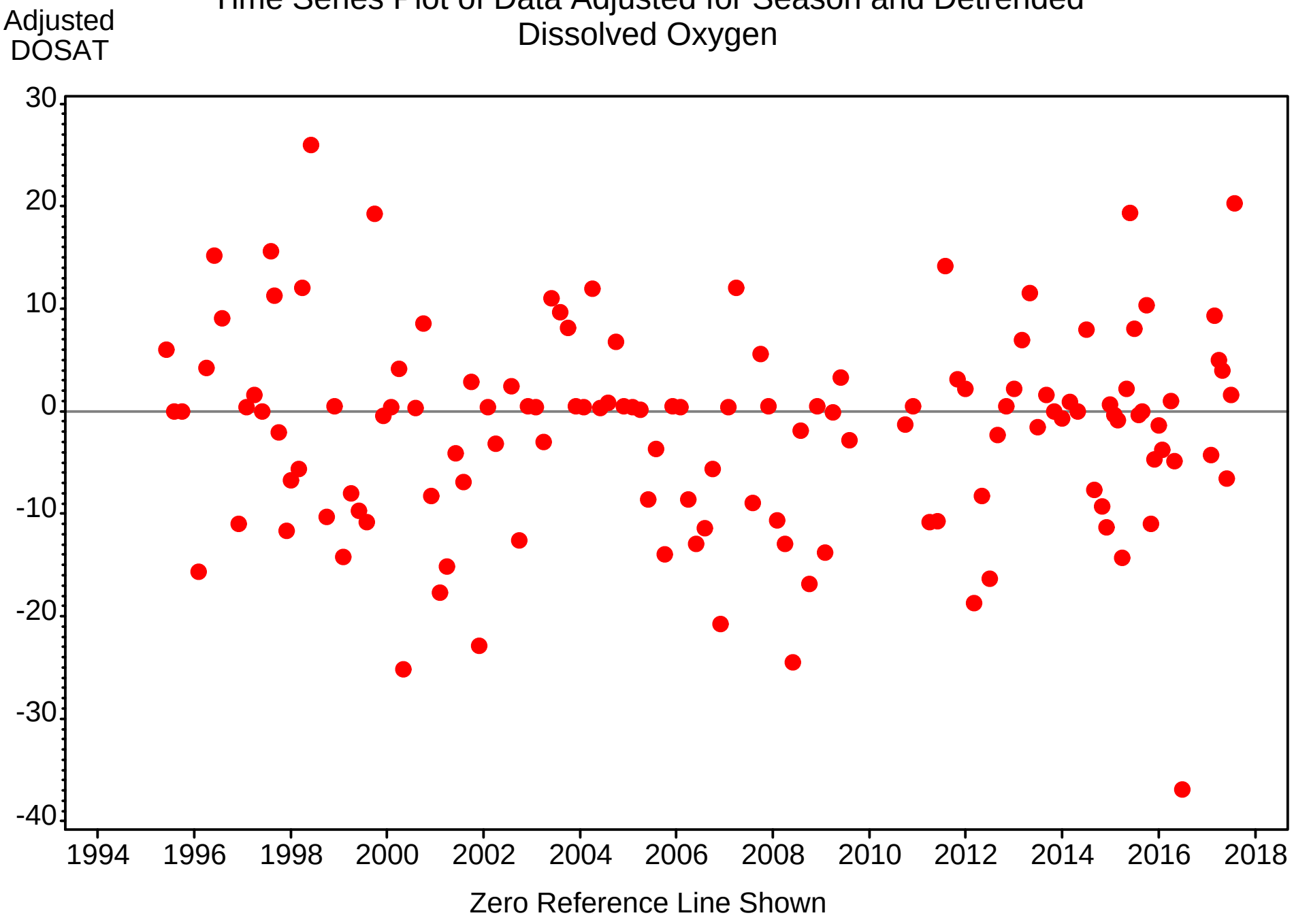
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.05	0.474	0.582	0

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.049697	0.47390	0.58186	0

S_21FLSJWM27010037 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



E-1649

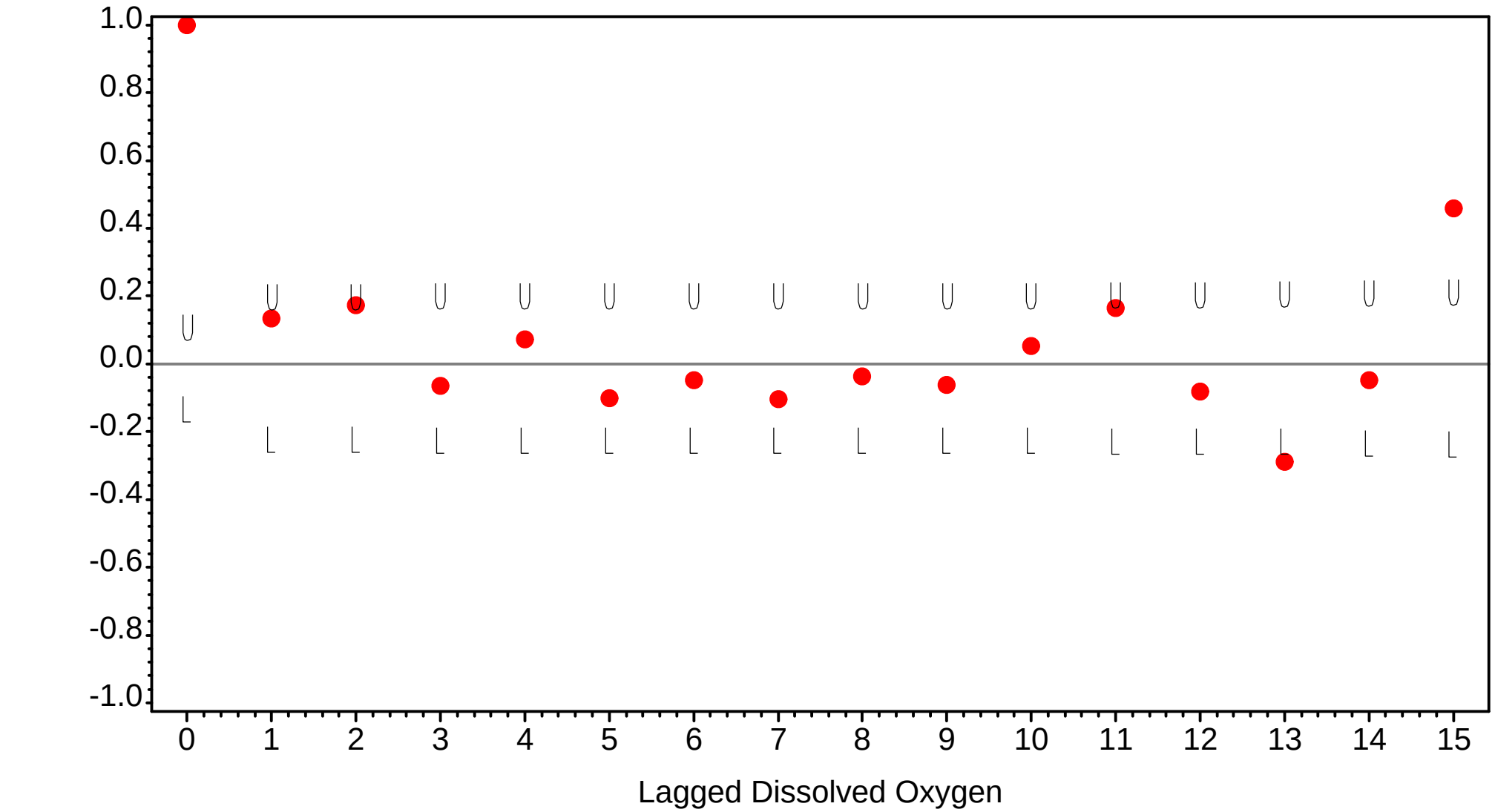
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.135	0.104	0.209	-0.209
2	0.174	0.105	0.210	-0.210
3	-0.064	0.106	0.212	-0.212
4	0.072	0.106	0.212	-0.212
5	-0.102	0.106	0.213	-0.213
6	-0.048	0.107	0.213	-0.213
7	-0.103	0.107	0.213	-0.213
8	-0.036	0.107	0.214	-0.214
9	-0.061	0.107	0.214	-0.214
10	0.054	0.107	0.214	-0.214
11	0.166	0.107	0.215	-0.215
12	-0.081	0.108	0.216	-0.216
13	-0.288	0.108	0.217	-0.217
14	-0.047	0.111	0.222	-0.222
15	0.460	0.111	0.223	-0.223

S_21FLSJWM27010037 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended



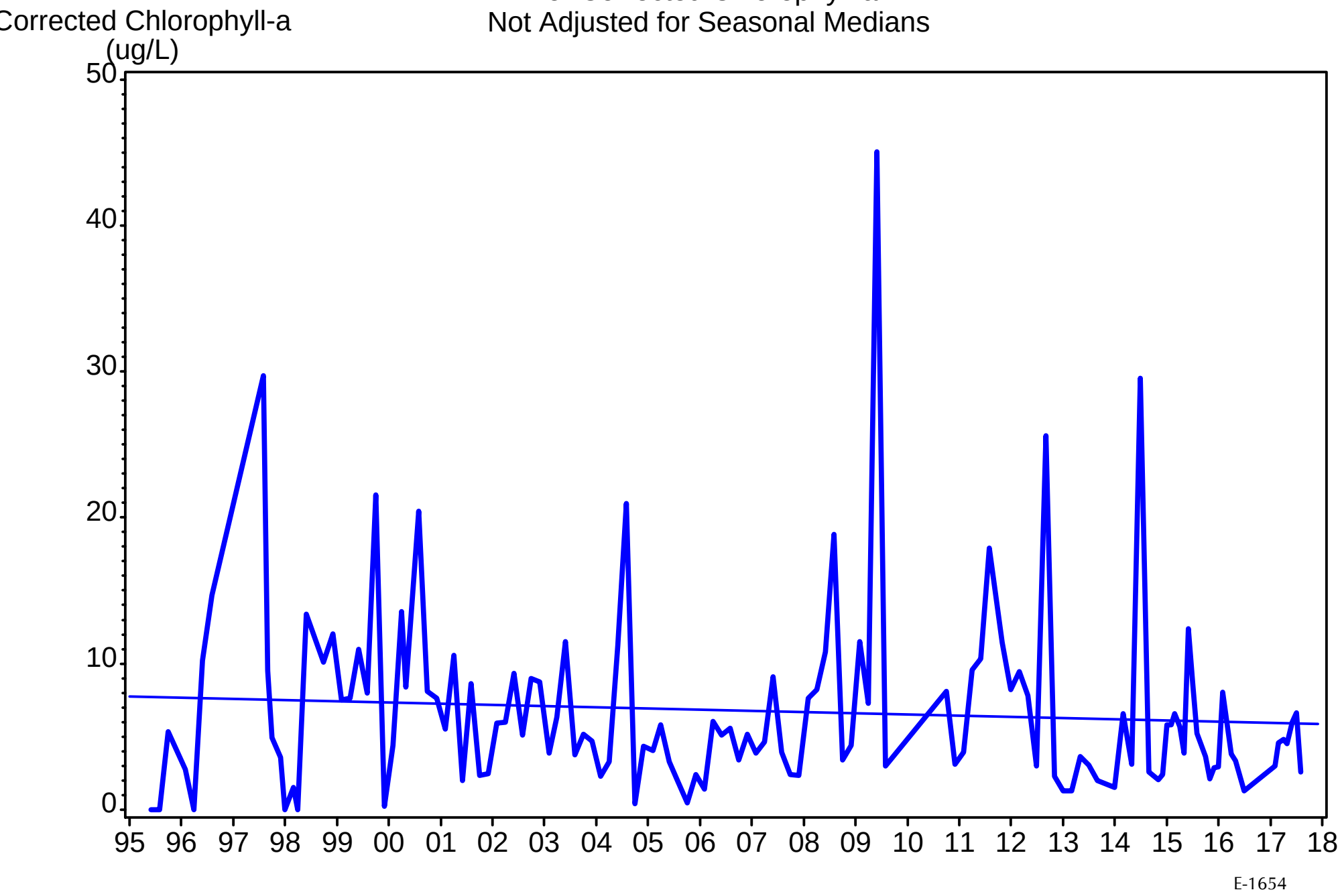
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1651

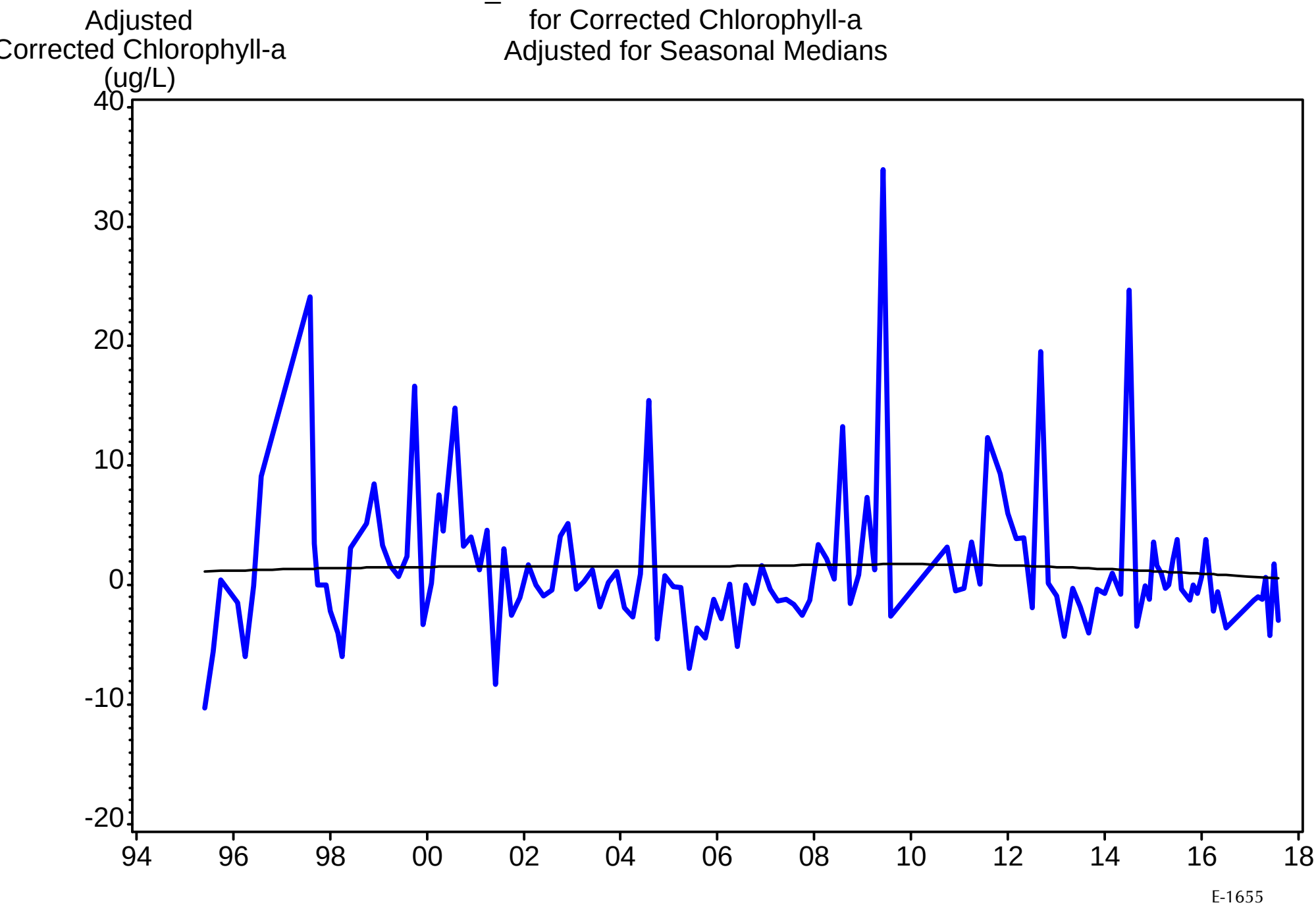
S_21FLSJWM27010037 Trends

S_21FLSJWM27010037 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



E-1654

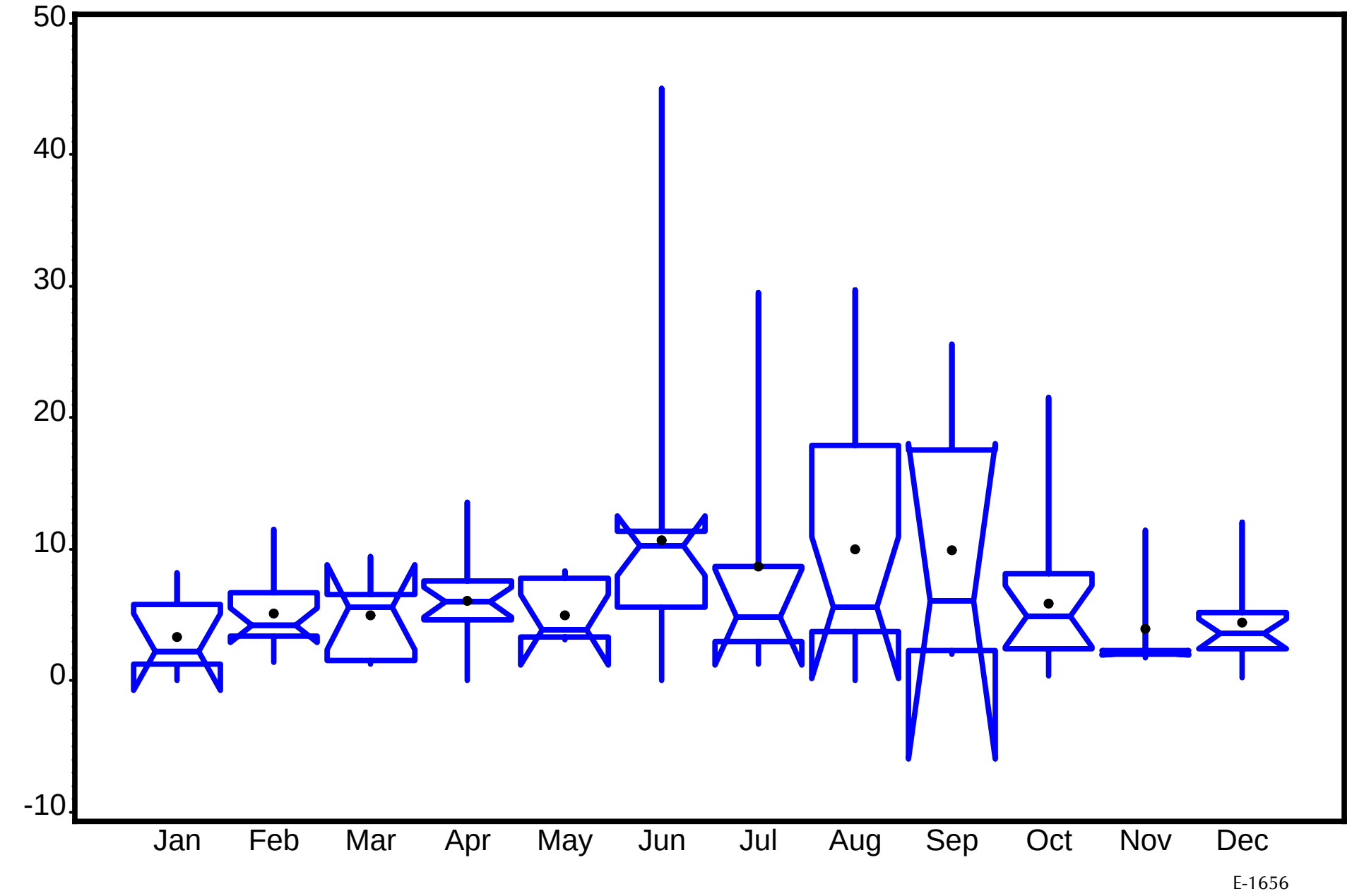
S_21FLSJWM27010037 Trends



S_21FLSJWM27010037 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a



E-1656

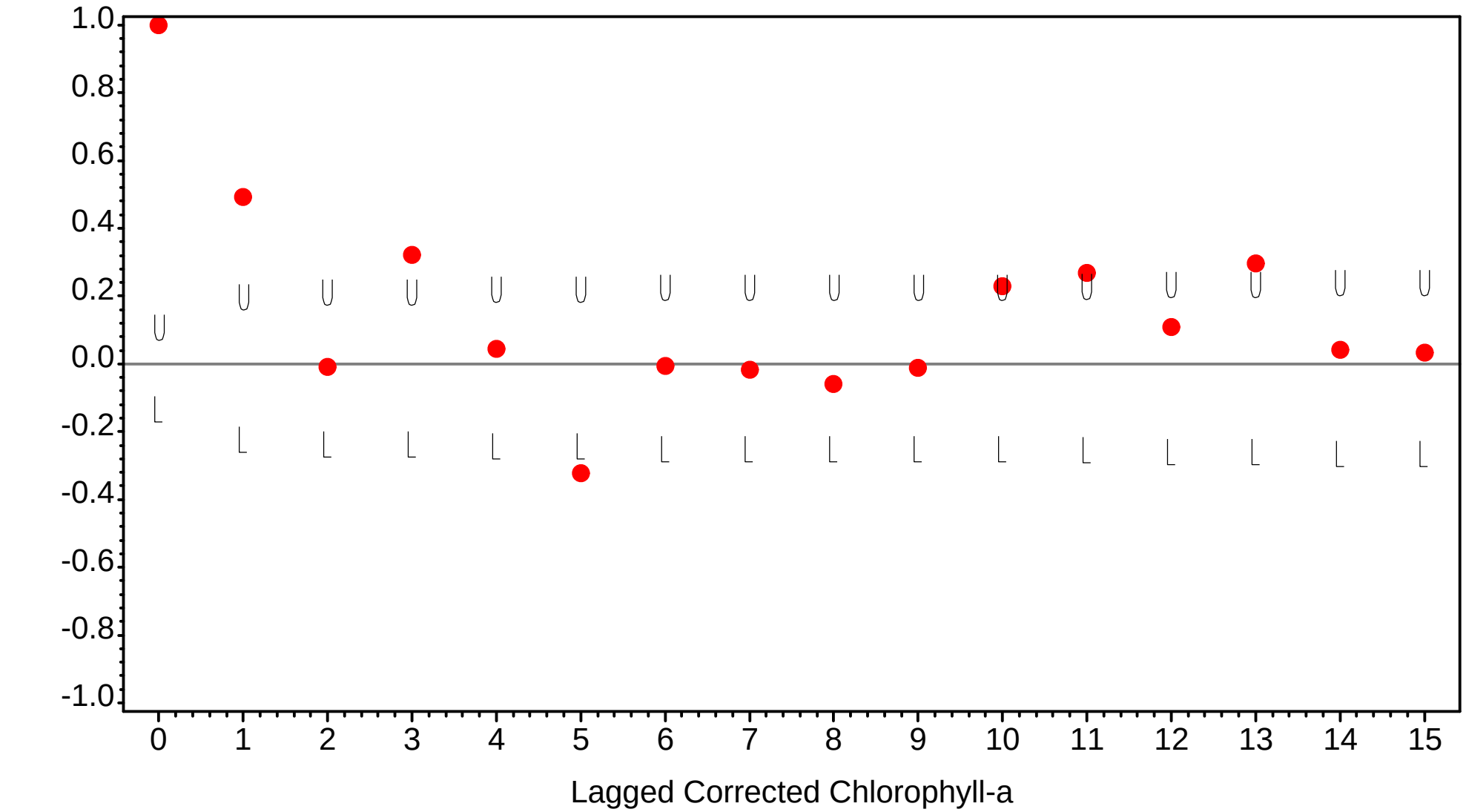
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.492	0.104	0.209	-0.209
2	-0.008	0.112	0.225	-0.225
3	0.322	0.112	0.225	-0.225
4	0.044	0.116	0.231	-0.231
5	-0.322	0.116	0.231	-0.231
6	-0.007	0.119	0.238	-0.238
7	-0.016	0.119	0.238	-0.238
8	-0.059	0.119	0.238	-0.238
9	-0.013	0.119	0.238	-0.238
10	0.228	0.119	0.238	-0.238
11	0.269	0.121	0.241	-0.241
12	0.109	0.123	0.246	-0.246
13	0.297	0.123	0.246	-0.246
14	0.042	0.126	0.251	-0.251
15	0.034	0.126	0.251	-0.251

S_21FLSJWM27010037 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1658

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

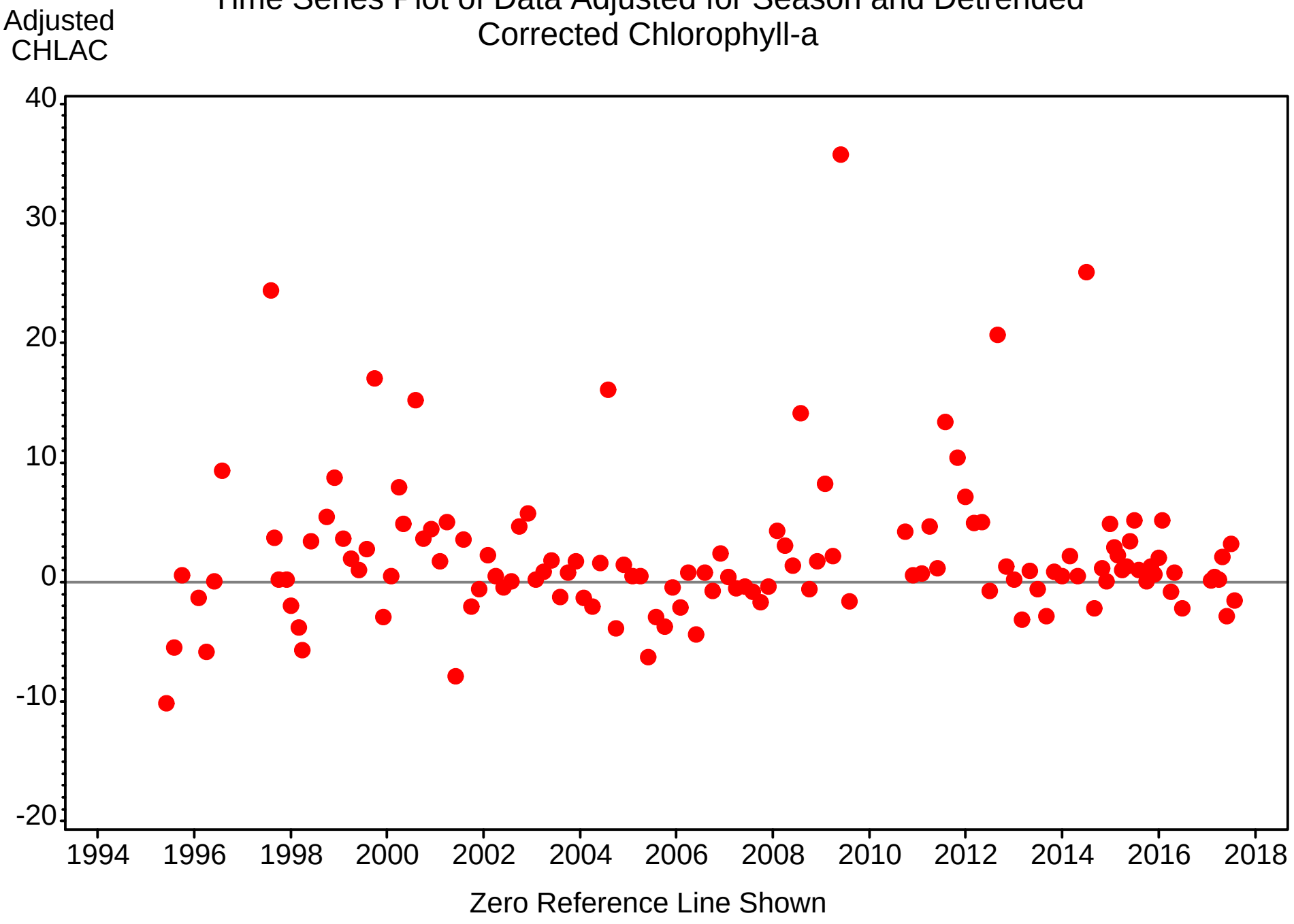
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.073	0.3	0.427	-0.061

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.073383	0.30031	0.42738	-0.060747

S_21FLSJWM27010037 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



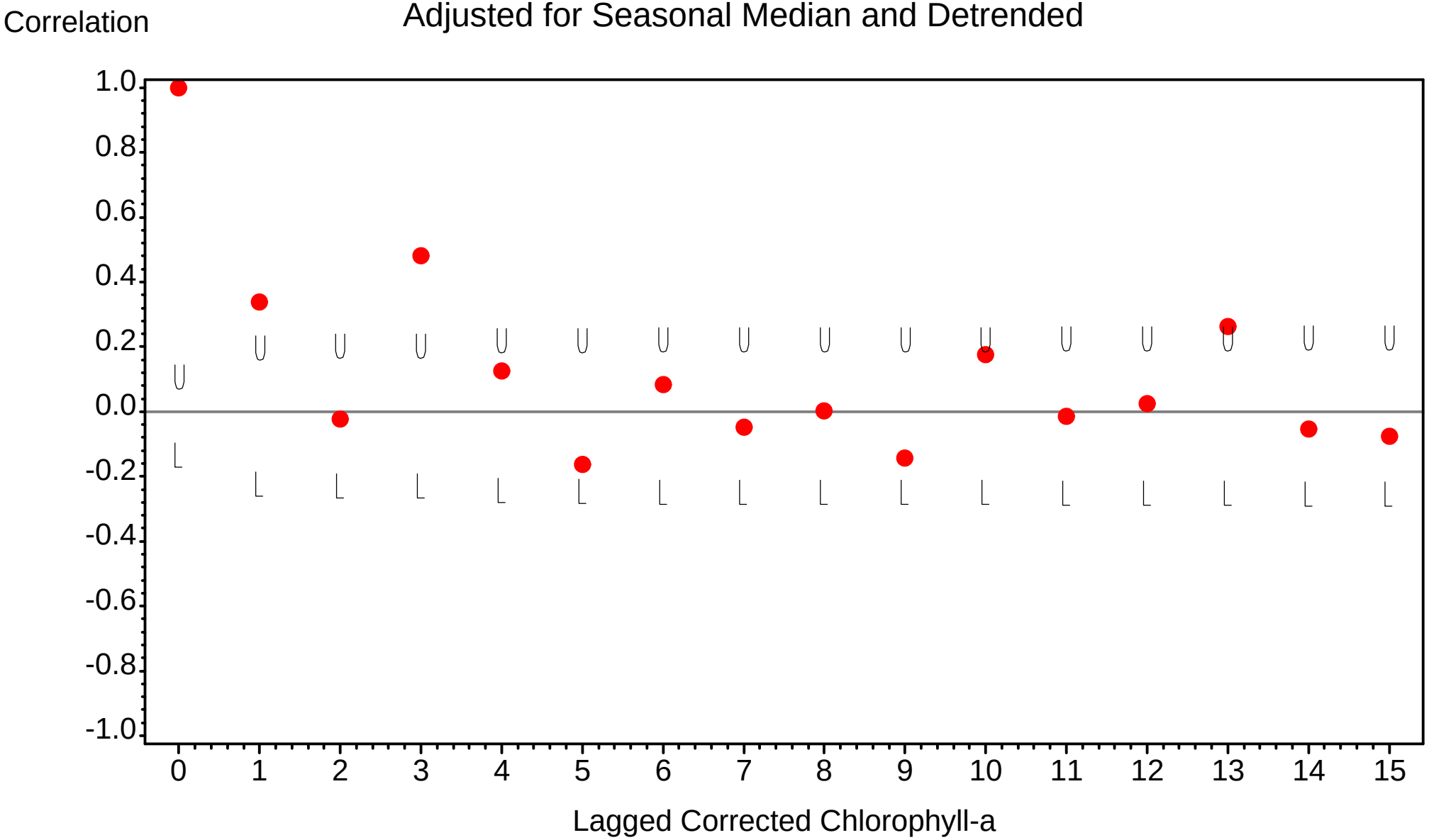
E-1661

S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.338	0.104	0.209	-0.209
2	-0.023	0.108	0.216	-0.216
3	0.482	0.108	0.216	-0.216
4	0.126	0.116	0.231	-0.231
5	-0.163	0.116	0.232	-0.232
6	0.084	0.117	0.234	-0.234
7	-0.049	0.117	0.234	-0.234
8	0.003	0.117	0.235	-0.235
9	-0.144	0.117	0.235	-0.235
10	0.176	0.118	0.236	-0.236
11	-0.015	0.119	0.238	-0.238
12	0.024	0.119	0.238	-0.238
13	0.264	0.119	0.238	-0.238
14	-0.054	0.121	0.242	-0.242
15	-0.076	0.121	0.242	-0.242

S_21FLSJWM27010037 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended

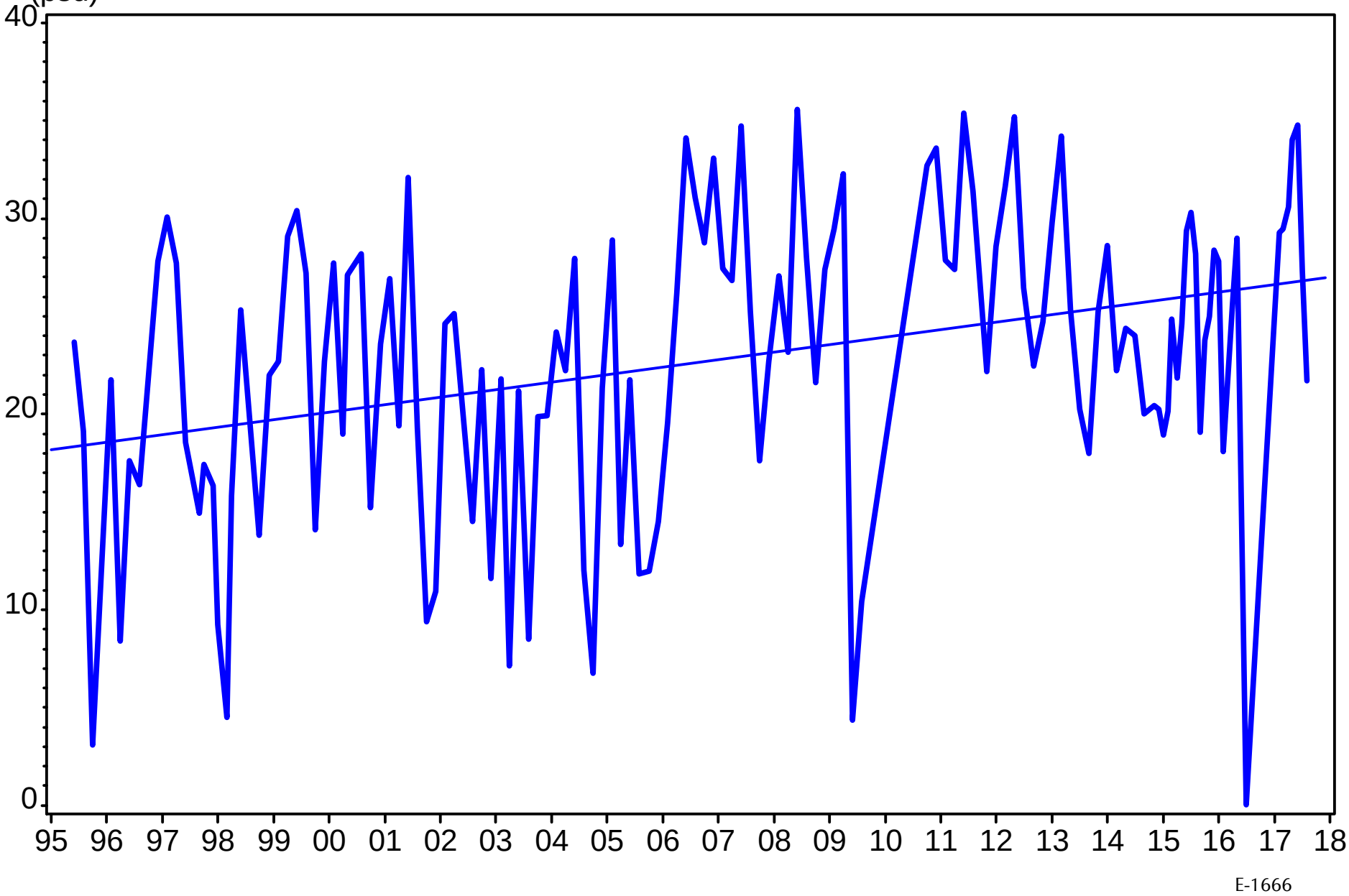


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1663

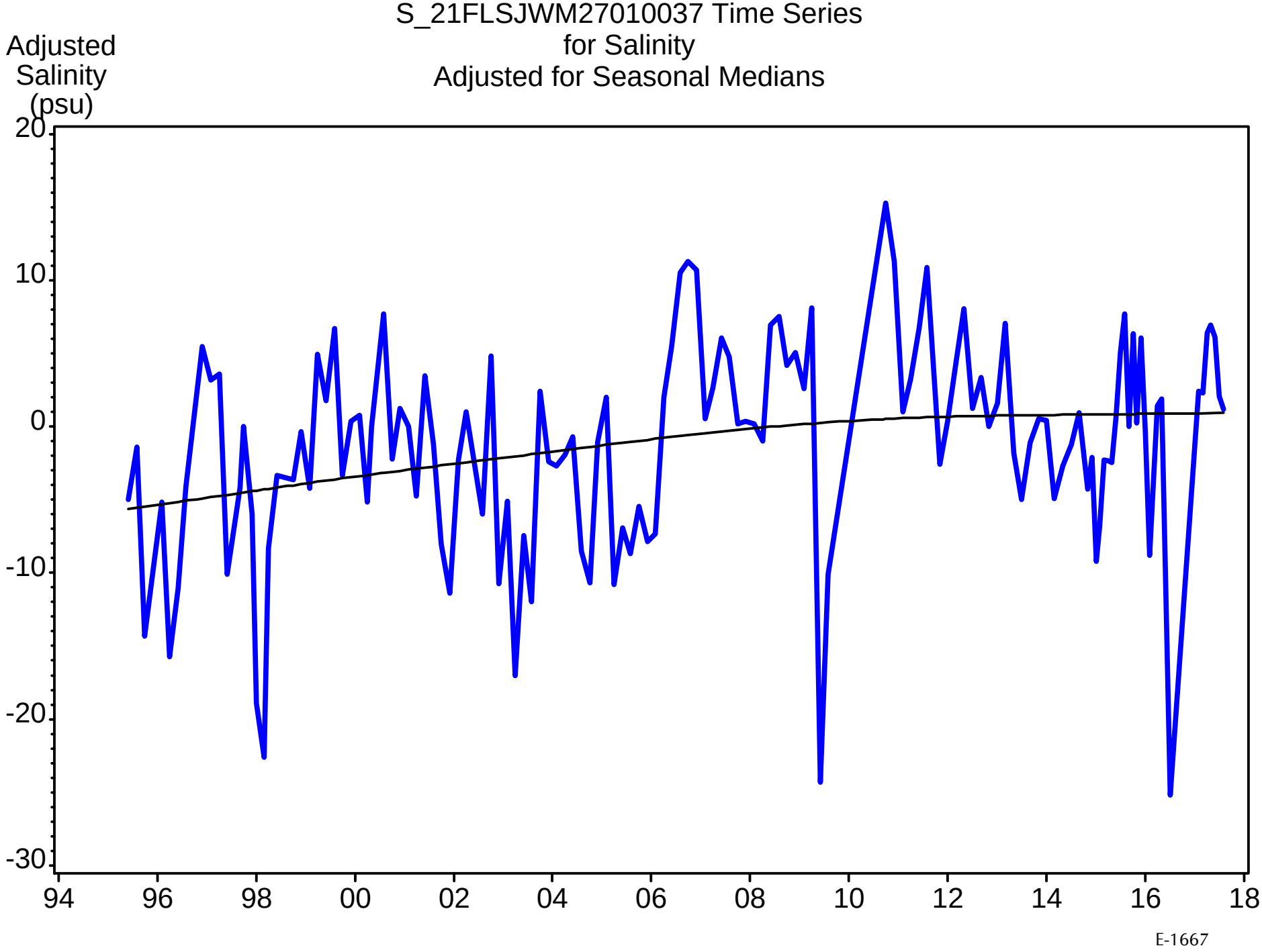
S_21FLSJWM27010037 Trends

S_21FLSJWM27010037 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



E-1666

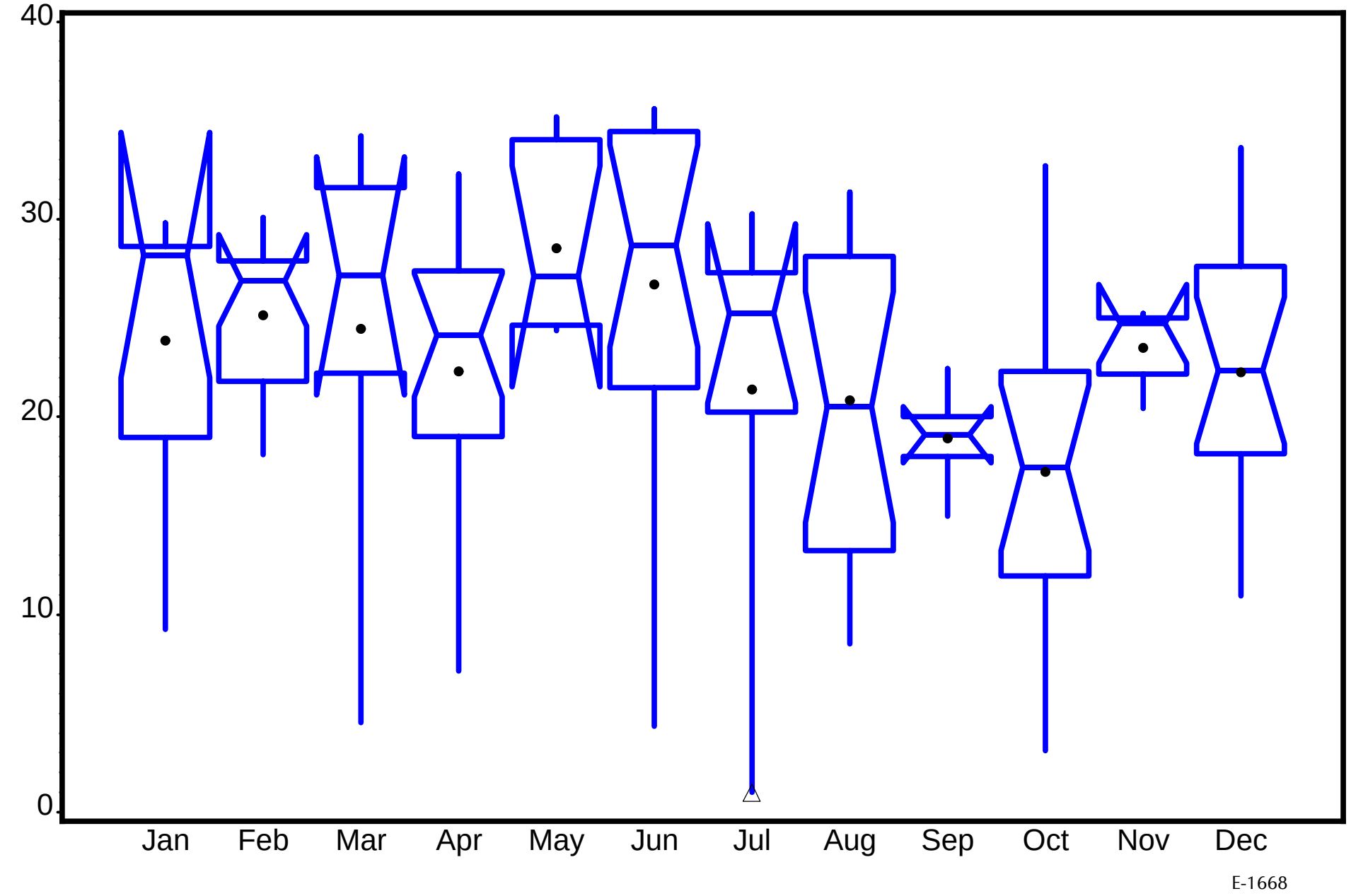
S_21FLSJWM27010037 Trends



S_21FLSJWM27010037 Trends Appendix

Seasonal Univariate Statistics

Salinity



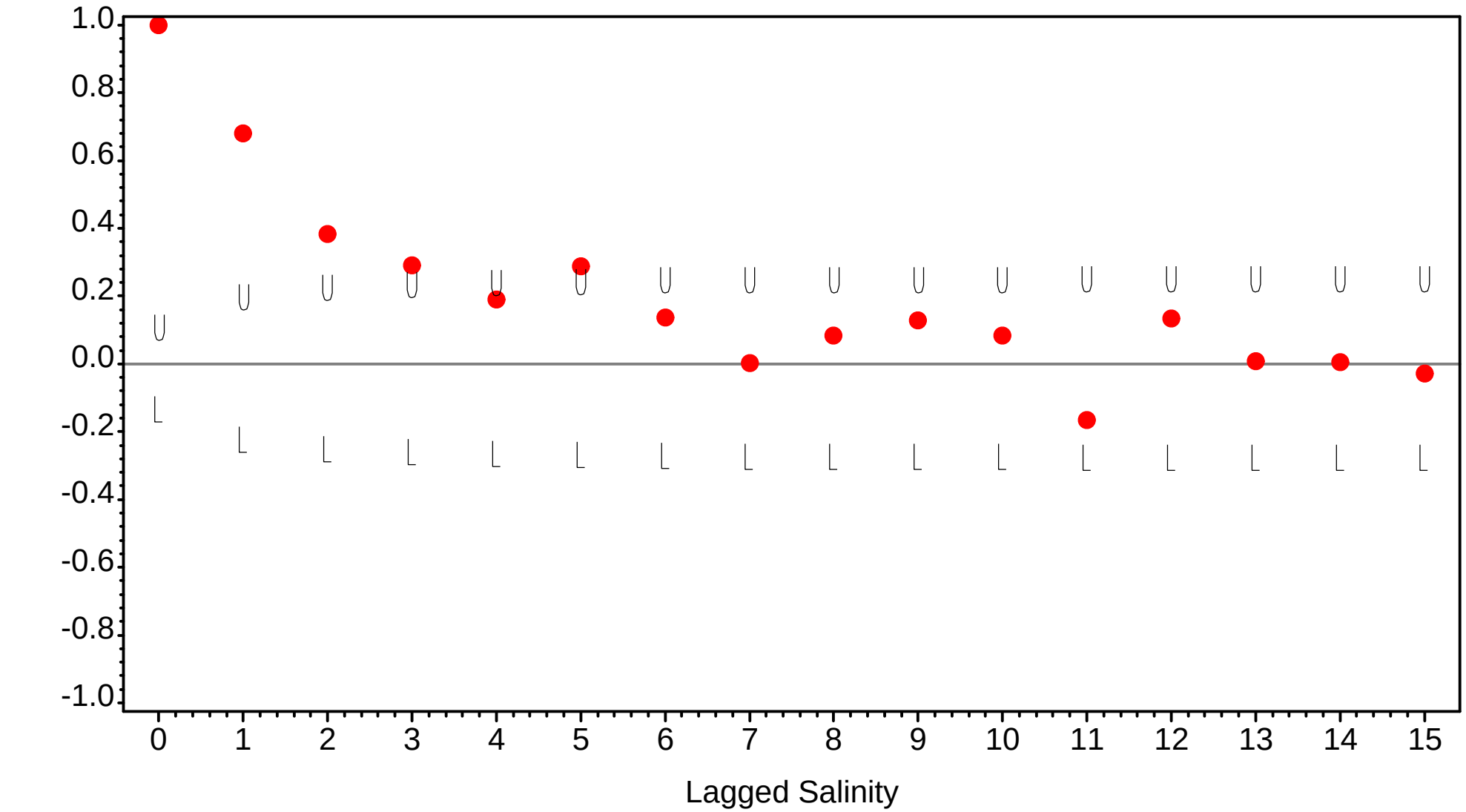
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.680	0.104	0.209	-0.209
2	0.384	0.119	0.239	-0.239
3	0.291	0.124	0.247	-0.247
4	0.191	0.126	0.252	-0.252
5	0.287	0.127	0.254	-0.254
6	0.138	0.129	0.259	-0.259
7	0.003	0.130	0.260	-0.260
8	0.084	0.130	0.260	-0.260
9	0.129	0.130	0.260	-0.260
10	0.083	0.131	0.261	-0.261
11	-0.166	0.131	0.262	-0.262
12	0.133	0.132	0.263	-0.263
13	0.008	0.132	0.264	-0.264
14	0.005	0.132	0.264	-0.264
15	-0.029	0.132	0.264	-0.264

S_21FLSJWM27010037 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.244	0	0.012	0.411

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.24405	.000412941	0.011725	0.41073

S_21FLSJWM27010037 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



E-1673

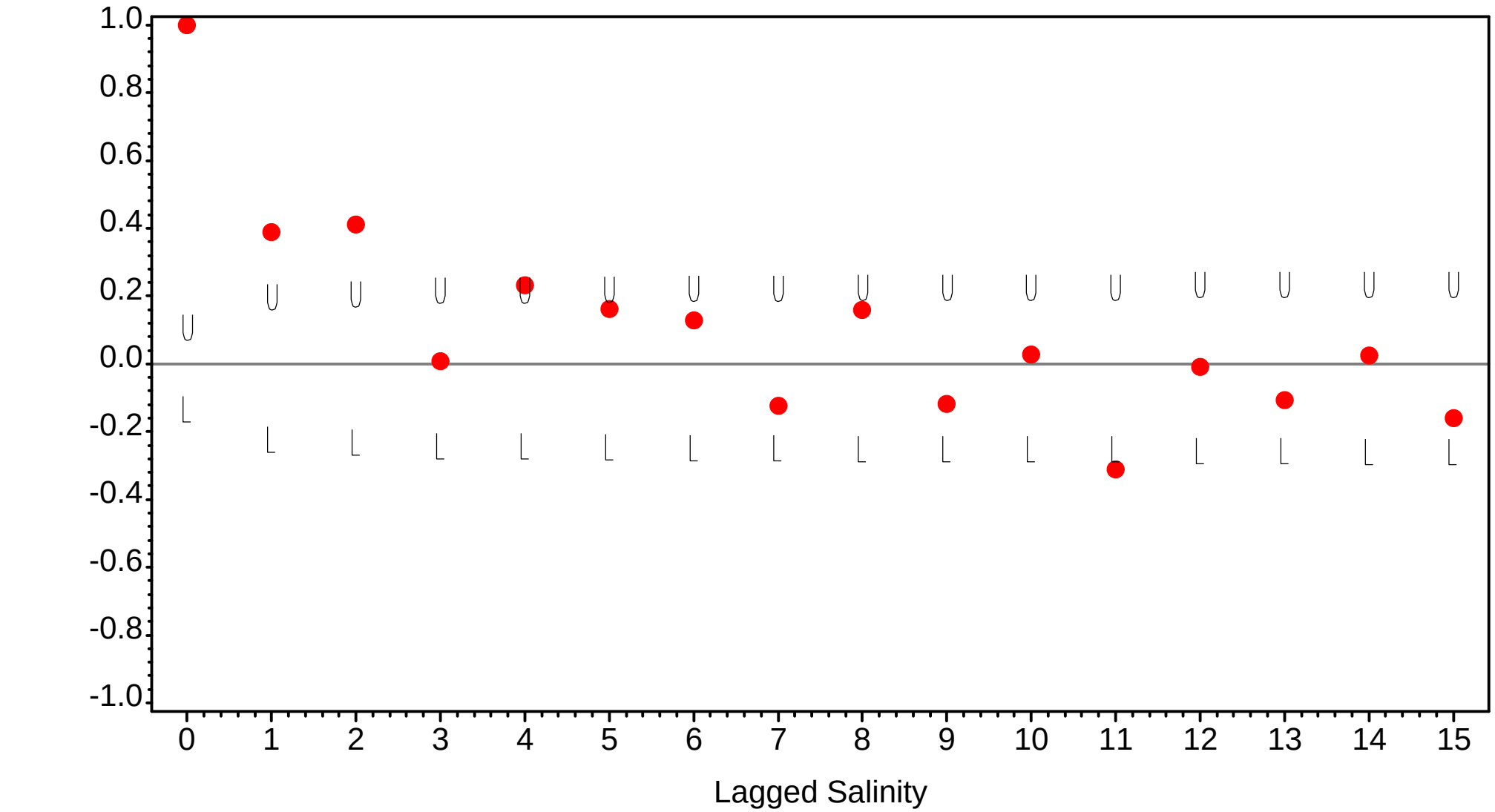
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.388	0.104	0.209	-0.209
2	0.412	0.109	0.219	-0.219
3	0.009	0.115	0.230	-0.230
4	0.233	0.115	0.230	-0.230
5	0.163	0.117	0.233	-0.233
6	0.127	0.117	0.235	-0.235
7	-0.125	0.118	0.236	-0.236
8	0.160	0.118	0.237	-0.237
9	-0.118	0.119	0.238	-0.238
10	0.028	0.120	0.239	-0.239
11	-0.311	0.120	0.239	-0.239
12	-0.010	0.122	0.245	-0.245
13	-0.108	0.122	0.245	-0.245
14	0.026	0.123	0.246	-0.246
15	-0.159	0.123	0.246	-0.246

S_21FLSJWM27010037 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended



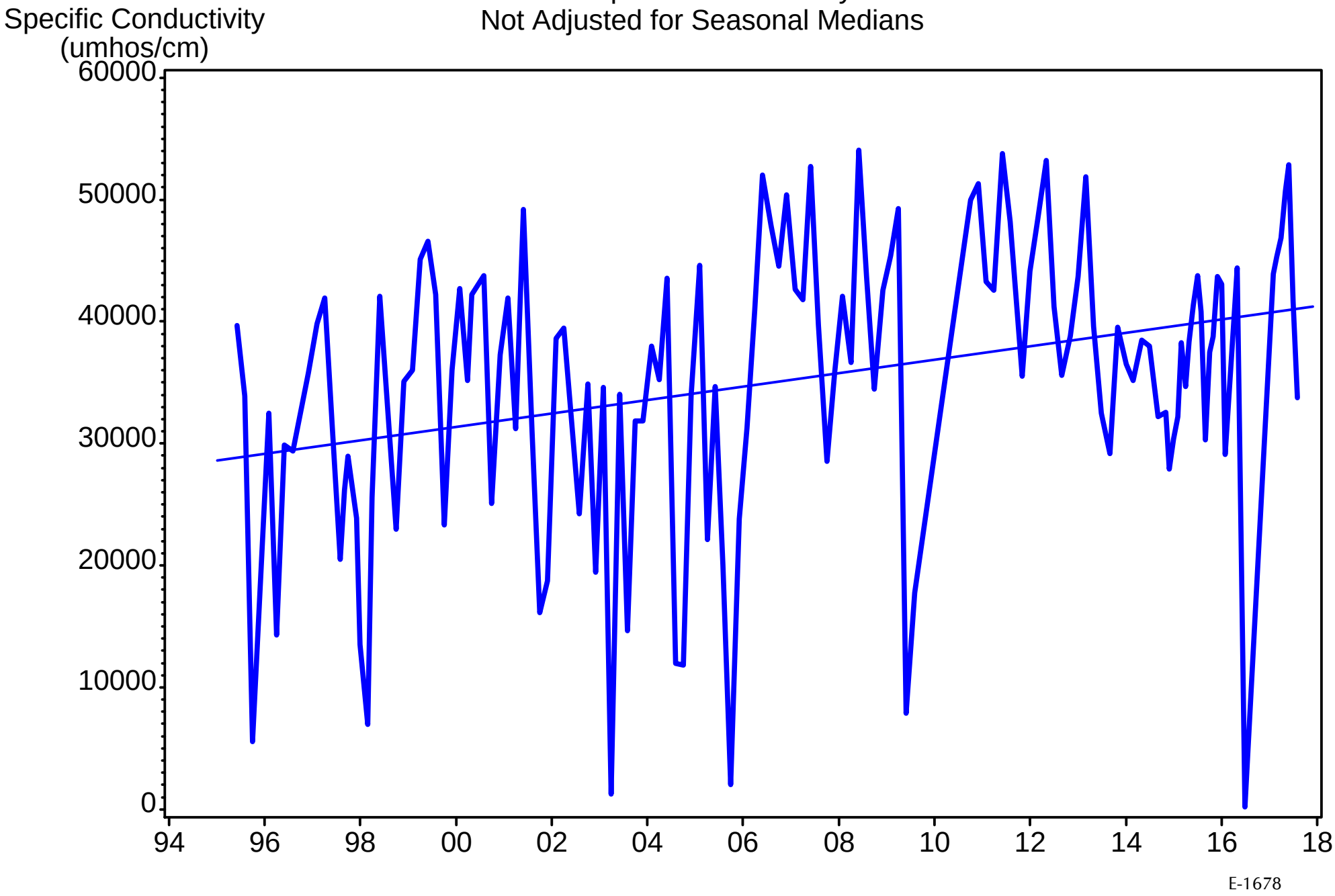
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1675

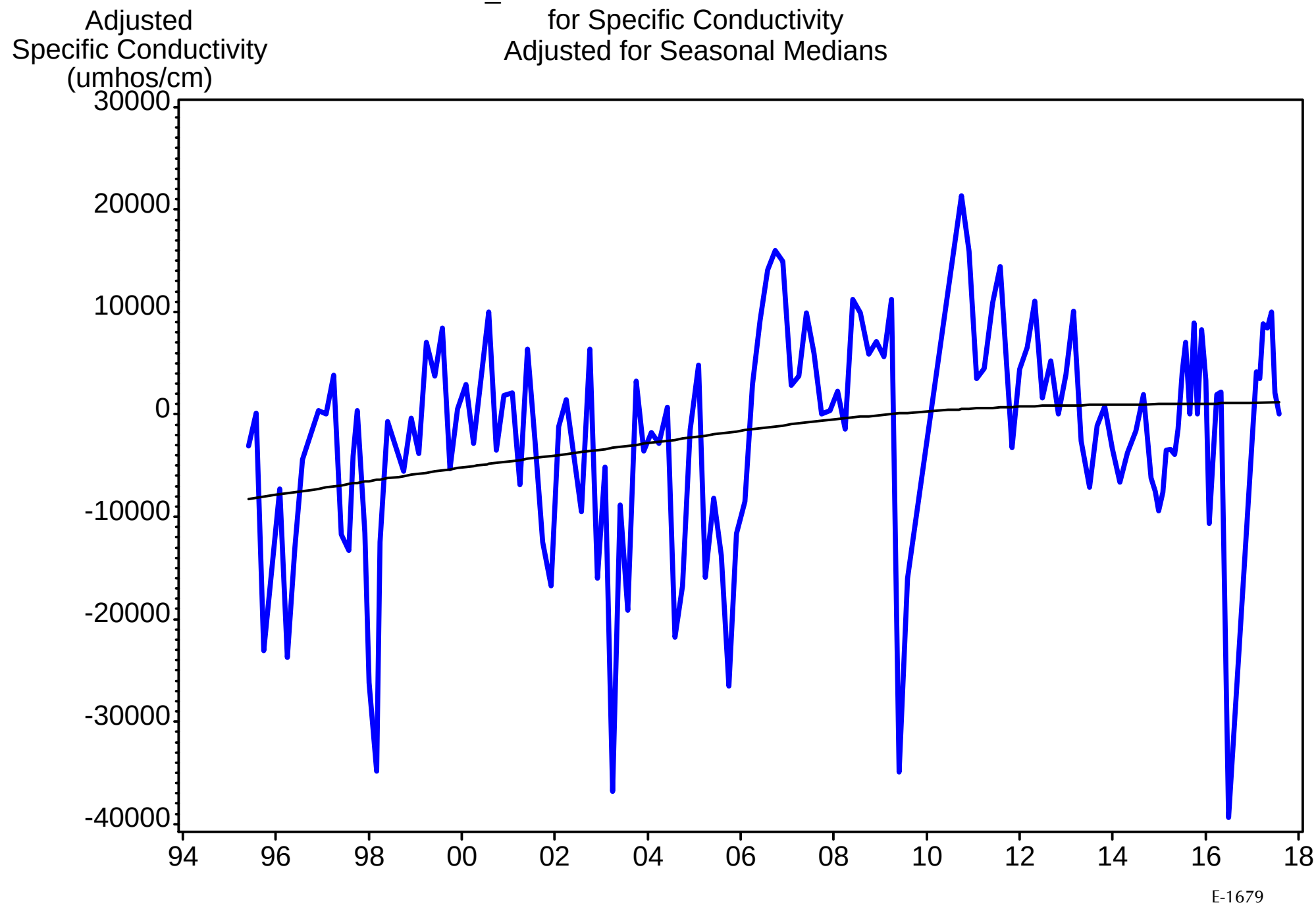
S_21FLSJWM27010037 Trends

S_21FLSJWM27010037 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



E-1678

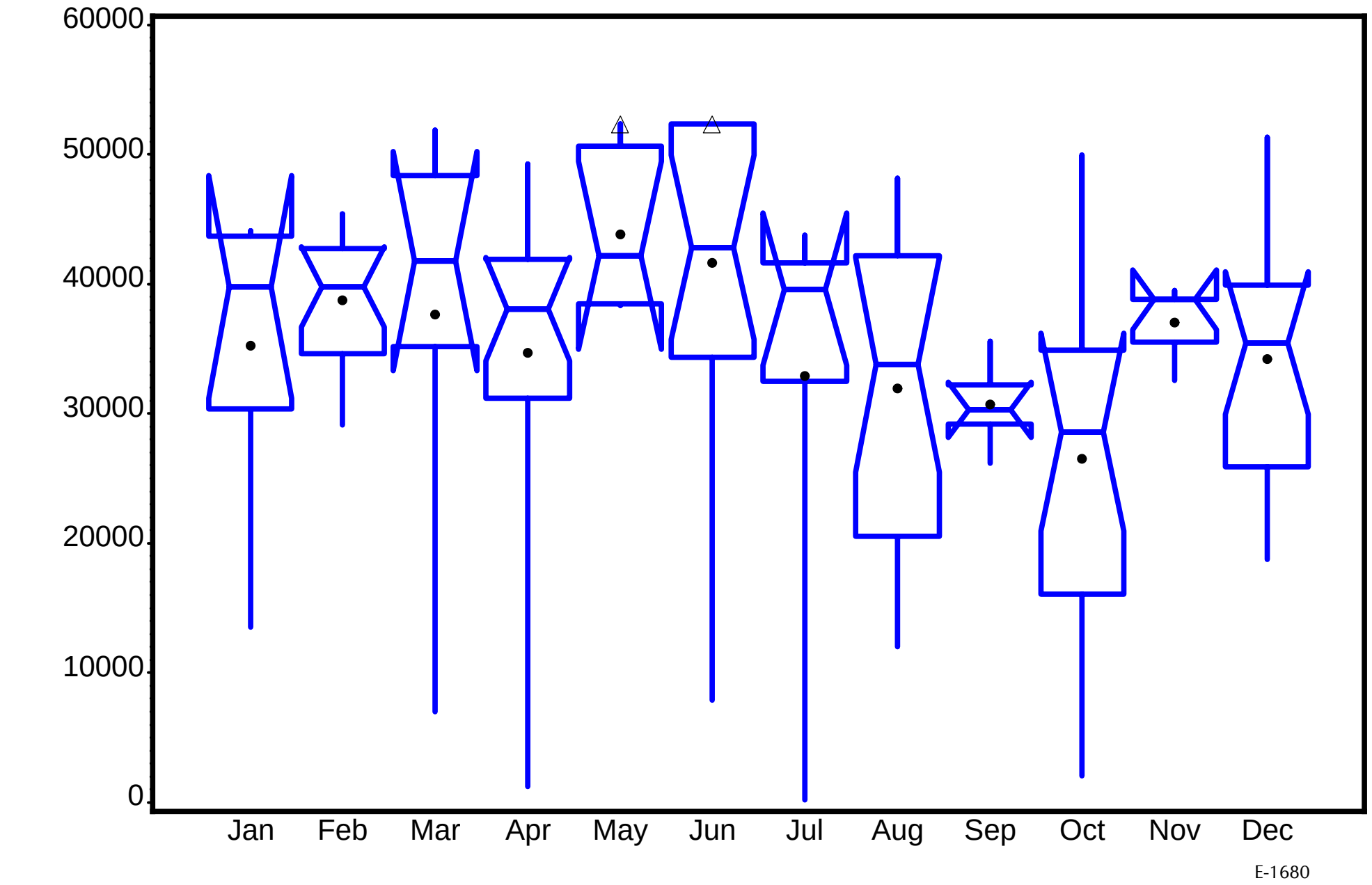
S_21FLSJWM27010037 Trends



S_21FLSJWM27010037 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity



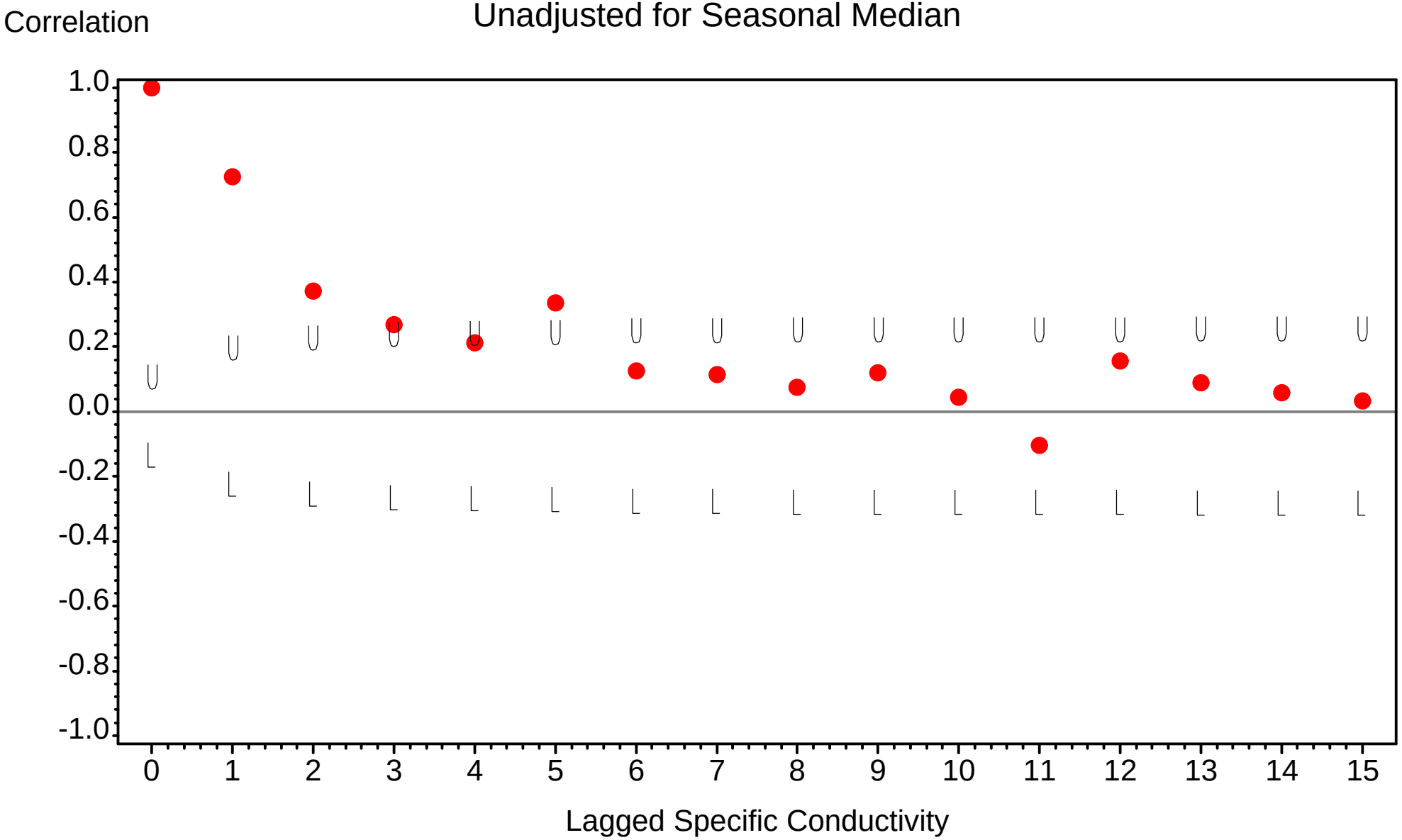
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.726	0.104	0.209	-0.209
2	0.373	0.121	0.242	-0.242
3	0.267	0.125	0.251	-0.251
4	0.211	0.127	0.255	-0.255
5	0.335	0.129	0.257	-0.257
6	0.125	0.132	0.263	-0.263
7	0.113	0.132	0.264	-0.264
8	0.076	0.132	0.265	-0.265
9	0.121	0.133	0.265	-0.265
10	0.043	0.133	0.266	-0.266
11	-0.104	0.133	0.266	-0.266
12	0.155	0.133	0.267	-0.267
13	0.088	0.134	0.268	-0.268
14	0.058	0.134	0.268	-0.268
15	0.032	0.134	0.269	-0.269

S_21FLSJWM27010037 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

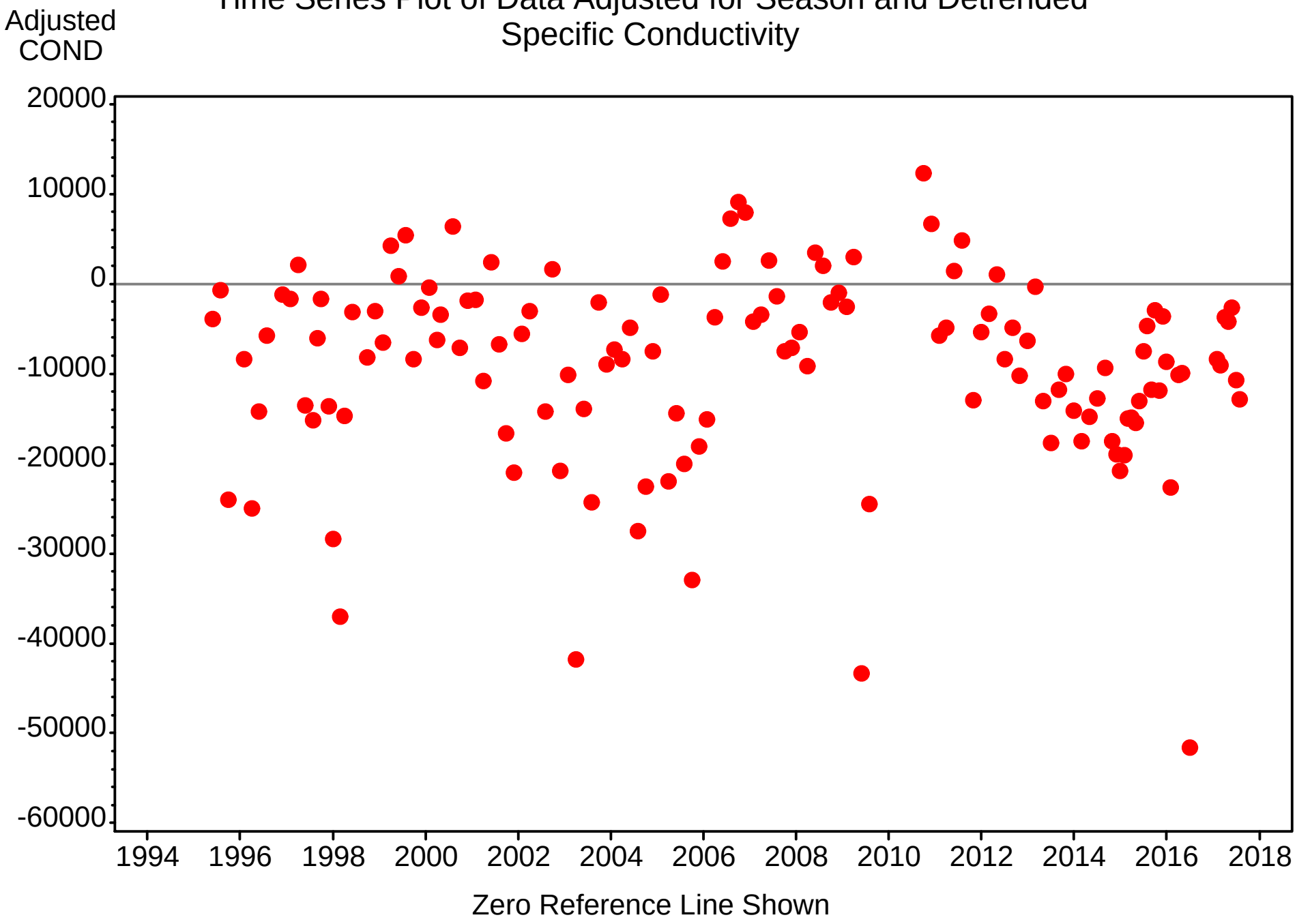
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.236	.001	0.019	543.286

S_21FLSJWM27010037 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.23598	.000602961	0.018770	543.286

S_21FLSJWM27010037 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity



E-1685

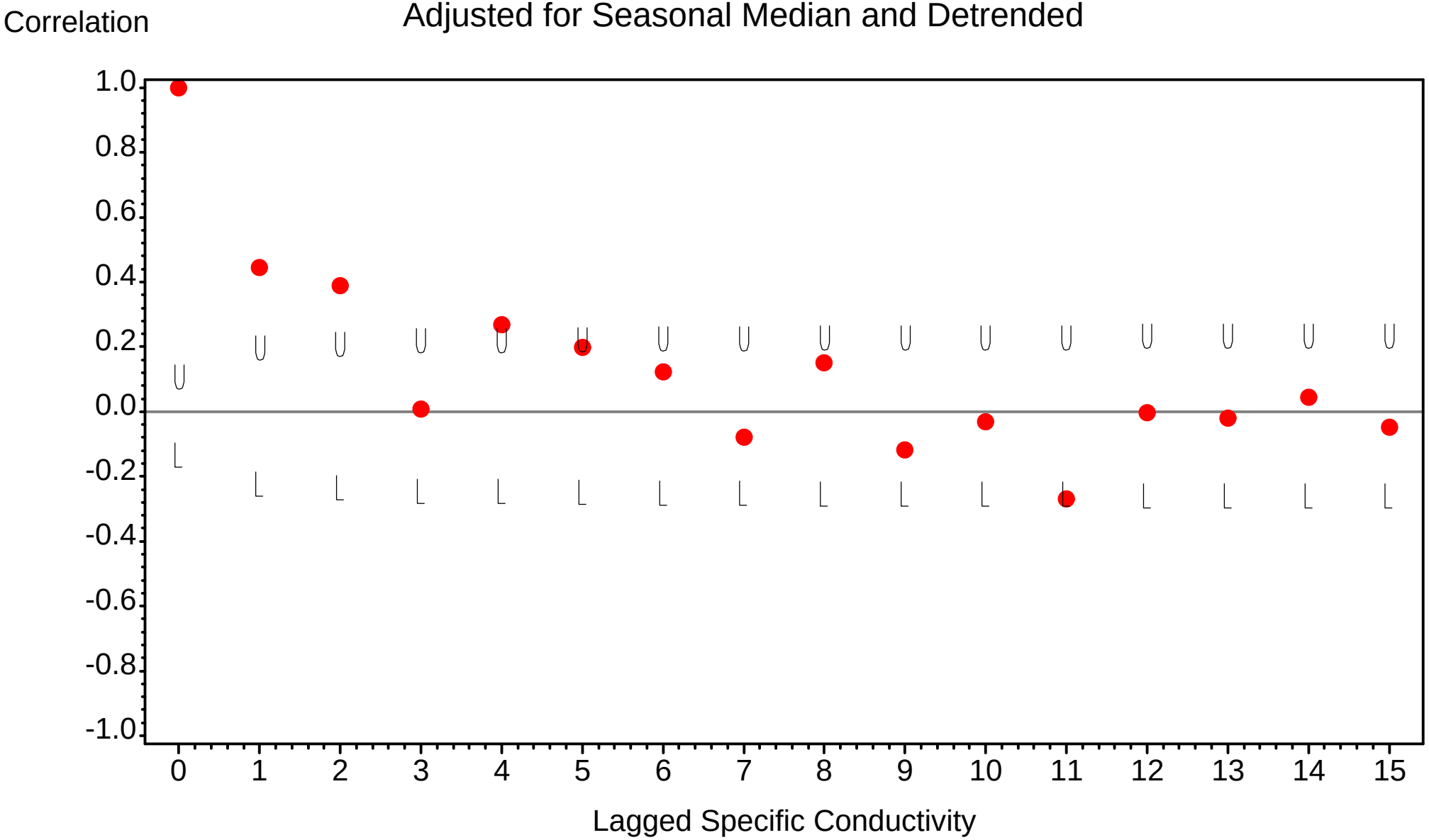
S_21FLSJWM27010037 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.060	0.120	-0.120
1	0.446	0.104	0.209	-0.209
2	0.388	0.111	0.222	-0.222
3	0.009	0.116	0.232	-0.232
4	0.267	0.116	0.232	-0.232
5	0.198	0.118	0.236	-0.236
6	0.123	0.119	0.238	-0.238
7	-0.079	0.120	0.239	-0.239
8	0.150	0.120	0.240	-0.240
9	-0.119	0.121	0.241	-0.241
10	-0.032	0.121	0.242	-0.242
11	-0.268	0.121	0.242	-0.242
12	-0.003	0.123	0.246	-0.246
13	-0.019	0.123	0.246	-0.246
14	0.043	0.123	0.246	-0.246
15	-0.047	0.123	0.246	-0.246

S_21FLSJWM27010037 Trends Appendix

Correlogram for Specific Conductivity

Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1687

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010037	S_21FLSJWM27010037	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.03
9	S_21FLSJWM27010037	S_21FLSJWM27010037	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010037	S_21FLSJWM27010037	DO	Dissolved Oxygen	(mg/L)	22	30	2.27
11	S_21FLSJWM27010037	S_21FLSJWM27010037	DOSAT	Dissolved Oxygen	(%)	32	40	2.31
12	S_21FLSJWM27010037	S_21FLSJWM27010037	SALIN	Salinity	(psu)	52	60	-9999.00
13	S_21FLSJWM27010037	S_21FLSJWM27010037	TN	Total Nitrogen	(mg/L)	2	10	0.59
14	S_21FLSJWM27010037	S_21FLSJWM27010037	TP	Total Phosphorus	(mg/L)	12	20	1.44

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.44	N	Y	N	N	-0.073	0.300	0.427	-0.061
9	0.58	Y	Y	Y	Y	0.236	0.001	0.019	543.286
10	1.72	Y	N	N	N	-0.120	0.086	0.182	-0.021
11	1.91	Y	N	N	N	-0.050	0.474	0.582	0.000
12	0.51	Y	Y	Y	Y	0.244	0.000	0.012	0.411
13	1.36	Y	Y	Y	Y	-0.194	0.005	0.053	-0.013
14	1.82	Y	N	Y	N	0.071	0.315	0.530	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	-0.07338	0.30031	0.42738	-0.061	-0.07300	0.30000	-0.061
9	0.23598	0.00060	0.01877	543.286	0.23598	0.01877	543.286
10	-0.12000	0.08562	0.18235	-0.021	-0.12000	0.08562	-0.021
11	-0.04970	0.47390	0.58186	0.000	-0.04970	0.47390	0.000
12	0.24405	0.00041	0.01172	0.411	0.24405	0.01172	0.411
13	-0.19378	0.00530	0.05323	-0.013	-0.19378	0.05323	-0.013
14	0.07057	0.31497	0.53036	0.001	0.07057	0.31497	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
16	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
17	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
18	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
19	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
20	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
21	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
16	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
17	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
18	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
19	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
20	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
21	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
16	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
17	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
18	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
19	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
20	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
21	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
22	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
23	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
24	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
25	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
26	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
27	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
28	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
22	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
23	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
24	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
25	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
26	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
27	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
28	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
23	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
24	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
25	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
26	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
27	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
28	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
29	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.15
30	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28	0.99
31	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67	1.60
32	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.27
33	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90	2.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
29	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017	-0.14839
30	Y	Y	N	N	-0.132	0.057	0.124	-0.001	-0.13170
31	Y	Y	N	N	0.150	0.038	0.109	0.103	0.15026
32	N	Y	Y	Y	0.141	0.033	0.135	357.337	0.14103
33	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014	-0.08367

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
29	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
30	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
31	0.03776	0.10869	0.103	0.15026	0.03776	0.103
32	0.03319	0.13465	357.337	0.14100	0.13500	357.337
33	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
34	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48	1.87
35	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00	0.20
36	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00	1.03
37	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.75
38	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43	1.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
34	Y	Y	Y	Y	0.090	0.188	0.382	0.156	0.08974
35	N	Y	Y	Y	0.153	0.020	0.128	0.254	0.15317
36	Y	Y	N	N	0.109	0.084	0.181	0.000	0.10913
37	Y	Y	Y	Y	0.015	0.858	0.907	0.001	0.01504
38	Y	Y	N	N	-0.115	0.116	0.160	-0.001	-0.12022

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
34	0.18759	0.38162	0.156	0.08974	0.38162	0.156
35	0.01994	0.12793	0.254	0.15300	0.12800	0.254
36	0.08403	0.18091	0.000	0.10913	0.08403	0.000
37	0.85776	0.90700	0.001	0.01504	0.90700	0.001
38	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
39	S_21FLVEMDHL05	S_21FLVEMDHL05	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.66	0.74
40	S_21FLVEMDHL05	S_21FLVEMDHL05	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.71
41	S_21FLVEMDHL05	S_21FLVEMDHL05	DO	Dissolved Oxygen	(mg/L)	22	30	2.01	2.54
42	S_21FLVEMDHL05	S_21FLVEMDHL05	DOSAT	Dissolved Oxygen	(%)	32	40	1.41	2.00
43	S_21FLVEMDHL05	S_21FLVEMDHL05	SALIN	Salinity	(psu)	52	60	-9999.00	0.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
39	Y	Y	Y	Y	0.145	0.032	0.115	0.086	0.14507
40	Y	Y	Y	Y	0.085	0.174	0.337	182.245	0.08502
41	Y	N	N	N	-0.149	0.017	0.110	-0.023	-0.14929
42	Y	Y	N	N	0.081	0.199	0.362	0.114	0.08126
43	Y	Y	N	N	0.060	0.339	0.502	0.082	0.05987

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
39	0.03182	0.11509	0.086	0.14507	0.11509	0.086
40	0.17411	0.33661	182.245	0.08502	0.33661	182.245
41	0.01704	0.11000	-0.023	-0.14929	0.01704	-0.023
42	0.19863	0.36237	0.114	0.08126	0.19863	0.114
43	0.33872	0.50152	0.082	0.05987	0.33872	0.082

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
44	S_21FLVEMDHL05	S_21FLVEMDHL05	SD	Secchi Depth	(m)	72	80	0.38	1.10
45	S_21FLVEMDHL05	S_21FLVEMDHL05	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.81
46	S_21FLVEMDHL05	S_21FLVEMDHL05	TP	Total Phosphorus	(mg/L)	12	20	0.80	0.83
47	S_21FLVEMDHL06	S_21FLVEMDHL06	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.28	0.01
48	S_21FLVEMDHL06	S_21FLVEMDHL06	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.76

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
44	Y	N	N	N	0.047	0.468	0.545	0.000	0.04654
45	Y	Y	Y	Y	-0.146	0.037	0.227	-0.009	-0.14590
46	Y	Y	N	N	-0.030	0.675	0.690	0.000	-0.02972
47	Y	N	N	N	0.024	0.729	0.758	0.016	0.02423
48	Y	Y	Y	Y	0.105	0.092	0.238	239.000	0.10454

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
44	0.46800	0.54466	0.000	0.04654	0.46800	0.000
45	0.03661	0.22687	-0.009	-0.14590	0.22687	-0.009
46	0.67549	0.68953	0.000	-0.02972	0.67549	0.000
47	0.72880	0.75791	0.016	0.02423	0.72880	0.016
48	0.09156	0.23833	239.000	0.10454	0.23833	239.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
49	S_21FLVEMDHL06	S_21FLVEMDHL06	DO	Dissolved Oxygen	(mg/L)	22	30	2.05	2.52
50	S_21FLVEMDHL06	S_21FLVEMDHL06	DOSAT	Dissolved Oxygen	(%)	32	40	1.25	1.99
51	S_21FLVEMDHL06	S_21FLVEMDHL06	SALIN	Salinity	(psu)	52	60	-9999.00	0.74
52	S_21FLVEMDHL06	S_21FLVEMDHL06	SD	Secchi Depth	(m)	72	80	0.69	0.94
53	S_21FLVEMDHL06	S_21FLVEMDHL06	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
49	Y	N	N	N	-0.116	0.062	0.197	-0.017	-0.11576
50	Y	Y	N	N	0.080	0.201	0.322	0.088	0.08045
51	Y	Y	Y	Y	0.090	0.143	0.319	0.138	0.09026
52	Y	Y	Y	Y	0.047	0.458	0.500	0.000	0.04707
53	Y	Y	Y	Y	-0.126	0.072	0.357	-0.011	-0.12577

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
49	0.06243	0.19679	-0.017	-0.11576	0.06243	-0.017
50	0.20088	0.32170	0.088	0.08045	0.20088	0.088
51	0.14300	0.31855	0.138	0.09026	0.31855	0.138
52	0.45795	0.50041	0.000	0.04707	0.50041	0.000
53	0.07193	0.35680	-0.011	-0.12577	0.35680	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
54	S_21FLVEMDHL06	S_21FLVEMDHL06	TP	Total Phosphorus	(mg/L)	12	20	1.37	0.87
55	S_21FLVEMDHL07	S_21FLVEMDHL07	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.63	0.86
56	S_21FLVEMDHL07	S_21FLVEMDHL07	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.63
57	S_21FLVEMDHL07	S_21FLVEMDHL07	DO	Dissolved Oxygen	(mg/L)	22	30	0.95	2.67
58	S_21FLVEMDHL07	S_21FLVEMDHL07	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	1.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
54	Y	Y	N	N	-0.070	0.311	0.352	-0.001	-0.07004
55	Y	Y	N	N	-0.072	0.299	0.400	-0.064	-0.07206
56	Y	Y	Y	Y	0.087	0.169	0.316	185.539	0.08720
57	Y	N	Y	N	-0.184	0.003	0.046	-0.029	-0.18418
58	Y	Y	N	N	0.008	0.910	0.929	0.000	0.00826

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
54	0.31141	0.35163	-0.001	-0.07004	0.31141	-0.001
55	0.29904	0.39997	-0.064	-0.07206	0.29904	-0.064
56	0.16902	0.31573	185.539	0.08720	0.31573	185.539
57	0.00342	0.04576	-0.029	-0.18418	0.00342	-0.029
58	0.91015	0.92863	0.000	0.00826	0.91015	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
59	S_21FLVEMDHL07	S_21FLVEMDHL07	SALIN	Salinity	(psu)	52	60	-9999.00	0.71
60	S_21FLVEMDHL07	S_21FLVEMDHL07	SD	Secchi Depth	(m)	72	80	0.57	1.17
61	S_21FLVEMDHL07	S_21FLVEMDHL07	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.36
62	S_21FLVEMDHL07	S_21FLVEMDHL07	TP	Total Phosphorus	(mg/L)	12	20	1.44	0.84
63	S_21FLVEMDHL08	S_21FLVEMDHL08	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.14	1.34

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
59	Y	Y	Y	Y	0.073	0.250	0.428	0.107	0.07253
60	Y	Y	N	N	0.025	0.714	0.742	0.000	0.02457
61	Y	Y	Y	Y	-0.185	0.009	0.183	-0.017	-0.18331
62	Y	Y	N	N	0.002	1.000	1.000	0.000	0.00159
63	Y	Y	Y	Y	-0.071	0.214	0.403	-0.051	-0.07149

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
59	0.25004	0.42819	0.107	0.07253	0.42819	0.107
60	0.71425	0.74214	0.000	0.02457	0.71425	0.000
61	0.00999	0.18667	-0.017	-0.18331	0.18667	-0.017
62	1.00000	1.00000	0.000	0.00159	1.00000	0.000
63	0.21416	0.40266	-0.051	-0.07149	0.40266	-0.051

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
64	S_21FLVEMDHL08	S_21FLVEMDHL08	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.59
65	S_21FLVEMDHL08	S_21FLVEMDHL08	DO	Dissolved Oxygen	(mg/L)	22	30	0.75	2.49
66	S_21FLVEMDHL08	S_21FLVEMDHL08	DOSAT	Dissolved Oxygen	(%)	32	40	0.22	1.87
67	S_21FLVEMDHL08	S_21FLVEMDHL08	SALIN	Salinity	(psu)	52	60	-9999.00	0.65
68	S_21FLVEMDHL08	S_21FLVEMDHL08	SD	Secchi Depth	(m)	72	80	0.27	2.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
64	Y	Y	Y	Y	0.120	0.020	0.160	254.845	0.11995
65	Y	N	N	N	-0.232	0.000	0.009	-0.042	-0.23164
66	Y	Y	N	N	-0.152	0.003	0.037	-0.244	-0.15249
67	Y	Y	Y	Y	0.136	0.008	0.129	0.193	0.13555
68	Y	Y	Y	Y	0.143	0.004	0.056	0.007	0.14263

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
64	0.01993	0.16007	254.845	0.11995	0.16007	254.845
65	0.00001	0.00939	-0.042	-0.23164	0.00001	-0.042
66	0.00335	0.03715	-0.244	-0.15249	0.00335	-0.244
67	0.00785	0.12892	0.193	0.13555	0.12892	0.193
68	0.00378	0.05556	0.007	0.14263	0.05556	0.007

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
69	S_21FLVEMDHL08	S_21FLVEMDHL08	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
70	S_21FLVEMDHL08	S_21FLVEMDHL08	TP	Total Phosphorus	(mg/L)	12	20	1.44	1.44
71	S_21FLVEMDHL09	S_21FLVEMDHL09	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.80	1.15
72	S_21FLVEMDHL09	S_21FLVEMDHL09	COND	Specific Conductivity	(umhos/cm)	62	70	0.08	0.52
73	S_21FLVEMDHL09	S_21FLVEMDHL09	DO	Dissolved Oxygen	(mg/L)	22	30	1.27	2.71
74	S_21FLVEMDHL09	S_21FLVEMDHL09	DOSAT	Dissolved Oxygen	(%)	32	40	0.70	1.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
69	Y	Y	Y	Y	0.028	0.718	0.811	0.003	0.02768
70	Y	Y	Y	Y	-0.190	0.007	0.042	-0.002	-0.19024
71	Y	Y	N	N	-0.127	0.021	0.085	-0.096	-0.12661
72	Y	Y	Y	Y	0.096	0.054	0.237	198.000	0.09624
73	Y	N	N	N	-0.220	0.000	0.020	-0.044	-0.21971
74	Y	Y	Y	Y	-0.050	0.319	0.474	-0.033	-0.05033

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
69	0.71842	0.81125	0.003	0.02768	0.81125	0.003
70	0.00697	0.04239	-0.002	-0.19024	0.04239	-0.002
71	0.02055	0.08517	-0.096	-0.12661	0.02055	-0.096
72	0.05369	0.23662	198.000	0.09624	0.23662	198.000
73	0.00001	0.02045	-0.044	-0.21971	0.00001	-0.044
74	0.31942	0.47358	-0.033	-0.05033	0.47358	-0.033

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
75	S_21FLVEMDHL09	S_21FLVEMDHL09	SALIN	Salinity	(psu)	52	60	-9999.00	0.64
76	S_21FLVEMDHL09	S_21FLVEMDHL09	SD	Secchi Depth	(m)	72	80	-9999.00	1.87
77	S_21FLVEMDHL09	S_21FLVEMDHL09	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
78	S_21FLVEMDHL09	S_21FLVEMDHL09	TP	Total Phosphorus	(mg/L)	12	20	1.00	0.92
79	S_21FLVEMDHL10	S_21FLVEMDHL10	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.27	0.96

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
75	Y	Y	Y	Y	0.117	0.019	0.176	0.144	0.11657
76	Y	Y	N	N	0.211	0.000	0.006	0.009	0.21061
77	Y	Y	Y	Y	-0.102	0.133	0.421	-0.010	-0.10176
78	Y	N	Y	N	-0.204	0.002	0.037	-0.002	-0.20424
79	Y	Y	N	N	-0.182	0.002	0.046	-0.117	-0.18198

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
75	0.01858	0.17621	0.144	0.11657	0.17621	0.144
76	0.00002	0.00602	0.009	0.21061	0.00002	0.009
77	0.13329	0.42067	-0.010	-0.10176	0.42067	-0.010
78	0.00203	0.03704	-0.002	-0.20424	0.00203	-0.002
79	0.00179	0.04648	-0.117	-0.18198	0.00179	-0.117

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
80	S_21FLVEMDHL10	S_21FLVEMDHL10	COND	Specific Conductivity	(umhos/cm)	62	70	0.01	0.50
81	S_21FLVEMDHL10	S_21FLVEMDHL10	DO	Dissolved Oxygen	(mg/L)	22	30	1.18	2.57
82	S_21FLVEMDHL10	S_21FLVEMDHL10	DOSAT	Dissolved Oxygen	(%)	32	40	0.91	1.88
83	S_21FLVEMDHL10	S_21FLVEMDHL10	SALIN	Salinity	(psu)	52	60	-9999.00	0.81
84	S_21FLVEMDHL10	S_21FLVEMDHL10	SD	Secchi Depth	(m)	72	80	-9999.00	1.83

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
80	N	Y	Y	Y	0.179	0.001	0.054	360.000	0.17869
81	Y	N	N	N	-0.275	0.000	0.009	-0.063	-0.27487
82	Y	Y	N	N	-0.206	0.000	0.020	-0.446	-0.20622
83	Y	Y	Y	Y	0.206	0.000	0.036	0.271	0.20579
84	Y	Y	N	N	0.246	0.000	0.004	0.015	0.24589

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
80	0.00082	0.05405	360.000	0.17900	0.05400	360.000
81	0.00000	0.00913	-0.063	-0.27487	0.00000	-0.063
82	0.00014	0.01957	-0.446	-0.20622	0.00014	-0.446
83	0.00010	0.03558	0.271	0.20579	0.03558	0.271
84	0.00000	0.00429	0.015	0.24589	0.00000	0.015

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
85	S_21FLVEMDHL10	S_21FLVEMDHL10	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.02
86	S_21FLVEMDHL10	S_21FLVEMDHL10	TP	Total Phosphorus	(mg/L)	12	20	1.66	0.56
87	S_21FLVEMDHL11	S_21FLVEMDHL11	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.28	0.30
88	S_21FLVEMDHL11	S_21FLVEMDHL11	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.59
89	S_21FLVEMDHL11	S_21FLVEMDHL11	DO	Dissolved Oxygen	(mg/L)	22	30	2.80	2.60

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
85	Y	Y	Y	Y	0.027	0.731	0.835	0.005	0.02745
86	Y	Y	N	N	-0.322	0.000	0.002	-0.004	-0.32156
87	N	Y	N	N	-0.105	0.062	0.106	-0.078	-0.10526
88	Y	Y	Y	Y	0.091	0.075	0.282	174.688	0.09076
89	Y	N	N	N	0.078	0.128	0.267	0.013	0.07838

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
85	0.73102	0.83542	0.005	0.02745	0.83542	0.005
86	0.00001	0.00156	-0.004	-0.32156	0.00001	-0.004
87	0.06191	0.10624	-0.078	-0.10500	0.06200	-0.078
88	0.07483	0.28160	174.688	0.09076	0.28160	174.688
89	0.12772	0.26689	0.013	0.07838	0.12772	0.013

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
90	S_21FLVEMDHL11	S_21FLVEMDHL11	DOSAT	Dissolved Oxygen	(%)	32	40	1.80	2.70
91	S_21FLVEMDHL11	S_21FLVEMDHL11	SALIN	Salinity	(psu)	52	60	-9999.00	0.51
92	S_21FLVEMDHL11	S_21FLVEMDHL11	SD	Secchi Depth	(m)	72	80	-9999.00	1.31
93	S_21FLVEMDHL11	S_21FLVEMDHL11	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.10
94	S_21FLVEMDHL11	S_21FLVEMDHL11	TP	Total Phosphorus	(mg/L)	12	20	0.20	-9999.00
95	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	1.38

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
90	Y	N	N	N	0.219	0.000	0.007	0.398	0.21873
91	Y	Y	Y	Y	0.112	0.027	0.192	0.146	0.11214
92	Y	Y	Y	Y	0.069	0.171	0.351	0.000	0.06942
93	Y	Y	Y	Y	-0.157	0.021	0.211	-0.017	-0.15603
94	N	N	N	N	-0.230	0.001	0.007	-0.002	-0.23025
95	Y	Y	Y	Y	0.074	0.356	0.527	0.052	0.07383

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
90	0.00004	0.00671	0.398	0.21873	0.00004	0.398
91	0.02662	0.19155	0.146	0.11214	0.19155	0.146
92	0.17136	0.35079	0.000	0.06942	0.35079	0.000
93	0.02254	0.21566	-0.017	-0.15603	0.21566	-0.017
94	0.00051	0.00713	-0.002	-0.23000	0.00100	-0.002
95	0.35568	0.52706	0.052	0.07383	0.52706	0.052

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
96	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23	0.08
97	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47	2.09
98	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56	2.11
99	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09	0.29
100	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00	-9999.00
101	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.04

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
96	N	Y	Y	Y	0.090	0.212	0.347	225.098	0.08958
97	Y	N	N	N	-0.099	0.163	0.243	-0.023	-0.09906
98	Y	N	N	N	0.046	0.549	0.573	0.109	0.04571
99	N	Y	Y	Y	0.155	0.028	0.107	0.318	0.15482
100	N	Y	N	N	0.192	0.005	0.044	0.011	0.19225
101	Y	Y	N	N	-0.161	0.045	0.205	-0.029	-0.16145

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
96	0.21156	0.34660	225.098	0.09000	0.34700	225.098
97	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
98	0.54949	0.57310	0.109	0.04571	0.54949	0.109
99	0.02802	0.10656	0.318	0.15500	0.10700	0.318
100	0.00486	0.04449	0.011	0.19200	0.00500	0.011
101	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
102	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	0.45
103	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.33
104	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09	0.79
105	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16	2.35
106	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00	2.11
107	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00	0.98

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
102	N	N	N	N	0.021	0.810	0.860	0.000	0.02128
103	N	Y	N	N	0.049	0.531	0.675	0.023	0.04851
104	Y	Y	Y	Y	0.017	0.821	0.864	6.873	0.01671
105	Y	Y	N	N	-0.022	0.763	0.834	-0.004	-0.02159
106	Y	Y	Y	Y	0.049	0.487	0.514	0.154	0.04892
107	Y	Y	Y	Y	0.070	0.304	0.474	0.025	0.06955

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
102	0.80954	0.86021	0.000	0.02100	0.81000	0.000
103	0.53077	0.67536	0.023	0.04900	0.53100	0.023
104	0.82111	0.86399	6.874	0.01671	0.86399	6.874
105	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004
106	0.48687	0.51426	0.154	0.04892	0.51426	0.154
107	0.30398	0.47368	0.025	0.06955	0.47368	0.025

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
108	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61	1.08
109	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.88
110	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10	1.51
111	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	-9999.00
112	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82	1.12
113	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25	0.82

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
108	Y	Y	N	N	0.064	0.330	0.509	0.000	0.06415
109	Y	Y	N	N	0.017	0.845	0.901	0.002	0.01724
110	Y	Y	Y	Y	0.050	0.519	0.695	0.000	0.05031
111	N	Y	N	N	0.078	0.299	0.360	0.020	0.07599
112	Y	N	Y	N	0.106	0.122	0.158	10.031	0.10598
113	Y	Y	N	N	-0.170	0.012	0.092	-0.059	-0.16974

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
108	0.32954	0.50893	0.000	0.06415	0.32954	0.000
109	0.84540	0.90084	0.002	0.01724	0.84540	0.002
110	0.51900	0.69540	0.000	0.05031	0.69540	0.000
111	0.31036	0.36979	0.020	0.07800	0.29900	0.020
112	0.12166	0.15796	10.031	0.10598	0.12166	10.031
113	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
114	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	0.70
115	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73	1.54
116	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00	1.54
117	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.48
118	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00
119	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
114	Y	Y	N	N	-0.175	0.011	0.082	-0.515	-0.17479
115	Y	N	Y	N	0.092	0.169	0.290	0.004	0.09207
116	Y	Y	Y	Y	0.094	0.155	0.427	0.007	0.09387
117	Y	Y	N	N	-0.031	0.706	0.812	-0.002	-0.03145
118	N	N	N	N	-0.023	0.786	0.871	0.000	-0.02254
119	N	Y	N	N	-0.142	0.074	0.219	-0.011	-0.14223

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
114	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
115	0.16857	0.29012	0.004	0.09207	0.16857	0.004
116	0.15479	0.42738	0.007	0.09387	0.42738	0.007
117	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002
118	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
119	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
120	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19	-9999.00
121	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42	2.33
122	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81	1.77
123	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00	-9999.00
124	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00	0.68

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
120	N	N	Y	N	0.085	0.243	0.291	2.029	0.08500
121	Y	Y	N	N	-0.040	0.591	0.737	-0.008	-0.03968
122	Y	Y	N	N	0.027	0.725	0.823	0.034	0.02716
123	N	Y	Y	Y	0.123	0.076	0.159	0.001	0.12322
124	Y	Y	N	N	0.194	0.005	0.046	0.009	0.19383

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
120	0.24287	0.29095	2.029	0.08500	0.24300	2.029
121	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008
122	0.72528	0.82342	0.034	0.02716	0.72528	0.034
123	0.07617	0.15857	0.001	0.12300	0.15900	0.001
124	0.00462	0.04647	0.009	0.19383	0.00462	0.009

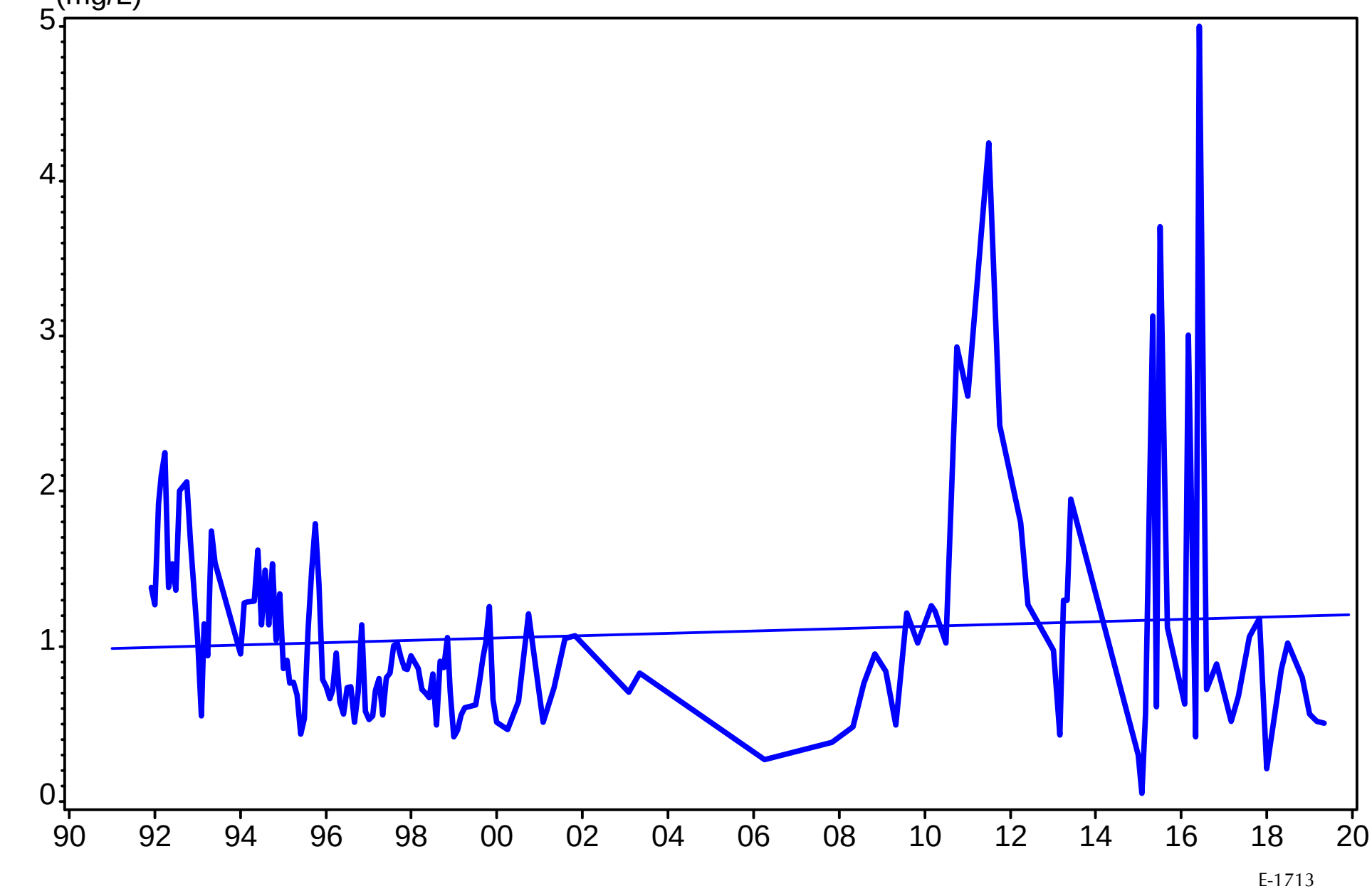
Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
125	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.31
126	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
125	N	Y	N	N	-0.241	0.003	0.076	-0.016	-0.24070
126	N	N	N	N	0.040	0.632	0.786	0.000	0.04009

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
125	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
126	0.63152	0.78567	0.000	0.04000	0.63200	0.000

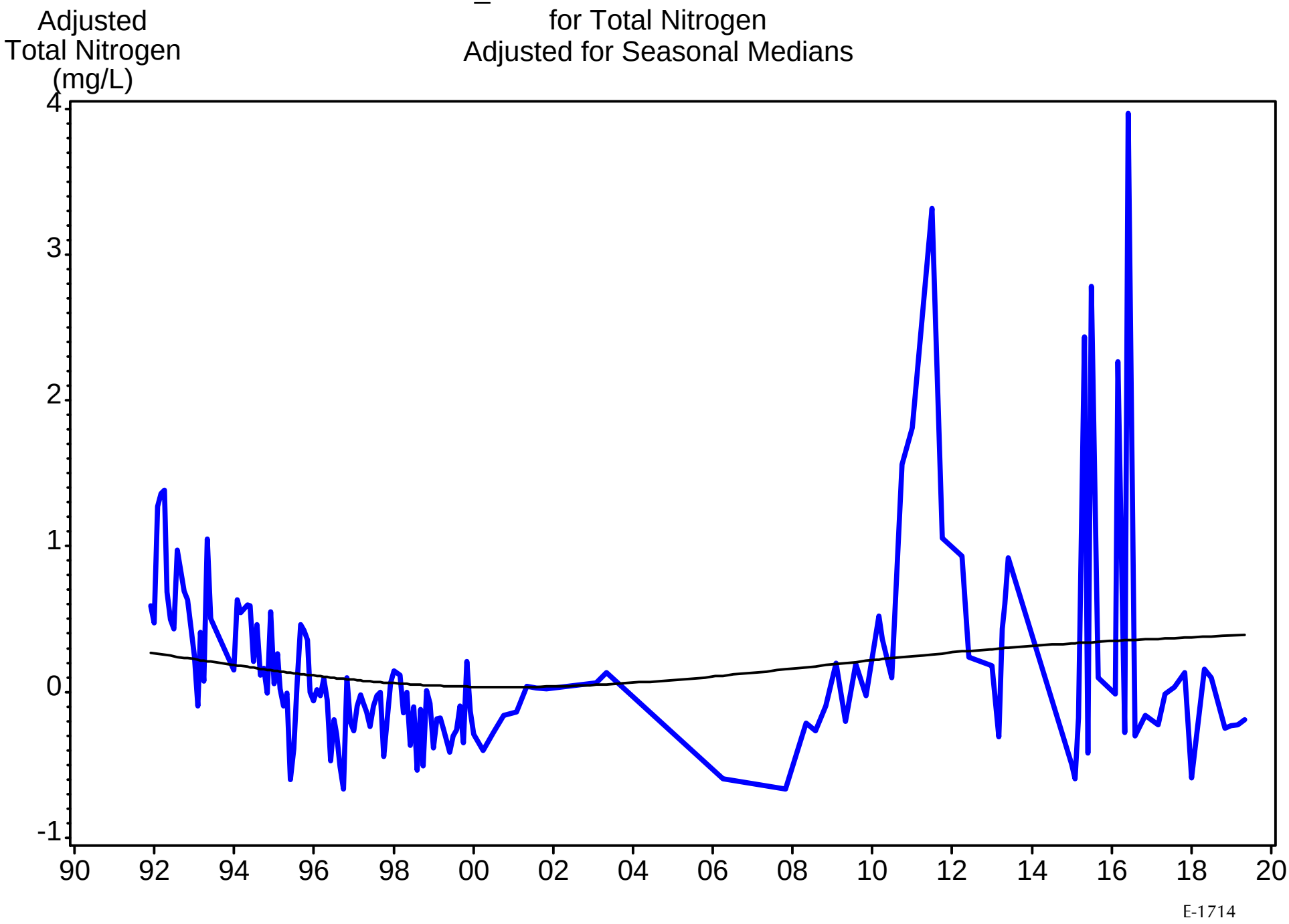
S_21FLVEMDHL12 Trends

S_21FLVEMDHL12 Monthly Data Time Series
for Total Nitrogen
Not Adjusted for Seasonal Medians



E-1713

S_21FLVEMDHL12 Trends

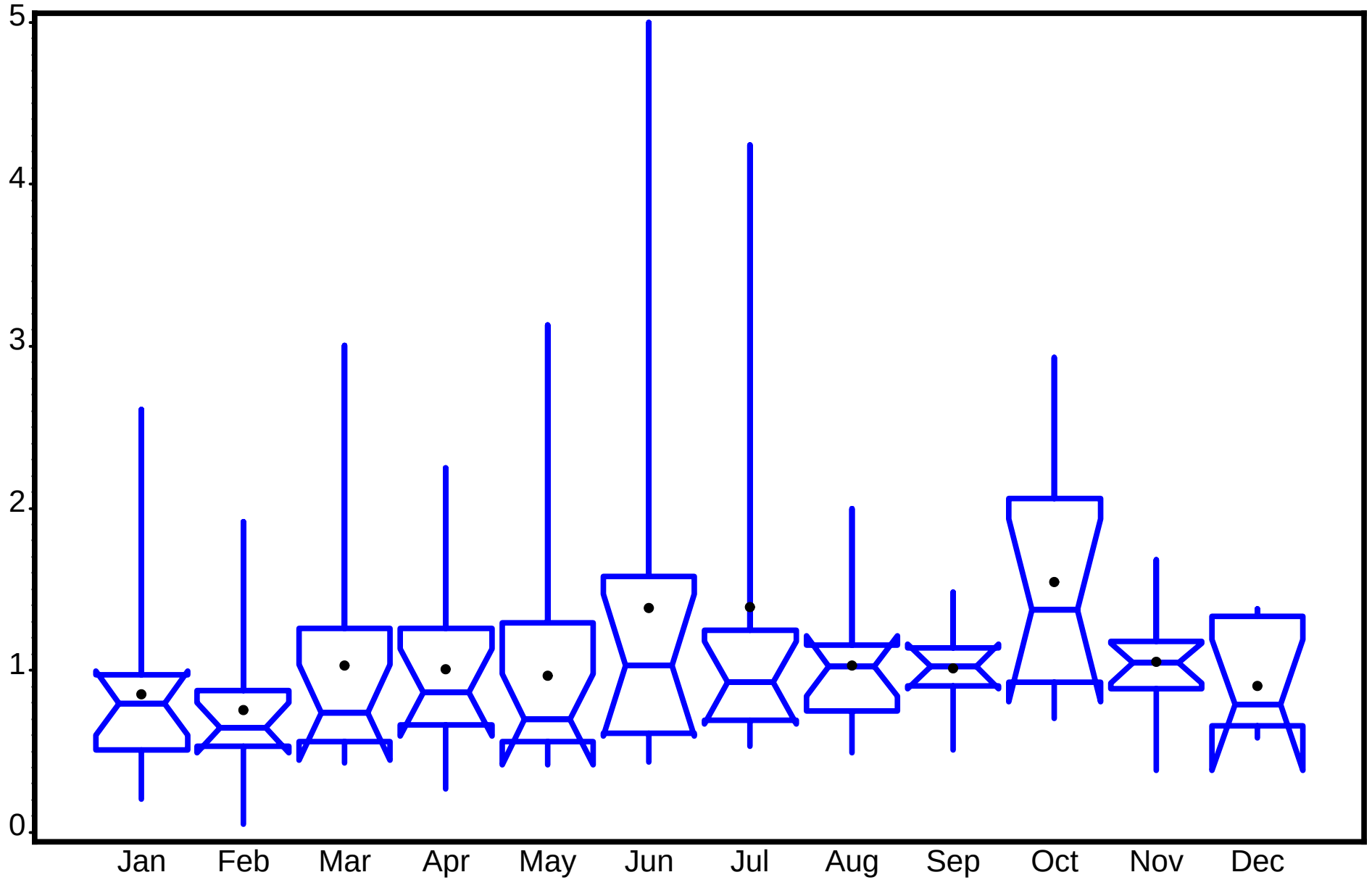


S_21FLVEMDHL12 Trends Appendix

Seasonal Univariate Statistics

Total Nitrogen

(mg/L)



E-1715

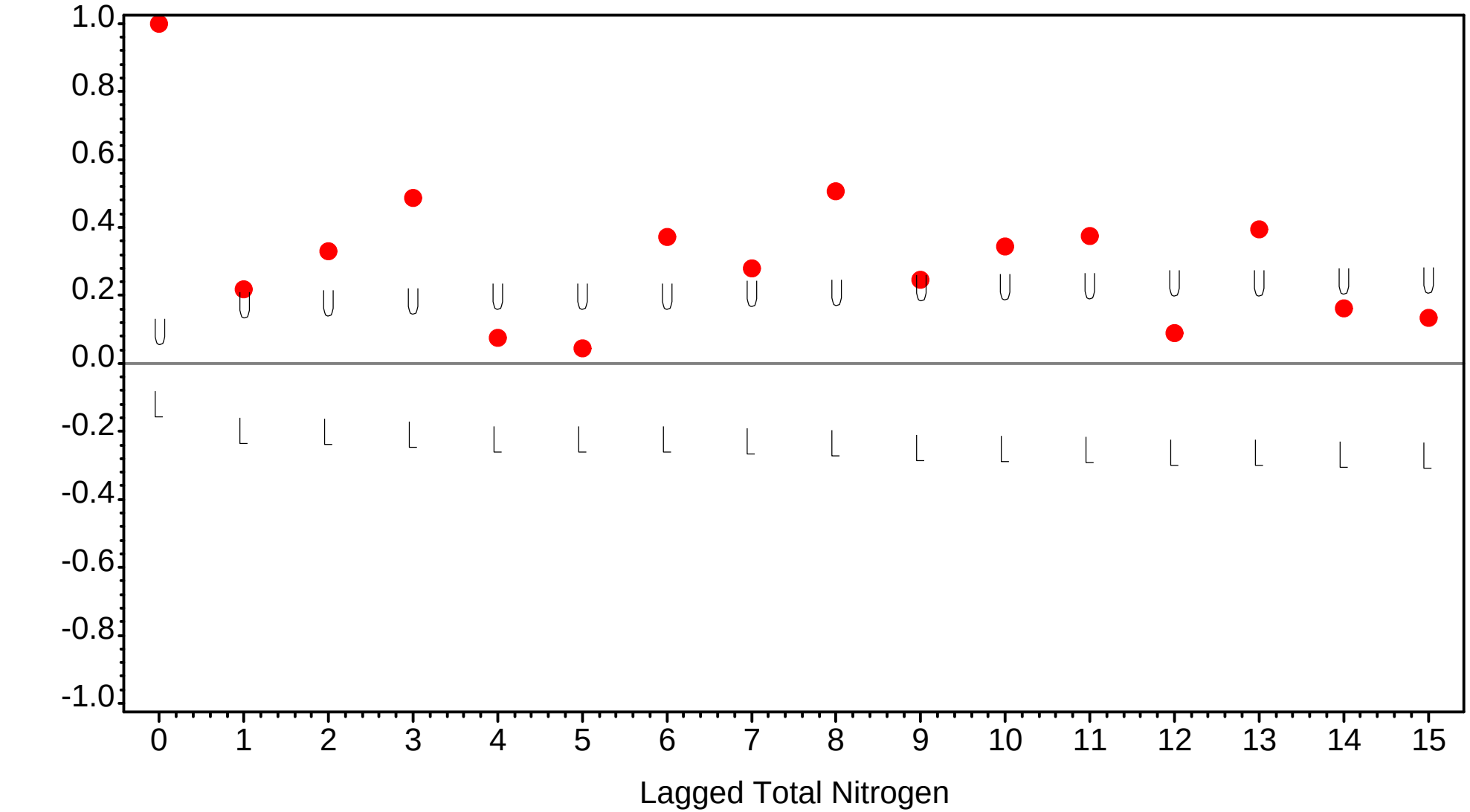
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Total Nitrogen
Unadjusted for Seasonal Medians

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.219	0.093	0.186	-0.186
2	0.330	0.094	0.189	-0.189
3	0.488	0.098	0.195	-0.195
4	0.075	0.104	0.209	-0.209
5	0.044	0.105	0.209	-0.209
6	0.372	0.105	0.209	-0.209
7	0.280	0.108	0.217	-0.217
8	0.507	0.110	0.221	-0.221
9	0.246	0.117	0.234	-0.234
10	0.345	0.118	0.237	-0.237
11	0.376	0.121	0.242	-0.242
12	0.089	0.124	0.249	-0.249
13	0.394	0.125	0.249	-0.249
14	0.163	0.128	0.256	-0.256
15	0.134	0.129	0.258	-0.258

S_21FLVEMDHL12 Trends Appendix

Correlogram for Total Nitrogen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Unadjusted for Seasonal Medians

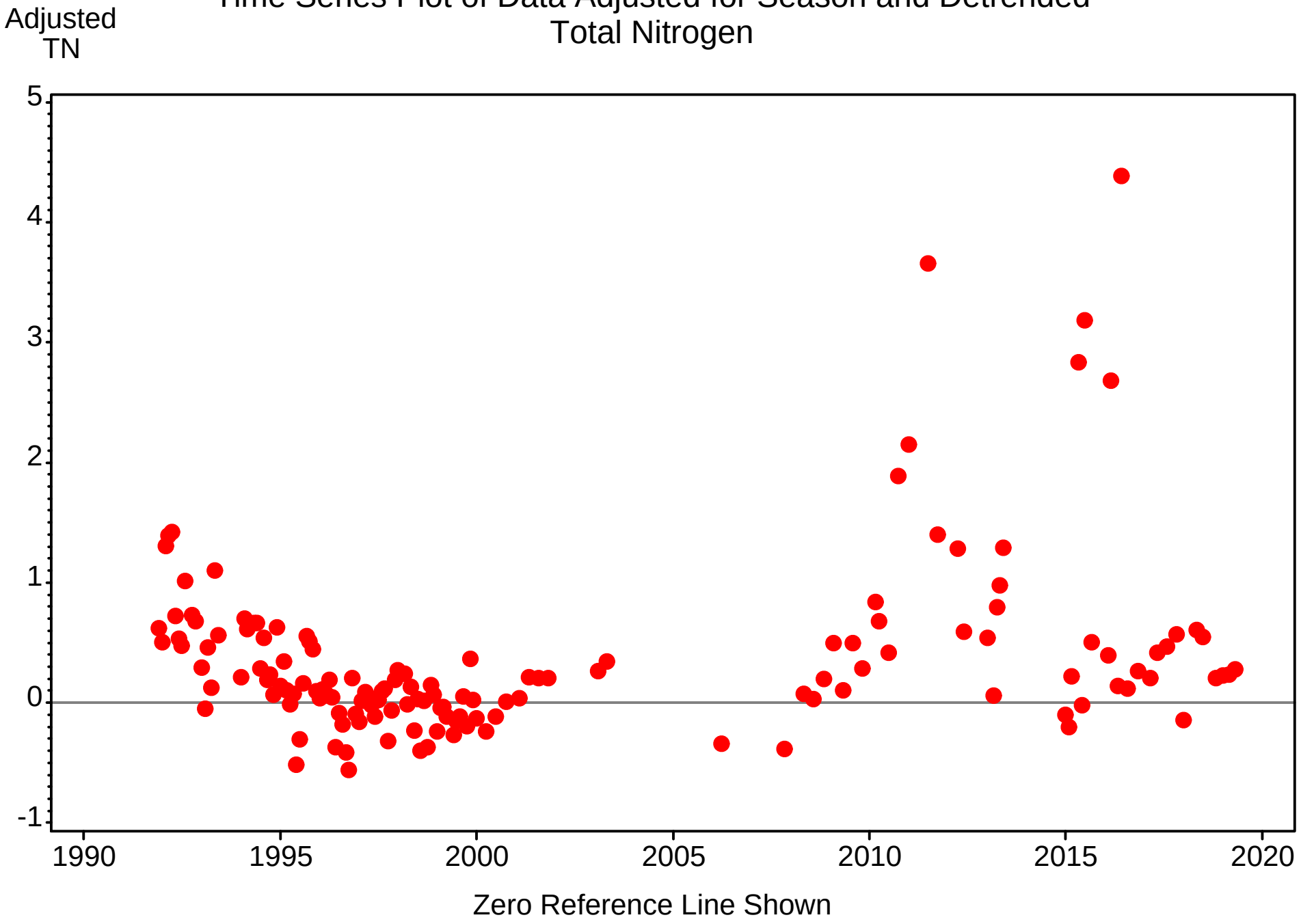
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.222	.001	0.05	-0.016

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Nitrogen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.22034	.000724513	0.051514	-0.015802

S_21FLVEMDHL12 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Nitrogen



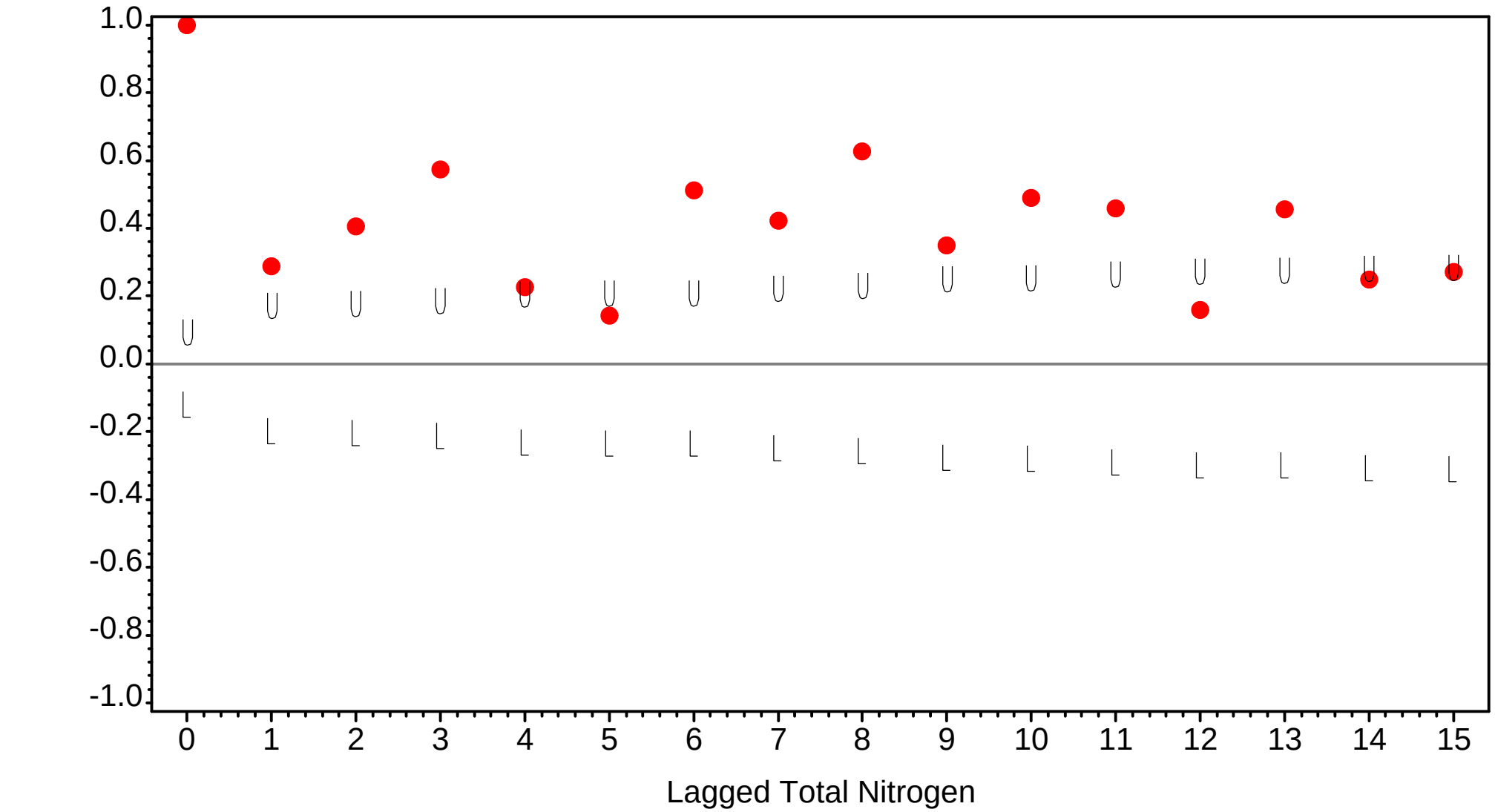
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Total Nitrogen Adjusted for Seasonal Median and Detrended

Lagged Total Nitrogen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.287	0.093	0.186	-0.186
2	0.406	0.095	0.191	-0.191
3	0.573	0.100	0.200	-0.200
4	0.225	0.109	0.218	-0.218
5	0.142	0.111	0.221	-0.221
6	0.511	0.111	0.222	-0.222
7	0.422	0.118	0.235	-0.235
8	0.628	0.122	0.244	-0.244
9	0.350	0.131	0.262	-0.262
10	0.490	0.134	0.267	-0.267
11	0.460	0.139	0.277	-0.277
12	0.158	0.143	0.286	-0.286
13	0.455	0.143	0.287	-0.287
14	0.249	0.147	0.295	-0.295
15	0.271	0.149	0.297	-0.297

S_21FLVEMDHL12 Trends Appendix

Correlogram for Total Nitrogen

Adjusted for Seasonal Median and Detrended

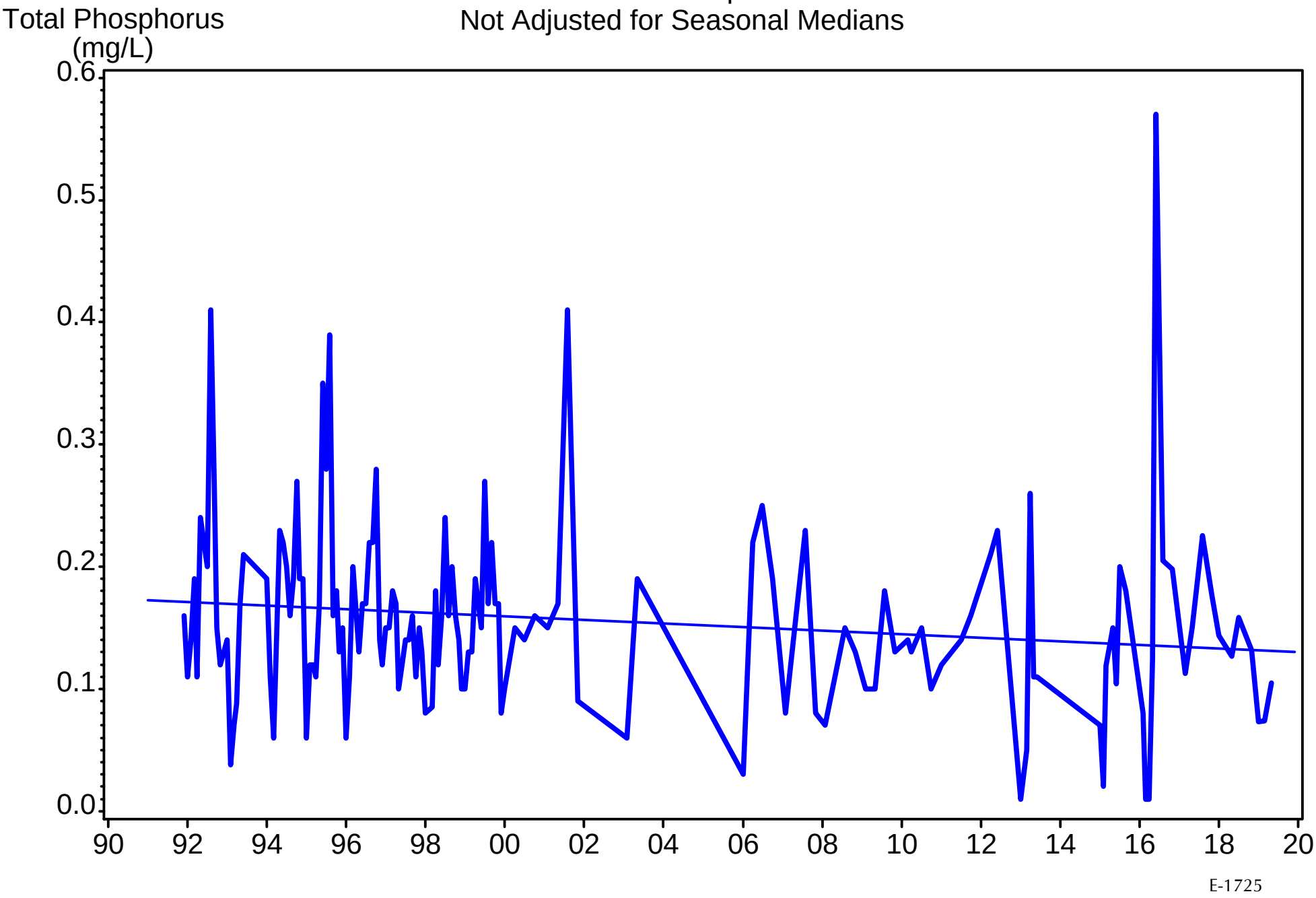


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

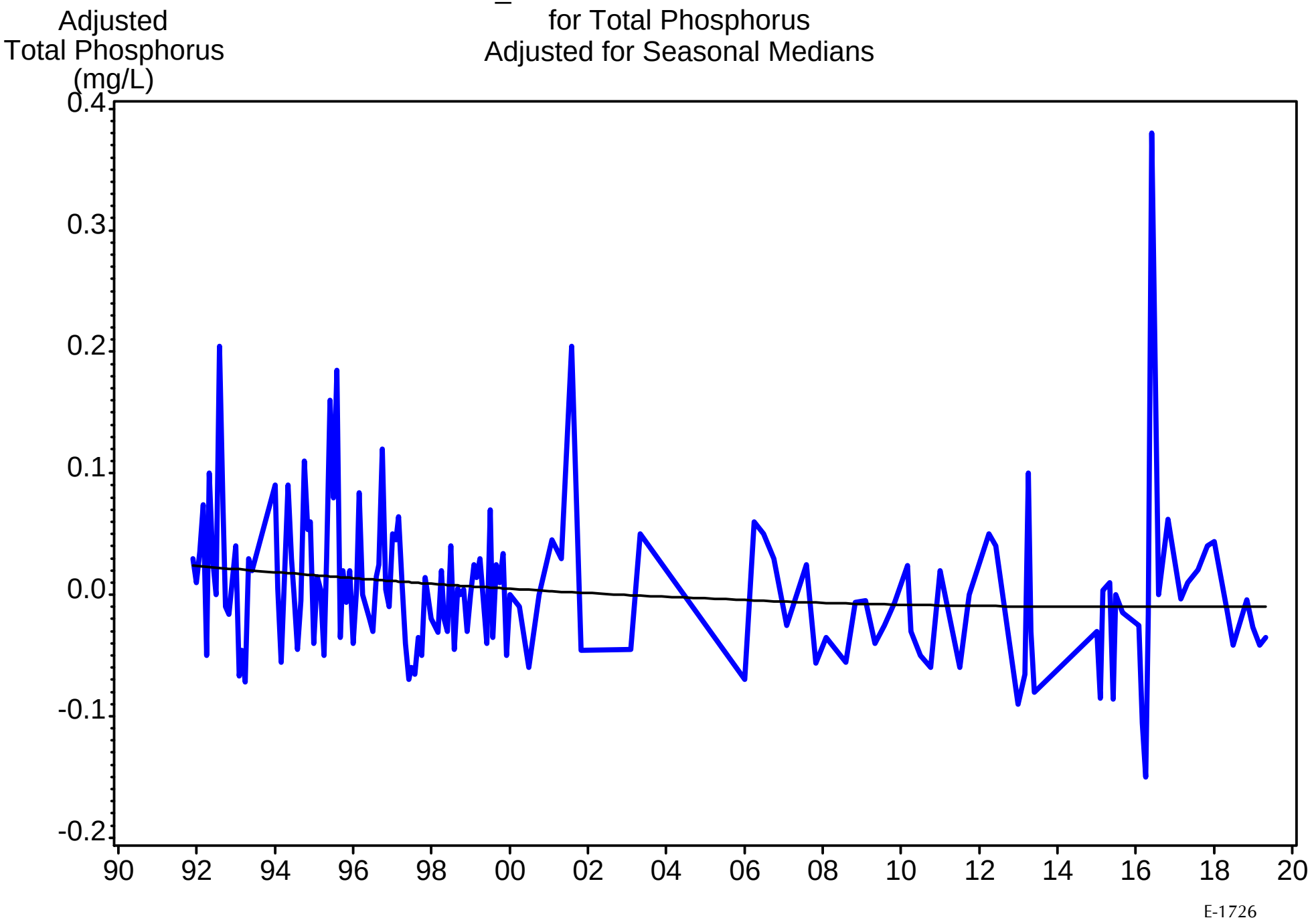
S_21FLVEMDHL12 Trends

S_21FLVEMDHL12 Monthly Data Time Series
for Total Phosphorus
Not Adjusted for Seasonal Medians



E-1725

S_21FLVEMDHL12 Trends

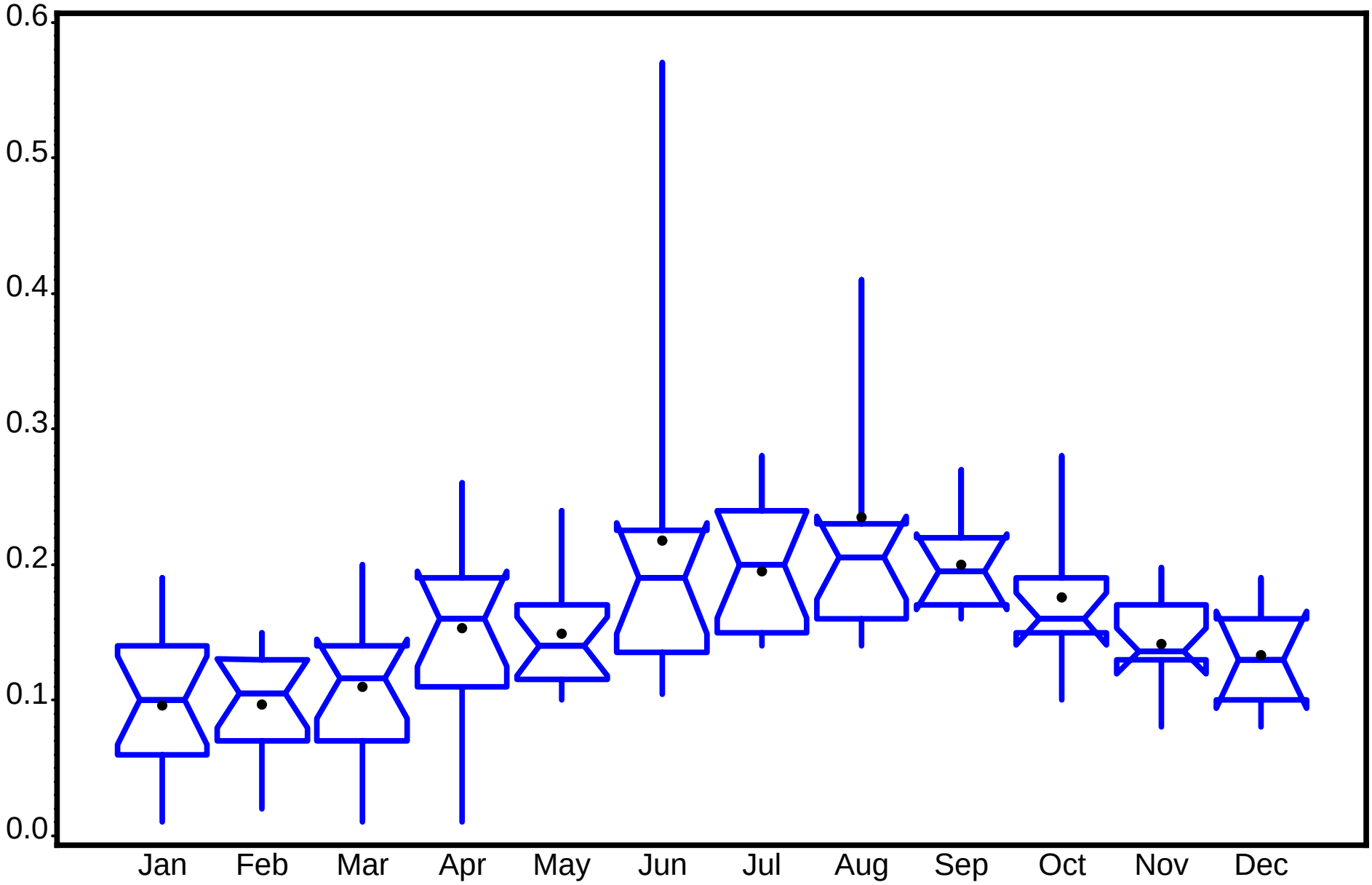


S_21FLVEMDHL12 Trends Appendix

Seasonal Univariate Statistics

Total Phosphorus

(mg/L)



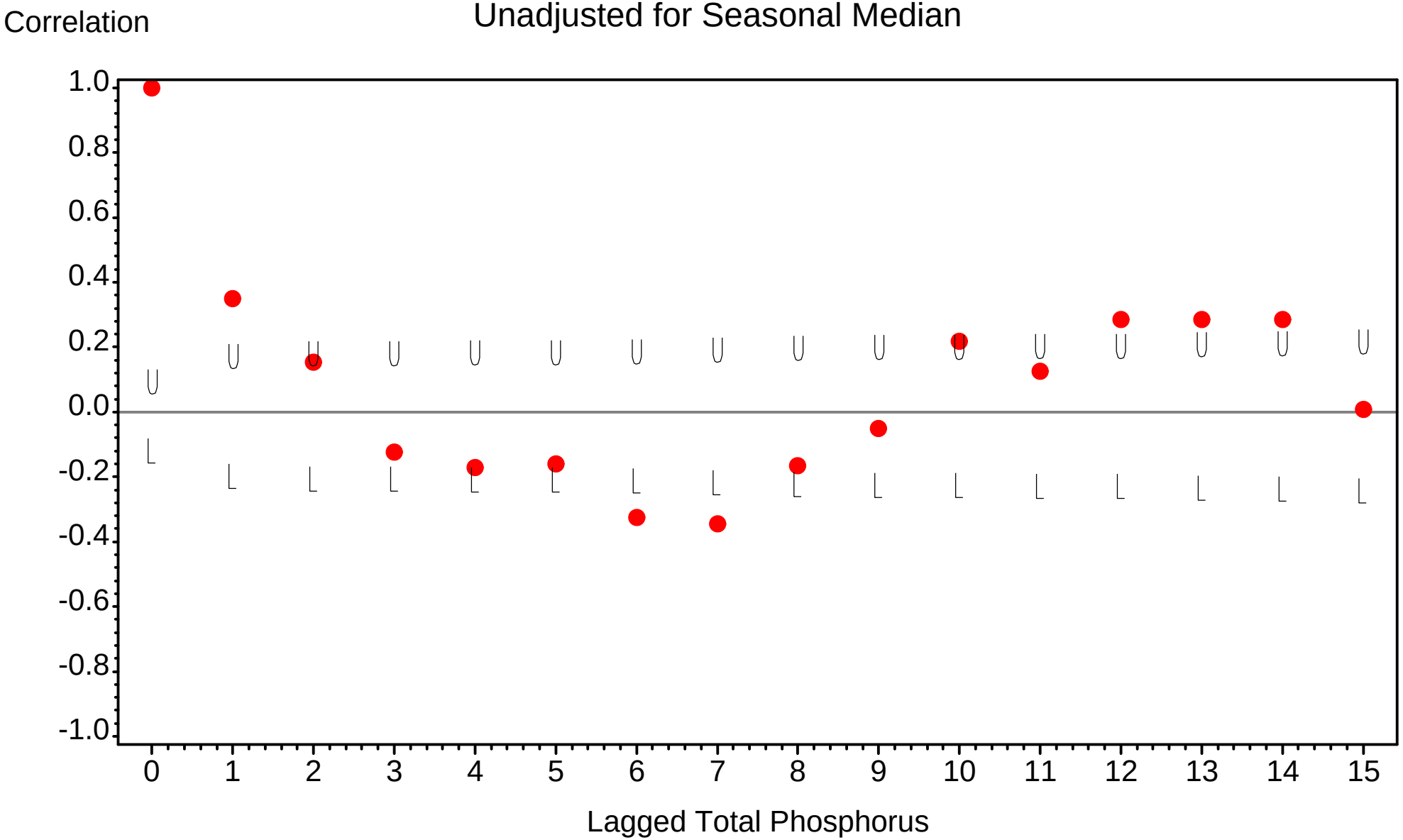
E-1727

S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Total Phosphorus
Unadjusted for Seasonal Medians

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.349	0.093	0.186	-0.186
2	0.154	0.097	0.193	-0.193
3	-0.125	0.097	0.194	-0.194
4	-0.171	0.098	0.195	-0.195
5	-0.161	0.099	0.197	-0.197
6	-0.325	0.099	0.199	-0.199
7	-0.344	0.102	0.205	-0.205
8	-0.167	0.106	0.211	-0.211
9	-0.051	0.106	0.213	-0.213
10	0.218	0.106	0.213	-0.213
11	0.126	0.108	0.215	-0.215
12	0.284	0.108	0.216	-0.216
13	0.285	0.110	0.220	-0.220
14	0.284	0.112	0.225	-0.225
15	0.008	0.114	0.229	-0.229

S_21FLVEMDHL12 Trends Appendix

Correlogram for Total Phosphorus
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Unadjusted for Seasonal Medians

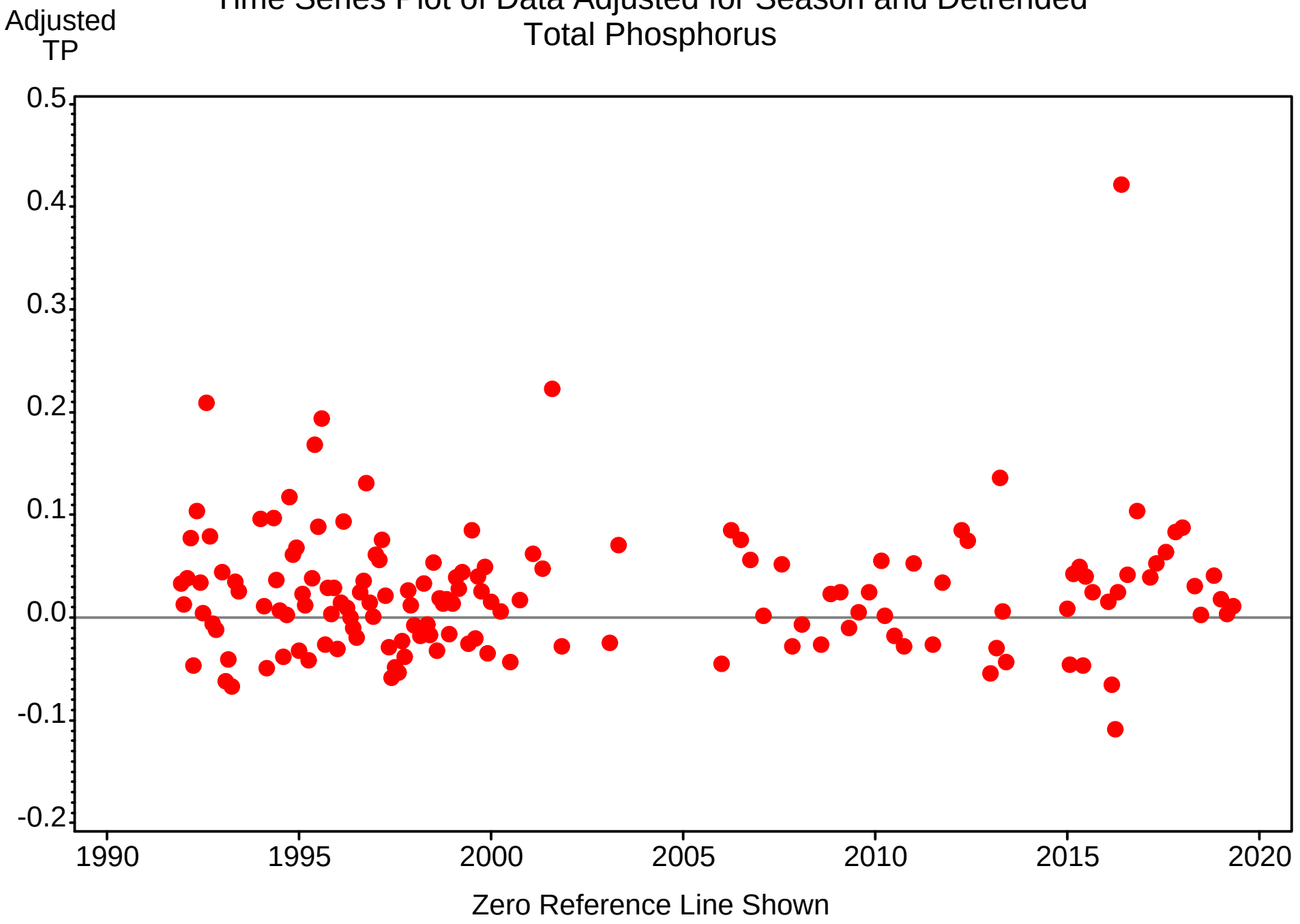
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.159	0.012	0.021	-.002

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Total Phosphorus
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.15854	0.011583	0.020869	-.00155769

S_21FLVEMDHL12 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Total Phosphorus



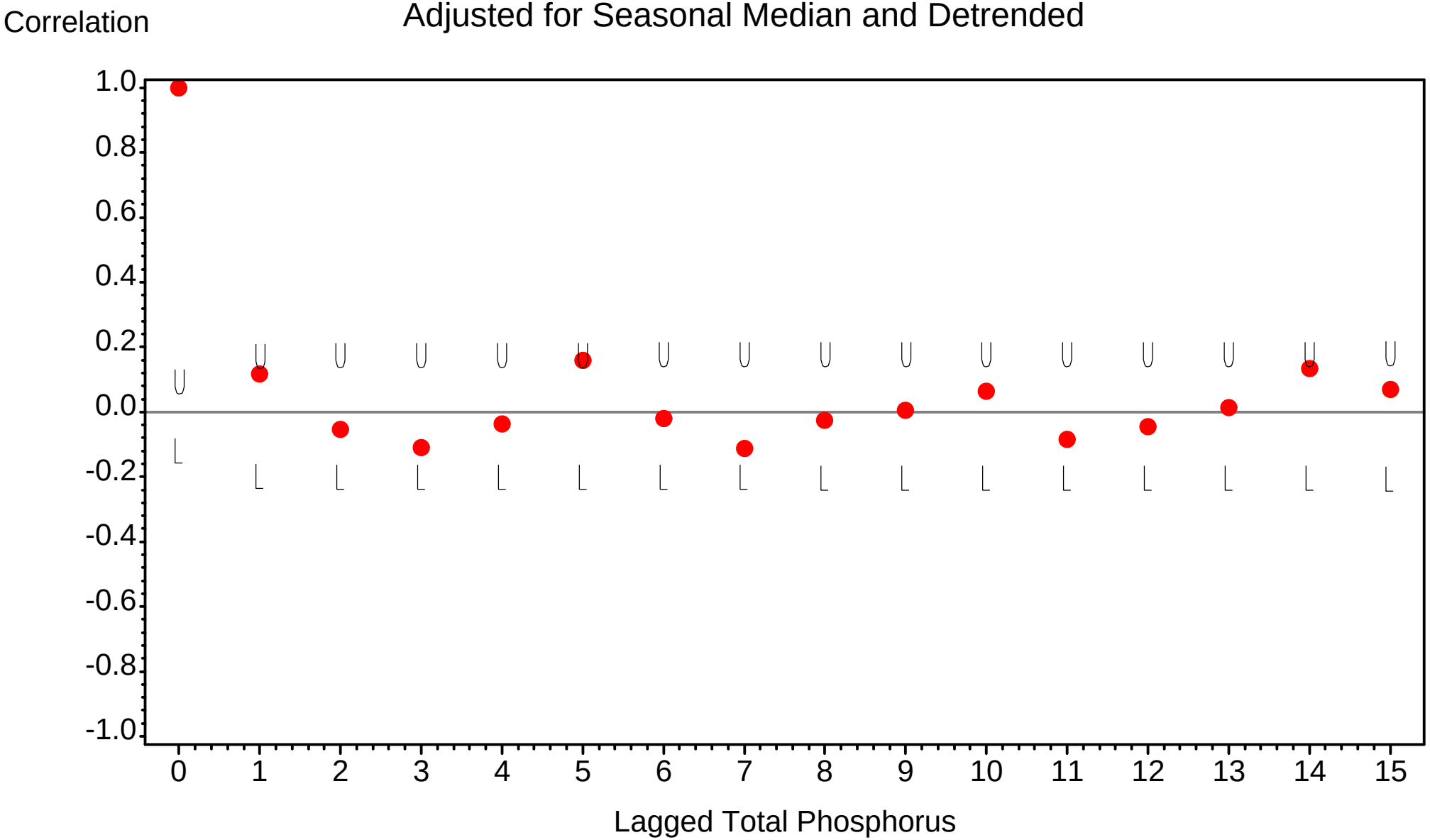
E-1732

S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Total Phosphorus Adjusted for Seasonal Median and Detrended

Lagged Total Phosphorus	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.117	0.093	0.186	-0.186
2	-0.055	0.093	0.187	-0.187
3	-0.111	0.093	0.187	-0.187
4	-0.037	0.094	0.187	-0.187
5	0.160	0.094	0.188	-0.188
6	-0.019	0.095	0.189	-0.189
7	-0.112	0.095	0.189	-0.189
8	-0.026	0.095	0.190	-0.190
9	0.006	0.095	0.190	-0.190
10	0.065	0.095	0.190	-0.190
11	-0.084	0.095	0.190	-0.190
12	-0.044	0.095	0.191	-0.191
13	0.014	0.095	0.191	-0.191
14	0.134	0.095	0.191	-0.191
15	0.070	0.096	0.192	-0.192

S_21FLVEMDHL12 Trends Appendix

Correlogram for Total Phosphorus
Adjusted for Seasonal Median and Detrended

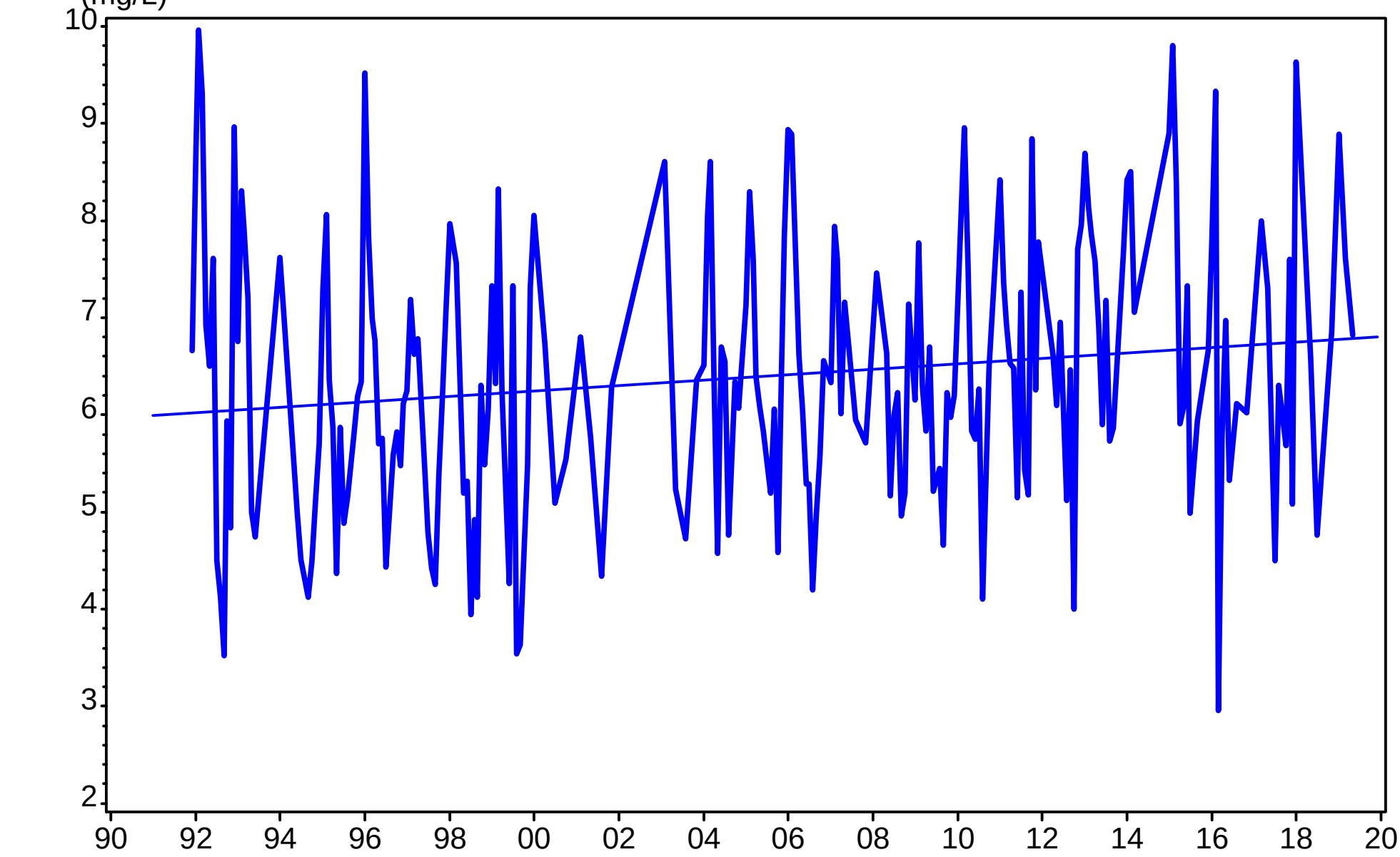


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1734

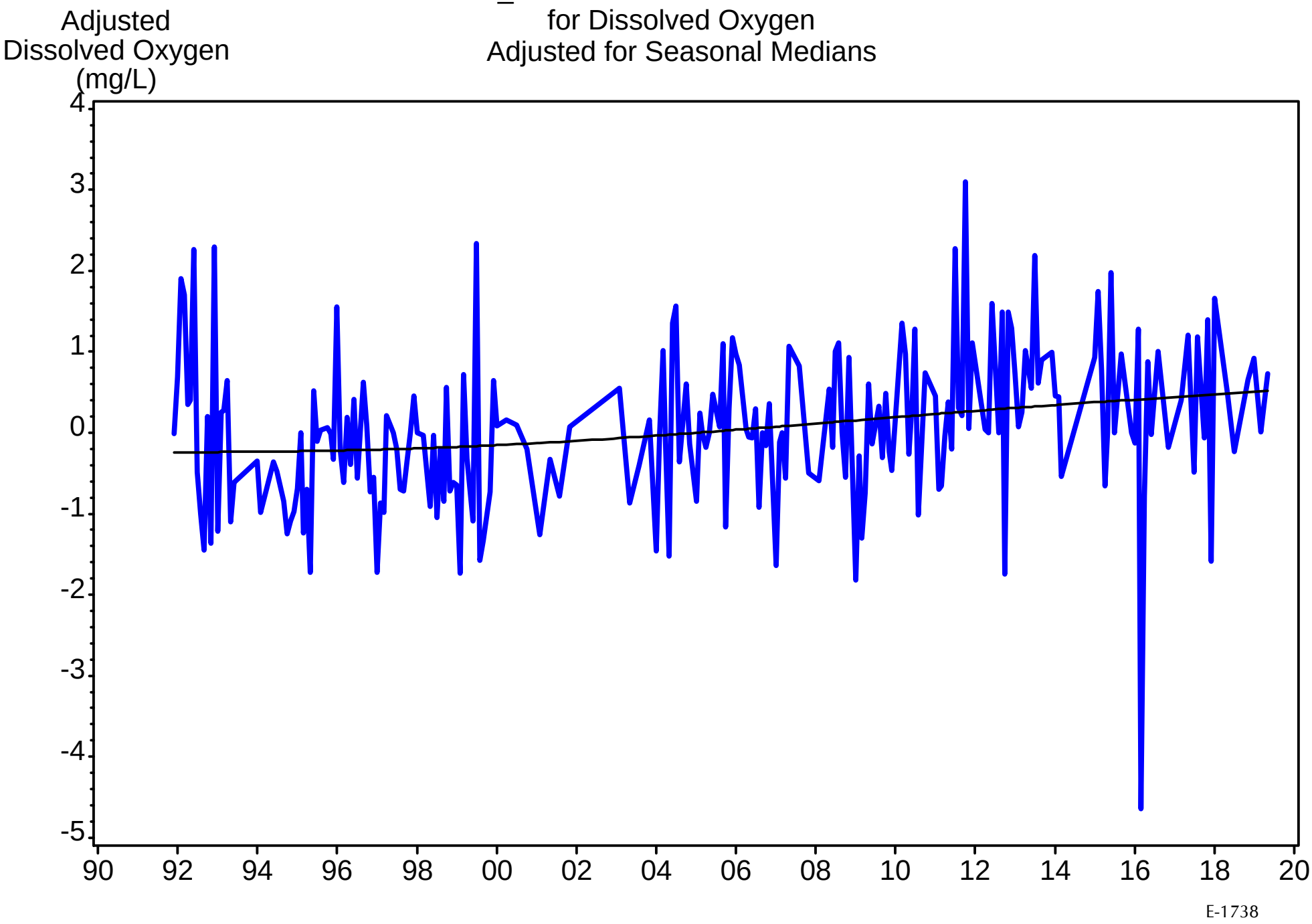
S_21FLVEMDHL12 Trends

S_21FLVEMDHL12 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1737

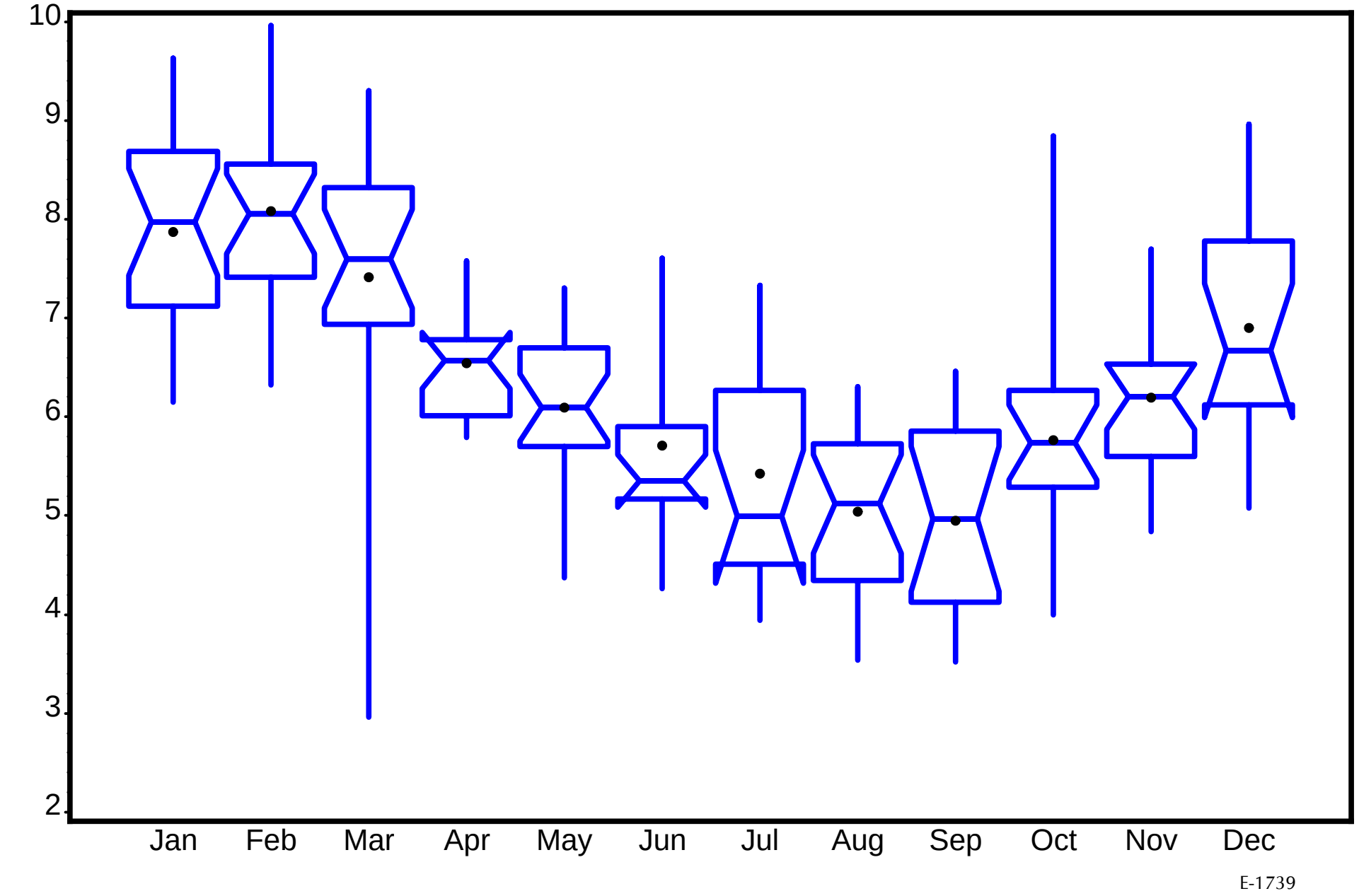
S_21FLVEMDHL12 Trends



S_21FLVEMDHL12 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



E-1739

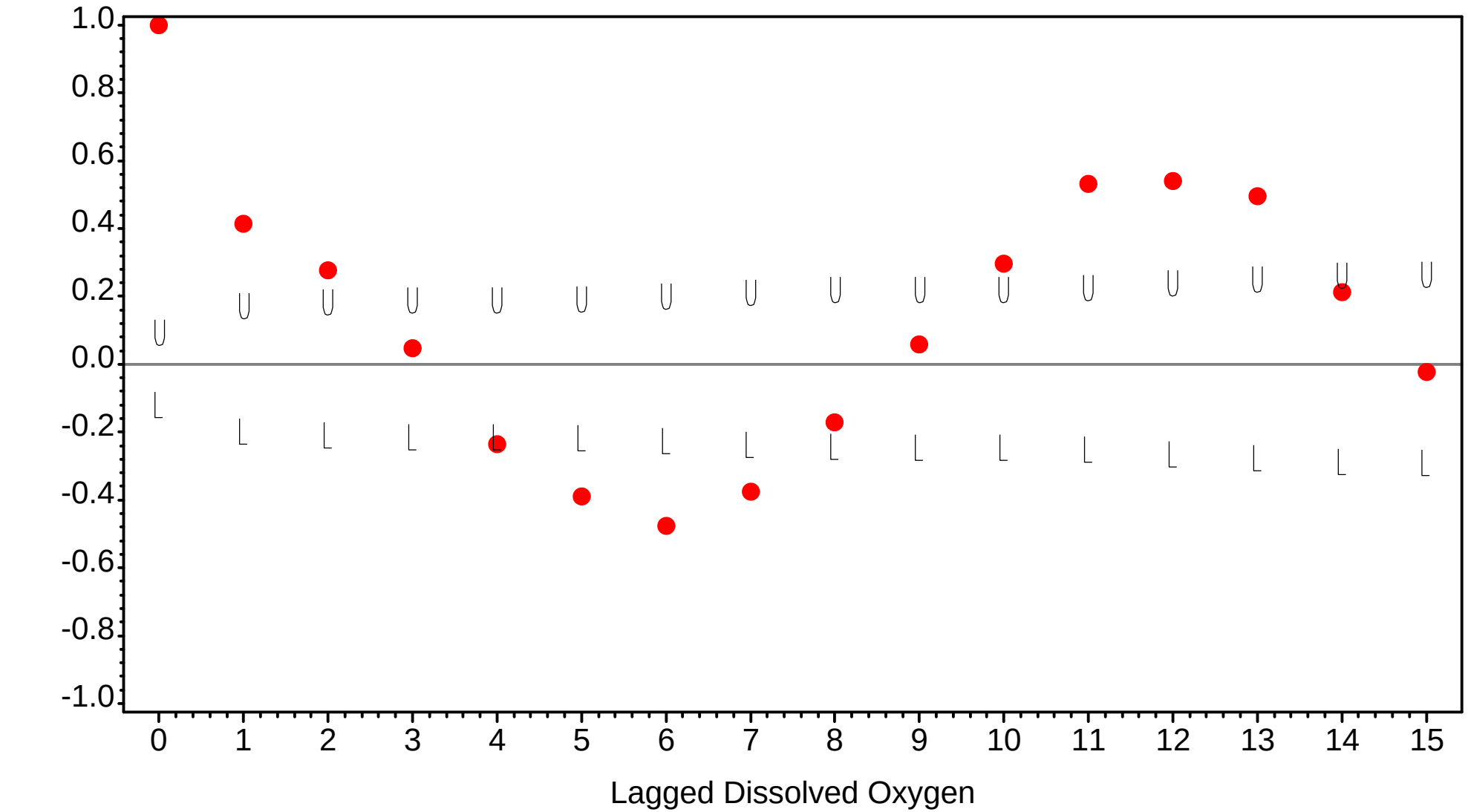
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.415	0.093	0.186	-0.186
2	0.278	0.098	0.196	-0.196
3	0.048	0.100	0.201	-0.201
4	-0.236	0.100	0.201	-0.201
5	-0.390	0.102	0.204	-0.204
6	-0.477	0.106	0.212	-0.212
7	-0.377	0.112	0.224	-0.224
8	-0.172	0.116	0.231	-0.231
9	0.059	0.116	0.233	-0.233
10	0.297	0.117	0.233	-0.233
11	0.531	0.119	0.237	-0.237
12	0.539	0.125	0.251	-0.251
13	0.494	0.132	0.264	-0.264
14	0.212	0.137	0.274	-0.274
15	-0.024	0.138	0.276	-0.276

S_21FLVEMDHL12 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

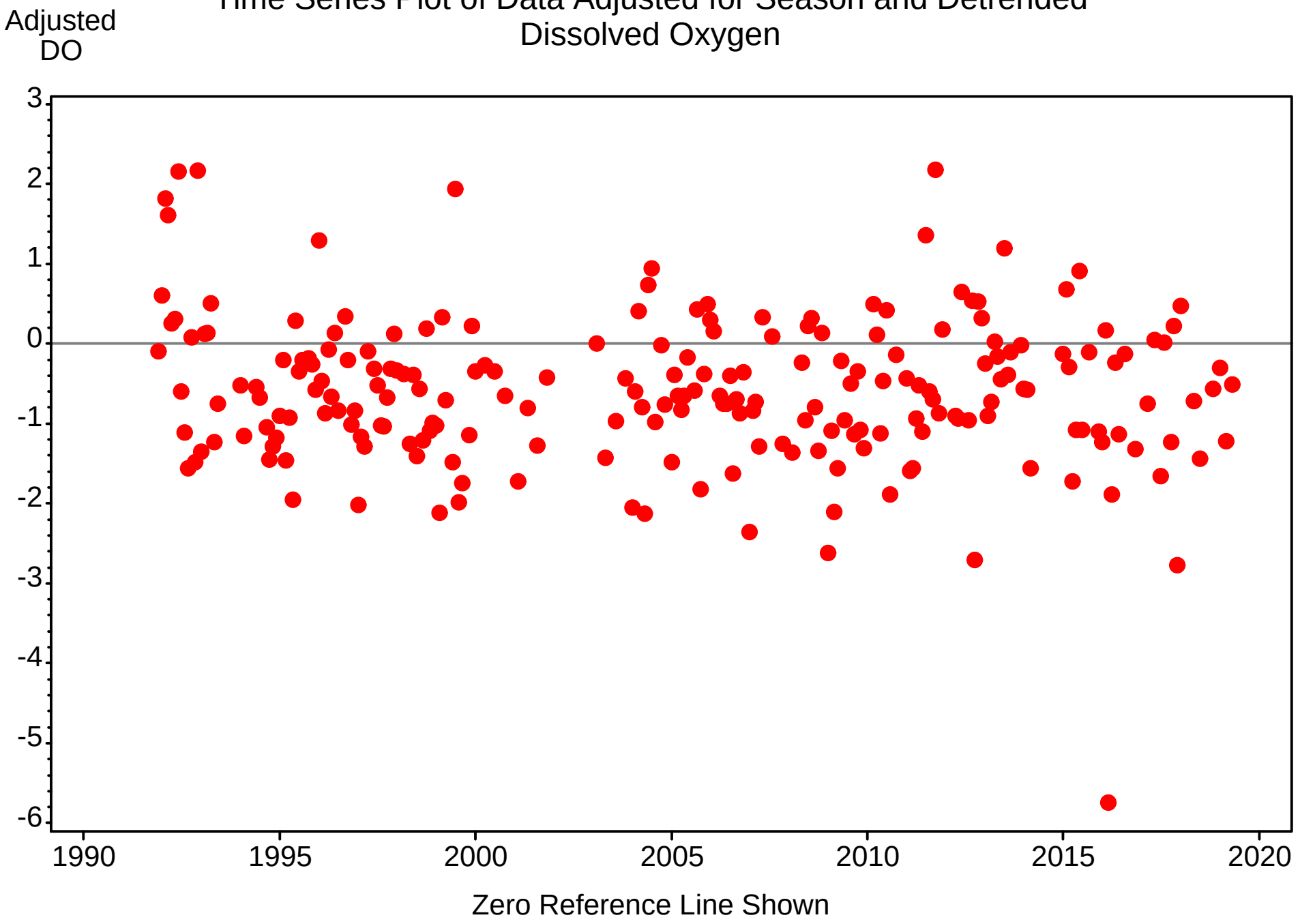
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.236	0	0	0.042

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.23569	.000002146	.000479102	0.042308

S_21FLVEMDHL12 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



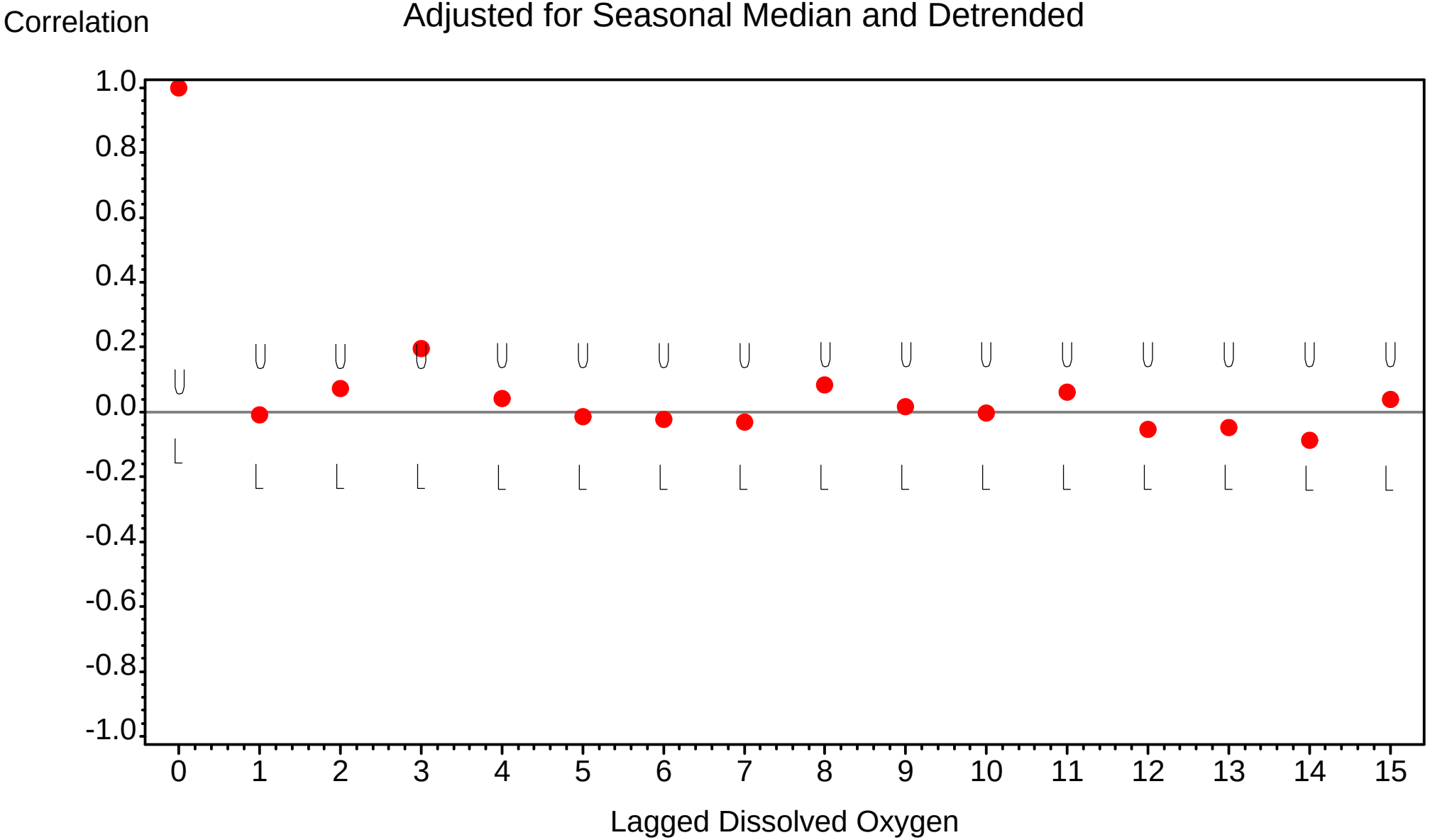
E-1744

S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	-0.009	0.093	0.186	-0.186
2	0.071	0.093	0.186	-0.186
3	0.195	0.093	0.186	-0.186
4	0.042	0.094	0.188	-0.188
5	-0.014	0.094	0.188	-0.188
6	-0.022	0.094	0.188	-0.188
7	-0.030	0.094	0.188	-0.188
8	0.084	0.094	0.189	-0.189
9	0.015	0.094	0.189	-0.189
10	-0.003	0.094	0.189	-0.189
11	0.062	0.094	0.189	-0.189
12	-0.054	0.095	0.189	-0.189
13	-0.047	0.095	0.189	-0.189
14	-0.087	0.095	0.190	-0.190
15	0.039	0.095	0.190	-0.190

S_21FLVEMDHL12 Trends Appendix

Correlogram for Dissolved Oxygen
Adjusted for Seasonal Median and Detrended

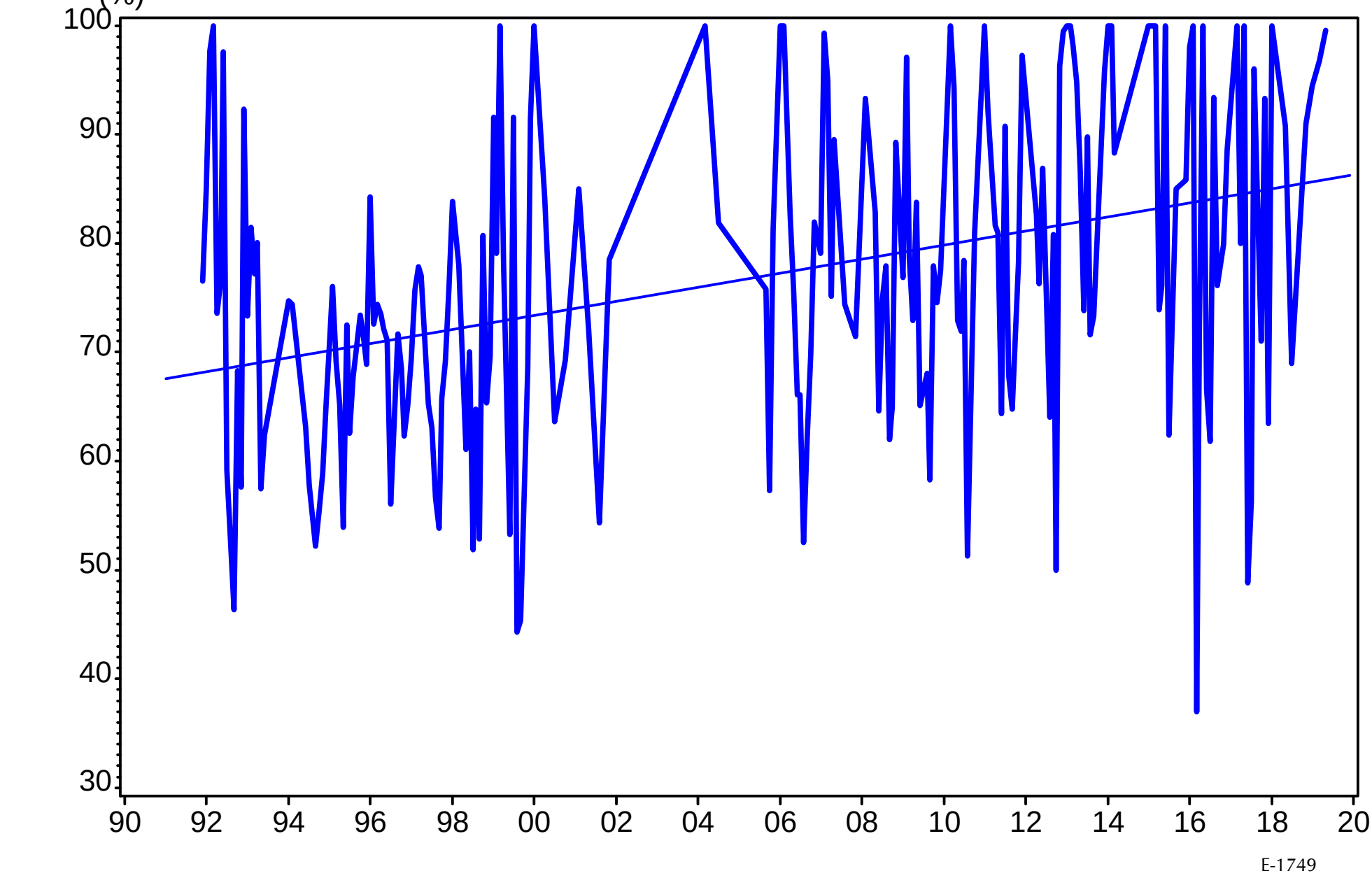


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1746

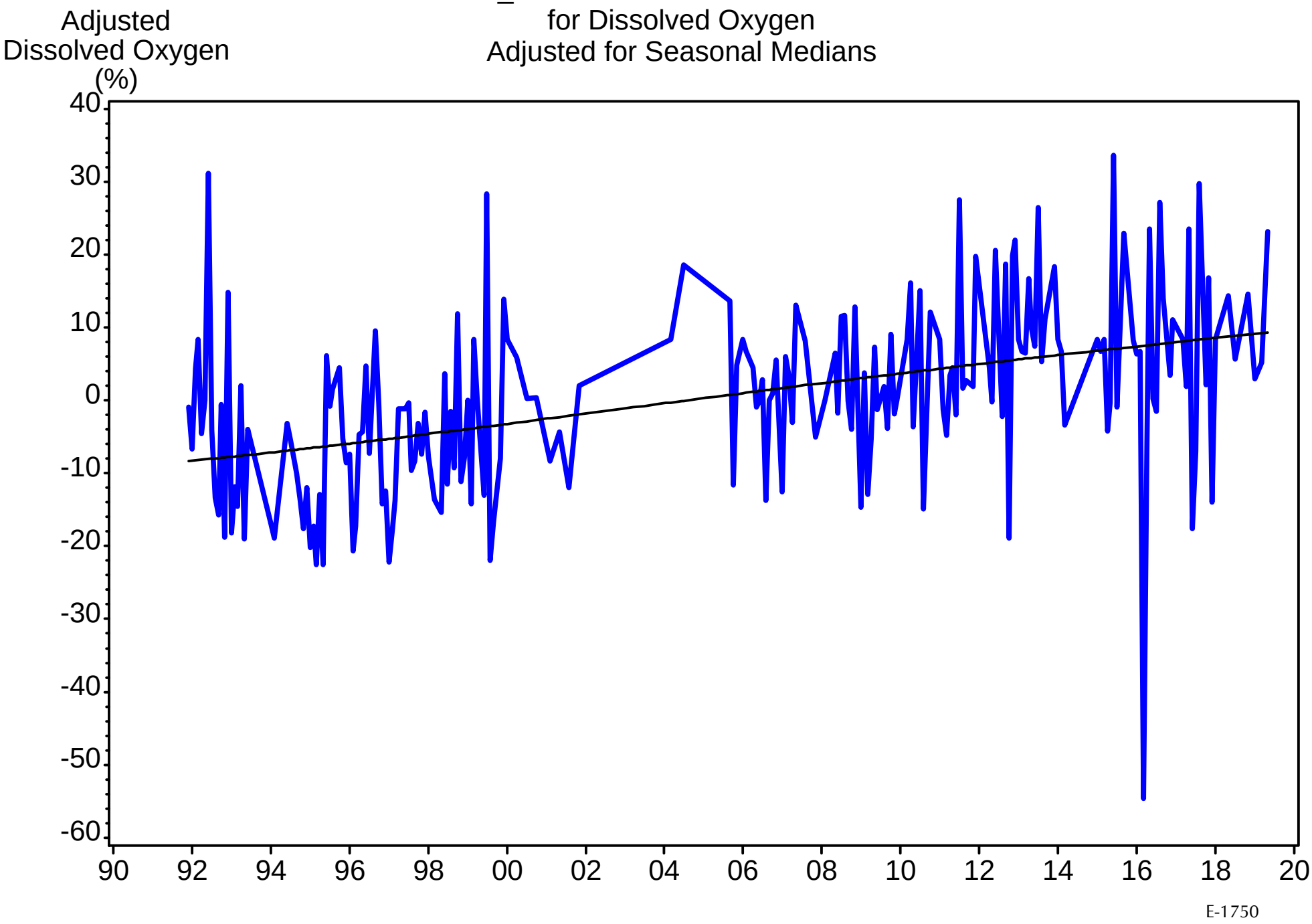
S_21FLVEMDHL12 Trends

S_21FLVEMDHL12 Monthly Data Time Series
for Dissolved Oxygen
Not Adjusted for Seasonal Medians



E-1749

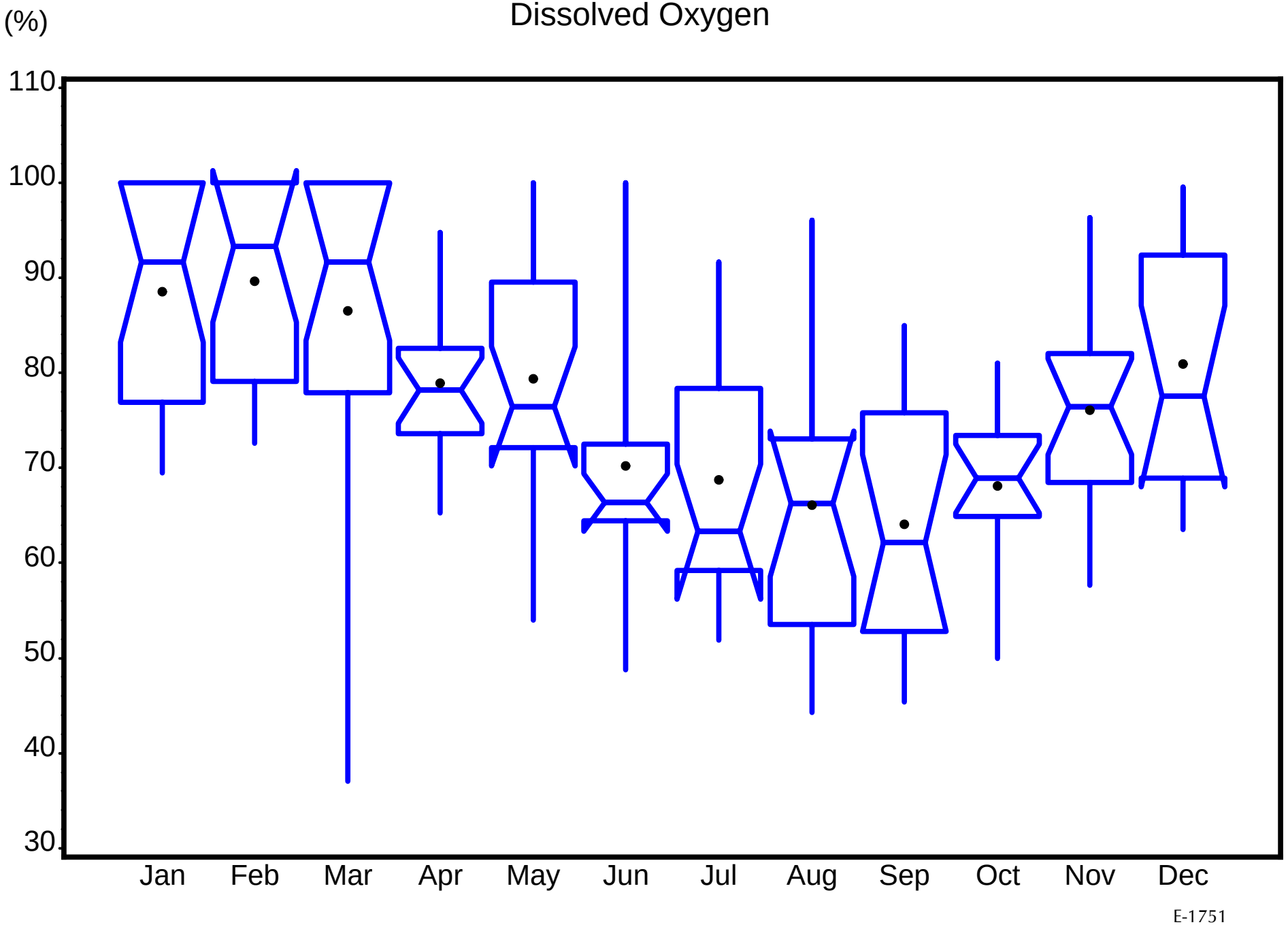
S_21FLVEMDHL12 Trends



S_21FLVEMDHL12 Trends Appendix

Seasonal Univariate Statistics

Dissolved Oxygen



E-1751

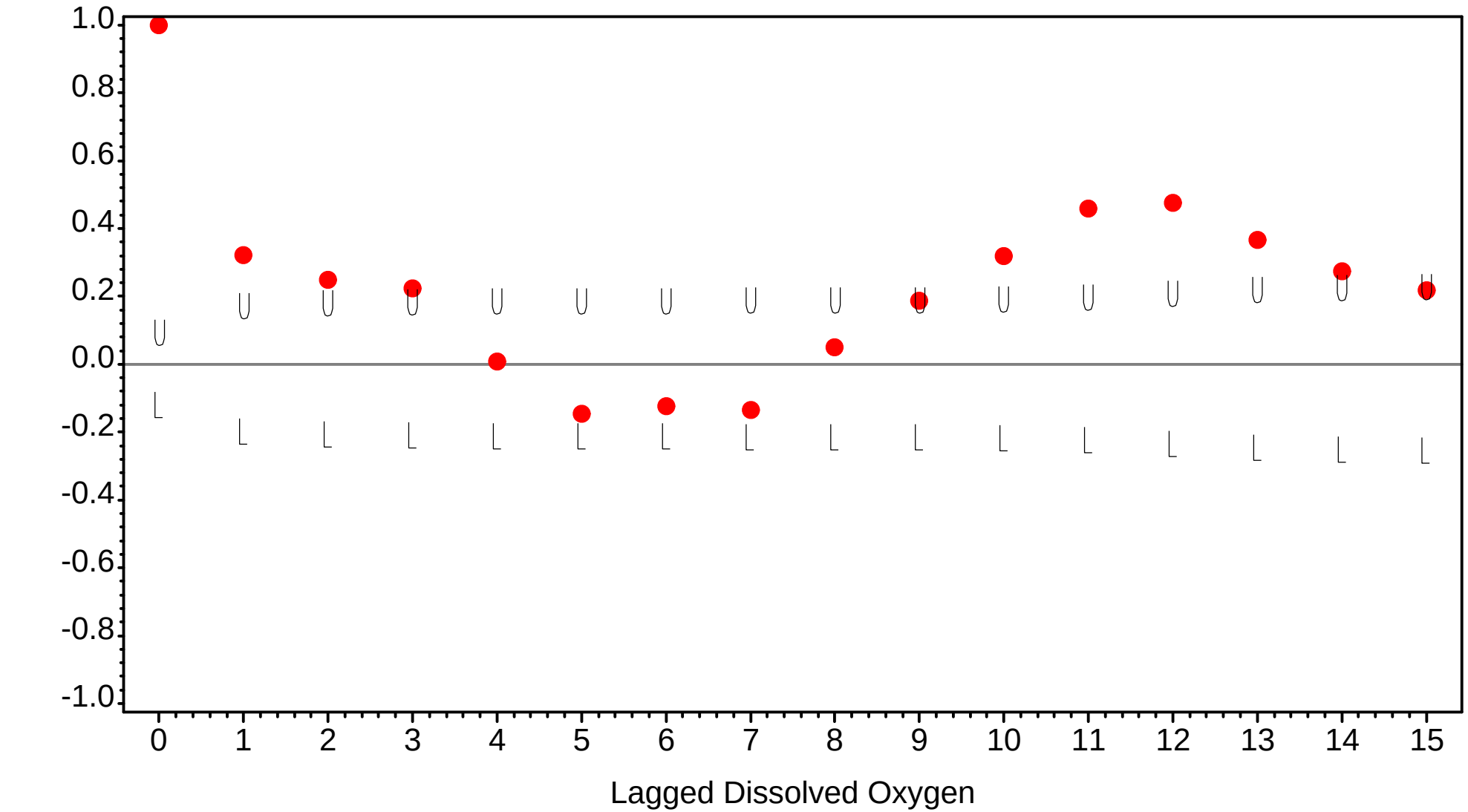
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen
Unadjusted for Seasonal Medians

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.321	0.093	0.186	-0.186
2	0.249	0.096	0.192	-0.192
3	0.224	0.098	0.196	-0.196
4	0.007	0.099	0.199	-0.199
5	-0.146	0.099	0.199	-0.199
6	-0.125	0.100	0.200	-0.200
7	-0.135	0.100	0.201	-0.201
8	0.049	0.101	0.202	-0.202
9	0.187	0.101	0.202	-0.202
10	0.319	0.102	0.204	-0.204
11	0.459	0.105	0.210	-0.210
12	0.476	0.110	0.221	-0.221
13	0.366	0.116	0.232	-0.232
14	0.275	0.119	0.239	-0.239
15	0.218	0.121	0.242	-0.242

S_21FLVEMDHL12 Trends Appendix

Correlogram for Dissolved Oxygen

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1753

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Unadjusted for Seasonal Medians

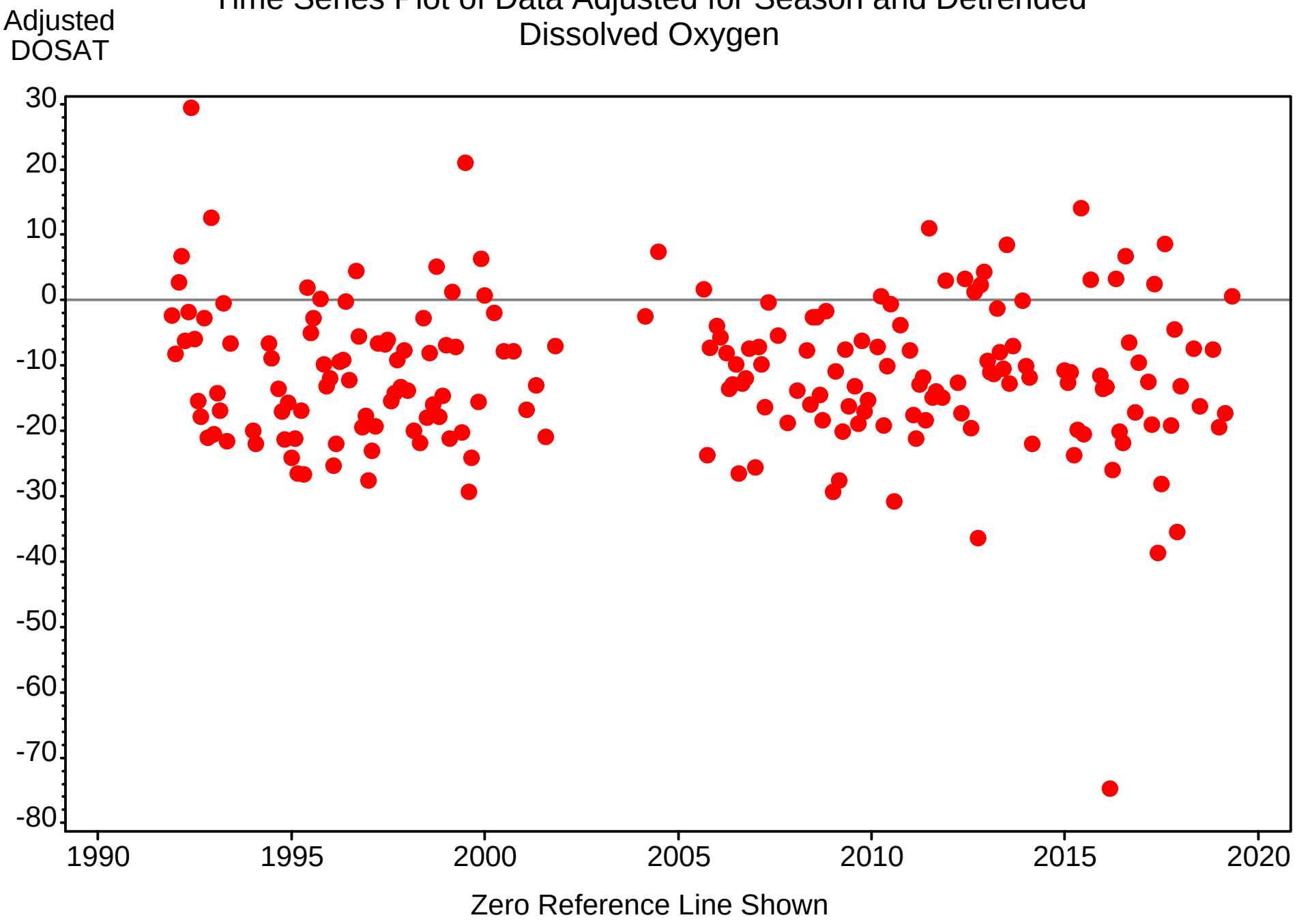
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.354	0	0	0.769

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Dissolved Oxygen
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.35398	0	.000054240	0.7692

S_21FLVEMDHL12 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Dissolved Oxygen



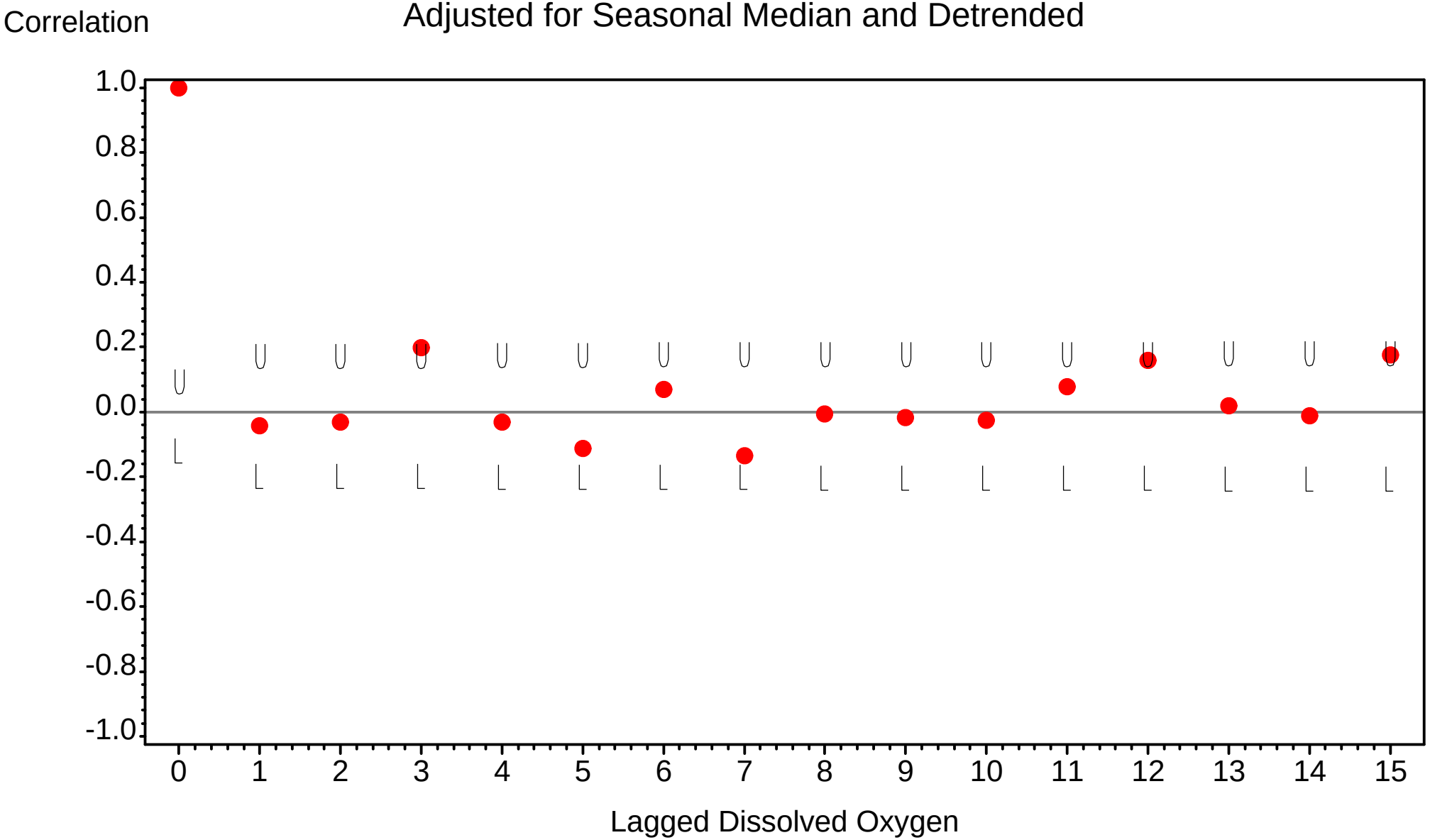
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Dissolved Oxygen Adjusted for Seasonal Median and Detrended

Lagged Dissolved Oxygen	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	-0.043	0.093	0.186	-0.186
2	-0.032	0.093	0.186	-0.186
3	0.197	0.093	0.186	-0.186
4	-0.030	0.094	0.188	-0.188
5	-0.113	0.094	0.188	-0.188
6	0.070	0.095	0.189	-0.189
7	-0.134	0.095	0.189	-0.189
8	-0.007	0.095	0.190	-0.190
9	-0.018	0.095	0.190	-0.190
10	-0.026	0.095	0.190	-0.190
11	0.078	0.095	0.191	-0.191
12	0.158	0.095	0.191	-0.191
13	0.020	0.096	0.192	-0.192
14	-0.011	0.096	0.192	-0.192
15	0.177	0.096	0.192	-0.192

S_21FLVEMDHL12 Trends Appendix

Correlogram for Dissolved Oxygen

Adjusted for Seasonal Median and Detrended



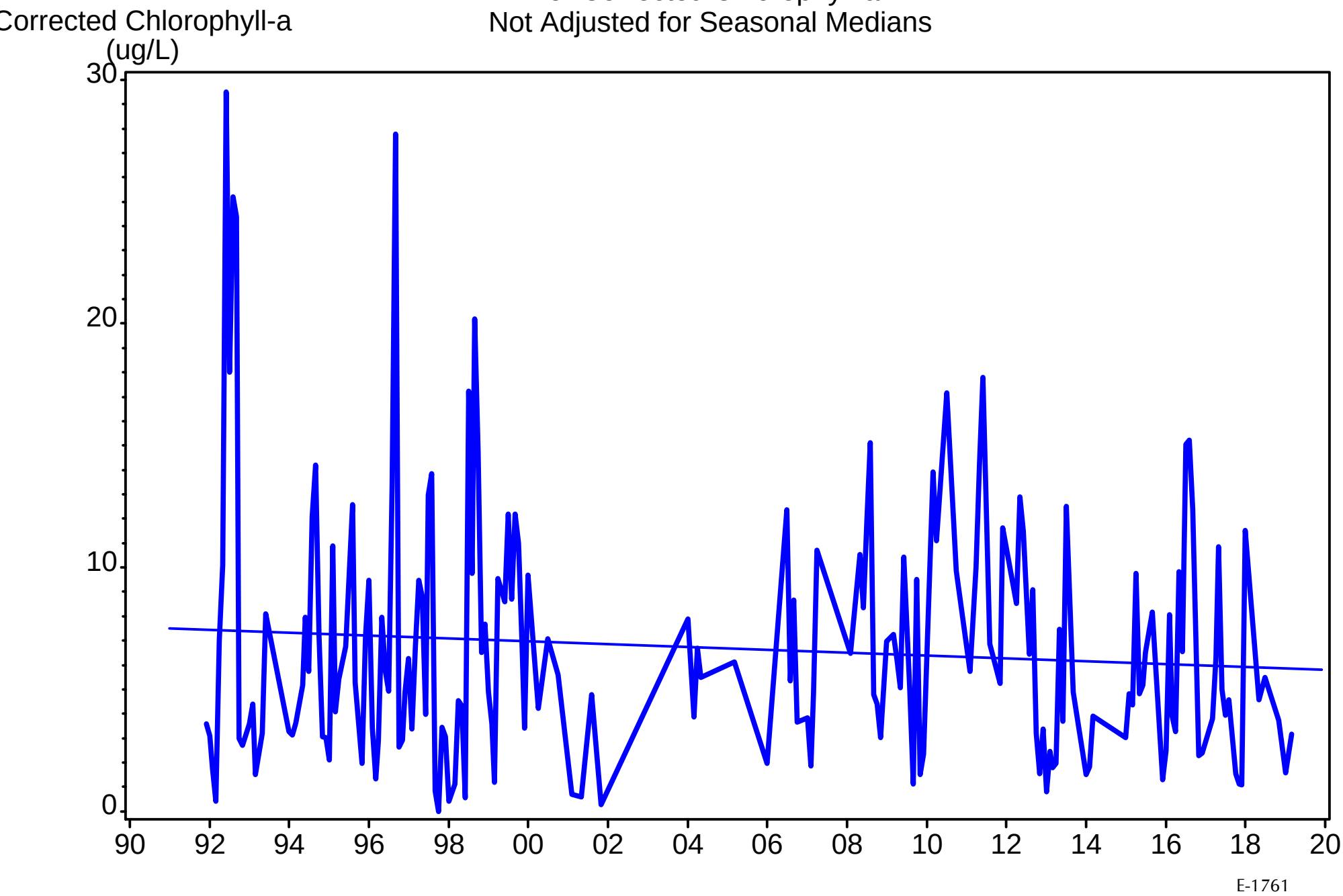
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1758

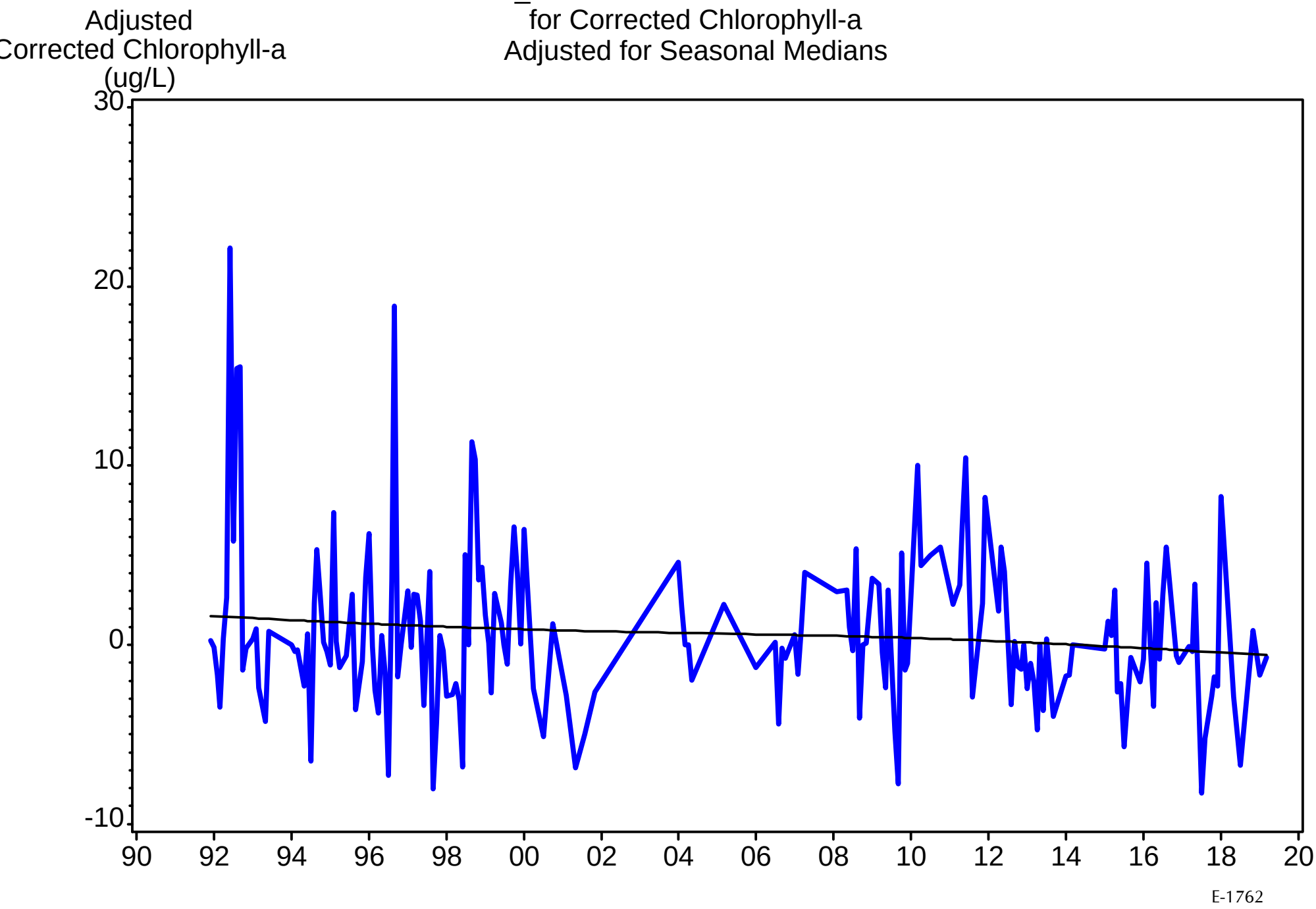
S_21FLVEMDHL12 Trends

S_21FLVEMDHL12 Monthly Data Time Series
for Corrected Chlorophyll-a
Not Adjusted for Seasonal Medians



E-1761

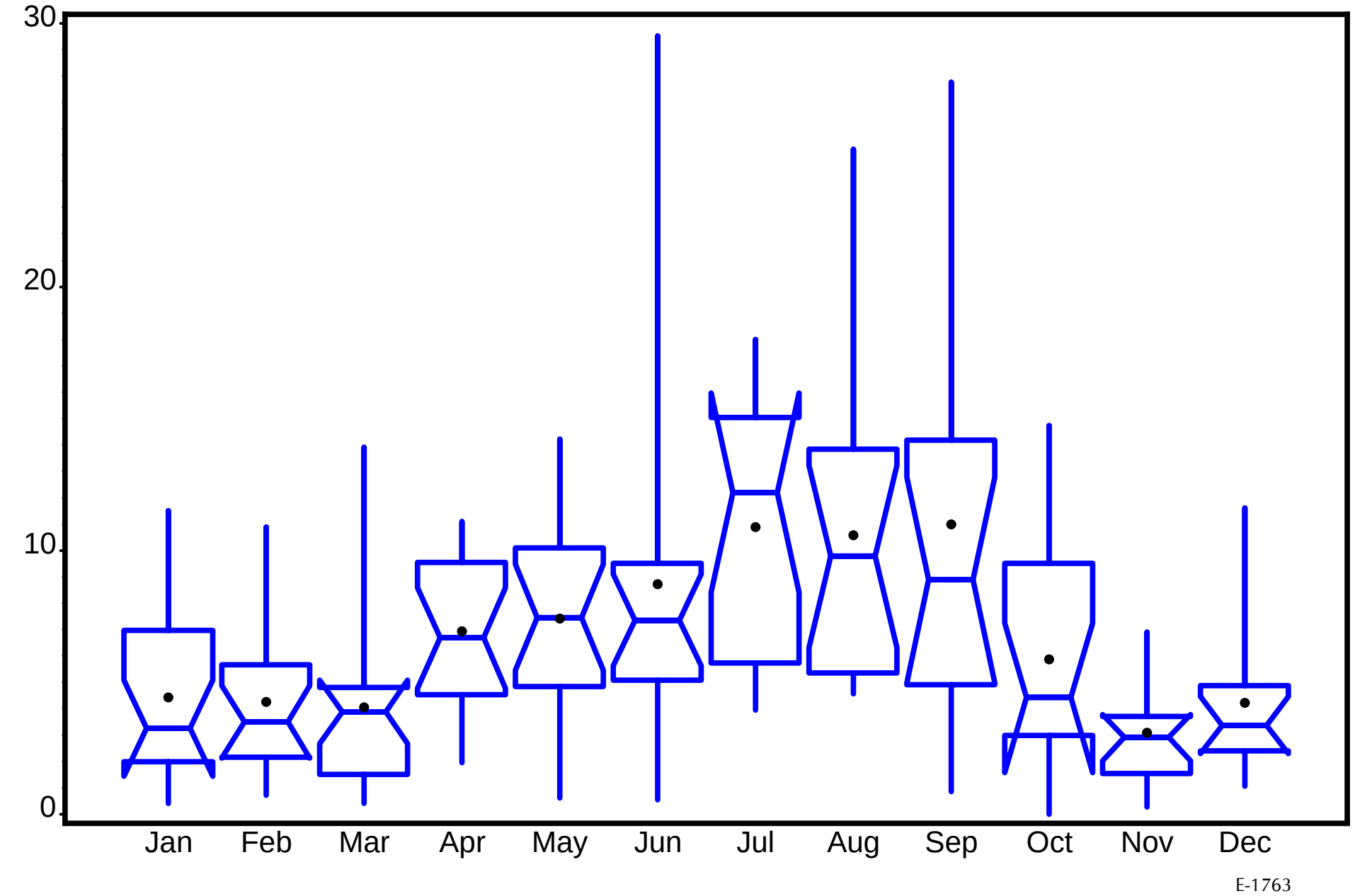
S_21FLVEMDHL12 Trends



S_21FLVEMDHL12 Trends Appendix

Seasonal Univariate Statistics

Corrected Chlorophyll-a



E-1763

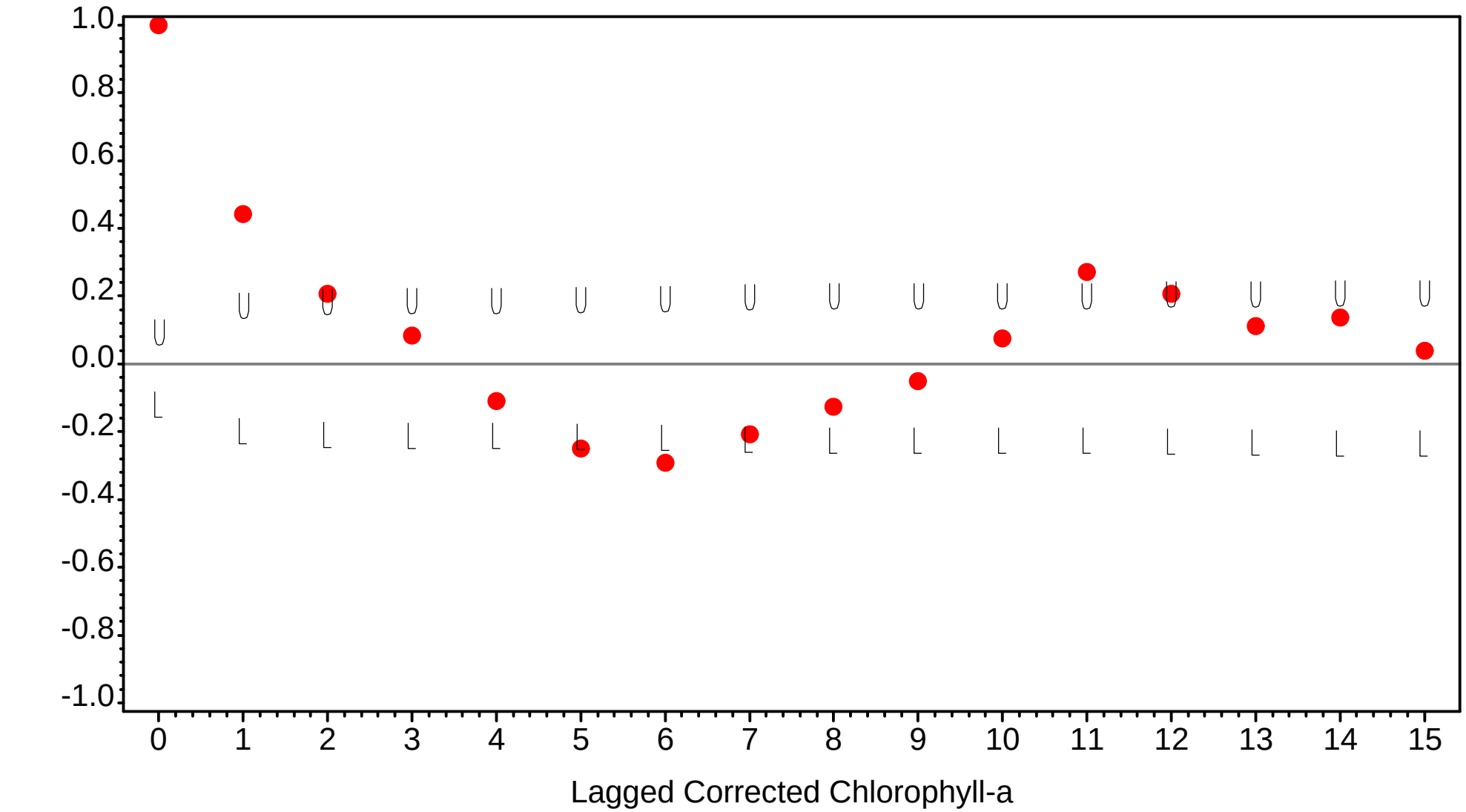
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.443	0.093	0.186	-0.186
2	0.208	0.099	0.197	-0.197
3	0.083	0.100	0.200	-0.200
4	-0.110	0.100	0.200	-0.200
5	-0.251	0.101	0.201	-0.201
6	-0.291	0.102	0.205	-0.205
7	-0.209	0.105	0.209	-0.209
8	-0.127	0.106	0.212	-0.212
9	-0.051	0.106	0.213	-0.213
10	0.074	0.106	0.213	-0.213
11	0.272	0.107	0.213	-0.213
12	0.207	0.108	0.217	-0.217
13	0.112	0.110	0.219	-0.219
14	0.137	0.110	0.220	-0.220
15	0.038	0.110	0.221	-0.221

S_21FLVEMDHL12 Trends Appendix

Correlogram for Corrected Chlorophyll-a

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Unadjusted for Seasonal Medians

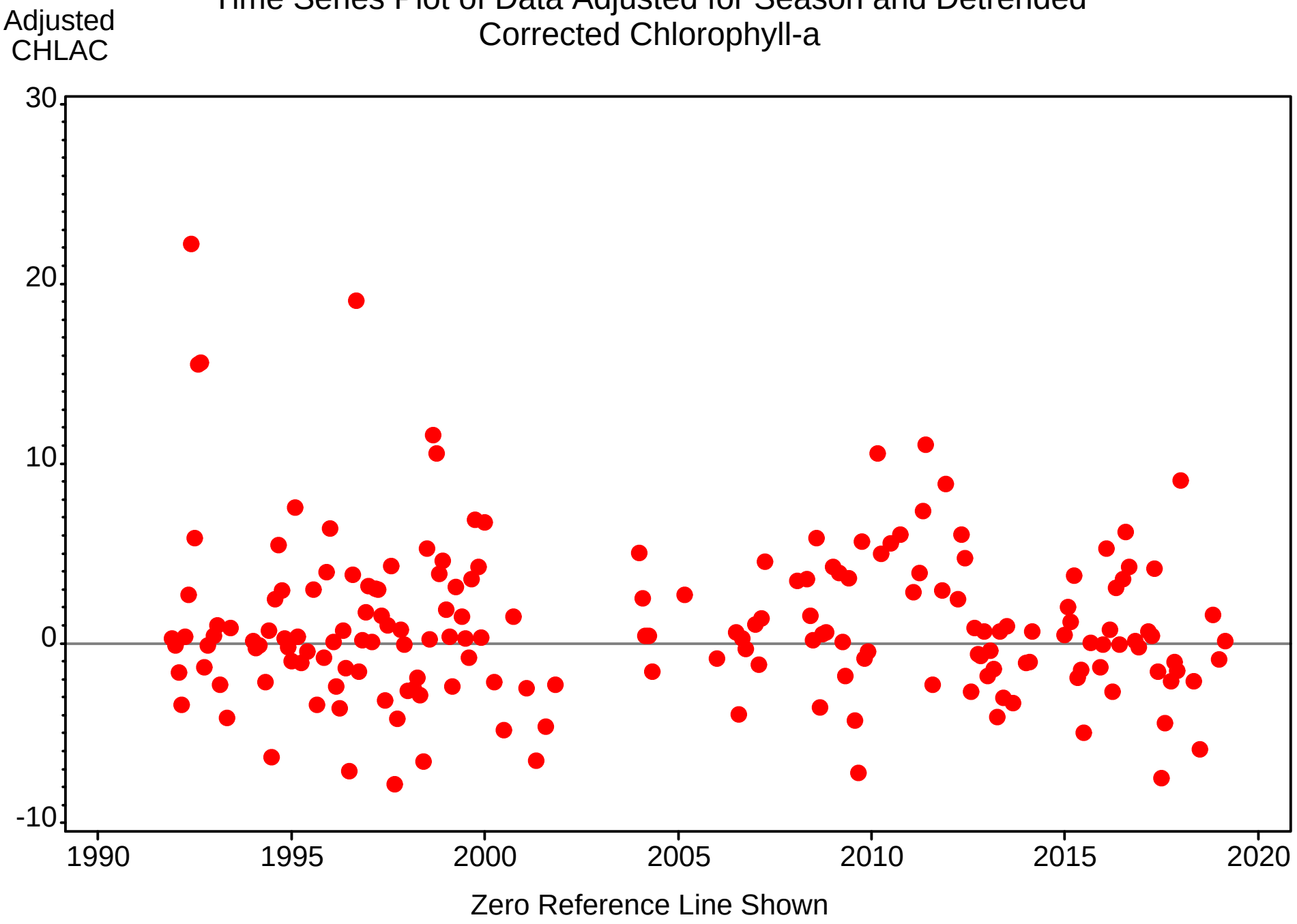
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.049	0.376	0.468	-0.028

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Corrected Chlorophyll-a
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.048729	0.37577	0.46804	-0.027680

S_21FLVEMDHL12 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Corrected Chlorophyll-a



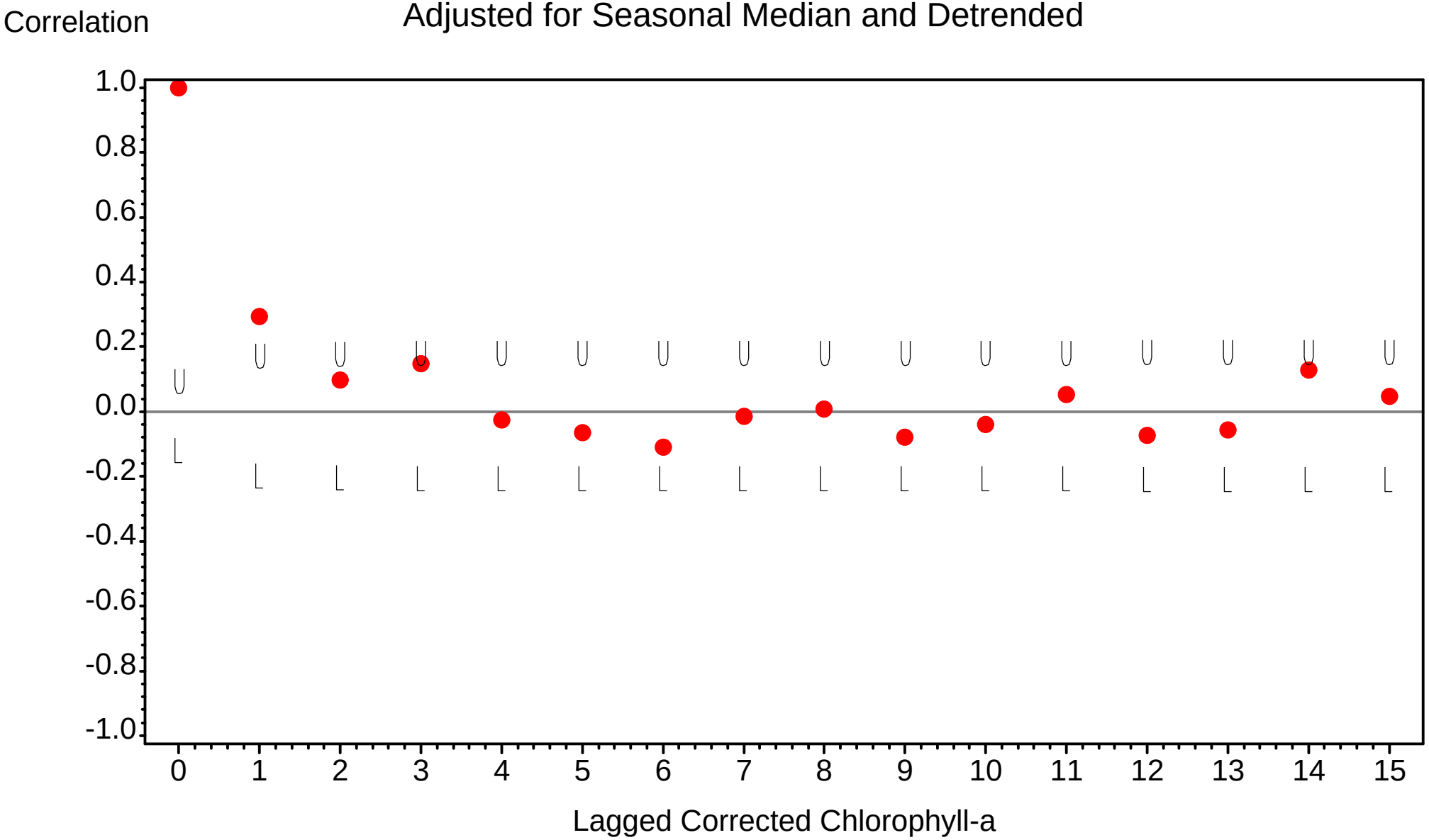
E-1768

S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Corrected Chlorophyll-a Adjusted for Seasonal Median and Detrended

Lagged Corrected Chlorophyll-a	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.294	0.093	0.186	-0.186
2	0.098	0.095	0.191	-0.191
3	0.149	0.096	0.192	-0.192
4	-0.026	0.096	0.193	-0.193
5	-0.064	0.096	0.193	-0.193
6	-0.111	0.097	0.193	-0.193
7	-0.015	0.097	0.194	-0.194
8	0.007	0.097	0.194	-0.194
9	-0.078	0.097	0.194	-0.194
10	-0.041	0.097	0.194	-0.194
11	0.052	0.097	0.194	-0.194
12	-0.072	0.097	0.195	-0.195
13	-0.057	0.097	0.195	-0.195
14	0.127	0.098	0.195	-0.195
15	0.047	0.098	0.196	-0.196

S_21FLVEMDHL12 Trends Appendix

Correlogram for Corrected Chlorophyll-a
Adjusted for Seasonal Median and Detrended

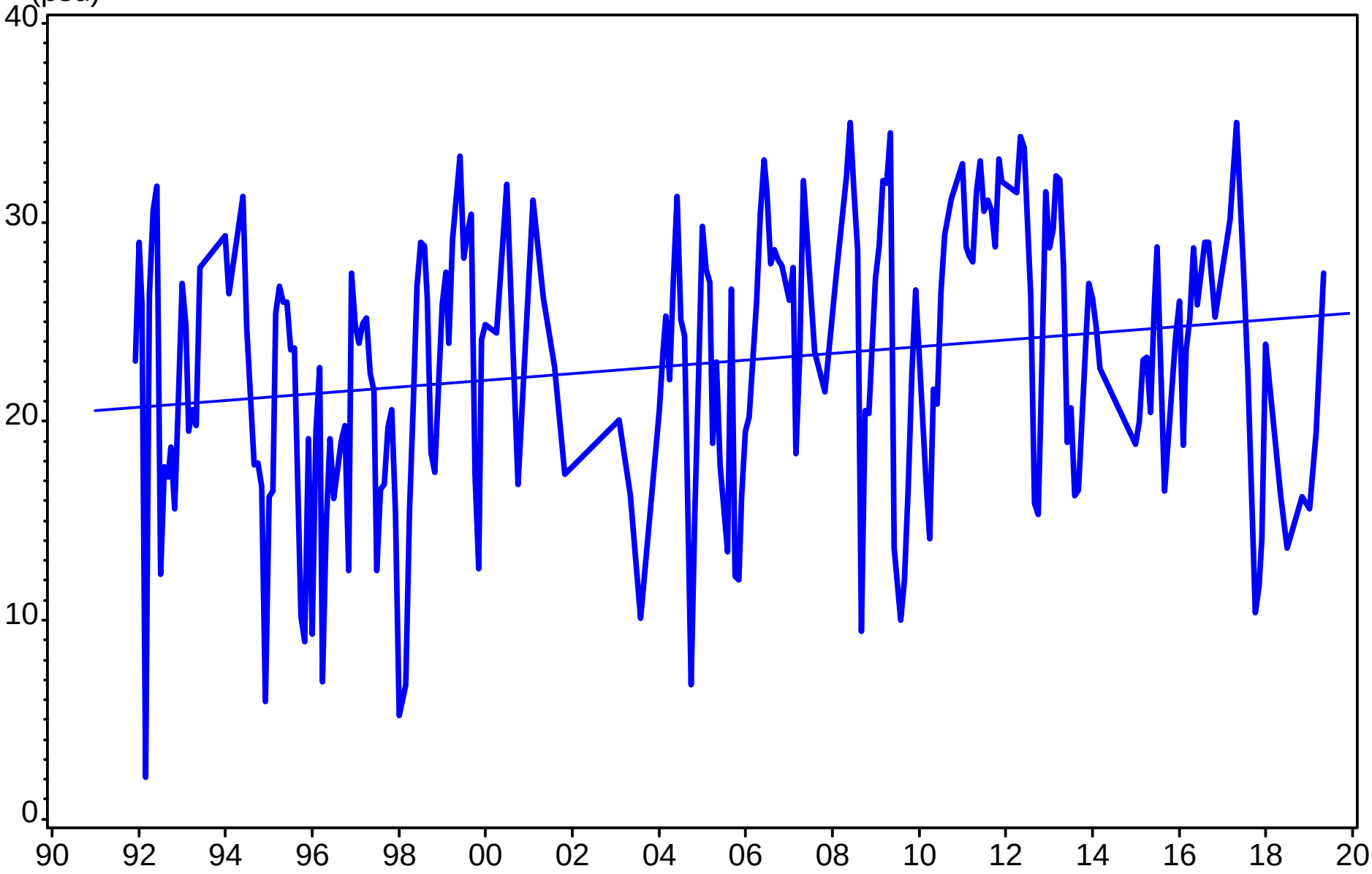


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1770

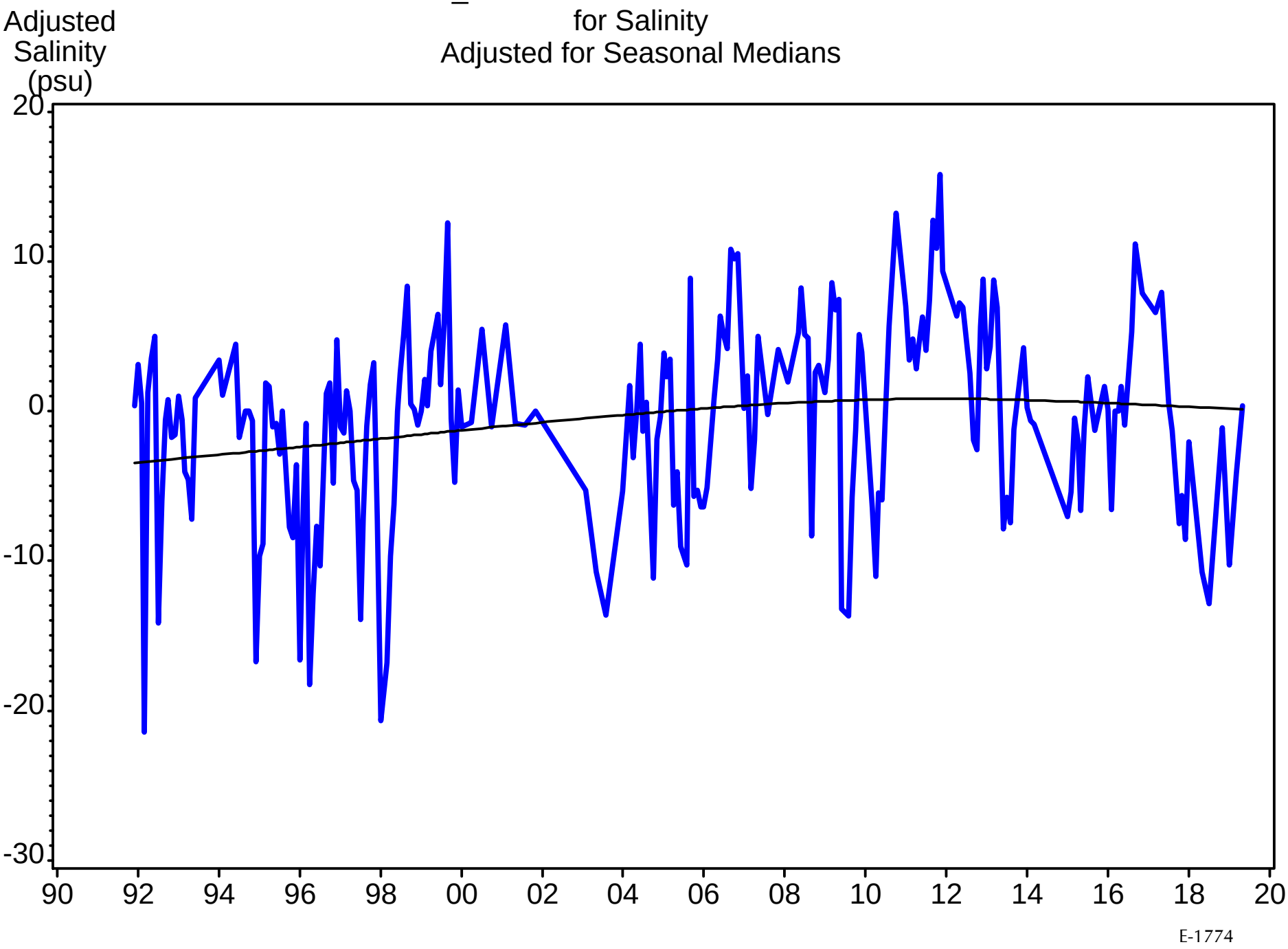
S_21FLVEMDHL12 Trends

S_21FLVEMDHL12 Monthly Data Time Series
for Salinity
Not Adjusted for Seasonal Medians



E-1773

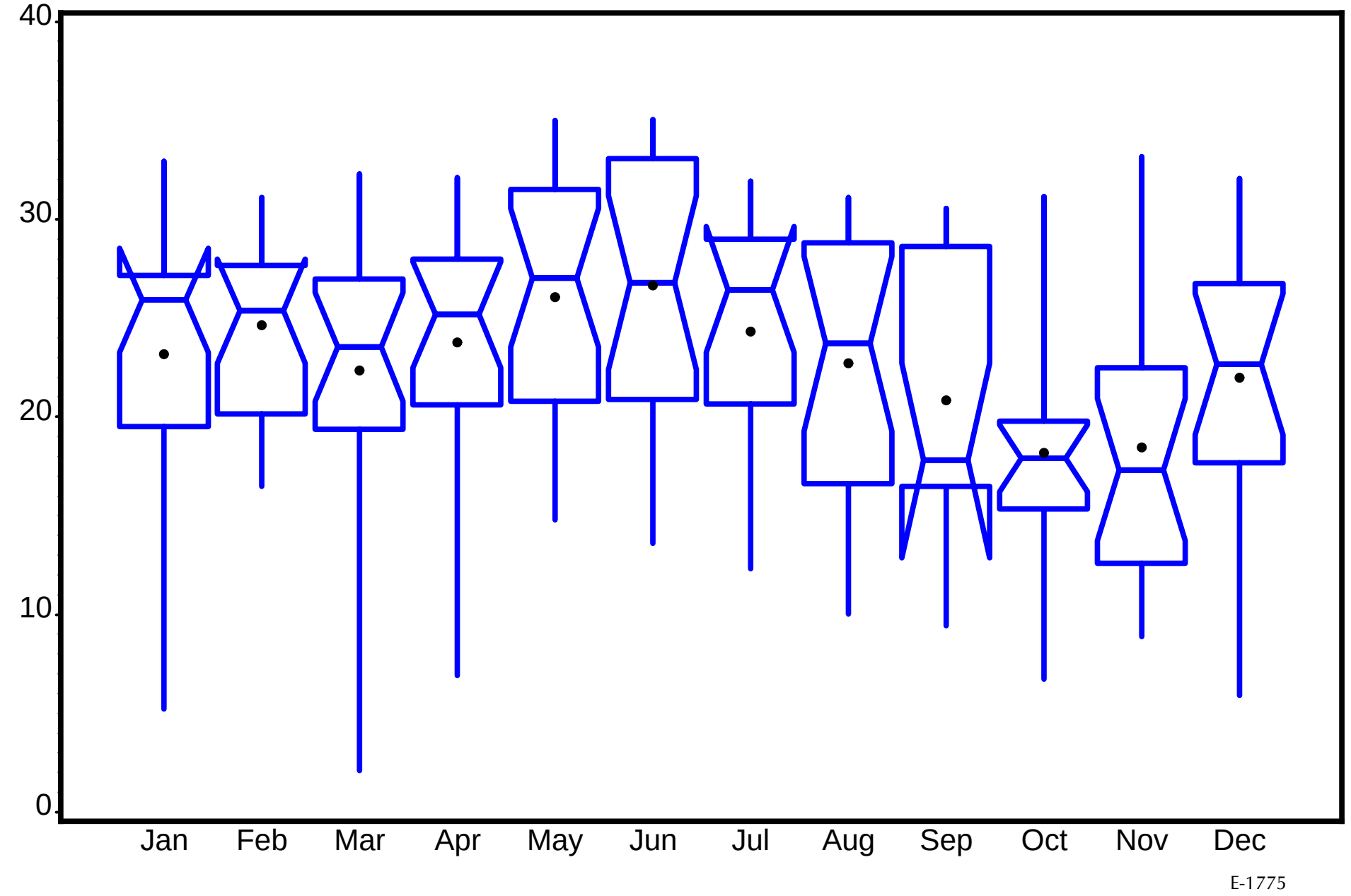
S_21FLVEMDHL12 Trends



S_21FLVEMDHL12 Trends Appendix

Seasonal Univariate Statistics

Salinity



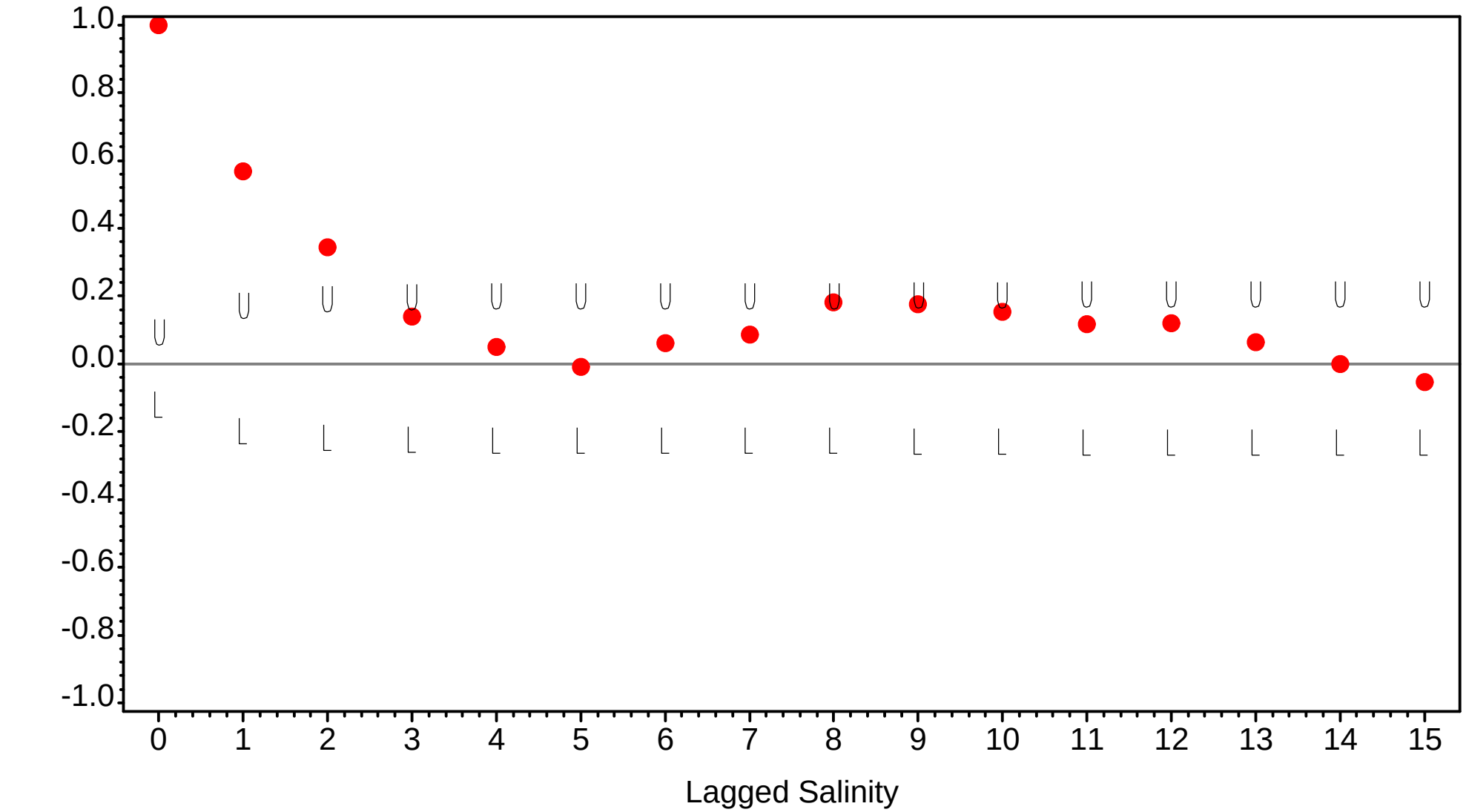
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Salinity
Unadjusted for Seasonal Medians

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.567	0.093	0.186	-0.186
2	0.345	0.102	0.205	-0.205
3	0.139	0.106	0.211	-0.211
4	0.050	0.106	0.212	-0.212
5	-0.009	0.106	0.212	-0.212
6	0.061	0.106	0.212	-0.212
7	0.086	0.106	0.213	-0.213
8	0.181	0.107	0.213	-0.213
9	0.177	0.107	0.215	-0.215
10	0.153	0.108	0.216	-0.216
11	0.118	0.109	0.218	-0.218
12	0.121	0.109	0.218	-0.218
13	0.064	0.110	0.219	-0.219
14	0.000	0.110	0.219	-0.219
15	-0.054	0.110	0.219	-0.219

S_21FLVEMDHL12 Trends Appendix

Correlogram for Salinity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Unadjusted for Seasonal Medians

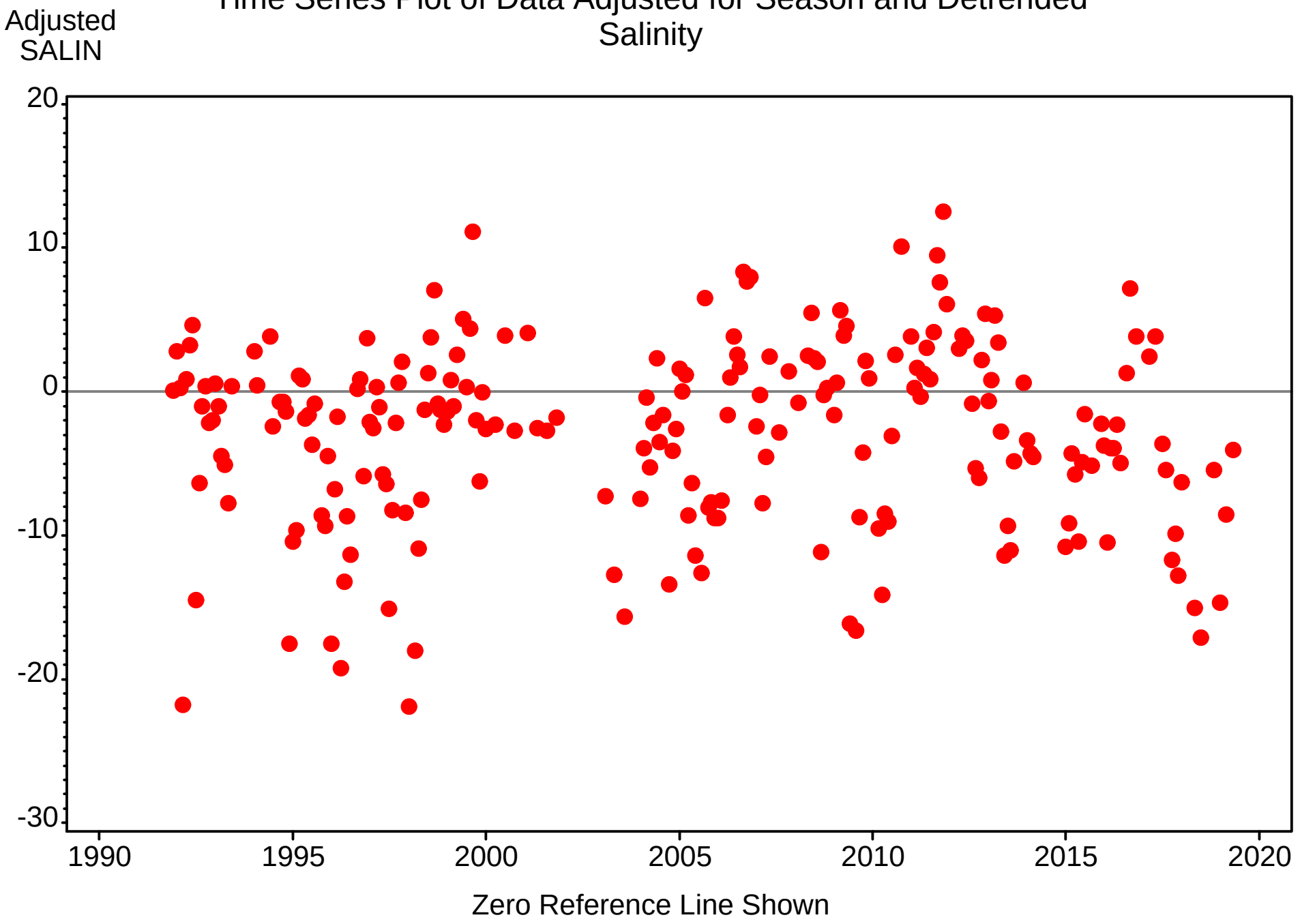
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.123	0.012	0.124	0.151

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Salinity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.12319	0.012253	0.12440	0.15105

S_21FLVEMDHL12 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Salinity



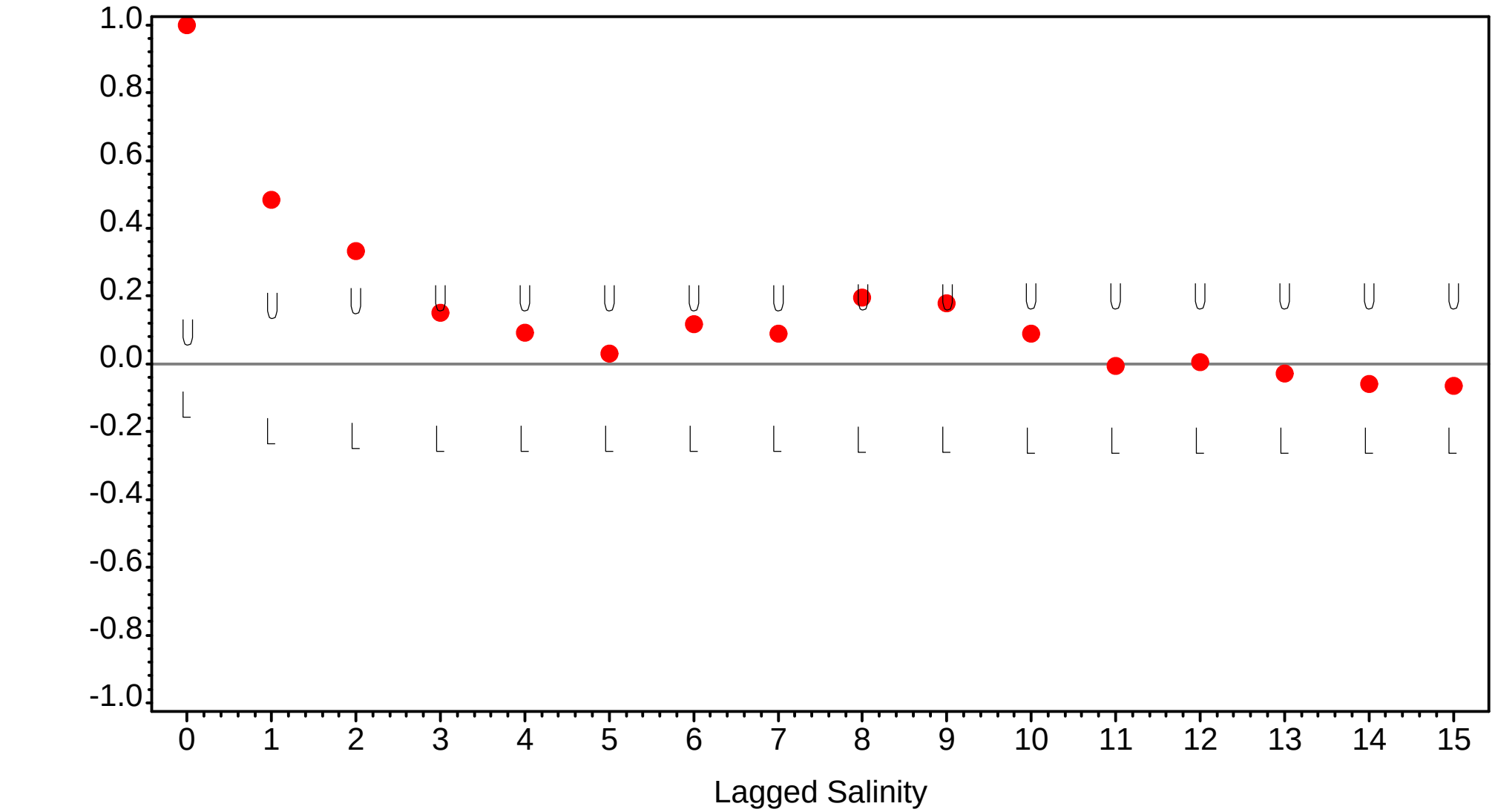
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Salinity
Adjusted for Seasonal Median and Detrended

Lagged Salinity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.483	0.093	0.186	-0.186
2	0.333	0.100	0.200	-0.200
3	0.151	0.103	0.206	-0.206
4	0.091	0.104	0.207	-0.207
5	0.031	0.104	0.208	-0.208
6	0.117	0.104	0.208	-0.208
7	0.089	0.104	0.208	-0.208
8	0.196	0.104	0.209	-0.209
9	0.180	0.105	0.211	-0.211
10	0.089	0.106	0.213	-0.213
11	-0.006	0.107	0.213	-0.213
12	0.005	0.107	0.213	-0.213
13	-0.029	0.107	0.213	-0.213
14	-0.058	0.107	0.213	-0.213
15	-0.064	0.107	0.213	-0.213

S_21FLVEMDHL12 Trends Appendix

Correlogram for Salinity

Adjusted for Seasonal Median and Detrended



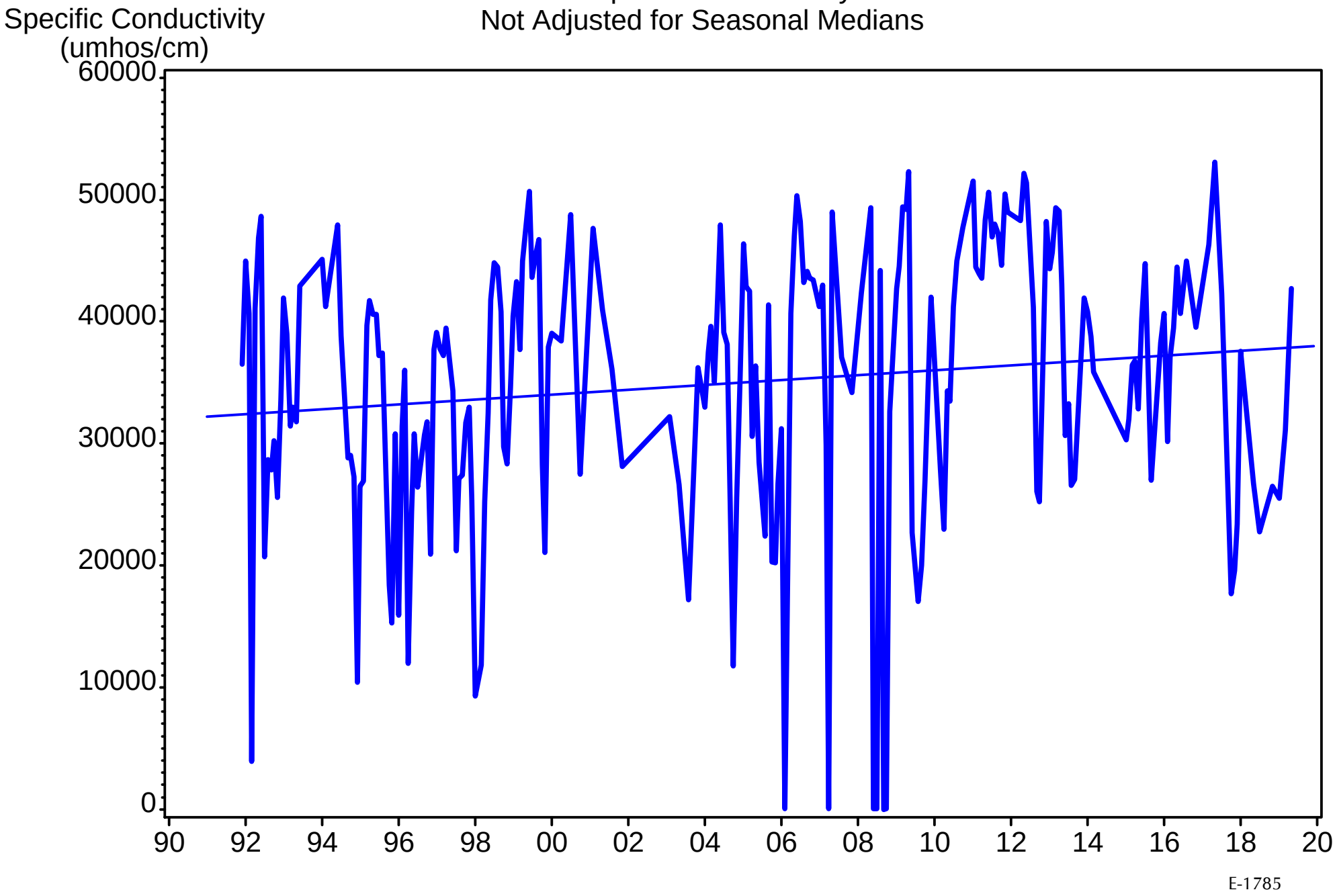
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

E-1782

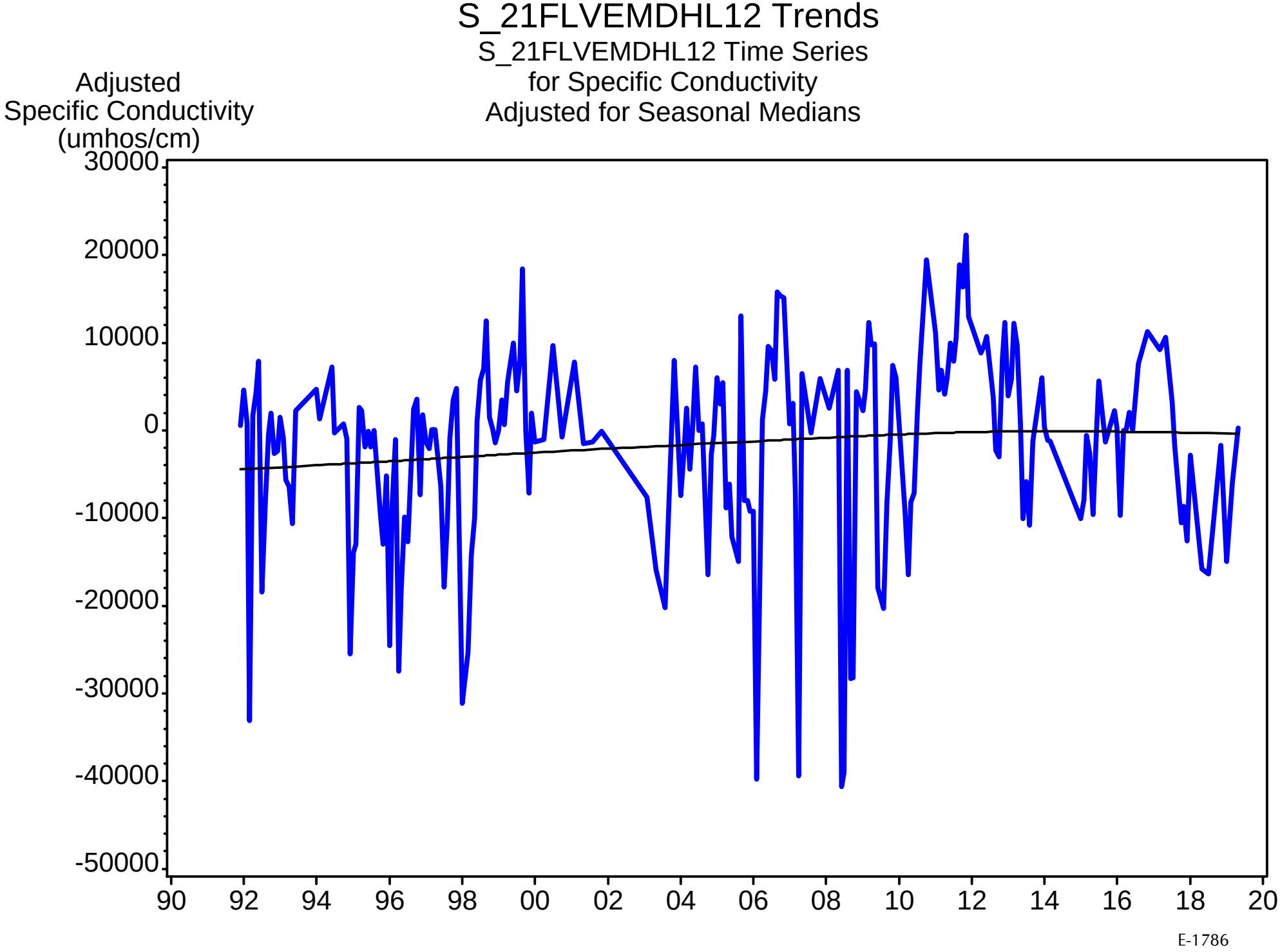
S_21FLVEMDHL12 Trends

S_21FLVEMDHL12 Monthly Data Time Series
for Specific Conductivity
Not Adjusted for Seasonal Medians



E-1785

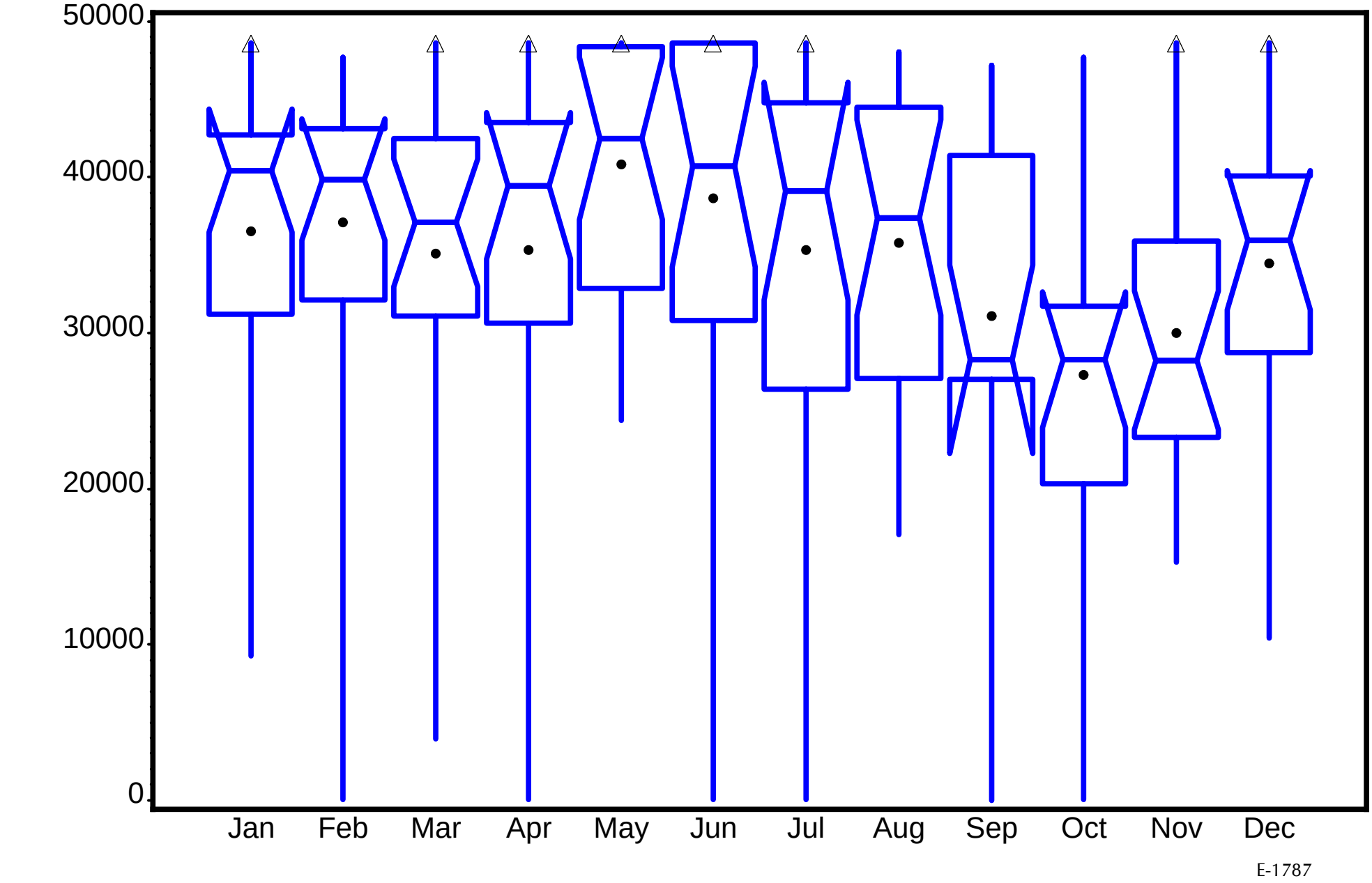
S_21FLVEMDHL12 Trends



S_21FLVEMDHL12 Trends Appendix

Seasonal Univariate Statistics

Specific Conductivity



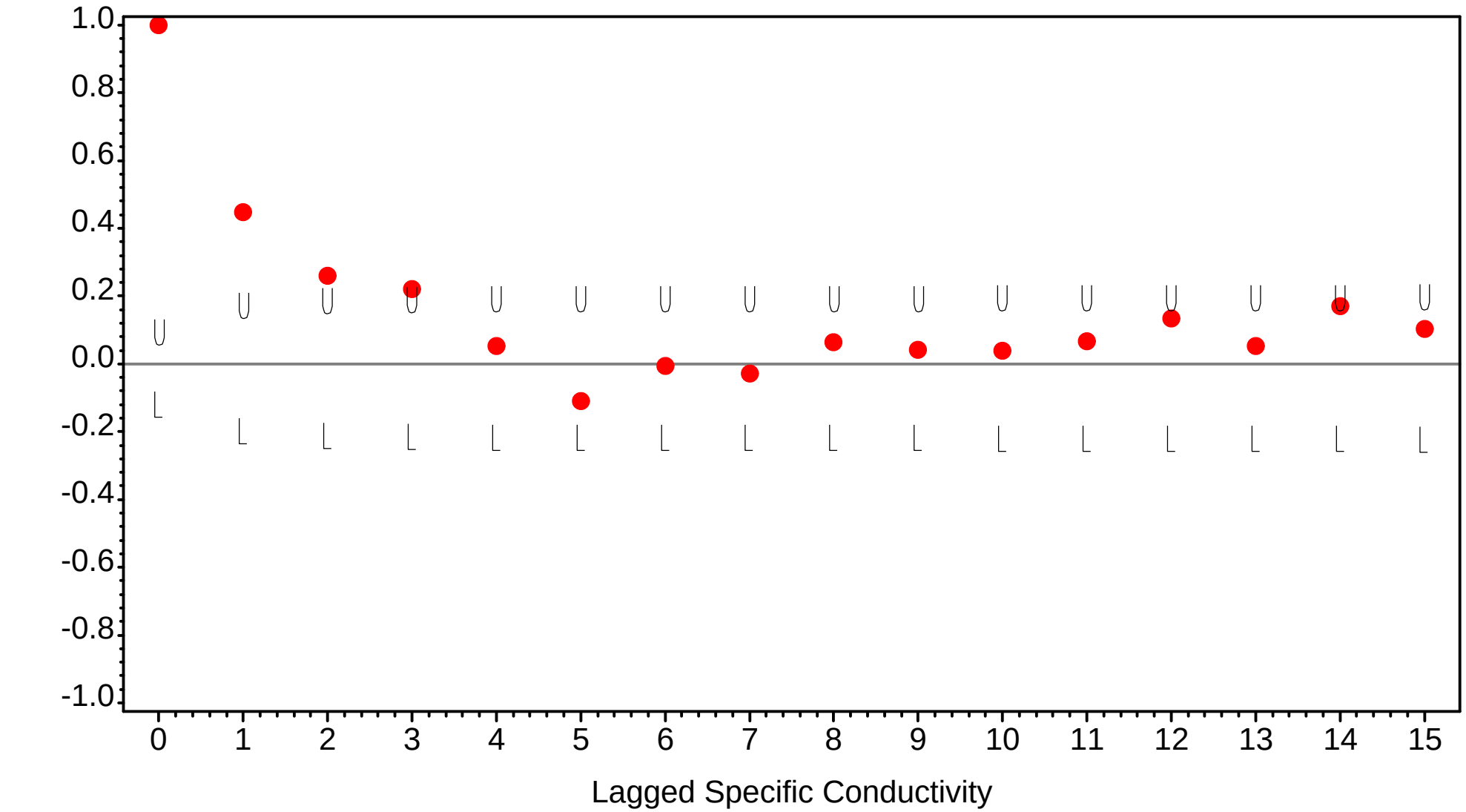
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Unadjusted for Seasonal Medians

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.447	0.093	0.186	-0.186
2	0.260	0.099	0.198	-0.198
3	0.220	0.101	0.202	-0.202
4	0.053	0.102	0.204	-0.204
5	-0.109	0.102	0.204	-0.204
6	-0.006	0.103	0.205	-0.205
7	-0.028	0.103	0.205	-0.205
8	0.064	0.103	0.205	-0.205
9	0.041	0.103	0.205	-0.205
10	0.040	0.103	0.206	-0.206
11	0.067	0.103	0.206	-0.206
12	0.135	0.103	0.206	-0.206
13	0.053	0.103	0.207	-0.207
14	0.170	0.104	0.207	-0.207
15	0.104	0.104	0.209	-0.209

S_21FLVEMDHL12 Trends Appendix

Correlogram for Specific Conductivity

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Unadjusted for Seasonal Medians

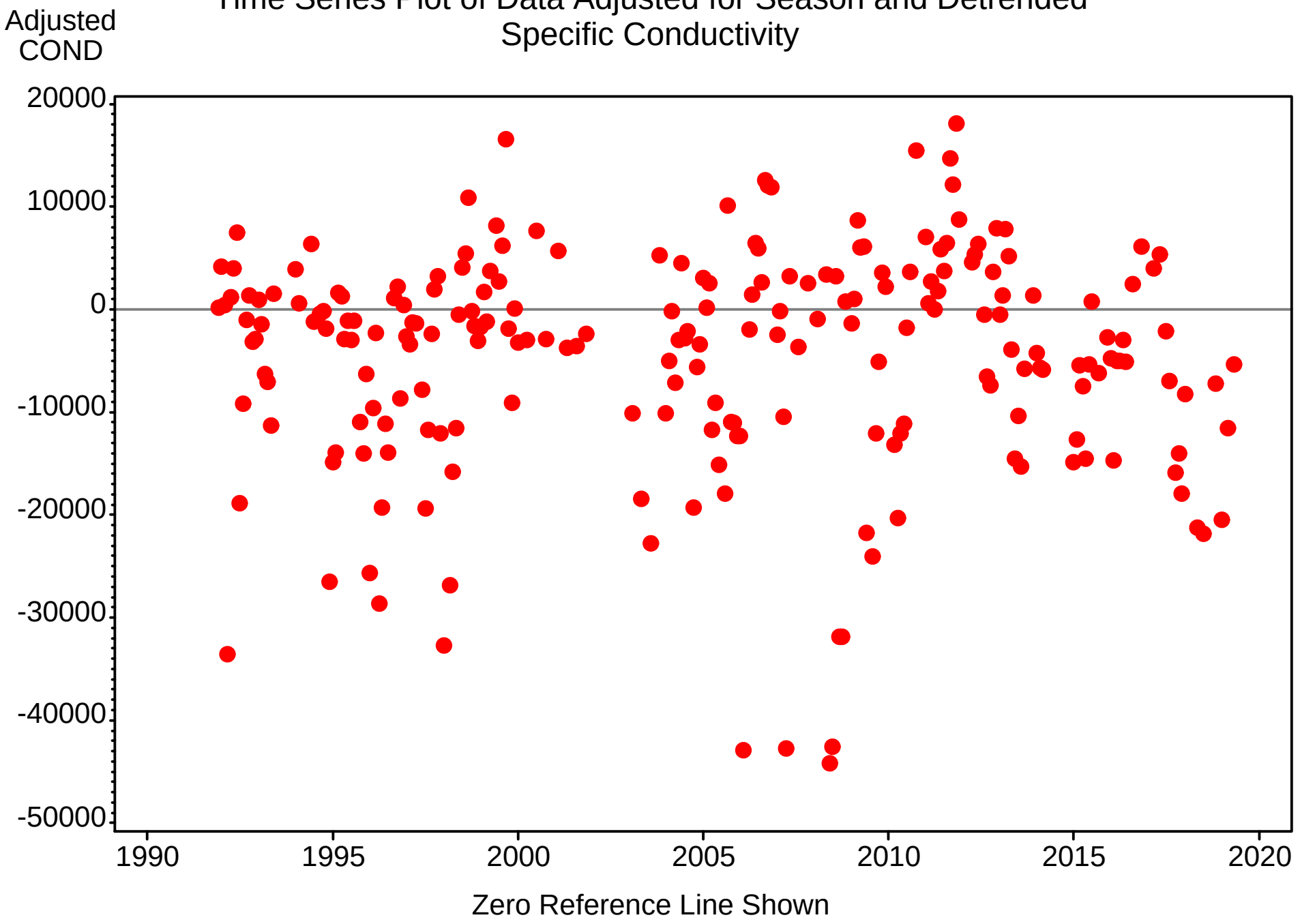
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.104	0.036	0.184	191.632

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Specific Conductivity
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.10362	0.035715	0.18354	191.632

S_21FLVEMDHL12 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Specific Conductivity



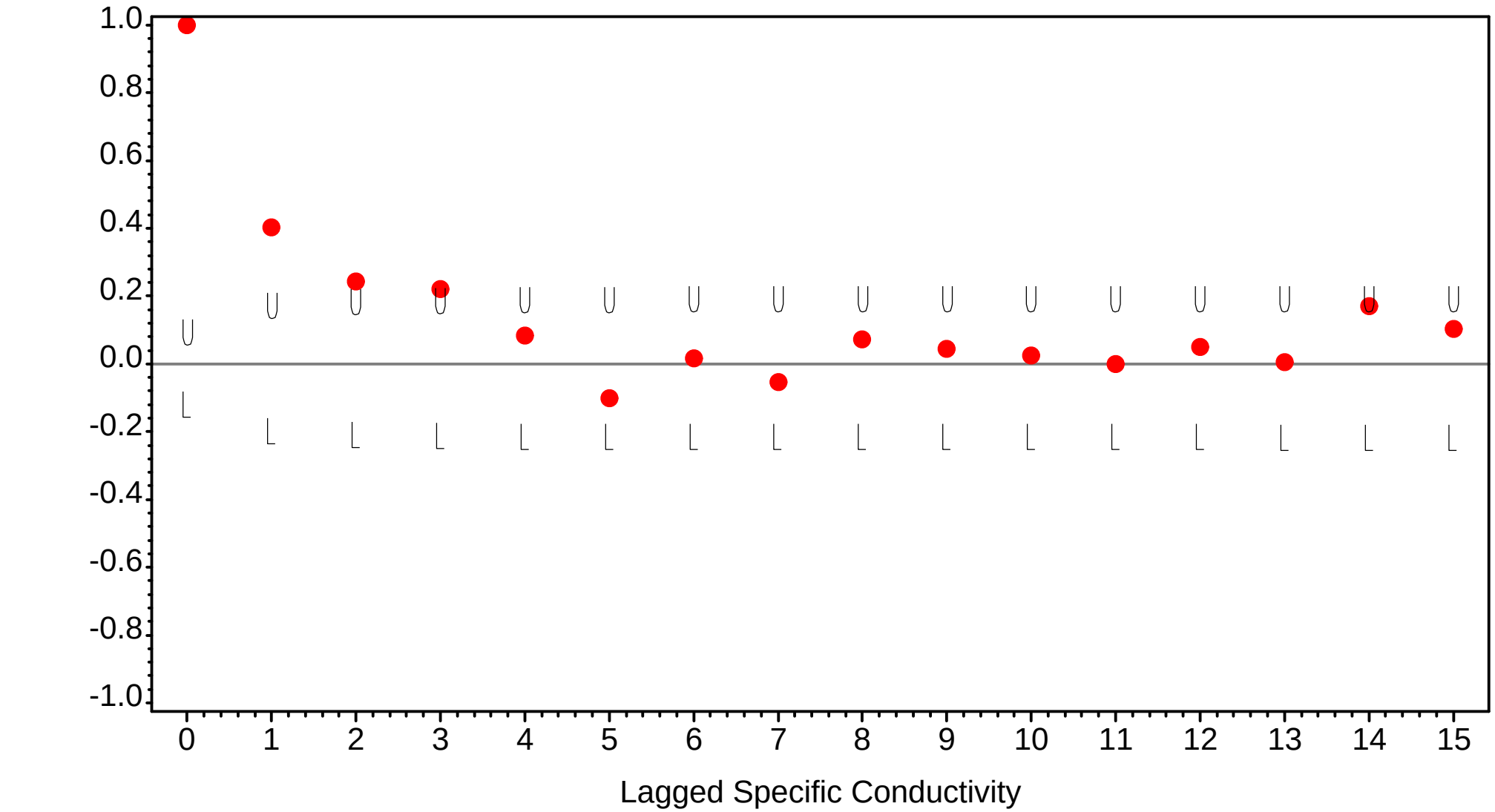
E-1792

S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Specific Conductivity
Adjusted for Seasonal Median and Detrended

Lagged Specific Conductivity	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.404	0.093	0.186	-0.186
2	0.244	0.098	0.196	-0.196
3	0.220	0.100	0.199	-0.199
4	0.083	0.101	0.202	-0.202
5	-0.101	0.101	0.202	-0.202
6	0.017	0.101	0.203	-0.203
7	-0.055	0.101	0.203	-0.203
8	0.073	0.101	0.203	-0.203
9	0.043	0.102	0.203	-0.203
10	0.025	0.102	0.203	-0.203
11	-0.001	0.102	0.203	-0.203
12	0.050	0.102	0.203	-0.203
13	0.004	0.102	0.204	-0.204
14	0.170	0.102	0.204	-0.204
15	0.103	0.103	0.205	-0.205

S_21FLVEMDHL12 Trends Appendix

Correlogram for Specific Conductivity
Adjusted for Seasonal Median and Detrended

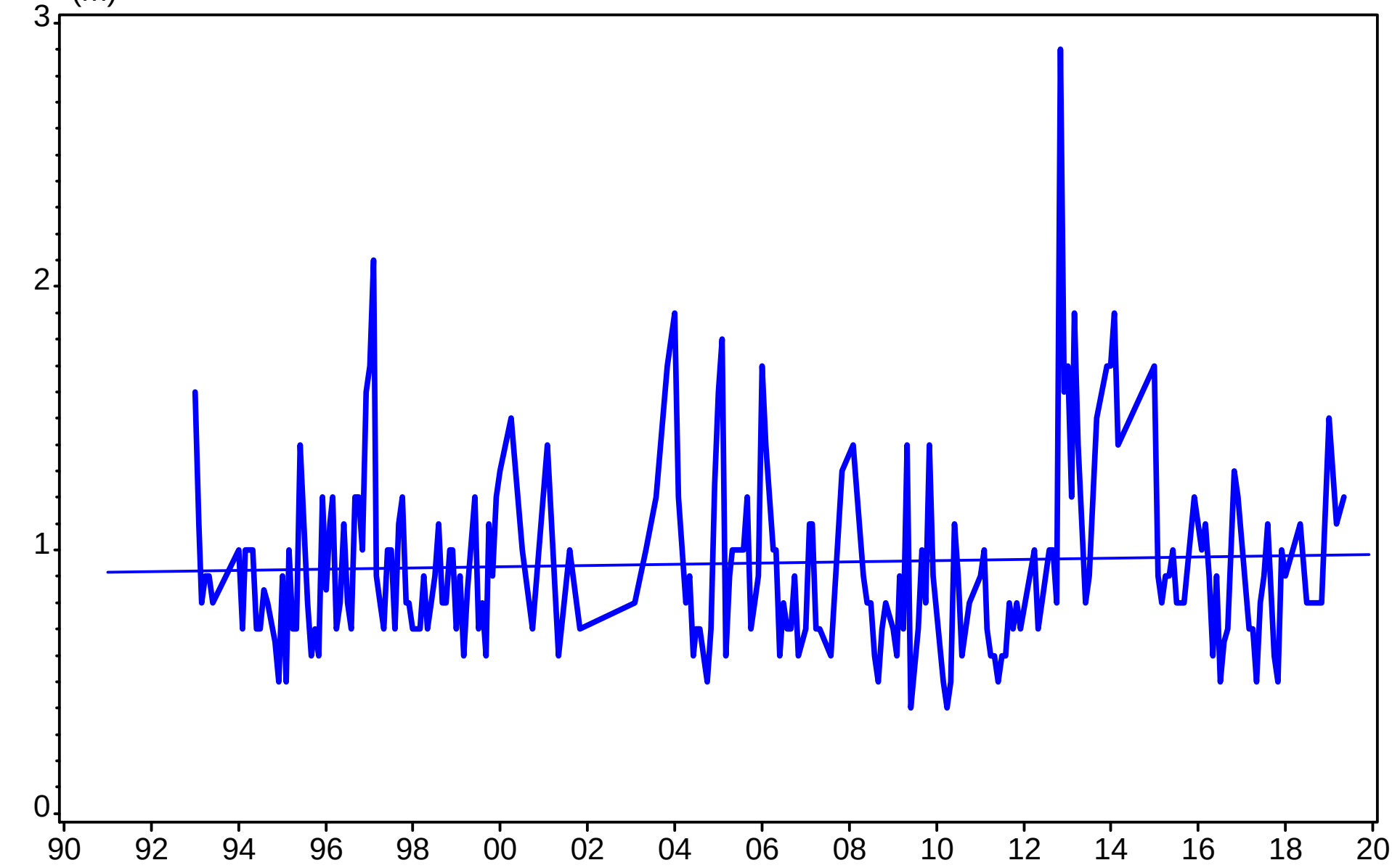


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1794

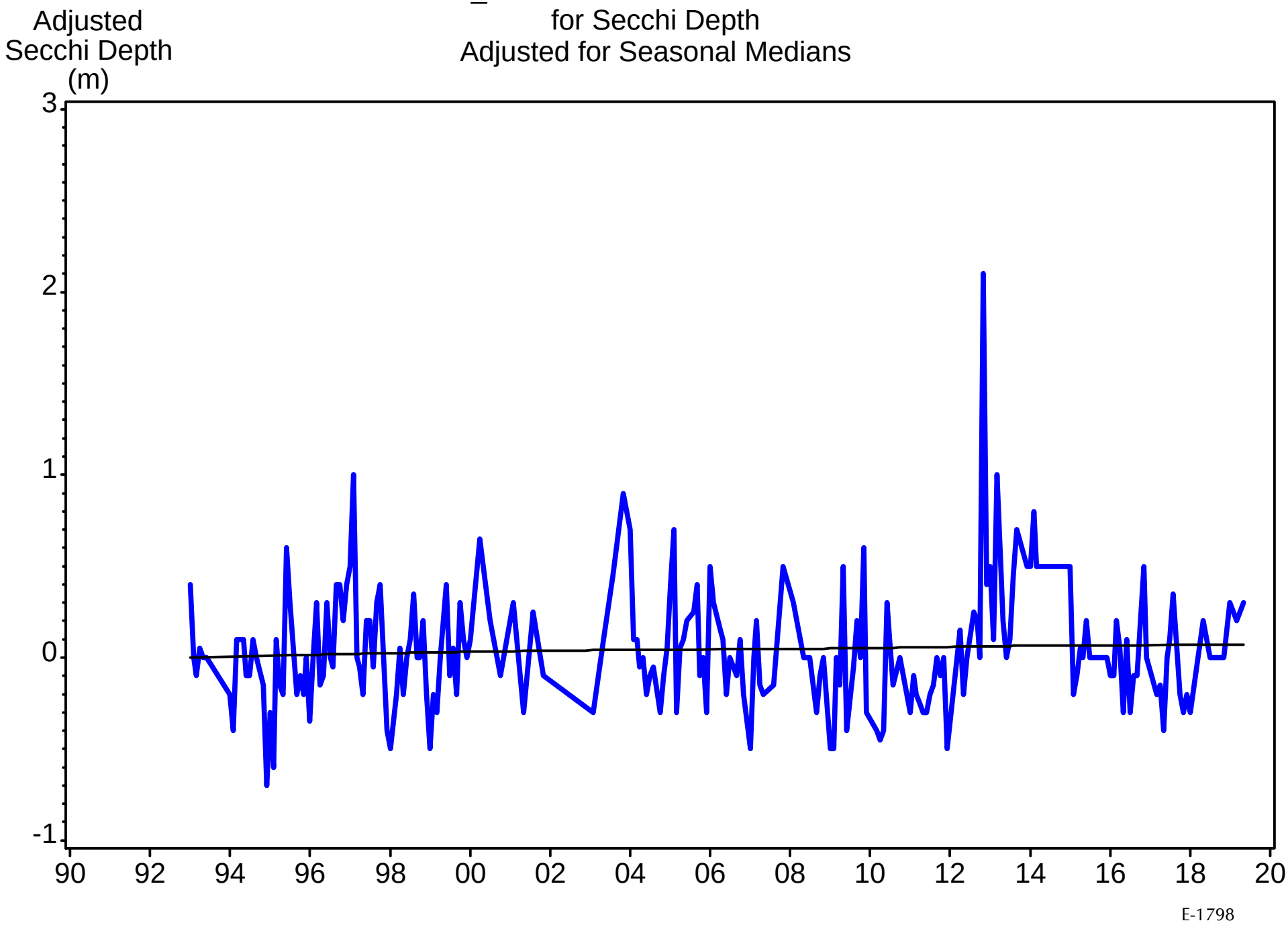
S_21FLVEMDHL12 Trends

S_21FLVEMDHL12 Monthly Data Time Series
for Secchi Depth
Not Adjusted for Seasonal Medians



E-1797

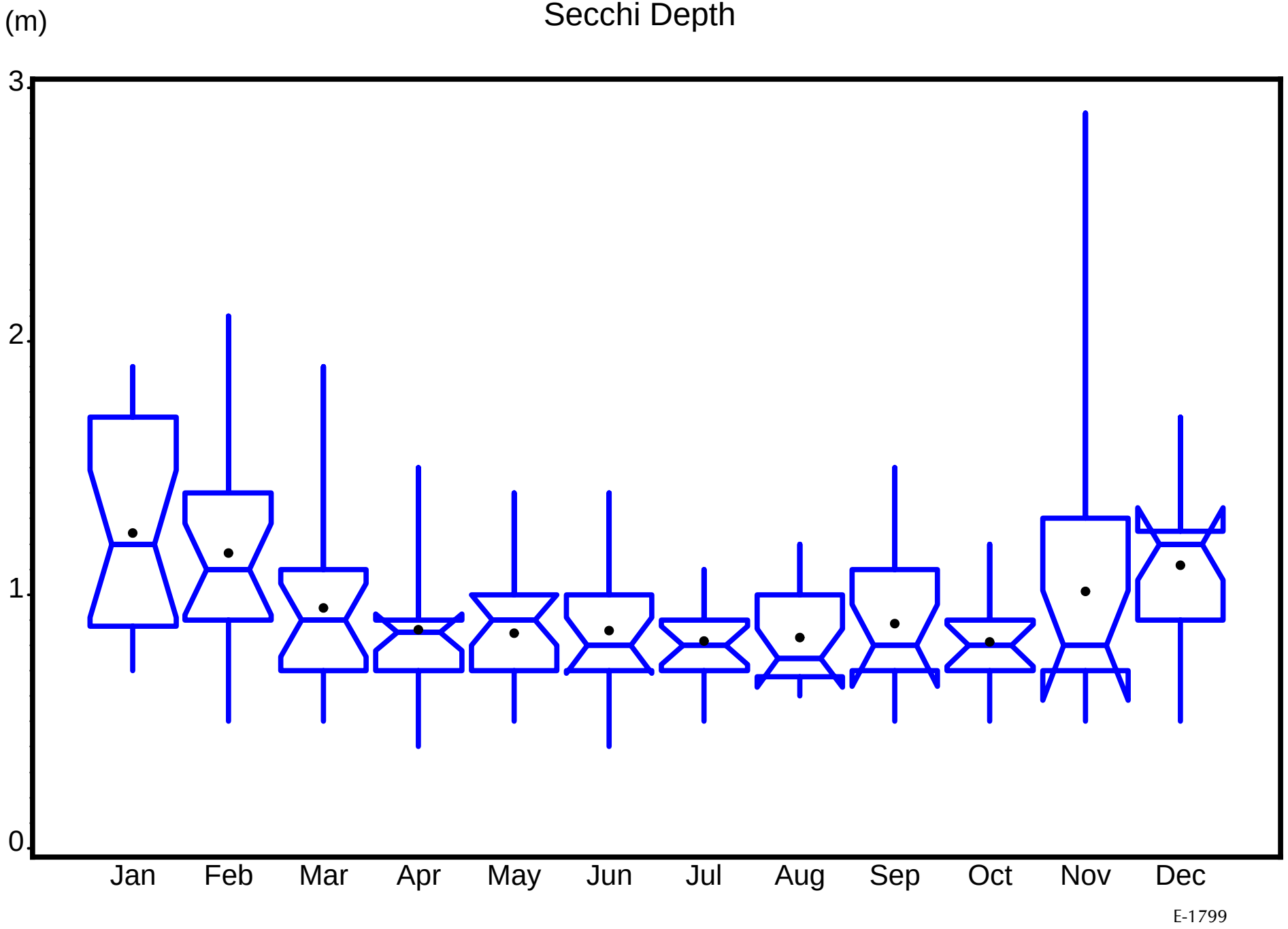
S_21FLVEMDHL12 Trends



S_21FLVEMDHL12 Trends Appendix

Seasonal Univariate Statistics

Secchi Depth



E-1799

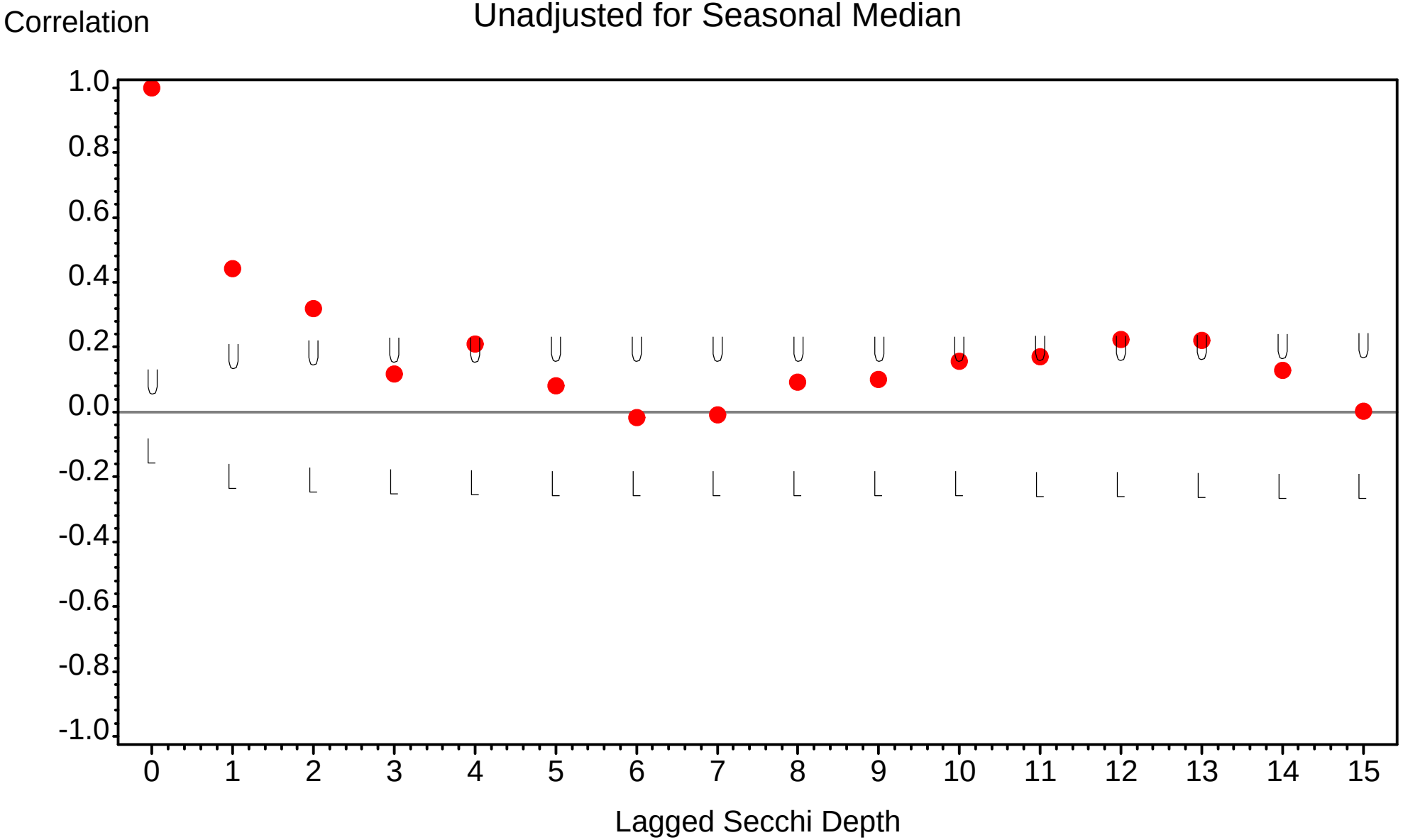
S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Unadjusted for Seasonal Medians

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.441	0.093	0.186	-0.186
2	0.319	0.099	0.197	-0.197
3	0.118	0.102	0.203	-0.203
4	0.209	0.102	0.204	-0.204
5	0.080	0.103	0.206	-0.206
6	-0.017	0.103	0.207	-0.207
7	-0.008	0.103	0.207	-0.207
8	0.091	0.103	0.207	-0.207
9	0.100	0.104	0.207	-0.207
10	0.157	0.104	0.208	-0.208
11	0.170	0.105	0.209	-0.209
12	0.224	0.105	0.211	-0.211
13	0.220	0.107	0.214	-0.214
14	0.127	0.108	0.216	-0.216
15	0.001	0.108	0.217	-0.217

S_21FLVEMDHL12 Trends Appendix

Correlogram for Secchi Depth

Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit

Zero Reference Line Shown

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Unadjusted for Seasonal Medians

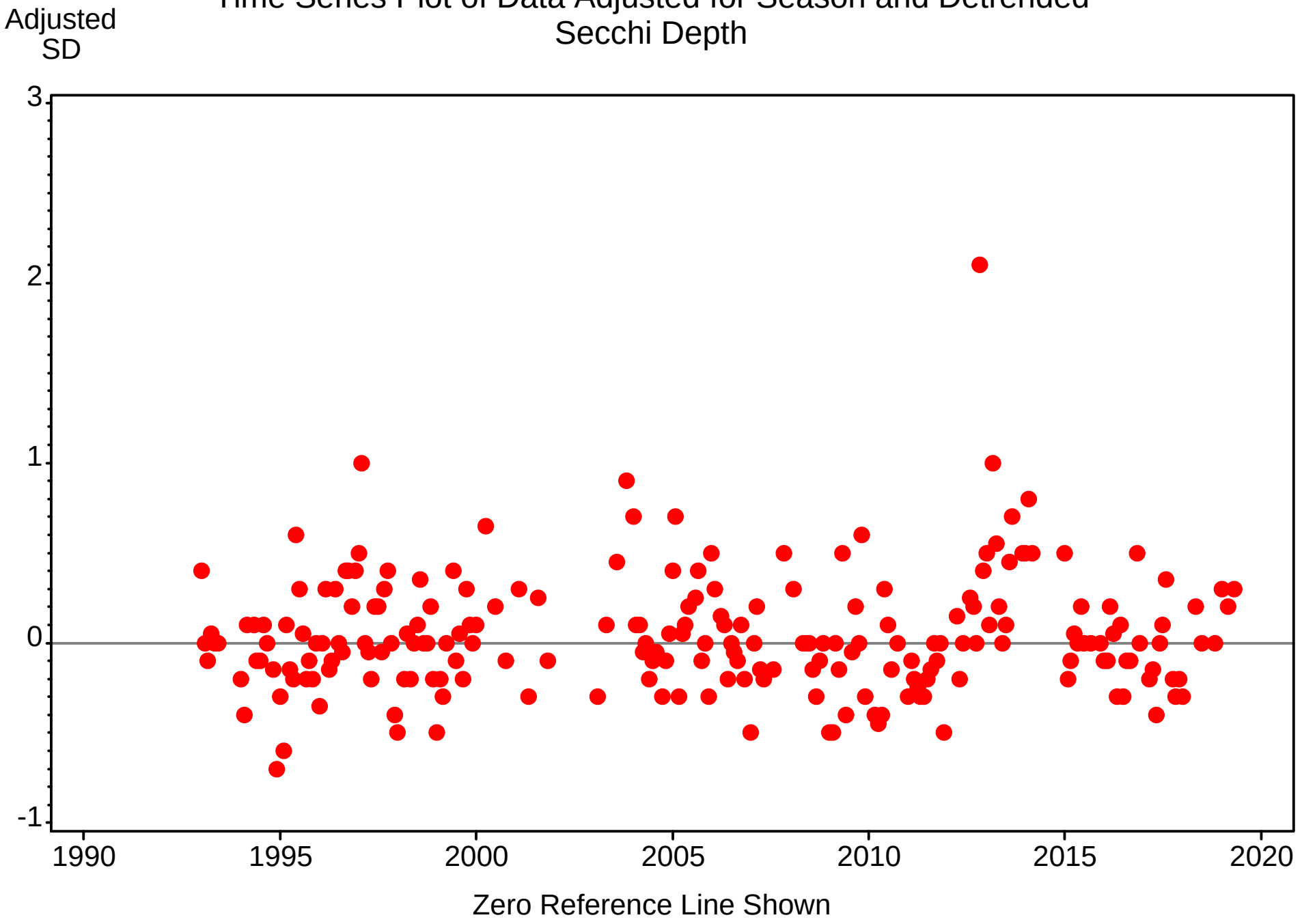
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-.002	0.983	0.988	0

S_21FLVEMDHL12 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Secchi Depth
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-.00154719	0.98312	0.98840	0

S_21FLVEMDHL12 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended Secchi Depth



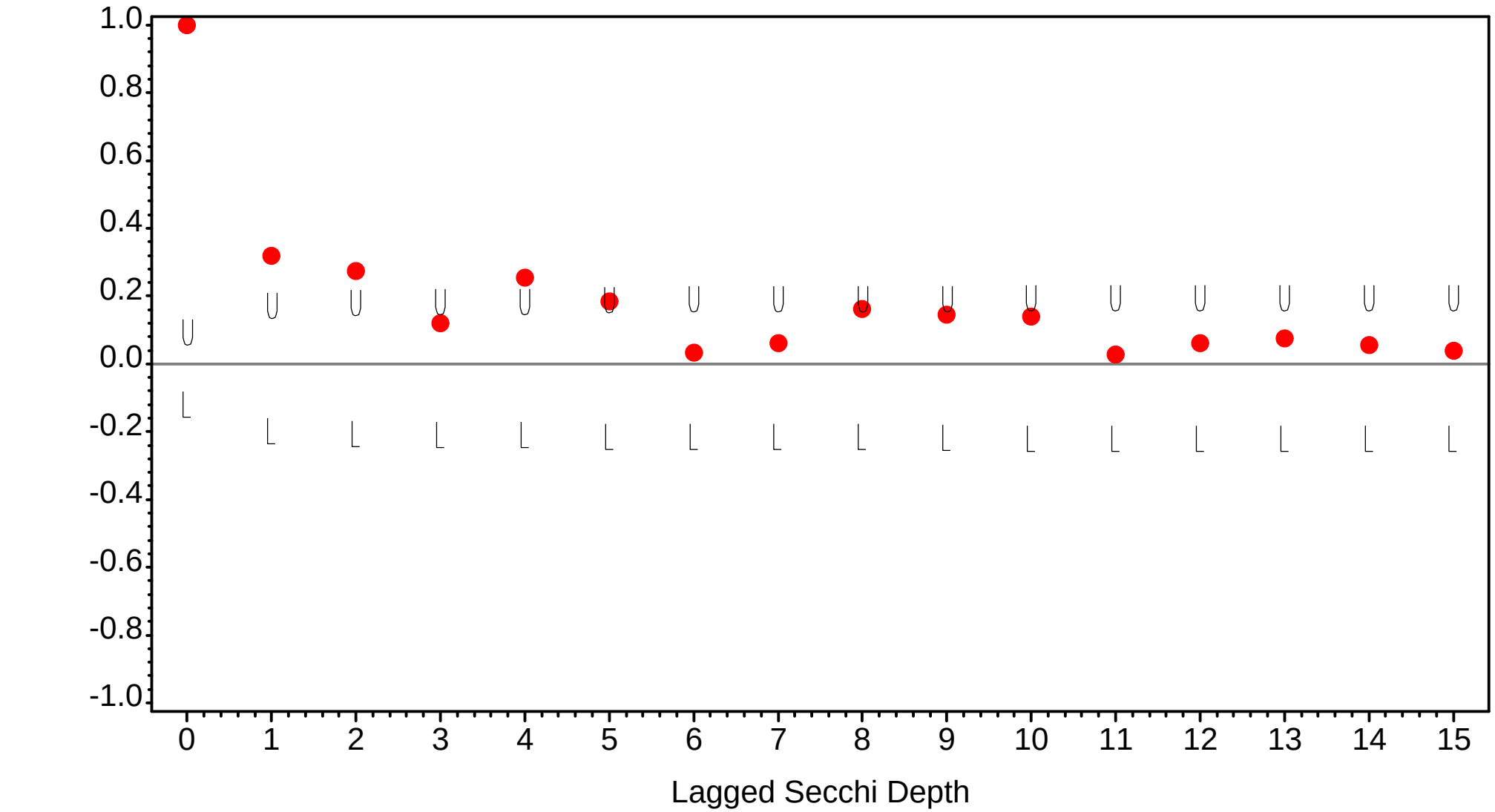
E-1804

S_21FLVEMDHL12 Trends Appendix
Autocorrelation Statistics for Secchi Depth
Adjusted for Seasonal Median and Detrended

Lagged Secchi Depth	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.054	0.107	-0.107
1	0.320	0.093	0.186	-0.186
2	0.274	0.096	0.192	-0.192
3	0.120	0.098	0.196	-0.196
4	0.255	0.099	0.197	-0.197
5	0.185	0.100	0.201	-0.201
6	0.034	0.101	0.203	-0.203
7	0.062	0.102	0.203	-0.203
8	0.162	0.102	0.203	-0.203
9	0.145	0.102	0.205	-0.205
10	0.139	0.103	0.206	-0.206
11	0.027	0.103	0.207	-0.207
12	0.061	0.103	0.207	-0.207
13	0.074	0.104	0.207	-0.207
14	0.055	0.104	0.207	-0.207
15	0.038	0.104	0.208	-0.208

S_21FLVEMDHL12 Trends Appendix

Correlogram for Secchi Depth
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

E-1806

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
1	S_21FLSJWM27010024	S_21FLSJWM27010024	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00
2	S_21FLSJWM27010024	S_21FLSJWM27010024	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
3	S_21FLSJWM27010024	S_21FLSJWM27010024	DO	Dissolved Oxygen	(mg/L)	22	30	2.17
4	S_21FLSJWM27010024	S_21FLSJWM27010024	DOSAT	Dissolved Oxygen	(%)	32	40	1.99
5	S_21FLSJWM27010024	S_21FLSJWM27010024	SALIN	Salinity	(psu)	52	60	-9999.00
6	S_21FLSJWM27010024	S_21FLSJWM27010024	TN	Total Nitrogen	(mg/L)	2	10	0.55
7	S_21FLSJWM27010024	S_21FLSJWM27010024	TP	Total Phosphorus	(mg/L)	12	20	0.80

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
1	-9999.00	N	N	Y	N	-0.059	0.405	0.510	-0.049
2	0.83	Y	Y	Y	Y	0.077	0.256	0.457	231.500
3	1.81	Y	N	N	N	0.042	0.545	0.617	0.007
4	1.69	Y	N	N	N	0.073	0.288	0.376	0.180
5	0.60	Y	Y	Y	Y	0.098	0.147	0.328	0.188
6	1.29	Y	N	N	N	-0.197	0.003	0.020	-0.011
7	1.26	Y	Y	Y	Y	0.091	0.179	0.398	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
1	-0.05882	0.40473	0.51040	-0.049	-0.05900	0.40500	-0.049
2	0.07692	0.25643	0.45689	231.500	0.07692	0.45689	231.500
3	0.04176	0.54495	0.61673	0.007	0.04176	0.54495	0.007
4	0.07271	0.28797	0.37646	0.180	0.07271	0.28797	0.180
5	0.09766	0.14661	0.32812	0.188	0.09766	0.32812	0.188
6	-0.19654	0.00346	0.01963	-0.011	-0.19654	0.00346	-0.011
7	0.08855	0.19036	0.40631	0.001	0.08855	0.40631	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
8	S_21FLSJWM27010037	S_21FLSJWM27010037	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.03
9	S_21FLSJWM27010037	S_21FLSJWM27010037	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
10	S_21FLSJWM27010037	S_21FLSJWM27010037	DO	Dissolved Oxygen	(mg/L)	22	30	2.27
11	S_21FLSJWM27010037	S_21FLSJWM27010037	DOSAT	Dissolved Oxygen	(%)	32	40	2.31
12	S_21FLSJWM27010037	S_21FLSJWM27010037	SALIN	Salinity	(psu)	52	60	-9999.00
13	S_21FLSJWM27010037	S_21FLSJWM27010037	TN	Total Nitrogen	(mg/L)	2	10	0.59
14	S_21FLSJWM27010037	S_21FLSJWM27010037	TP	Total Phosphorus	(mg/L)	12	20	1.44

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
8	0.44	N	Y	N	N	-0.073	0.300	0.427	-0.061
9	0.58	Y	Y	Y	Y	0.236	0.001	0.019	543.286
10	1.72	Y	N	N	N	-0.120	0.086	0.182	-0.021
11	1.91	Y	N	N	N	-0.050	0.474	0.582	0.000
12	0.51	Y	Y	Y	Y	0.244	0.000	0.012	0.411
13	1.36	Y	Y	Y	Y	-0.194	0.005	0.053	-0.013
14	1.82	Y	N	Y	N	0.071	0.315	0.530	0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
8	-0.07338	0.30031	0.42738	-0.061	-0.07300	0.30000	-0.061
9	0.23598	0.00060	0.01877	543.286	0.23598	0.01877	543.286
10	-0.12000	0.08562	0.18235	-0.021	-0.12000	0.08562	-0.021
11	-0.04970	0.47390	0.58186	0.000	-0.04970	0.47390	0.000
12	0.24405	0.00041	0.01172	0.411	0.24405	0.01172	0.411
13	-0.19378	0.00530	0.05323	-0.013	-0.19378	0.05323	-0.013
14	0.07057	0.31497	0.53036	0.001	0.07057	0.31497	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
15	S_21FLSJWM27010579	S_21FLSJWM27010579	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.52
16	S_21FLSJWM27010579	S_21FLSJWM27010579	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
17	S_21FLSJWM27010579	S_21FLSJWM27010579	DO	Dissolved Oxygen	(mg/L)	22	30	1.18
18	S_21FLSJWM27010579	S_21FLSJWM27010579	DOSAT	Dissolved Oxygen	(%)	32	40	0.12
19	S_21FLSJWM27010579	S_21FLSJWM27010579	SALIN	Salinity	(psu)	52	60	0.16
20	S_21FLSJWM27010579	S_21FLSJWM27010579	SD	Secchi Depth	(m)	72	80	-9999.00
21	S_21FLSJWM27010579	S_21FLSJWM27010579	TN	Total Nitrogen	(mg/L)	2	10	-9999.00

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
15	0.78	Y	N	N	N	0.185	0.000	0.009	0.019
16	0.91	Y	Y	Y	Y	0.141	0.002	0.118	3.633
17	1.48	Y	N	N	N	-0.080	0.082	0.212	-0.020
18	0.83	Y	N	N	N	-0.033	0.717	0.776	-0.036
19	-9999.00	N	N	N	N	0.179	0.000	0.044	0.003
20	0.16	N	Y	Y	Y	0.102	0.096	0.185	0.001
21	0.24	N	Y	Y	Y	-0.009	0.851	0.913	-0.001

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
15	0.18508	0.00006	0.00900	0.019	0.18508	0.00006	0.019
16	0.14122	0.00202	0.11766	3.633	0.14122	0.11766	3.633
17	-0.07989	0.08217	0.21224	-0.020	-0.07989	0.08217	-0.020
18	-0.03270	0.71735	0.77620	-0.036	-0.03270	0.71735	-0.036
19	0.17949	0.00008	0.04429	0.003	0.17900	0.00000	0.003
20	0.10197	0.09551	0.18499	0.001	0.10200	0.18500	0.001
21	-0.00915	0.85080	0.91313	-0.001	-0.00900	0.91300	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6
22	S_21FLSJWM27010579	S_21FLSJWM27010579	TP	Total Phosphorus	(mg/L)	12	20	0.11
23	S_21FLVEMDHL03	S_21FLVEMDHL03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.48
24	S_21FLVEMDHL03	S_21FLVEMDHL03	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00
25	S_21FLVEMDHL03	S_21FLVEMDHL03	DO	Dissolved Oxygen	(mg/L)	22	30	2.16
26	S_21FLVEMDHL03	S_21FLVEMDHL03	DOSAT	Dissolved Oxygen	(%)	32	40	1.59
27	S_21FLVEMDHL03	S_21FLVEMDHL03	SALIN	Salinity	(psu)	52	60	-9999.00
28	S_21FLVEMDHL03	S_21FLVEMDHL03	SD	Secchi Depth	(m)	72	80	0.10

Obs	dist_12	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_Slope
22	-9999.00	N	Y	N	N	0.141	0.003	0.016	0.000
23	0.50	Y	Y	N	N	0.159	0.019	0.068	0.090
24	0.68	Y	Y	Y	Y	0.098	0.115	0.288	301.600
25	2.07	Y	N	N	N	-0.133	0.034	0.144	-0.019
26	1.36	Y	Y	N	N	0.102	0.107	0.246	0.157
27	0.51	Y	Y	Y	Y	0.089	0.155	0.346	0.143
28	0.50	N	Y	Y	Y	0.066	0.298	0.430	0.000

Obs	adj_Tau	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
22	0.13971	0.00275	0.01624	0.000	0.14100	0.00300	0.000
23	0.15909	0.01921	0.06813	0.090	0.15909	0.01921	0.090
24	0.09802	0.11509	0.28841	301.600	0.09802	0.28841	301.600
25	-0.13290	0.03402	0.14429	-0.019	-0.13290	0.03402	-0.019
26	0.10171	0.10748	0.24640	0.157	0.10171	0.10748	0.157
27	0.08863	0.15472	0.34597	0.143	0.08863	0.34597	0.143
28	0.06636	0.29797	0.42996	0.000	0.06600	0.43000	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
29	S_21FLVEMDHL03	S_21FLVEMDHL03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.15
30	S_21FLVEMDHL03	S_21FLVEMDHL03	TP	Total Phosphorus	(mg/L)	12	20	1.28	0.99
31	S_21FLVEMDHL04	S_21FLVEMDHL04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.67	1.60
32	S_21FLVEMDHL04	S_21FLVEMDHL04	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.27
33	S_21FLVEMDHL04	S_21FLVEMDHL04	DO	Dissolved Oxygen	(mg/L)	22	30	1.90	2.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
29	Y	Y	Y	Y	-0.148	0.036	0.260	-0.017	-0.14839
30	Y	Y	N	N	-0.132	0.057	0.124	-0.001	-0.13170
31	Y	Y	N	N	0.150	0.038	0.109	0.103	0.15026
32	N	Y	Y	Y	0.141	0.033	0.135	357.337	0.14103
33	Y	Y	Y	Y	-0.084	0.213	0.418	-0.014	-0.08367

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
29	0.03597	0.26002	-0.017	-0.14839	0.26002	-0.017
30	0.05689	0.12361	-0.001	-0.13170	0.05689	-0.001
31	0.03776	0.10869	0.103	0.15026	0.03776	0.103
32	0.03319	0.13465	357.337	0.14100	0.13500	357.337
33	0.21280	0.41808	-0.014	-0.08367	0.41808	-0.014

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
34	S_21FLVEMDHL04	S_21FLVEMDHL04	DOSAT	Dissolved Oxygen	(%)	32	40	1.48	1.87
35	S_21FLVEMDHL04	S_21FLVEMDHL04	SALIN	Salinity	(psu)	52	60	-9999.00	0.20
36	S_21FLVEMDHL04	S_21FLVEMDHL04	SD	Secchi Depth	(m)	72	80	-9999.00	1.03
37	S_21FLVEMDHL04	S_21FLVEMDHL04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.75
38	S_21FLVEMDHL04	S_21FLVEMDHL04	TP	Total Phosphorus	(mg/L)	12	20	0.43	1.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
34	Y	Y	Y	Y	0.090	0.188	0.382	0.156	0.08974
35	N	Y	Y	Y	0.153	0.020	0.128	0.254	0.15317
36	Y	Y	N	N	0.109	0.084	0.181	0.000	0.10913
37	Y	Y	Y	Y	0.015	0.858	0.907	0.001	0.01504
38	Y	Y	N	N	-0.115	0.116	0.160	-0.001	-0.12022

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
34	0.18759	0.38162	0.156	0.08974	0.38162	0.156
35	0.01994	0.12793	0.254	0.15300	0.12800	0.254
36	0.08403	0.18091	0.000	0.10913	0.08403	0.000
37	0.85776	0.90700	0.001	0.01504	0.90700	0.001
38	0.09990	0.14340	-0.001	-0.12022	0.09990	-0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
39	S_21FLVEMDHL05	S_21FLVEMDHL05	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.66	0.74
40	S_21FLVEMDHL05	S_21FLVEMDHL05	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.71
41	S_21FLVEMDHL05	S_21FLVEMDHL05	DO	Dissolved Oxygen	(mg/L)	22	30	2.01	2.54
42	S_21FLVEMDHL05	S_21FLVEMDHL05	DOSAT	Dissolved Oxygen	(%)	32	40	1.41	2.00
43	S_21FLVEMDHL05	S_21FLVEMDHL05	SALIN	Salinity	(psu)	52	60	-9999.00	0.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
39	Y	Y	Y	Y	0.145	0.032	0.115	0.086	0.14507
40	Y	Y	Y	Y	0.085	0.174	0.337	182.245	0.08502
41	Y	N	N	N	-0.149	0.017	0.110	-0.023	-0.14929
42	Y	Y	N	N	0.081	0.199	0.362	0.114	0.08126
43	Y	Y	N	N	0.060	0.339	0.502	0.082	0.05987

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
39	0.03182	0.11509	0.086	0.14507	0.11509	0.086
40	0.17411	0.33661	182.245	0.08502	0.33661	182.245
41	0.01704	0.11000	-0.023	-0.14929	0.01704	-0.023
42	0.19863	0.36237	0.114	0.08126	0.19863	0.114
43	0.33872	0.50152	0.082	0.05987	0.33872	0.082

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
44	S_21FLVEMDHL05	S_21FLVEMDHL05	SD	Secchi Depth	(m)	72	80	0.38	1.10
45	S_21FLVEMDHL05	S_21FLVEMDHL05	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.81
46	S_21FLVEMDHL05	S_21FLVEMDHL05	TP	Total Phosphorus	(mg/L)	12	20	0.80	0.83
47	S_21FLVEMDHL06	S_21FLVEMDHL06	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.28	0.01
48	S_21FLVEMDHL06	S_21FLVEMDHL06	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.76

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
44	Y	N	N	N	0.047	0.468	0.545	0.000	0.04654
45	Y	Y	Y	Y	-0.146	0.037	0.227	-0.009	-0.14590
46	Y	Y	N	N	-0.030	0.675	0.690	0.000	-0.02972
47	Y	N	N	N	0.024	0.729	0.758	0.016	0.02423
48	Y	Y	Y	Y	0.105	0.092	0.238	239.000	0.10454

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
44	0.46800	0.54466	0.000	0.04654	0.46800	0.000
45	0.03661	0.22687	-0.009	-0.14590	0.22687	-0.009
46	0.67549	0.68953	0.000	-0.02972	0.67549	0.000
47	0.72880	0.75791	0.016	0.02423	0.72880	0.016
48	0.09156	0.23833	239.000	0.10454	0.23833	239.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
49	S_21FLVEMDHL06	S_21FLVEMDHL06	DO	Dissolved Oxygen	(mg/L)	22	30	2.05	2.52
50	S_21FLVEMDHL06	S_21FLVEMDHL06	DOSAT	Dissolved Oxygen	(%)	32	40	1.25	1.99
51	S_21FLVEMDHL06	S_21FLVEMDHL06	SALIN	Salinity	(psu)	52	60	-9999.00	0.74
52	S_21FLVEMDHL06	S_21FLVEMDHL06	SD	Secchi Depth	(m)	72	80	0.69	0.94
53	S_21FLVEMDHL06	S_21FLVEMDHL06	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
49	Y	N	N	N	-0.116	0.062	0.197	-0.017	-0.11576
50	Y	Y	N	N	0.080	0.201	0.322	0.088	0.08045
51	Y	Y	Y	Y	0.090	0.143	0.319	0.138	0.09026
52	Y	Y	Y	Y	0.047	0.458	0.500	0.000	0.04707
53	Y	Y	Y	Y	-0.126	0.072	0.357	-0.011	-0.12577

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
49	0.06243	0.19679	-0.017	-0.11576	0.06243	-0.017
50	0.20088	0.32170	0.088	0.08045	0.20088	0.088
51	0.14300	0.31855	0.138	0.09026	0.31855	0.138
52	0.45795	0.50041	0.000	0.04707	0.50041	0.000
53	0.07193	0.35680	-0.011	-0.12577	0.35680	-0.011

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
54	S_21FLVEMDHL06	S_21FLVEMDHL06	TP	Total Phosphorus	(mg/L)	12	20	1.37	0.87
55	S_21FLVEMDHL07	S_21FLVEMDHL07	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.63	0.86
56	S_21FLVEMDHL07	S_21FLVEMDHL07	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.63
57	S_21FLVEMDHL07	S_21FLVEMDHL07	DO	Dissolved Oxygen	(mg/L)	22	30	0.95	2.67
58	S_21FLVEMDHL07	S_21FLVEMDHL07	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	1.44

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
54	Y	Y	N	N	-0.070	0.311	0.352	-0.001	-0.07004
55	Y	Y	N	N	-0.072	0.299	0.400	-0.064	-0.07206
56	Y	Y	Y	Y	0.087	0.169	0.316	185.539	0.08720
57	Y	N	Y	N	-0.184	0.003	0.046	-0.029	-0.18418
58	Y	Y	N	N	0.008	0.910	0.929	0.000	0.00826

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
54	0.31141	0.35163	-0.001	-0.07004	0.31141	-0.001
55	0.29904	0.39997	-0.064	-0.07206	0.29904	-0.064
56	0.16902	0.31573	185.539	0.08720	0.31573	185.539
57	0.00342	0.04576	-0.029	-0.18418	0.00342	-0.029
58	0.91015	0.92863	0.000	0.00826	0.91015	0.000

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
59	S_21FLVEMDHL07	S_21FLVEMDHL07	SALIN	Salinity	(psu)	52	60	-9999.00	0.71
60	S_21FLVEMDHL07	S_21FLVEMDHL07	SD	Secchi Depth	(m)	72	80	0.57	1.17
61	S_21FLVEMDHL07	S_21FLVEMDHL07	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.36
62	S_21FLVEMDHL07	S_21FLVEMDHL07	TP	Total Phosphorus	(mg/L)	12	20	1.44	0.84
63	S_21FLVEMDHL08	S_21FLVEMDHL08	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.14	1.34

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
59	Y	Y	Y	Y	0.073	0.250	0.428	0.107	0.07253
60	Y	Y	N	N	0.025	0.714	0.742	0.000	0.02457
61	Y	Y	Y	Y	-0.185	0.009	0.183	-0.017	-0.18331
62	Y	Y	N	N	0.002	1.000	1.000	0.000	0.00159
63	Y	Y	Y	Y	-0.071	0.214	0.403	-0.051	-0.07149

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
59	0.25004	0.42819	0.107	0.07253	0.42819	0.107
60	0.71425	0.74214	0.000	0.02457	0.71425	0.000
61	0.00999	0.18667	-0.017	-0.18331	0.18667	-0.017
62	1.00000	1.00000	0.000	0.00159	1.00000	0.000
63	0.21416	0.40266	-0.051	-0.07149	0.40266	-0.051

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
64	S_21FLVEMDHL08	S_21FLVEMDHL08	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.59
65	S_21FLVEMDHL08	S_21FLVEMDHL08	DO	Dissolved Oxygen	(mg/L)	22	30	0.75	2.49
66	S_21FLVEMDHL08	S_21FLVEMDHL08	DOSAT	Dissolved Oxygen	(%)	32	40	0.22	1.87
67	S_21FLVEMDHL08	S_21FLVEMDHL08	SALIN	Salinity	(psu)	52	60	-9999.00	0.65
68	S_21FLVEMDHL08	S_21FLVEMDHL08	SD	Secchi Depth	(m)	72	80	0.27	2.03

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
64	Y	Y	Y	Y	0.120	0.020	0.160	254.845	0.11995
65	Y	N	N	N	-0.232	0.000	0.009	-0.042	-0.23164
66	Y	Y	N	N	-0.152	0.003	0.037	-0.244	-0.15249
67	Y	Y	Y	Y	0.136	0.008	0.129	0.193	0.13555
68	Y	Y	Y	Y	0.143	0.004	0.056	0.007	0.14263

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
64	0.01993	0.16007	254.845	0.11995	0.16007	254.845
65	0.00001	0.00939	-0.042	-0.23164	0.00001	-0.042
66	0.00335	0.03715	-0.244	-0.15249	0.00335	-0.244
67	0.00785	0.12892	0.193	0.13555	0.12892	0.193
68	0.00378	0.05556	0.007	0.14263	0.05556	0.007

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
69	S_21FLVEMDHL08	S_21FLVEMDHL08	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
70	S_21FLVEMDHL08	S_21FLVEMDHL08	TP	Total Phosphorus	(mg/L)	12	20	1.44	1.44
71	S_21FLVEMDHL09	S_21FLVEMDHL09	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.80	1.15
72	S_21FLVEMDHL09	S_21FLVEMDHL09	COND	Specific Conductivity	(umhos/cm)	62	70	0.08	0.52
73	S_21FLVEMDHL09	S_21FLVEMDHL09	DO	Dissolved Oxygen	(mg/L)	22	30	1.27	2.71
74	S_21FLVEMDHL09	S_21FLVEMDHL09	DOSAT	Dissolved Oxygen	(%)	32	40	0.70	1.79

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
69	Y	Y	Y	Y	0.028	0.718	0.811	0.003	0.02768
70	Y	Y	Y	Y	-0.190	0.007	0.042	-0.002	-0.19024
71	Y	Y	N	N	-0.127	0.021	0.085	-0.096	-0.12661
72	Y	Y	Y	Y	0.096	0.054	0.237	198.000	0.09624
73	Y	N	N	N	-0.220	0.000	0.020	-0.044	-0.21971
74	Y	Y	Y	Y	-0.050	0.319	0.474	-0.033	-0.05033

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
69	0.71842	0.81125	0.003	0.02768	0.81125	0.003
70	0.00697	0.04239	-0.002	-0.19024	0.04239	-0.002
71	0.02055	0.08517	-0.096	-0.12661	0.02055	-0.096
72	0.05369	0.23662	198.000	0.09624	0.23662	198.000
73	0.00001	0.02045	-0.044	-0.21971	0.00001	-0.044
74	0.31942	0.47358	-0.033	-0.05033	0.47358	-0.033

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
75	S_21FLVEMDHL09	S_21FLVEMDHL09	SALIN	Salinity	(psu)	52	60	-9999.00	0.64
76	S_21FLVEMDHL09	S_21FLVEMDHL09	SD	Secchi Depth	(m)	72	80	-9999.00	1.87
77	S_21FLVEMDHL09	S_21FLVEMDHL09	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.23
78	S_21FLVEMDHL09	S_21FLVEMDHL09	TP	Total Phosphorus	(mg/L)	12	20	1.00	0.92
79	S_21FLVEMDHL10	S_21FLVEMDHL10	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.27	0.96

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
75	Y	Y	Y	Y	0.117	0.019	0.176	0.144	0.11657
76	Y	Y	N	N	0.211	0.000	0.006	0.009	0.21061
77	Y	Y	Y	Y	-0.102	0.133	0.421	-0.010	-0.10176
78	Y	N	Y	N	-0.204	0.002	0.037	-0.002	-0.20424
79	Y	Y	N	N	-0.182	0.002	0.046	-0.117	-0.18198

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
75	0.01858	0.17621	0.144	0.11657	0.17621	0.144
76	0.00002	0.00602	0.009	0.21061	0.00002	0.009
77	0.13329	0.42067	-0.010	-0.10176	0.42067	-0.010
78	0.00203	0.03704	-0.002	-0.20424	0.00203	-0.002
79	0.00179	0.04648	-0.117	-0.18198	0.00179	-0.117

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
80	S_21FLVEMDHL10	S_21FLVEMDHL10	COND	Specific Conductivity	(umhos/cm)	62	70	0.01	0.50
81	S_21FLVEMDHL10	S_21FLVEMDHL10	DO	Dissolved Oxygen	(mg/L)	22	30	1.18	2.57
82	S_21FLVEMDHL10	S_21FLVEMDHL10	DOSAT	Dissolved Oxygen	(%)	32	40	0.91	1.88
83	S_21FLVEMDHL10	S_21FLVEMDHL10	SALIN	Salinity	(psu)	52	60	-9999.00	0.81
84	S_21FLVEMDHL10	S_21FLVEMDHL10	SD	Secchi Depth	(m)	72	80	-9999.00	1.83

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
80	N	Y	Y	Y	0.179	0.001	0.054	360.000	0.17869
81	Y	N	N	N	-0.275	0.000	0.009	-0.063	-0.27487
82	Y	Y	N	N	-0.206	0.000	0.020	-0.446	-0.20622
83	Y	Y	Y	Y	0.206	0.000	0.036	0.271	0.20579
84	Y	Y	N	N	0.246	0.000	0.004	0.015	0.24589

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
80	0.00082	0.05405	360.000	0.17900	0.05400	360.000
81	0.00000	0.00913	-0.063	-0.27487	0.00000	-0.063
82	0.00014	0.01957	-0.446	-0.20622	0.00014	-0.446
83	0.00010	0.03558	0.271	0.20579	0.03558	0.271
84	0.00000	0.00429	0.015	0.24589	0.00000	0.015

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
85	S_21FLVEMDHL10	S_21FLVEMDHL10	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.02
86	S_21FLVEMDHL10	S_21FLVEMDHL10	TP	Total Phosphorus	(mg/L)	12	20	1.66	0.56
87	S_21FLVEMDHL11	S_21FLVEMDHL11	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	0.28	0.30
88	S_21FLVEMDHL11	S_21FLVEMDHL11	COND	Specific Conductivity	(umhos/cm)	62	70	-9999.00	0.59
89	S_21FLVEMDHL11	S_21FLVEMDHL11	DO	Dissolved Oxygen	(mg/L)	22	30	2.80	2.60

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
85	Y	Y	Y	Y	0.027	0.731	0.835	0.005	0.02745
86	Y	Y	N	N	-0.322	0.000	0.002	-0.004	-0.32156
87	N	Y	N	N	-0.105	0.062	0.106	-0.078	-0.10526
88	Y	Y	Y	Y	0.091	0.075	0.282	174.688	0.09076
89	Y	N	N	N	0.078	0.128	0.267	0.013	0.07838

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
85	0.73102	0.83542	0.005	0.02745	0.83542	0.005
86	0.00001	0.00156	-0.004	-0.32156	0.00001	-0.004
87	0.06191	0.10624	-0.078	-0.10500	0.06200	-0.078
88	0.07483	0.28160	174.688	0.09076	0.28160	174.688
89	0.12772	0.26689	0.013	0.07838	0.12772	0.013

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
90	S_21FLVEMDHL11	S_21FLVEMDHL11	DOSAT	Dissolved Oxygen	(%)	32	40	1.80	2.70
91	S_21FLVEMDHL11	S_21FLVEMDHL11	SALIN	Salinity	(psu)	52	60	-9999.00	0.51
92	S_21FLVEMDHL11	S_21FLVEMDHL11	SD	Secchi Depth	(m)	72	80	-9999.00	1.31
93	S_21FLVEMDHL11	S_21FLVEMDHL11	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.10
94	S_21FLVEMDHL11	S_21FLVEMDHL11	TP	Total Phosphorus	(mg/L)	12	20	0.20	-9999.00
95	S_21FLVEMDHL12	S_21FLVEMDHL12	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	1.42	0.95

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
90	Y	N	N	N	0.219	0.000	0.007	0.398	0.21873
91	Y	Y	Y	Y	0.112	0.027	0.192	0.146	0.11214
92	Y	Y	Y	Y	0.069	0.171	0.351	0.000	0.06942
93	Y	Y	Y	Y	-0.157	0.021	0.211	-0.017	-0.15603
94	N	N	N	N	-0.230	0.001	0.007	-0.002	-0.23025
95	Y	Y	N	N	-0.049	0.376	0.468	-0.028	-0.04873

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
90	0.00004	0.00671	0.398	0.21873	0.00004	0.398
91	0.02662	0.19155	0.146	0.11214	0.19155	0.146
92	0.17136	0.35079	0.000	0.06942	0.35079	0.000
93	0.02254	0.21566	-0.017	-0.15603	0.21566	-0.017
94	0.00051	0.00713	-0.002	-0.23000	0.00100	-0.002
95	0.37577	0.46804	-0.028	-0.04873	0.37577	-0.028

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
96	S_21FLVEMDHL12	S_21FLVEMDHL12	COND	Specific Conductivity	(umhos/cm)	62	70	0.03	0.66
97	S_21FLVEMDHL12	S_21FLVEMDHL12	DO	Dissolved Oxygen	(mg/L)	22	30	2.25	2.15
98	S_21FLVEMDHL12	S_21FLVEMDHL12	DOSAT	Dissolved Oxygen	(%)	32	40	0.63	2.15
99	S_21FLVEMDHL12	S_21FLVEMDHL12	SALIN	Salinity	(psu)	52	60	-9999.00	0.56
100	S_21FLVEMDHL12	S_21FLVEMDHL12	SD	Secchi Depth	(m)	72	80	0.08	1.06
101	S_21FLVEMDHL12	S_21FLVEMDHL12	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.36

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
96	Y	Y	Y	Y	0.104	0.036	0.184	191.632	0.10362
97	Y	N	N	N	0.236	0.000	0.000	0.042	0.23569
98	Y	N	N	N	0.354	0.000	0.000	0.769	0.35398
99	Y	Y	Y	Y	0.123	0.012	0.124	0.151	0.12319
100	Y	Y	Y	Y	-0.002	0.983	0.988	0.000	-0.00155
101	N	Y	Y	Y	-0.222	0.001	0.050	-0.016	-0.22034

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
96	0.03571	0.18354	191.632	0.10362	0.18354	191.632
97	0.00000	0.00048	0.042	0.23569	0.00000	0.042
98	0.00000	0.00005	0.769	0.35398	0.00000	0.769
99	0.01225	0.12440	0.151	0.12319	0.12440	0.151
100	0.98312	0.98840	0.000	-0.00155	0.98840	0.000
101	0.00072	0.05151	-0.016	-0.22200	0.05000	-0.016

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
102	S_21FLVEMDHL12	S_21FLVEMDHL12	TP	Total Phosphorus	(mg/L)	12	20	1.63	1.31
103	S_21FLVEMDTR01	S_21FLVEMDTR01	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	1.38
104	S_21FLVEMDTR01	S_21FLVEMDTR01	COND	Specific Conductivity	(umhos/cm)	62	70	0.23	0.08
105	S_21FLVEMDTR01	S_21FLVEMDTR01	DO	Dissolved Oxygen	(mg/L)	22	30	2.47	2.09
106	S_21FLVEMDTR01	S_21FLVEMDTR01	DOSAT	Dissolved Oxygen	(%)	32	40	2.56	2.11
107	S_21FLVEMDTR01	S_21FLVEMDTR01	SALIN	Salinity	(psu)	52	60	0.09	0.29

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
102	Y	N	N	N	-0.159	0.012	0.021	-0.002	-0.15854
103	Y	Y	Y	Y	0.074	0.356	0.527	0.052	0.07383
104	N	Y	Y	Y	0.090	0.212	0.347	225.098	0.08958
105	Y	N	N	N	-0.099	0.163	0.243	-0.023	-0.09906
106	Y	N	N	N	0.046	0.549	0.573	0.109	0.04571
107	N	Y	Y	Y	0.155	0.028	0.107	0.318	0.15482

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
102	0.01158	0.02087	-0.002	-0.15854	0.01158	-0.002
103	0.35568	0.52706	0.052	0.07383	0.52706	0.052
104	0.21156	0.34660	225.098	0.09000	0.34700	225.098
105	0.16270	0.24297	-0.023	-0.09906	0.16270	-0.023
106	0.54949	0.57310	0.109	0.04571	0.54949	0.109
107	0.02802	0.10656	0.318	0.15500	0.10700	0.318

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
108	S_21FLVEMDTR01	S_21FLVEMDTR01	SD	Secchi Depth	(m)	72	80	-9999.00	-9999.00
109	S_21FLVEMDTR01	S_21FLVEMDTR01	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.04
110	S_21FLVEMDTR01	S_21FLVEMDTR01	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	0.45
111	S_21FLVEMDTR02	S_21FLVEMDTR02	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.33
112	S_21FLVEMDTR02	S_21FLVEMDTR02	COND	Specific Conductivity	(umhos/cm)	62	70	0.09	0.79
113	S_21FLVEMDTR02	S_21FLVEMDTR02	DO	Dissolved Oxygen	(mg/L)	22	30	2.16	2.35

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
108	N	Y	N	N	0.192	0.005	0.044	0.011	0.19225
109	Y	Y	N	N	-0.161	0.045	0.205	-0.029	-0.16145
110	N	N	N	N	0.021	0.810	0.860	0.000	0.02128
111	N	Y	N	N	0.049	0.531	0.675	0.023	0.04851
112	Y	Y	Y	Y	0.017	0.821	0.864	6.873	0.01671
113	Y	Y	N	N	-0.022	0.763	0.834	-0.004	-0.02159

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
108	0.00486	0.04449	0.011	0.19200	0.00500	0.011
109	0.04497	0.20500	-0.029	-0.16145	0.04497	-0.029
110	0.80954	0.86021	0.000	0.02100	0.81000	0.000
111	0.53077	0.67536	0.023	0.04900	0.53100	0.023
112	0.82111	0.86399	6.874	0.01671	0.86399	6.874
113	0.76267	0.83430	-0.004	-0.02159	0.76267	-0.004

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
114	S_21FLVEMDTR02	S_21FLVEMDTR02	DOSAT	Dissolved Oxygen	(%)	32	40	2.00	2.11
115	S_21FLVEMDTR02	S_21FLVEMDTR02	SALIN	Salinity	(psu)	52	60	-9999.00	0.98
116	S_21FLVEMDTR02	S_21FLVEMDTR02	SD	Secchi Depth	(m)	72	80	0.61	1.08
117	S_21FLVEMDTR02	S_21FLVEMDTR02	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.88
118	S_21FLVEMDTR02	S_21FLVEMDTR02	TP	Total Phosphorus	(mg/L)	12	20	0.10	1.51
119	S_21FLVEMDTR03	S_21FLVEMDTR03	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
114	Y	Y	Y	Y	0.049	0.487	0.514	0.154	0.04892
115	Y	Y	Y	Y	0.070	0.304	0.474	0.025	0.06955
116	Y	Y	N	N	0.064	0.330	0.509	0.000	0.06415
117	Y	Y	N	N	0.017	0.845	0.901	0.002	0.01724
118	Y	Y	Y	Y	0.050	0.519	0.695	0.000	0.05031
119	N	Y	N	N	0.078	0.299	0.360	0.020	0.07599

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
114	0.48687	0.51426	0.154	0.04892	0.51426	0.154
115	0.30398	0.47368	0.025	0.06955	0.47368	0.025
116	0.32954	0.50893	0.000	0.06415	0.32954	0.000
117	0.84540	0.90084	0.002	0.01724	0.84540	0.002
118	0.51900	0.69540	0.000	0.05031	0.69540	0.000
119	0.31036	0.36979	0.020	0.07800	0.29900	0.020

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
120	S_21FLVEMDTR03	S_21FLVEMDTR03	COND	Specific Conductivity	(umhos/cm)	62	70	0.82	1.12
121	S_21FLVEMDTR03	S_21FLVEMDTR03	DO	Dissolved Oxygen	(mg/L)	22	30	0.25	0.82
122	S_21FLVEMDTR03	S_21FLVEMDTR03	DOSAT	Dissolved Oxygen	(%)	32	40	-9999.00	0.70
123	S_21FLVEMDTR03	S_21FLVEMDTR03	SALIN	Salinity	(psu)	52	60	0.73	1.54
124	S_21FLVEMDTR03	S_21FLVEMDTR03	SD	Secchi Depth	(m)	72	80	-9999.00	1.54
125	S_21FLVEMDTR03	S_21FLVEMDTR03	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	1.48

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
120	Y	N	Y	N	0.106	0.122	0.158	10.031	0.10598
121	Y	Y	N	N	-0.170	0.012	0.092	-0.059	-0.16974
122	Y	Y	N	N	-0.175	0.011	0.082	-0.515	-0.17479
123	Y	N	Y	N	0.092	0.169	0.290	0.004	0.09207
124	Y	Y	Y	Y	0.094	0.155	0.427	0.007	0.09387
125	Y	Y	N	N	-0.031	0.706	0.812	-0.002	-0.03145

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
120	0.12166	0.15796	10.031	0.10598	0.12166	10.031
121	0.01188	0.09239	-0.059	-0.16974	0.01188	-0.059
122	0.01113	0.08250	-0.515	-0.17479	0.01113	-0.515
123	0.16857	0.29012	0.004	0.09207	0.16857	0.004
124	0.15479	0.42738	0.007	0.09387	0.42738	0.007
125	0.70576	0.81201	-0.002	-0.03145	0.70576	-0.002

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
126	S_21FLVEMDTR03	S_21FLVEMDTR03	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00
127	S_21FLVEMDTR04	S_21FLVEMDTR04	CHLAC	Corrected Chlorophyll-a	(ug/L)	42	50	-9999.00	0.44
128	S_21FLVEMDTR04	S_21FLVEMDTR04	COND	Specific Conductivity	(umhos/cm)	62	70	0.19	-9999.00
129	S_21FLVEMDTR04	S_21FLVEMDTR04	DO	Dissolved Oxygen	(mg/L)	22	30	1.42	2.33
130	S_21FLVEMDTR04	S_21FLVEMDTR04	DOSAT	Dissolved Oxygen	(%)	32	40	0.81	1.77
131	S_21FLVEMDTR04	S_21FLVEMDTR04	SALIN	Salinity	(psu)	52	60	-9999.00	-9999.00

Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
126	N	N	N	N	-0.023	0.786	0.871	0.000	-0.02254
127	N	Y	N	N	-0.142	0.074	0.219	-0.011	-0.14223
128	N	N	Y	N	0.085	0.243	0.291	2.029	0.08500
129	Y	Y	N	N	-0.040	0.591	0.737	-0.008	-0.03968
130	Y	Y	N	N	0.027	0.725	0.823	0.034	0.02716
131	N	Y	Y	Y	0.123	0.076	0.159	0.001	0.12322

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
126	0.78614	0.87138	0.000	-0.02300	0.78600	0.000
127	0.07413	0.21912	-0.011	-0.14200	0.07400	-0.011
128	0.24287	0.29095	2.029	0.08500	0.24300	2.029
129	0.59098	0.73685	-0.008	-0.03968	0.59098	-0.008
130	0.72528	0.82342	0.034	0.02716	0.72528	0.034
131	0.07617	0.15857	0.001	0.12300	0.15900	0.001

Obs	basin	station	var	ax1	ax2	display_start	display_stop	dist_6	dist_12
132	S_21FLVEMDTR04	S_21FLVEMDTR04	SD	Secchi Depth	(m)	72	80	-9999.00	0.68
133	S_21FLVEMDTR04	S_21FLVEMDTR04	TN	Total Nitrogen	(mg/L)	2	10	-9999.00	0.31
134	S_21FLVEMDTR04	S_21FLVEMDTR04	TP	Total Phosphorus	(mg/L)	12	20	-9999.00	-9999.00

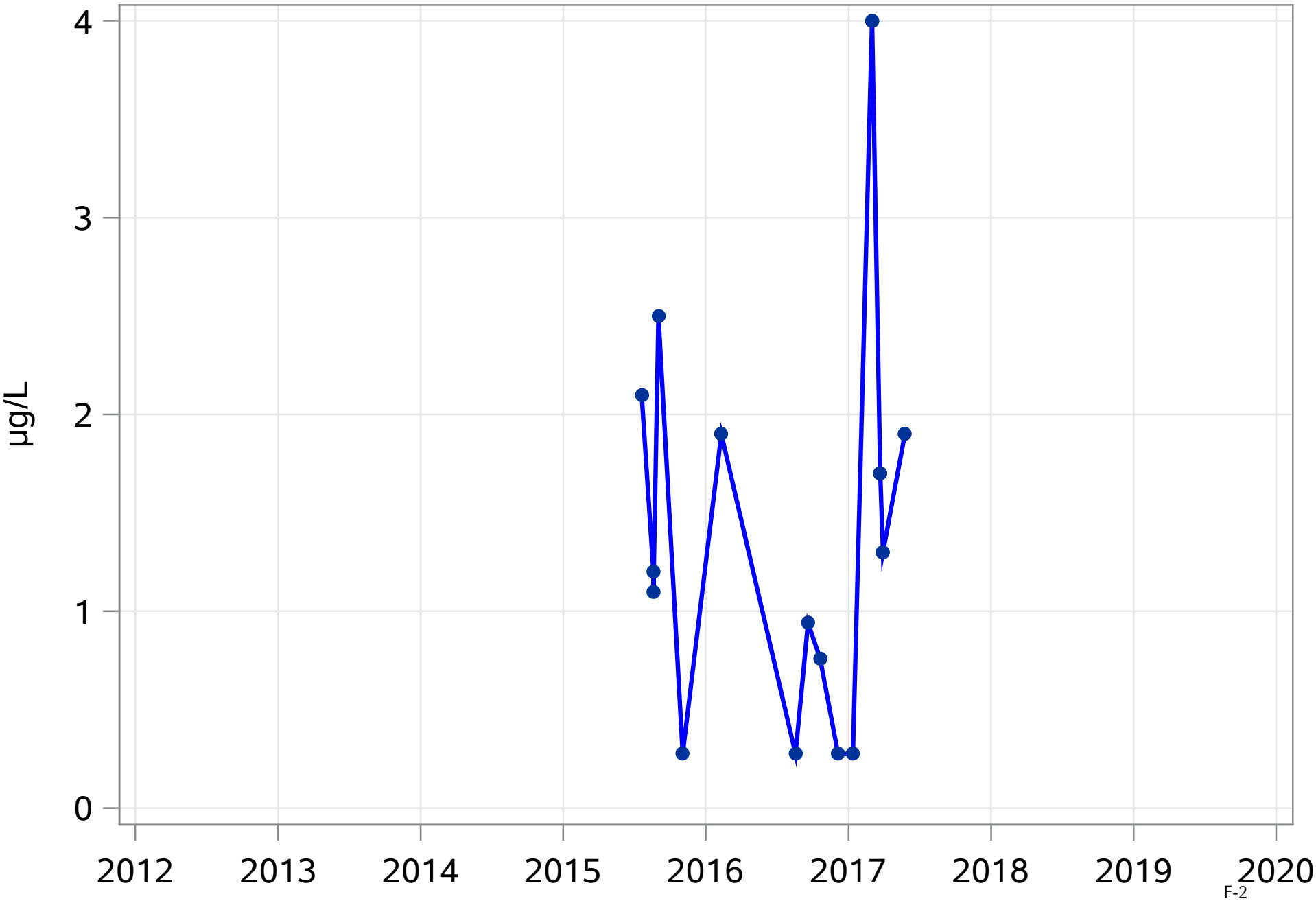
Obs	seasonality	corr_1	corr_2	autocorrelation	unadj_Tau	unadj_Pwithout	unadj_Pwith	unadj_ Slope	adj_Tau
132	Y	Y	N	N	0.194	0.005	0.046	0.009	0.19383
133	N	Y	N	N	-0.241	0.003	0.076	-0.016	-0.24070
134	N	N	N	N	0.040	0.632	0.786	0.000	0.04009

Obs	adj_Pwithout	adj_Pwith	adj_Slope	Tau	p	slope
132	0.00462	0.04647	0.009	0.19383	0.00462	0.009
133	0.00315	0.07596	-0.016	-0.24100	0.00300	-0.016
134	0.63152	0.78567	0.000	0.04000	0.63200	0.000

Appendix B-F
Assessment of 2012-June 2019 Data for Impairment

2645 - Mizners Branch

Nutrients (Total Chlorphyll-a)

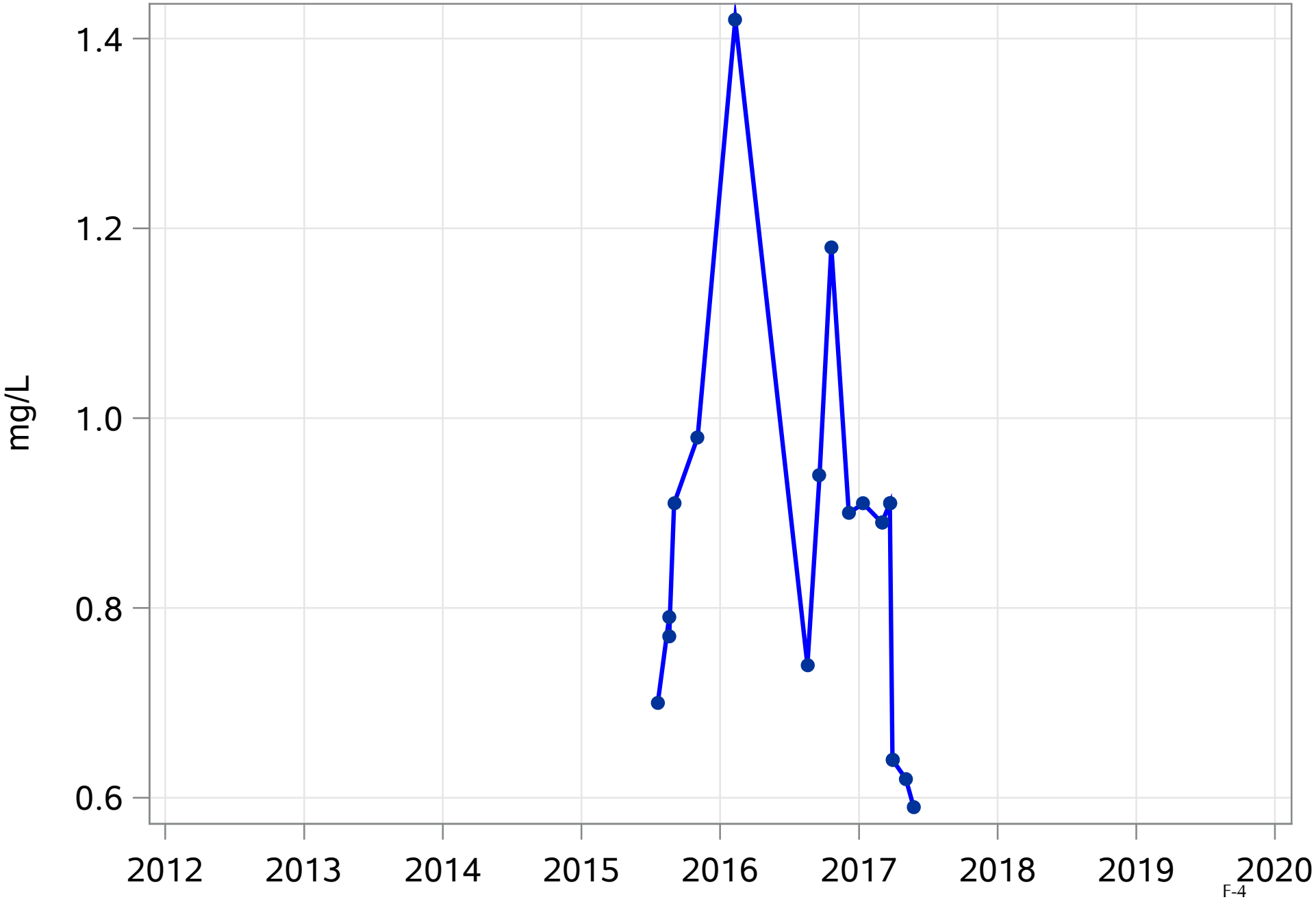


2645 - Mizners Branch
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2645	2015	1.1
2	2645	2016	0.6
3	2645	2017	1.6

2645 - Mizners Branch

Nutrients (Total Nitrogen)

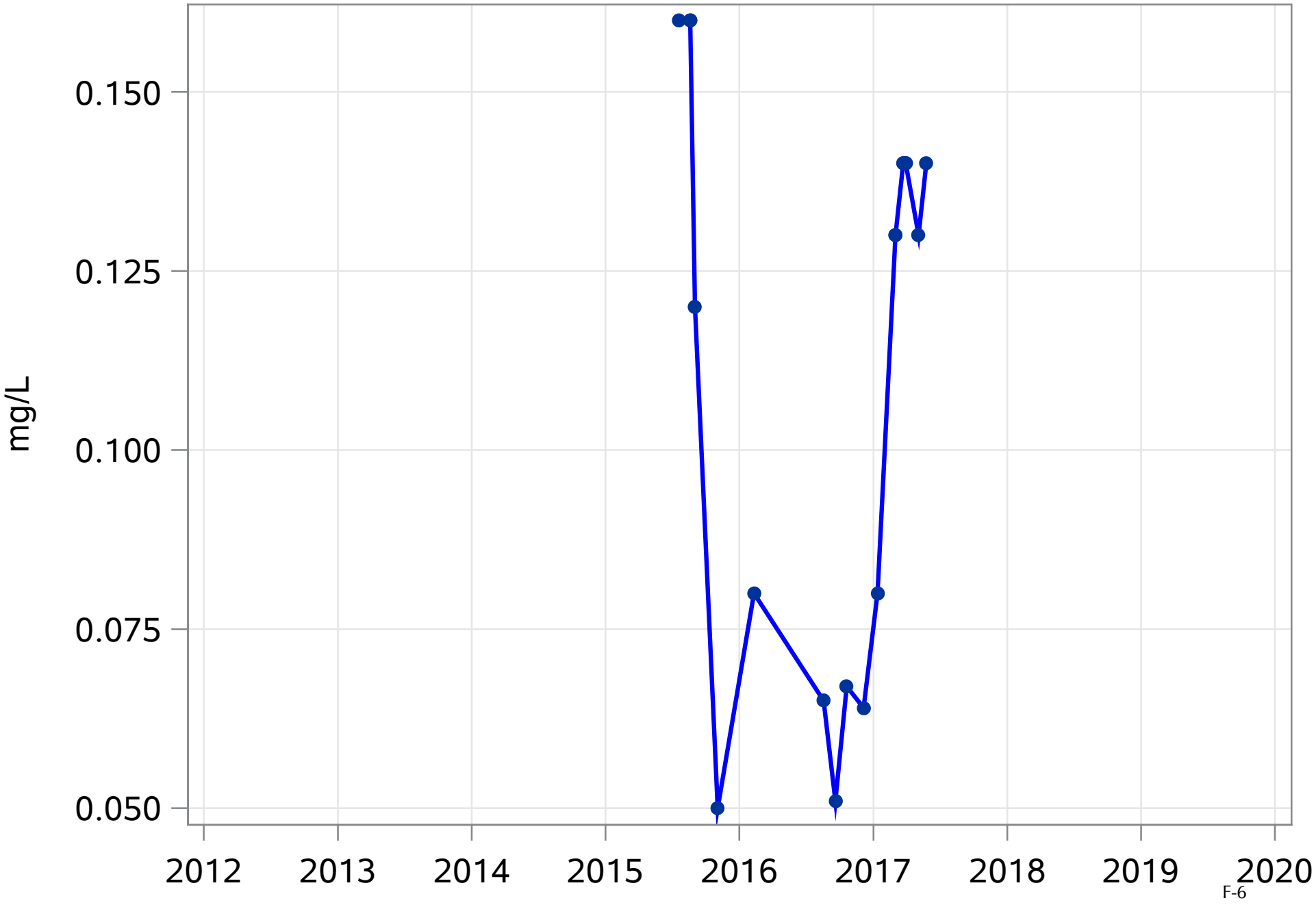


2645 - Mizners Branch
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2645	2015	0.82
2	2645	2016	1.01
3	2645	2017	0.76

2645 - Mizners Branch

Nutrients (Total Phosphorus)

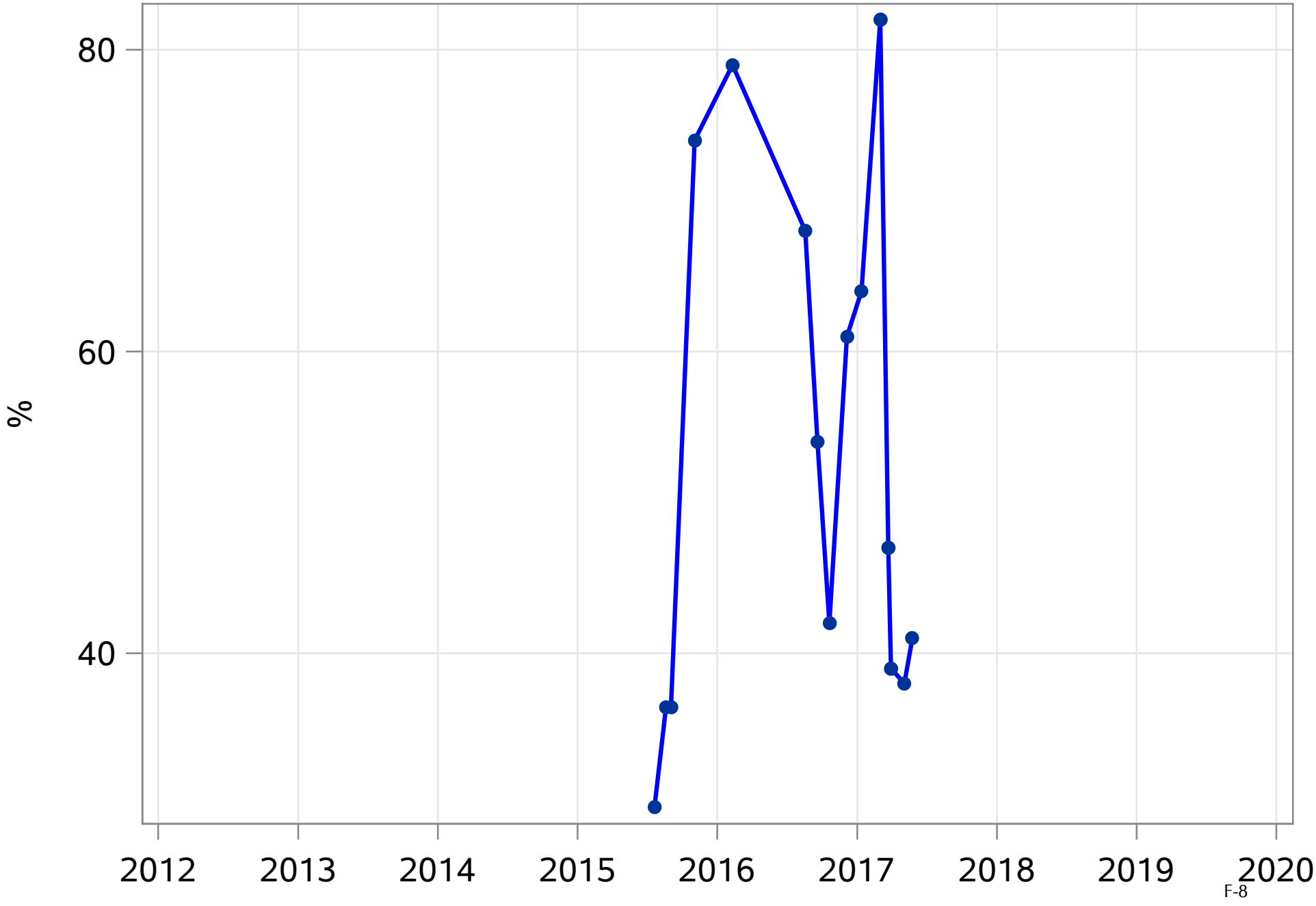


2645 - Mizners Branch
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2645	2015	0.120
2	2645	2016	0.065
3	2645	2017	0.128

2645 - Mizners Branch

Dissolved Oxygen

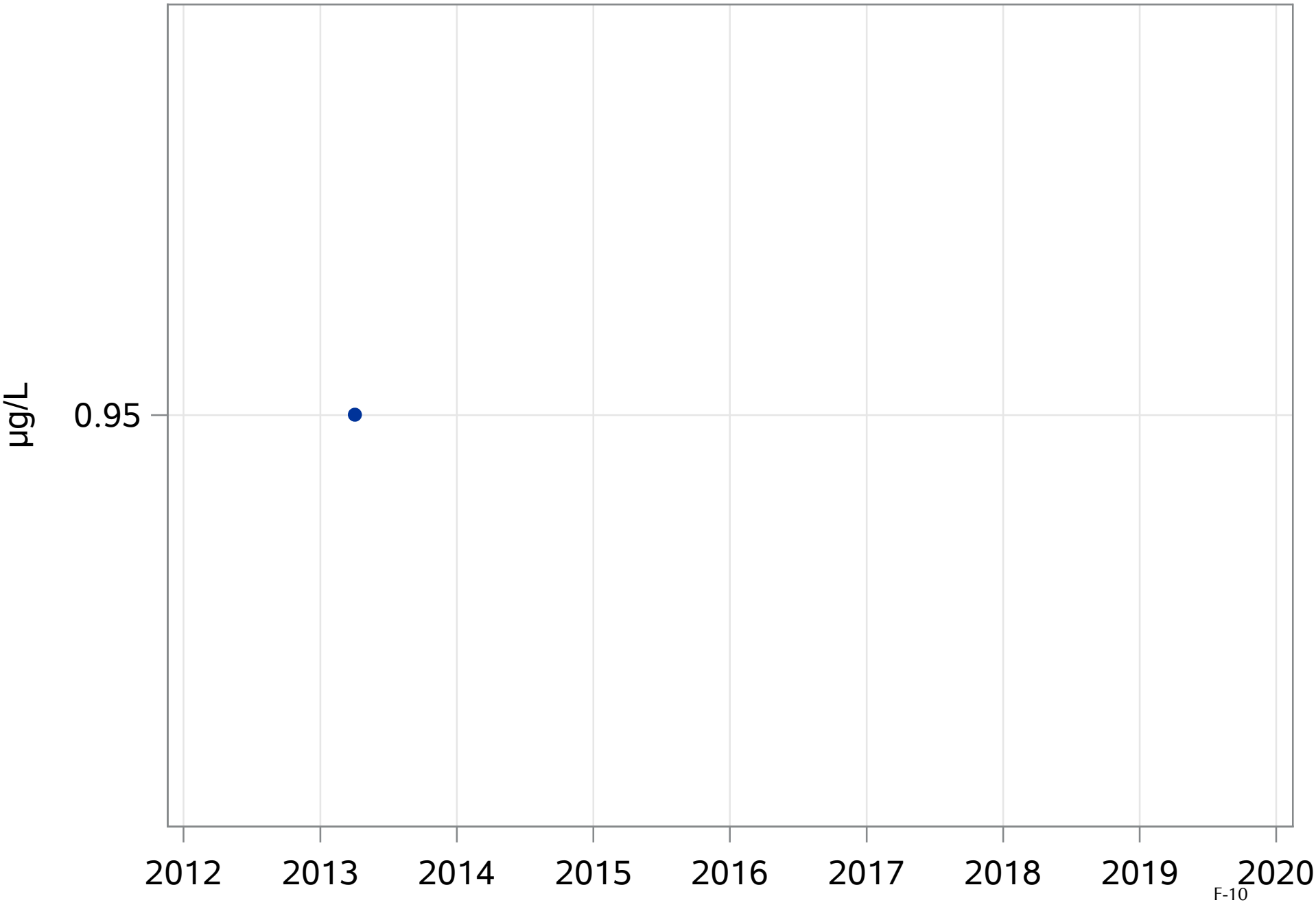


2645 - Mizners Branch
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	3	18	3	18

2646 - Little Tomoka River

Nutrients (Total Chlorphyll-a)

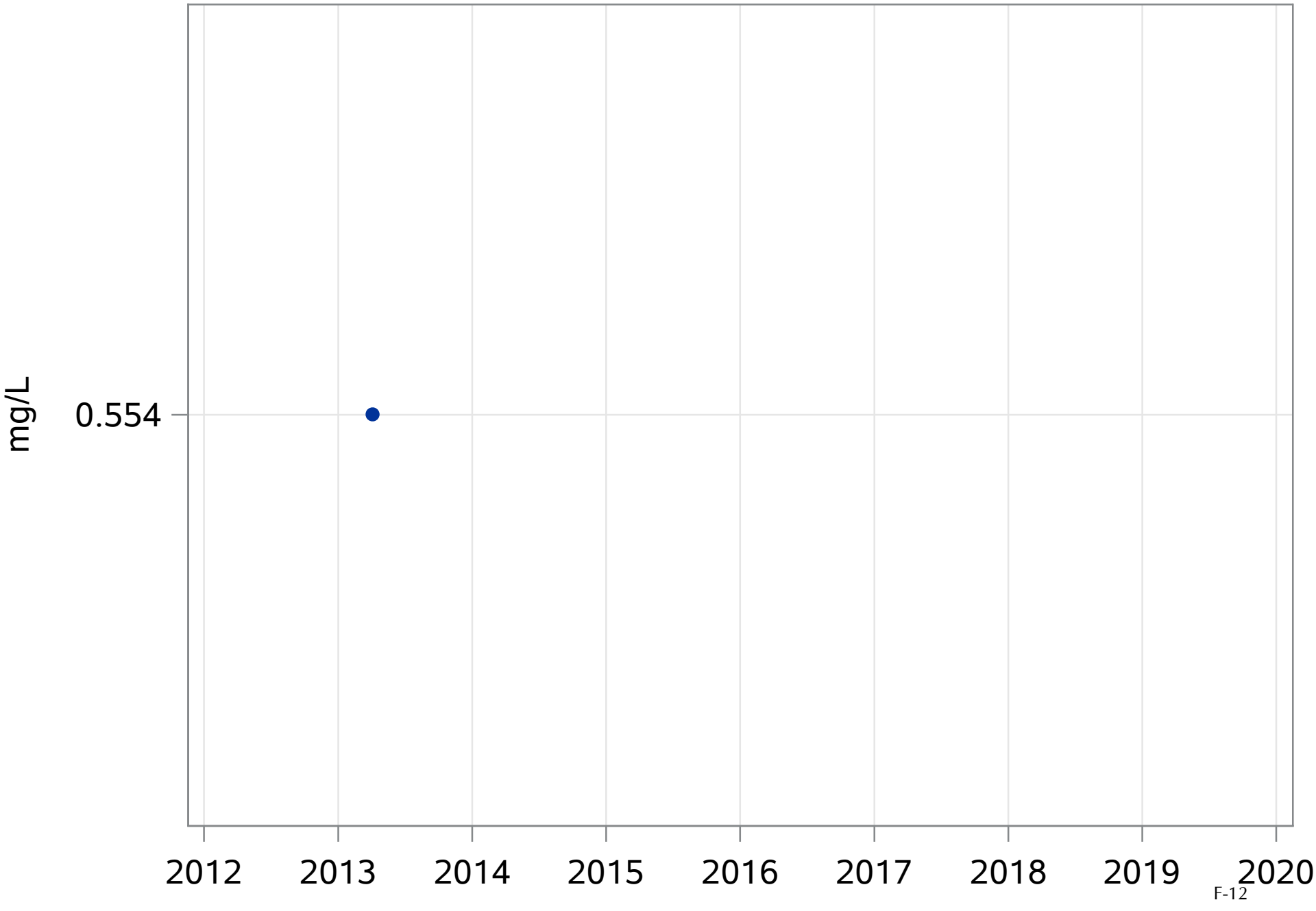


2646 - Little Tomoka River
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2646	2013	1

2646 - Little Tomoka River

Nutrients (Total Nitrogen)

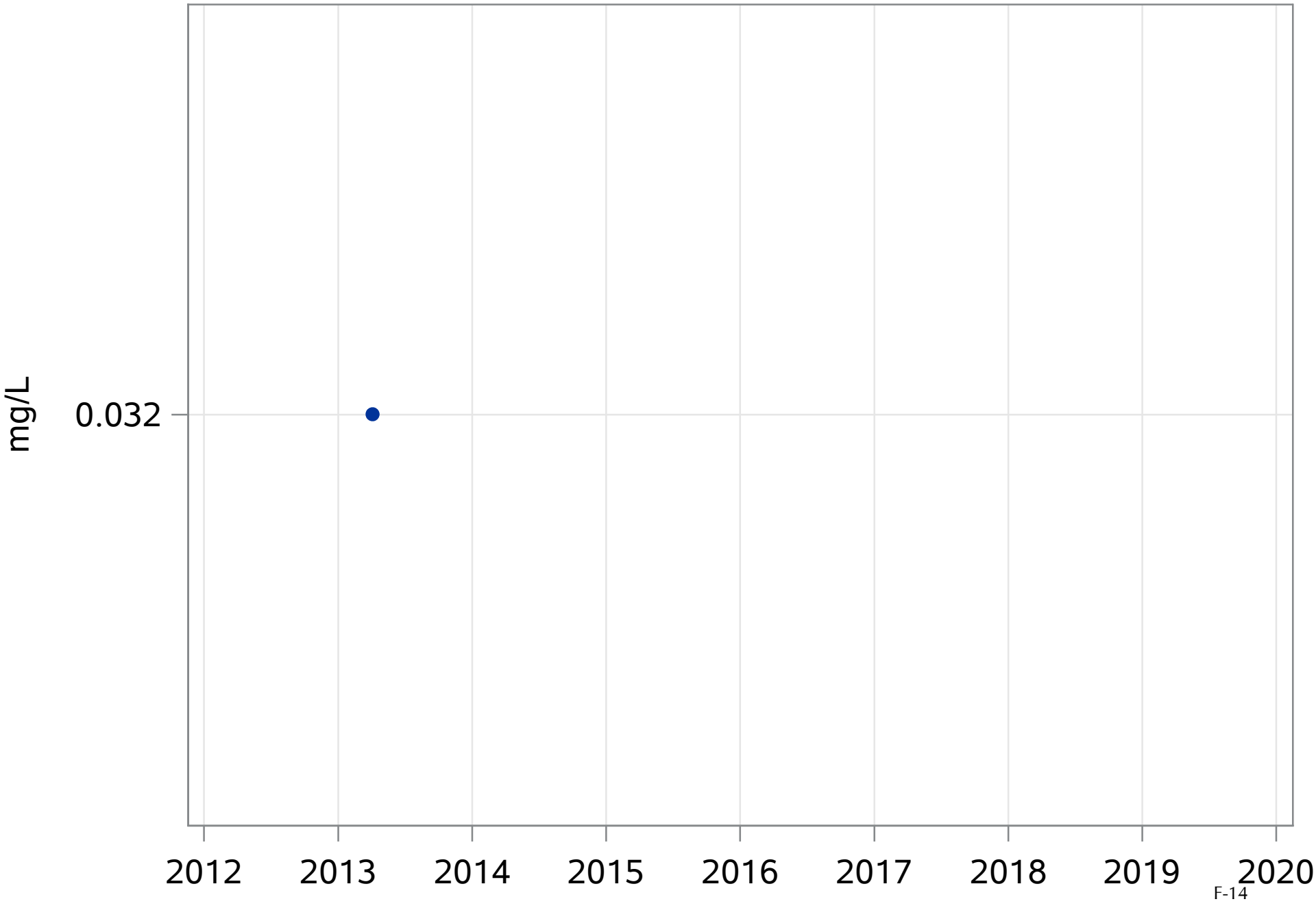


2646 - Little Tomoka River
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2646	2013	0.55

2646 - Little Tomoka River

Nutrients (Total Phosphorus)

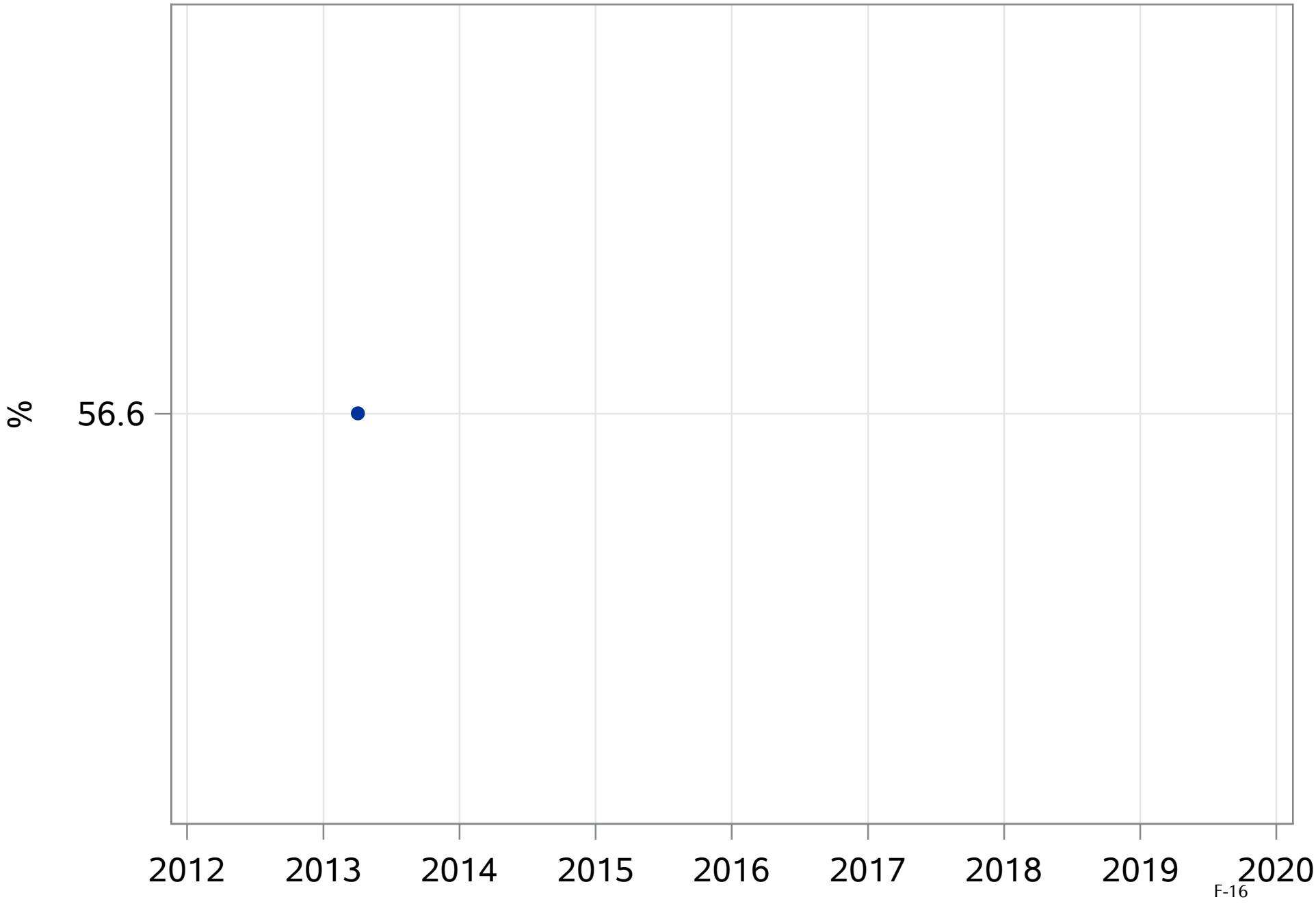


2646 - Little Tomoka River
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2646	2013	0.032

2646 - Little Tomoka River

Dissolved Oxygen

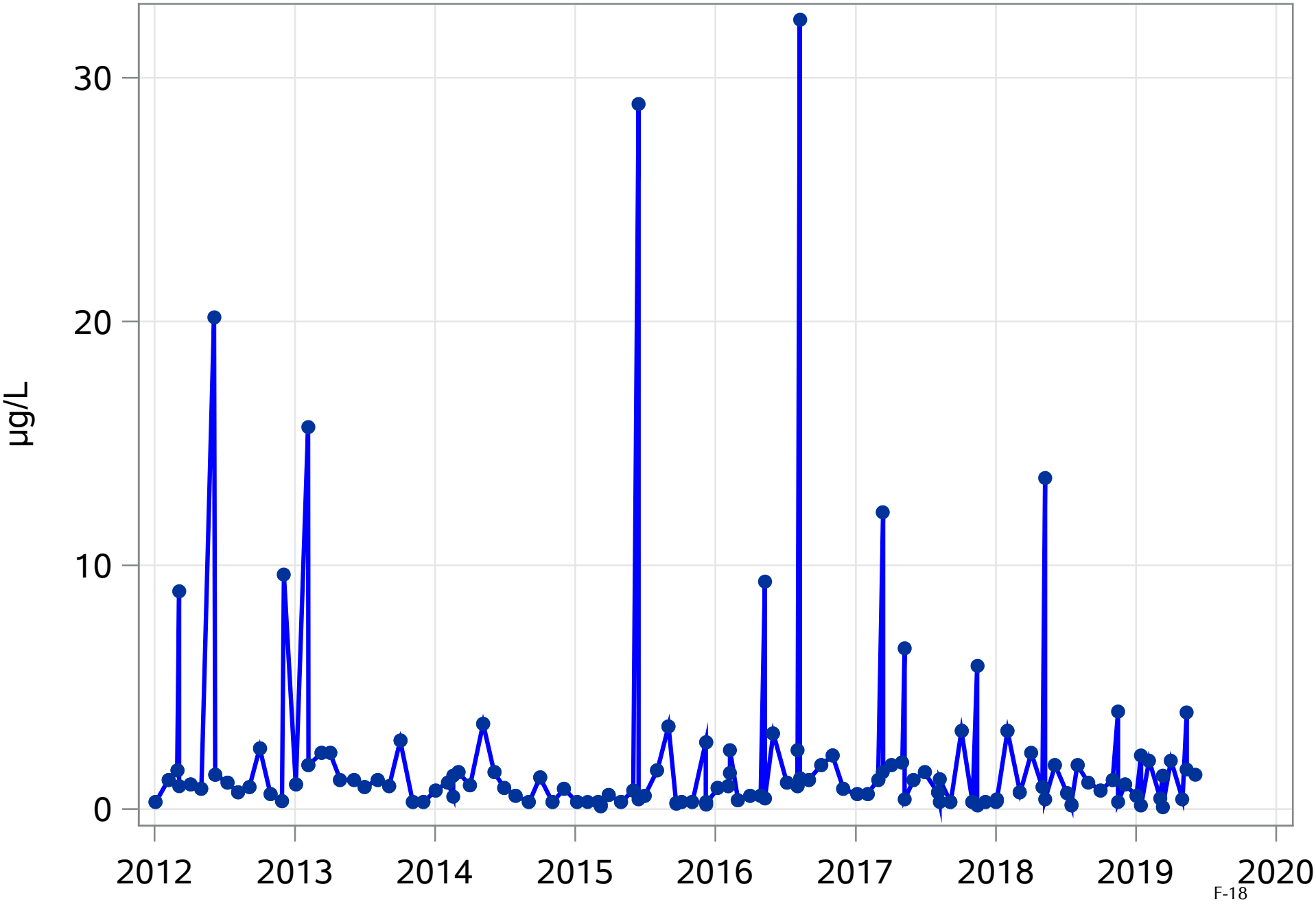


2646 - Little Tomoka River
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	1	0	1

2634 - Tomoka River (Fresh)

Nutrients (Total Chlorphyll-a)

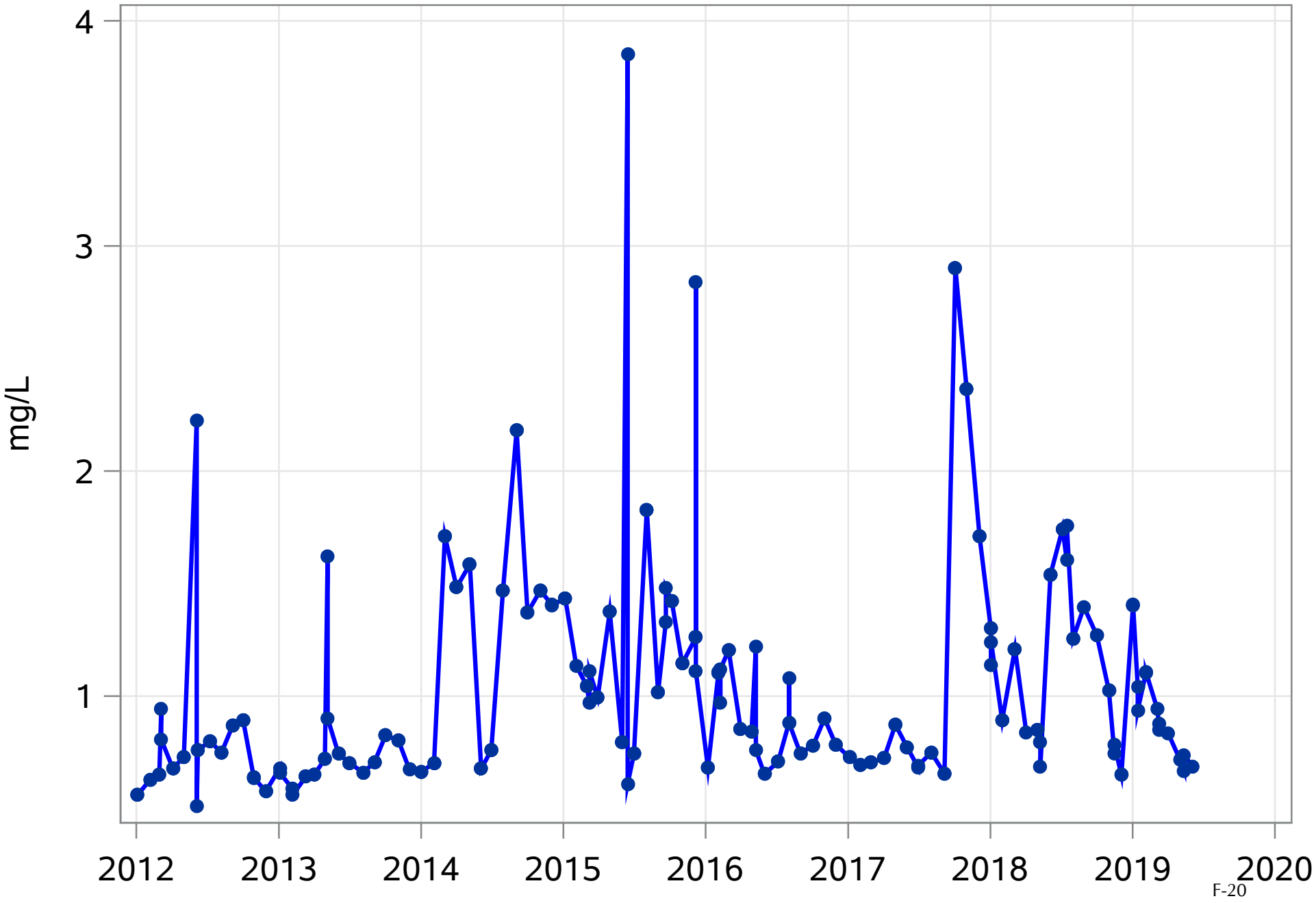


2634 - Tomoka River (Fresh)
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2634	2012	1.2
2	2634	2013	1.2
3	2634	2014	0.9
4	2634	2015	0.5
5	2634	2016	1.3
6	2634	2017	1.0
7	2634	2018	0.9
8	2634	2019	0.9

2634 - Tomoka River (Fresh)

Nutrients (Total Nitrogen)

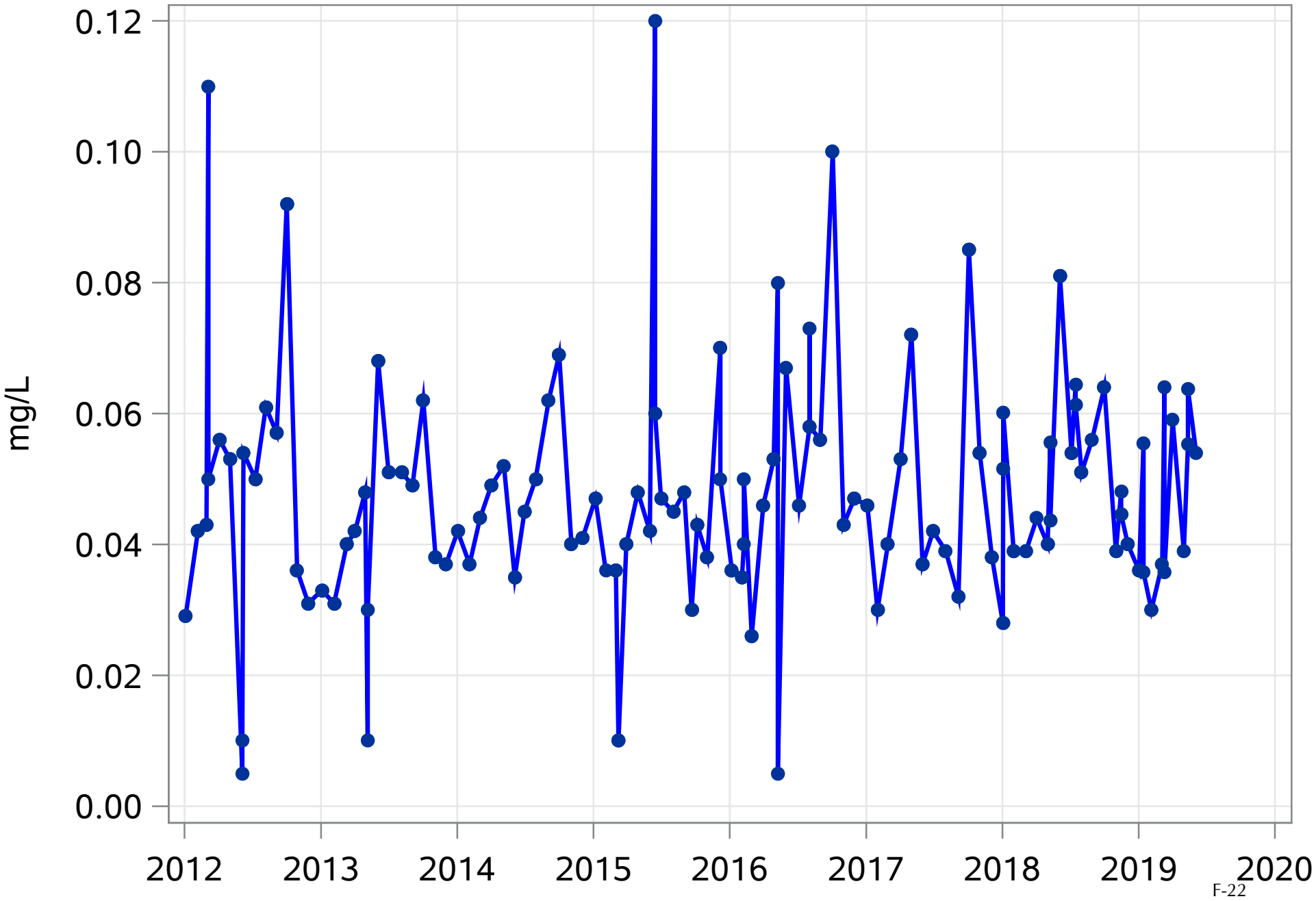


2634 - Tomoka River (Fresh)
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2634	2012	0.74
2	2634	2013	0.72
3	2634	2014	1.20
4	2634	2015	1.21
5	2634	2016	0.86
6	2634	2017	0.97
7	2634	2018	1.10
8	2634	2019	0.93

2634 - Tomoka River (Fresh)

Nutrients (Total Phosphorus)

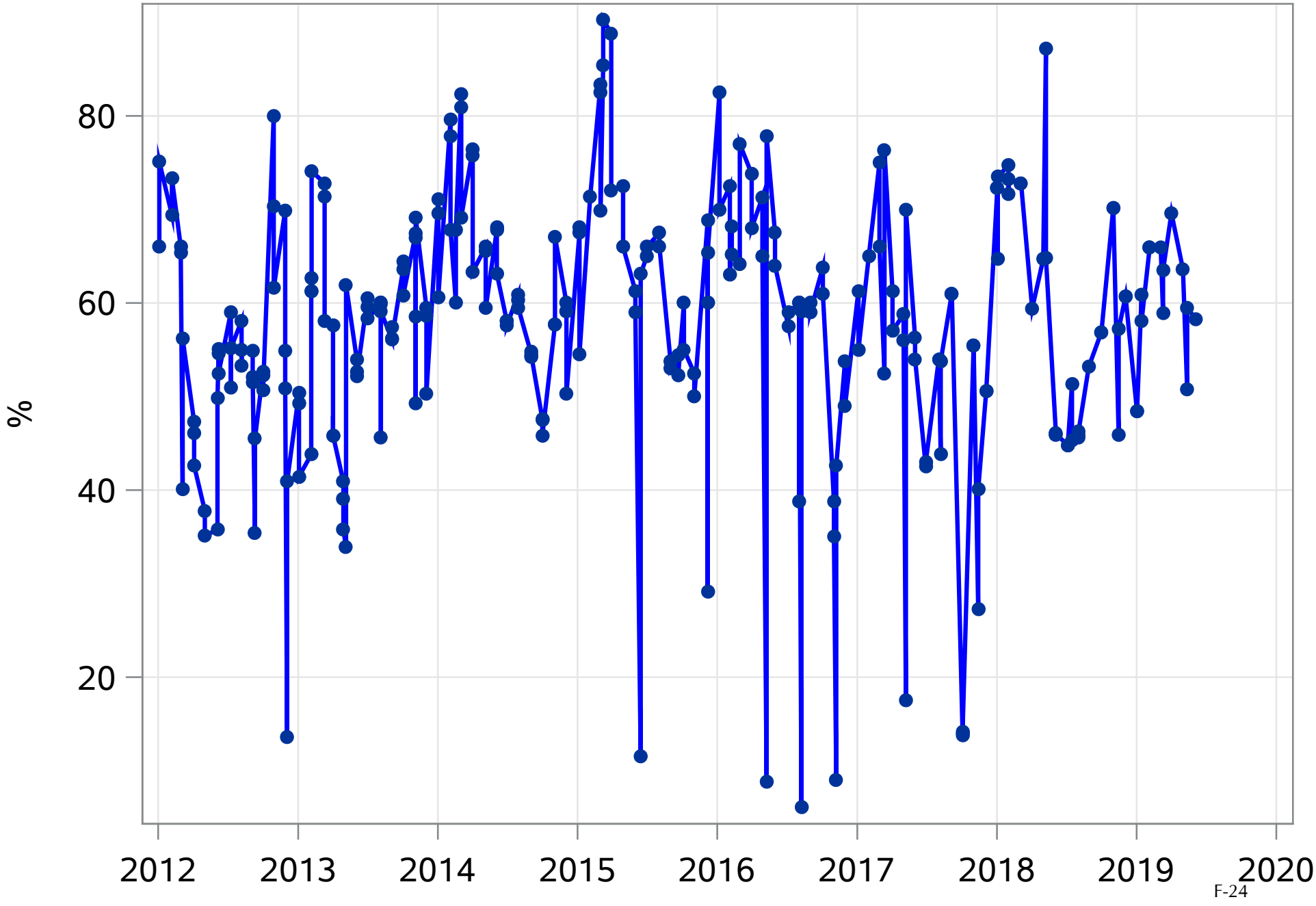


2634 - Tomoka River (Fresh)
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2634	2012	0.043
2	2634	2013	0.041
3	2634	2014	0.046
4	2634	2015	0.041
5	2634	2016	0.046
6	2634	2017	0.045
7	2634	2018	0.048
8	2634	2019	0.043

2634 - Tomoka River (Fresh)

Dissolved Oxygen

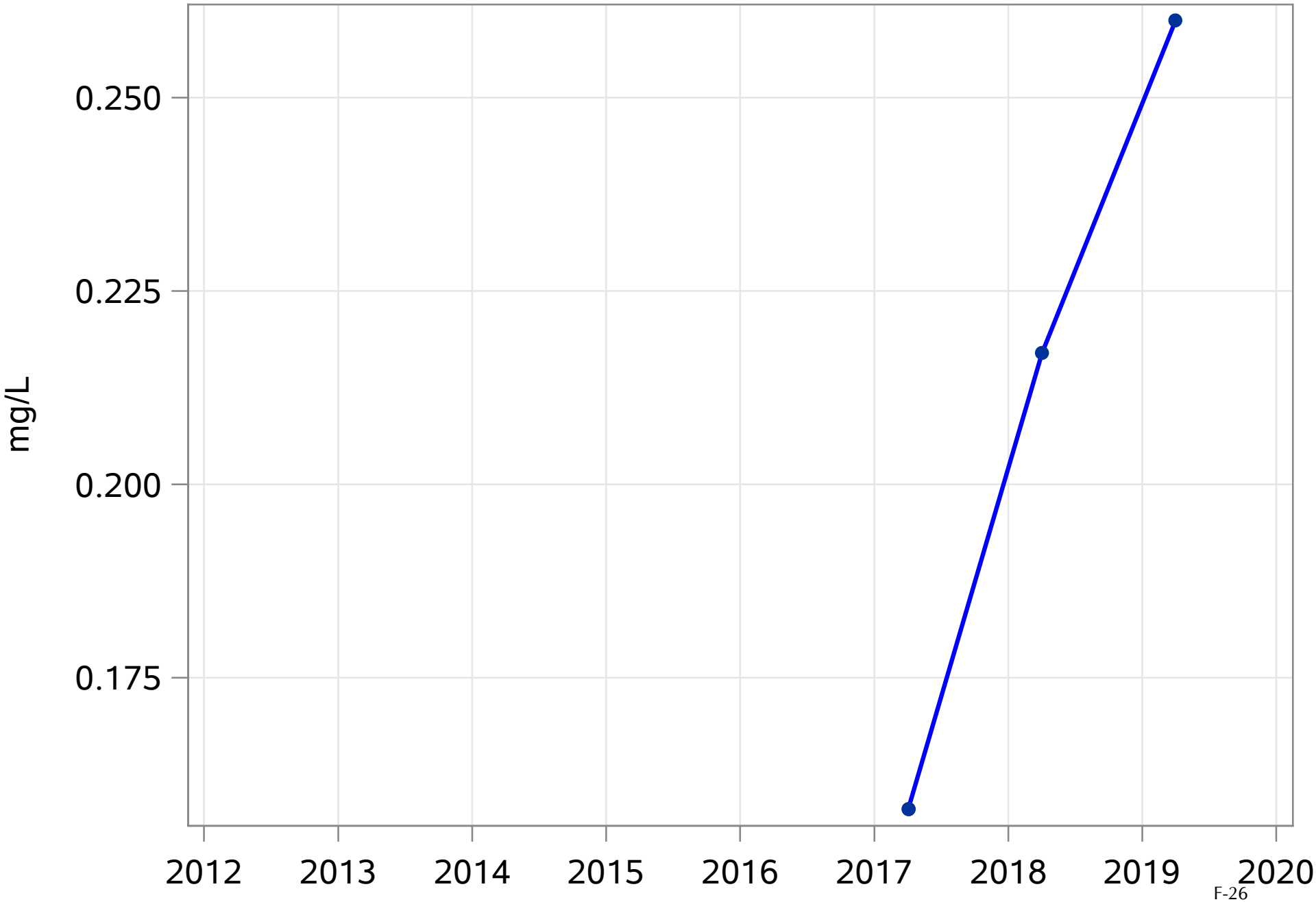


2634 - Tomoka River (Fresh)
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	17	226	17	226

2634 - Tomoka River (Fresh)

Aluminum

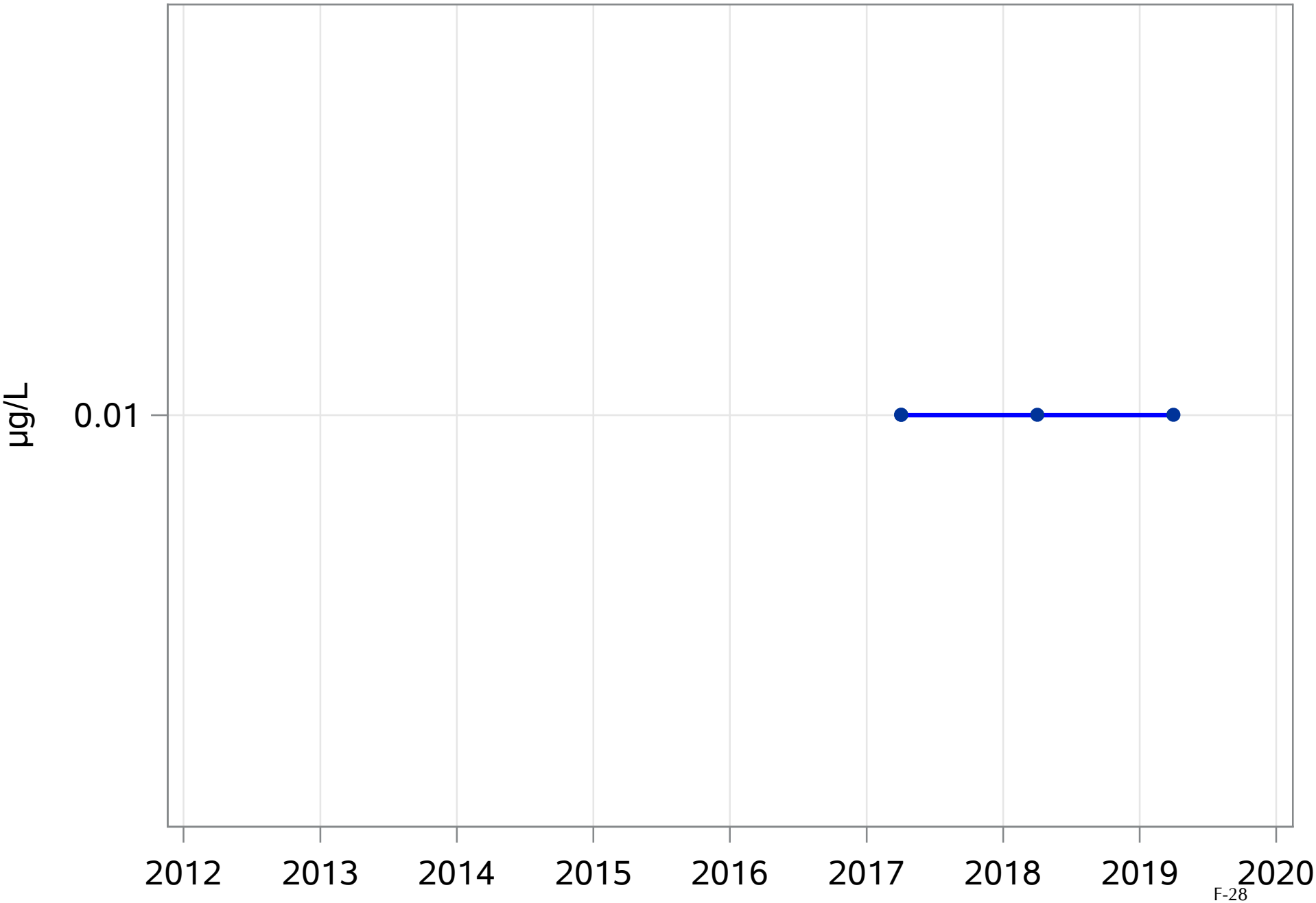


2634 - Tomoka River (Fresh)
Aluminum

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	4	0	4

2634 - Tomoka River (Fresh)

Cadmium

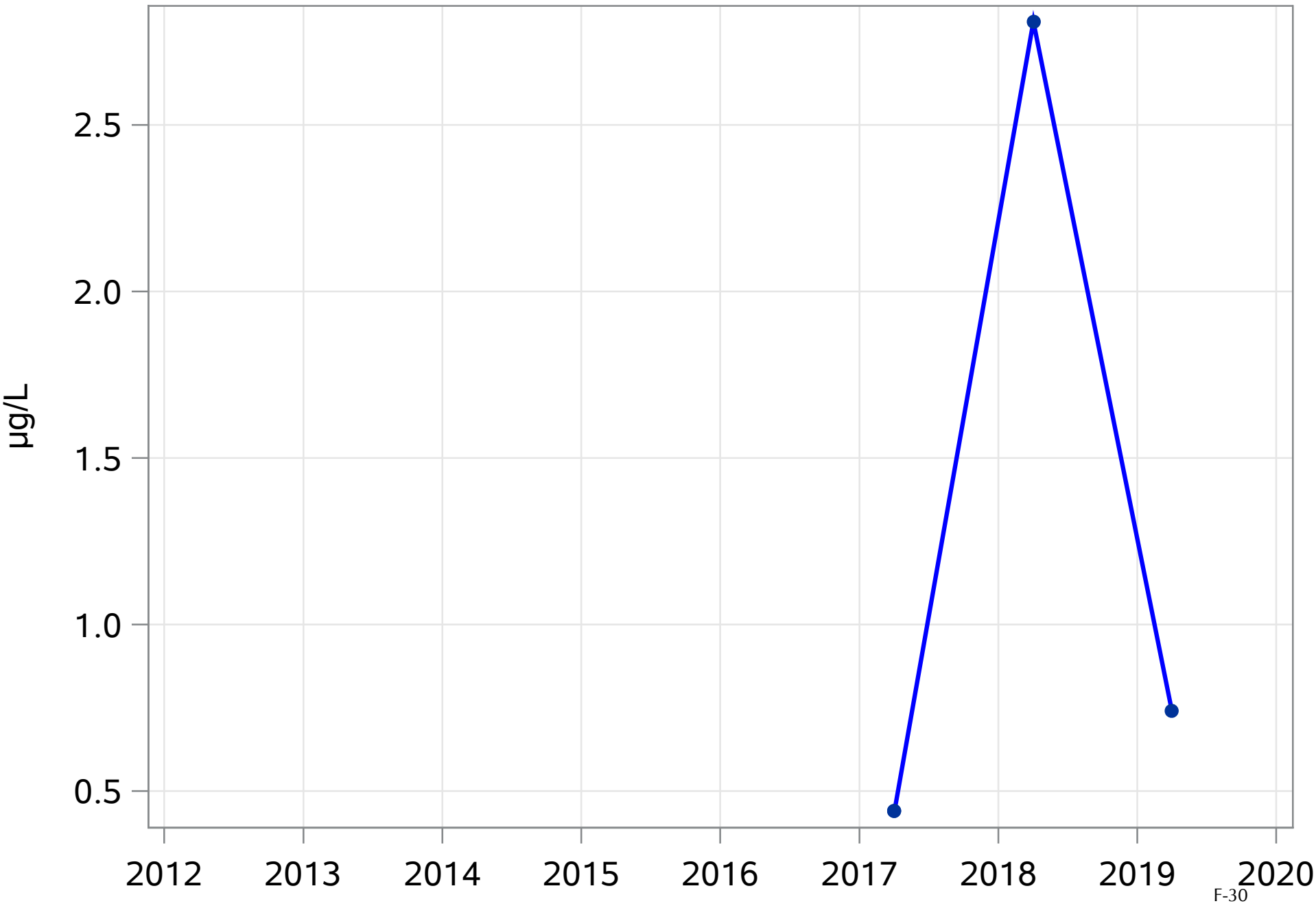


2634 - Tomoka River (Fresh)
Cadmium

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	4	0	4

2634 - Tomoka River (Fresh)

Copper

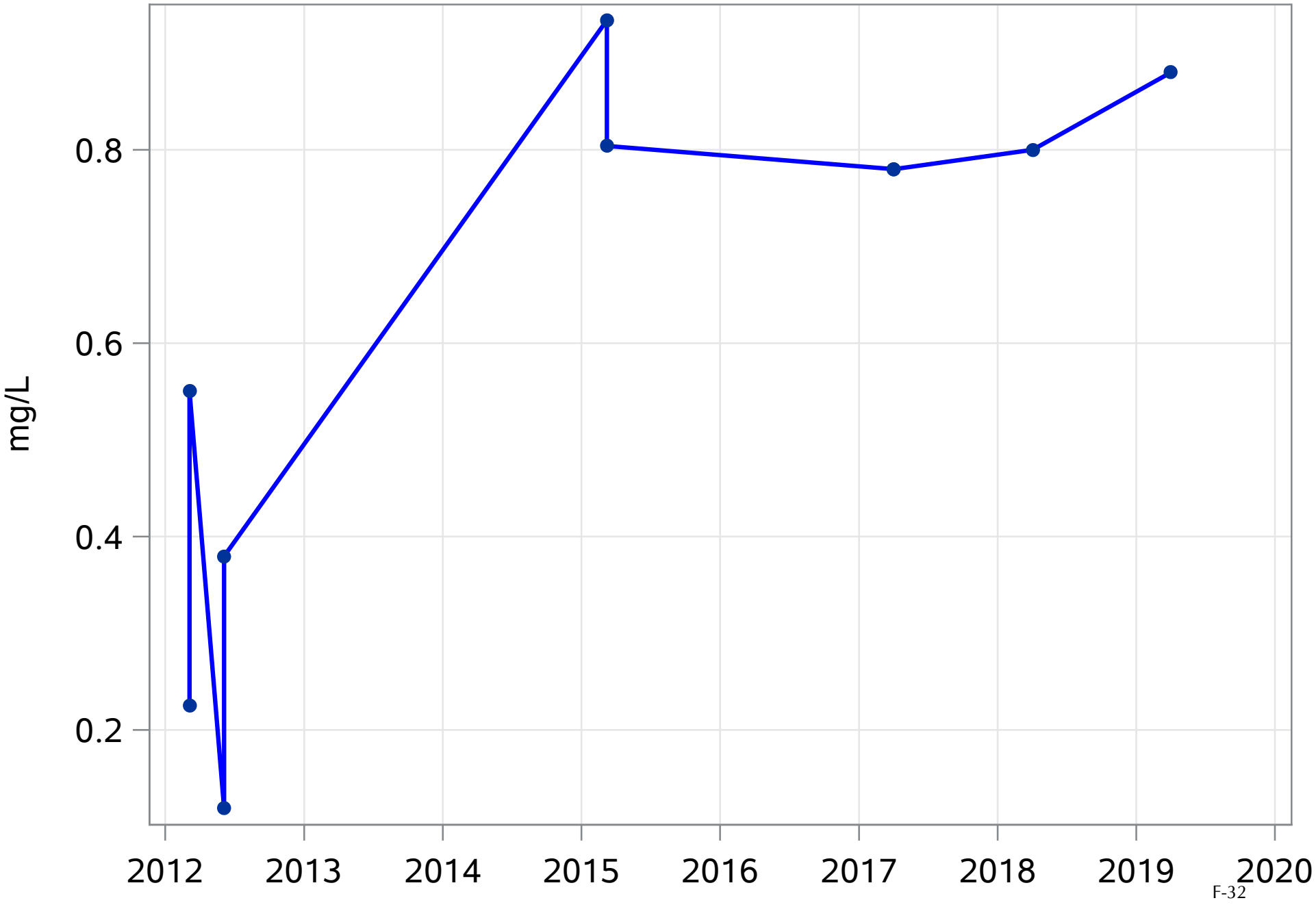


2634 - Tomoka River (Fresh)
Copper

Obs	pp_fail	pp_Count	vp_fail	VP_count	a	b	c	d
1	0	4	0	4	4	4	4	4

2634 - Tomoka River (Fresh)

Iron

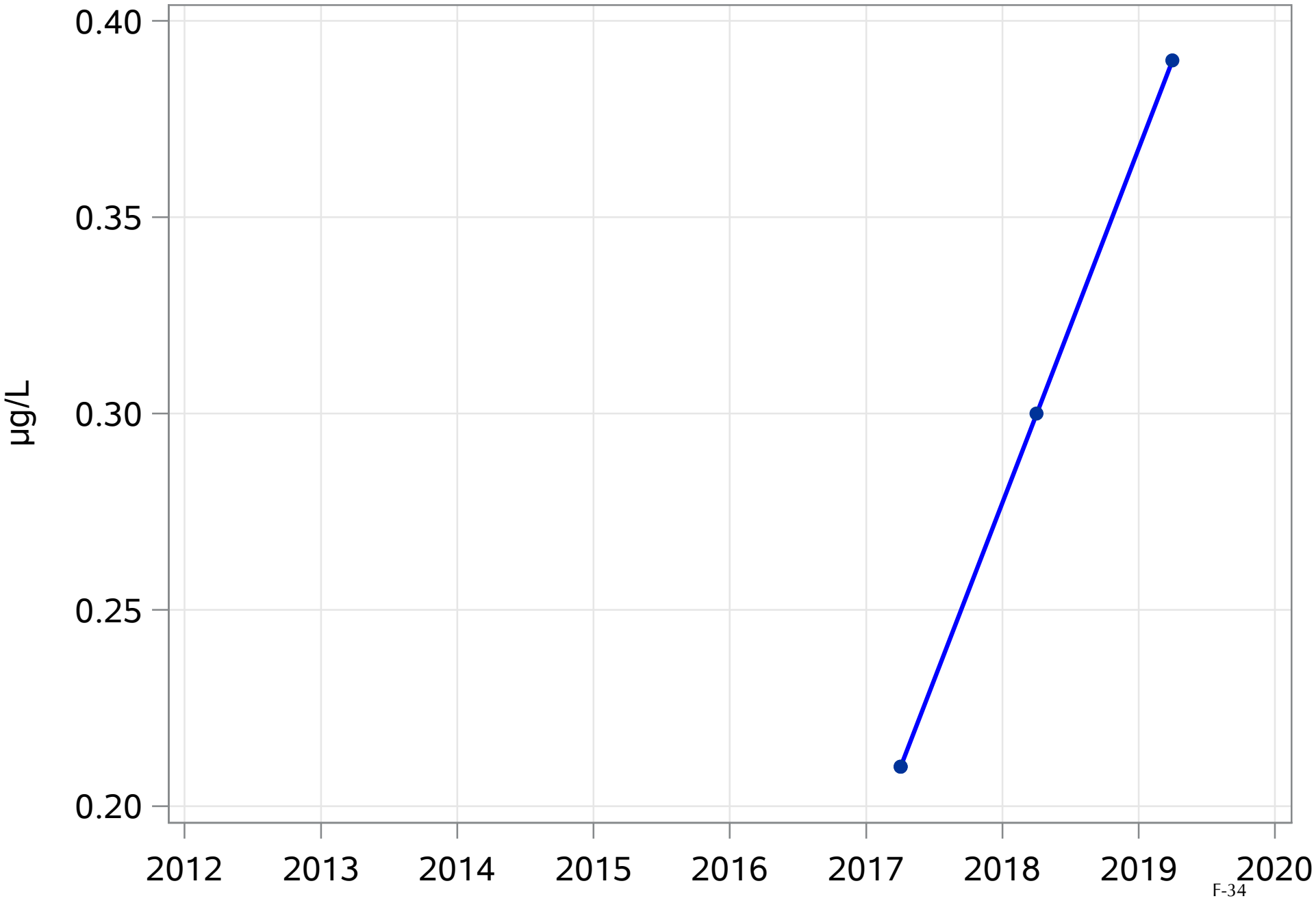


2634 - Tomoka River (Fresh)
Iron

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	10	0	10

2634 - Tomoka River (Fresh)

Lead

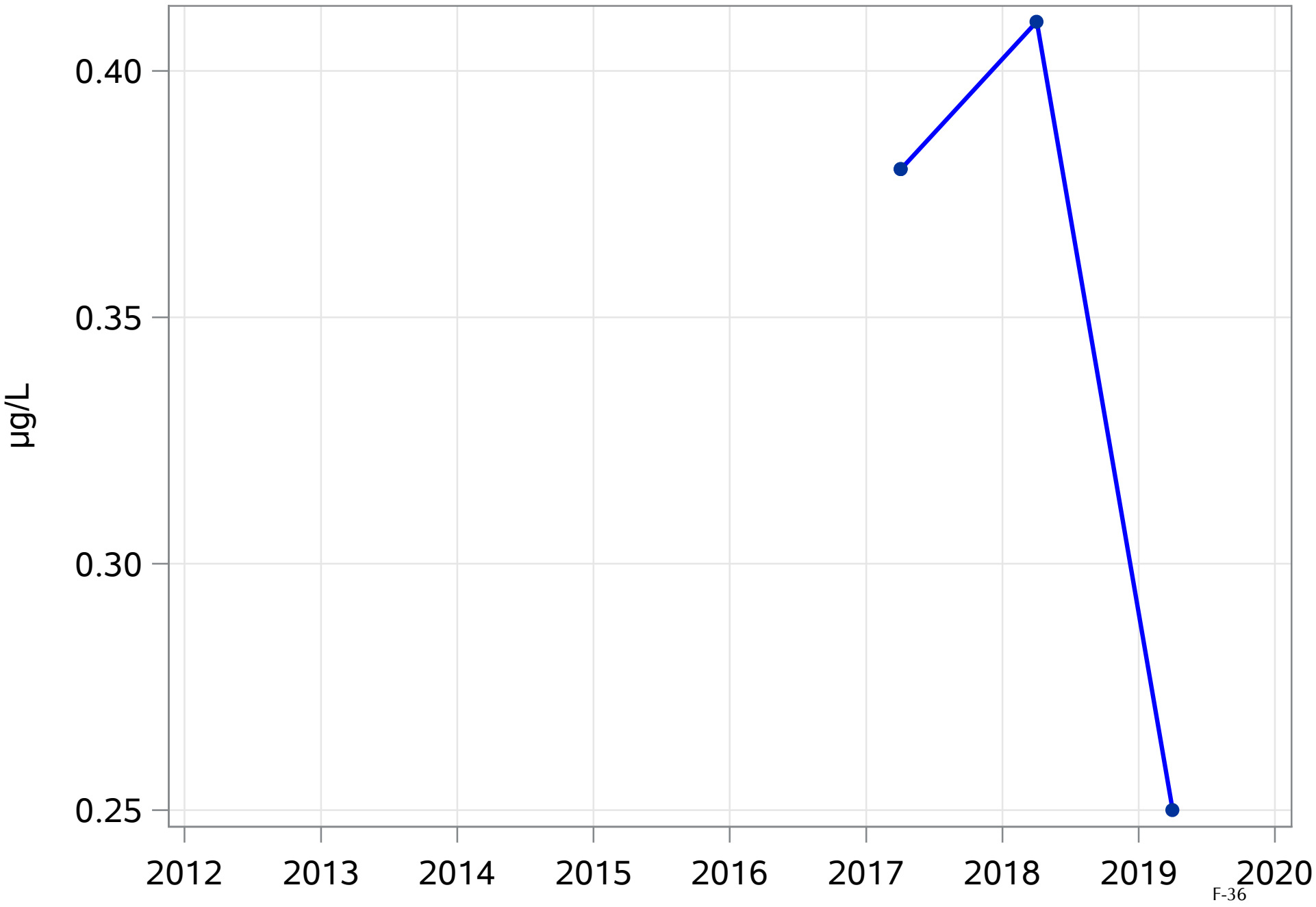


2634 - Tomoka River (Fresh)
Lead

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	4	0	4

2634 - Tomoka River (Fresh)

Nickel

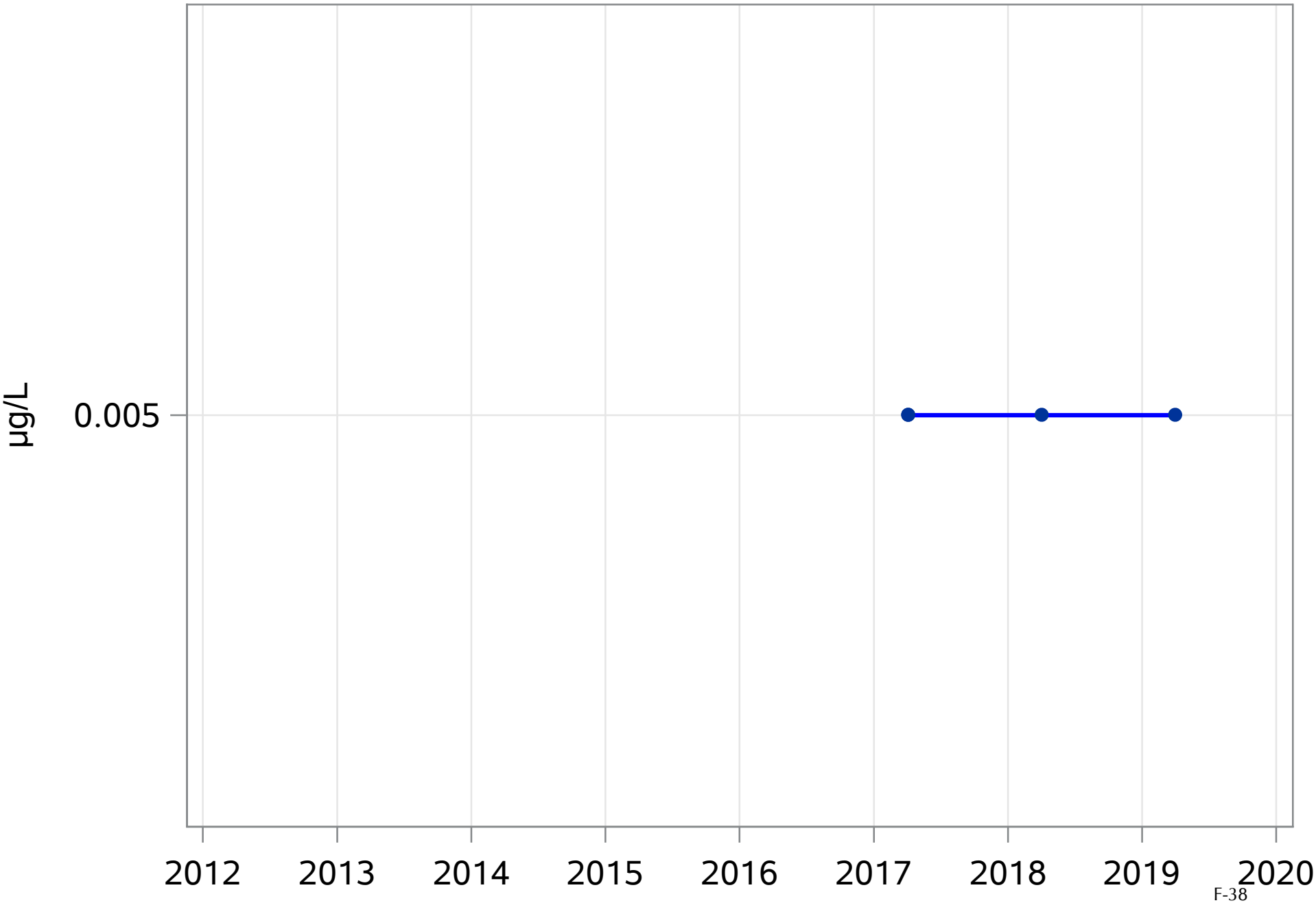


2634 - Tomoka River (Fresh)
Nickel

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	4	0	4

2634 - Tomoka River (Fresh)

Silver

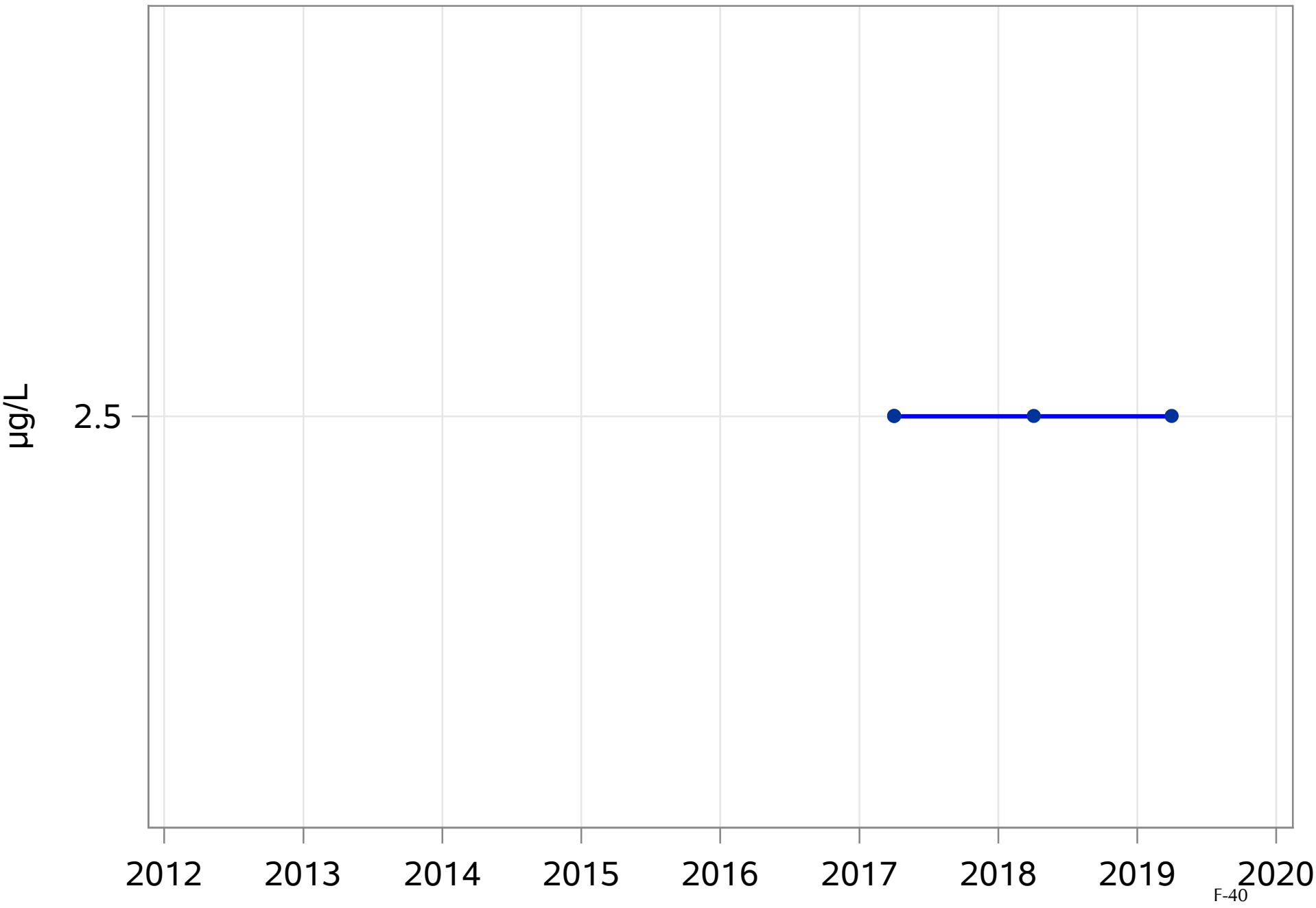


2634 - Tomoka River (Fresh)
Silver

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	4	0	4

2634 - Tomoka River (Freshwater)

Zinc

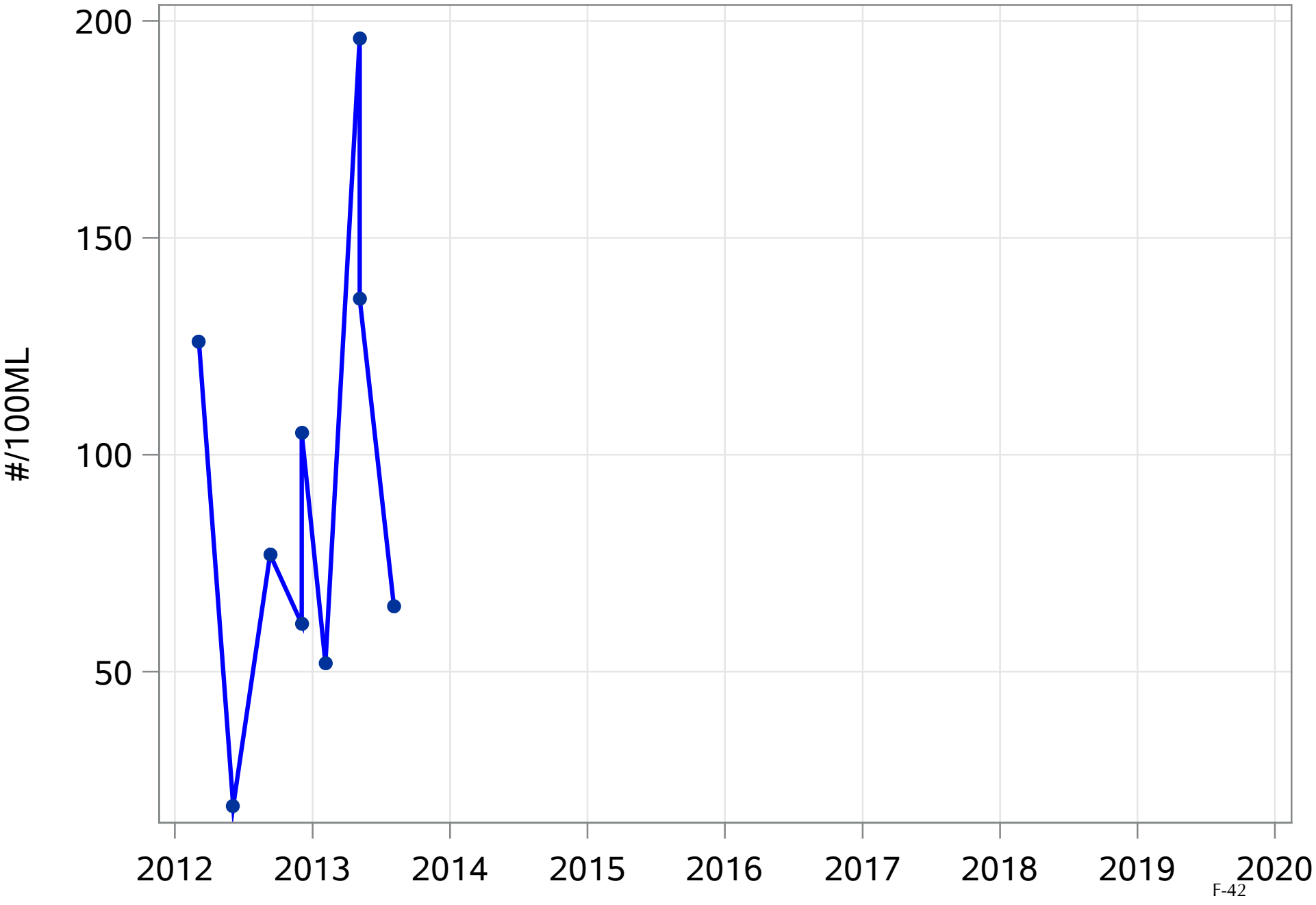


2634 - Tomoka River (Fresh)
Zinc

Obs	pp_fail	pp_Count	vp_fail	VP_count
1	0	4	0	4

2634 - Tomoka River (Fresh)

Enterococci

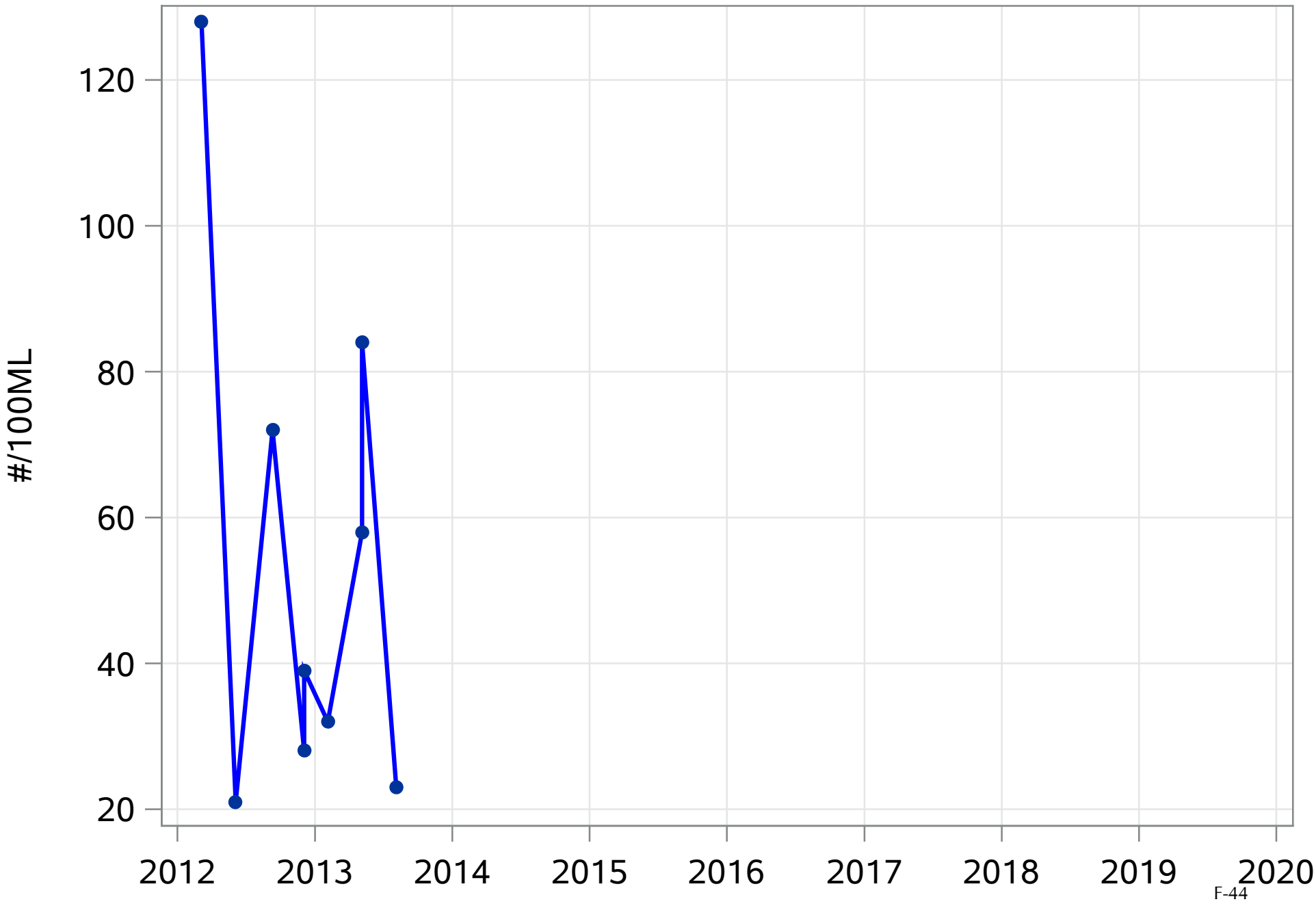


2634 - Tomoka River (Fresh)
Enterococci

Obs	fail	n
1	0	9

2634 - Tomoka River (Fresh)

Fecal Coliform

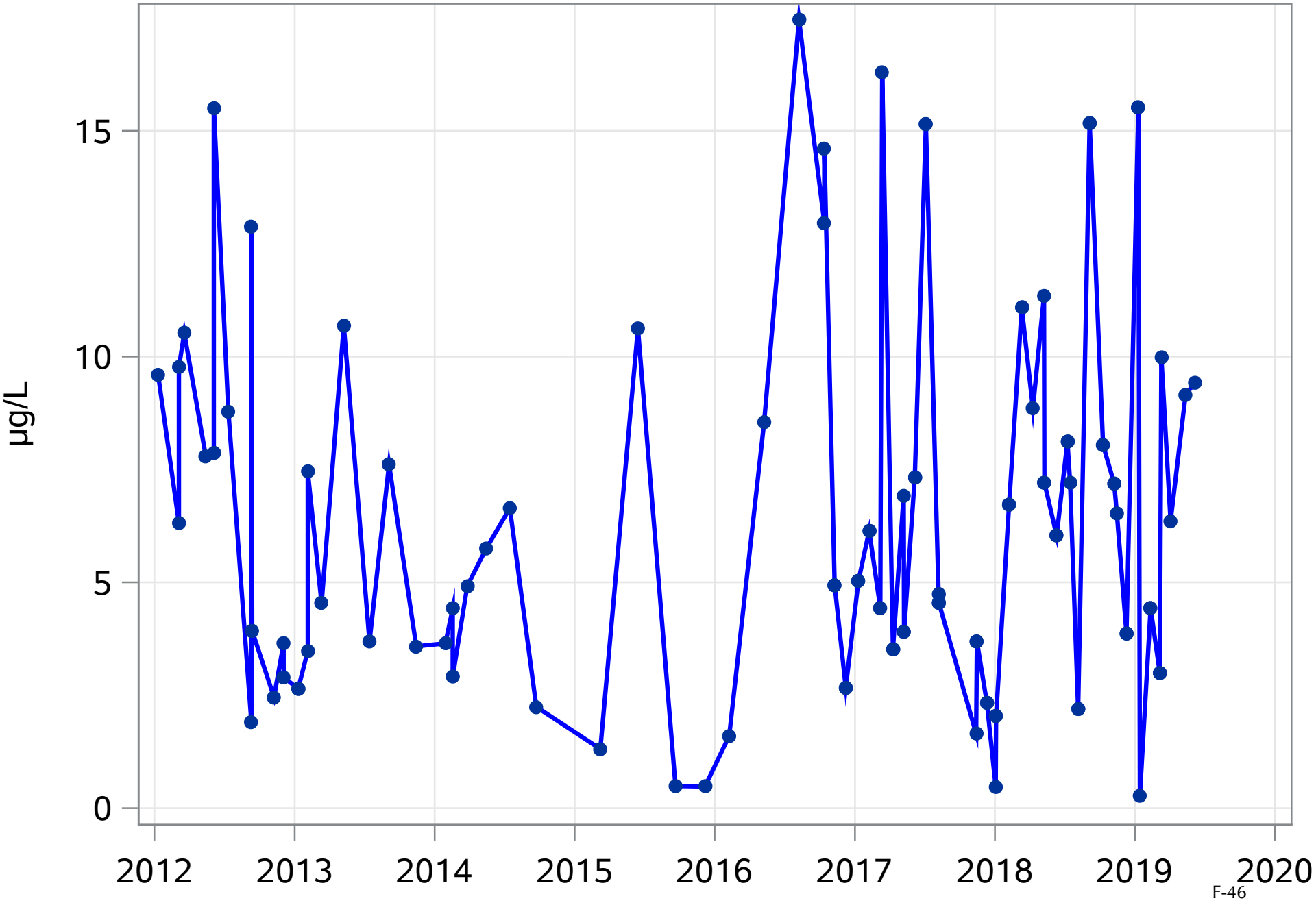


2634 - Tomoka River (Fresh)
Fecal Coliform

Obs	fail	n
1	0	9

2634A - Tomoka River (Marine)

Nutrients (Total Chlorphyll-a)

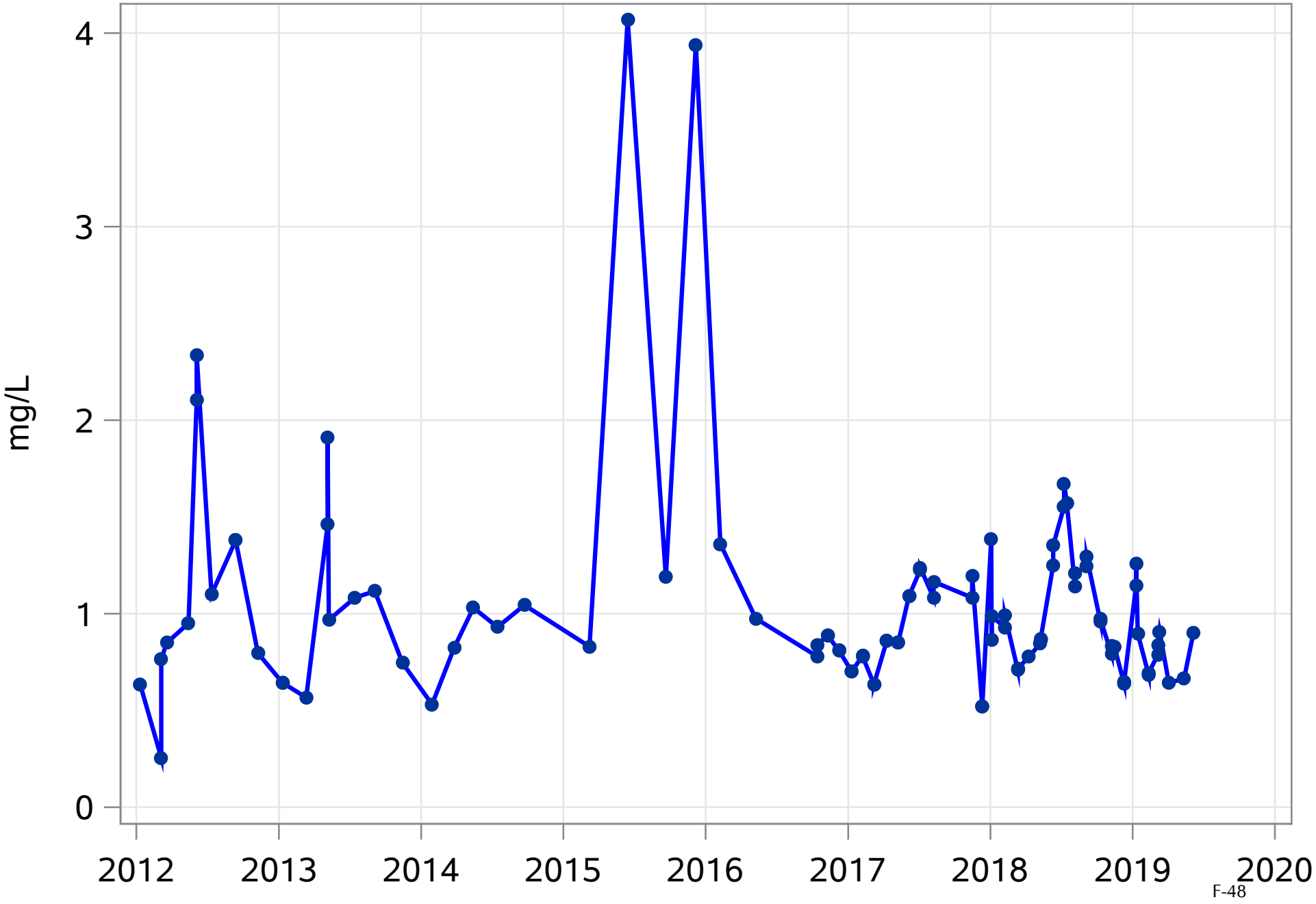


2634A - Tomoka River (Marine)
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2634A	2012	6.0
2	2634A	2013	4.6
3	2634A	2014	4.1
4	2634A	2015	1.3
5	2634A	2016	5.8
6	2634A	2017	5.0
7	2634A	2018	5.8
8	2634A	2019	5.1

2634A - Tomoka River (Marine)

Nutrients (Total Nitrogen)

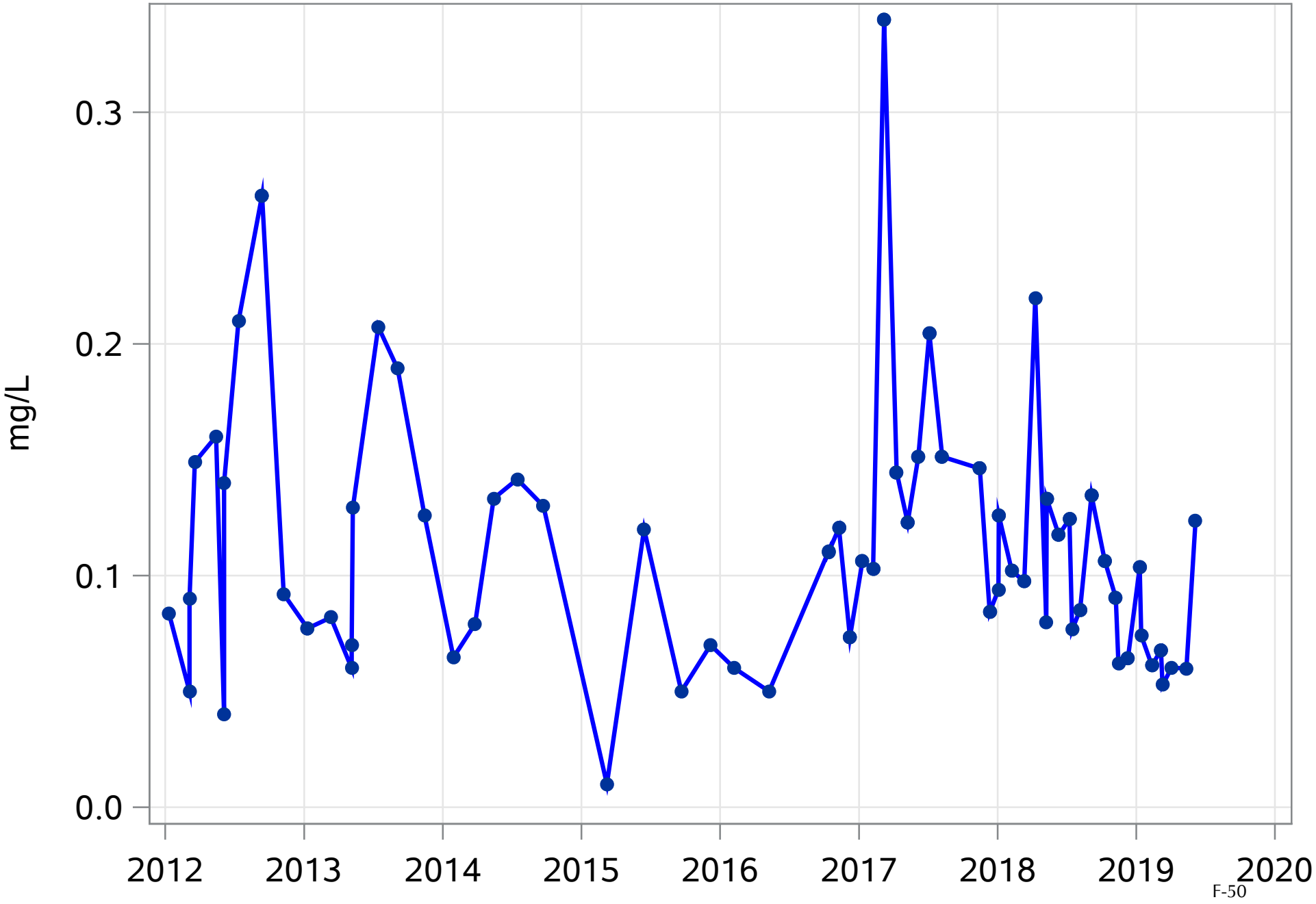


2634A - Tomoka River (Marine)
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2634A	2012	0.98
2	2634A	2013	0.94
3	2634A	2014	0.85
4	2634A	2015	1.99
5	2634A	2016	0.90
6	2634A	2017	0.86
7	2634A	2018	1.00
8	2634A	2019	0.84

2634A - Tomoka River (Marine)

Nutrients (Total Phosphorus)

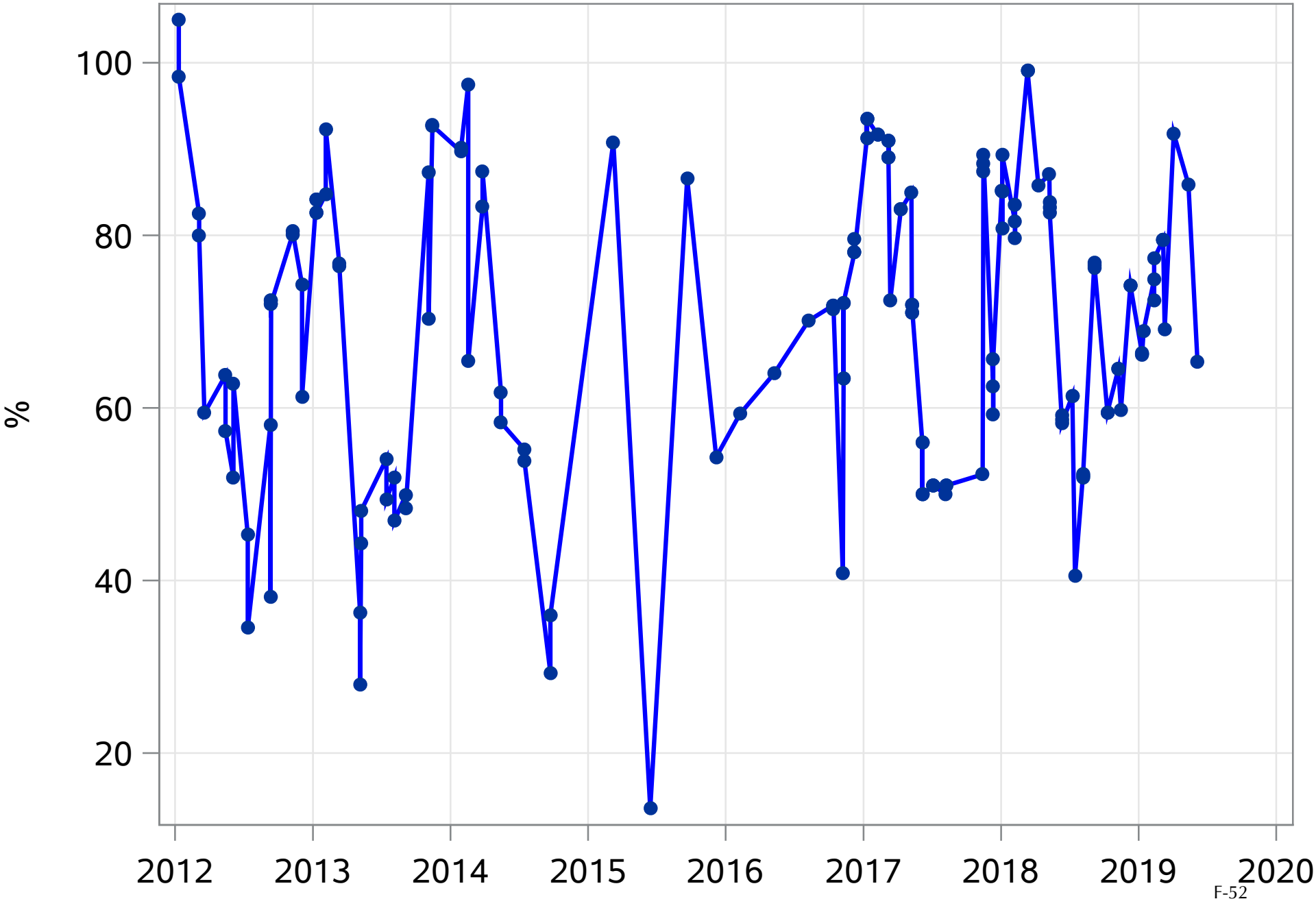


2634A - Tomoka River (Marine)
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2634A	2012	0.119
2	2634A	2013	0.103
3	2634A	2014	0.105
4	2634A	2015	0.045
5	2634A	2016	0.086
6	2634A	2017	0.144
7	2634A	2018	0.103
8	2634A	2019	0.073

2634A - Tomoka River (Marine)

Dissolved Oxygen

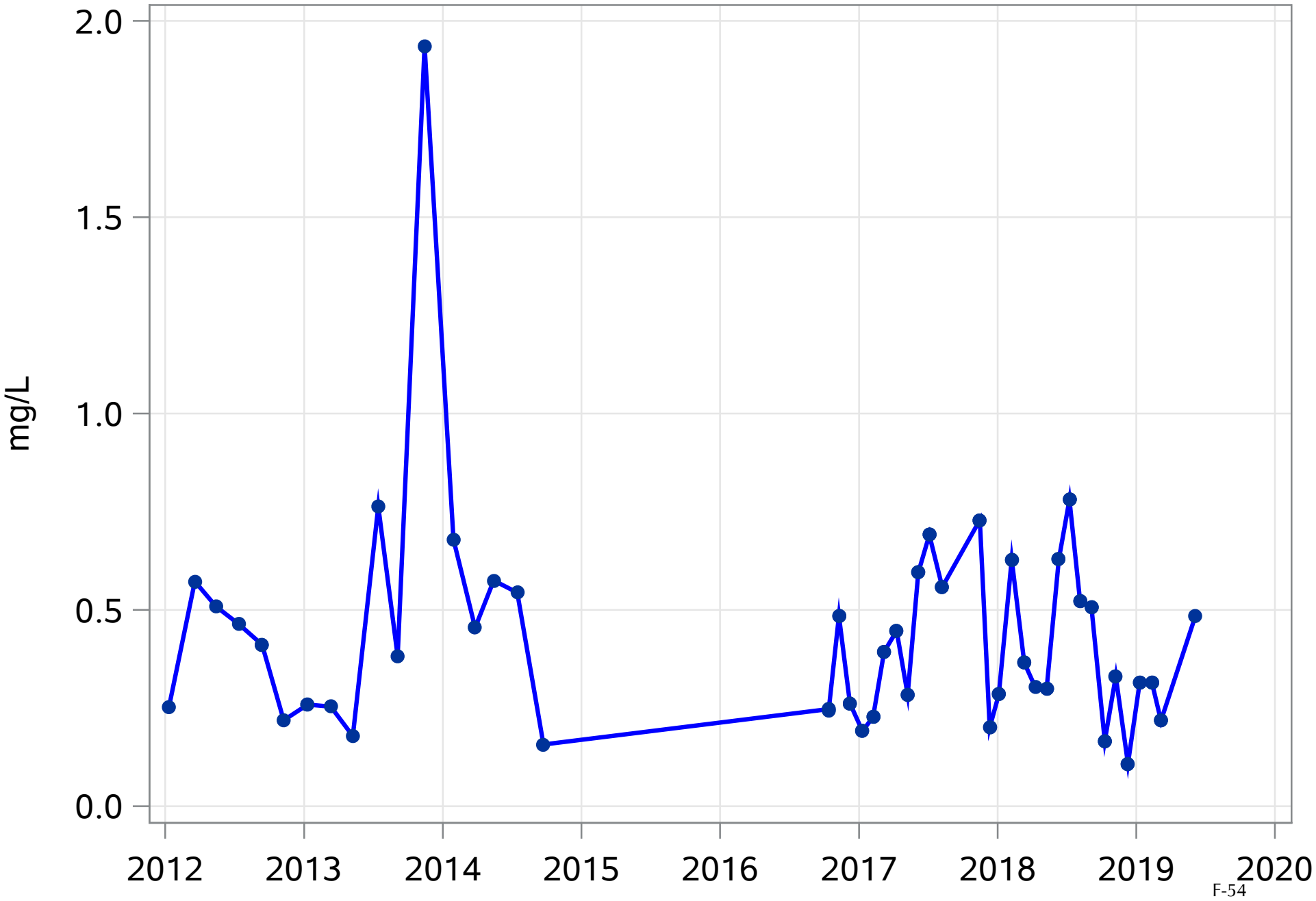


2634A - Tomoka River (Marine)
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	8	113	8	113

2634A - Tomoka River (Marine)

Aluminum

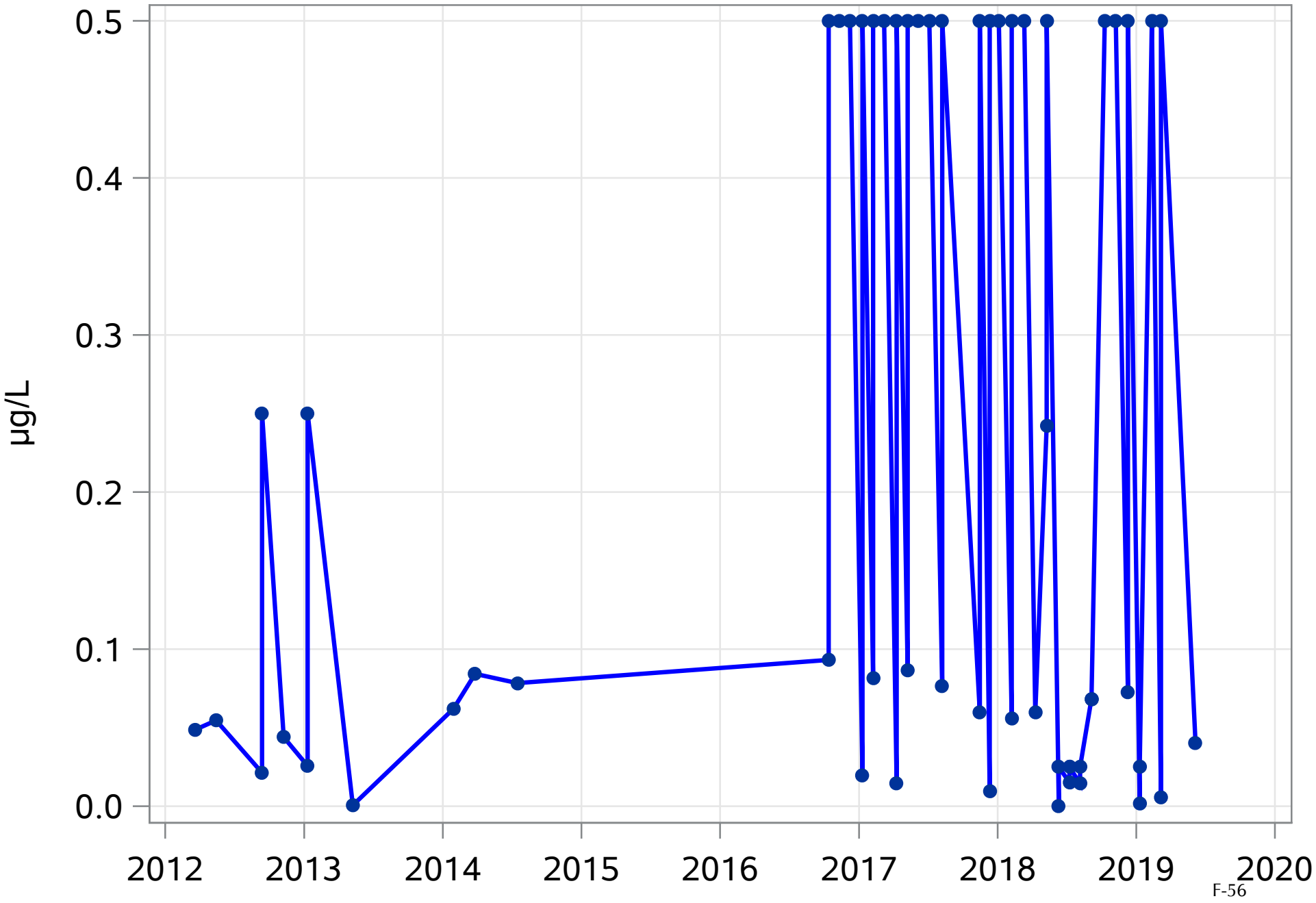


2634A - Tomoka River (Marine)
Aluminum

Obs	pp_fail	n_pp	vp_fail	n_vp
1	1	75	1	75

2634A - Tomoka River (Marine)

Cadmium

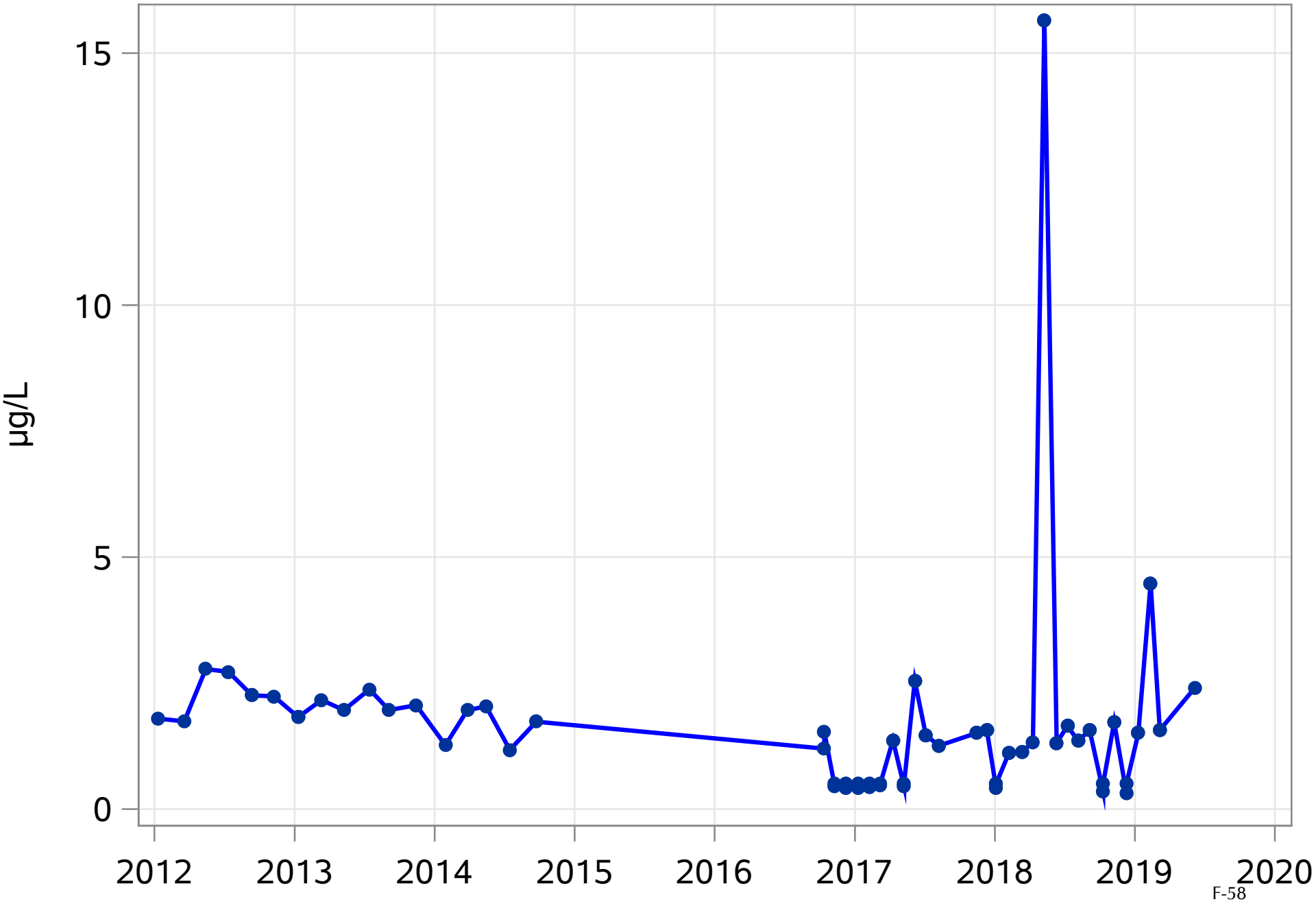


2634A - Tomoka River (Marine)
Cadmium

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	57	0	57

2634A - Tomoka River (Marine)

Copper

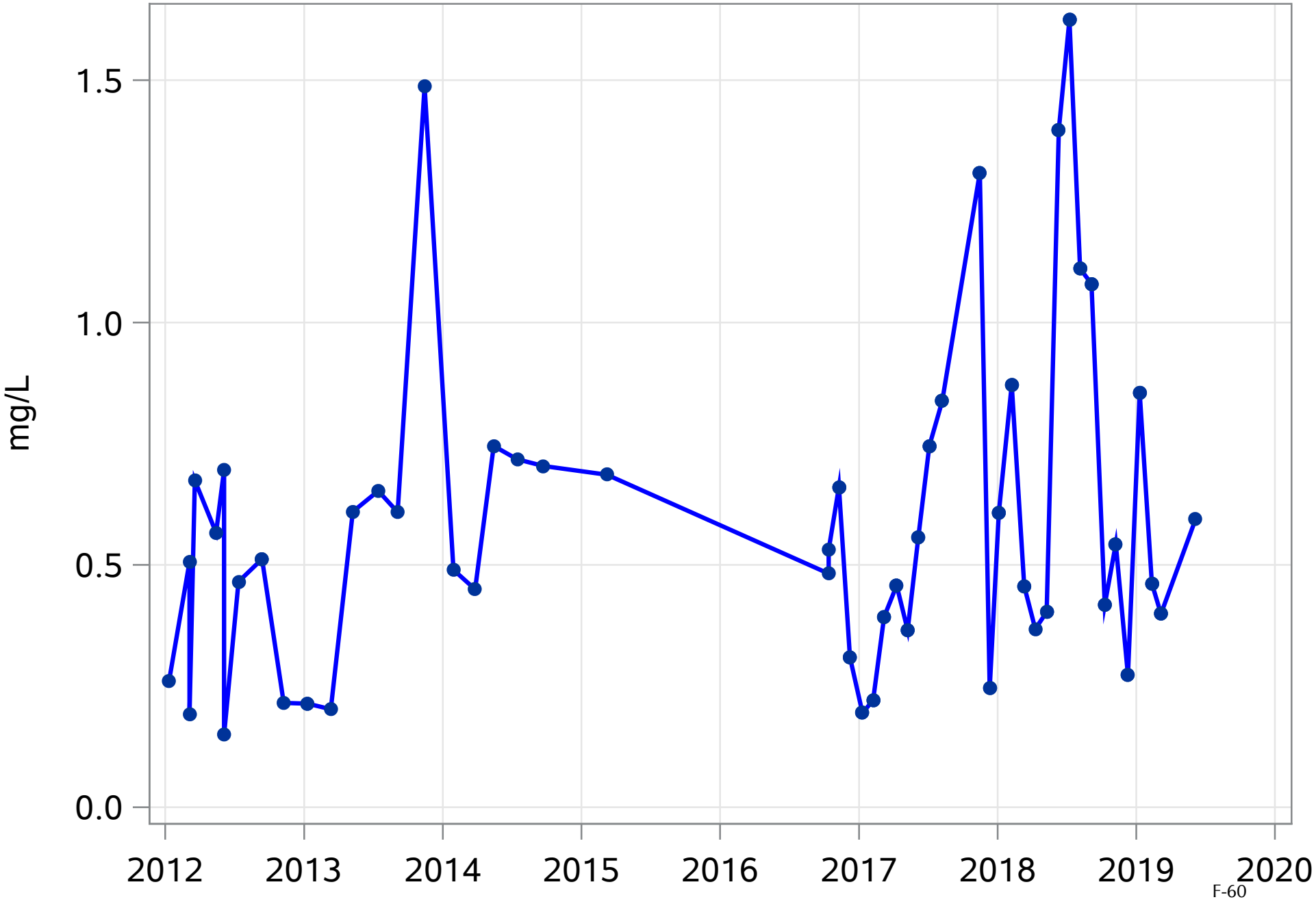


2634A - Tomoka River (Marine)
Copper

Obs	pp_fail	pp_Count	vp_fail	VP_count	a	b	c	d
1	4	75	4	75	75	75	75	75

2634A - Tomoka River (Marine)

Iron

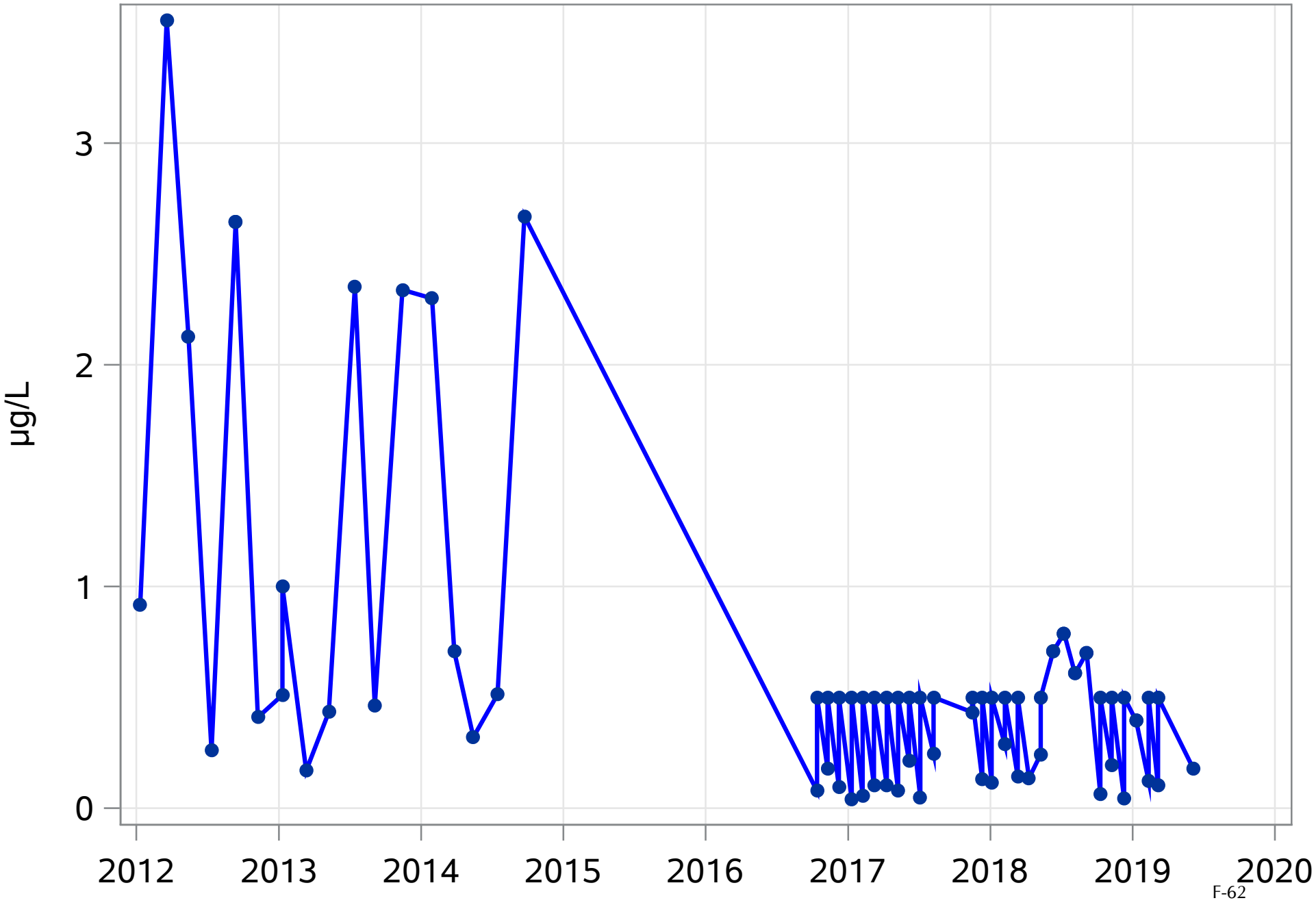


2634A - Tomoka River (Marine)
Iron

Obs	pp_fail	n_pp	vp_fail	n_vp
1	65	80	65	80

2634A - Tomoka River (Marine)

Lead

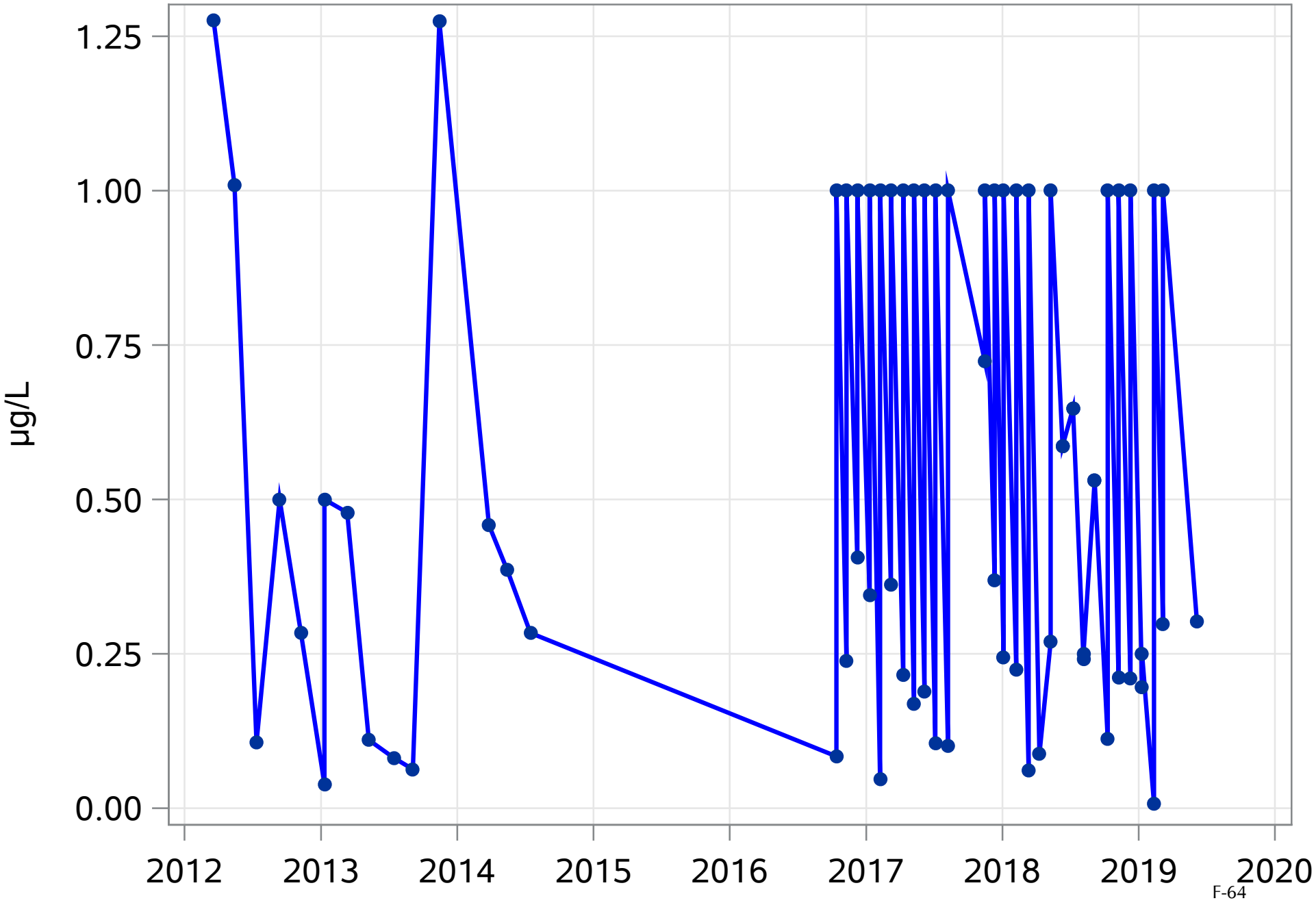


2634A - Tomoka River (Marine)
Lead

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	75	0	75

2634A - Tomoka River (Marine)

Nickel

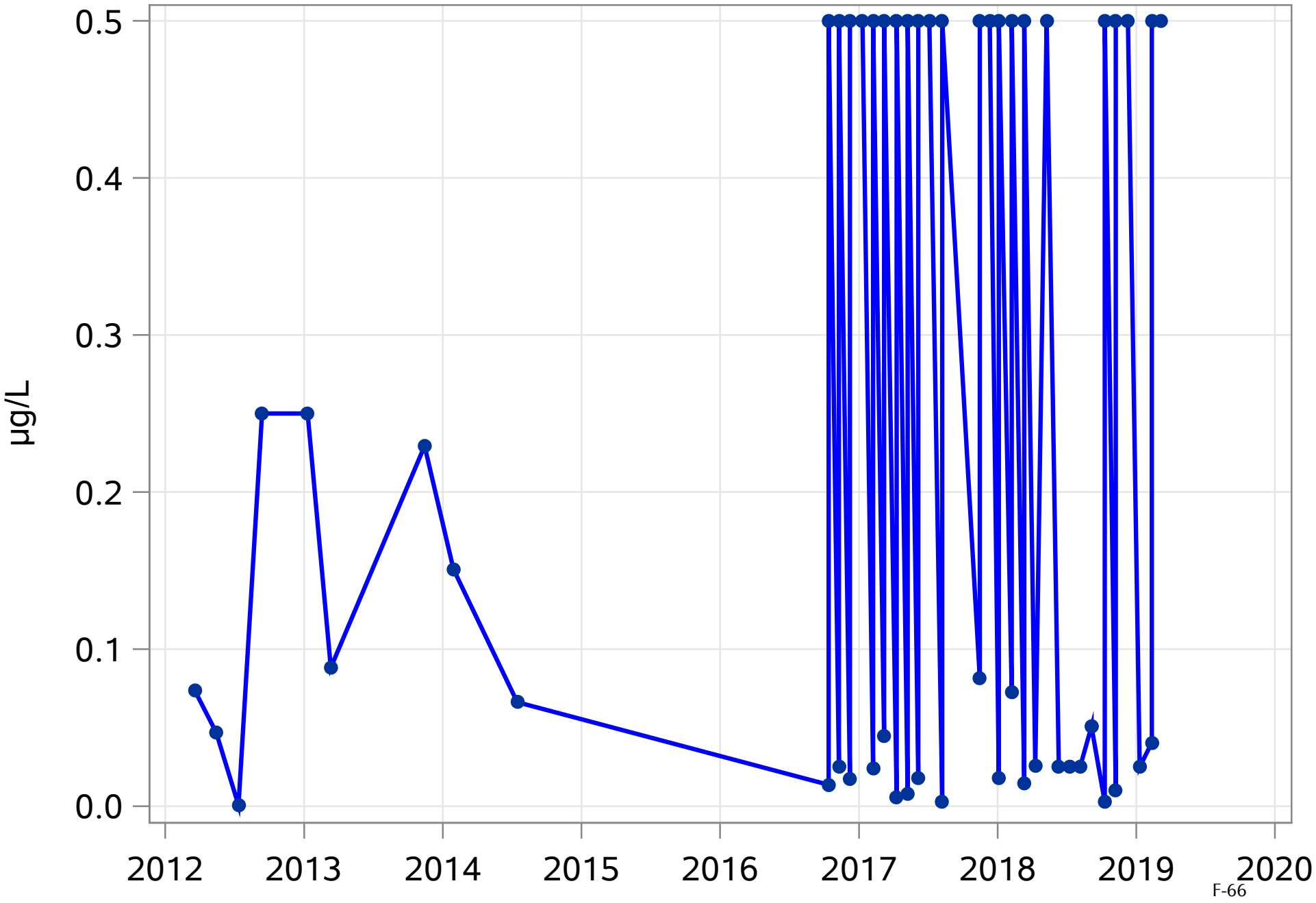


2634A - Tomoka River (Marine)
Nickel

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	71	0	71

2634A - Tomoka River (Marine)

Silver

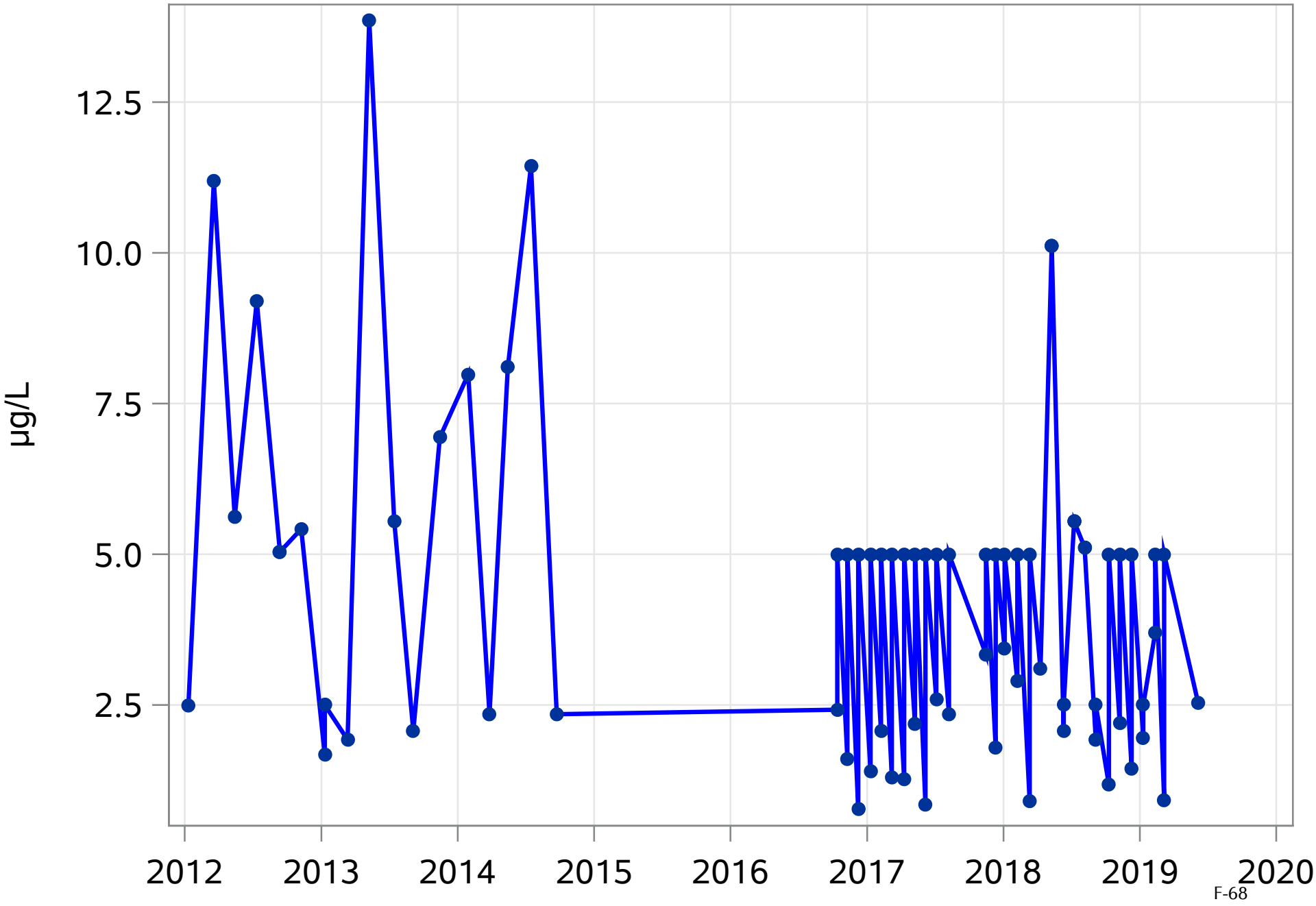


2634A - Tomoka River (Marine)
Silver

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	54	0	54

2634A - Tomoka River (Marine)

Zinc

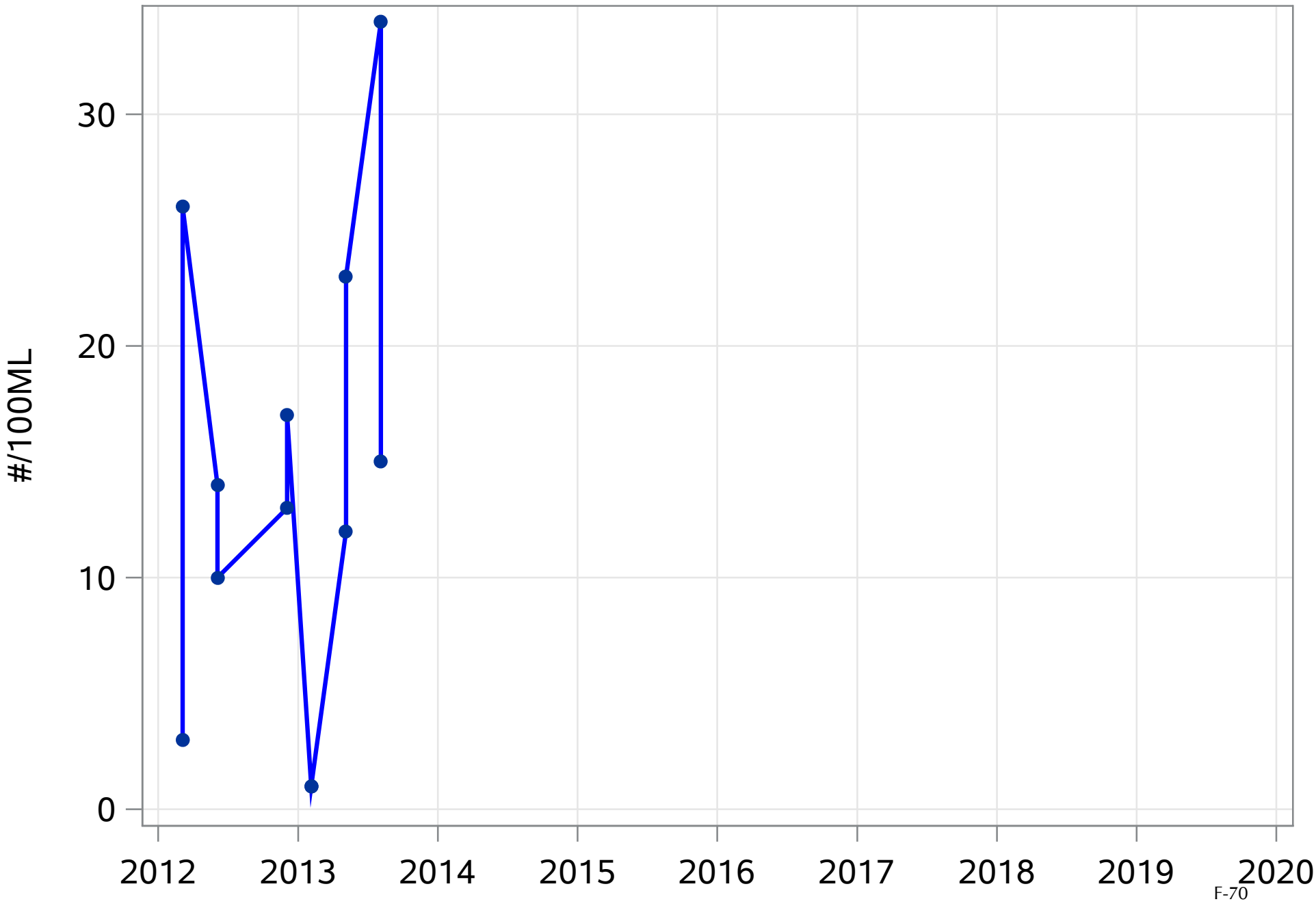


2634A - Tomoka River (Marine)
Zinc

Obs	pp_fail	pp_Count	vp_fail	VP_count
1	4	75	4	75

2634A - Tomoka River (Marine)

Enterococci

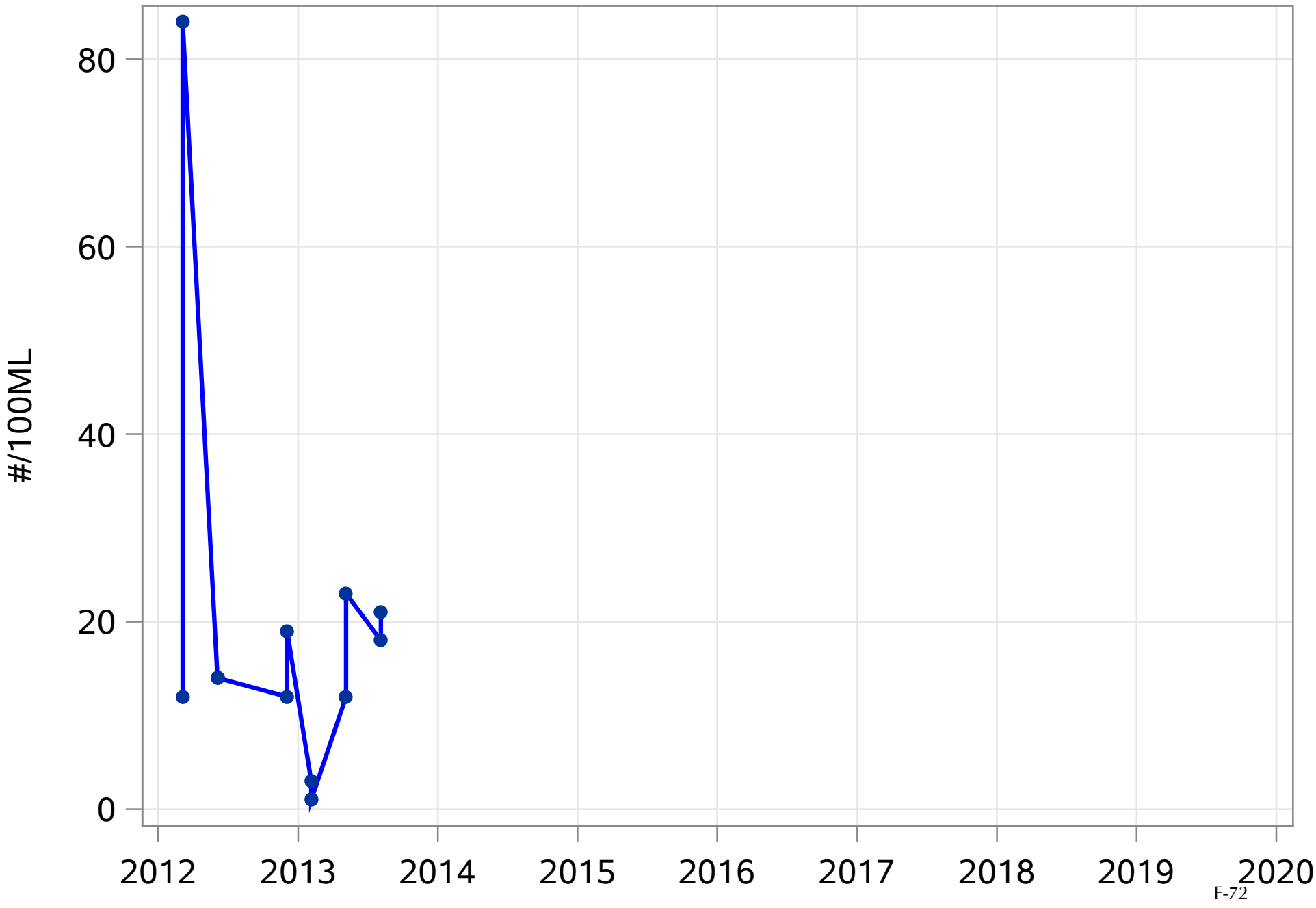


2634A - Tomoka River (Marine)
Enterococci

Obs	fail	n
1	0	12

2634A - Tomoka River (Marine)

Fecal Coliform

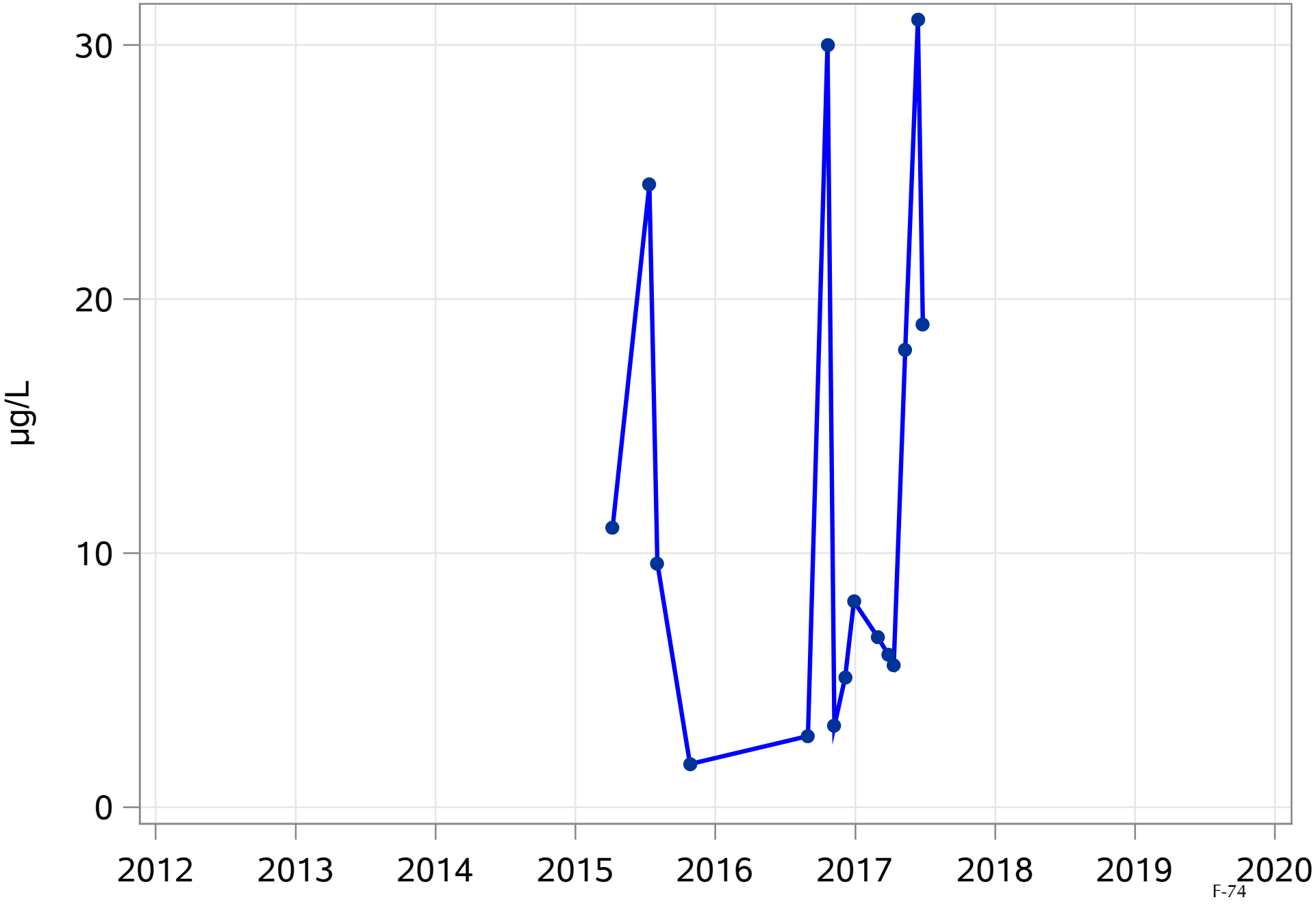


2634A - Tomoka River (Marine)
Fecal Coliform

Obs	fail	n
1	0	12

2642 - Unnamed Branch

Nutrients (Total Chlorphyll-a)

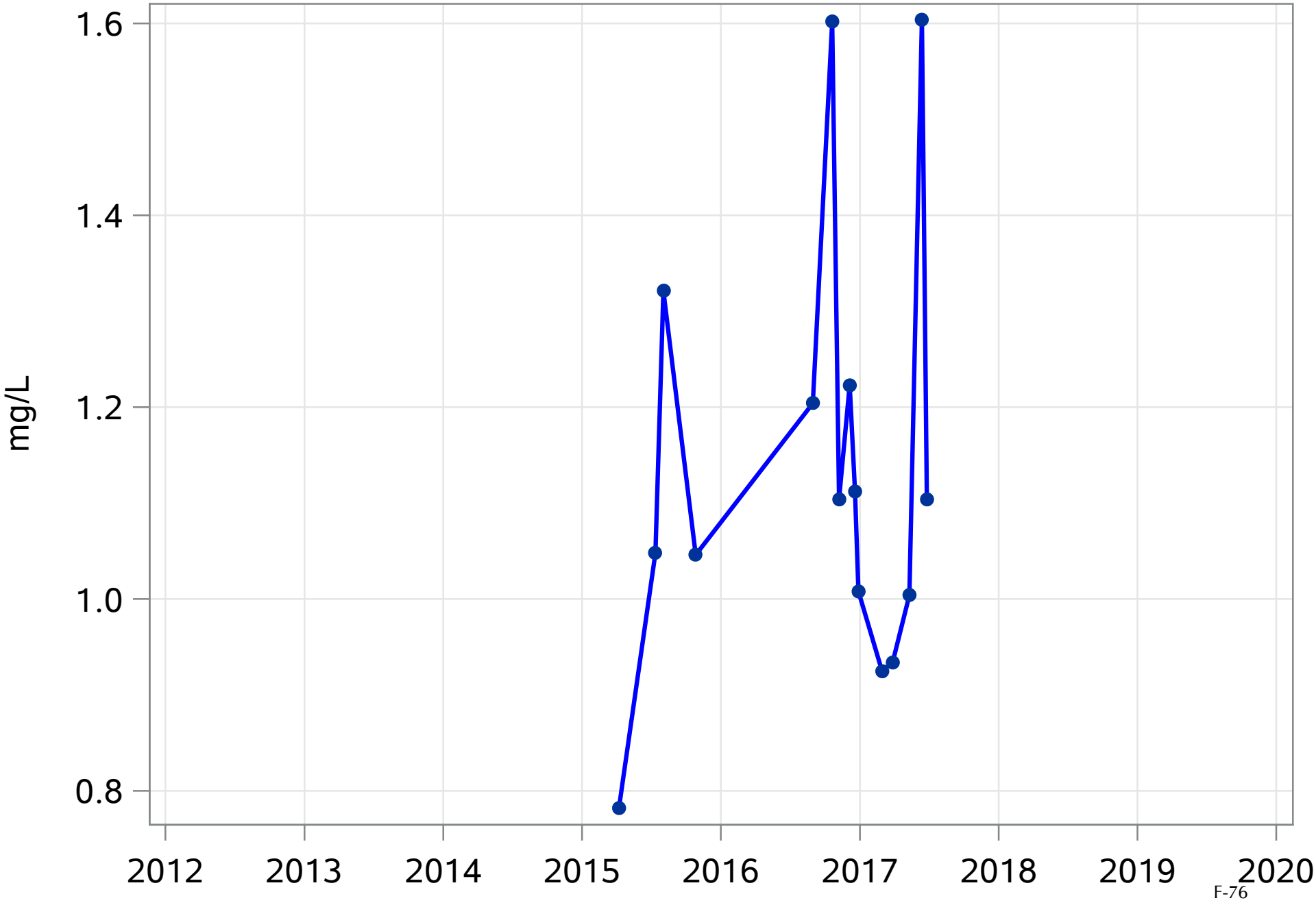


2642 - Unnamed Branch
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2642	2015	8.1
2	2642	2016	6.4
3	2642	2017	11.6

2642 - Unnamed Branch

Nutrients (Total Nitrogen)

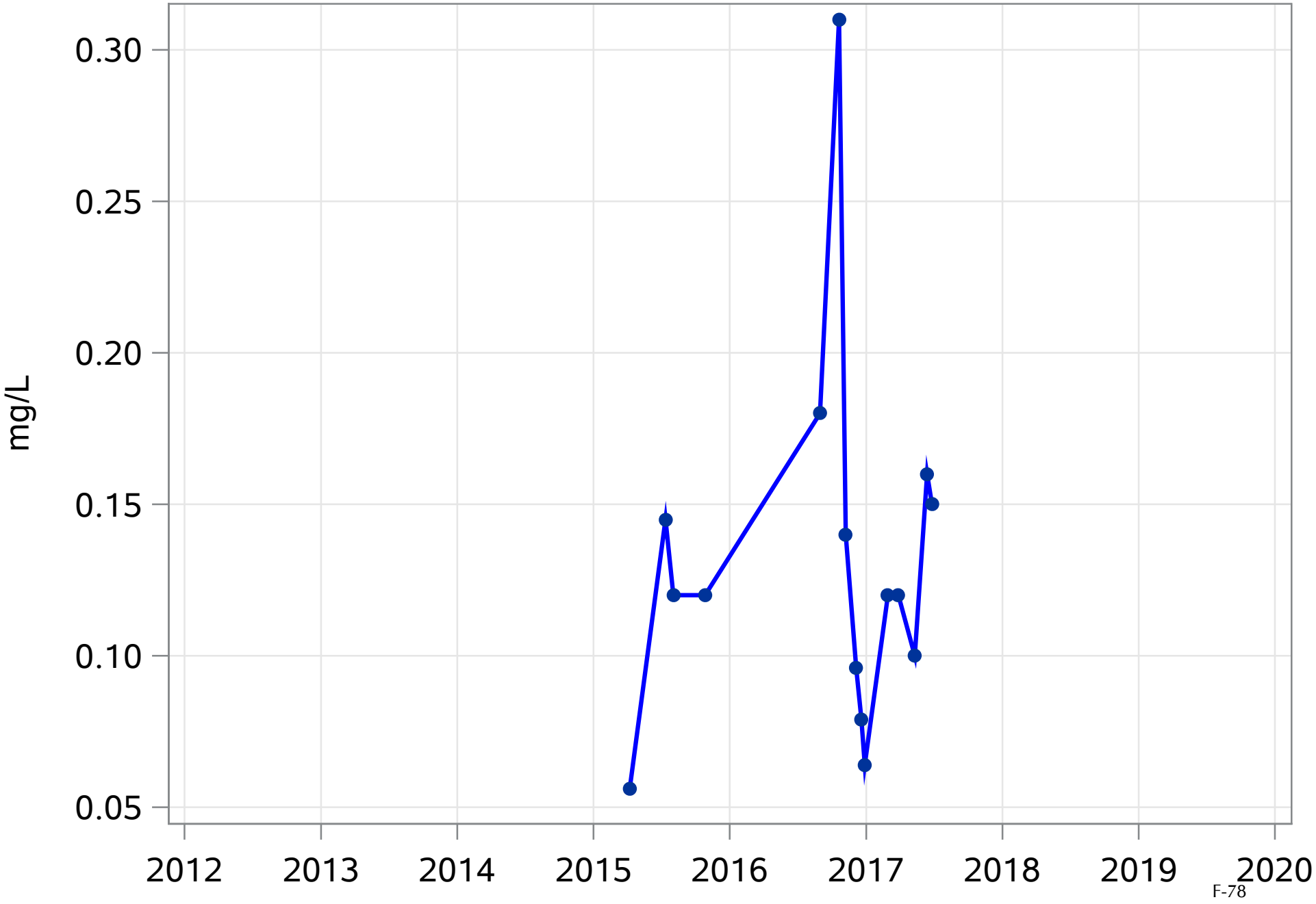


2642 - Unnamed Branch
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2642	2015	1.03
2	2642	2016	1.20
3	2642	2017	1.09

2642 - Unnamed Branch

Nutrients (Total Phosphorus)

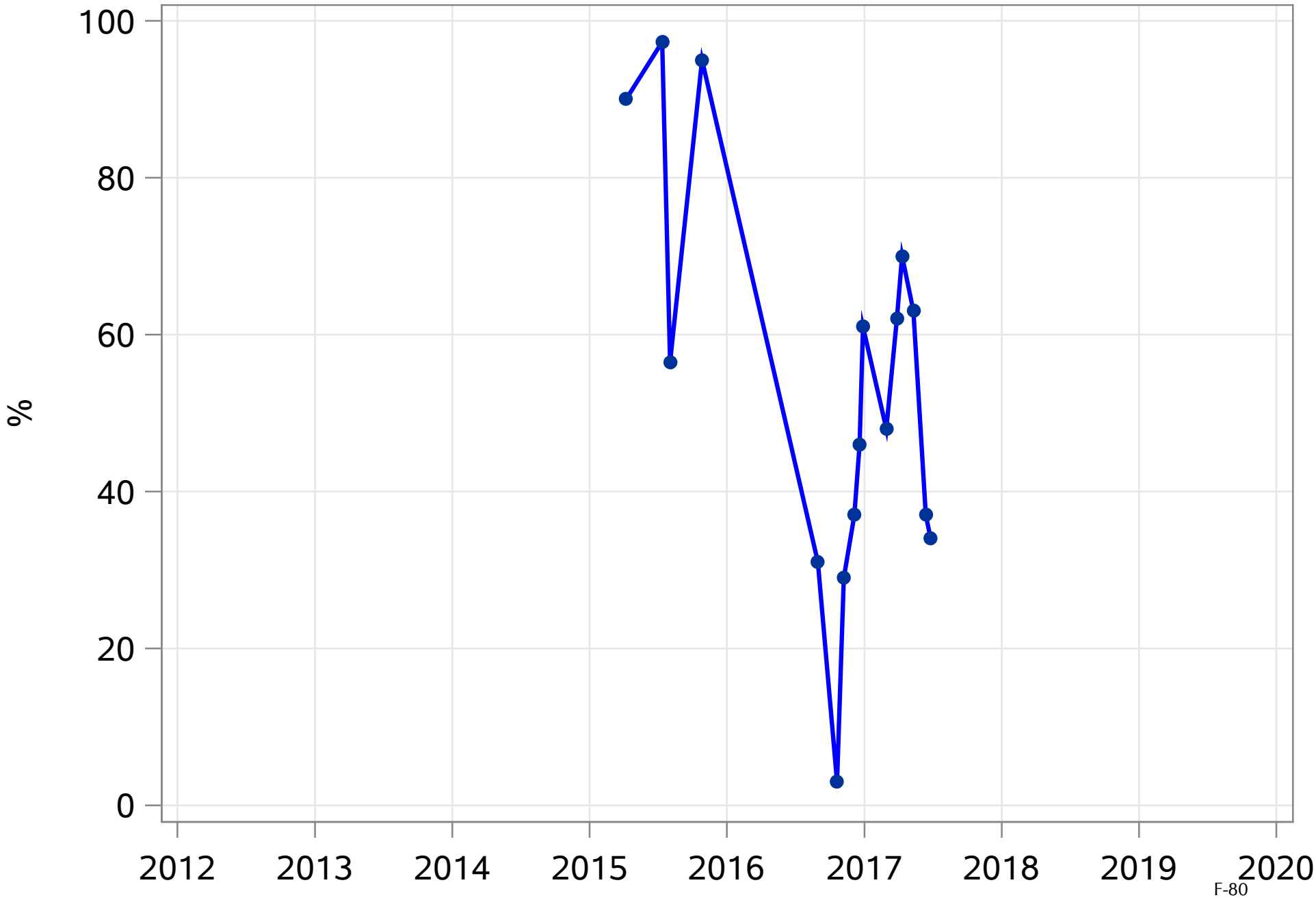


2642 - Unnamed Branch
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2642	2015	0.104
2	2642	2016	0.125
3	2642	2017	0.128

2642 - Unnamed Branch

Dissolved Oxygen

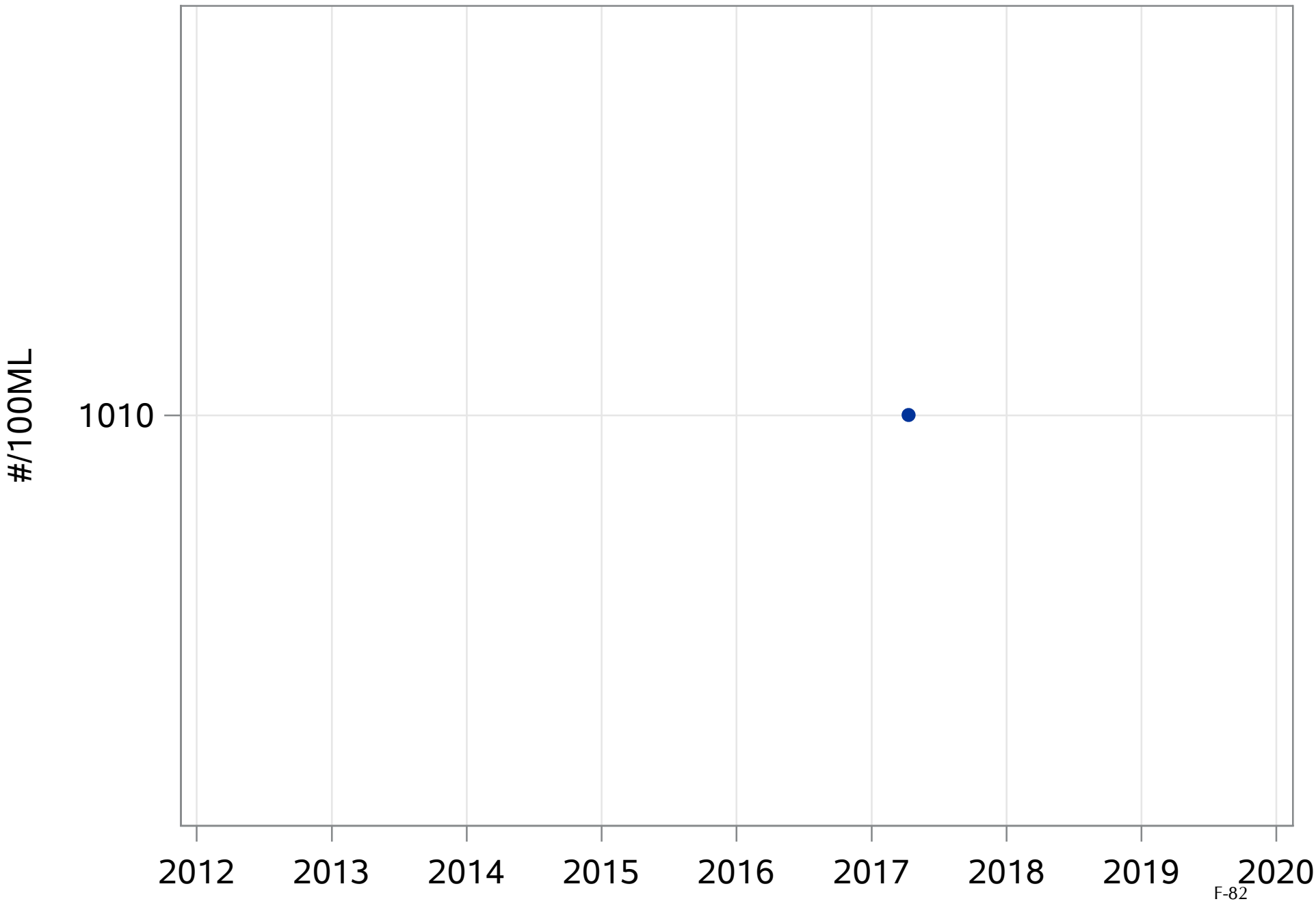


2642 - Unnamed Branch
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	6	16	6	16

2642 - Unnamed Branch

E. Coli

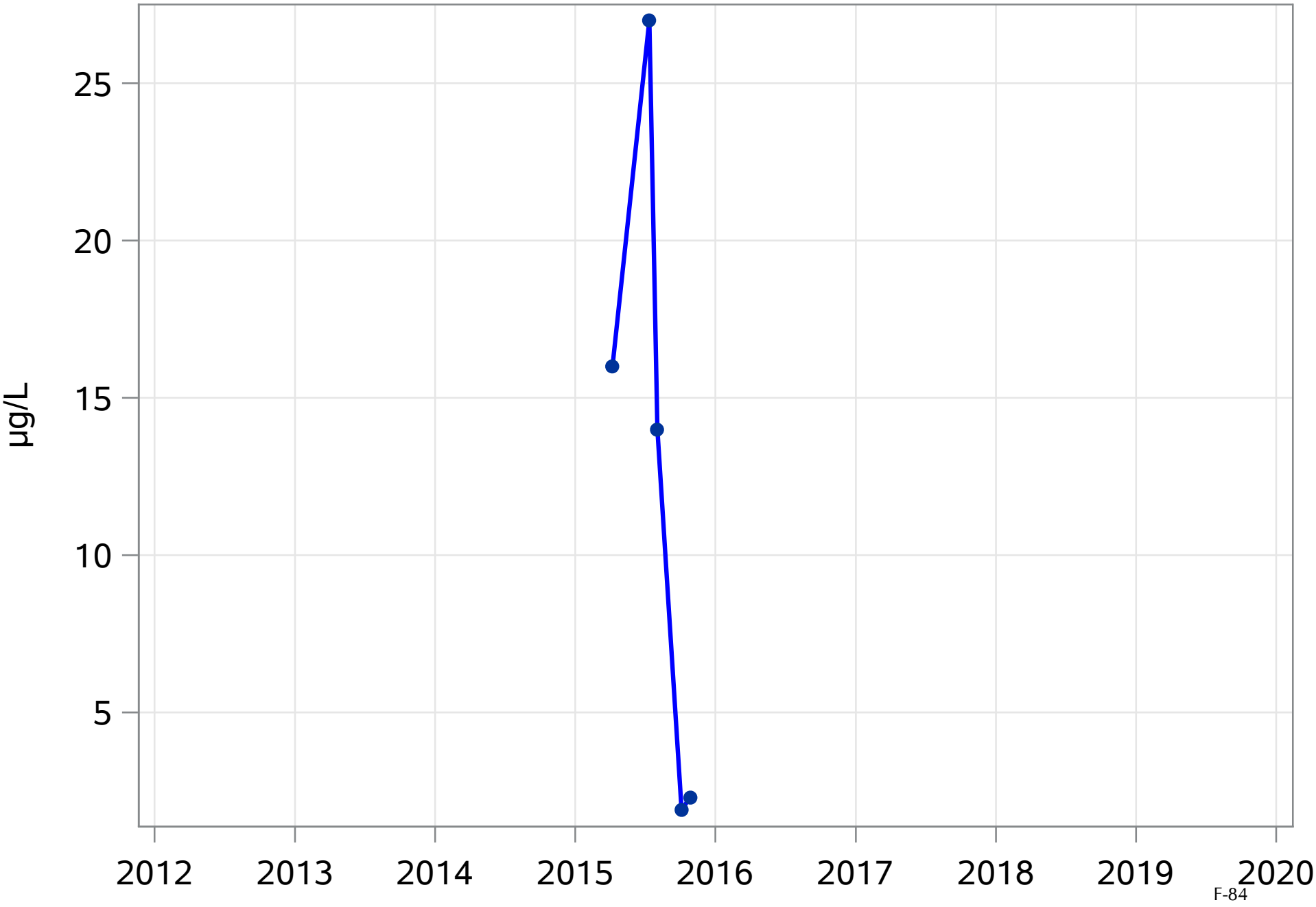


2642 - Unnamed Branch
E. Coli

Obs	fail	n
1	0	1

2640 - Unnamed Branch

Nutrients (Total Chlorphyll-a)

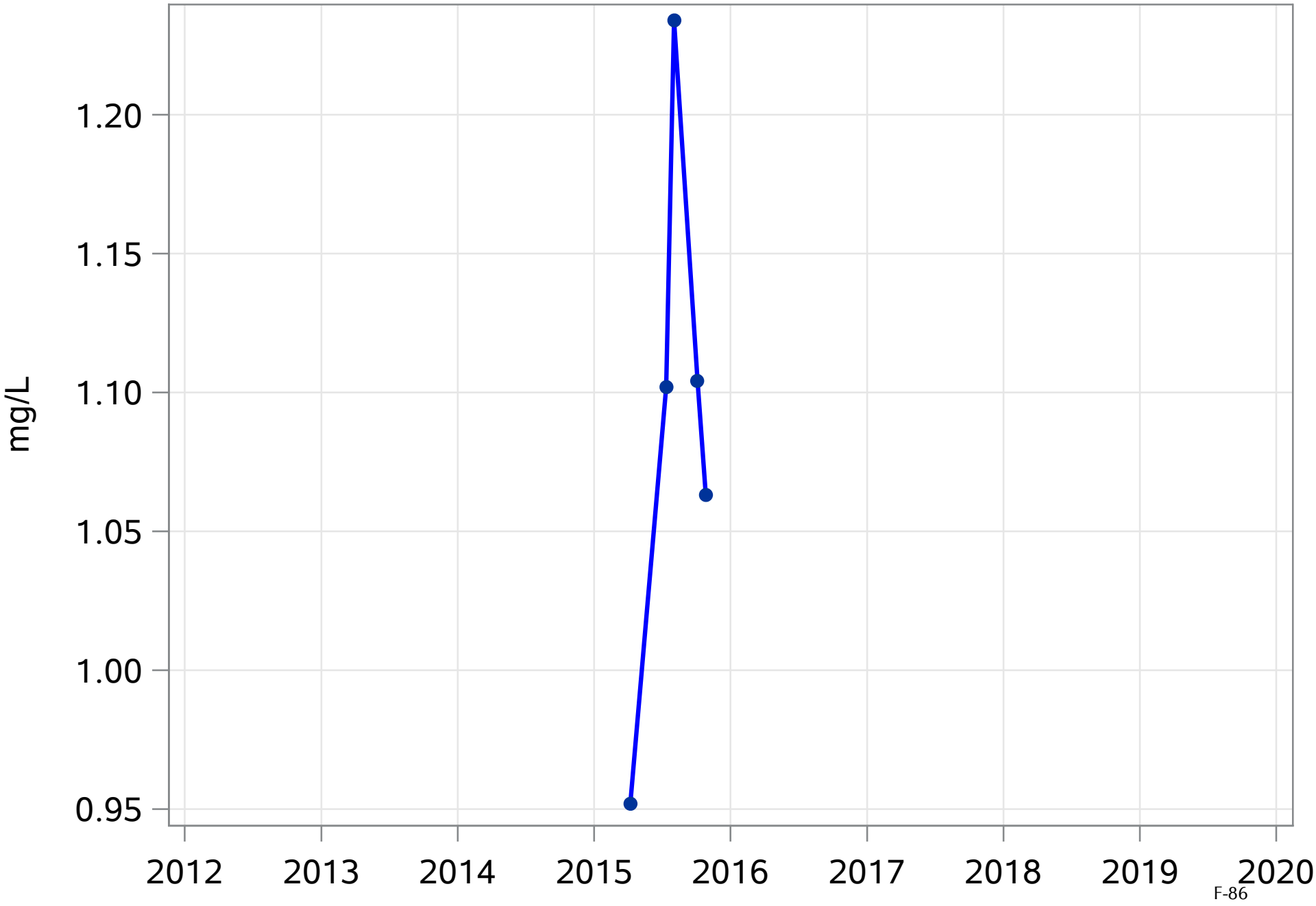


2640 - Unnamed Branch
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2640	2015	7.7

2640 - Unnamed Branch

Nutrients (Total Nitrogen)

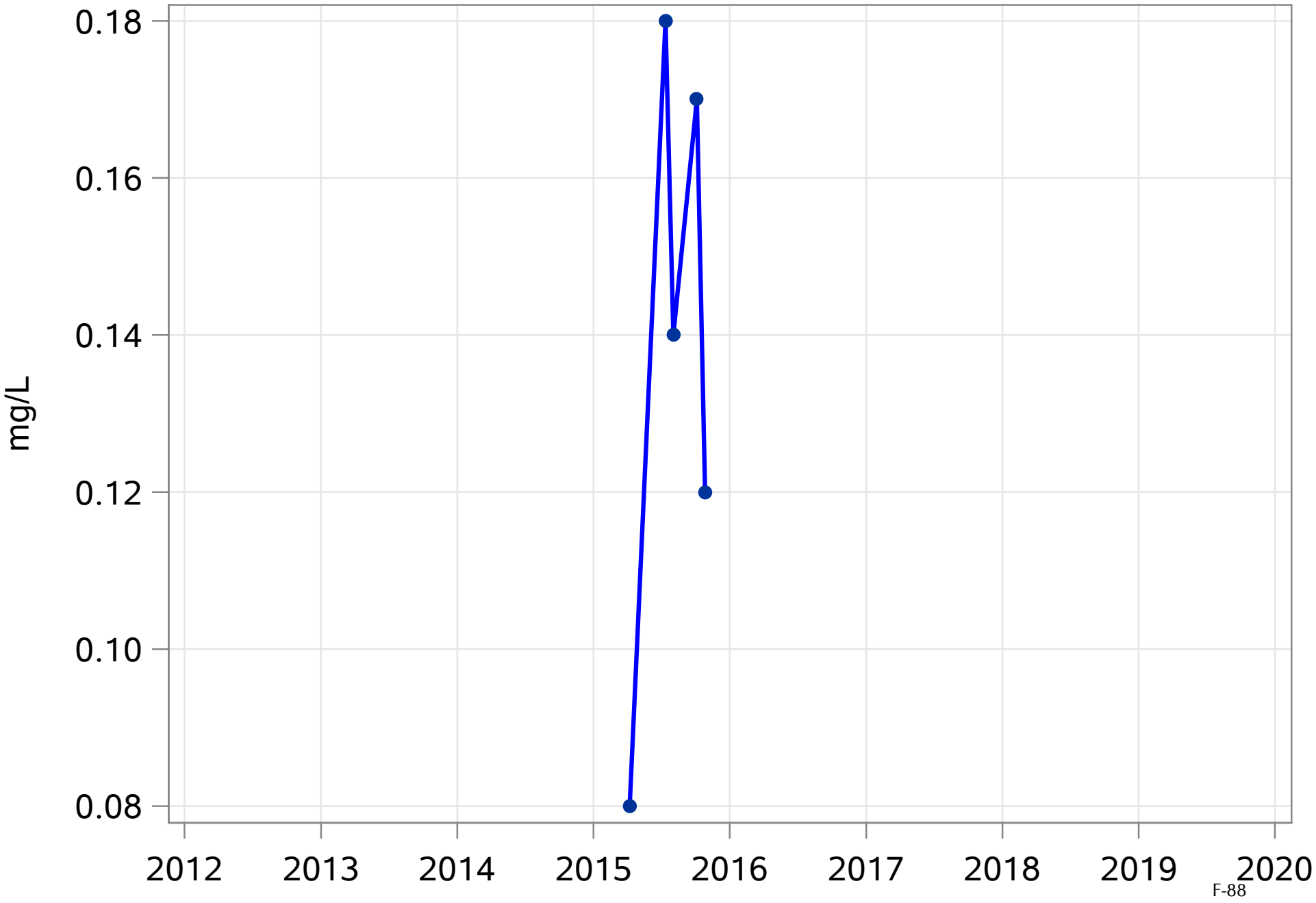


2640 - Unnamed Branch
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2640	2015	1.09

2640 - Unnamed Branch

Nutrients (Total Phosphorus)

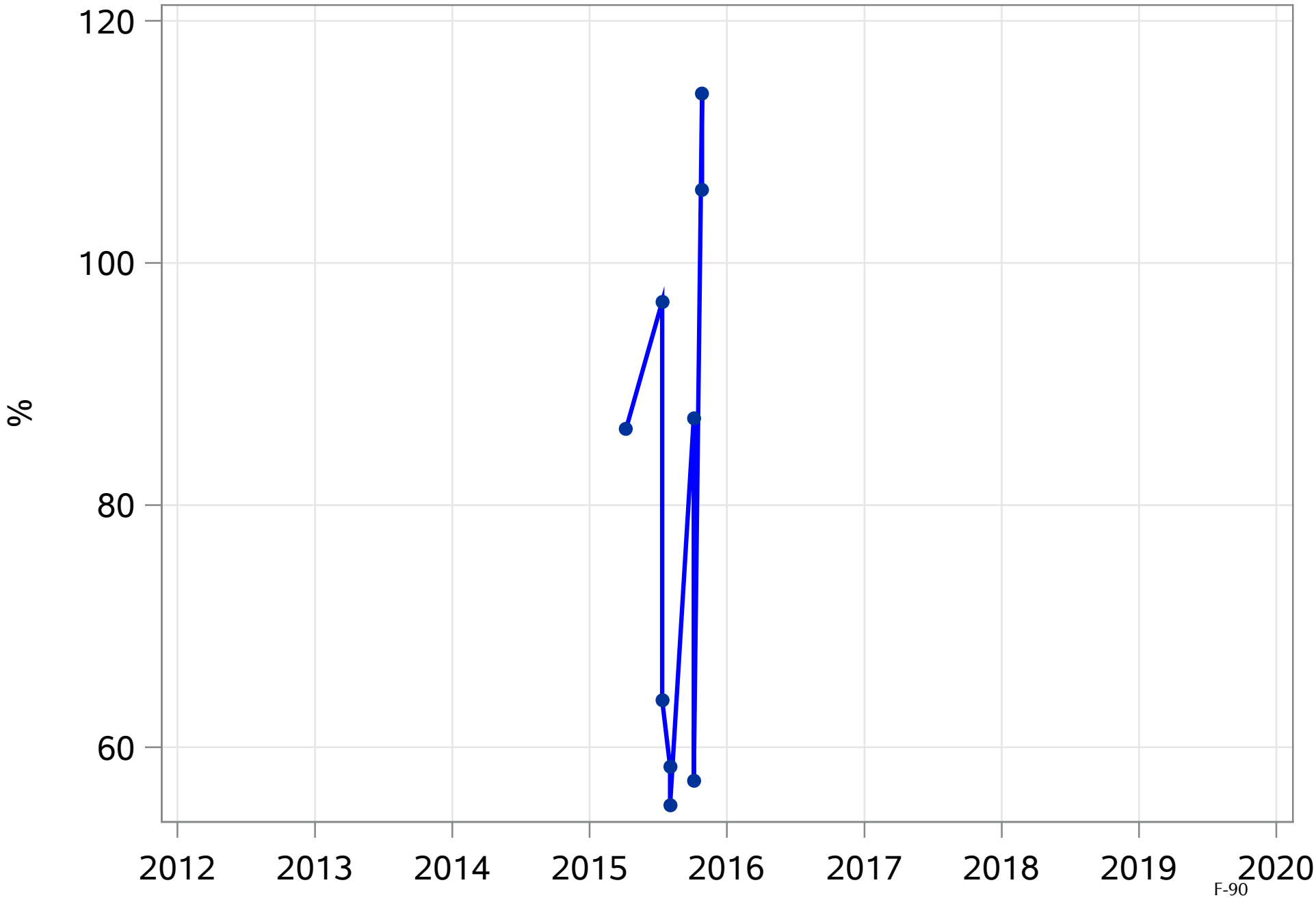


2640 - Unnamed Branch
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2640	2015	0.133

2640 - Unnamed Branch

Dissolved Oxygen

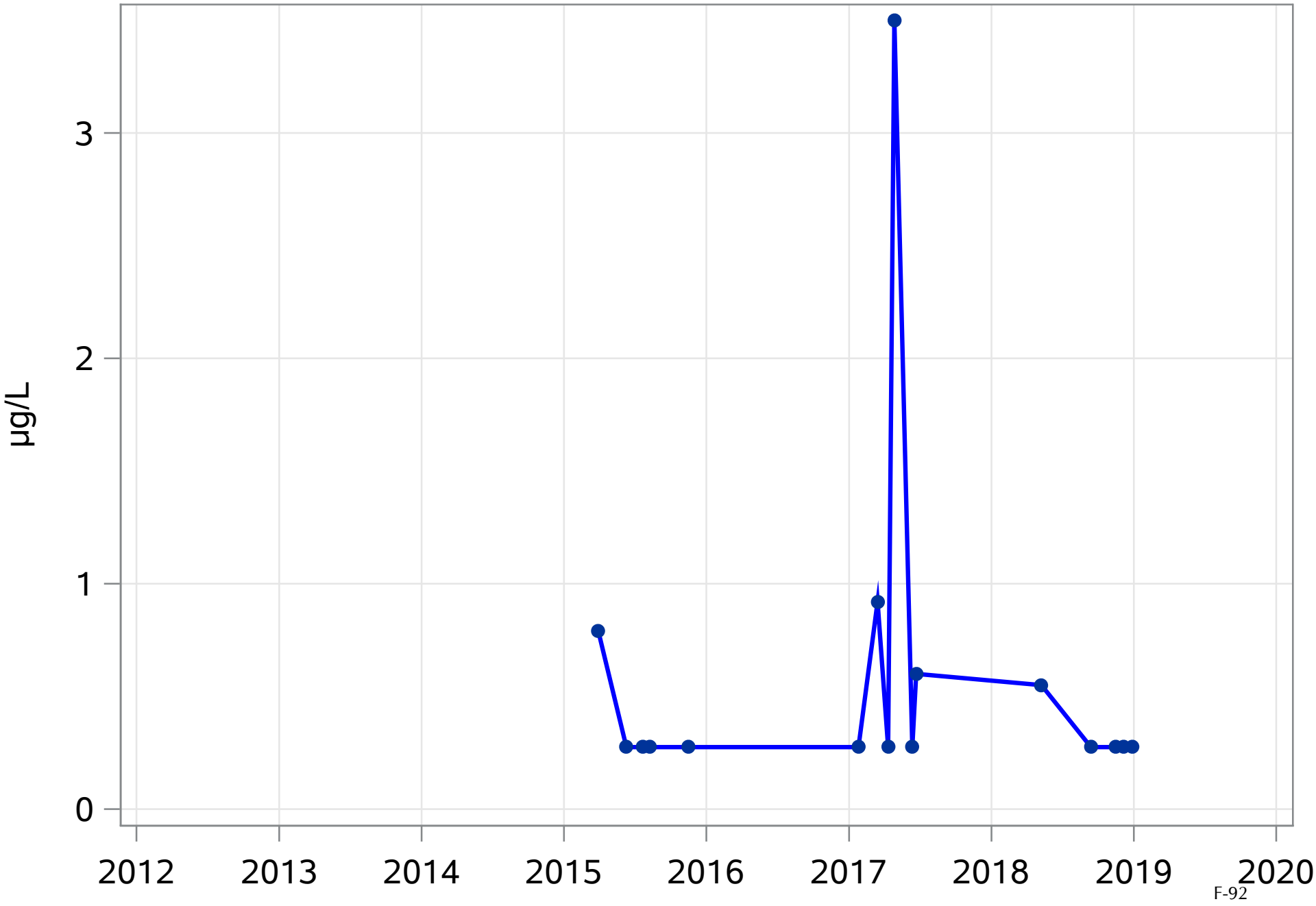


2640 - Unnamed Branch
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	5	0	5

2641 - Unnamed Branch

Nutrients (Total Chlorphyll-a)

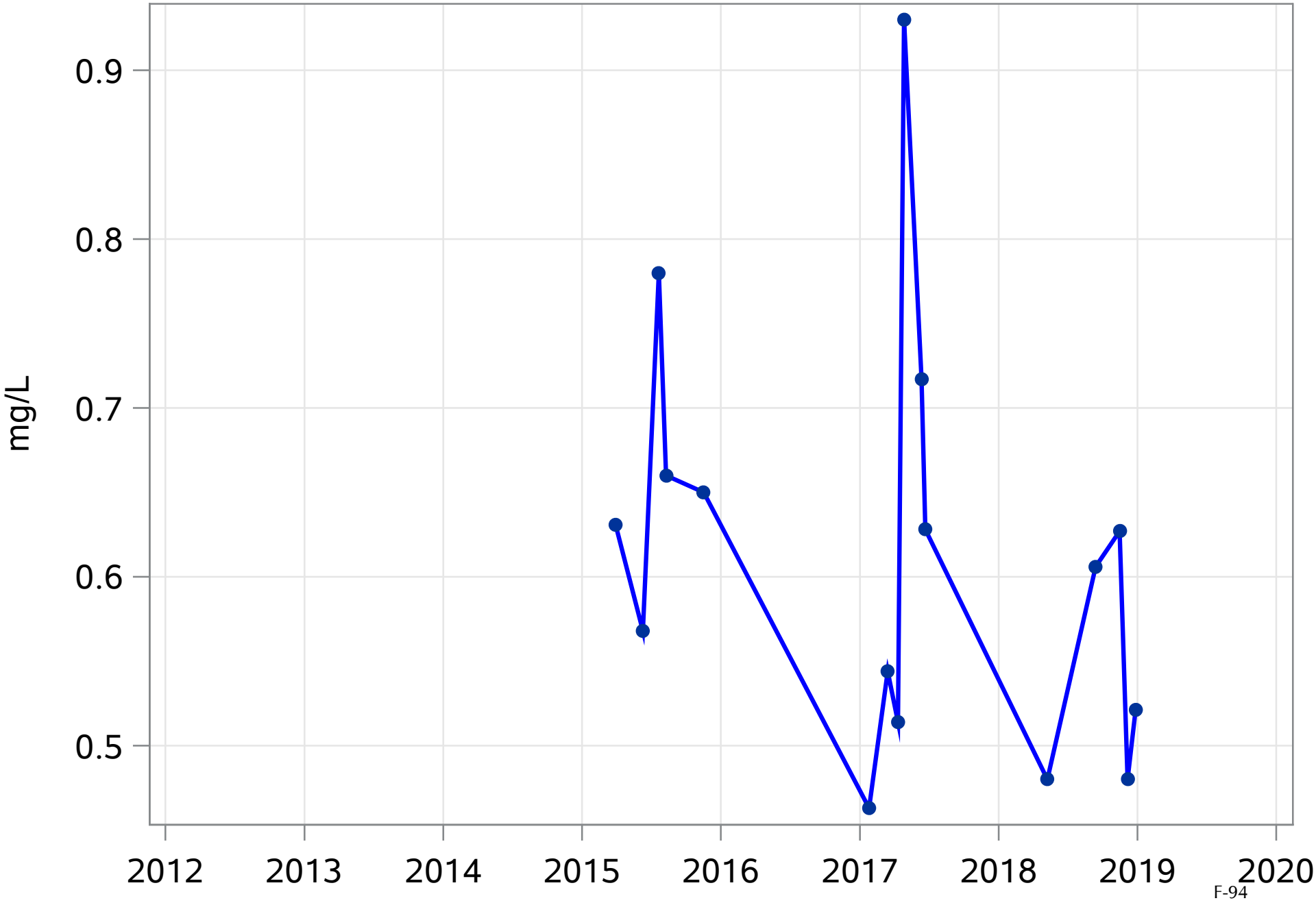


2641 - Unnamed Branch
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2641	2015	0.3
2	2641	2017	0.6
3	2641	2018	0.3

2641 - Unnamed Branch

Nutrients (Total Nitrogen)

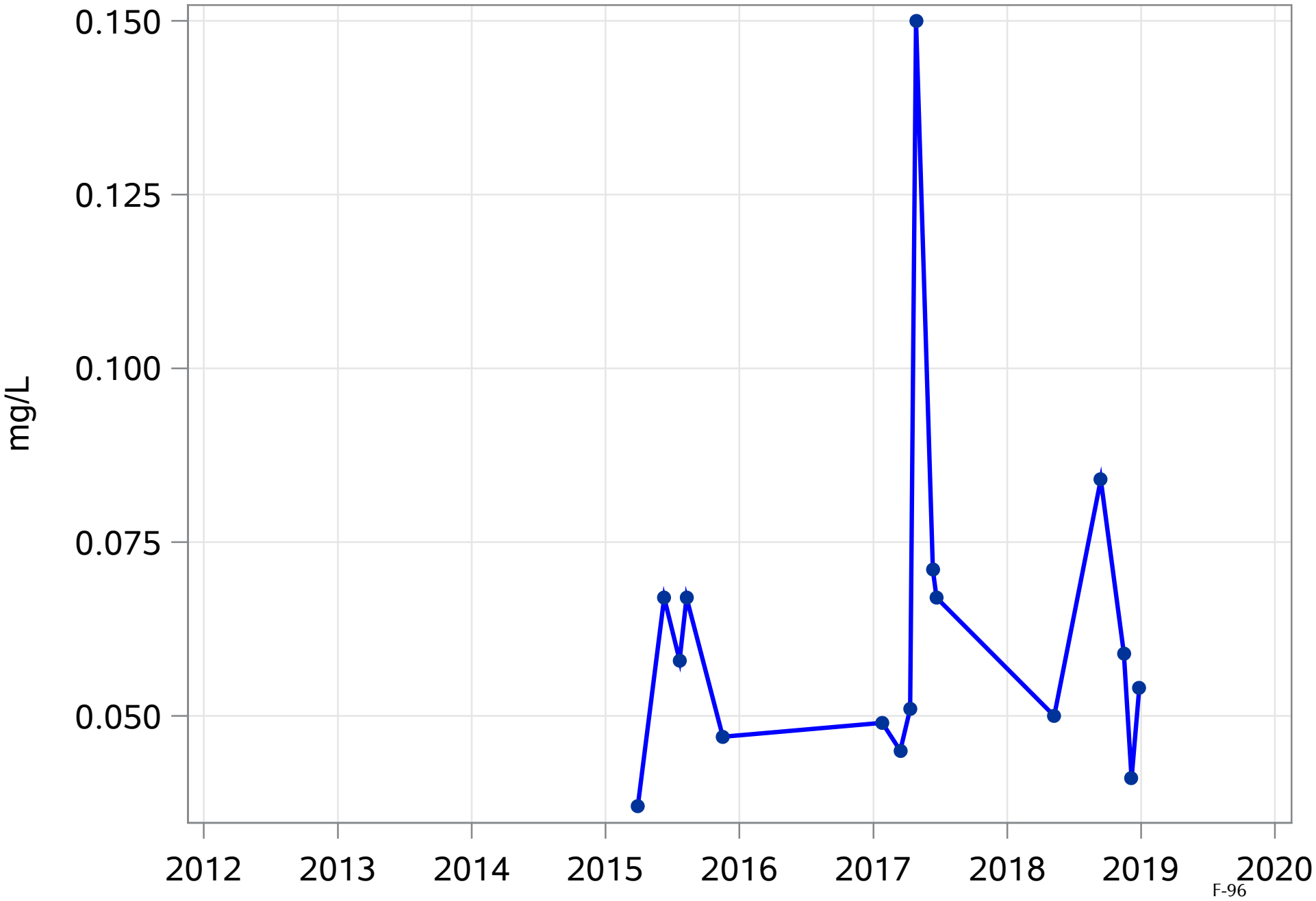


2641 - Unnamed Branch
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2641	2015	0.65
2	2641	2017	0.62
3	2641	2018	0.54

2641 - Unnamed Branch

Nutrients (Total Phosphorus)

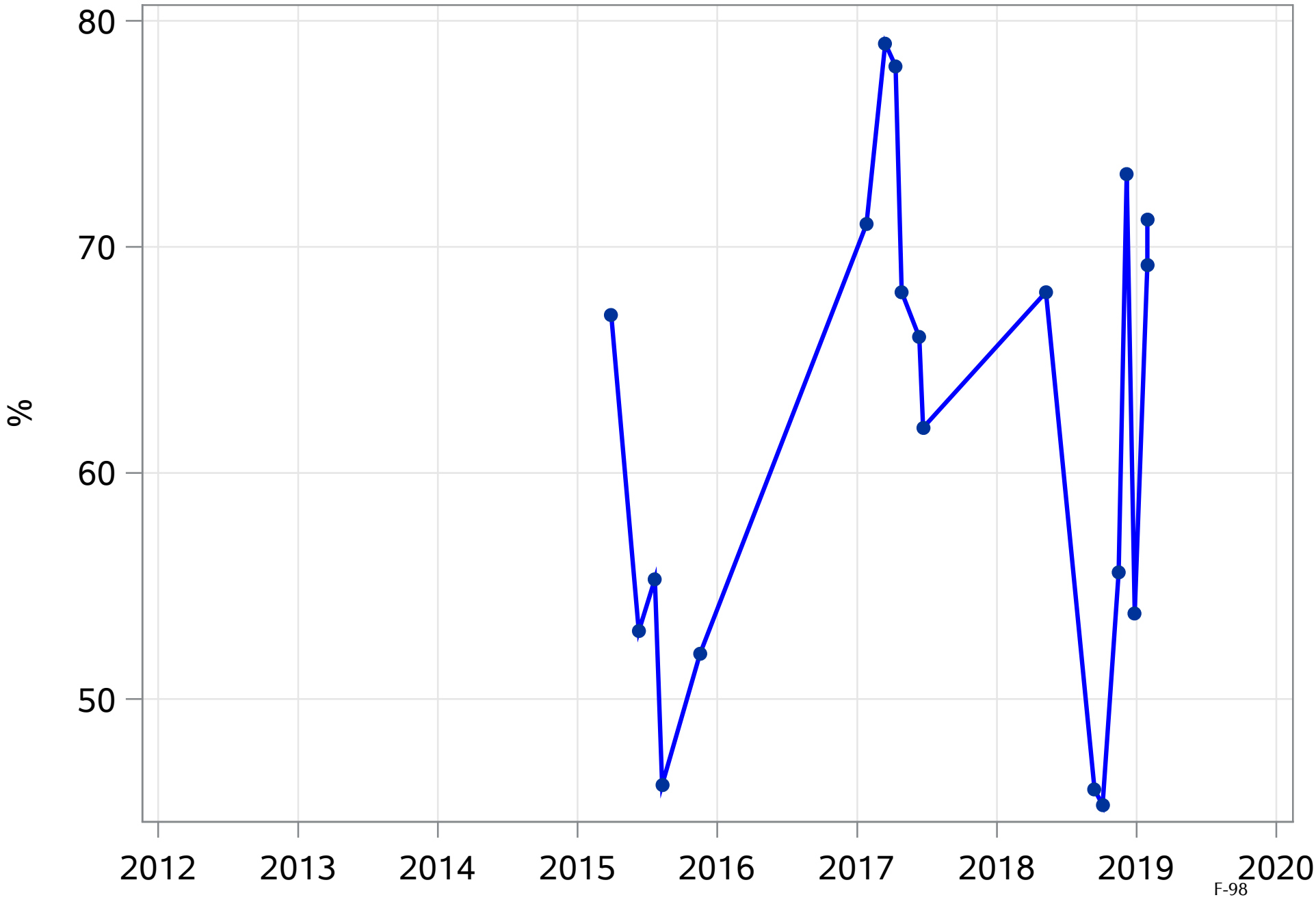


2641 - Unnamed Branch
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2641	2015	0.054
2	2641	2017	0.066
3	2641	2018	0.056

2641 - Unnamed Branch

Dissolved Oxygen

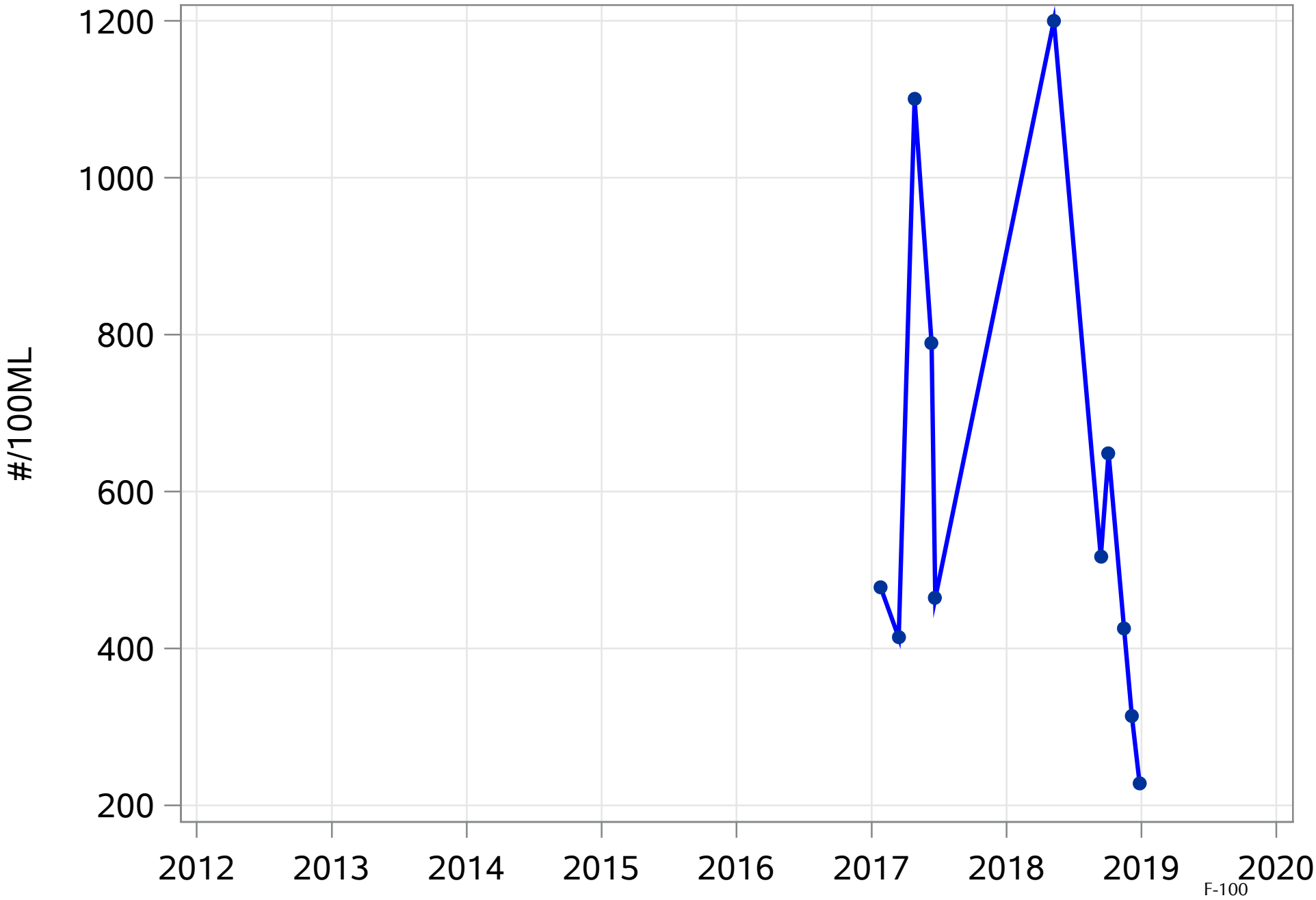


2641 - Unnamed Branch
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	19	0	19

2641 - Unnamed Branch

E. Coli

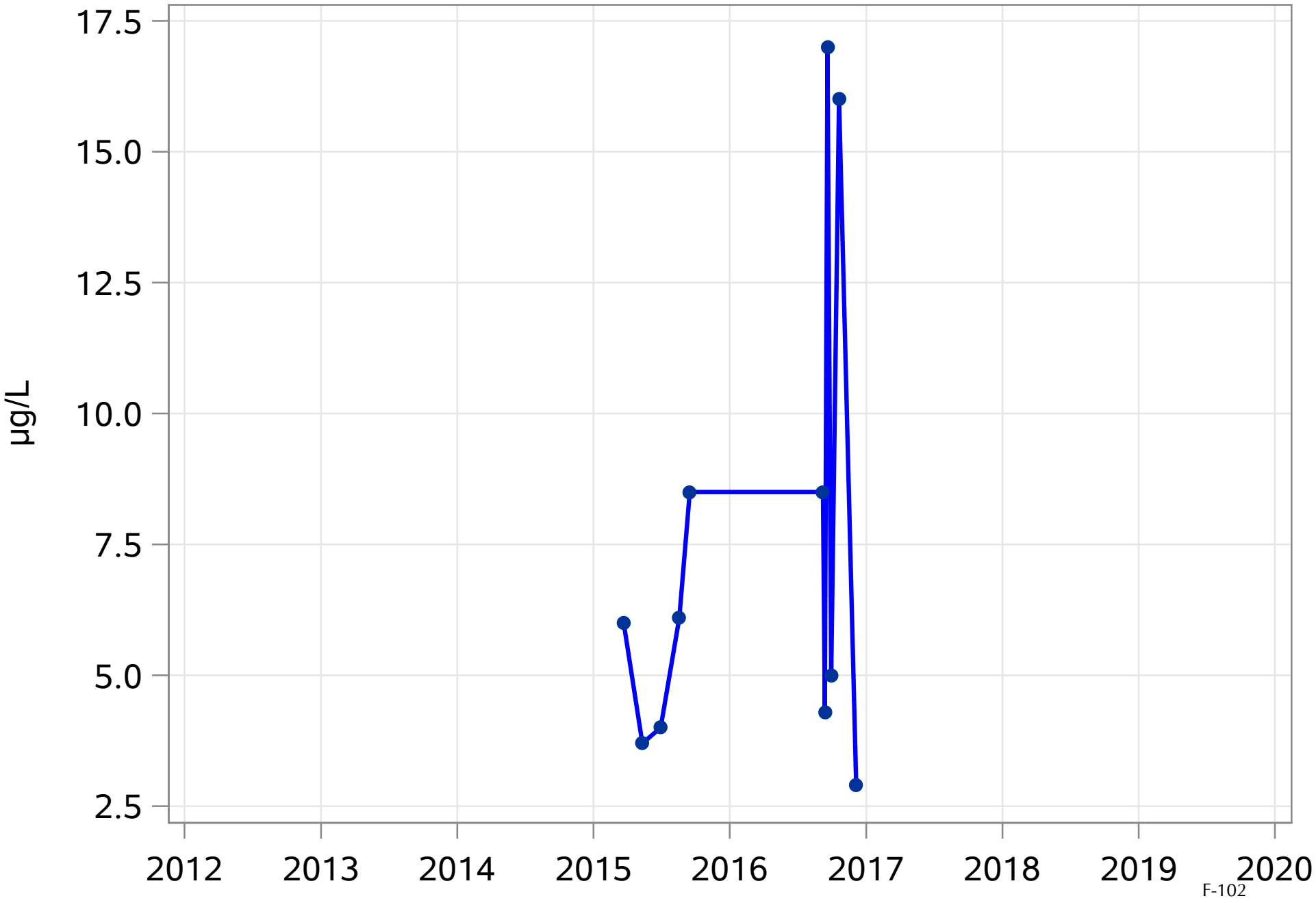


2641 - Unnamed Branch
E. Coli

Obs	fail	n
1	9	11

2647 - Holly Hill Ditch

Nutrients (Total Chlorphyll-a)

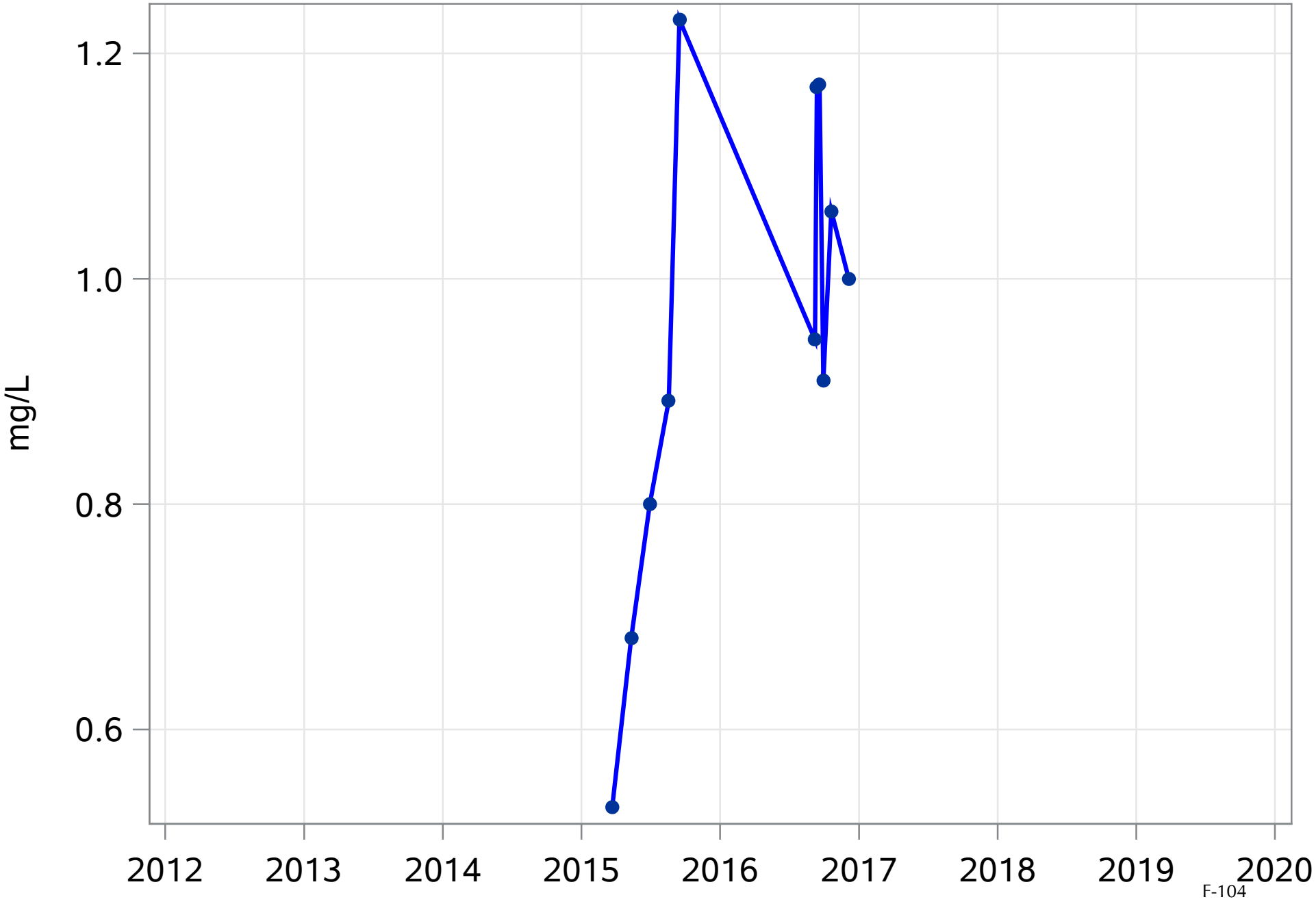


2647 - Holly Hill Ditch
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2647	2015	5.4
2	2647	2016	7.2

2647 - Holly Hill Ditch

Nutrients (Total Nitrogen)

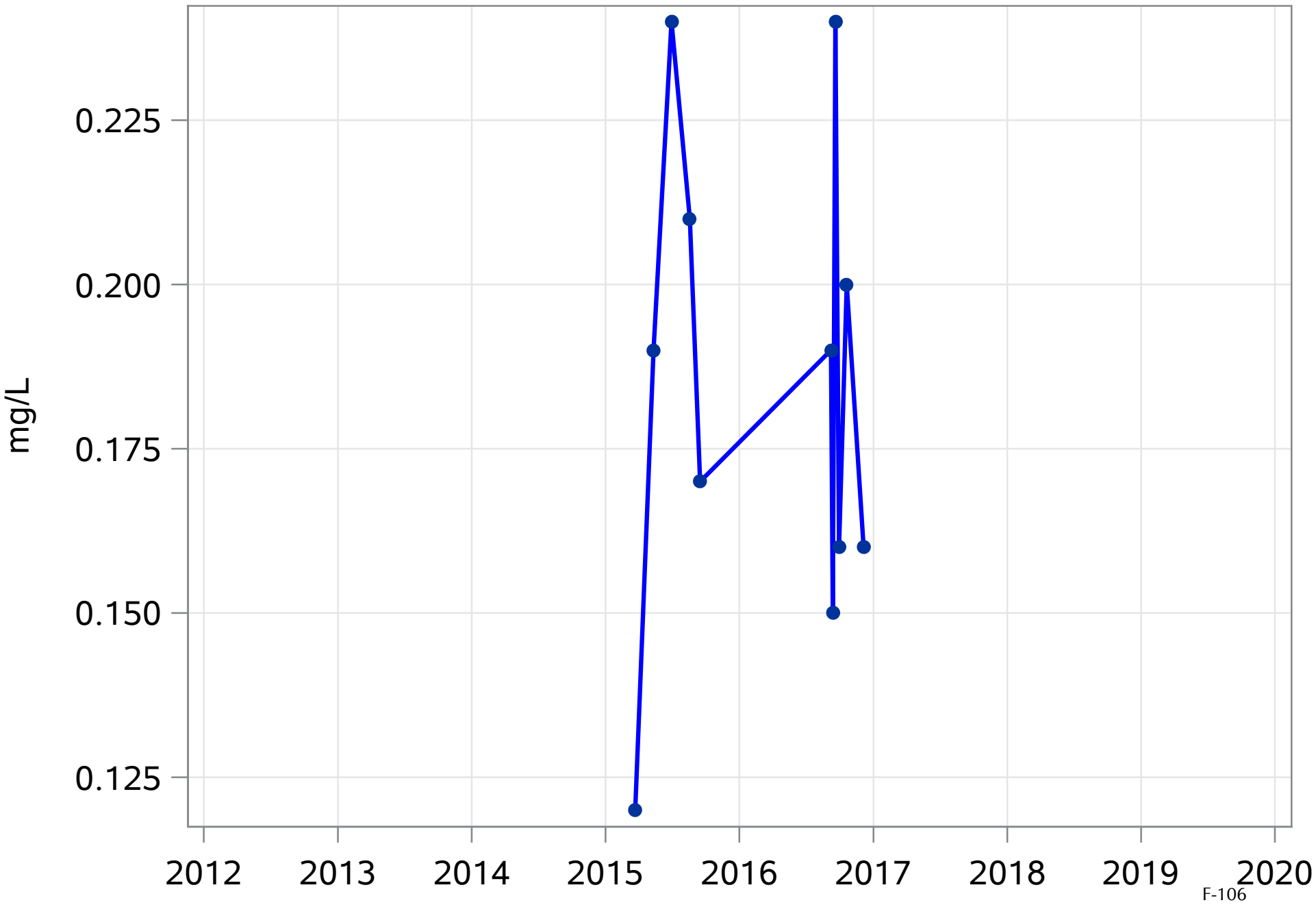


2647 - Holly Hill Ditch
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2647	2015	0.79
2	2647	2016	1.04

2647 - Holly Hill Ditch

Nutrients (Total Phosphorus)

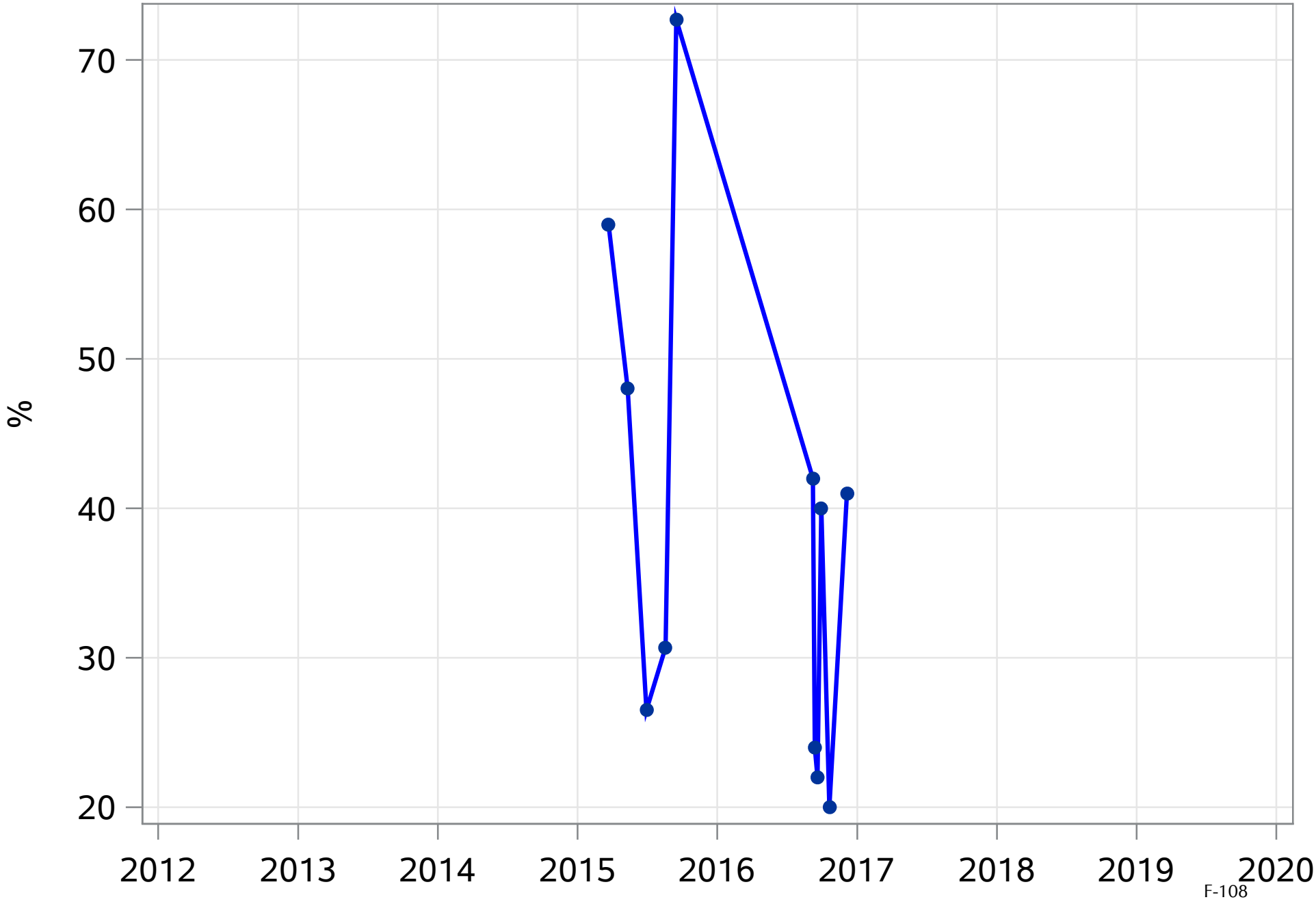


2647 - Holly Hill Ditch
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2647	2015	0.181
2	2647	2016	0.181

2647 - Holly Hill Ditch

Dissolved Oxygen

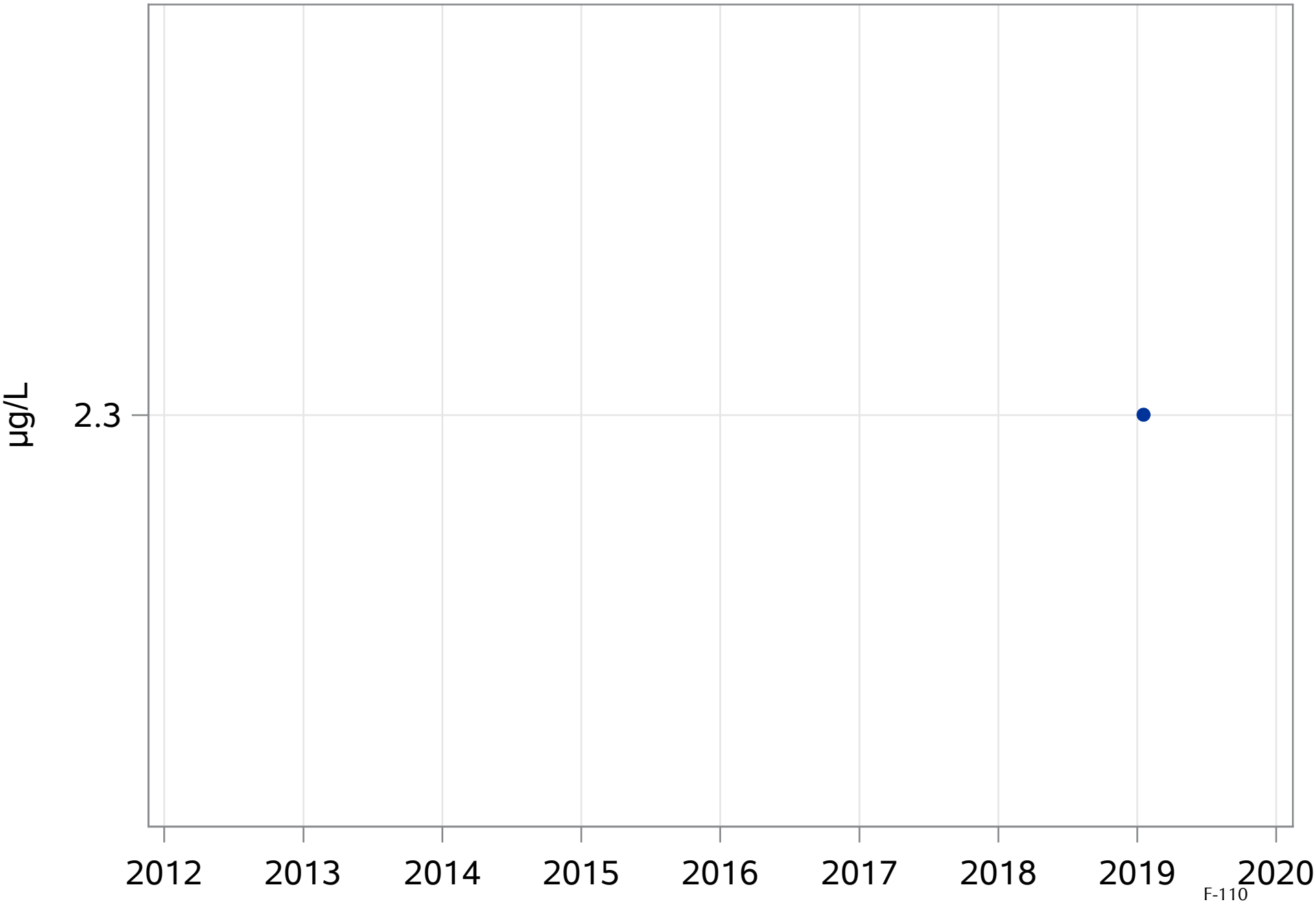


2647 - Holly Hill Ditch
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	7	11	7	11

2631 - Unnamed Ditch

Nutrients (Total Chlorphyll-a)

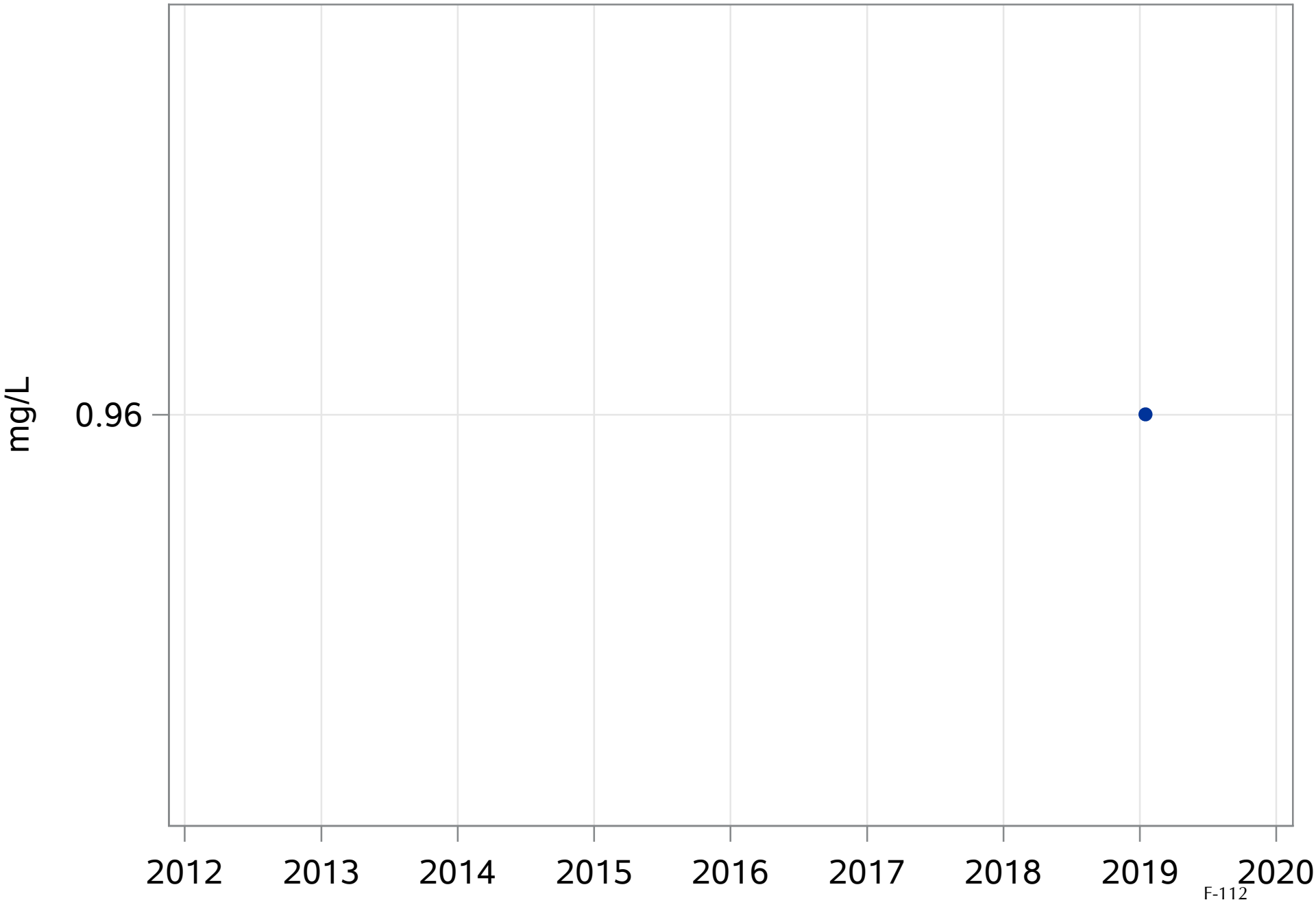


2631 - Unnamed Ditch
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2631	2019	2.3

2631 - Unnamed Ditch

Nutrients (Total Nitrogen)

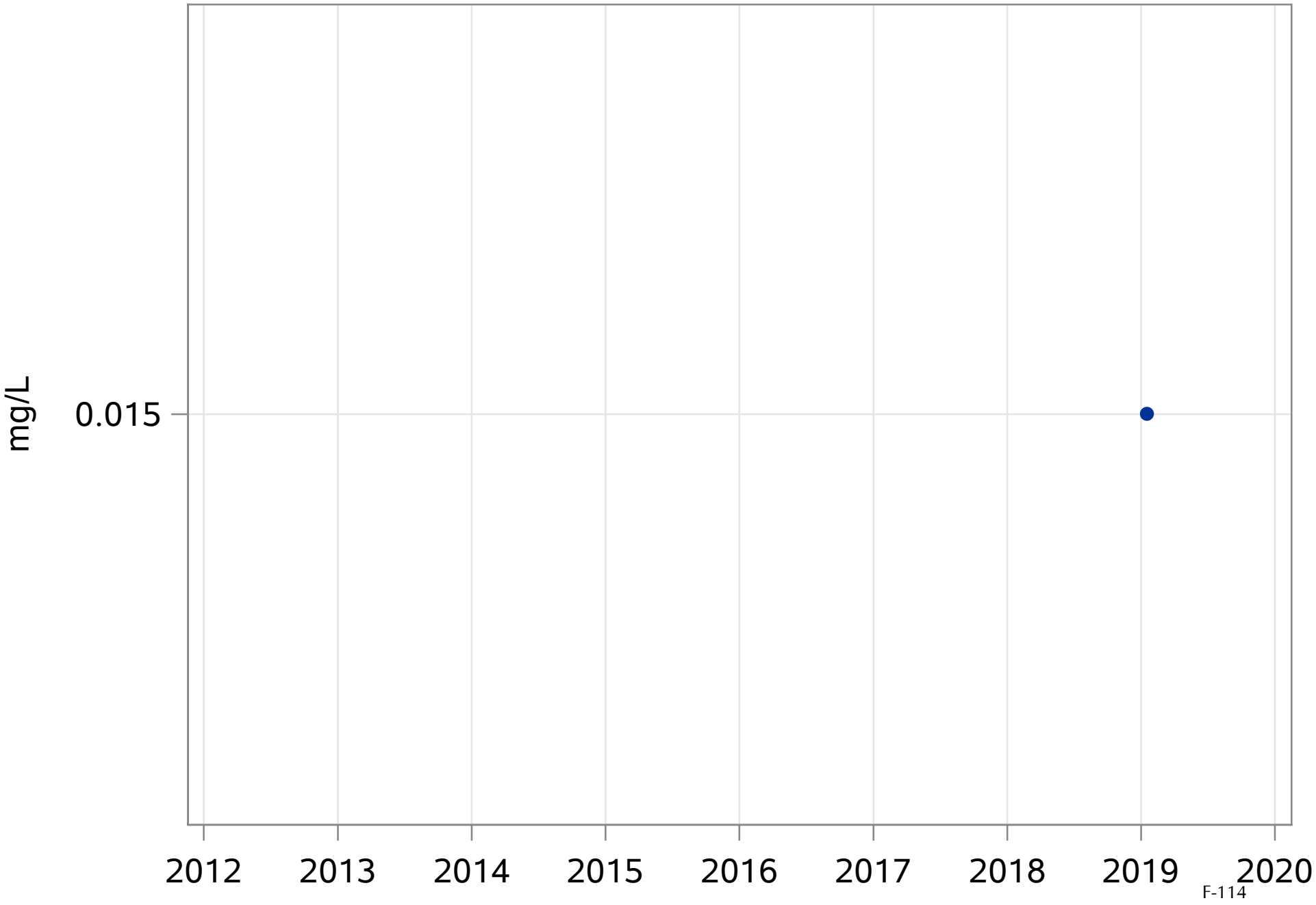


2631 - Unnamed Ditch
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2631	2019	0.96

2631 - Unnamed Ditch

Nutrients (Total Phosphorus)

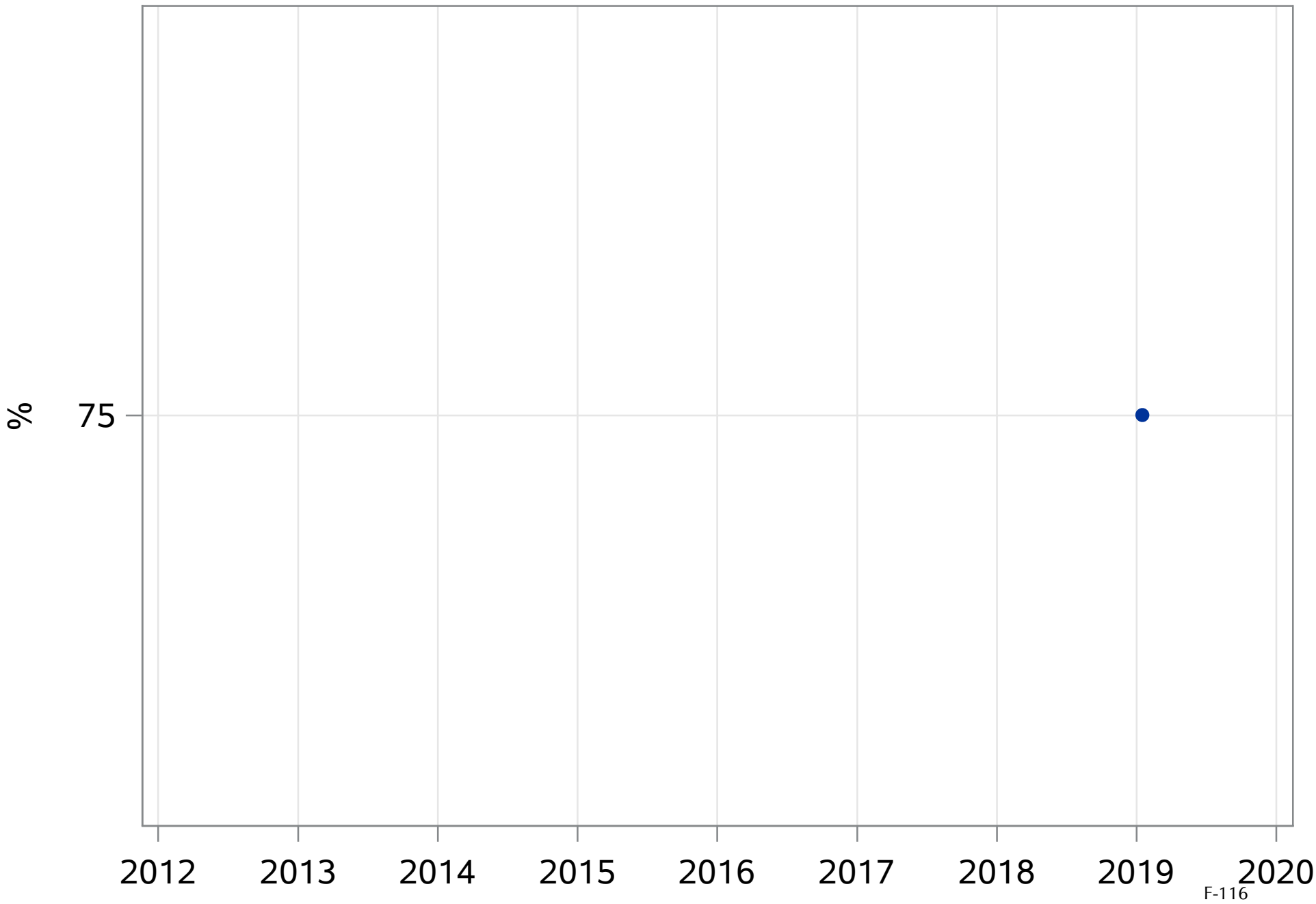


2631 - Unnamed Ditch
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2631	2019	0.015

2631 - Unnamed Ditch

Dissolved Oxygen

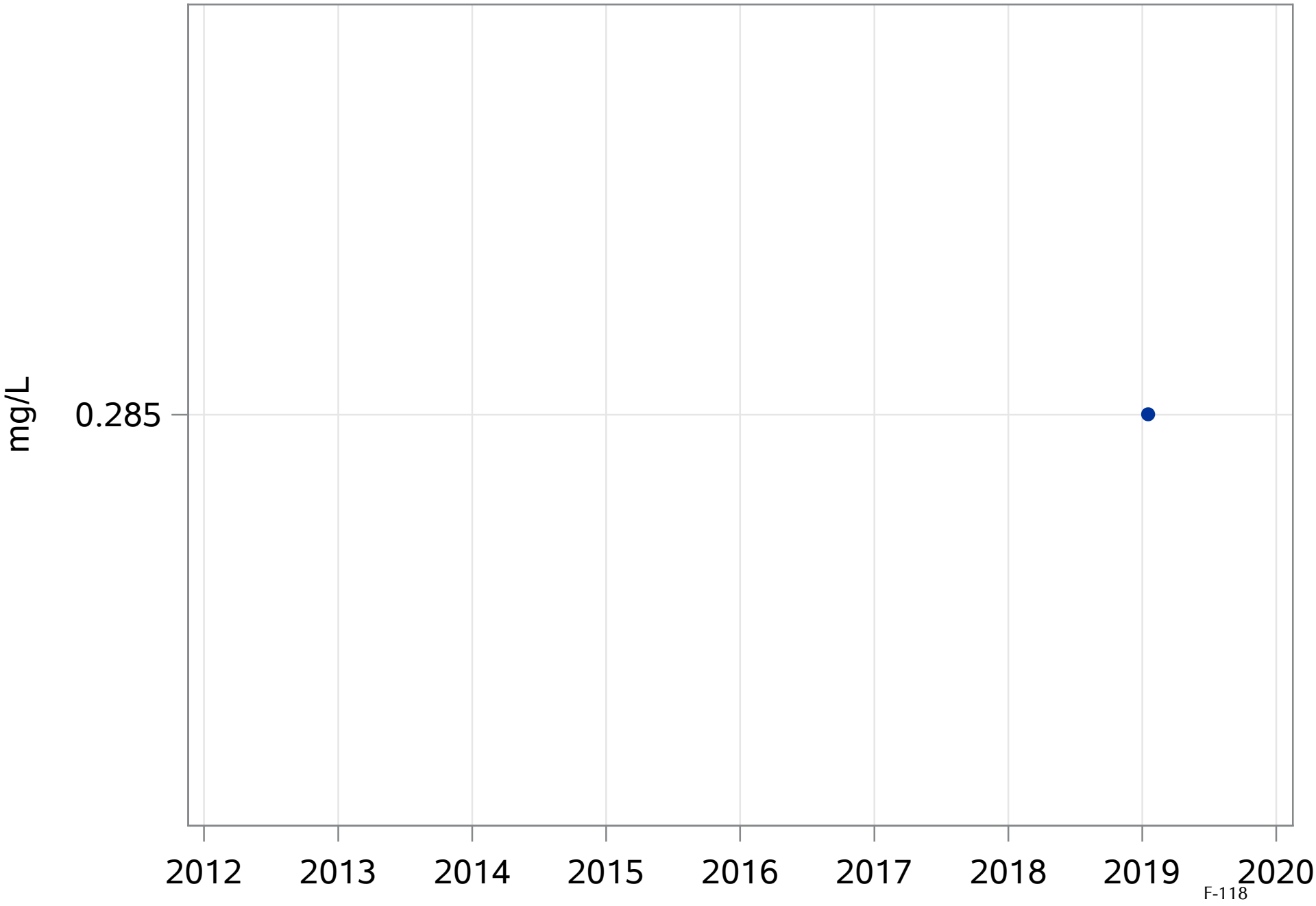


2631 - Unnamed Ditch
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	1	0	1

2631 - Unnamed Ditch

Aluminum

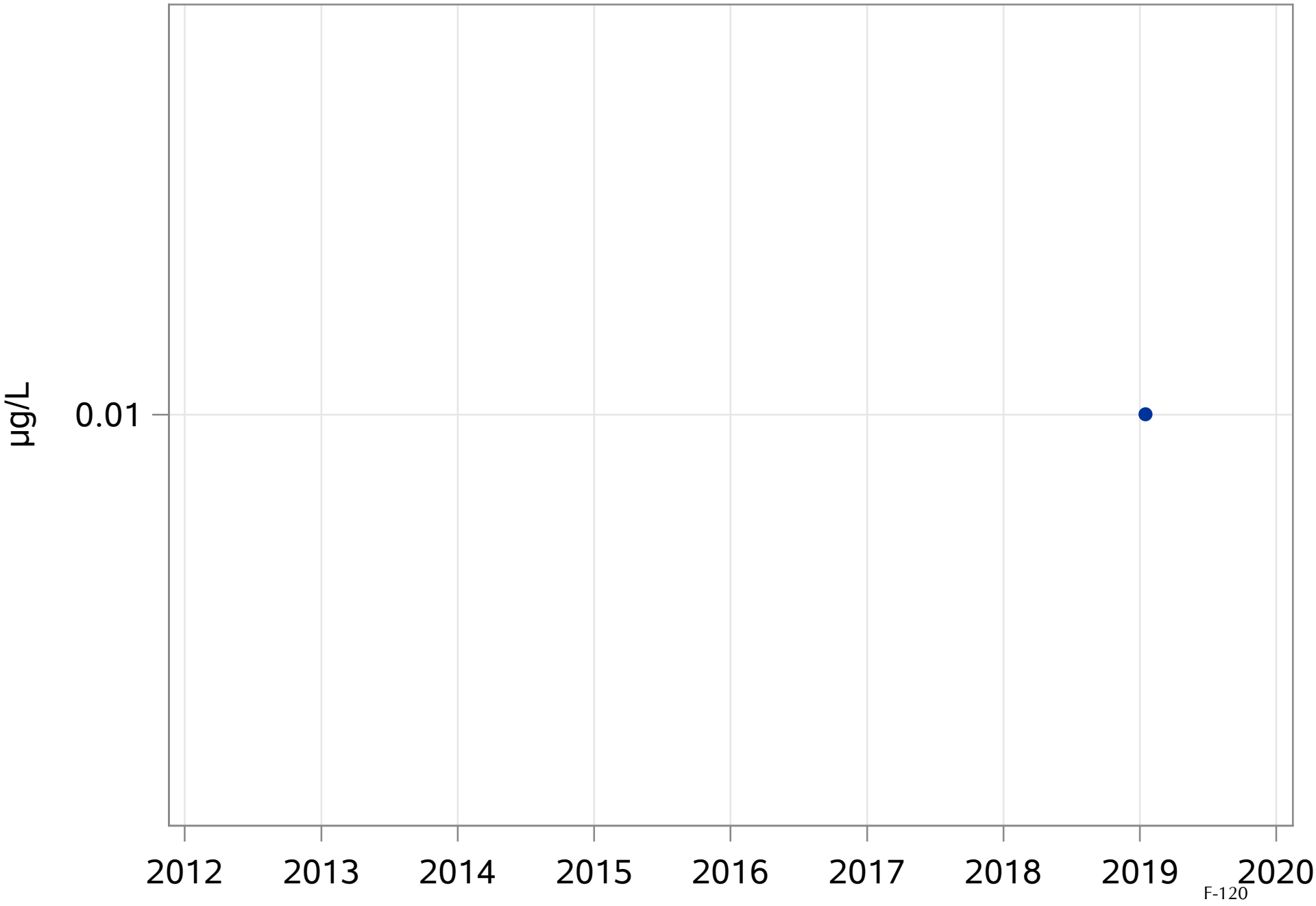


2631 - Unnamed Ditch
Aluminum

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	1	0	1

2631 - Unnamed Ditch

Cadmium

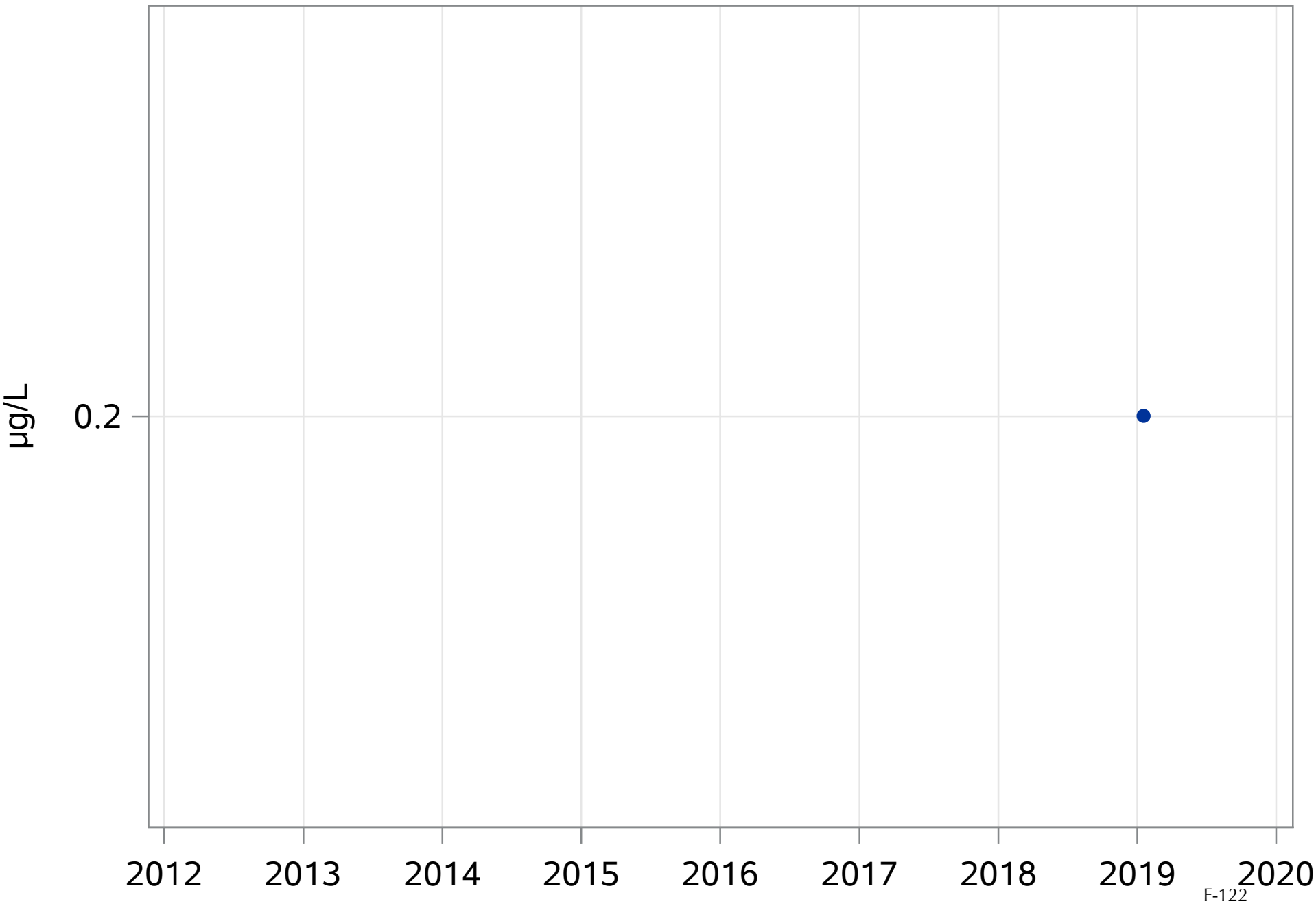


2631 - Unnamed Ditch
Cadmium

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	1	0	1

2631 - Unnamed Ditch

Copper

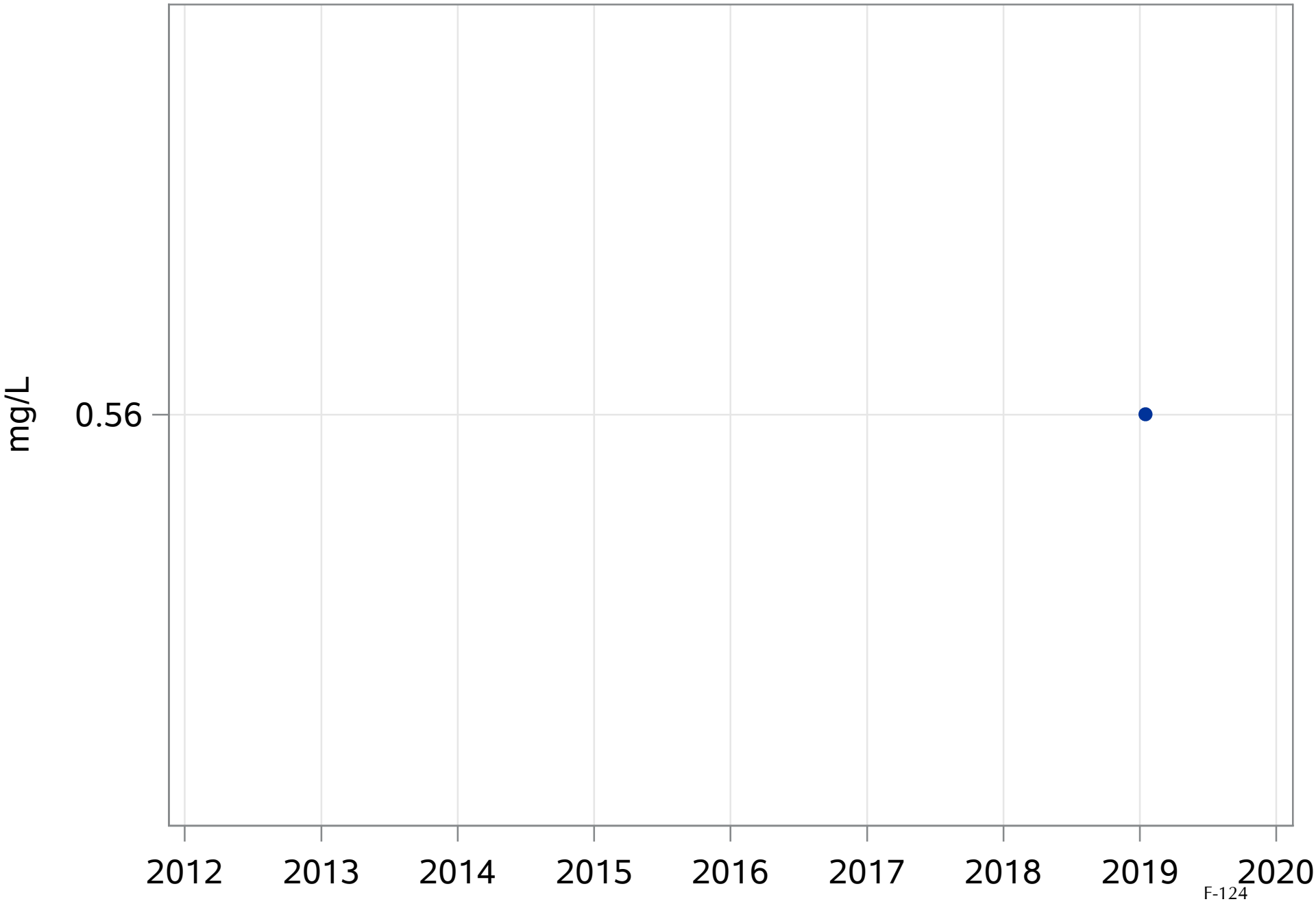


2631 - Unnamed Ditch
Copper

Obs	pp_fail	pp_Count	vp_fail	VP_count	a	b	c	d
1	0	1	0	1	1	1	1	1

2631 - Unnamed Ditch

Iron

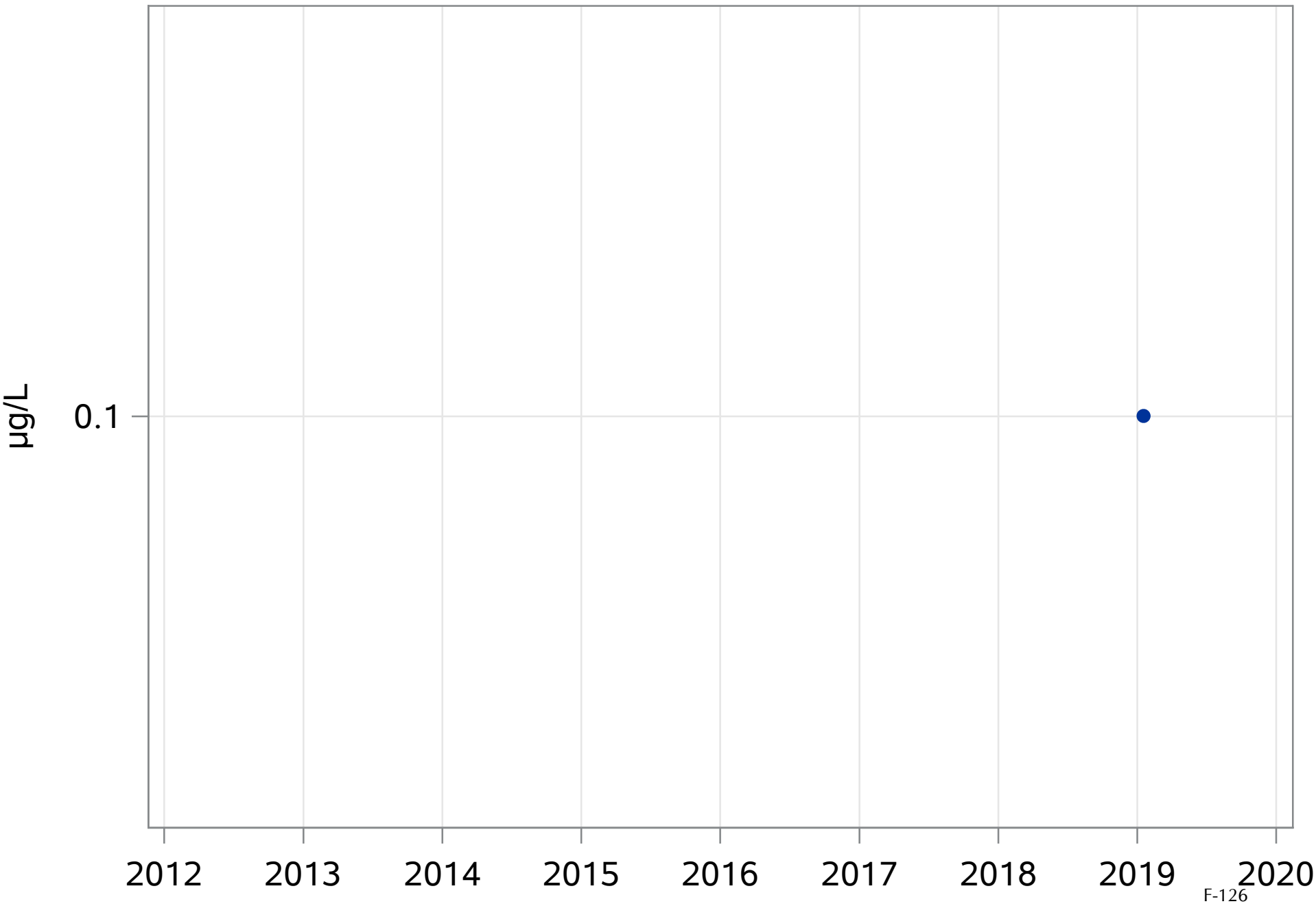


2631 - Unnamed Ditch
Iron

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	1	0	1

2631 - Unnamed Ditch

Lead

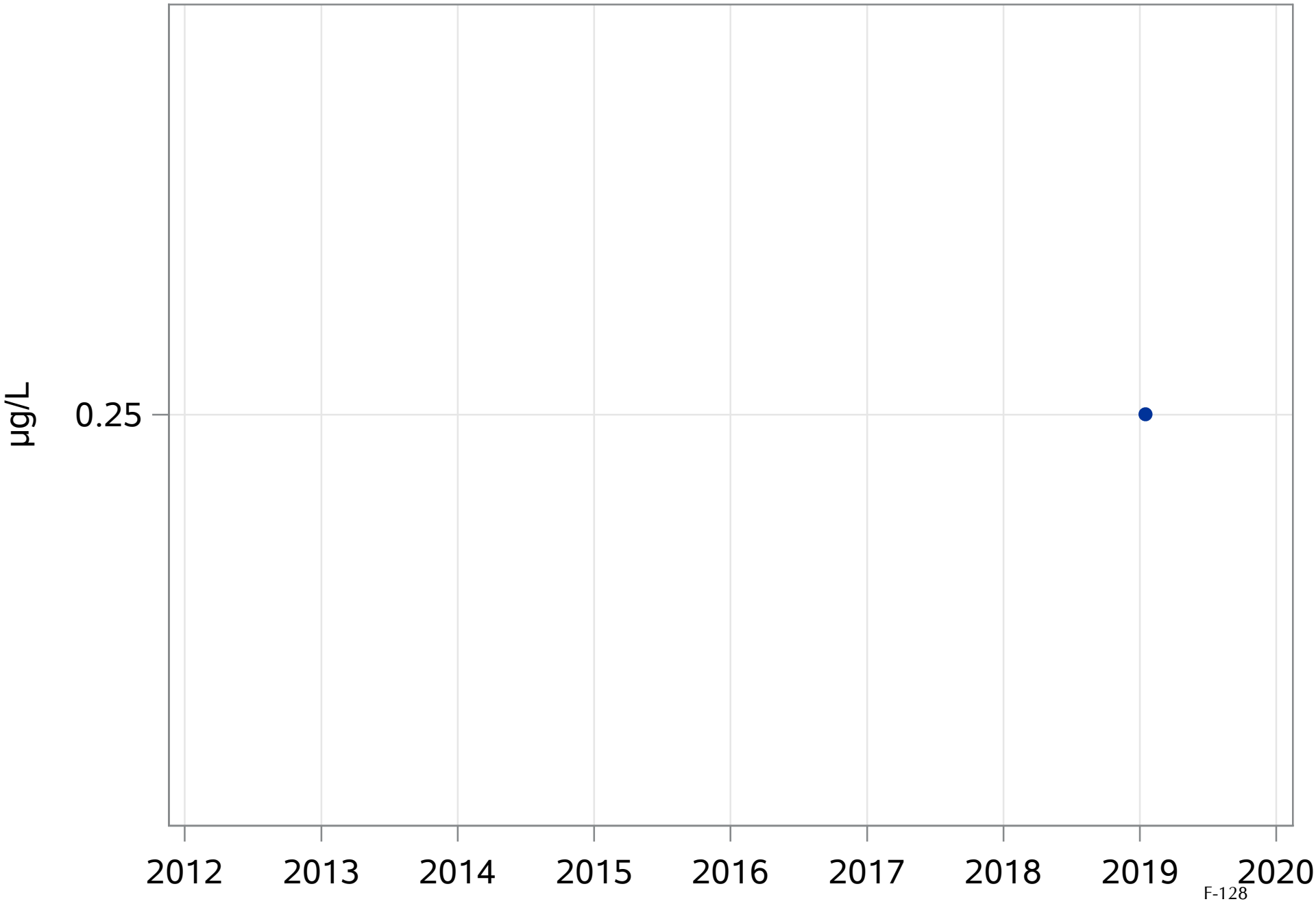


2631 - Unnamed Ditch
Lead

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	1	0	1

2631 - Unnamed Ditch

Nickel

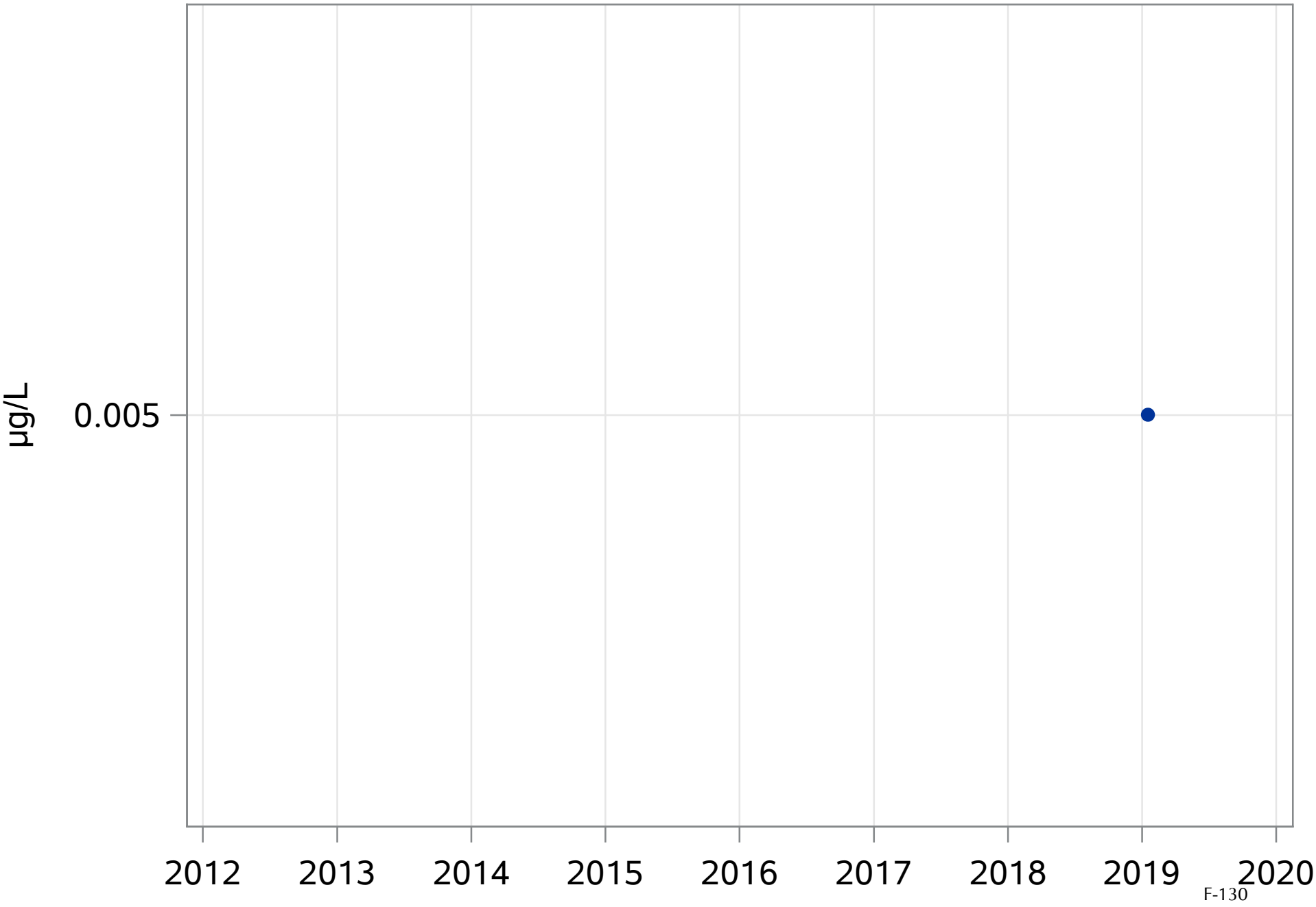


2631 - Unnamed Ditch
Nickel

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	1	0	1

2631 - Unnamed Ditch

Silver

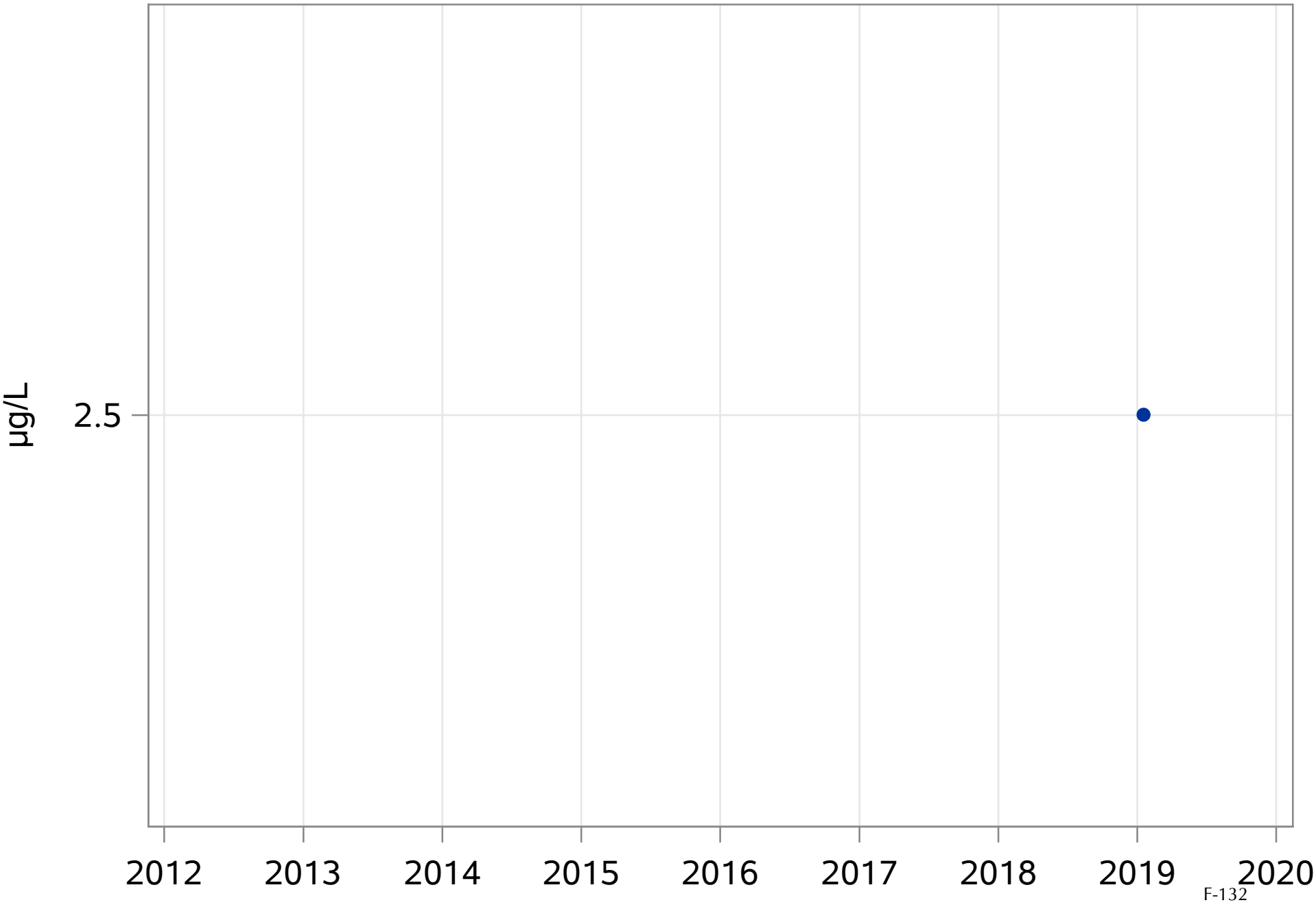


2631 - Unnamed Ditch
Silver

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	1	0	1

2631 - Unnamed Ditch

Zinc

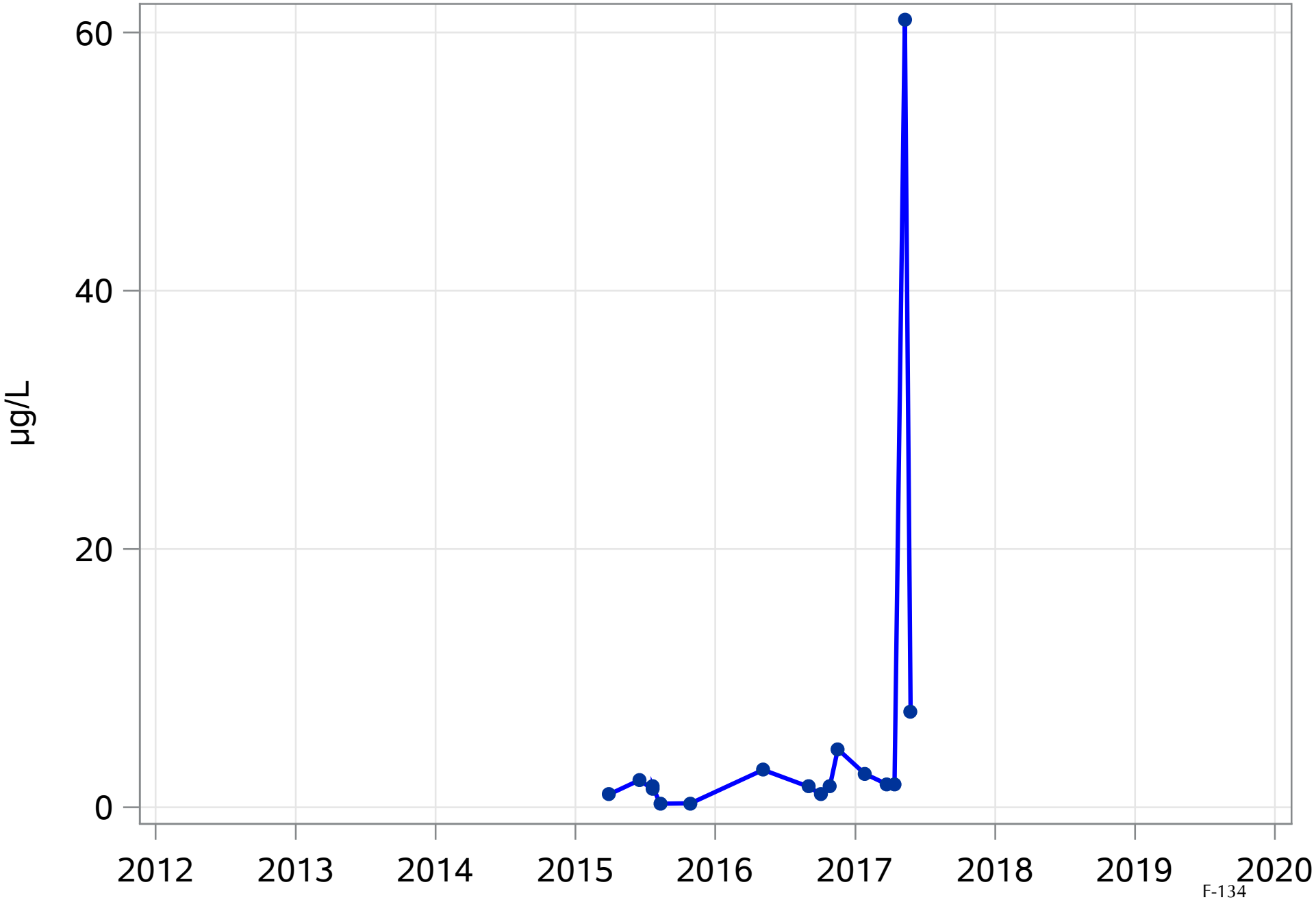


2631 - Unnamed Ditch
Zinc

Obs	pp_fail	pp_Count	vp_fail	VP_count
1	0	1	0	1

2635 - Groover Branch

Nutrients (Total Chlorphyll-a)

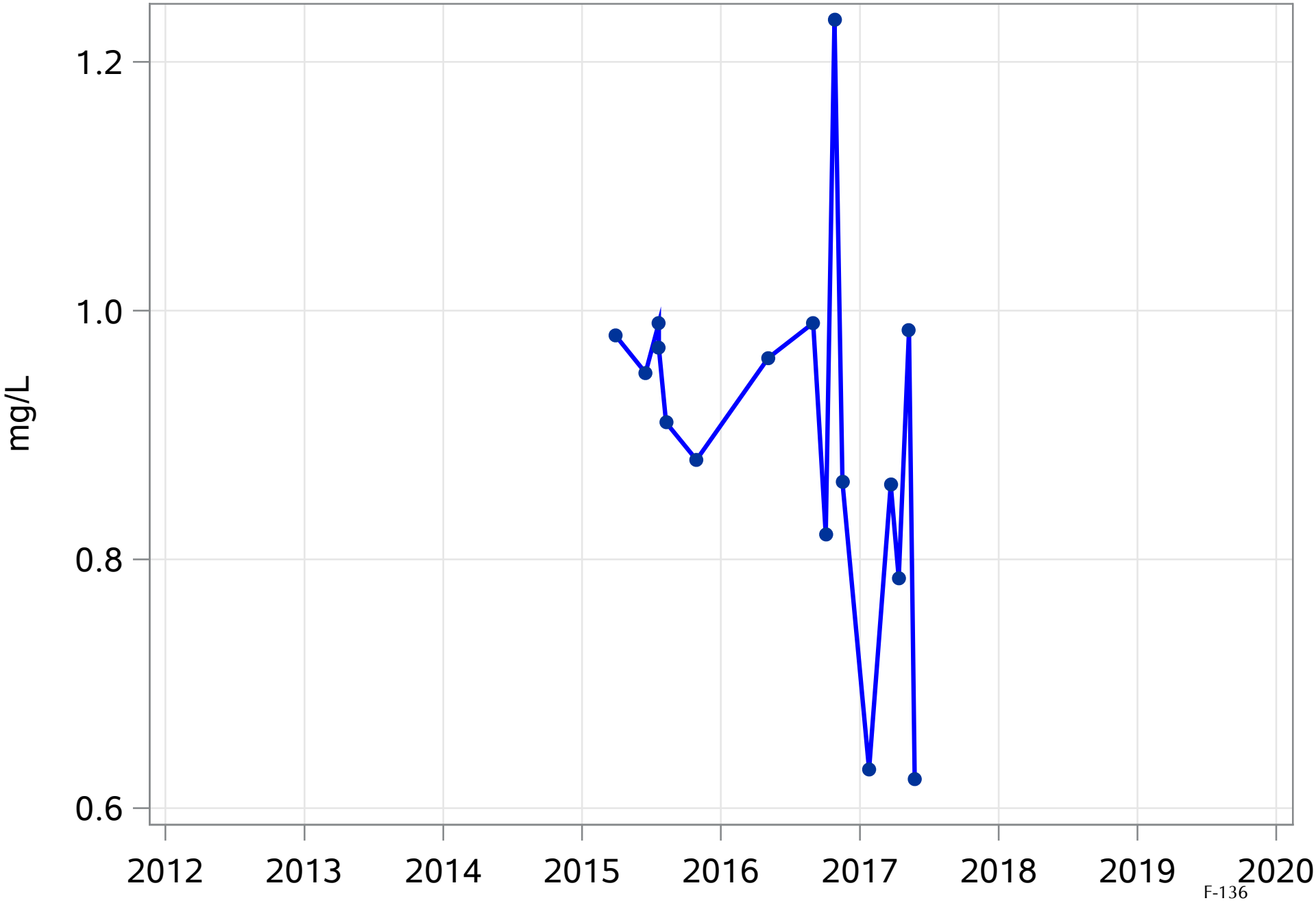


2635 - Groover Branch
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2635	2015	0.9
2	2635	2016	2.0
3	2635	2017	5.2

2635 - Groover Branch

Nutrients (Total Nitrogen)

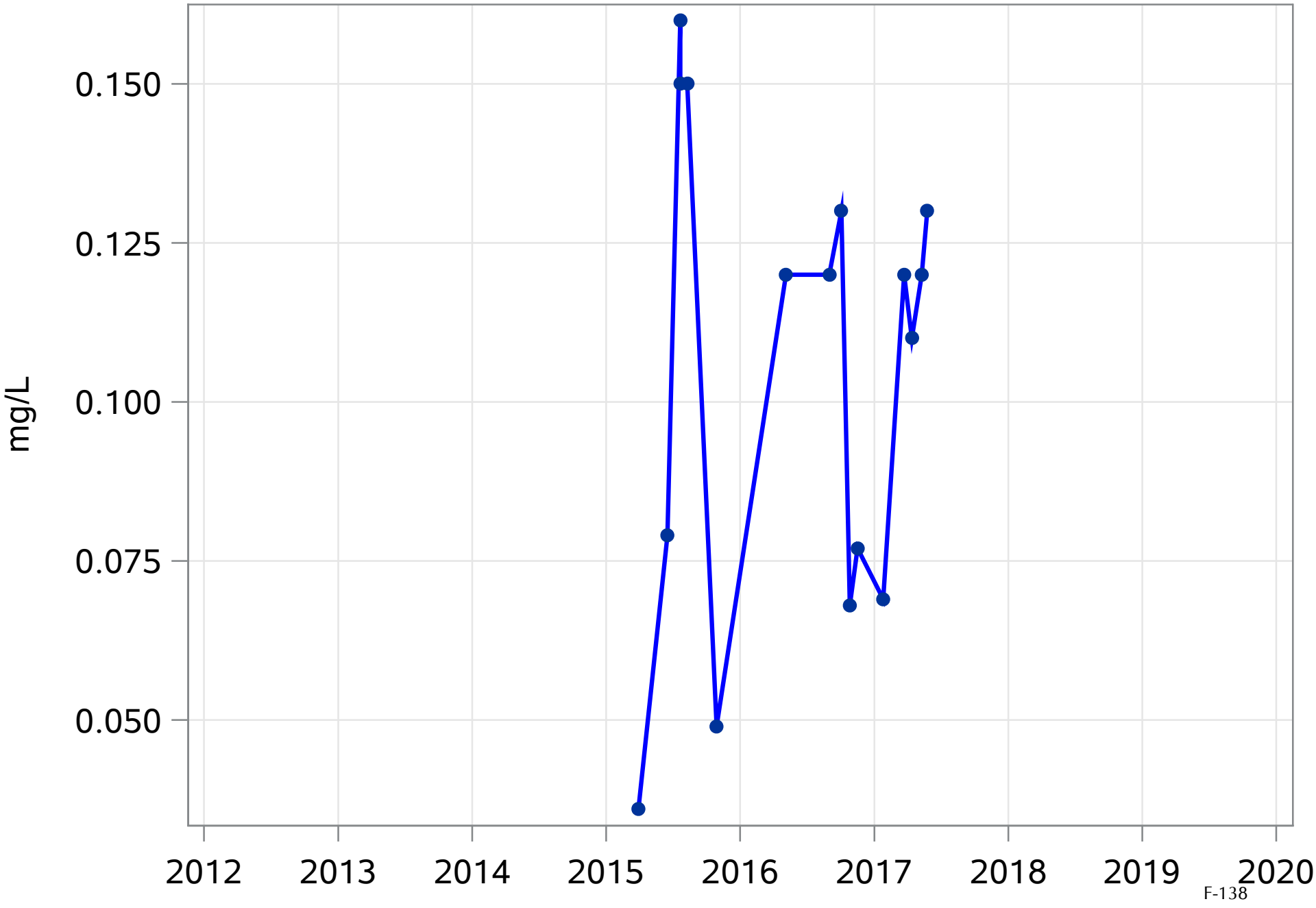


2635 - Groover Branch
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2635	2015	0.95
2	2635	2016	0.96
3	2635	2017	0.76

2635 - Groover Branch

Nutrients (Total Phosphorus)

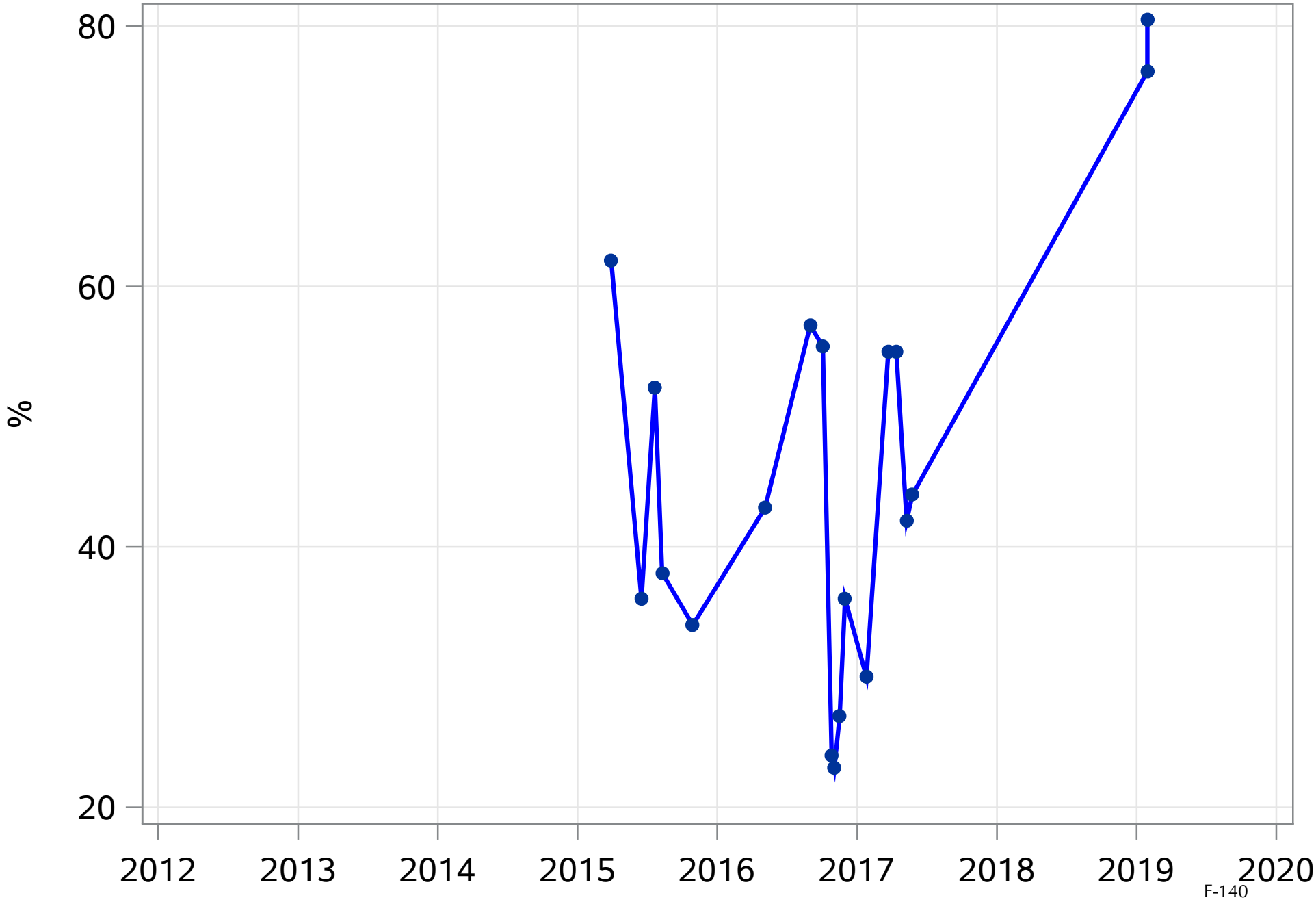


2635 - Groover Branch
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2635	2015	0.089
2	2635	2016	0.100
3	2635	2017	0.107

2635 - Groover Branch

Dissolved Oxygen

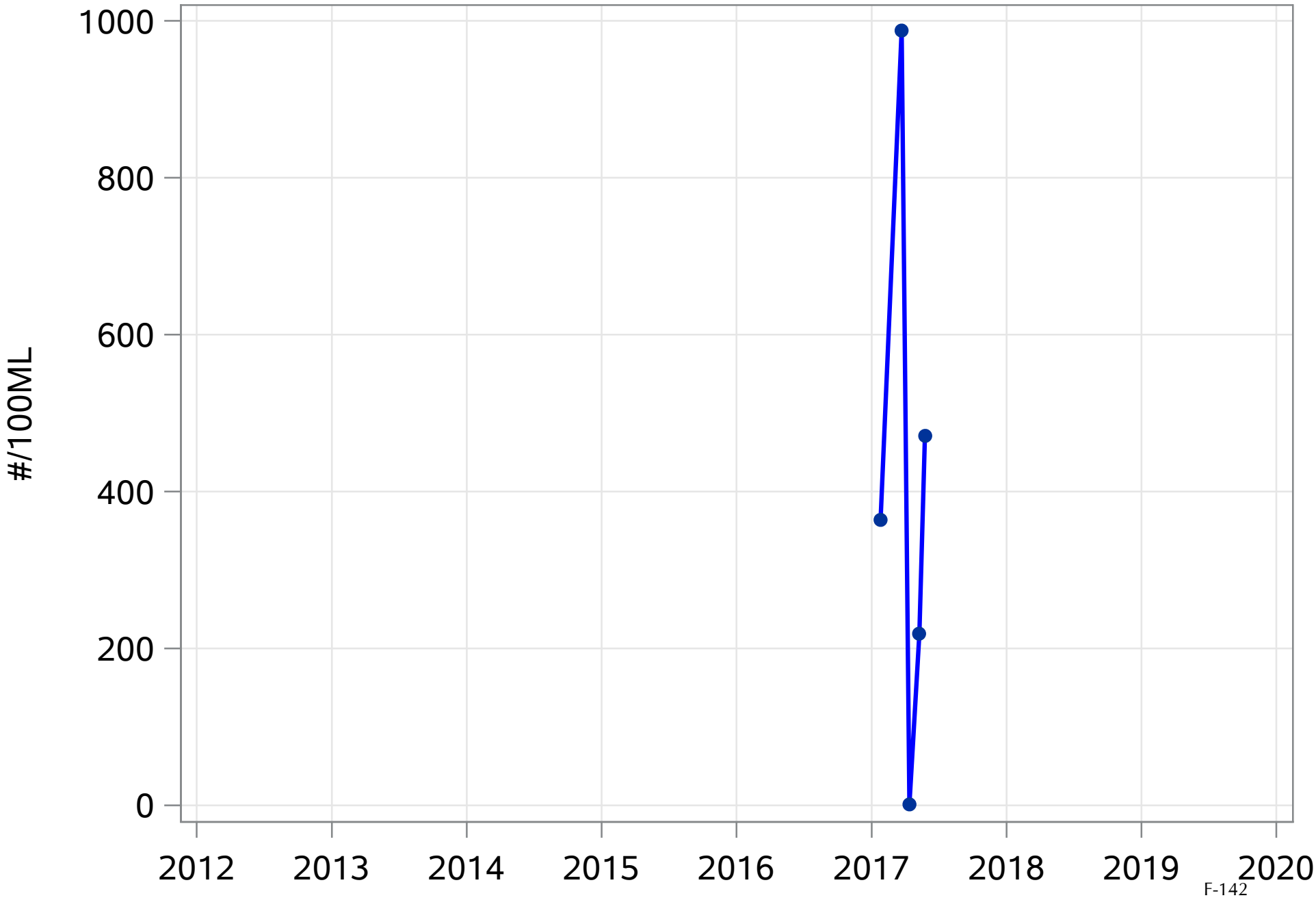


2635 - Groover Branch
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	7	19	7	19

2635 - Groover Branch

E. Coli

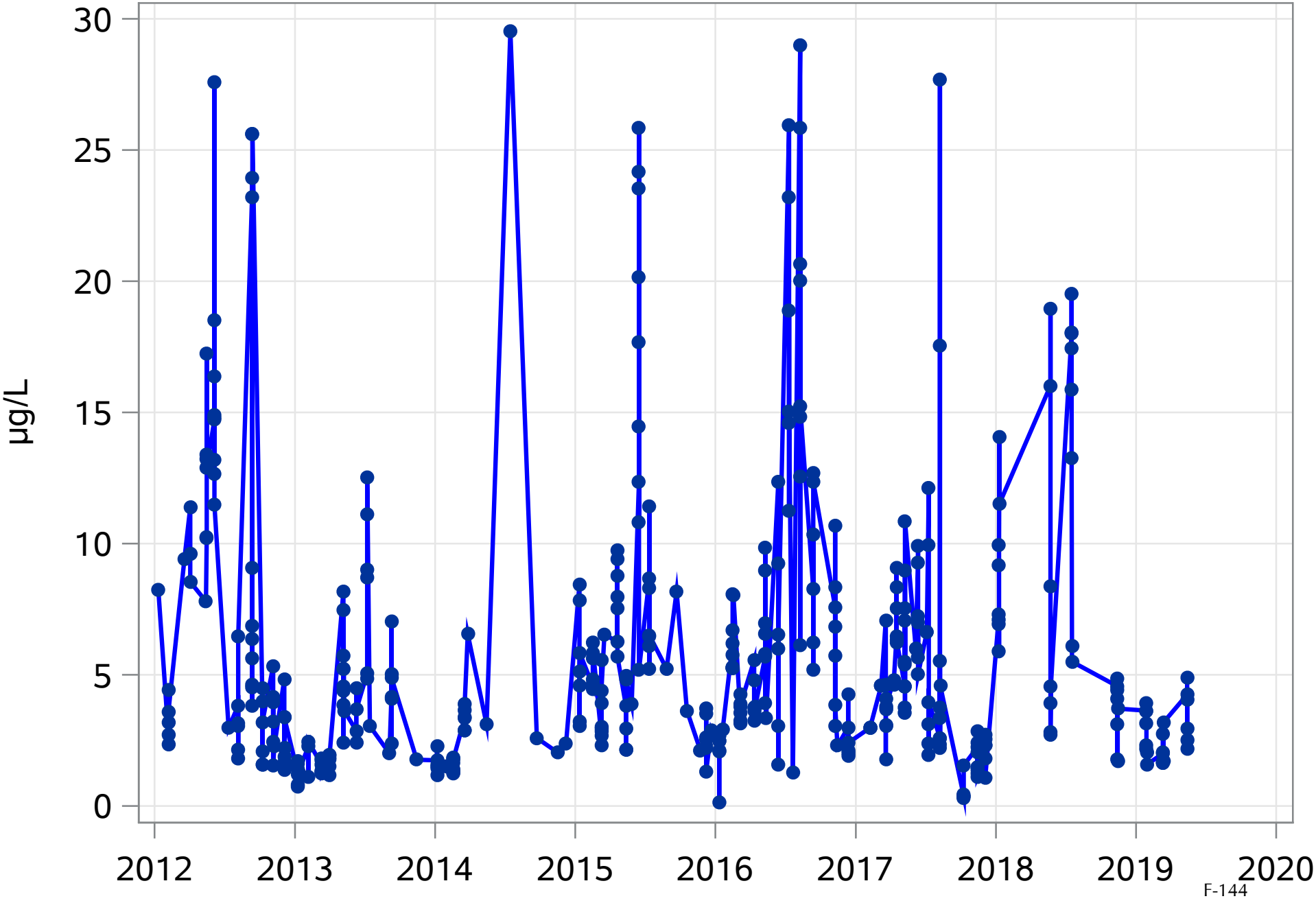


2635 - Groover Branch
E. Coli

Obs	fail	n
1	2	5

2363B - Halifax River

Nutrients (Total Chlorphyll-a)



2363B - Halifax River
Nutrients (Total Chlorphyll-a)

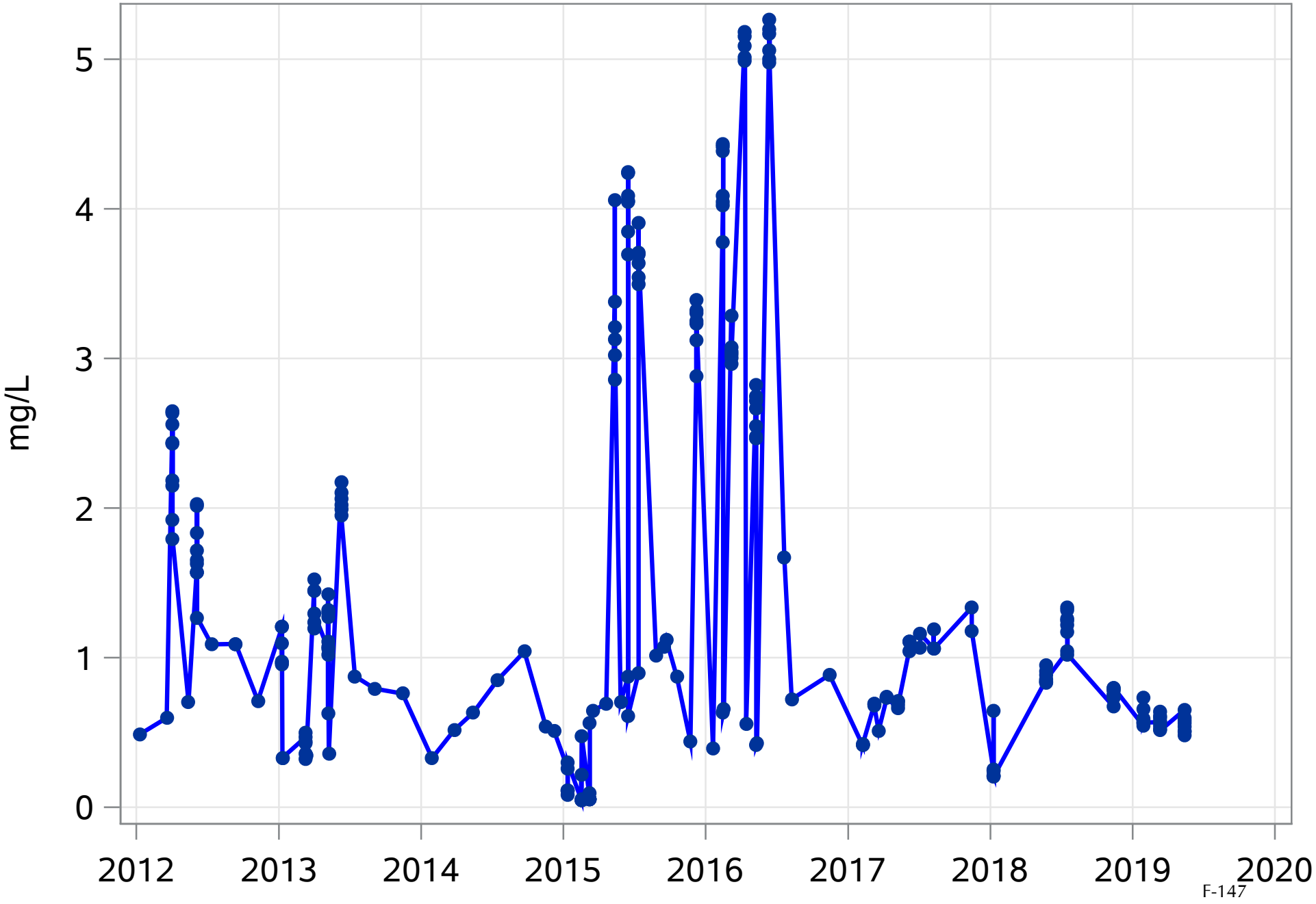
Obs	wbid	year	geoCHLAC
1	2363B	2012	5.5
2	2363B	2013	2.7
3	2363B	2014	2.3
4	2363B	2015	5.3
5	2363B	2016	5.5
6	2363B	2017	3.5
7	2363B	2018	6.9
8	2363B	2019	2.6

2363B - Halifax River
Nutrients (Total Chlorphyll-a)

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	8	0	8

2363B - Halifax River

Nutrients (Total Nitrogen)



2363B - Halifax River
Nutrients (Total Nitrogen)

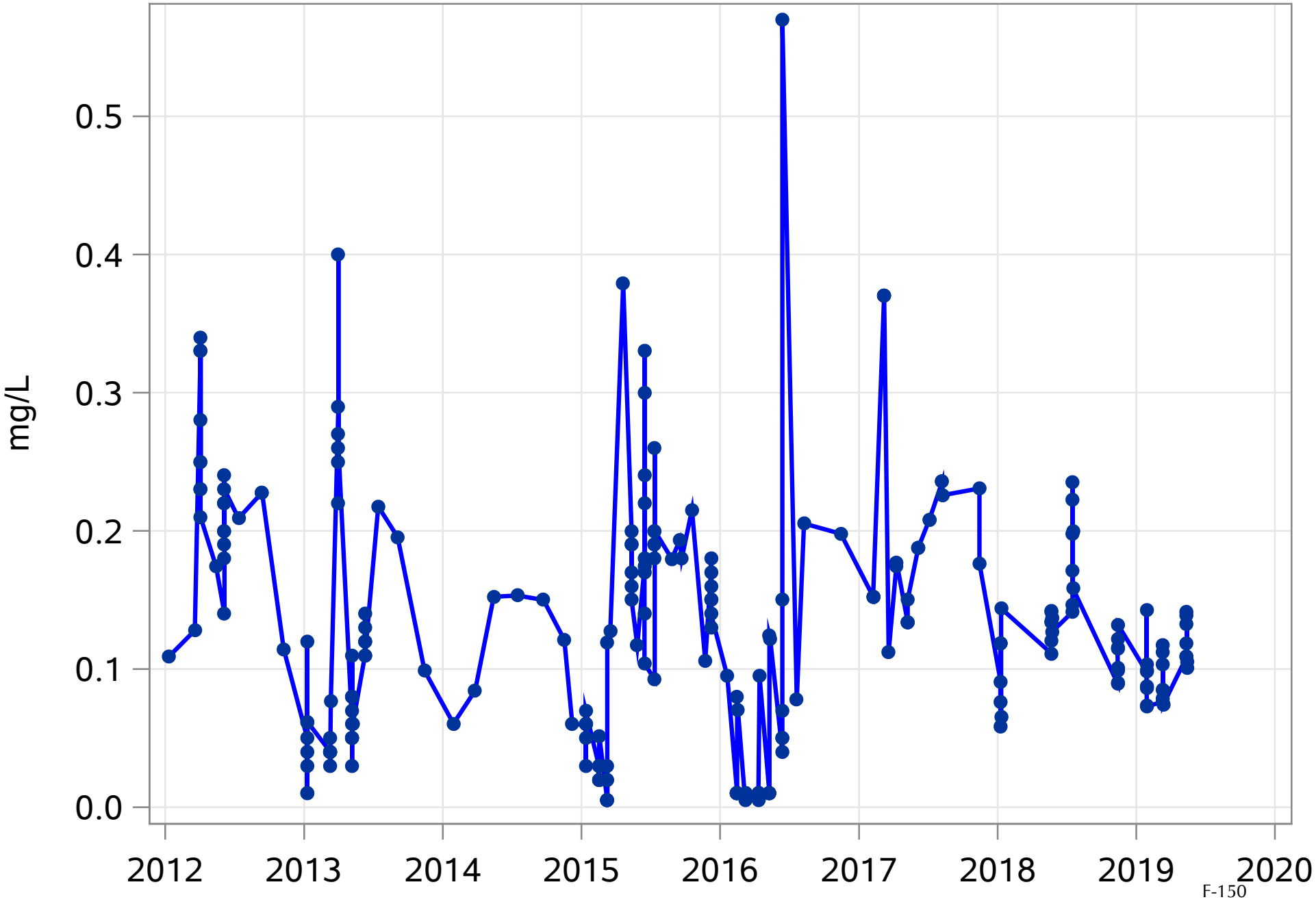
Obs	wbid	year	geoTN
1	2363B	2012	1.52
2	2363B	2013	0.93
3	2363B	2014	0.59
4	2363B	2015	0.72
5	2363B	2016	2.54
6	2363B	2017	0.79
7	2363B	2018	0.67
8	2363B	2019	0.57

2363B - Halifax River
Nutrients (Total Nitrogen)

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	8	0	8

2363B - Halifax River

Nutrients (Total Phosphorus)

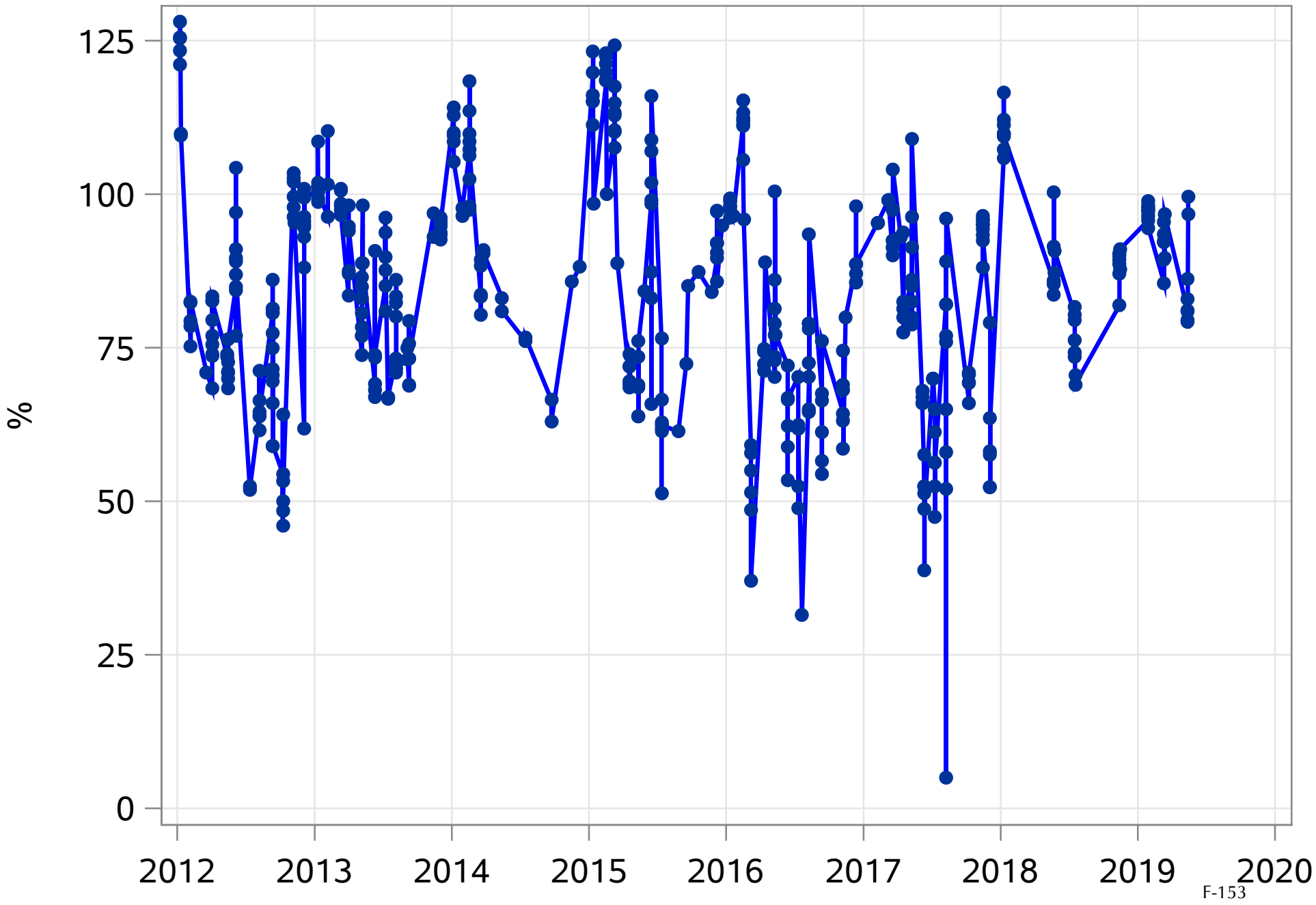


2363B - Halifax River
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2363B	2012	0.210
2	2363B	2013	0.077
3	2363B	2014	0.104
4	2363B	2015	0.087
5	2363B	2016	0.023
6	2363B	2017	0.191
7	2363B	2018	0.124
8	2363B	2019	0.100

2363B - Halifax River
Nutrients (Total Phosphorus)

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	8	0	8

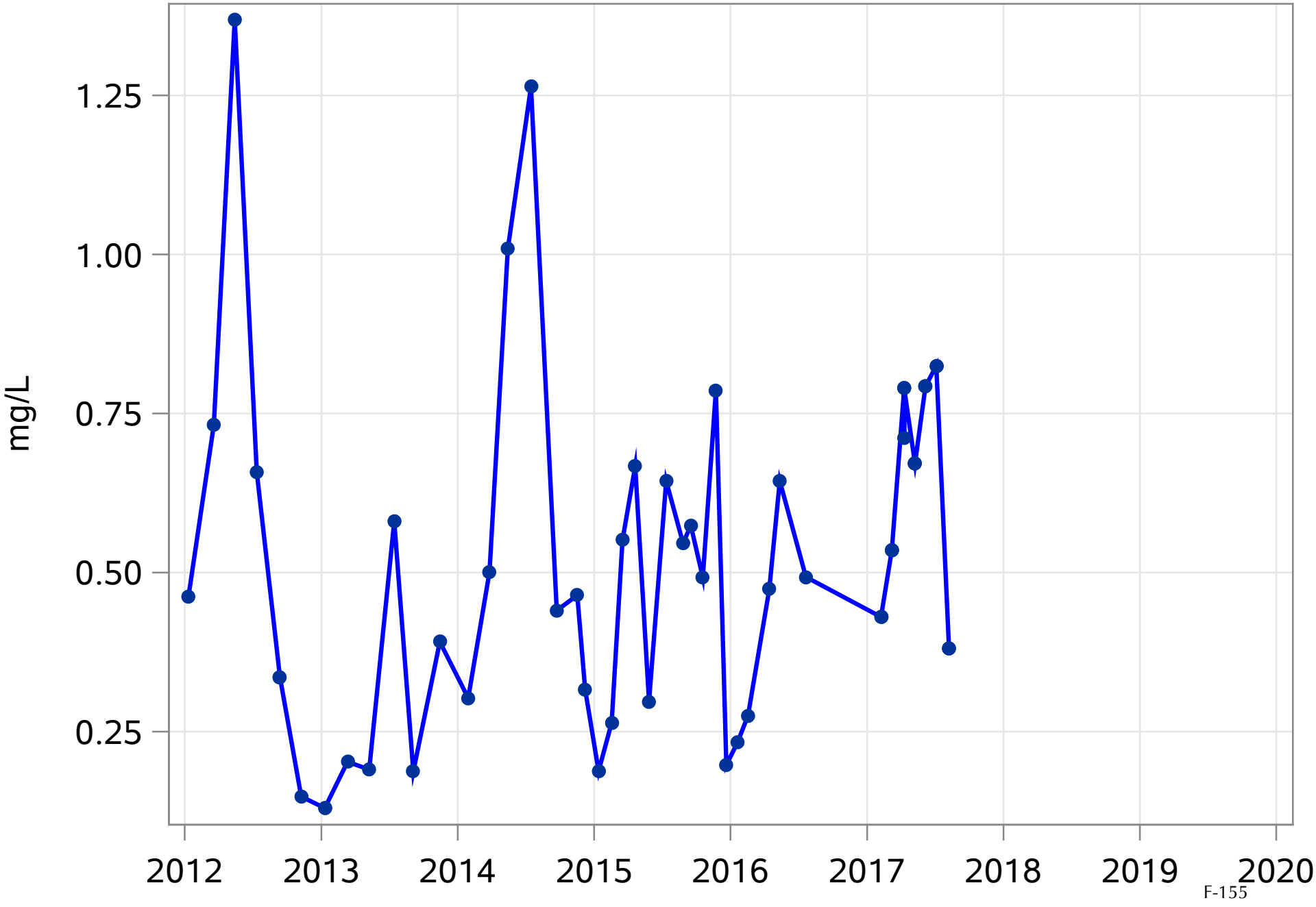

2363B - Halifax River
Dissolved Oxygen
%
125
100
75
50
25
0
2012
2013
2014
2015
2016
2017
2018
2019
2020

2363B - Halifax River
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	4	462	4	462

2363B - Halifax River

Aluminum

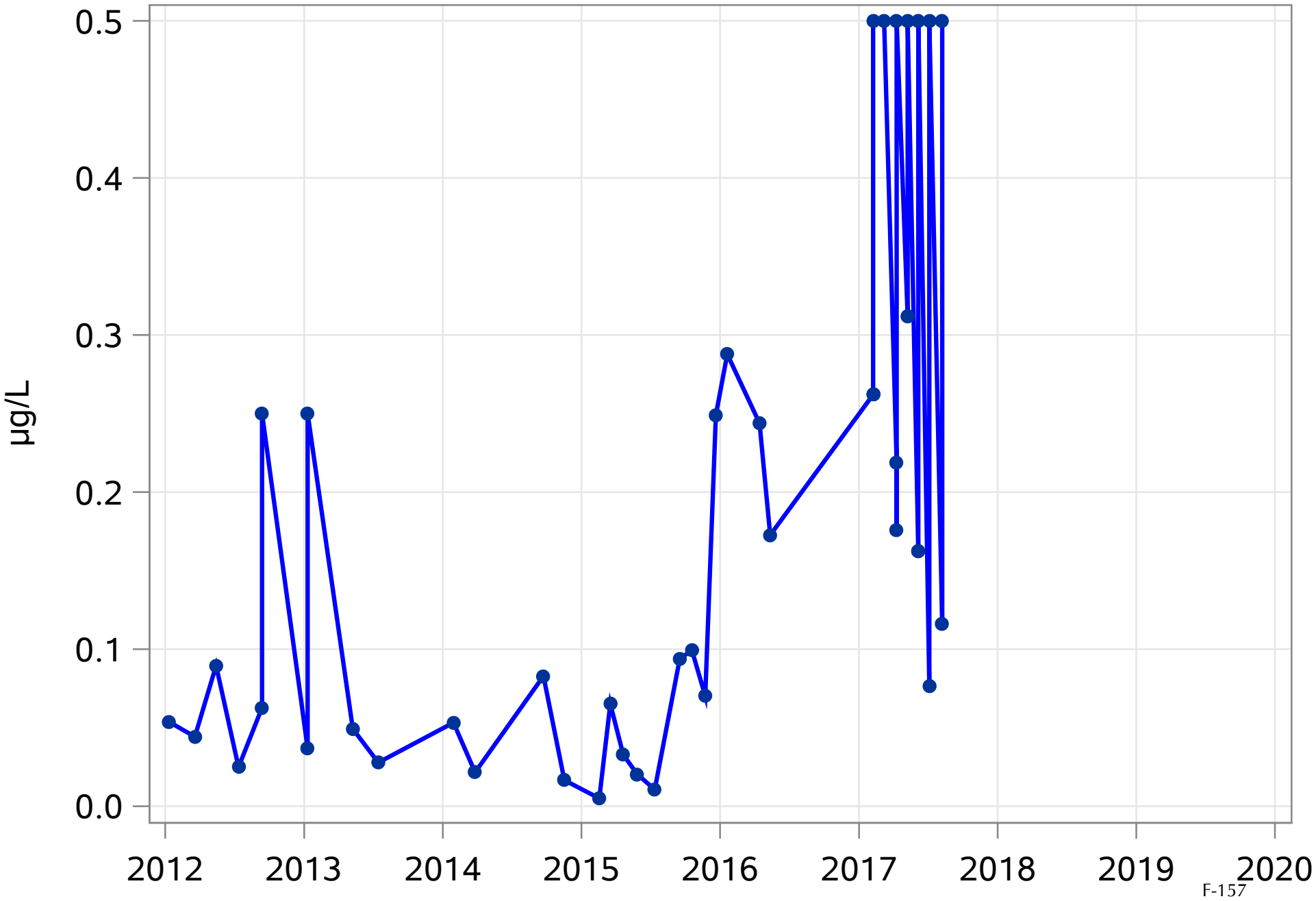


2363B - Halifax River
Aluminum

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	56	0	56

2363B - Halifax River

Cadmium

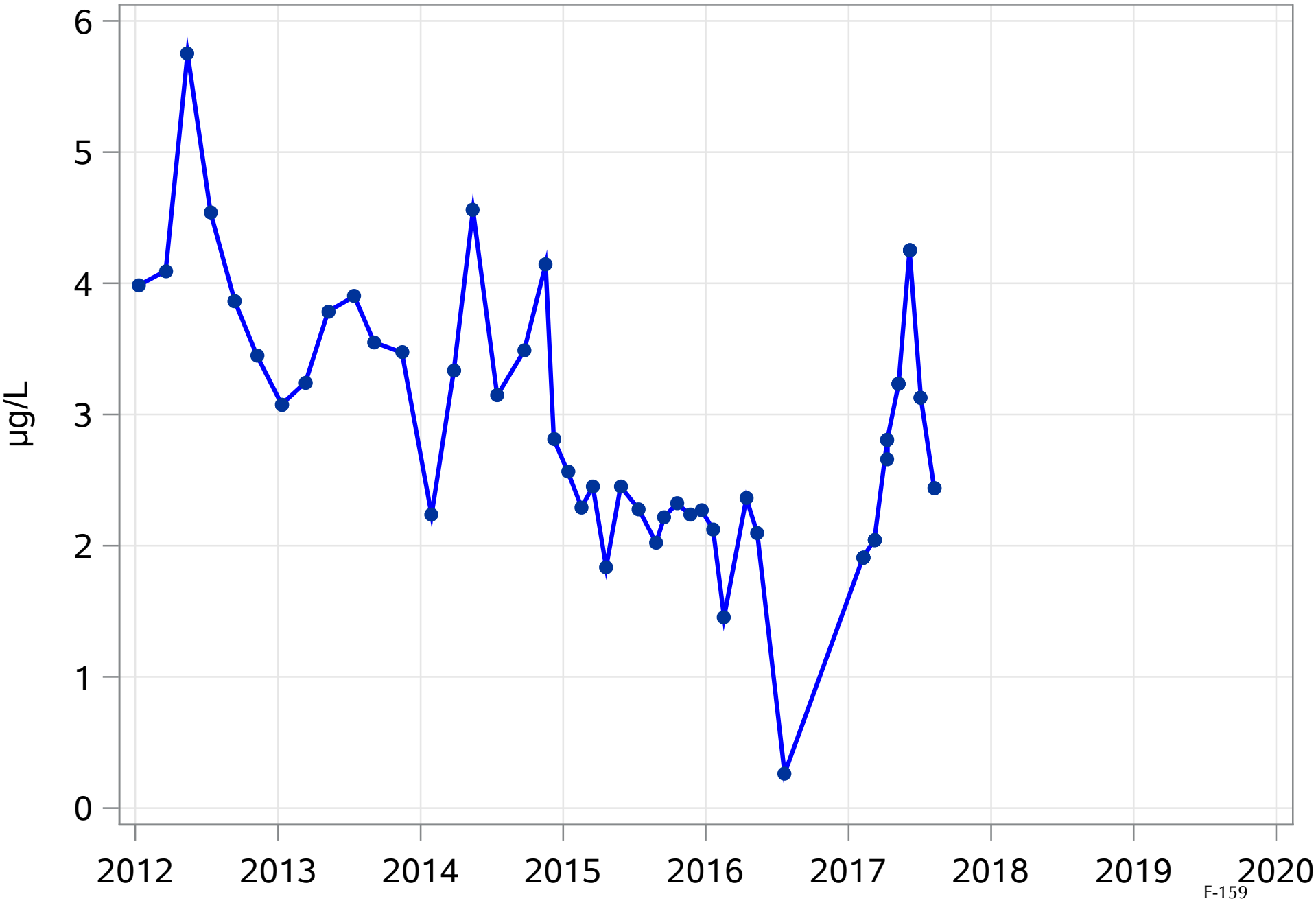


2363B - Halifax River
Cadmium

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	43	0	43

2363B - Halifax River

Copper

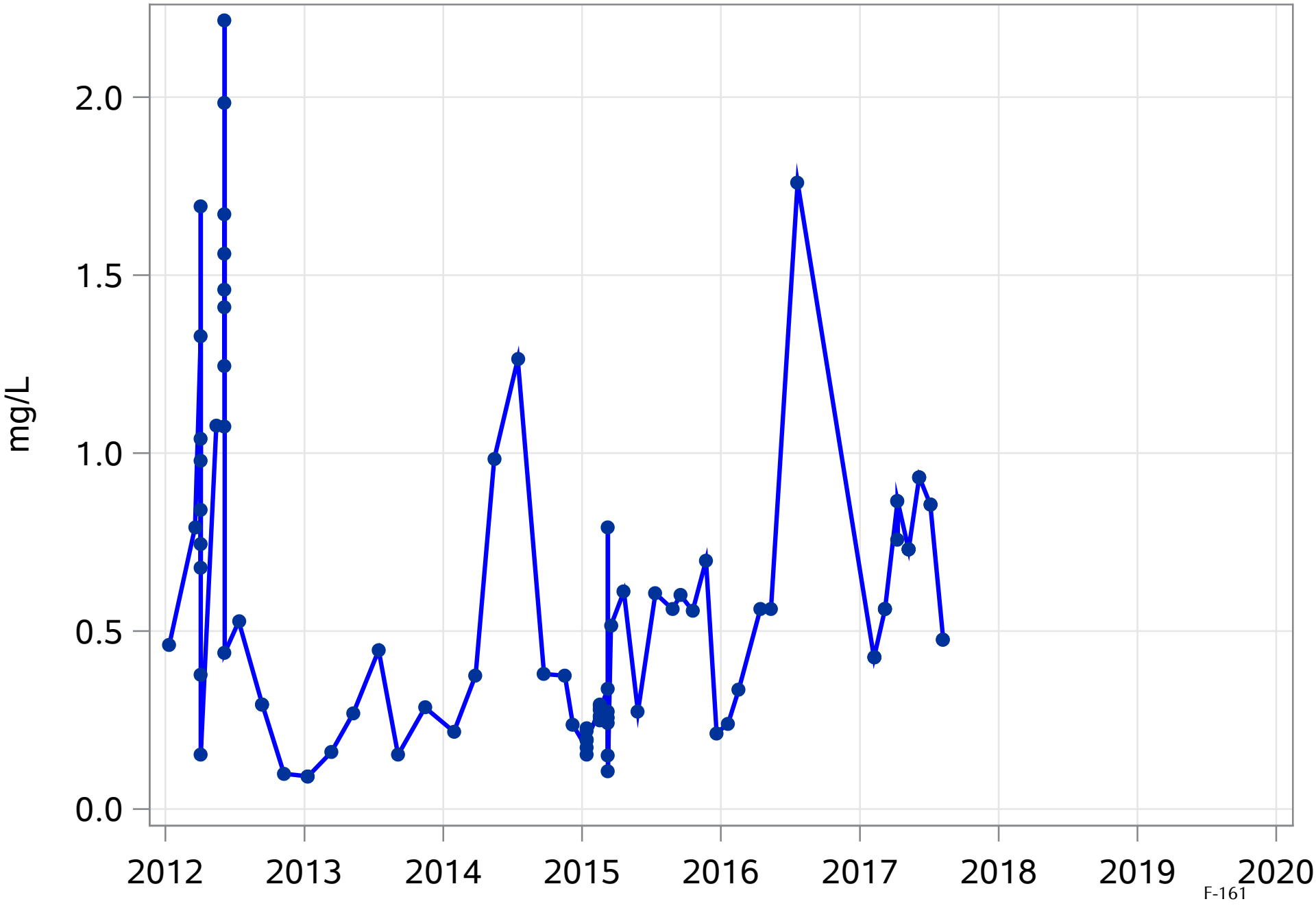


2363B - Halifax River
Copper

Obs	pp_fail	pp_Count	vp_fail	VP_count	a	b	c	d
1	13	56	13	56	56	56	56	56

2363B - Halifax River

Iron

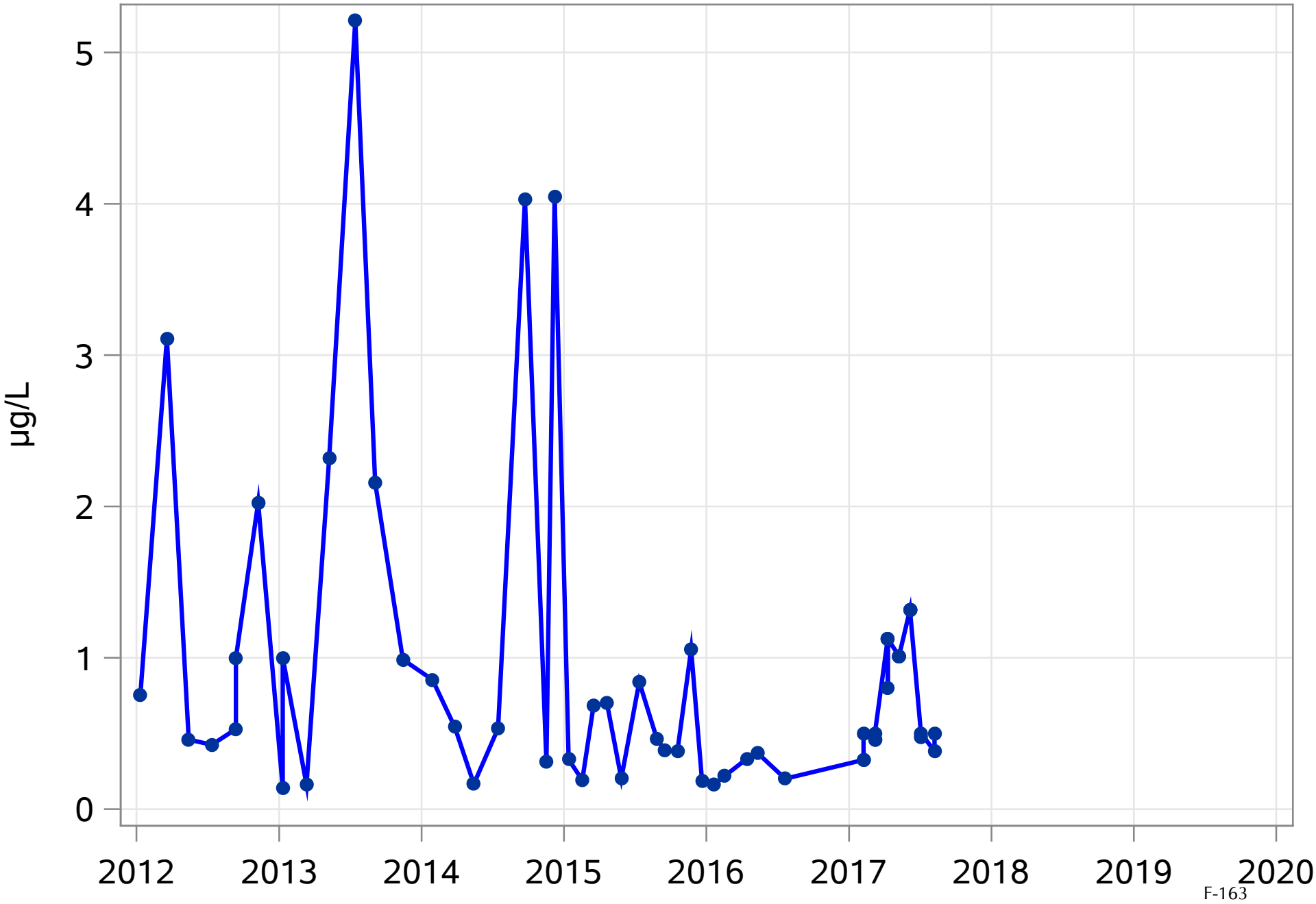


2363B - Halifax River
Iron

Obs	pp_fail	n_pp	vp_fail	n_vp
1	59	93	59	93

2363B - Halifax River

Lead

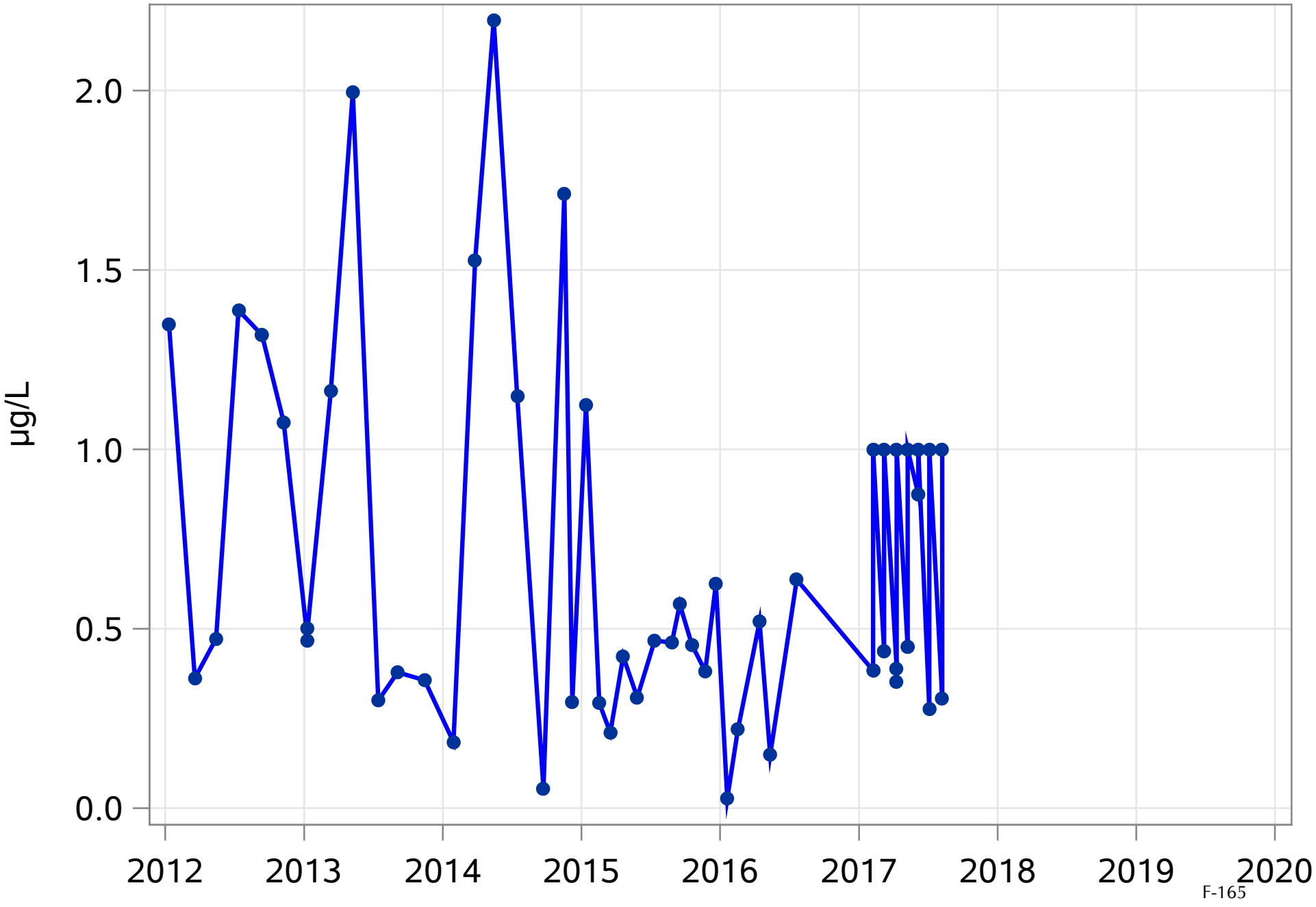


2363B - Halifax River
Lead

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	56	0	56

2363B - Halifax River

Nickel

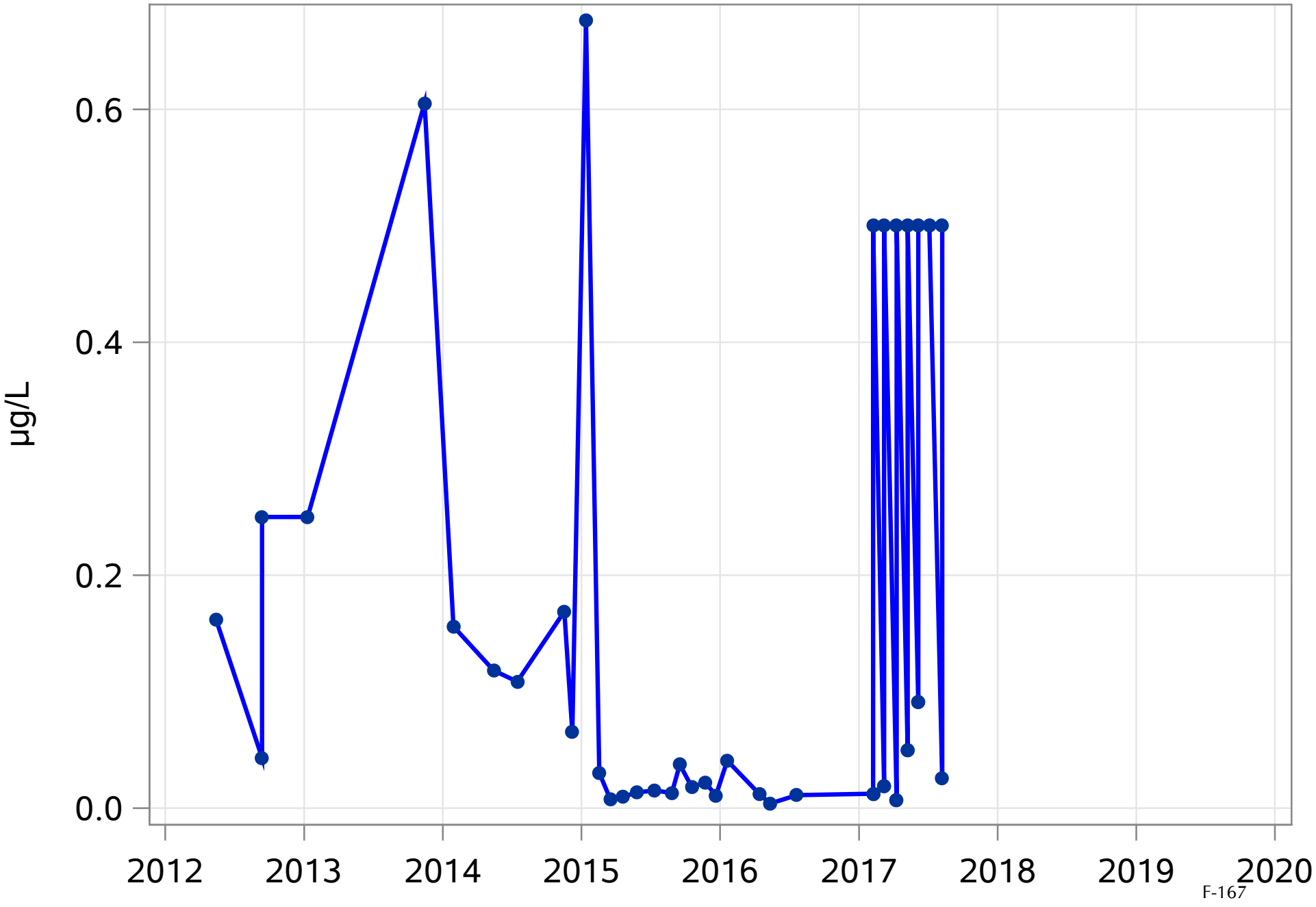


2363B - Halifax River
Nickel

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	56	0	56

2363B - Halifax River

Silver

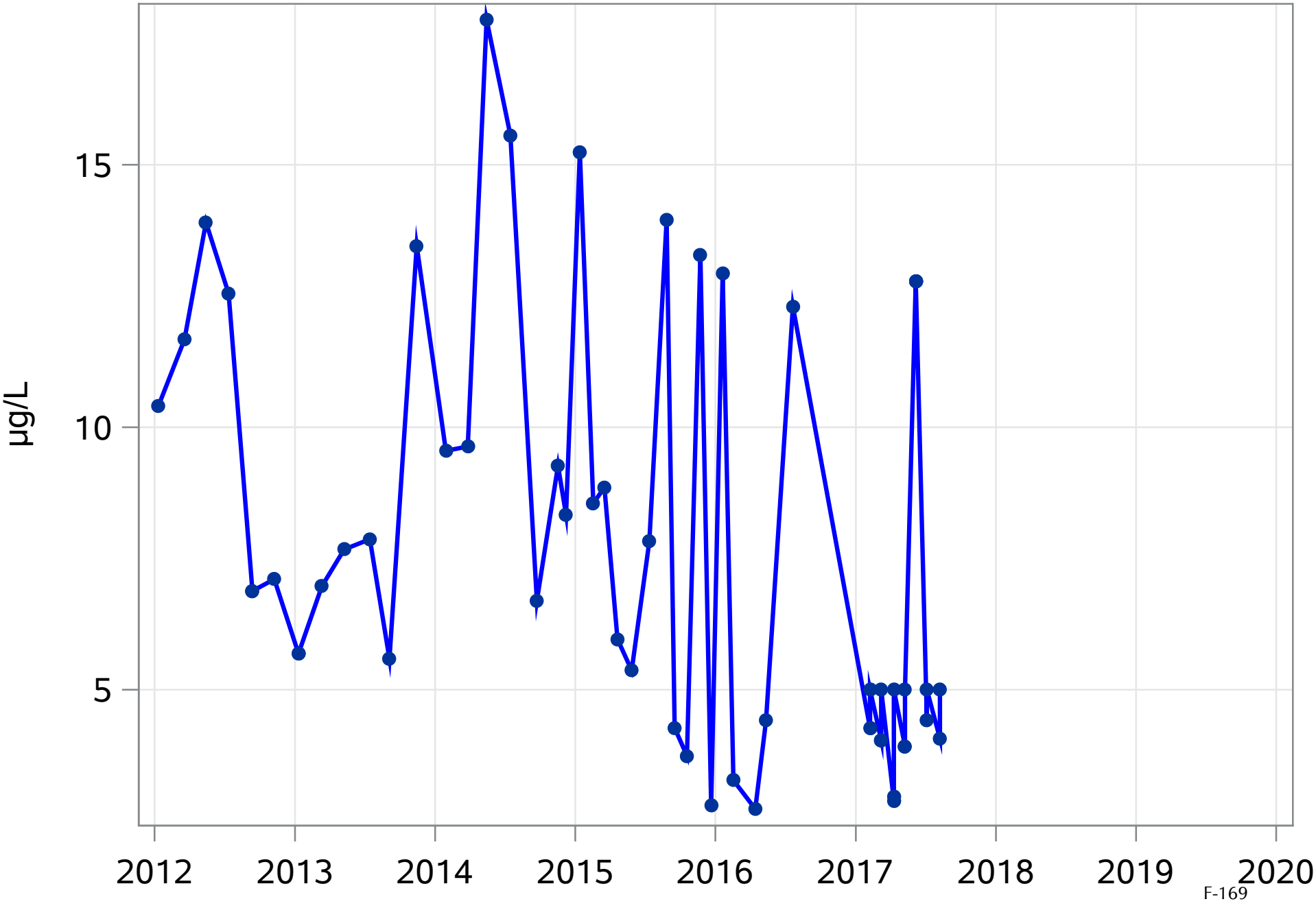


2363B - Halifax River
Silver

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	43	0	43

2363B - Halifax River

Zinc

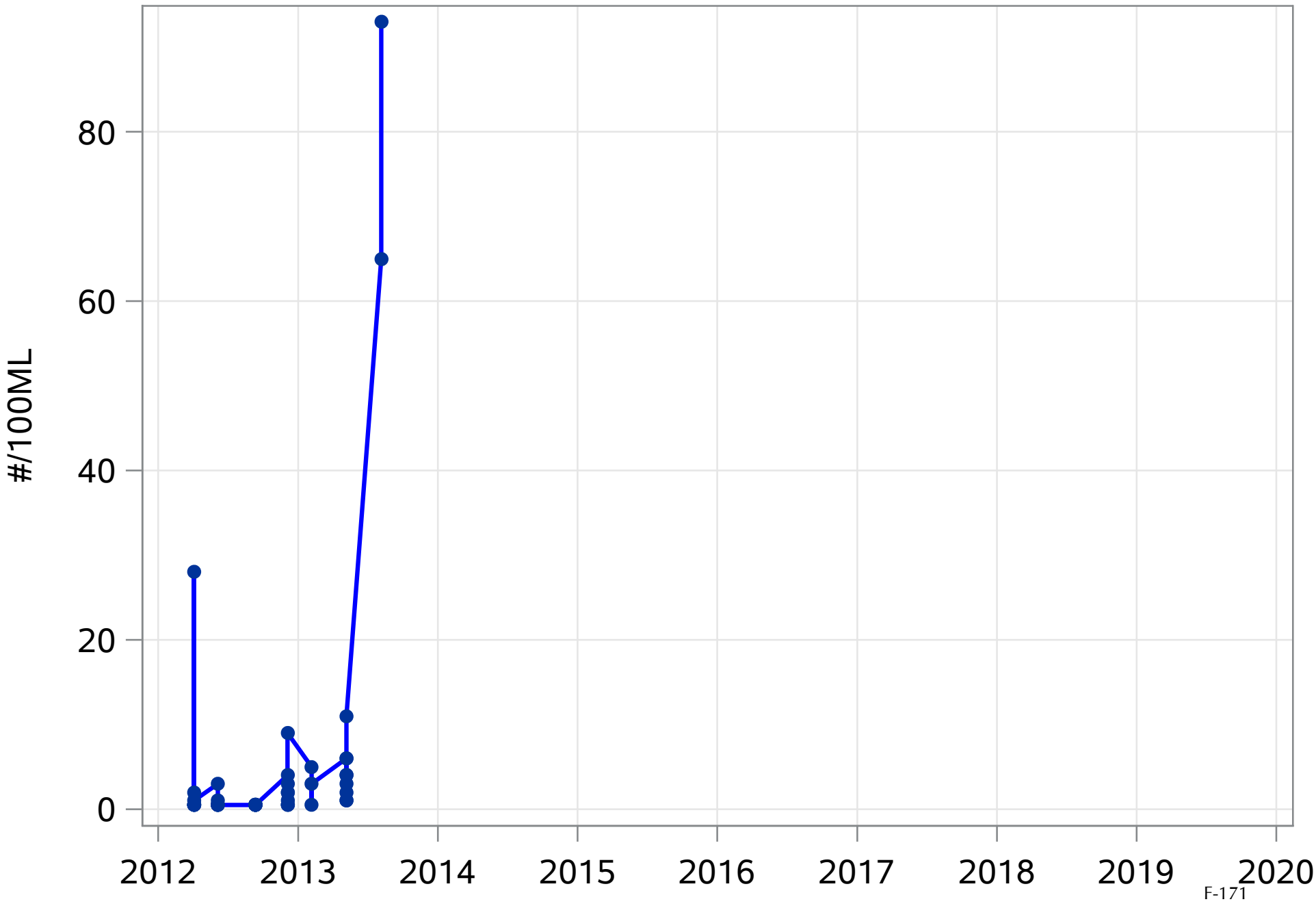


2363B - Halifax River
Zinc

Obs	pp_fail	pp_Count	vp_fail	VP_count
1	13	56	13	56

2363B - Halifax River

Enterococci

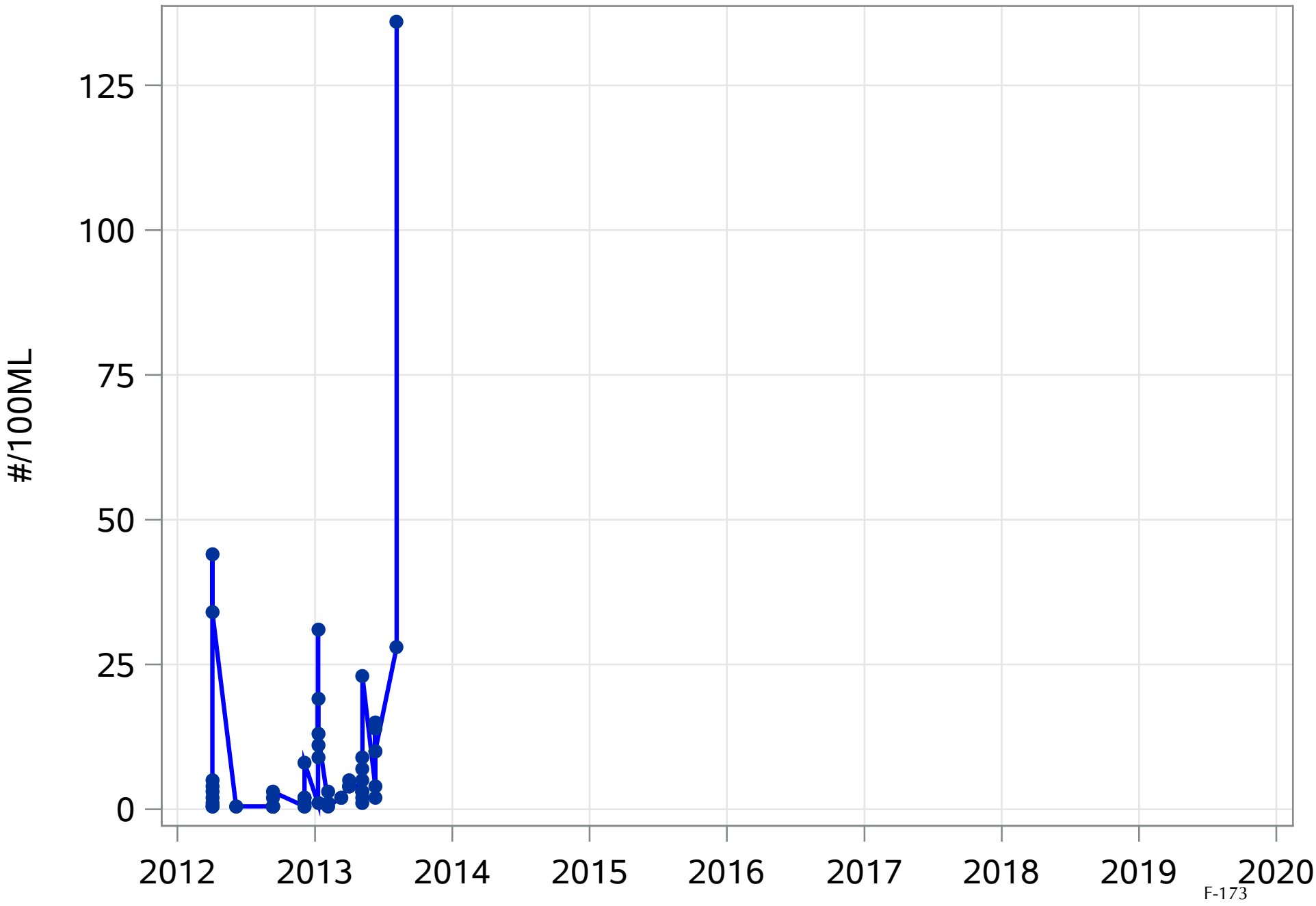


2363B - Halifax River
Enterococci

Obs	fail	n
1	0	50

2363B - Halifax River

Fecal Coliform

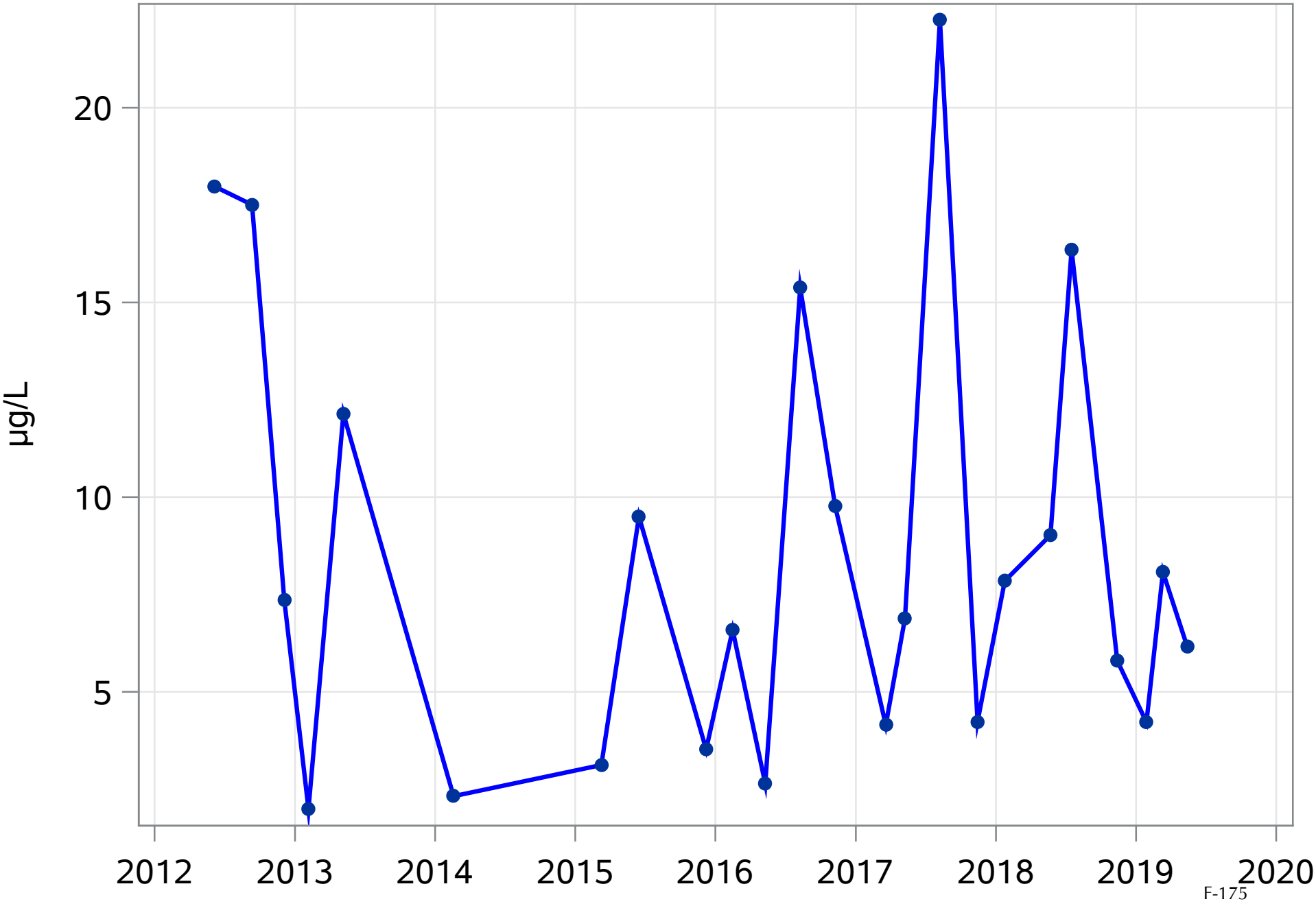


2363B - Halifax River
Fecal Coliform

Obs	fail	n
1	0	61

2363C - Tomoka Basin

Nutrients (Total Chlorphyll-a)

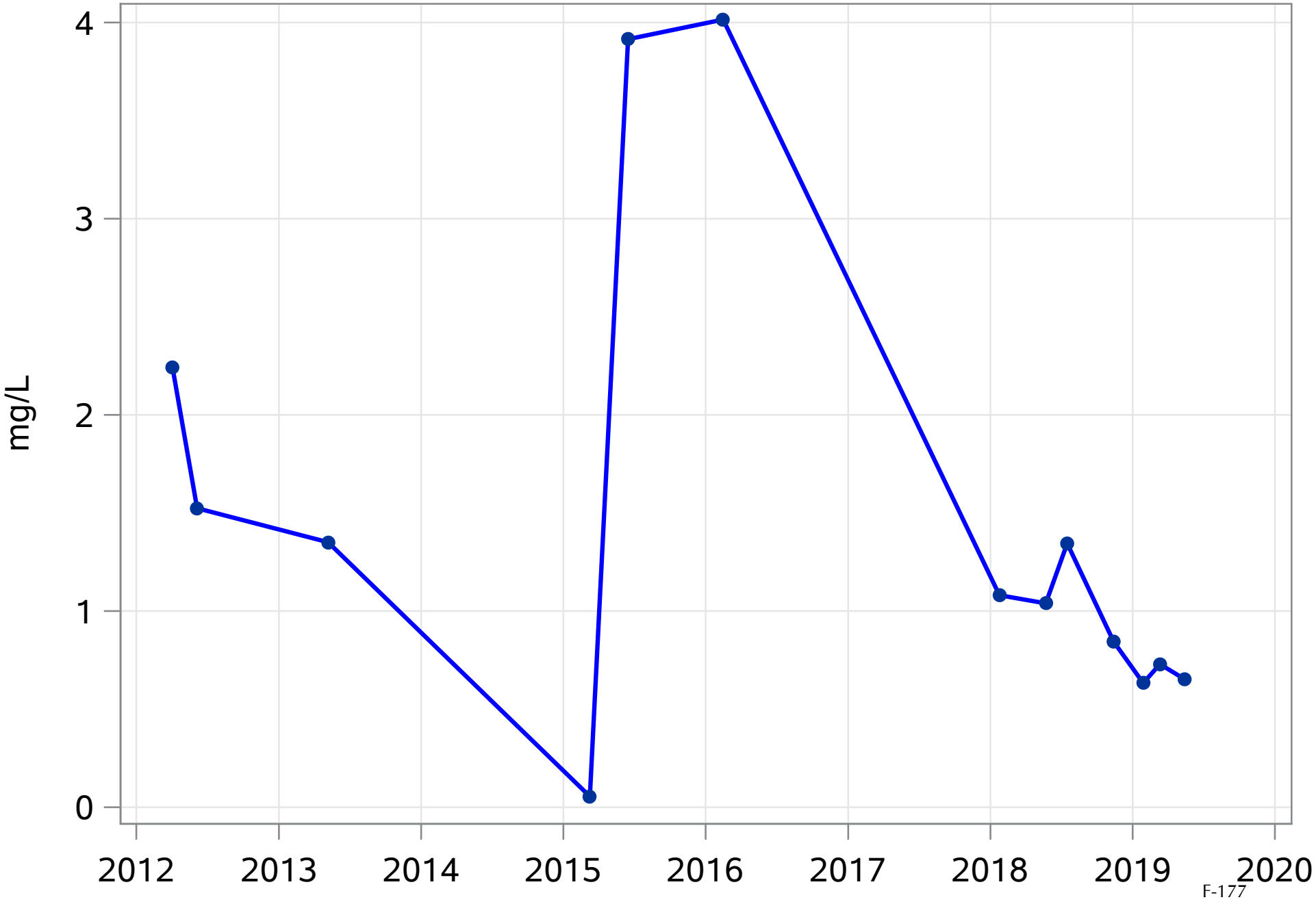


2363C - Tomoka Basin
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2363C	2012	13.2
2	2363C	2013	4.9
3	2363C	2014	2.3
4	2363C	2015	4.7
5	2363C	2016	7.2
6	2363C	2017	7.2
7	2363C	2018	9.1
8	2363C	2019	5.9

2363C - Tomoka Basin

Nutrients (Total Nitrogen)

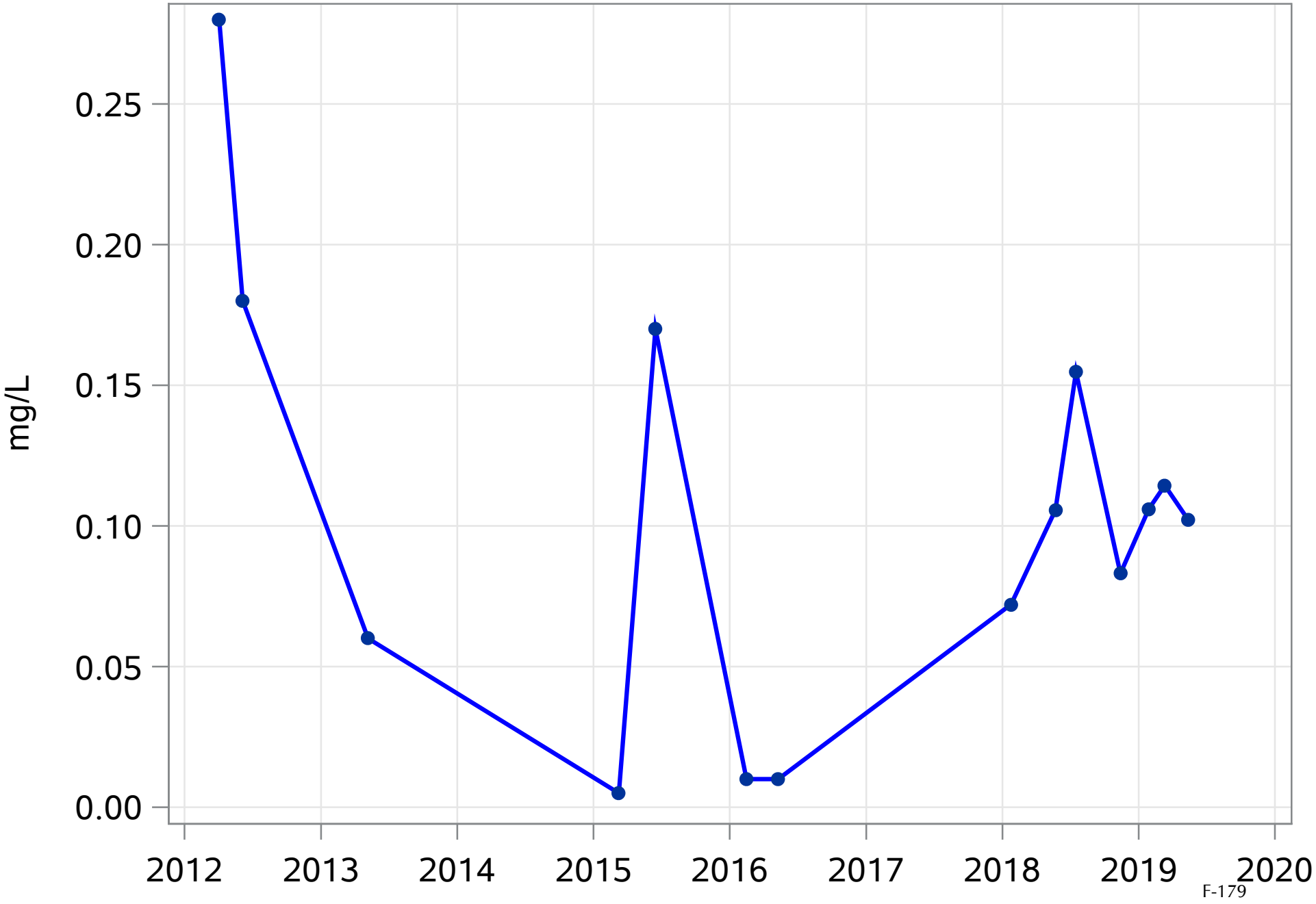


2363C - Tomoka Basin
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2363C	2012	1.85
2	2363C	2013	1.35
3	2363C	2015	0.46
4	2363C	2016	4.02
5	2363C	2018	1.06
6	2363C	2019	0.67

2363C - Tomoka Basin

Nutrients (Total Phosphorus)

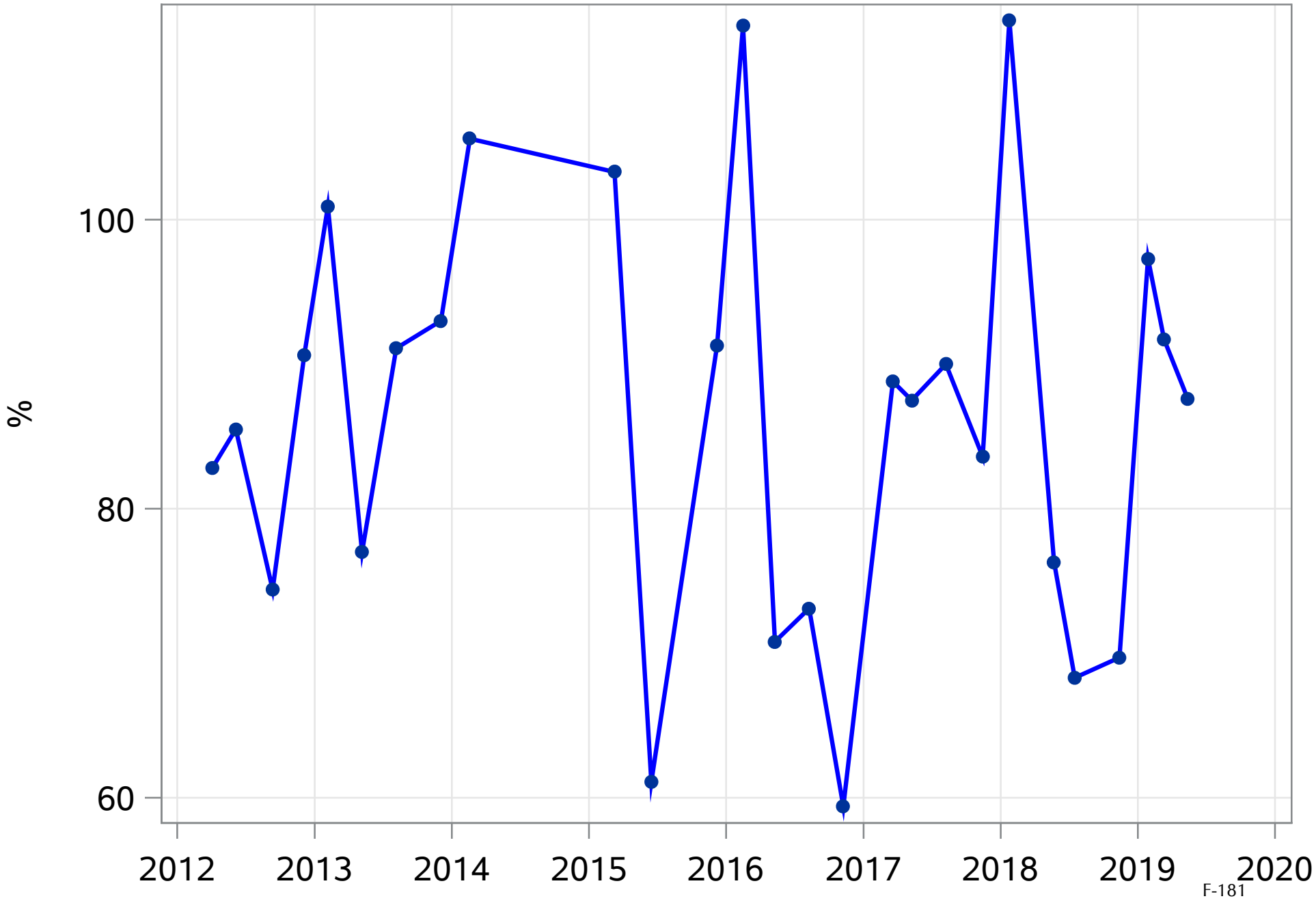


2363C - Tomoka Basin
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2363C	2012	0.224
2	2363C	2013	0.060
3	2363C	2015	0.029
4	2363C	2016	0.010
5	2363C	2018	0.099
6	2363C	2019	0.107

2363C - Tomoka Basin

Dissolved Oxygen

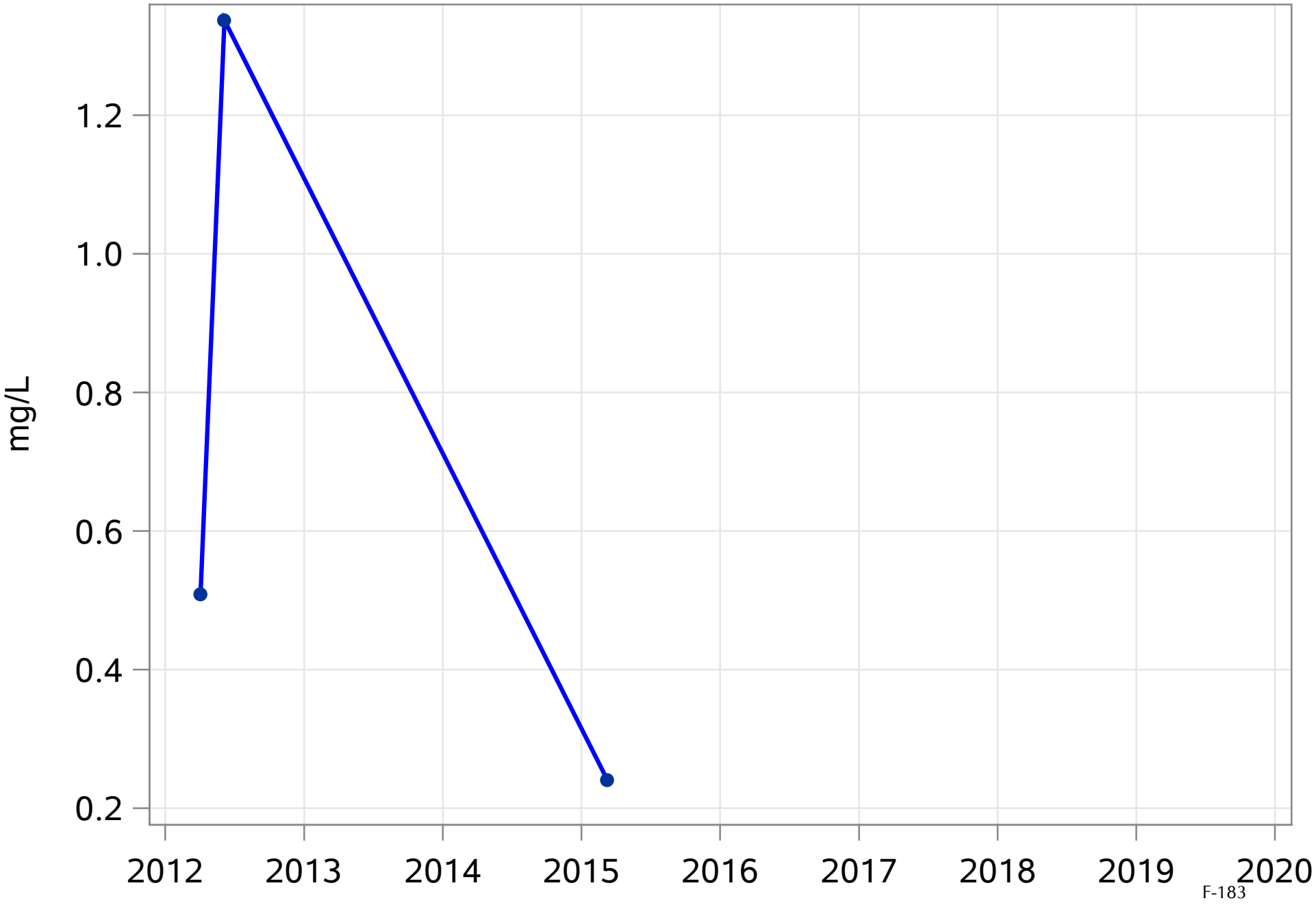


2363C - Tomoka Basin
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	27	0	27

2363C - Tomoka Basin

Iron

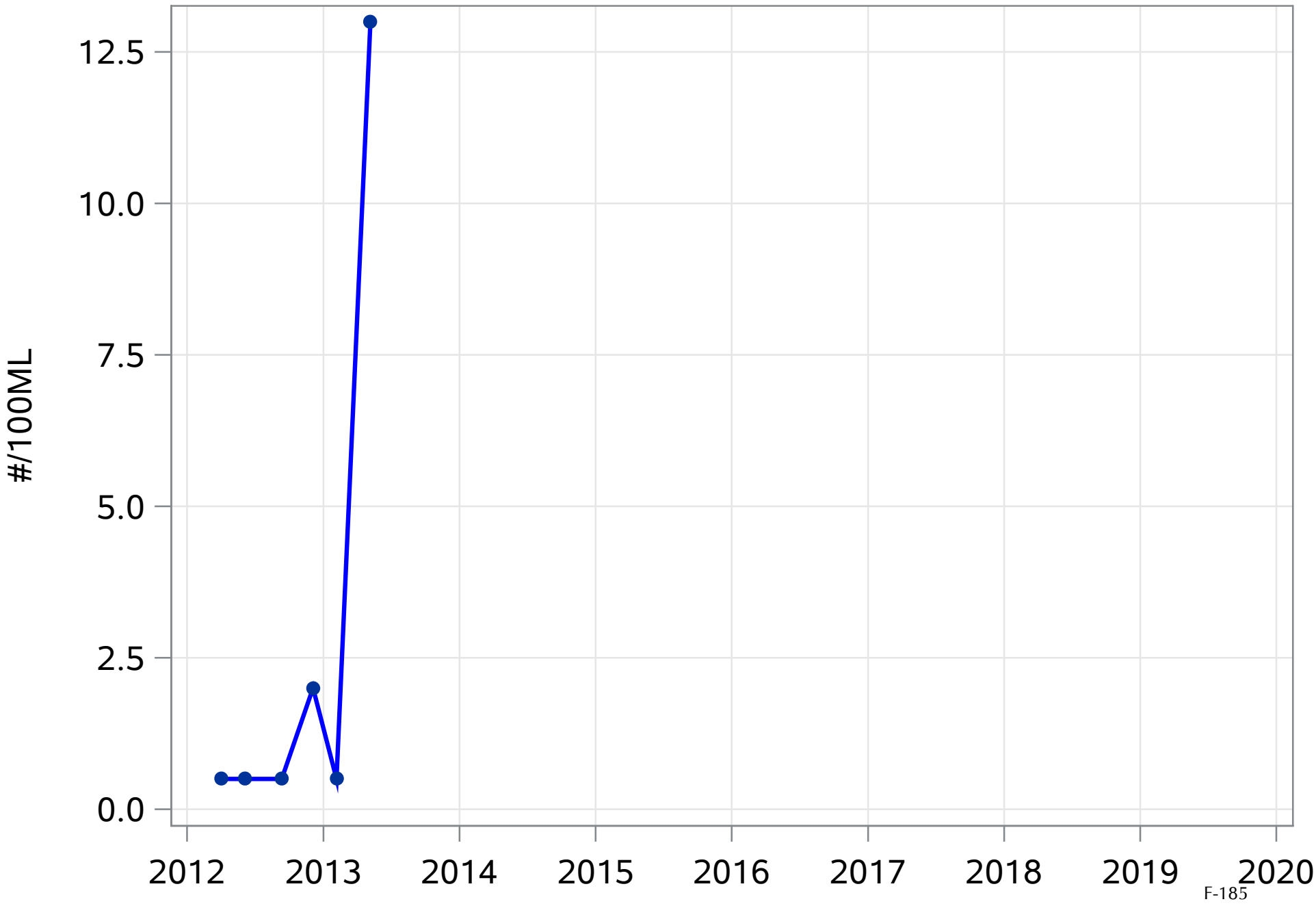


2363C - Tomoka Basin
Iron

Obs	pp_fail	n_pp	vp_fail	n_vp
1	2	3	2	3

2363C - Tomoka Basin

Enterococci

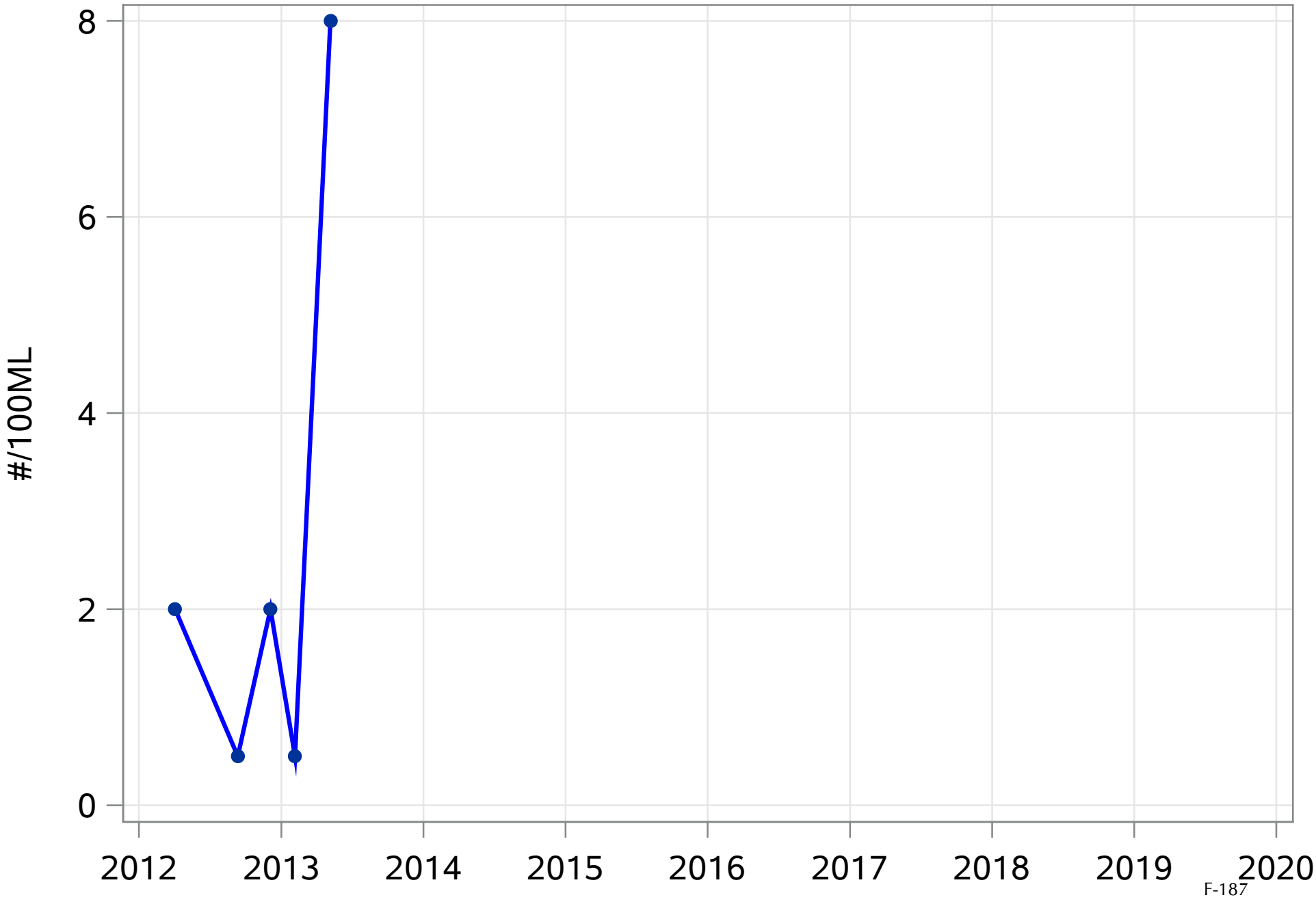


2363C - Tomoka Basin
Enterococci

Obs	fail	n
1	0	6

2363C - Tomoka Basin

Fecal Coliform

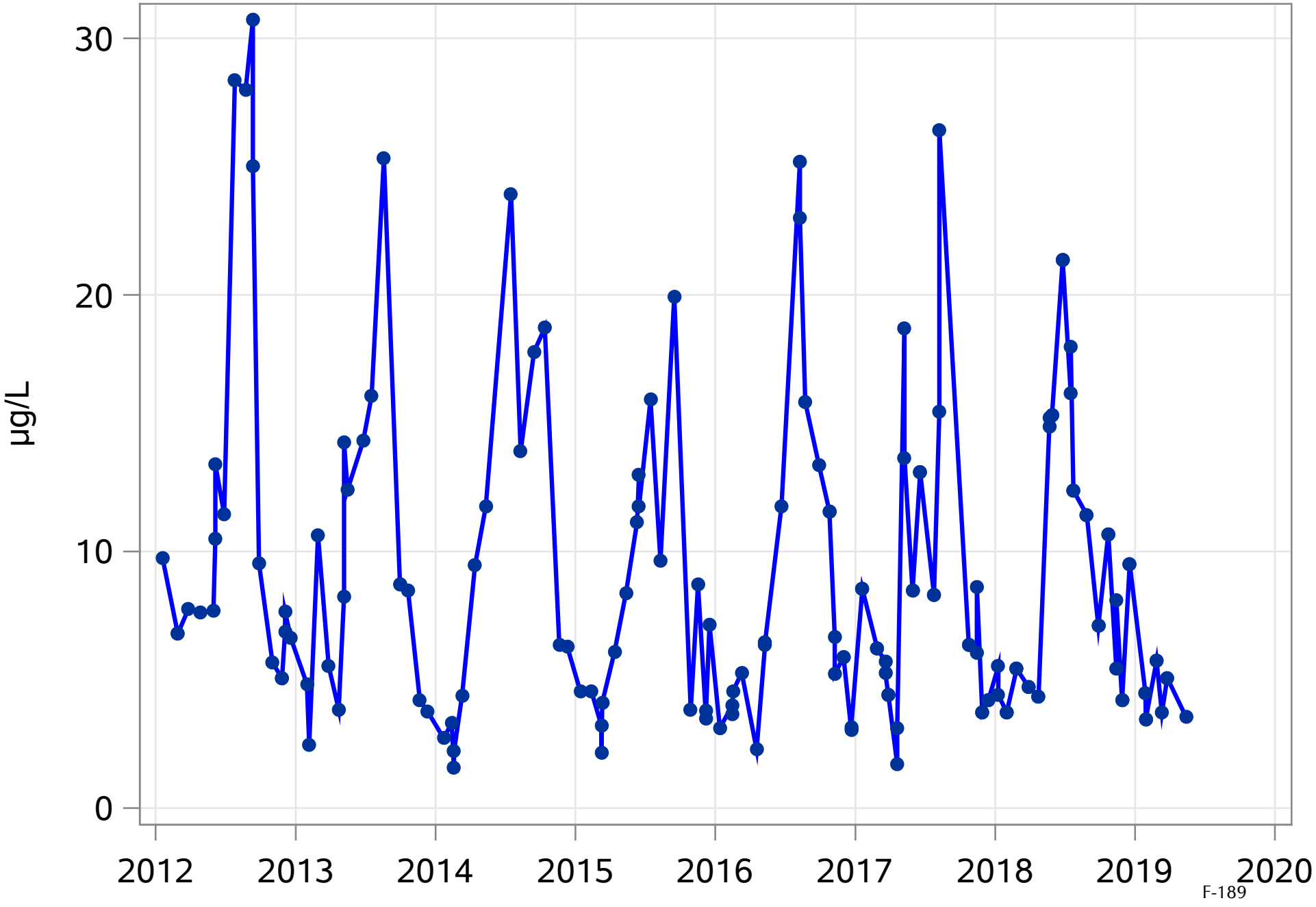


2363C - Tomoka Basin
Fecal Coliform

Obs	fail	n
1	0	5

2363J - Palm Coast

Nutrients (Total Chlorphyll-a)

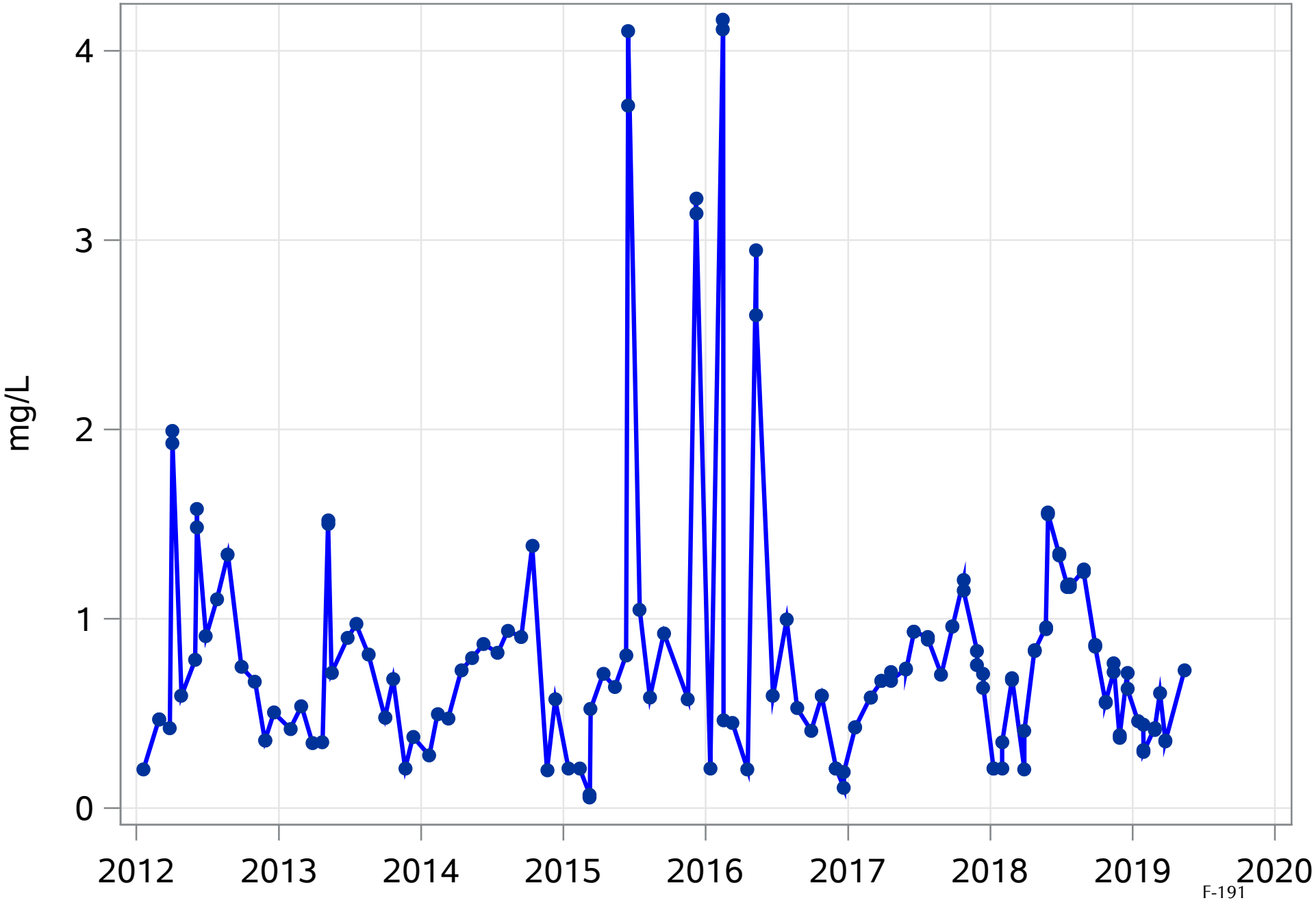


2363J - Palm Coast
Nutrients (Total Chlorphyll-a)

Obs	wbid	year	geoCHLAC
1	2363J	2012	10.0
2	2363J	2013	7.9
3	2363J	2014	6.8
4	2363J	2015	6.5
5	2363J	2016	6.7
6	2363J	2017	7.0
7	2363J	2018	8.3
8	2363J	2019	4.4

2363J - Palm Coast

Nutrients (Total Nitrogen)

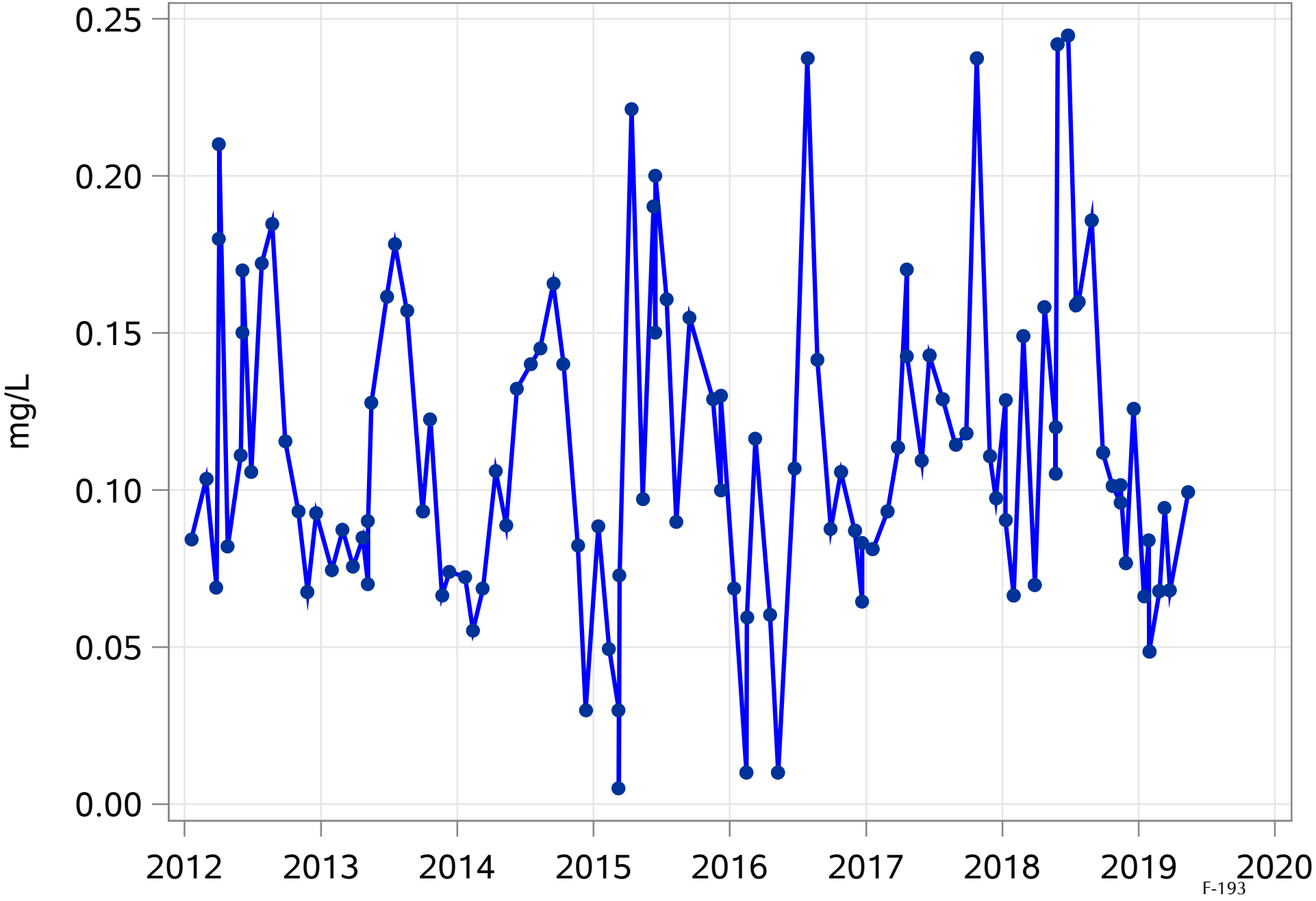


2363J - Palm Coast
Nutrients (Total Nitrogen)

Obs	wbid	year	geoTN
1	2363J	2012	0.73
2	2363J	2013	0.59
3	2363J	2014	0.63
4	2363J	2015	0.67
5	2363J	2016	0.57
6	2363J	2017	0.75
7	2363J	2018	0.69
8	2363J	2019	0.42

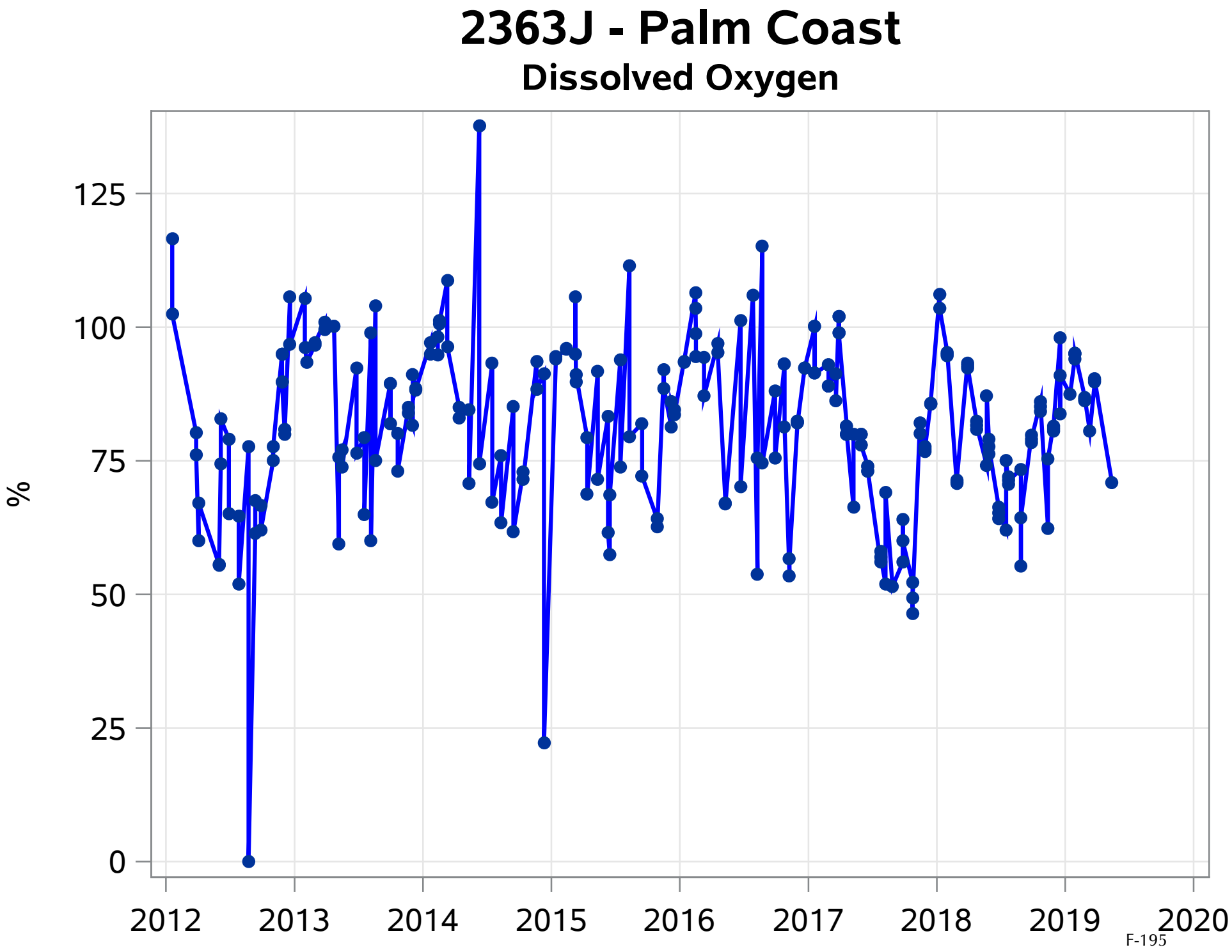
2363J - Palm Coast

Nutrients (Total Phosphorus)



2363J - Palm Coast
Nutrients (Total Phosphorus)

Obs	wbid	year	geoTP
1	2363J	2012	0.113
2	2363J	2013	0.098
3	2363J	2014	0.093
4	2363J	2015	0.091
5	2363J	2016	0.057
6	2363J	2017	0.121
7	2363J	2018	0.126
8	2363J	2019	0.069

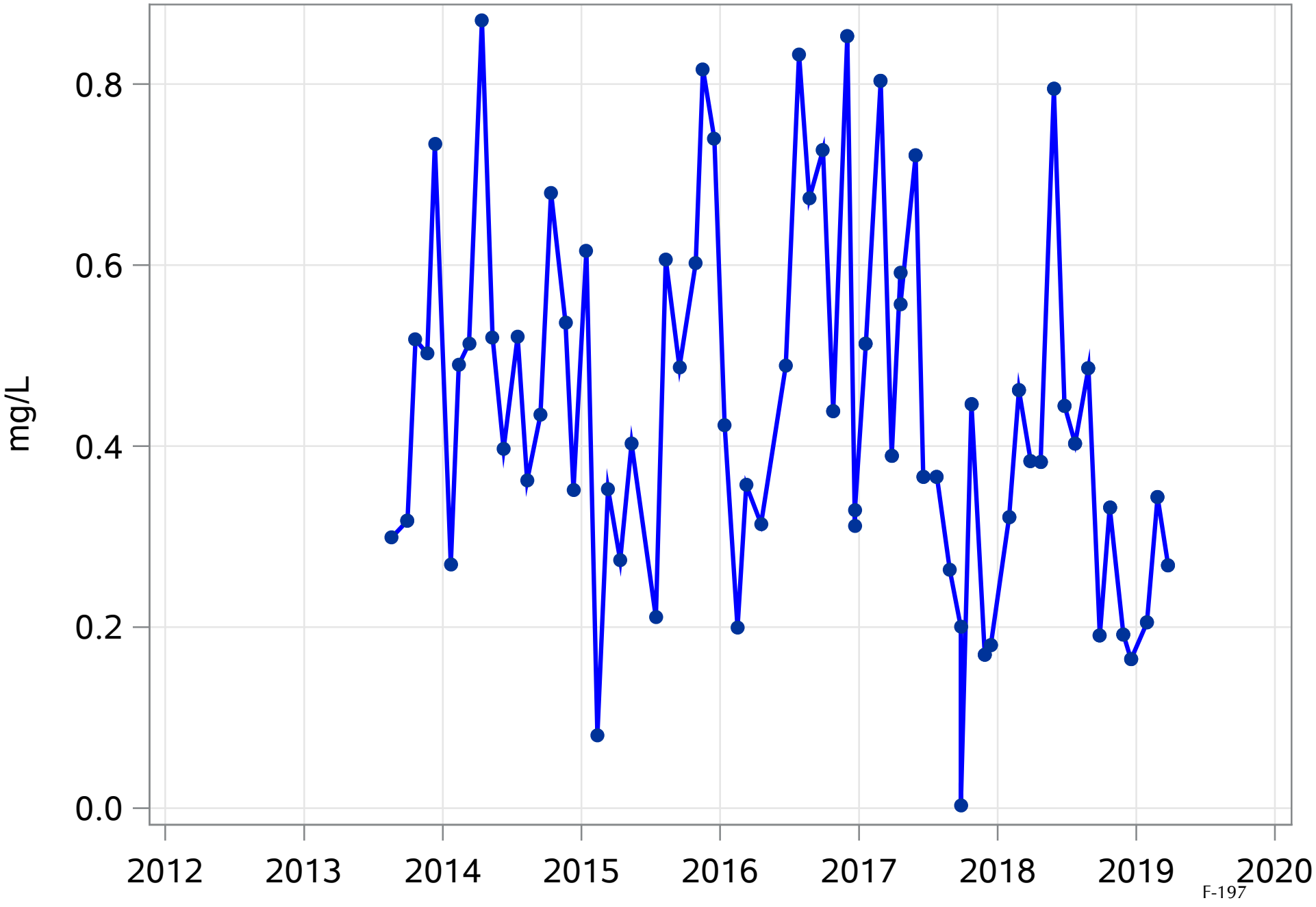

2363J - Palm Coast
Dissolved Oxygen
%
125
100
75
50
25
0
2012
2013
2014
2015
2016
2017
2018
2019
2020

2363J - Palm Coast
Dissolved Oxygen

Obs	pp_fail	n_pp	vp_fail	n_vp
1	1	166	1	166

2363J - Palm Coast

Aluminum

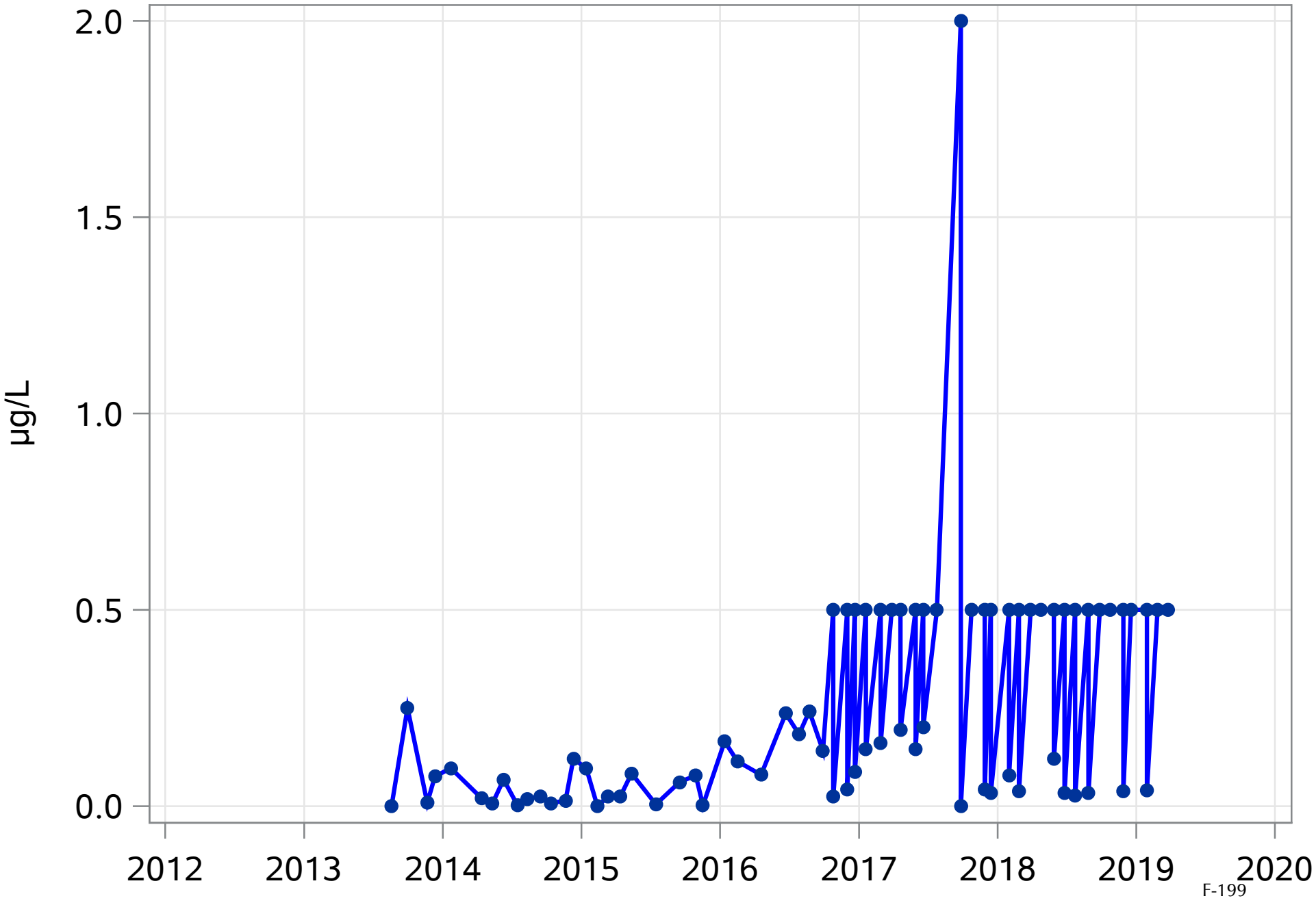


2363J - Palm Coast
Aluminum

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	96	0	96

2363J - Palm Coast

Cadmium

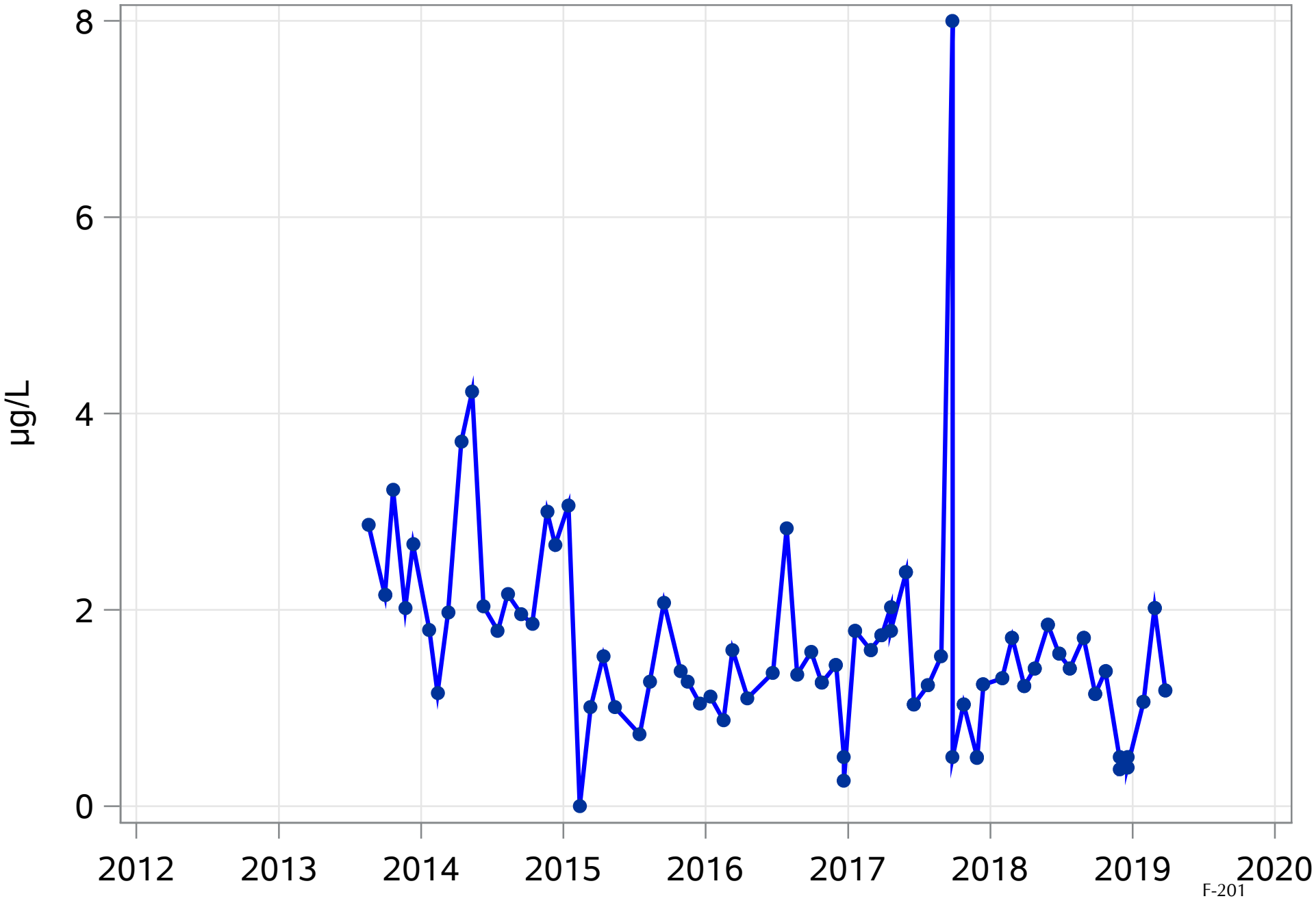


2363J - Palm Coast
Cadmium

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	78	0	78

2363J - Palm Coast

Copper

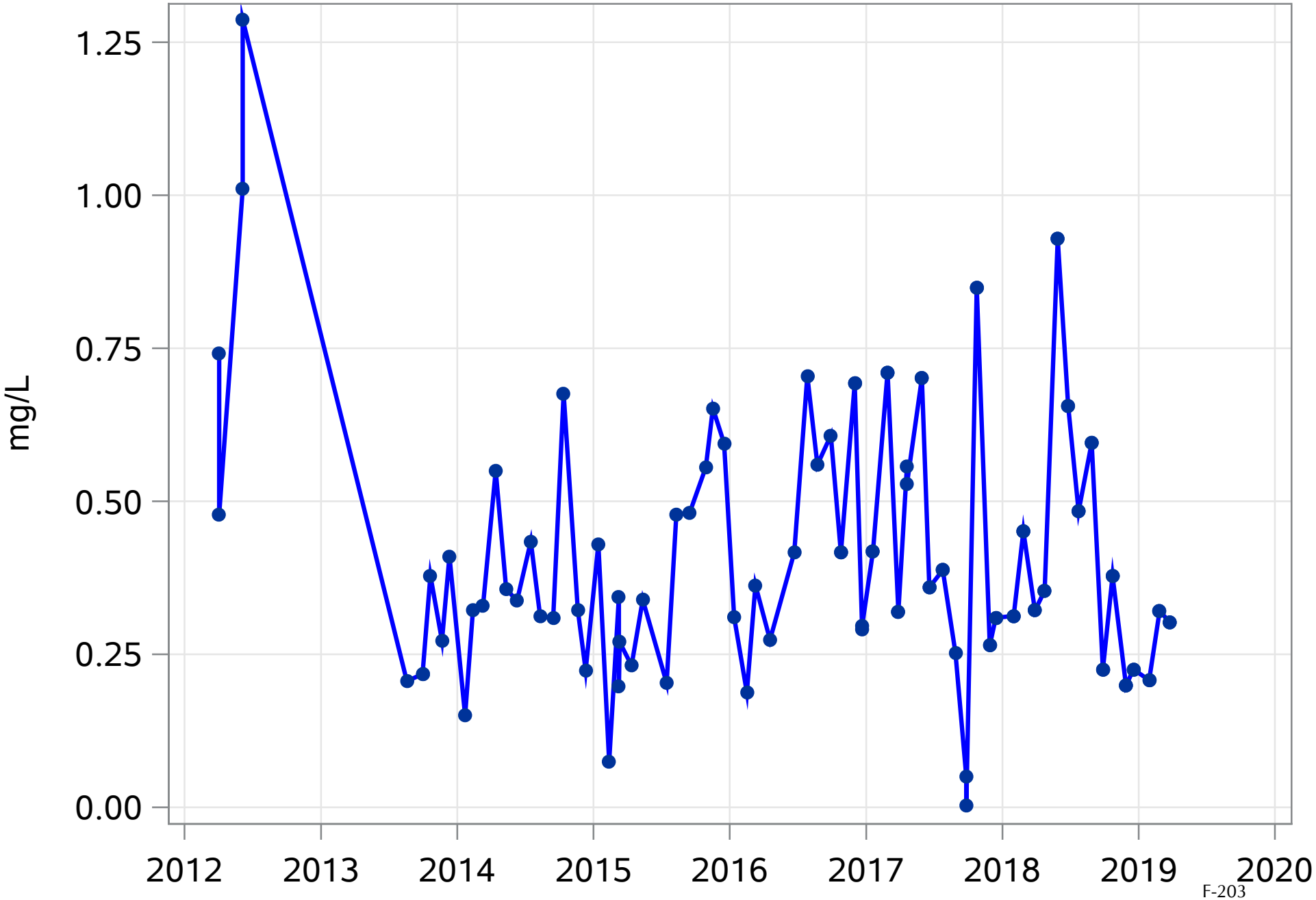


2363J - Palm Coast
Copper

Obs	pp_fail	pp_Count	vp_fail	VP_count	a	b	c	d
1	3	96	3	96	96	96	96	96

2363J - Palm Coast

Iron

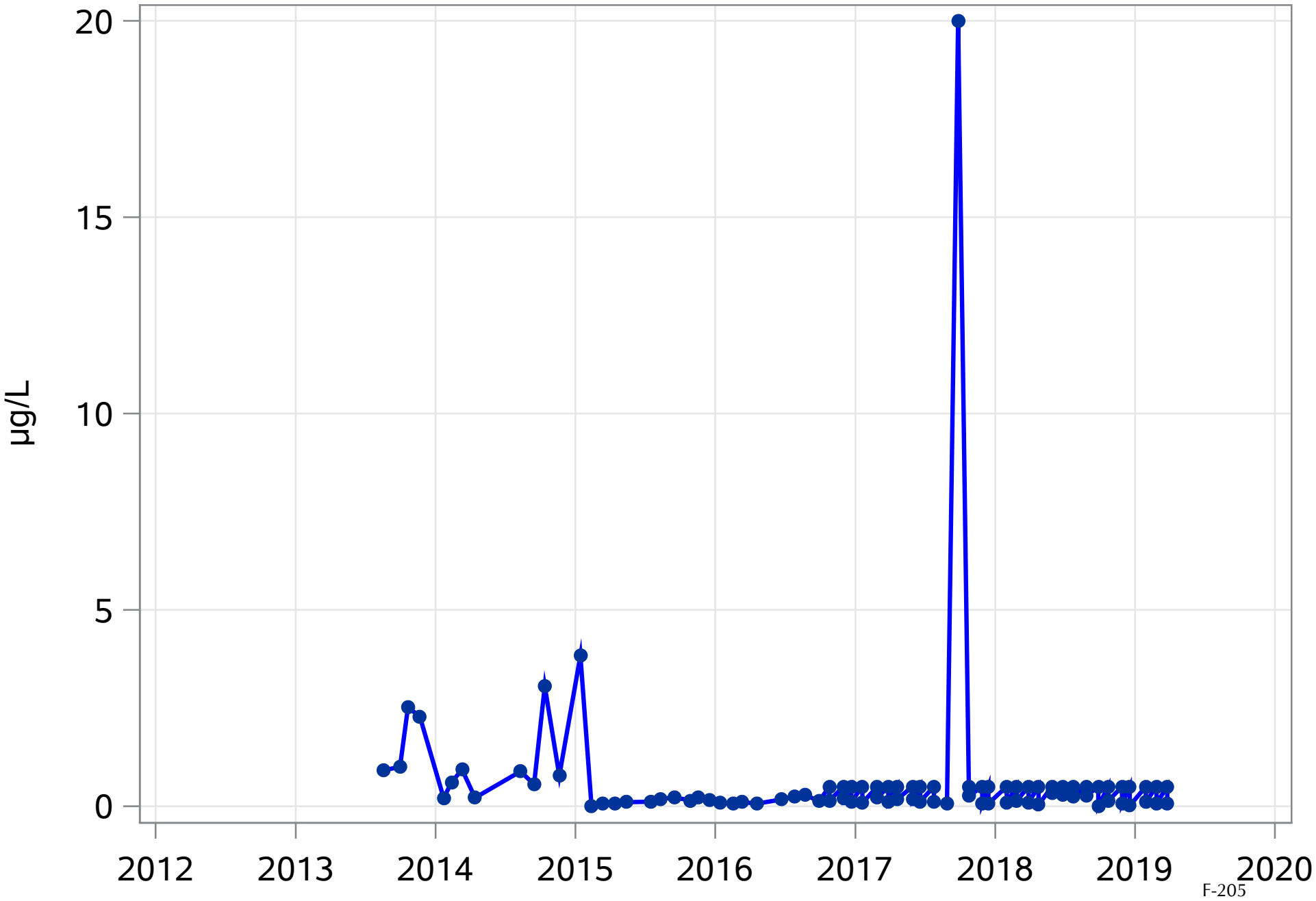


2363J - Palm Coast
Iron

Obs	pp_fail	n_pp	vp_fail	n_vp
1	74	102	74	102

2363J - Palm Coast

Lead

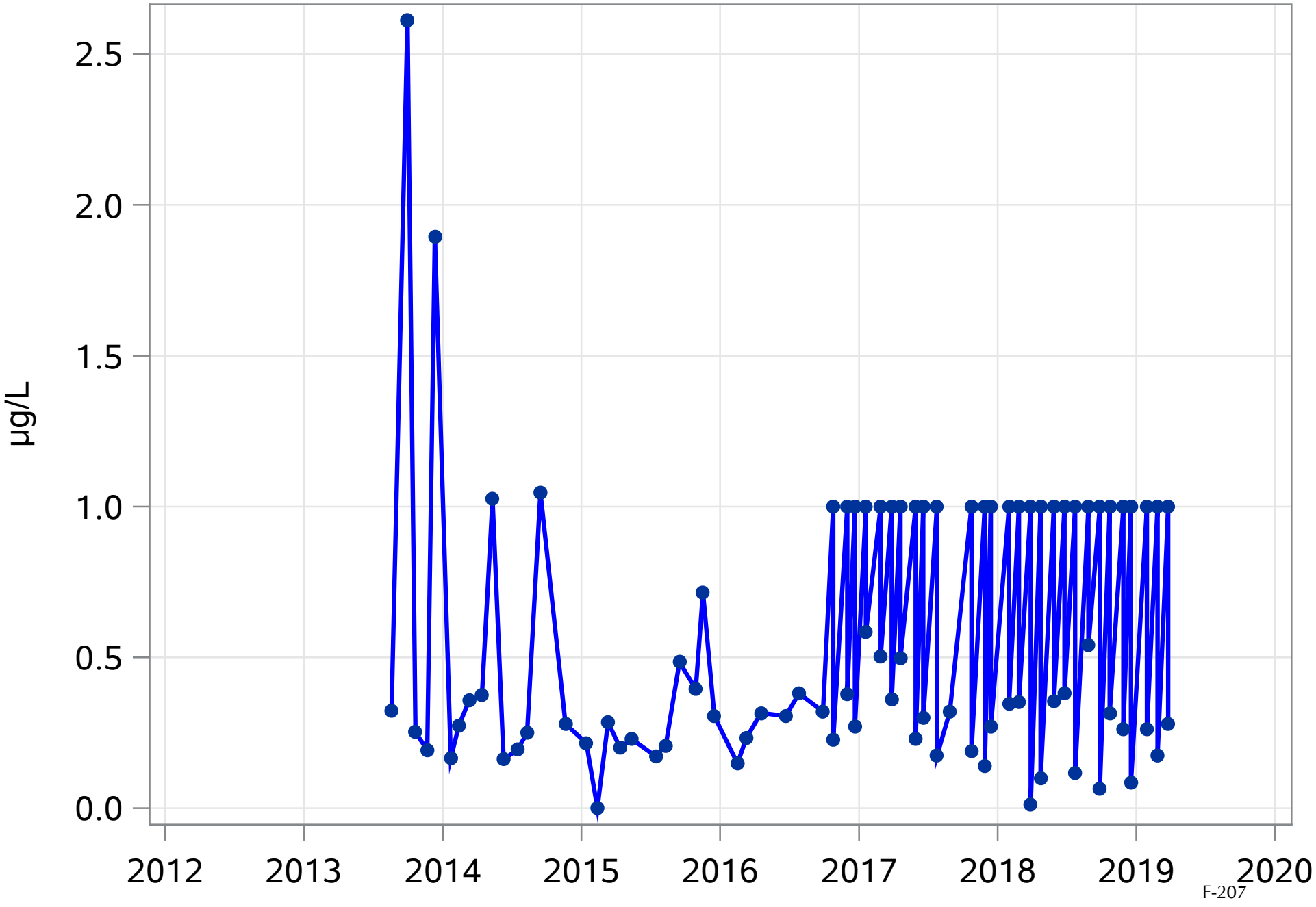


2363J - Palm Coast
Lead

Obs	pp_fail	n_pp	vp_fail	n_vp
1	1	89	1	89

2363J - Palm Coast

Nickel

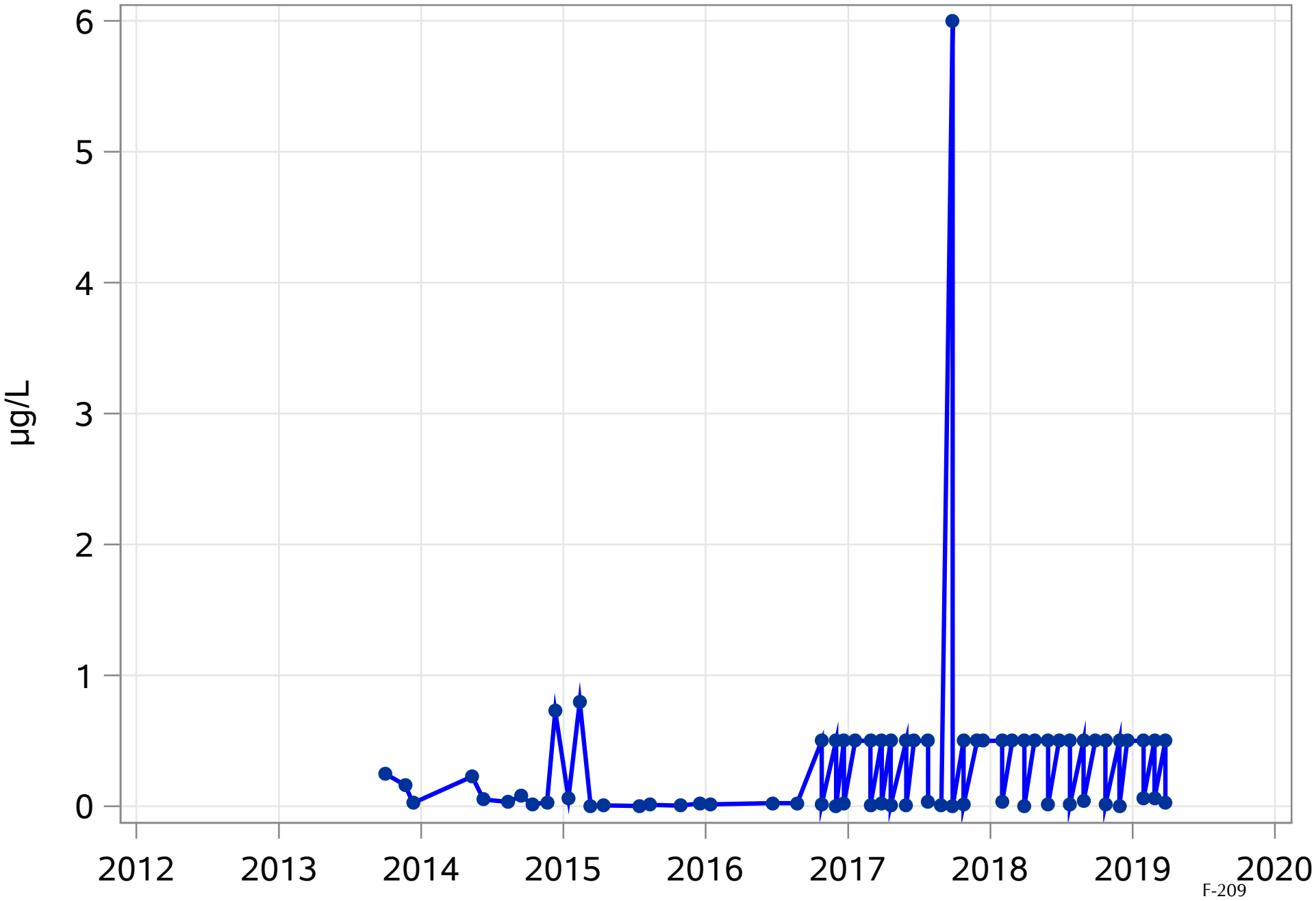


2363J - Palm Coast
Nickel

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	90	0	90

2363J - Palm Coast

Silver

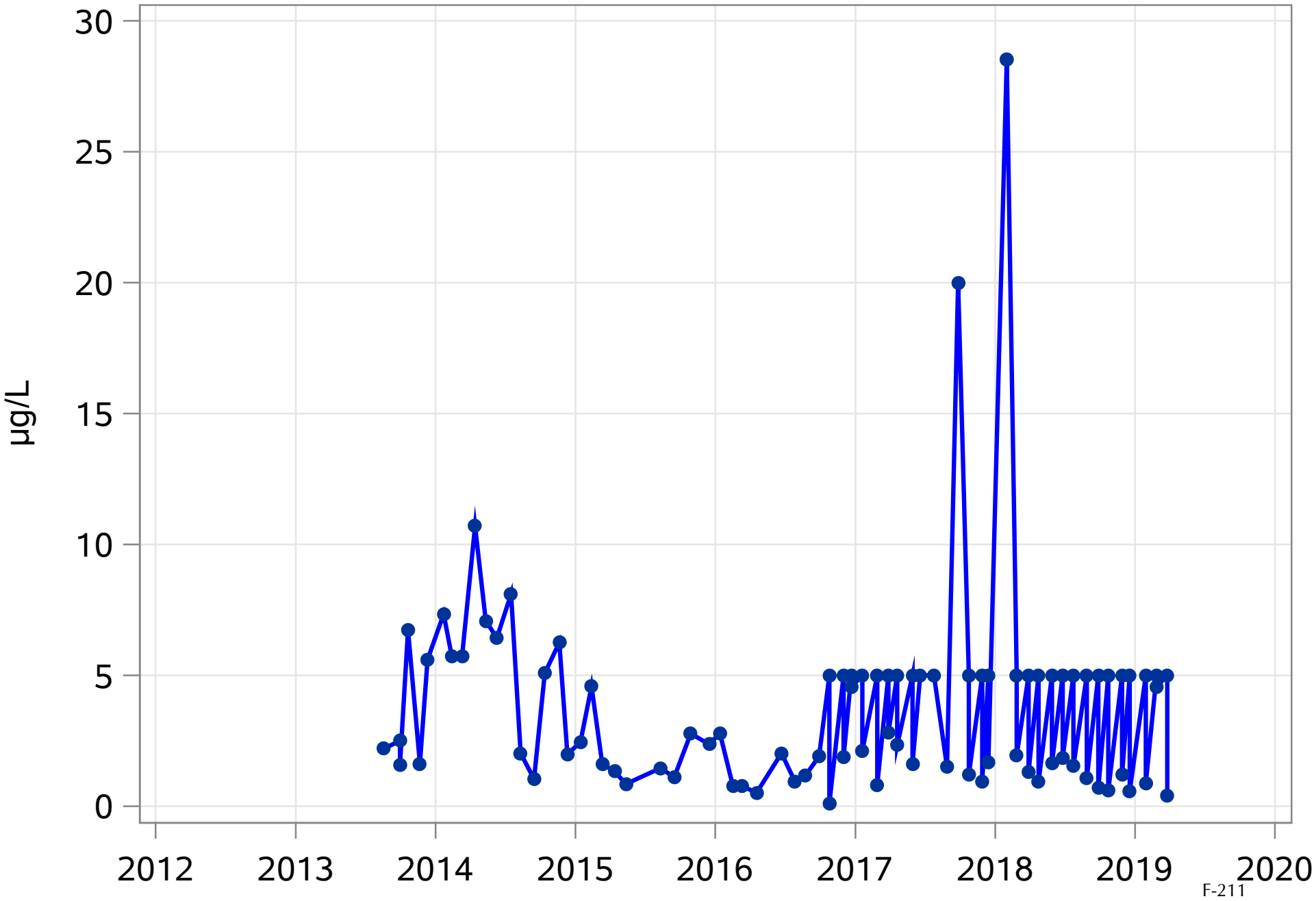


2363J - Palm Coast
Silver

Obs	pp_fail	n_pp	vp_fail	n_vp
1	0	71	1	71

2363J - Palm Coast

Zinc

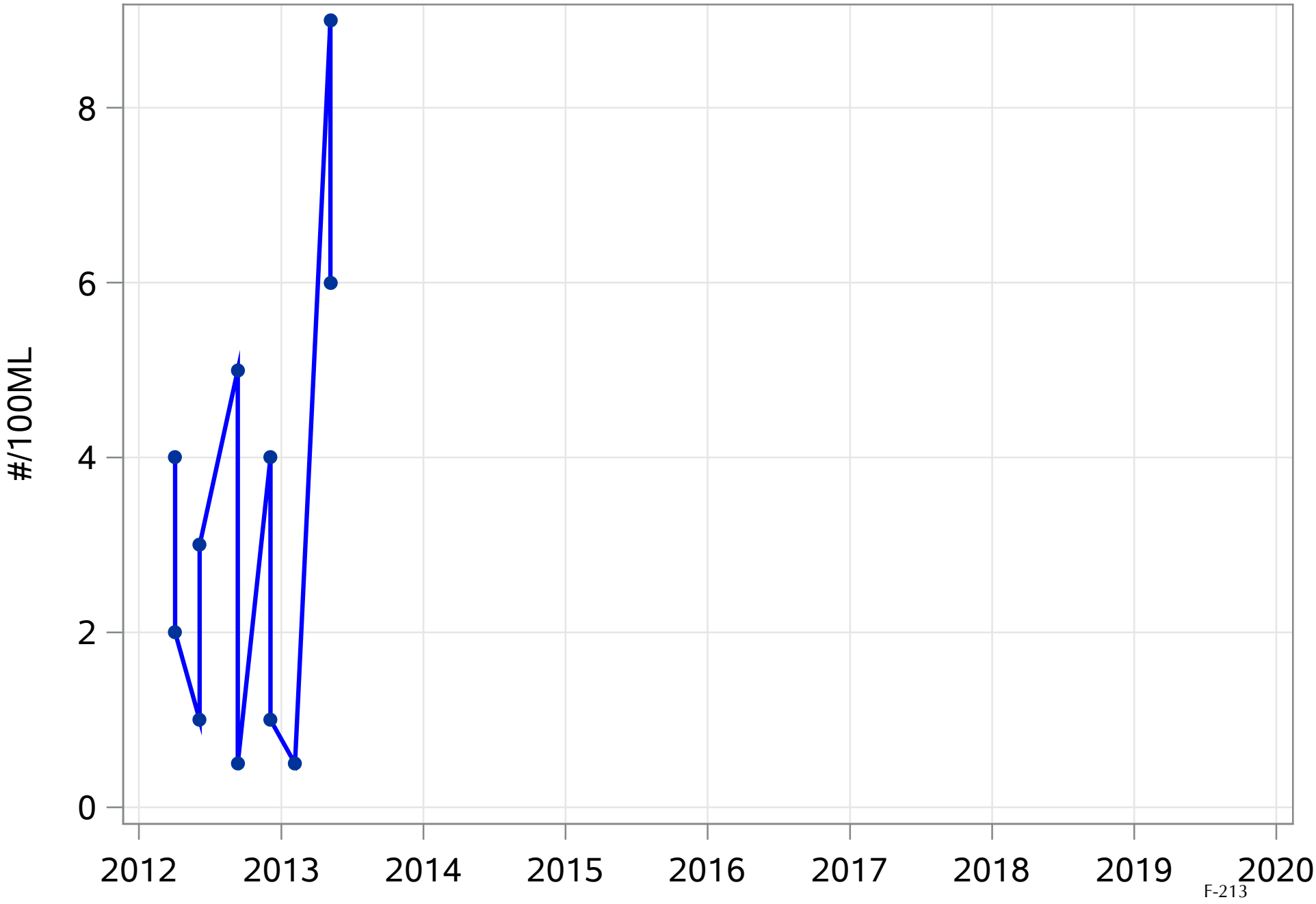


2363J - Palm Coast
Zinc

Obs	pp_fail	pp_Count	vp_fail	VP_count
1	3	96	3	96

2363J - Palm Coast

Enterococci

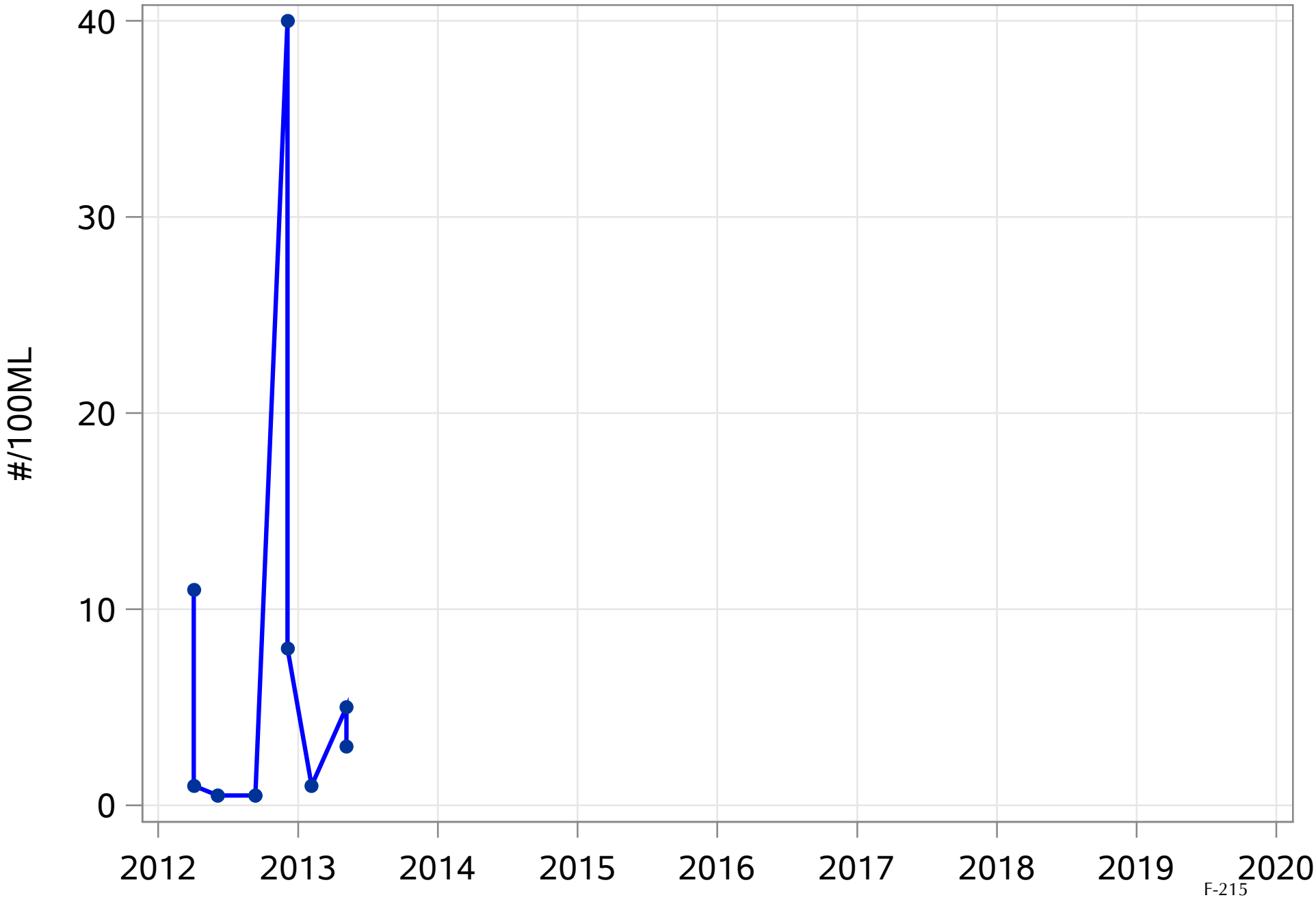


2363J - Palm Coast
Enterococci

Obs	fail	n
1	0	11

2363J - Palm Coast

Fecal Coliform

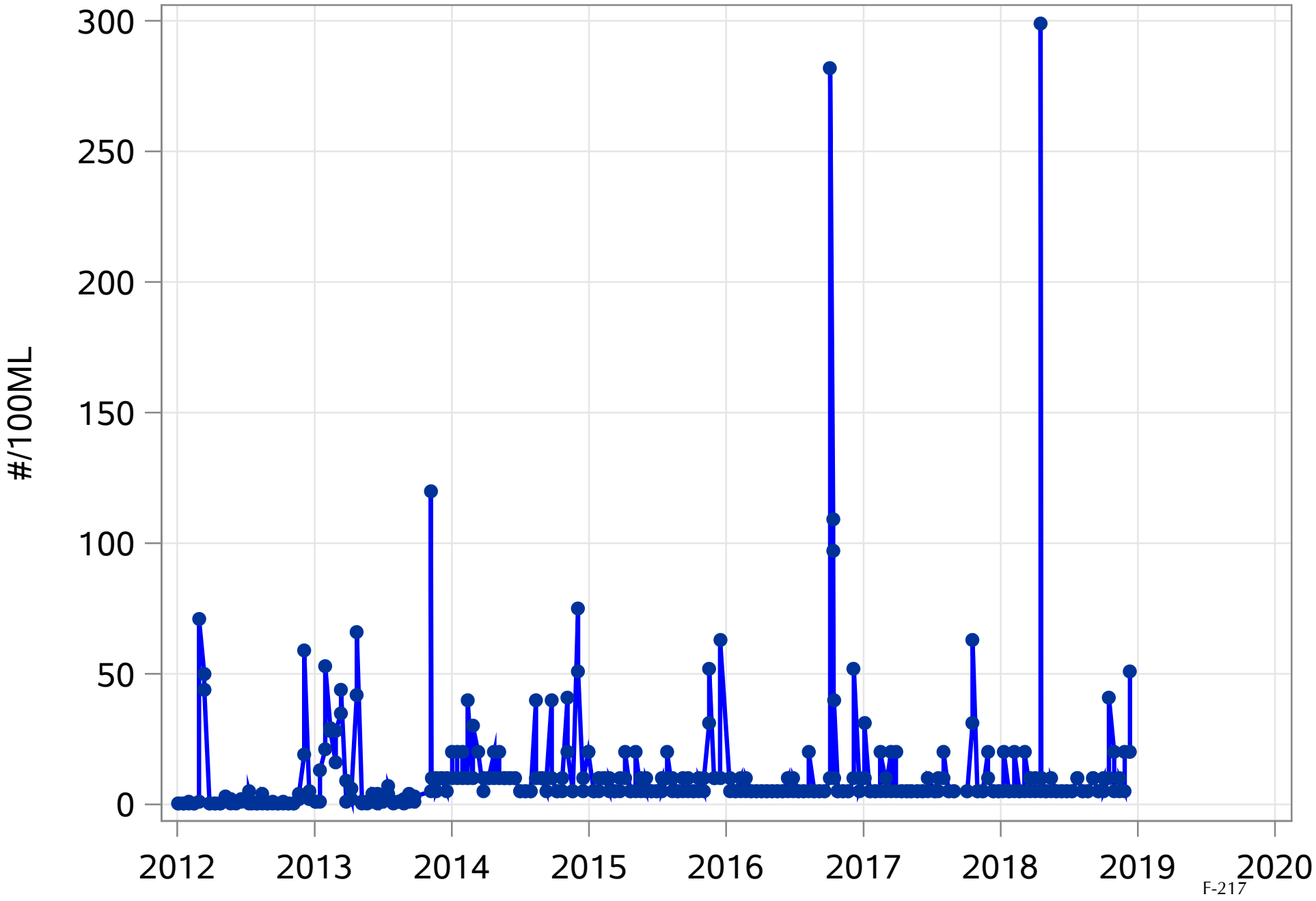


2363J - Palm Coast
Fecal Coliform

Obs	fail	n
1	0	11

8118 - Atlantic Ocean (Volusia County)

Enterococci



8118 - Atlantic Ocean (Volusia County)
Enterococci

Obs	fail	n
1	2	359

Appendix B-G

Annual Geometric Means/Arithmetic Means for Total Nitrogen, Total Phosphorus and Chlorophyll *a*

Annual Geometric Means
IWR Run 58 Data

Obs	wbid	Waterbody	year	cgeotn	cgeotp	cgeoclc
1	2363B	Halifax River - 3M	1990	1.14	0.12	.
2	2363B	Halifax River - 3M	1991	1.32	0.15	.
3	2363B	Halifax River - 3M	1992	1.64	0.13	.
4	2363B	Halifax River - 3M	1993	1.07	0.13	.
5	2363B	Halifax River - 3M	1994	1.28	0.15	.
6	2363B	Halifax River - 3M	1995	0.87	0.15	.
7	2363B	Halifax River - 3M	1996	0.73	0.14	.
8	2363B	Halifax River - 3M	1997	0.73	0.13	.
9	2363B	Halifax River - 3M	1998	0.80	0.13	.
10	2363B	Halifax River - 3M	1999	0.69	0.17	.
11	2363B	Halifax River - 3M	2000	0.71	0.14	.
12	2363B	Halifax River - 3M	2001	0.73	0.17	.
13	2363B	Halifax River - 3M	2002	0.97	0.10	.
14	2363B	Halifax River - 3M	2003	0.77	0.13	.
15	2363B	Halifax River - 3M	2004	0.77	0.12	.
16	2363B	Halifax River - 3M	2005	0.74	0.11	.
17	2363B	Halifax River - 3M	2006	0.37	0.09	.
18	2363B	Halifax River - 3M	2007	0.35	0.10	.
19	2363B	Halifax River - 3M	2008	0.70	0.13	.
20	2363B	Halifax River - 3M	2009	0.99	0.13	.
21	2363B	Halifax River - 3M	2010	1.51	0.12	.
22	2363B	Halifax River - 3M	2011	2.13	0.12	.
23	2363B	Halifax River - 3M	2012	1.52	0.21	.
24	2363B	Halifax River - 3M	2013	0.93	0.08	.
25	2363B	Halifax River - 3M	2014	0.59	0.10	.

Annual Geometric Means
IWR Run 58 Data

Obs	wbid	Waterbody	year	cgeotn	cgeotp	cgeoclc
26	2363B	Halifax River - 3M	2015	0.72	0.09	.
27	2363B	Halifax River - 3M	2016	2.54	0.02	.
28	2363B	Halifax River - 3M	2017	0.79	0.19	.
29	2363B	Halifax River - 3M	2018	0.67	0.12	.
30	2363B	Halifax River - 3M	2019	0.57	0.10	.
31	2363C	Tomoka Basin - 3M	1991	1.28	0.10	11.50
32	2363C	Tomoka Basin - 3M	1992	1.66	0.12	5.85
33	2363C	Tomoka Basin - 3M	1993	1.09	0.09	3.66
34	2363C	Tomoka Basin - 3M	1994	1.31	0.12	7.32
35	2363C	Tomoka Basin - 3M	1995	0.98	0.12	3.24
36	2363C	Tomoka Basin - 3M	1996	0.81	0.10	4.73
37	2363C	Tomoka Basin - 3M	1997	0.78	0.10	2.71
38	2363C	Tomoka Basin - 3M	1998	0.83	0.12	3.59
39	2363C	Tomoka Basin - 3M	1999	0.76	0.15	5.78
40	2363C	Tomoka Basin - 3M	2000	0.53	0.07	4.12
41	2363C	Tomoka Basin - 3M	2001	0.50	0.07	1.68
42	2363C	Tomoka Basin - 3M	2002	1.43	0.10	6.05
43	2363C	Tomoka Basin - 3M	2003	0.78	0.08	.
44	2363C	Tomoka Basin - 3M	2004	.	.	2.67
45	2363C	Tomoka Basin - 3M	2006	0.39	0.04	3.61
46	2363C	Tomoka Basin - 3M	2007	0.45	0.08	2.97
47	2363C	Tomoka Basin - 3M	2008	0.70	0.10	7.12
48	2363C	Tomoka Basin - 3M	2009	1.03	0.10	6.44
49	2363C	Tomoka Basin - 3M	2010	1.72	0.07	13.44
50	2363C	Tomoka Basin - 3M	2011	2.94	0.11	9.82

Annual Geometric Means
IWR Run 58 Data

Obs	wbid	Waterbody	year	cgeotn	cgeotp	cgeoclc
51	2363C	Tomoka Basin - 3M	2012	1.85	0.22	13.23
52	2363C	Tomoka Basin - 3M	2013	1.35	0.06	4.92
53	2363C	Tomoka Basin - 3M	2014	.	.	2.32
54	2363C	Tomoka Basin - 3M	2015	0.46	0.03	4.71
55	2363C	Tomoka Basin - 3M	2016	4.02	0.01	7.15
56	2363C	Tomoka Basin - 3M	2017	.	.	7.20
57	2363C	Tomoka Basin - 3M	2018	1.06	0.10	9.05
58	2363C	Tomoka Basin - 3M	2019	0.67	0.11	5.95
59	2363J	Palm Coast - 3M	1990	1.21	0.10	7.18
60	2363J	Palm Coast - 3M	1991	1.43	0.13	11.57
61	2363J	Palm Coast - 3M	1992	1.67	0.10	4.99
62	2363J	Palm Coast - 3M	1993	1.05	0.10	4.31
63	2363J	Palm Coast - 3M	1994	1.25	0.09	4.32
64	2363J	Palm Coast - 3M	1995	0.81	0.12	3.00
65	2363J	Palm Coast - 3M	1996	0.66	0.12	4.51
66	2363J	Palm Coast - 3M	1997	0.67	0.11	3.17
67	2363J	Palm Coast - 3M	1998	0.66	0.11	3.88
68	2363J	Palm Coast - 3M	1999	0.62	0.17	5.77
69	2363J	Palm Coast - 3M	2000	0.61	0.09	3.87
70	2363J	Palm Coast - 3M	2001	0.52	0.17	3.27
71	2363J	Palm Coast - 3M	2002	1.75	0.09	8.95
72	2363J	Palm Coast - 3M	2003	0.63	0.12	.
73	2363J	Palm Coast - 3M	2004	0.38	0.07	2.82
74	2363J	Palm Coast - 3M	2005	0.48	0.12	7.49
75	2363J	Palm Coast - 3M	2006	0.44	0.06	5.04

Annual Geometric Means
IWR Run 58 Data

Obs	wbid	Waterbody	year	cgeotn	cgeotp	cgeoclc
76	2363J	Palm Coast - 3M	2007	0.50	0.09	5.37
77	2363J	Palm Coast - 3M	2008	0.51	0.15	6.57
78	2363J	Palm Coast - 3M	2009	0.77	0.11	7.91
79	2363J	Palm Coast - 3M	2010	0.83	0.09	11.04
80	2363J	Palm Coast - 3M	2011	0.89	0.10	10.79
81	2363J	Palm Coast - 3M	2012	0.73	0.11	9.98
82	2363J	Palm Coast - 3M	2013	0.59	0.10	7.91
83	2363J	Palm Coast - 3M	2014	0.63	0.09	6.81
84	2363J	Palm Coast - 3M	2015	0.67	0.09	6.55
85	2363J	Palm Coast - 3M	2016	0.57	0.06	6.71
86	2363J	Palm Coast - 3M	2017	0.75	0.12	6.97
87	2363J	Palm Coast - 3M	2018	0.69	0.13	8.28
88	2363J	Palm Coast - 3M	2019	0.42	0.07	4.39
89	2631	Unnamed Ditch - 3F	2019	0.96	0.02	2.30
90	2634	Tomoka River - 3F	1992	1.41	0.02	0.53
91	2634	Tomoka River - 3F	1993	0.97	0.07	0.59
92	2634	Tomoka River - 3F	1994	1.31	0.10	1.86
93	2634	Tomoka River - 3F	1995	1.40	0.05	0.90
94	2634	Tomoka River - 3F	1996	0.98	0.02	0.69
95	2634	Tomoka River - 3F	1997	0.93	0.03	0.27
96	2634	Tomoka River - 3F	1998	1.12	0.03	0.38
97	2634	Tomoka River - 3F	1999	0.84	0.04	1.10
98	2634	Tomoka River - 3F	2000	0.30	0.21	0.70
99	2634	Tomoka River - 3F	2001	0.42	0.11	0.63
100	2634	Tomoka River - 3F	2002	1.03	0.05	0.61

Annual Geometric Means
IWR Run 58 Data

Obs	wbid	Waterbody	year	cgeotn	cgeotp	cgeoclc
101	2634	Tomoka River - 3F	2003	1.01	0.05	0.68
102	2634	Tomoka River - 3F	2004	1.03	0.04	0.60
103	2634	Tomoka River - 3F	2005	1.06	0.04	0.91
104	2634	Tomoka River - 3F	2006	0.72	0.04	0.46
105	2634	Tomoka River - 3F	2007	0.76	0.04	0.81
106	2634	Tomoka River - 3F	2008	1.21	0.09	2.39
107	2634	Tomoka River - 3F	2009	1.23	0.06	2.05
108	2634	Tomoka River - 3F	2010	1.10	0.06	1.36
109	2634	Tomoka River - 3F	2011	0.85	0.05	1.17
110	2634	Tomoka River - 3F	2012	0.74	0.04	1.17
111	2634	Tomoka River - 3F	2013	0.72	0.04	1.22
112	2634	Tomoka River - 3F	2014	1.20	0.05	0.89
113	2634	Tomoka River - 3F	2015	1.21	0.04	0.55
114	2634	Tomoka River - 3F	2016	0.86	0.05	1.28
115	2634	Tomoka River - 3F	2017	0.97	0.05	0.95
116	2634	Tomoka River - 3F	2018	1.10	0.05	0.91
117	2634	Tomoka River - 3F	2019	0.93	0.04	0.85
118	2634A	Tomoka River - 3M	1990	1.31	0.10	5.00
119	2634A	Tomoka River - 3M	1992	1.35	0.13	.
120	2634A	Tomoka River - 3M	1993	0.94	0.09	5.03
121	2634A	Tomoka River - 3M	1994	1.44	0.10	6.66
122	2634A	Tomoka River - 3M	1995	1.08	0.09	5.76
123	2634A	Tomoka River - 3M	1996	1.01	0.06	2.83
124	2634A	Tomoka River - 3M	1997	0.83	0.06	1.57
125	2634A	Tomoka River - 3M	1998	1.01	0.07	1.02

Annual Geometric Means
IWR Run 58 Data

Obs	wbid	Waterbody	year	cgeotn	cgeotp	cgeoclc
126	2634A	Tomoka River - 3M	1999	0.83	0.11	4.45
127	2634A	Tomoka River - 3M	2000	0.47	0.30	6.25
128	2634A	Tomoka River - 3M	2001	0.39	0.29	4.16
129	2634A	Tomoka River - 3M	2002	1.05	0.10	3.12
130	2634A	Tomoka River - 3M	2003	1.06	0.07	6.77
131	2634A	Tomoka River - 3M	2004	1.05	0.10	5.01
132	2634A	Tomoka River - 3M	2005	1.05	0.06	4.37
133	2634A	Tomoka River - 3M	2006	0.55	0.07	5.47
134	2634A	Tomoka River - 3M	2007	0.77	0.09	4.84
135	2634A	Tomoka River - 3M	2008	0.99	0.13	8.37
136	2634A	Tomoka River - 3M	2009	1.07	0.07	5.64
137	2634A	Tomoka River - 3M	2010	1.73	0.08	8.74
138	2634A	Tomoka River - 3M	2011	1.90	0.14	11.13
139	2634A	Tomoka River - 3M	2012	0.98	0.12	6.03
140	2634A	Tomoka River - 3M	2013	0.94	0.10	4.58
141	2634A	Tomoka River - 3M	2014	0.85	0.10	4.11
142	2634A	Tomoka River - 3M	2015	1.99	0.05	1.34
143	2634A	Tomoka River - 3M	2016	0.90	0.09	5.84
144	2634A	Tomoka River - 3M	2017	0.86	0.14	5.00
145	2634A	Tomoka River - 3M	2018	1.00	0.10	5.77
146	2634A	Tomoka River - 3M	2019	0.84	0.08	5.08
147	2635	Groover Branch - 3F	2000	0.78	.	.
148	2635	Groover Branch - 3F	2005	1.00	0.05	.
149	2635	Groover Branch - 3F	2008	1.85	0.14	4.07
150	2635	Groover Branch - 3F	2009	1.25	0.09	1.73

Annual Geometric Means
IWR Run 58 Data

Obs	wbid	Waterbody	year	cgeotn	cgeotp	cgeoclc
151	2635	Groover Branch - 3F	2015	0.94	0.08	0.77
152	2635	Groover Branch - 3F	2016	0.96	0.10	2.02
153	2635	Groover Branch - 3F	2017	0.76	0.11	5.17
154	2640	Unnamed Branch - 3M	2000	0.70	.	.
155	2640	Unnamed Branch - 3M	2006	0.24	0.01	10.46
156	2640	Unnamed Branch - 3M	2007	1.02	0.02	12.25
157	2640	Unnamed Branch - 3M	2008	0.96	0.10	7.34
158	2640	Unnamed Branch - 3M	2009	0.71	0.08	8.03
159	2640	Unnamed Branch - 3M	2010	0.95	0.05	15.69
160	2640	Unnamed Branch - 3M	2015	1.09	0.13	7.66
161	2641	Unnamed Branch - 3F	1996	0.50	0.07	.
162	2641	Unnamed Branch - 3F	2000	0.52	.	.
163	2641	Unnamed Branch - 3F	2005	0.88	0.08	.
164	2641	Unnamed Branch - 3F	2010	0.61	0.06	0.82
165	2641	Unnamed Branch - 3F	2015	0.65	0.05	0.34
166	2641	Unnamed Branch - 3F	2017	0.62	0.07	0.59
167	2641	Unnamed Branch - 3F	2018	0.54	0.06	0.32
168	2642	Unnamed Branch - 3M	2006	0.25	0.01	9.95
169	2642	Unnamed Branch - 3M	2007	1.37	0.02	15.96
170	2642	Unnamed Branch - 3M	2008	1.21	0.11	10.02
171	2642	Unnamed Branch - 3M	2009	0.95	0.11	9.97
172	2642	Unnamed Branch - 3M	2010	1.12	0.08	26.86
173	2642	Unnamed Branch - 3M	2015	1.03	0.10	8.14
174	2642	Unnamed Branch - 3M	2016	1.20	0.12	6.44
175	2642	Unnamed Branch - 3M	2017	1.09	0.13	11.56

Annual Geometric Means
IWR Run 58 Data

Obs	wbid	Waterbody	year	cgeotn	cgeotp	cgeoclc
176	2645	Mizners Branch - 3F	2000	0.55	.	.
177	2645	Mizners Branch - 3F	2008	0.91	0.13	1.10
178	2645	Mizners Branch - 3F	2010	0.87	0.10	1.54
179	2645	Mizners Branch - 3F	2015	0.84	0.11	1.14
180	2645	Mizners Branch - 3F	2016	1.01	0.06	0.63
181	2645	Mizners Branch - 3F	2017	0.76	0.13	1.59
182	2646	Little Tomoka River - 3F	2000	0.63	.	.
183	2646	Little Tomoka River - 3F	2010	1.31	0.04	2.10
184	2646	Little Tomoka River - 3F	2011	0.99	0.12	87.00
185	2646	Little Tomoka River - 3F	2013	0.55	0.03	0.95
186	2647	Holly Hill Ditch - 3M	1996	0.76	0.14	.
187	2647	Holly Hill Ditch - 3M	2005	0.93	0.17	5.37
188	2647	Holly Hill Ditch - 3M	2008	1.70	0.33	2.80
189	2647	Holly Hill Ditch - 3M	2009	1.13	0.13	3.91
190	2647	Holly Hill Ditch - 3M	2015	0.79	0.18	5.40
191	2647	Holly Hill Ditch - 3M	2016	1.04	0.18	7.24

Annual Average IWR Run 58 Data

Obs	wbid	Waterbody	year	annavgCHL
1	2363B	Halifax River - 3M	1990	16.69
2	2363B	Halifax River - 3M	1991	10.3817778
3	2363B	Halifax River - 3M	1992	10.0878873
4	2363B	Halifax River - 3M	1993	7.75624419
5	2363B	Halifax River - 3M	1994	10.8333981
6	2363B	Halifax River - 3M	1995	6.16287037
7	2363B	Halifax River - 3M	1996	6.88650485
8	2363B	Halifax River - 3M	1997	7.19072072
9	2363B	Halifax River - 3M	1998	7.82421426
10	2363B	Halifax River - 3M	1999	9.24736433
11	2363B	Halifax River - 3M	2000	7.58201381
12	2363B	Halifax River - 3M	2001	6.1178517
13	2363B	Halifax River - 3M	2002	8.66626222
14	2363B	Halifax River - 3M	2003	5.87845
15	2363B	Halifax River - 3M	2004	4.04541736
16	2363B	Halifax River - 3M	2005	5.26758833
17	2363B	Halifax River - 3M	2006	4.95196931
18	2363B	Halifax River - 3M	2007	4.40423276
19	2363B	Halifax River - 3M	2008	9.99797377
20	2363B	Halifax River - 3M	2009	8.08928489
21	2363B	Halifax River - 3M	2010	12.51335
22	2363B	Halifax River - 3M	2011	9.31514662
23	2363B	Halifax River - 3M	2012	7.82818697
24	2363B	Halifax River - 3M	2013	3.51278868
25	2363B	Halifax River - 3M	2014	3.25304145

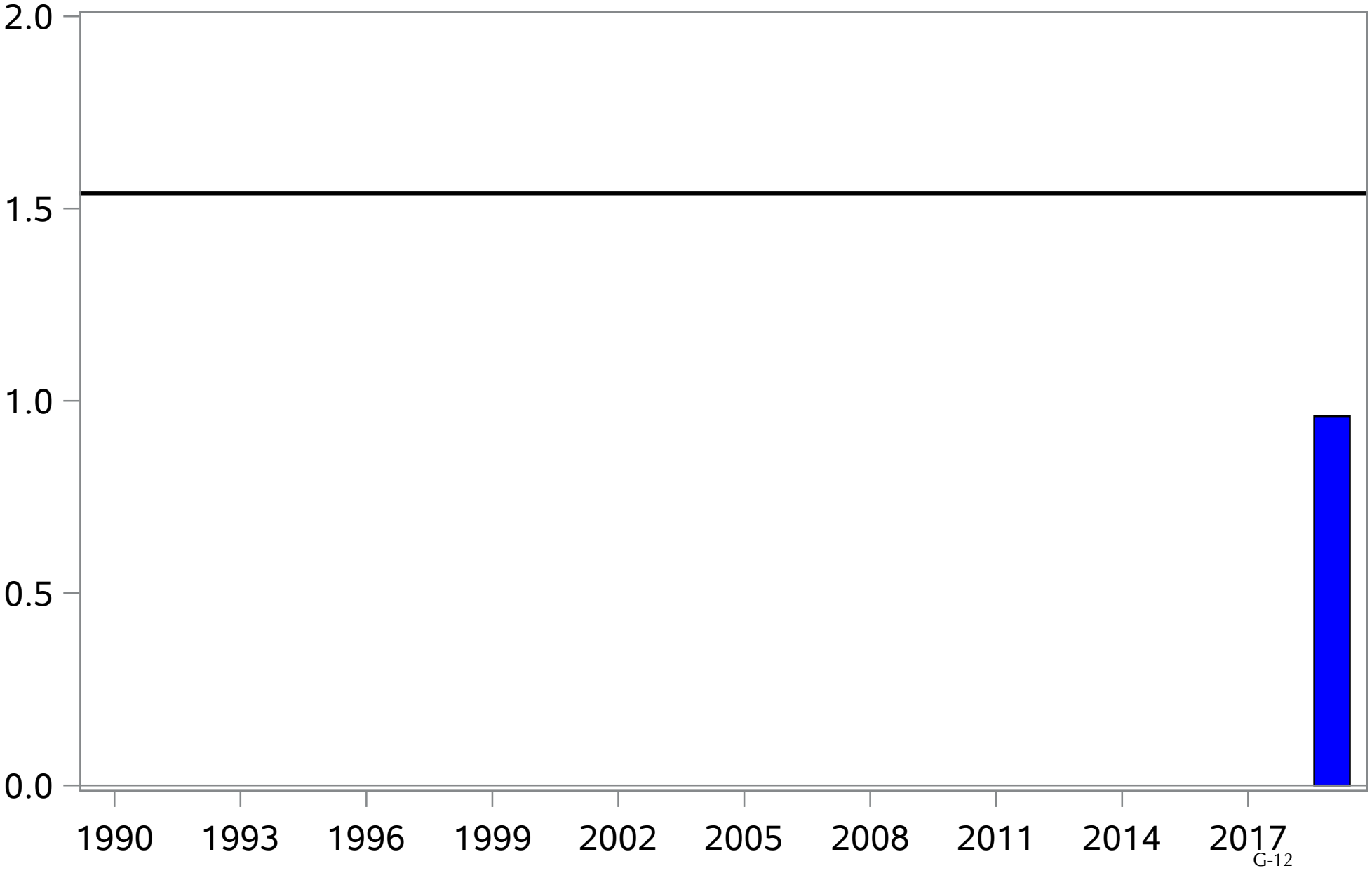
Annual Average IWR Run 58 Data

Obs	wbid	Waterbody	year	annavgCHL
26	2363B	Halifax River - 3M	2015	6.64096849
27	2363B	Halifax River - 3M	2016	7.47089302
28	2363B	Halifax River - 3M	2017	4.77699764
29	2363B	Halifax River - 3M	2018	8.75298226
30	2363B	Halifax River - 3M	2019	2.72295818

WBID 2631 Unnamed Ditch - 3F

Total Nitrogen AGM (mg/L)

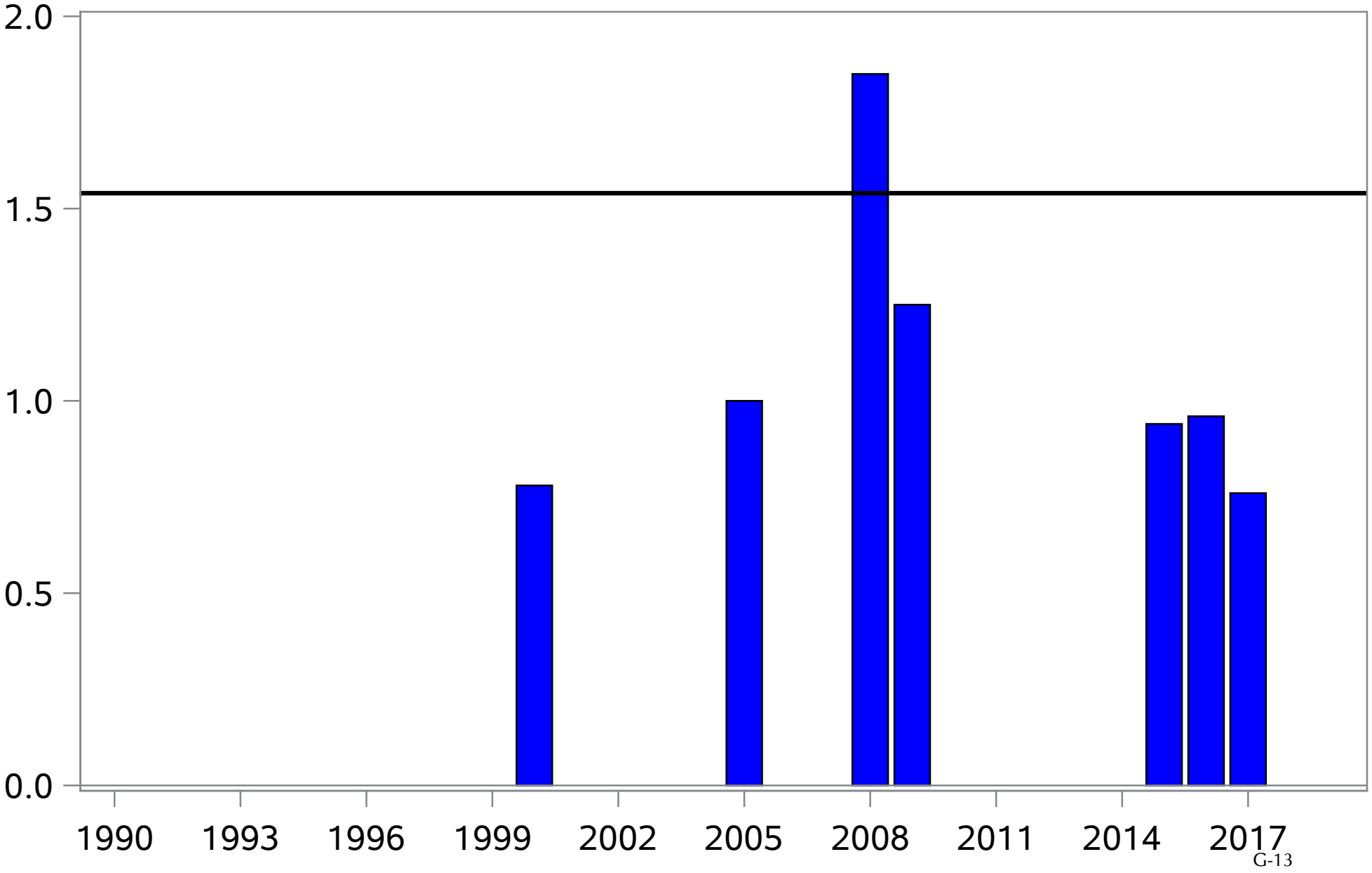
Reference Line = NNC



WBID 2635 Groover Branch - 3F

Total Nitrogen AGM (mg/L)

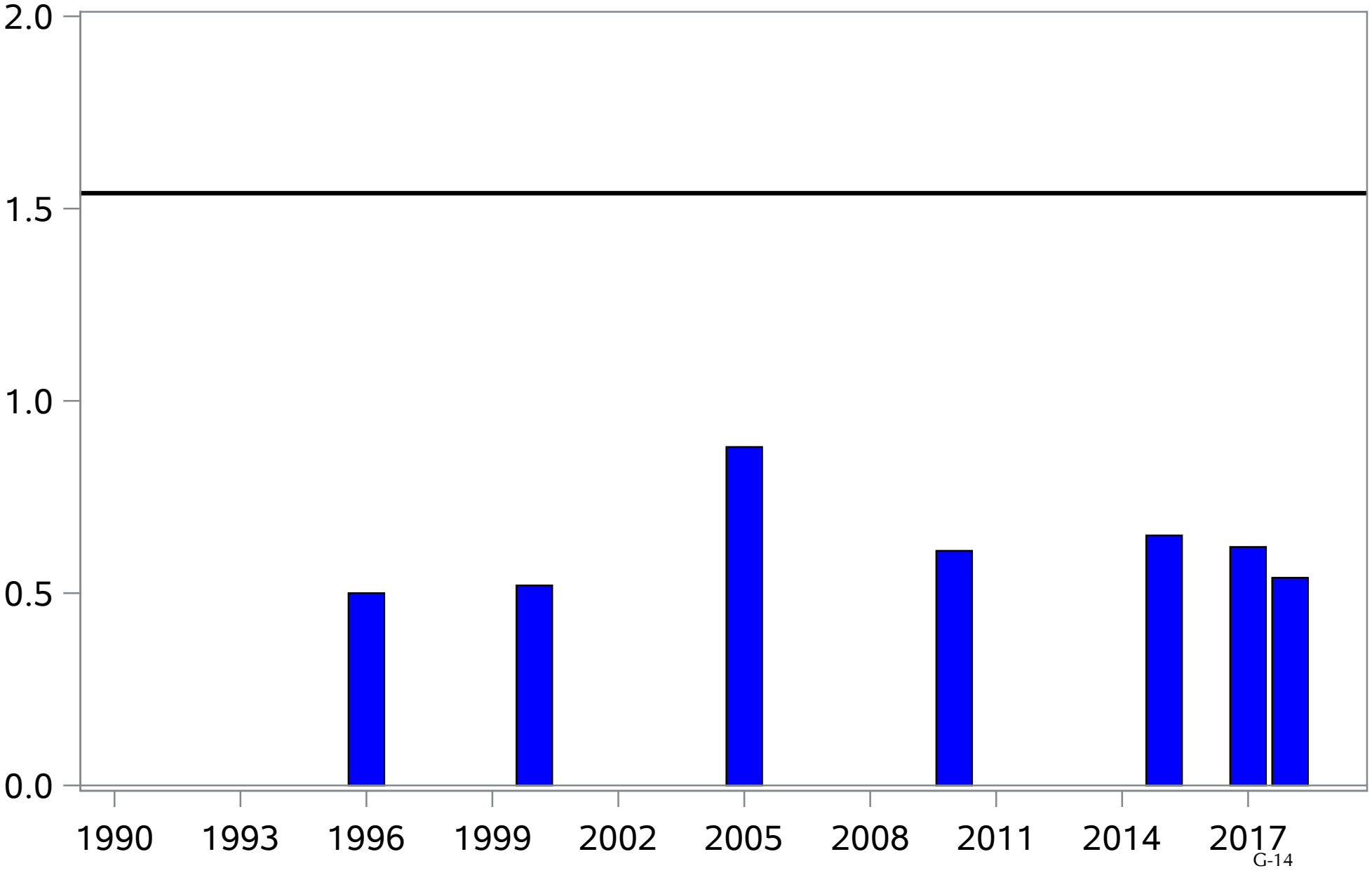
Reference Line = NNC



WBID 2641 Unnamed Branch - 3F

Total Nitrogen AGM (mg/L)

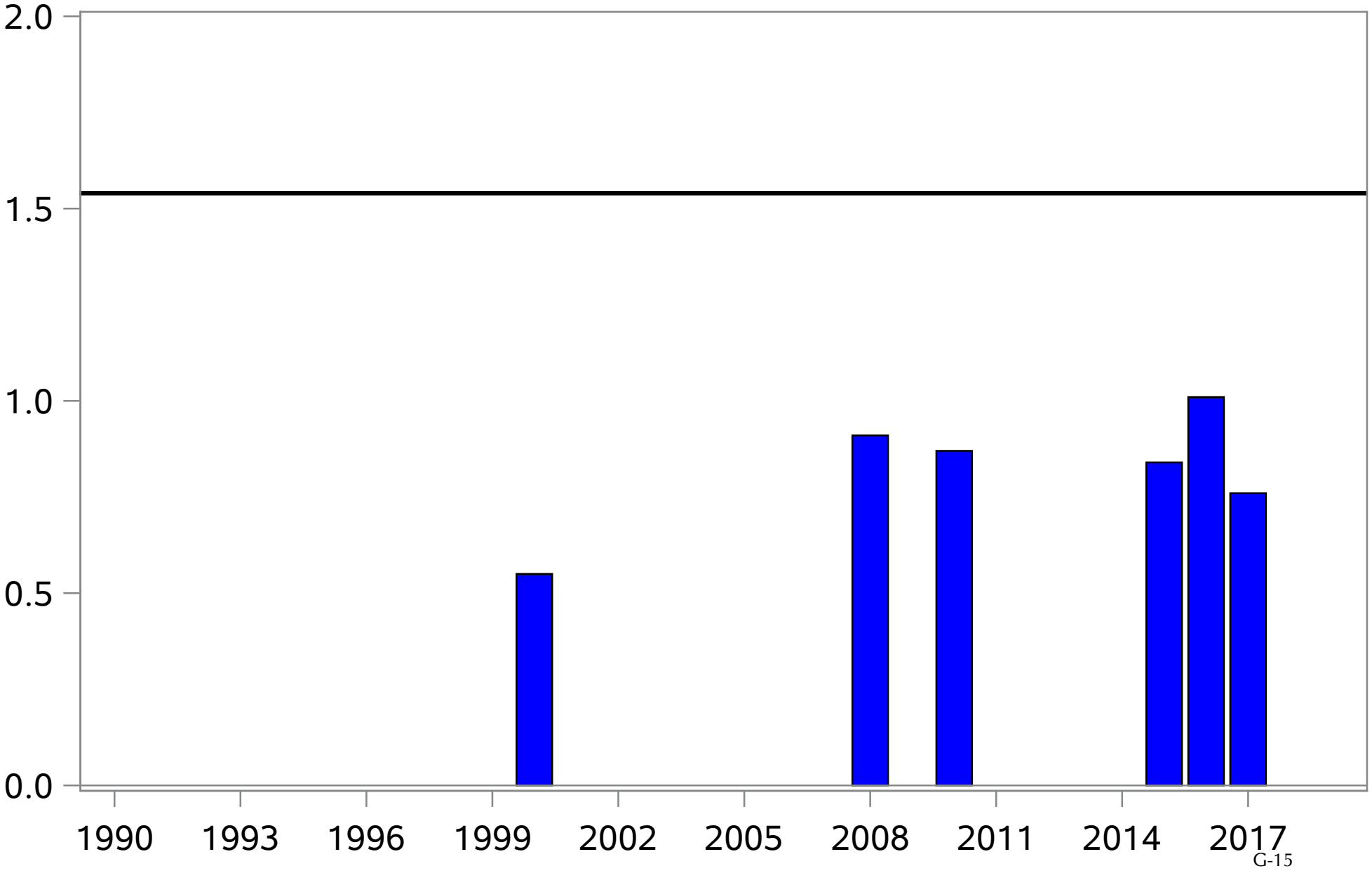
Reference Line = NNC



WBID 2645 Mizners Branch - 3F

Total Nitrogen AGM (mg/L)

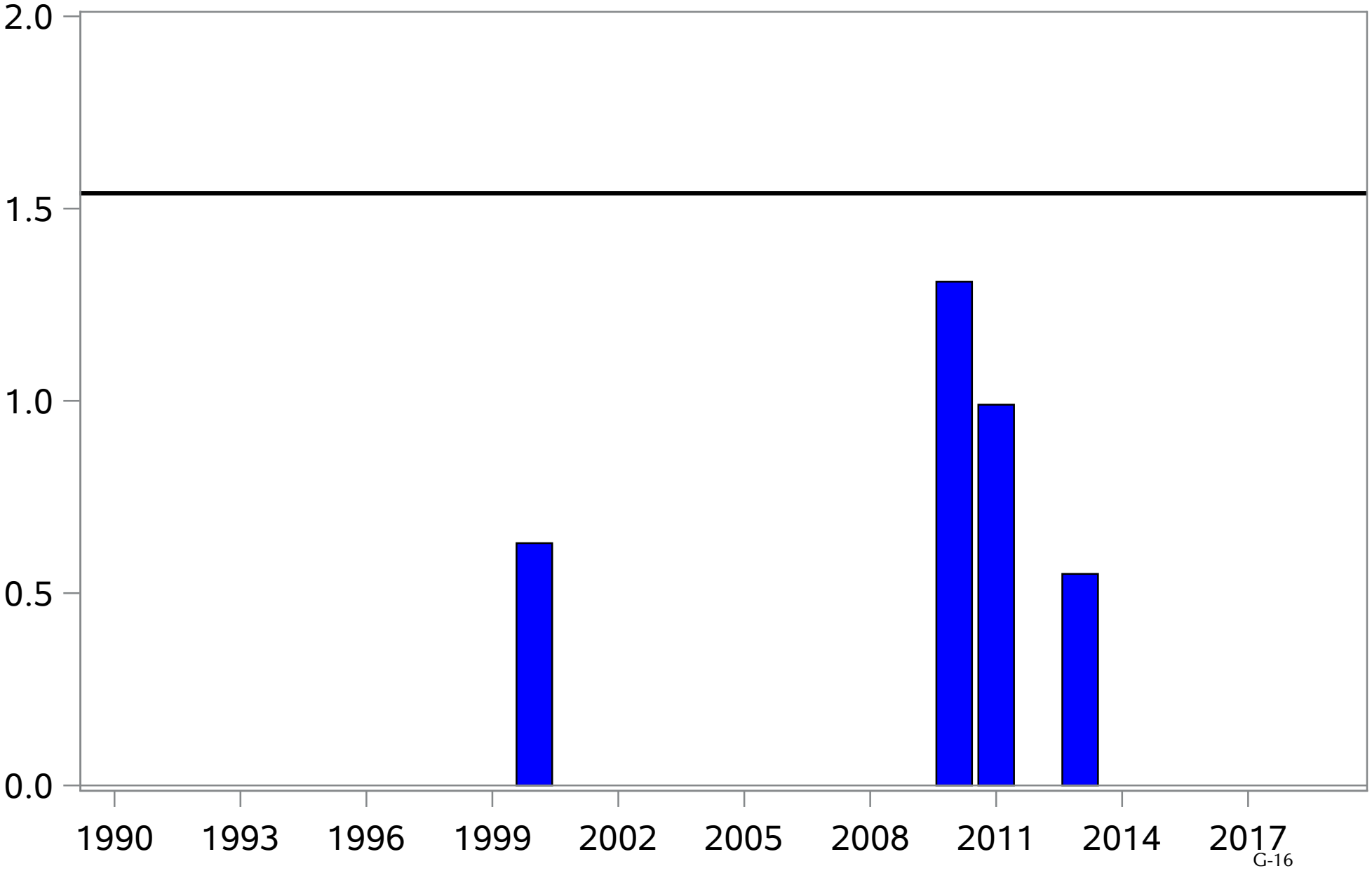
Reference Line = NNC



WBID 2646 Little Tomoka River - 3F

Total Nitrogen AGM (mg/L)

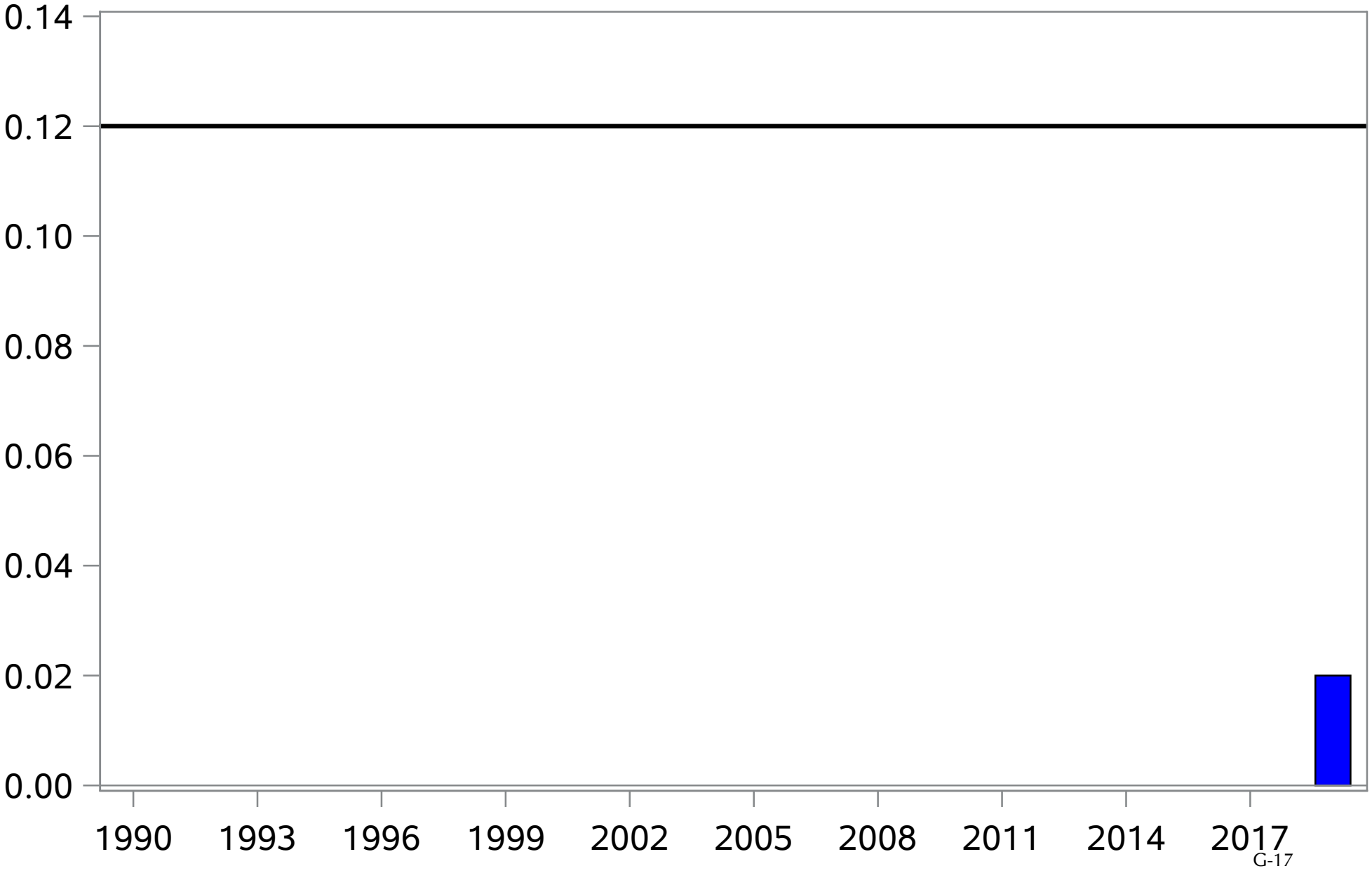
Reference Line = NNC



WBID 2631 Unnamed Ditch - 3F

Total Phosphorus AGM (mg/L)

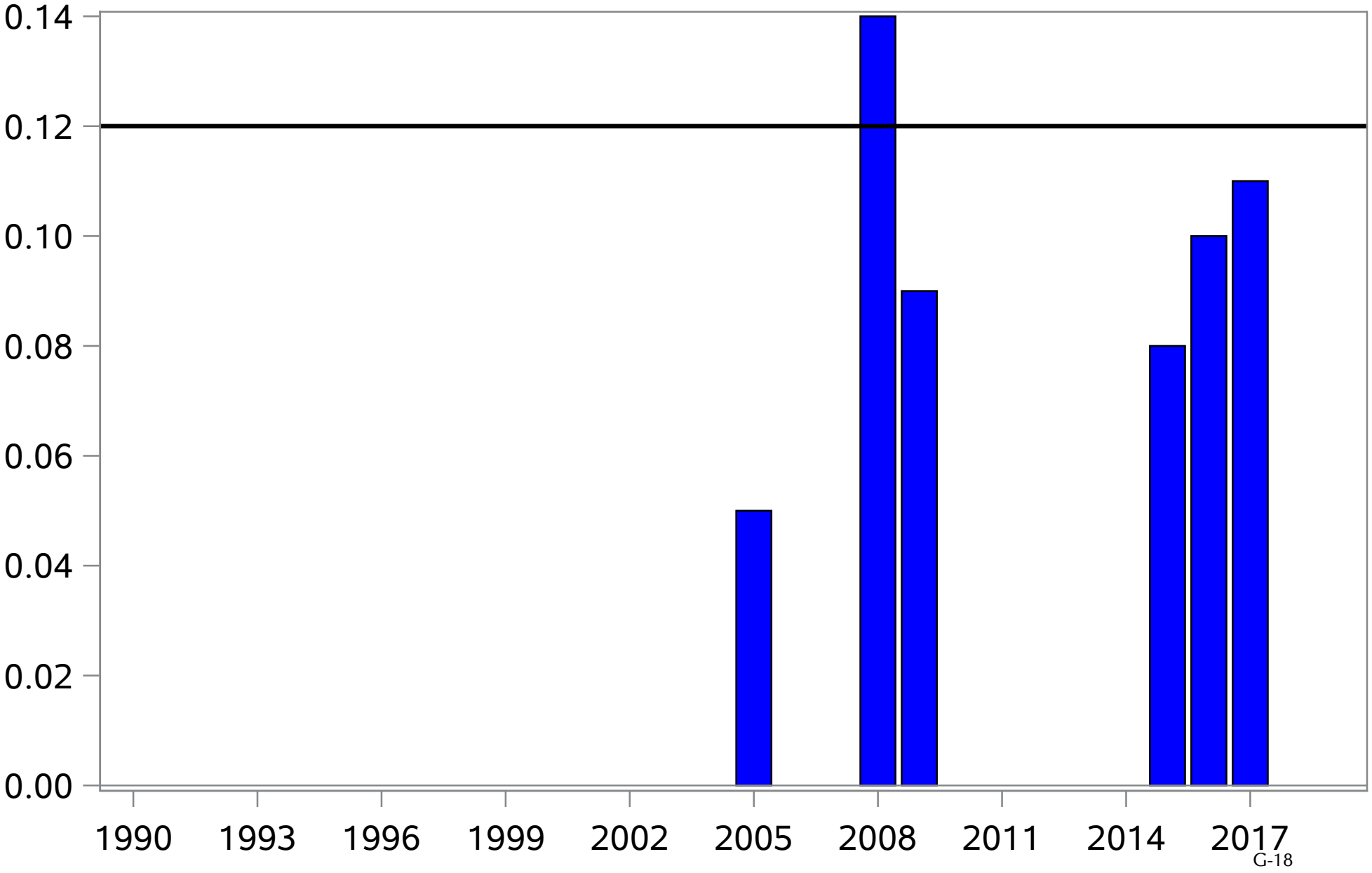
Reference Line = NNC



WBID 2635 Groover Branch - 3F

Total Phosphorus AGM (mg/L)

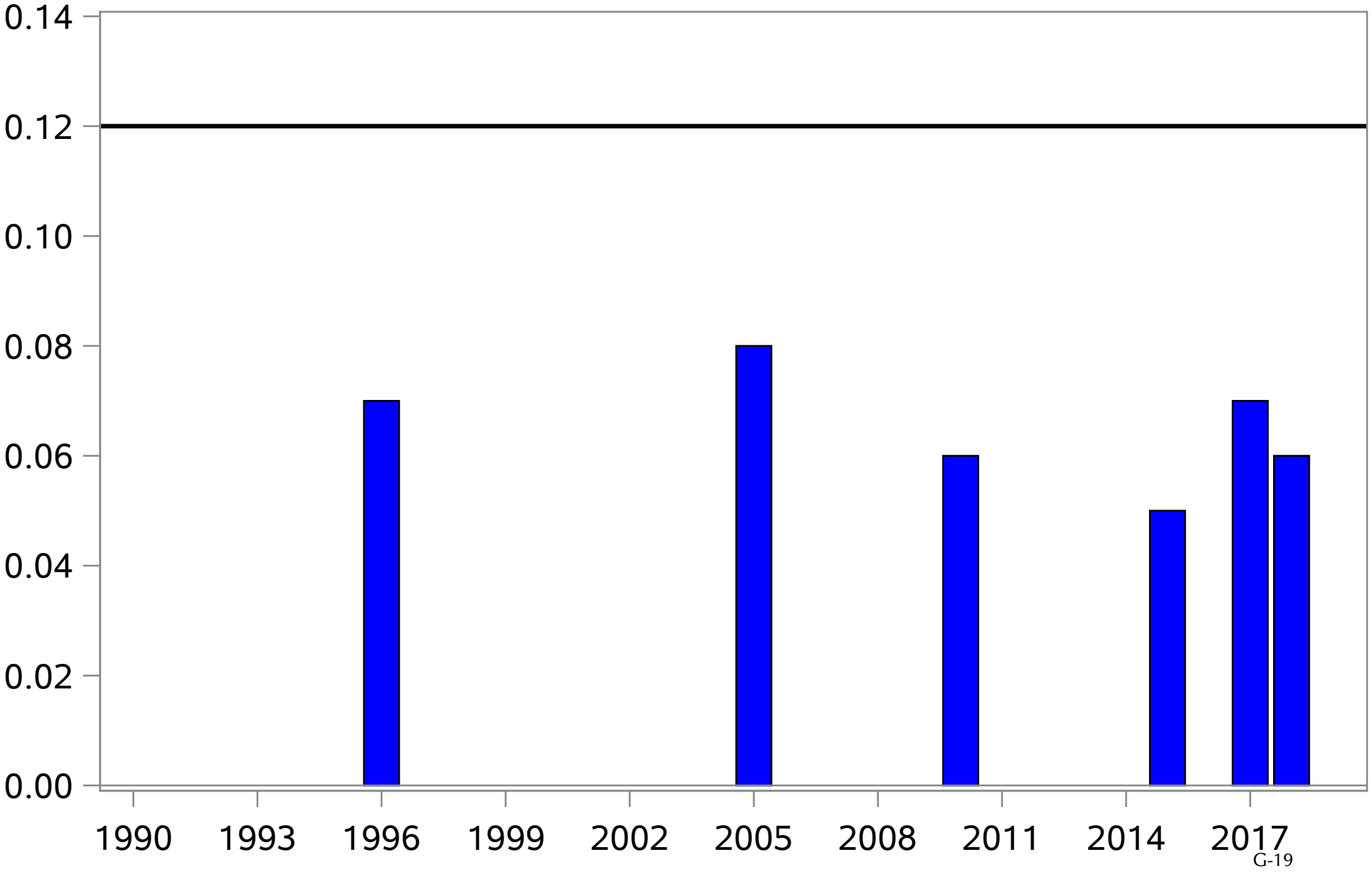
Reference Line = NNC



WBID 2641 Unnamed Branch - 3F

Total Phosphorus AGM (mg/L)

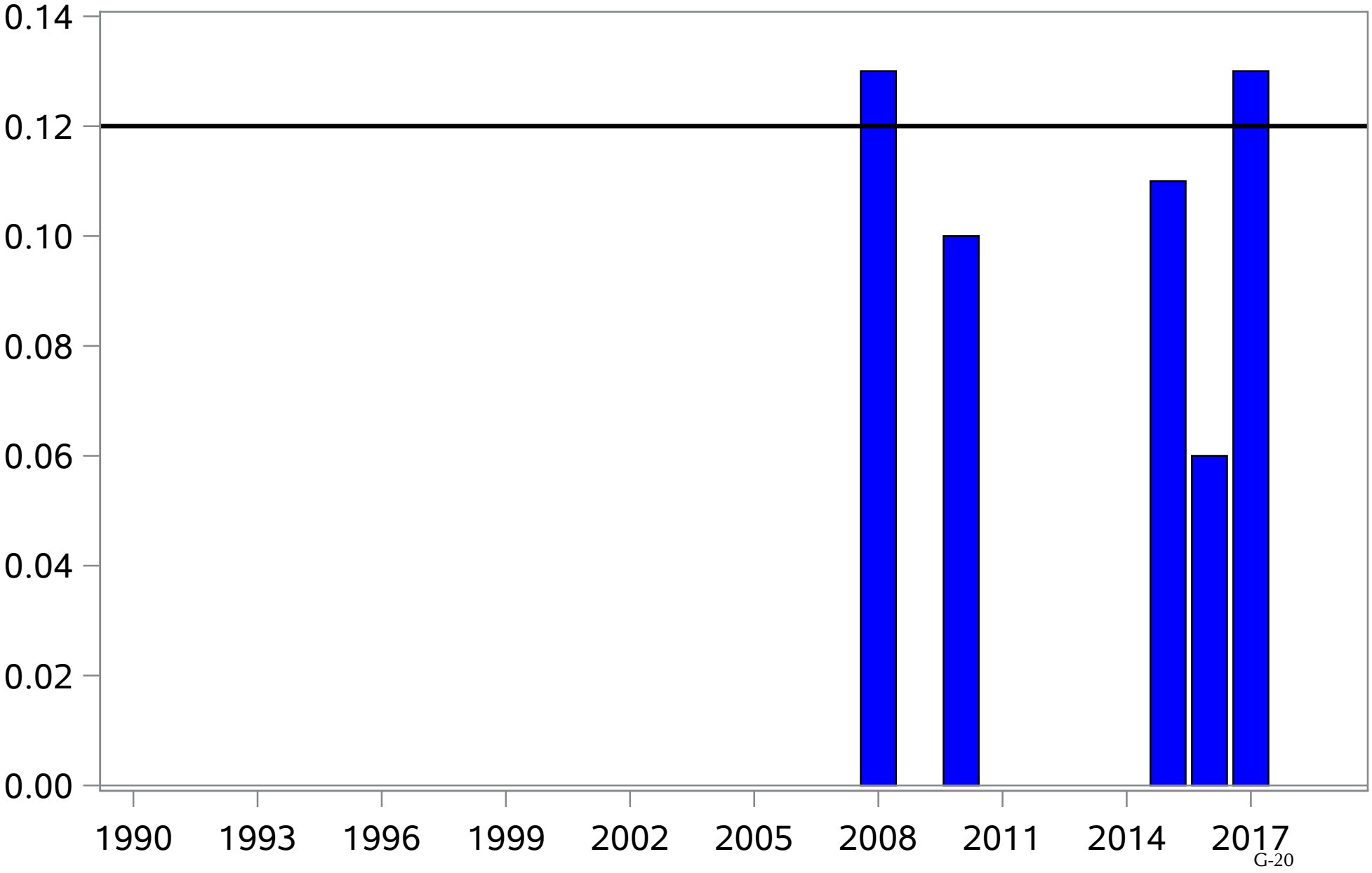
Reference Line = NNC



WBID 2645 Mizners Branch - 3F

Total Phosphorus AGM (mg/L)

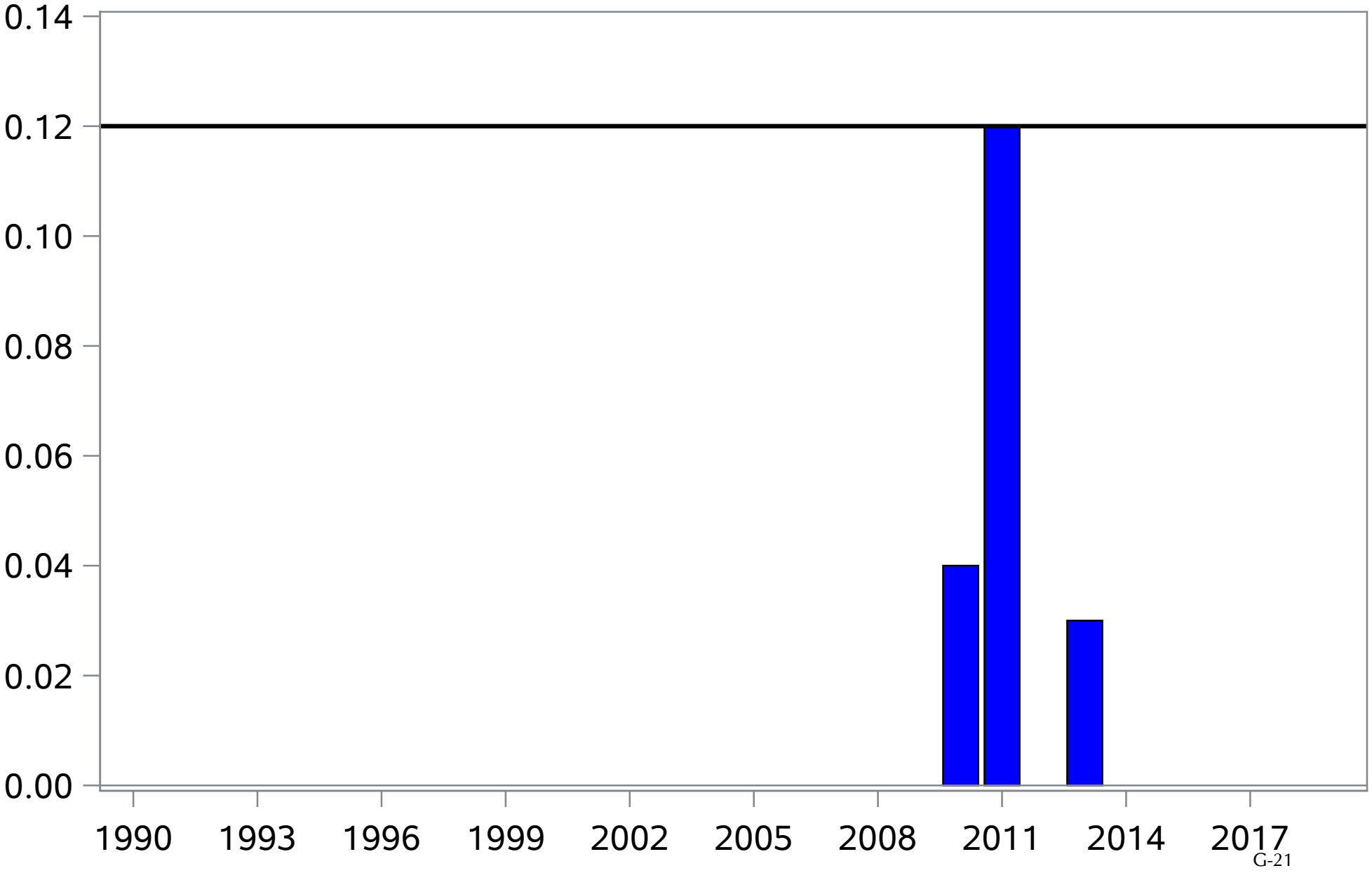
Reference Line = NNC



WBID 2646 Little Tomoka River - 3F

Total Phosphorus AGM (mg/L)

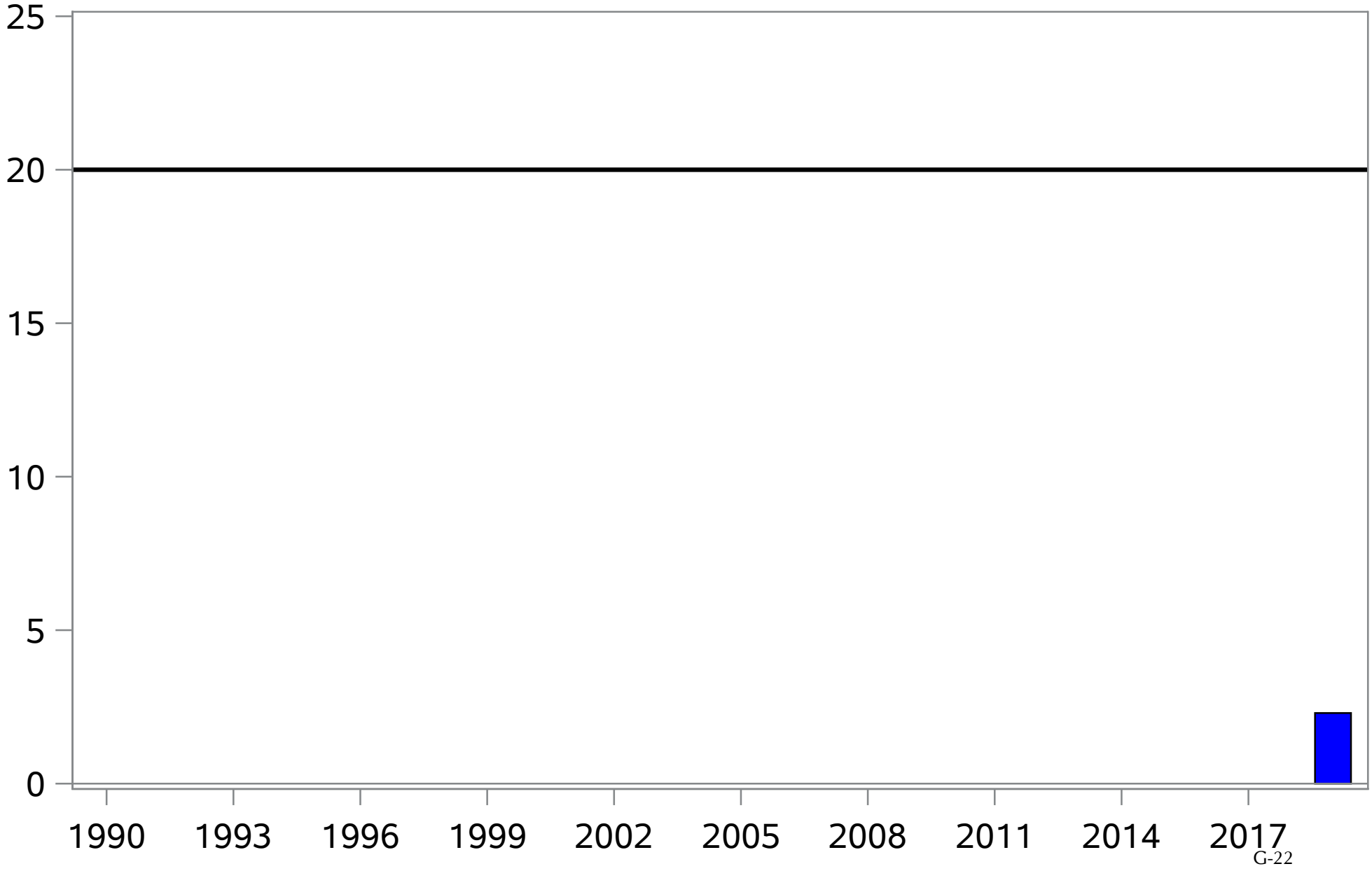
Reference Line = NNC



WBID 2631 Unnamed Ditch - 3F

Chlorophyll AGM (ug/L)

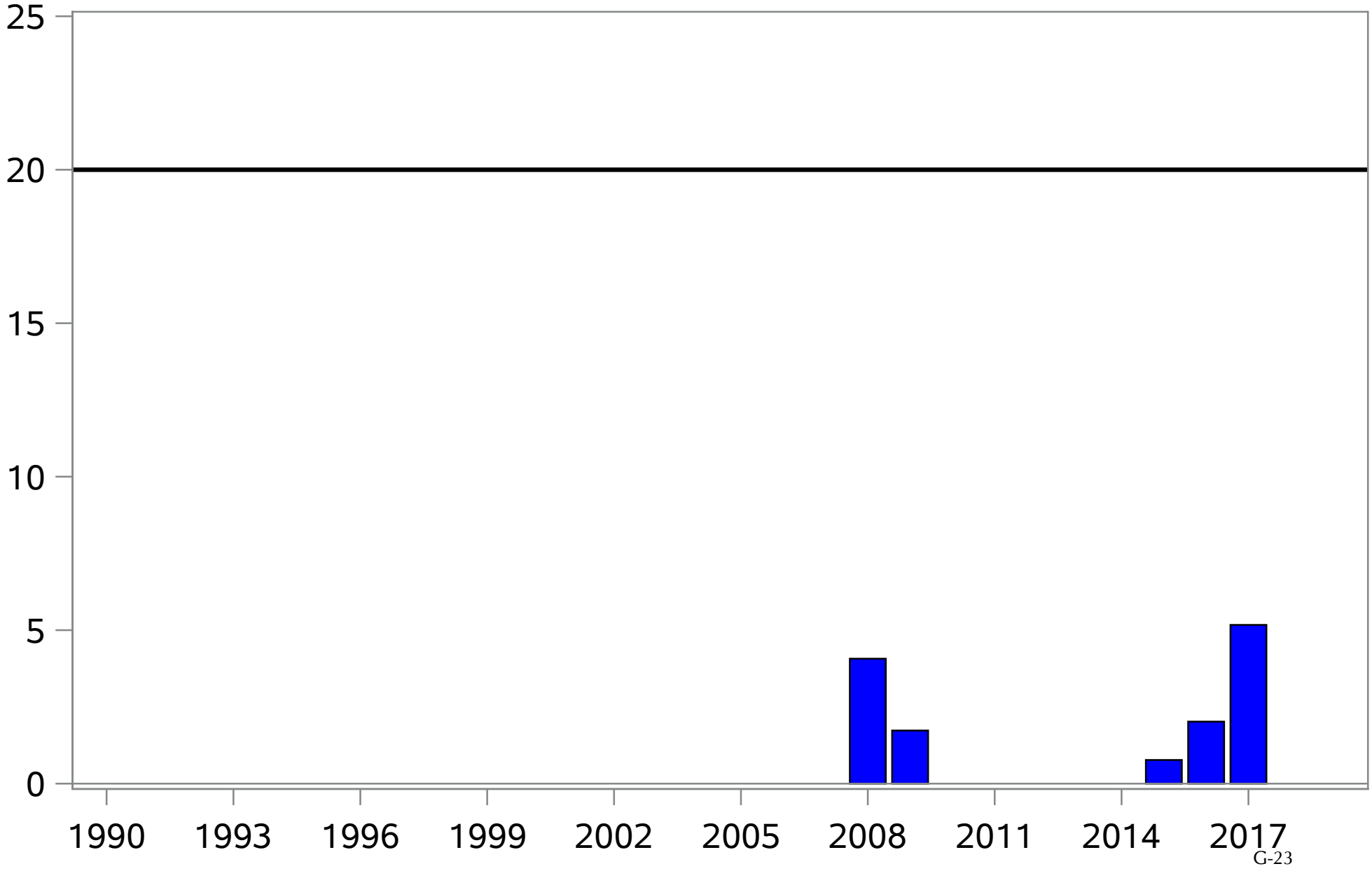
Reference Line = 20 ug/L



WBID 2635 Groover Branch - 3F

Chlorophyll AGM (ug/L)

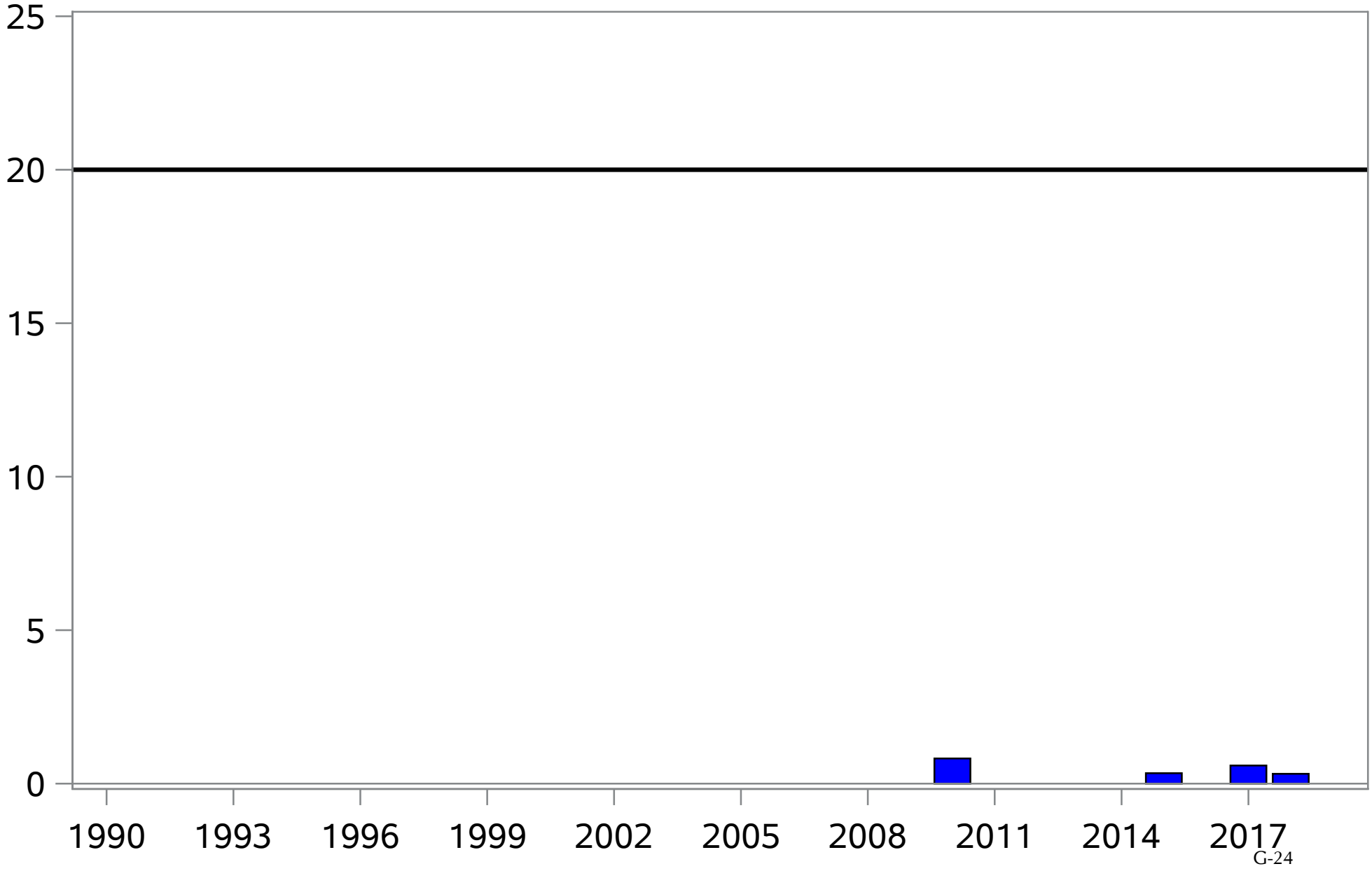
Reference Line = 20 ug/L



WBID 2641 Unnamed Branch - 3F

Chlorophyll AGM (ug/L)

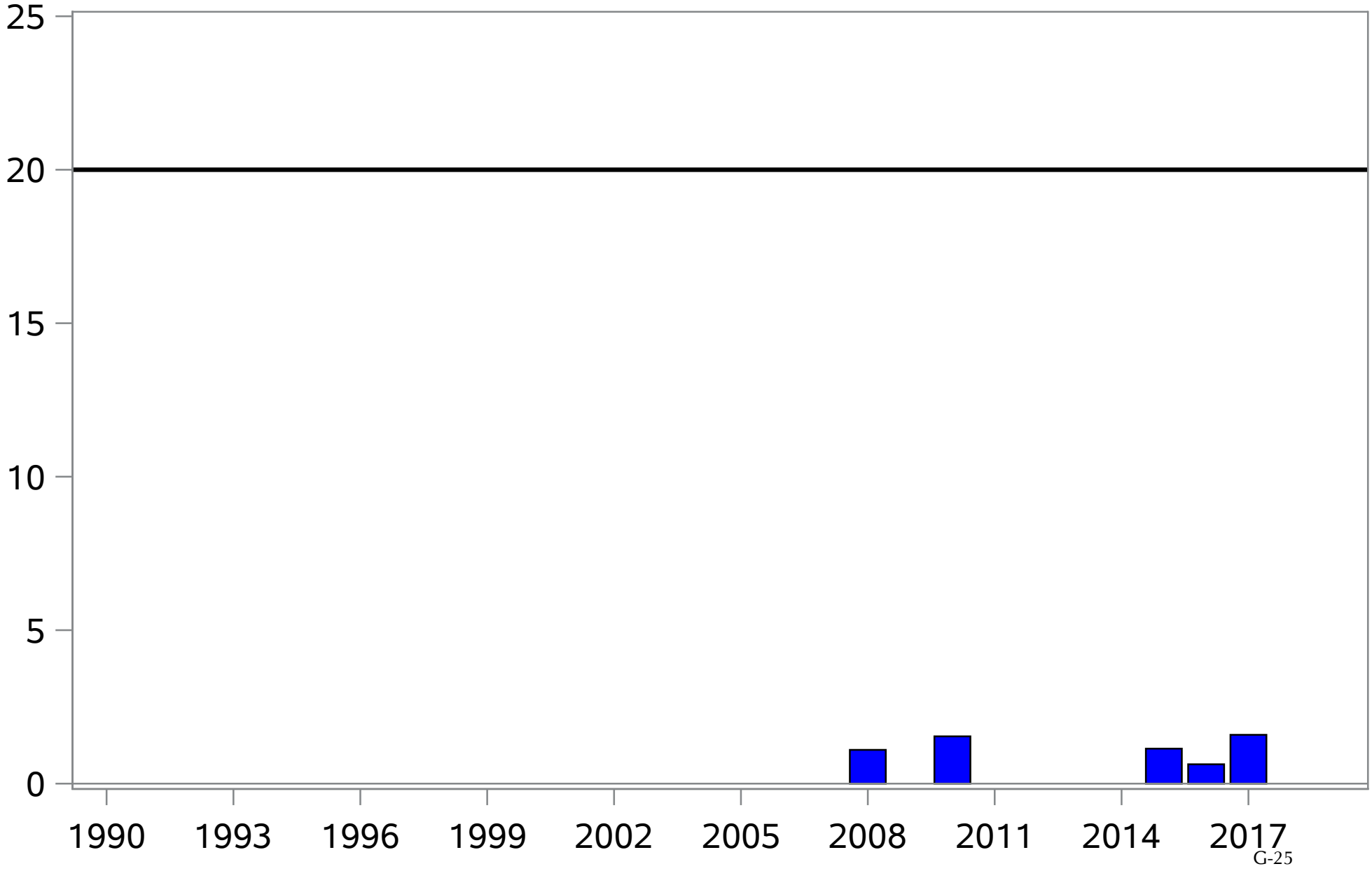
Reference Line = 20 ug/L



WBID 2645 Mizners Branch - 3F

Chlorophyll AGM (ug/L)

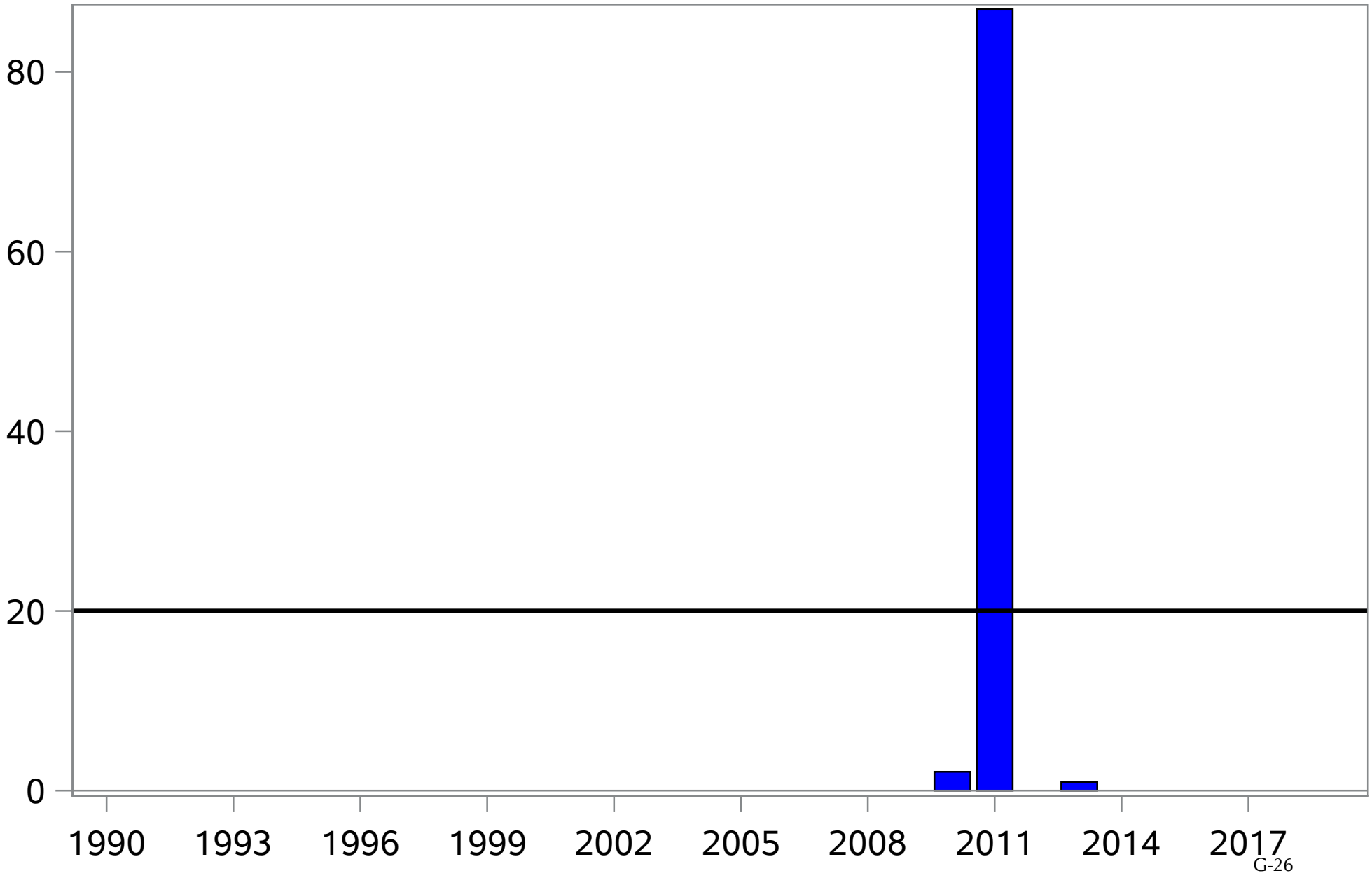
Reference Line = 20 ug/L



WBID 2646 Little Tomoka River - 3F

Chlorophyll AGM (ug/L)

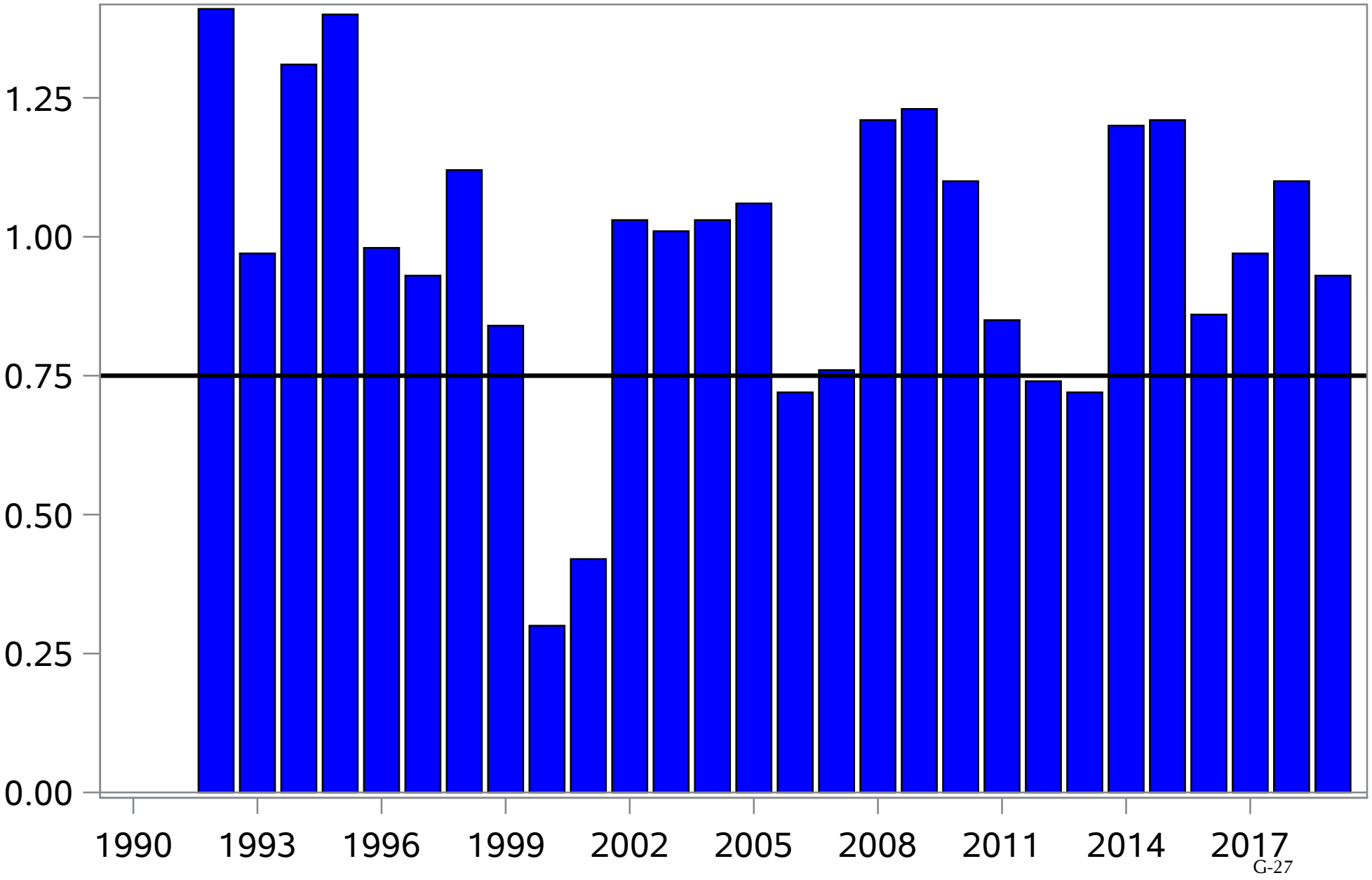
Reference Line = 20 ug/L



WBID 2634 Tomoka River (3F)

Total Nitrogen AGM (mg/L)

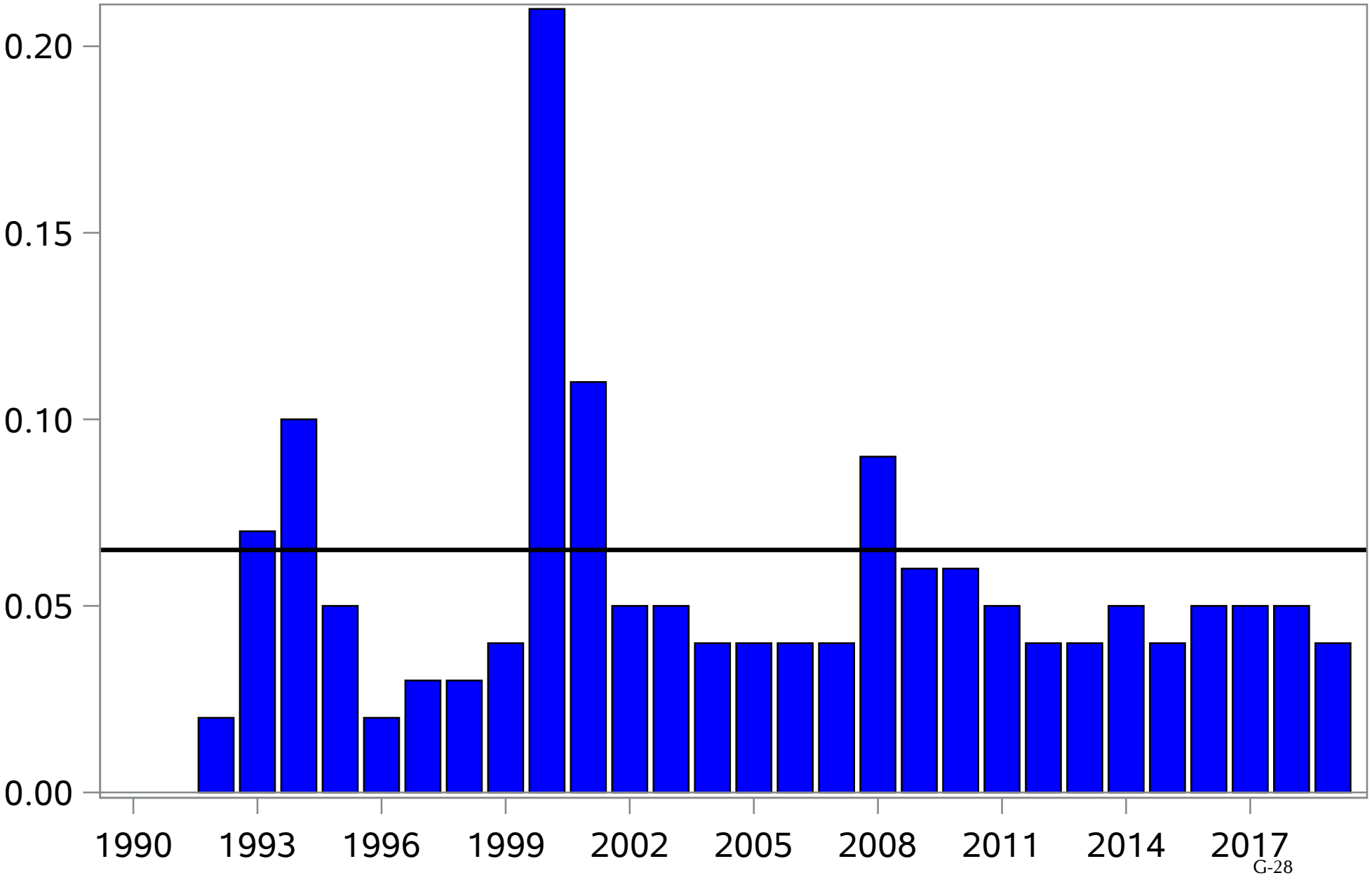
Reference Line = TMDL



WBID 2634 Tomoka River (3F)

Total Phosphorus AGM (mg/L)

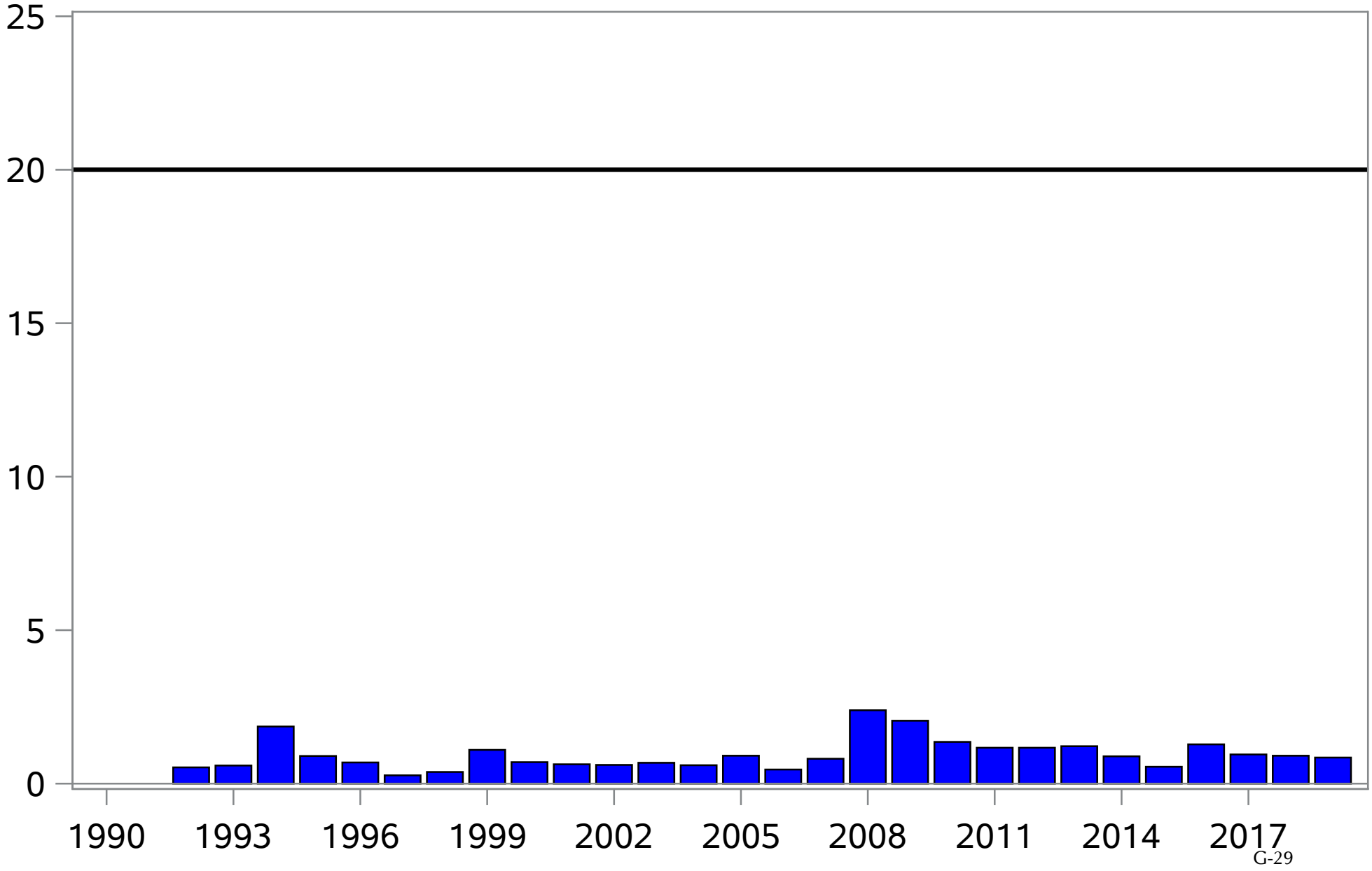
Reference Line = TMDL



WBID 2634 Tomoka River (3F)

Chlorophyll AGM (ug/L)

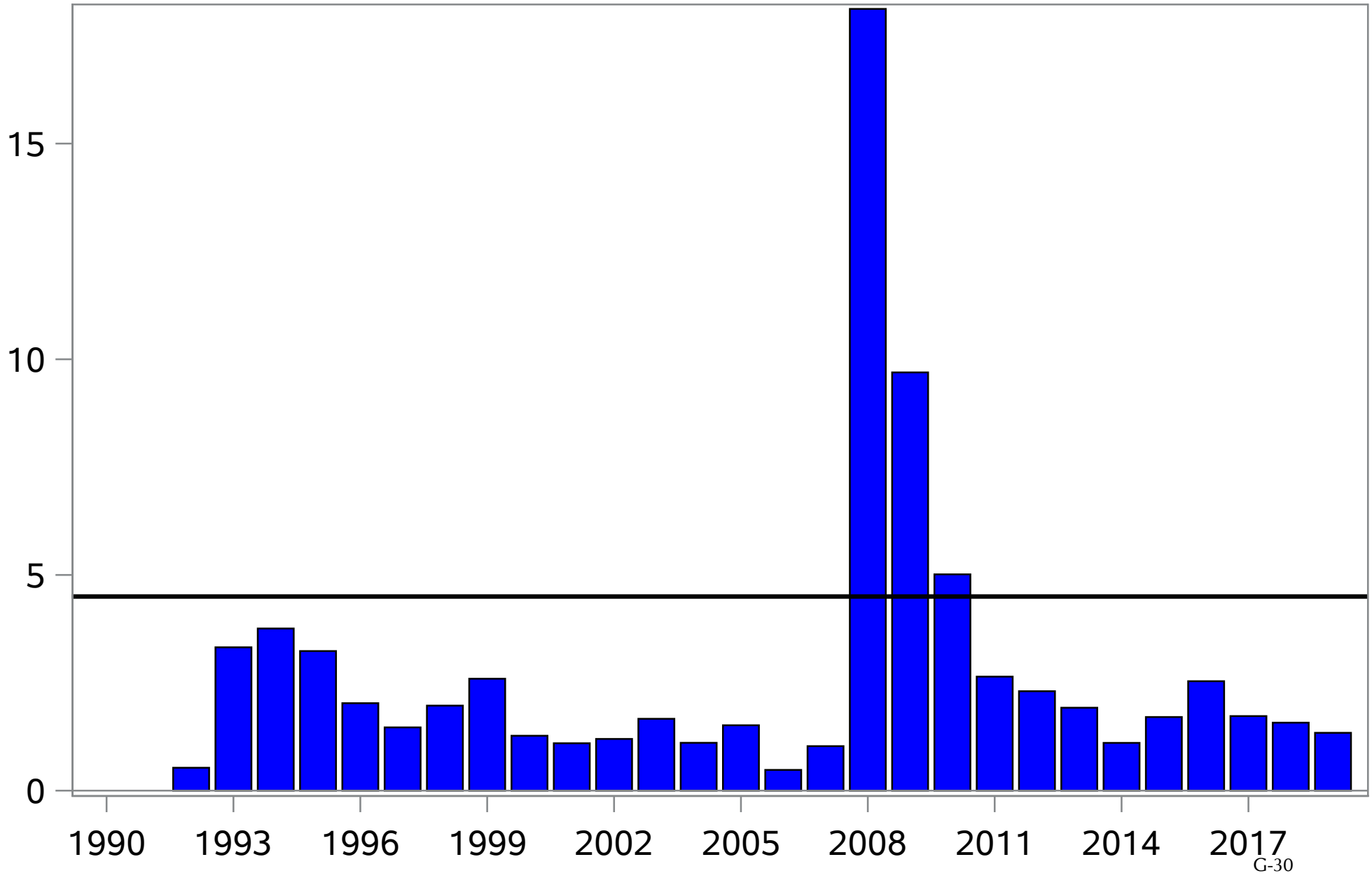
Reference Line = 20 ug/L



WBID 2634 Tomoka River (3F)

Average Chlorophyll (ug/L)

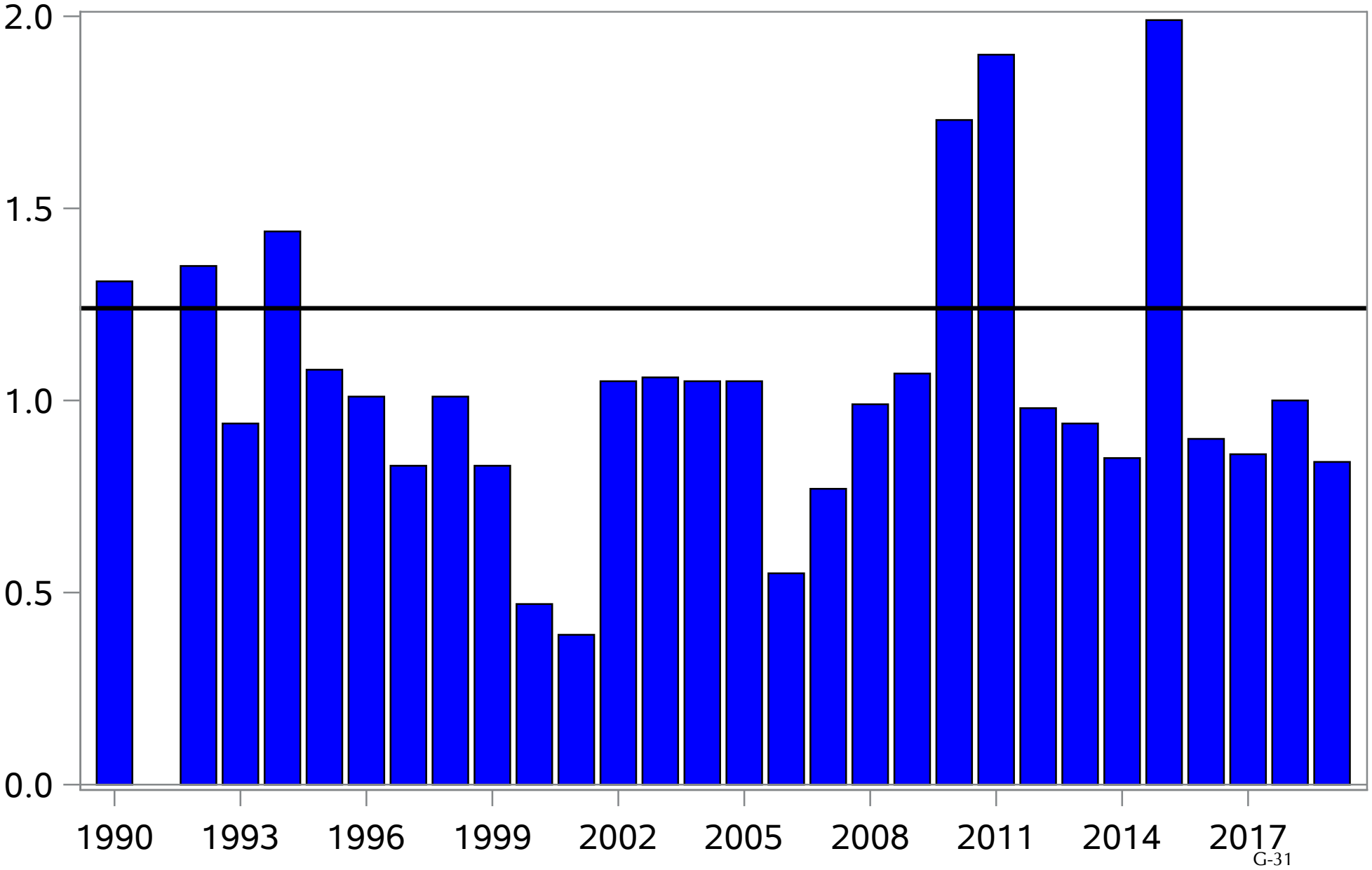
Reference Line = TMDL target 4.5 ug/L Annual Average



WBID 2634A Tomoka River (3M)

Total Nitrogen AGM (mg/L)

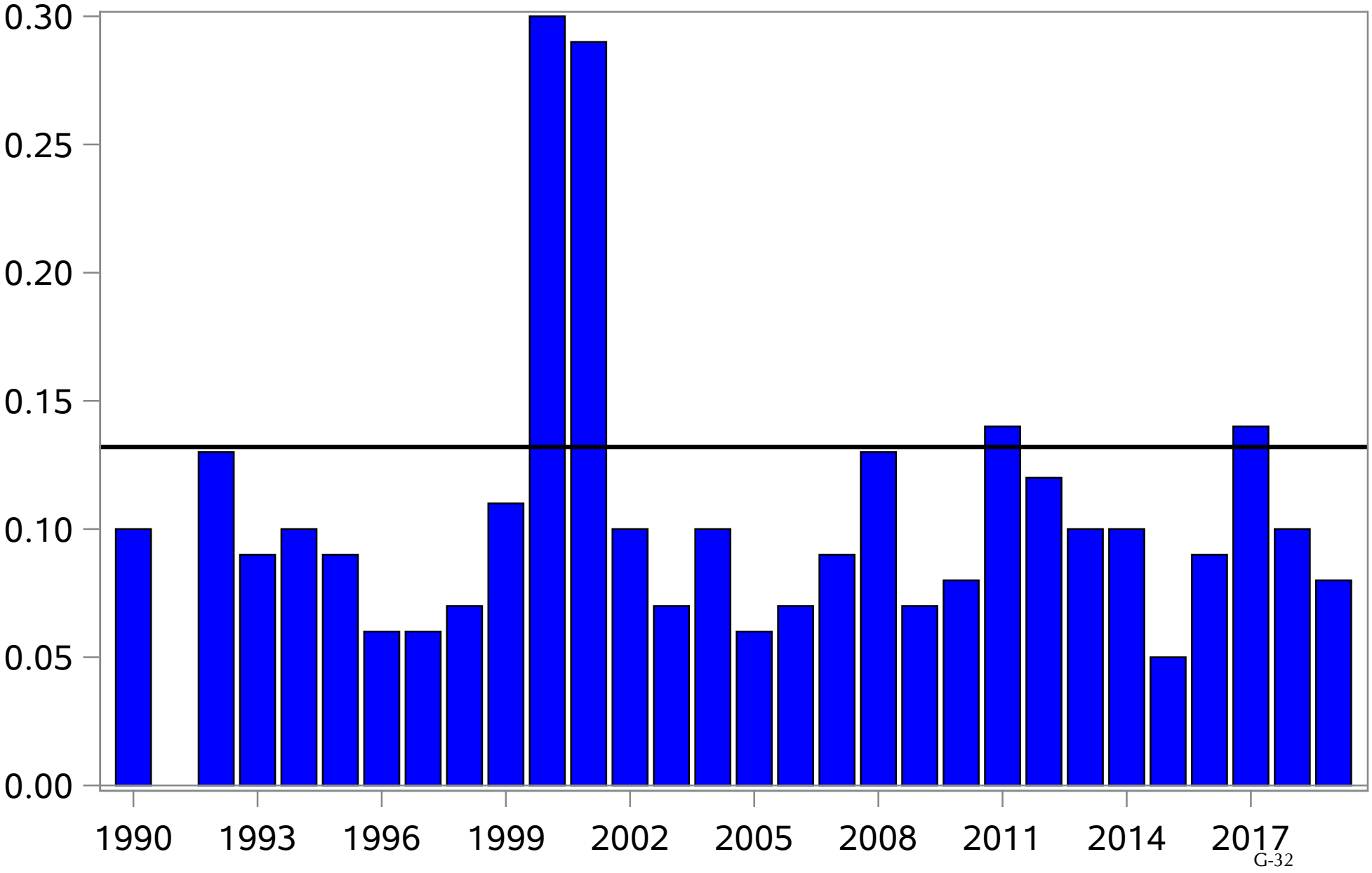
Reference Line = NNC



WBID 2634A Tomoka River (3M)

Total Phosphorus AGM (mg/L)

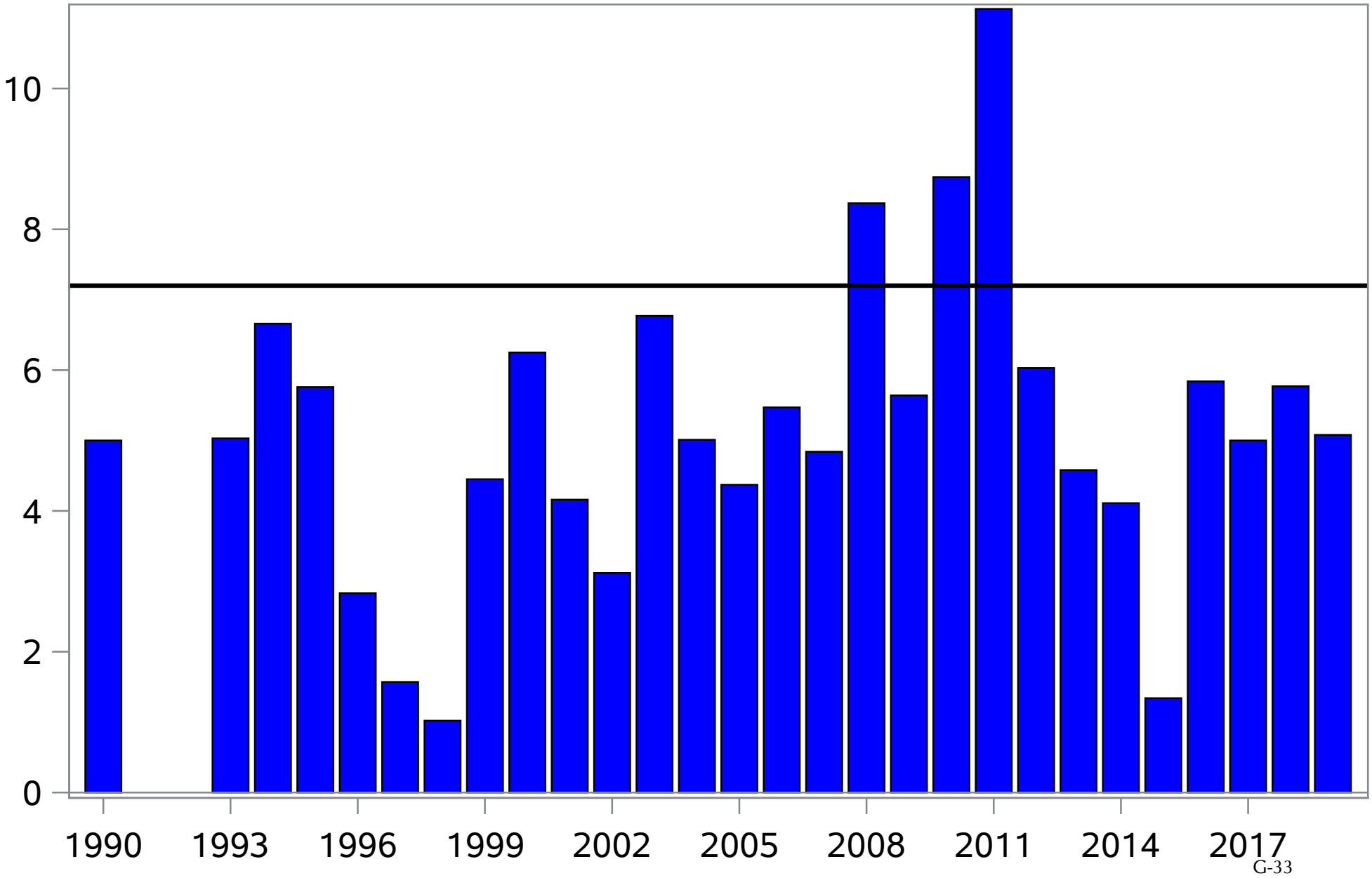
Reference Line = NNC



WBID 2634A Tomoka River (3M)

Chlorphyll AGM (ug/L)

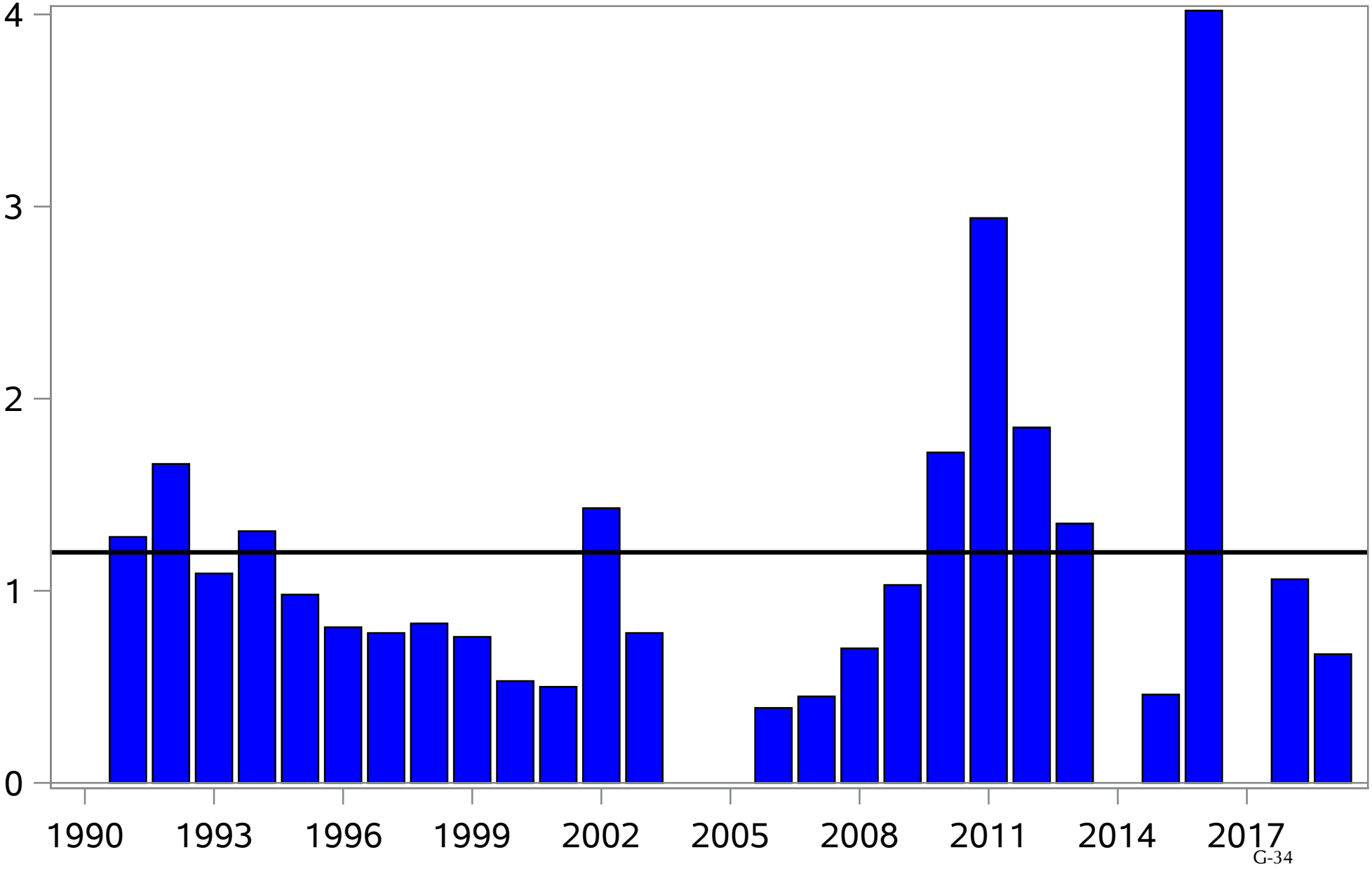
Reference Line = NNC



WBID 2363C Tomoka Basin (3M)

Total Nitrogen AGM (mg/L)

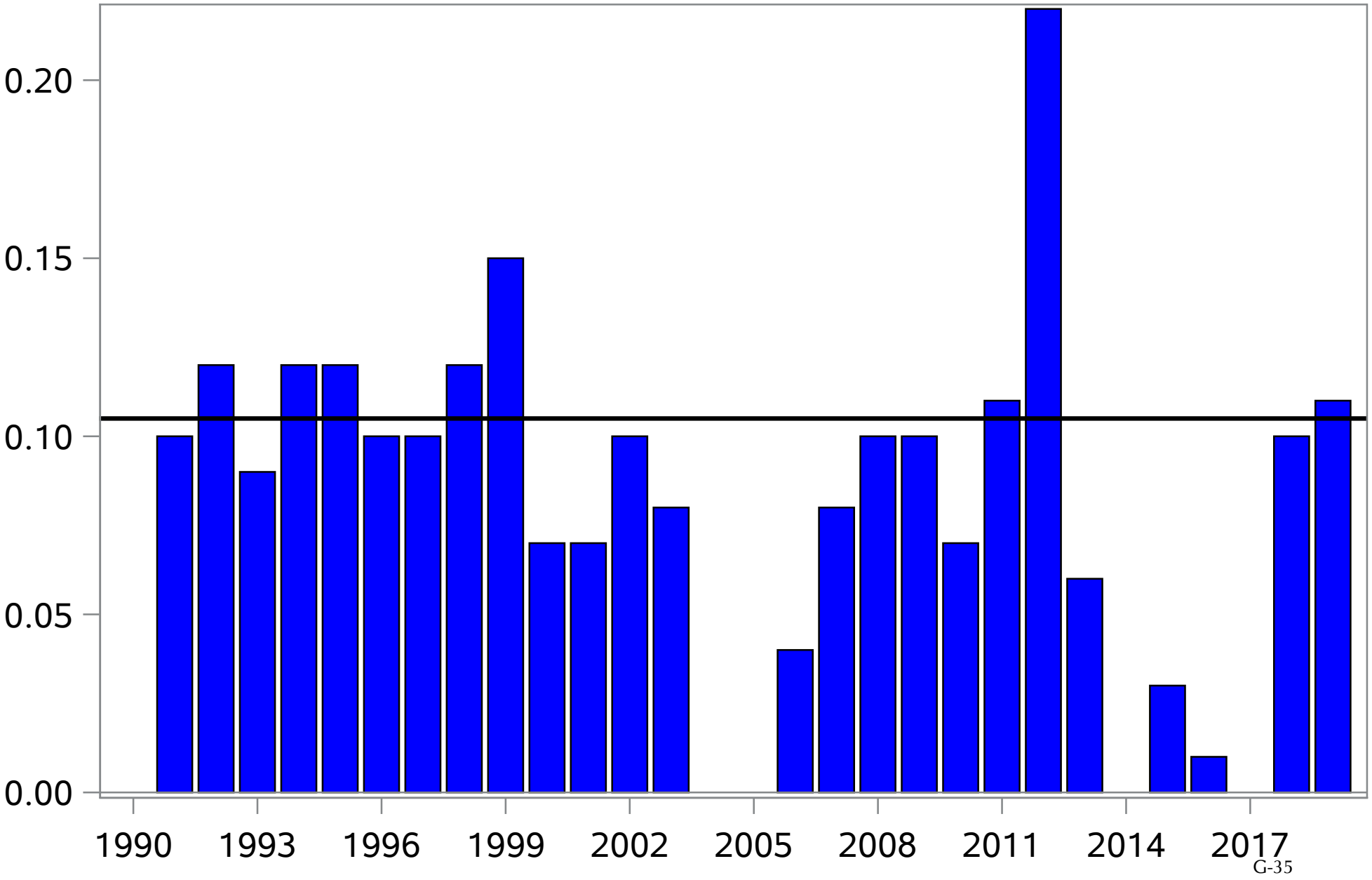
Reference Line = NNC



WBID 2363C Tomoka Basin (3M)

Total Phosphorus AGM (mg/L)

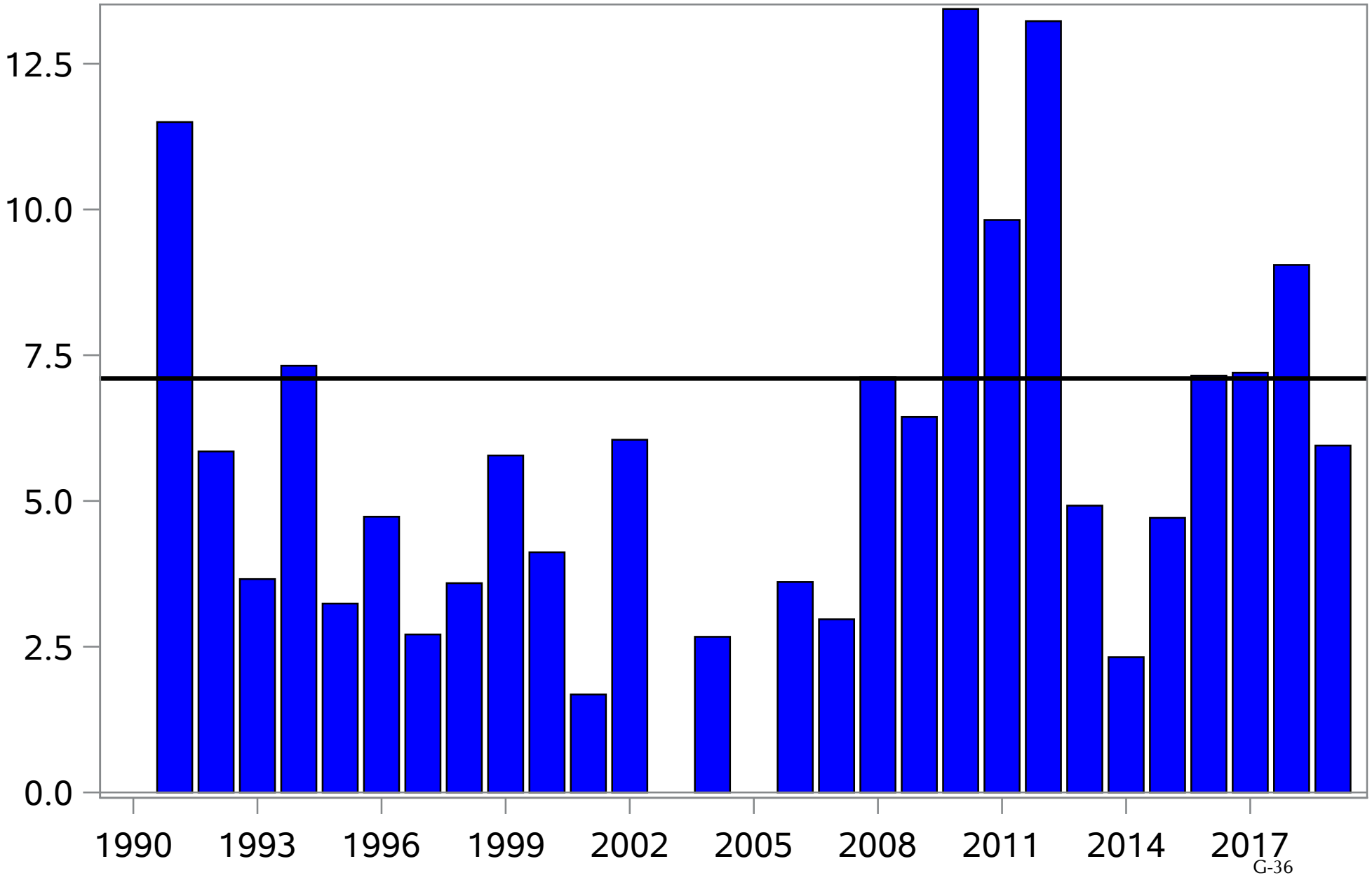
Reference Line = NNC



WBID 2363C Tomoka Basin (3M)

Chlorophyll AGM (ug/L)

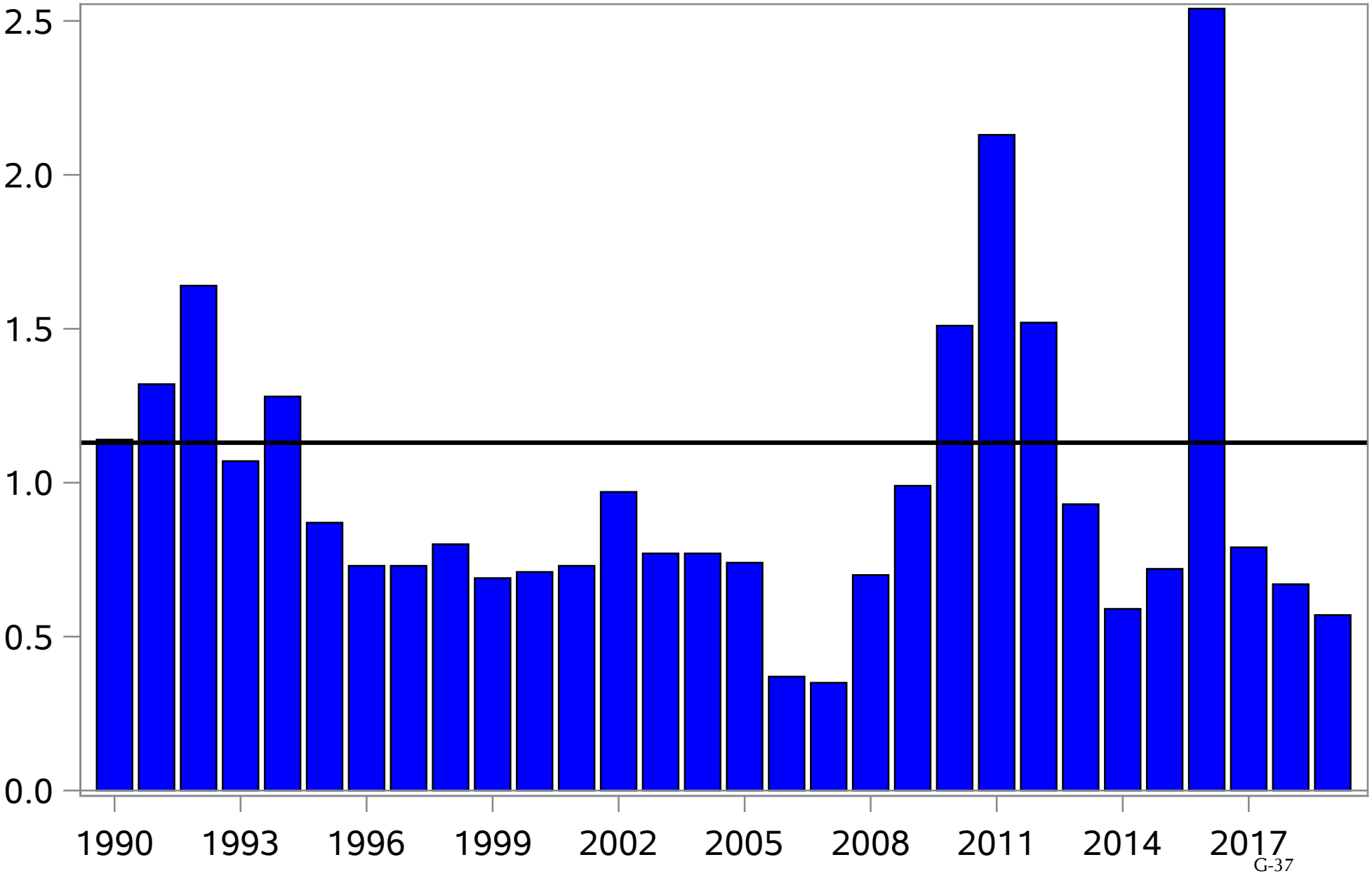
Reference Line = NNC



WBID 2363B Halifax River (3M)

Total Nitrogen AGM (mg/L)

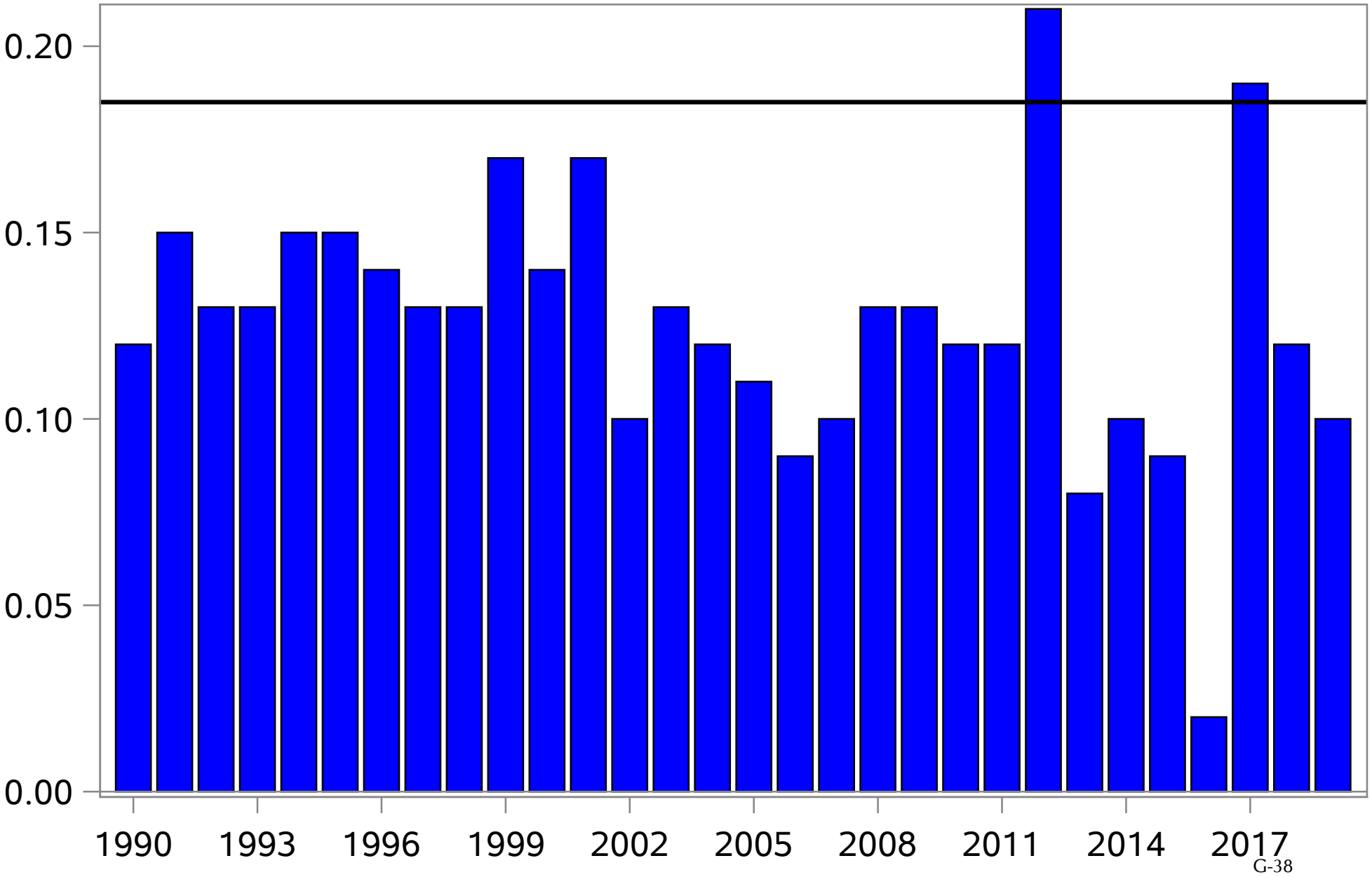
Reference Line = TMDL



WBID 2363B Halifax River (3M)

Total Phosphorus AGM (mg/L)

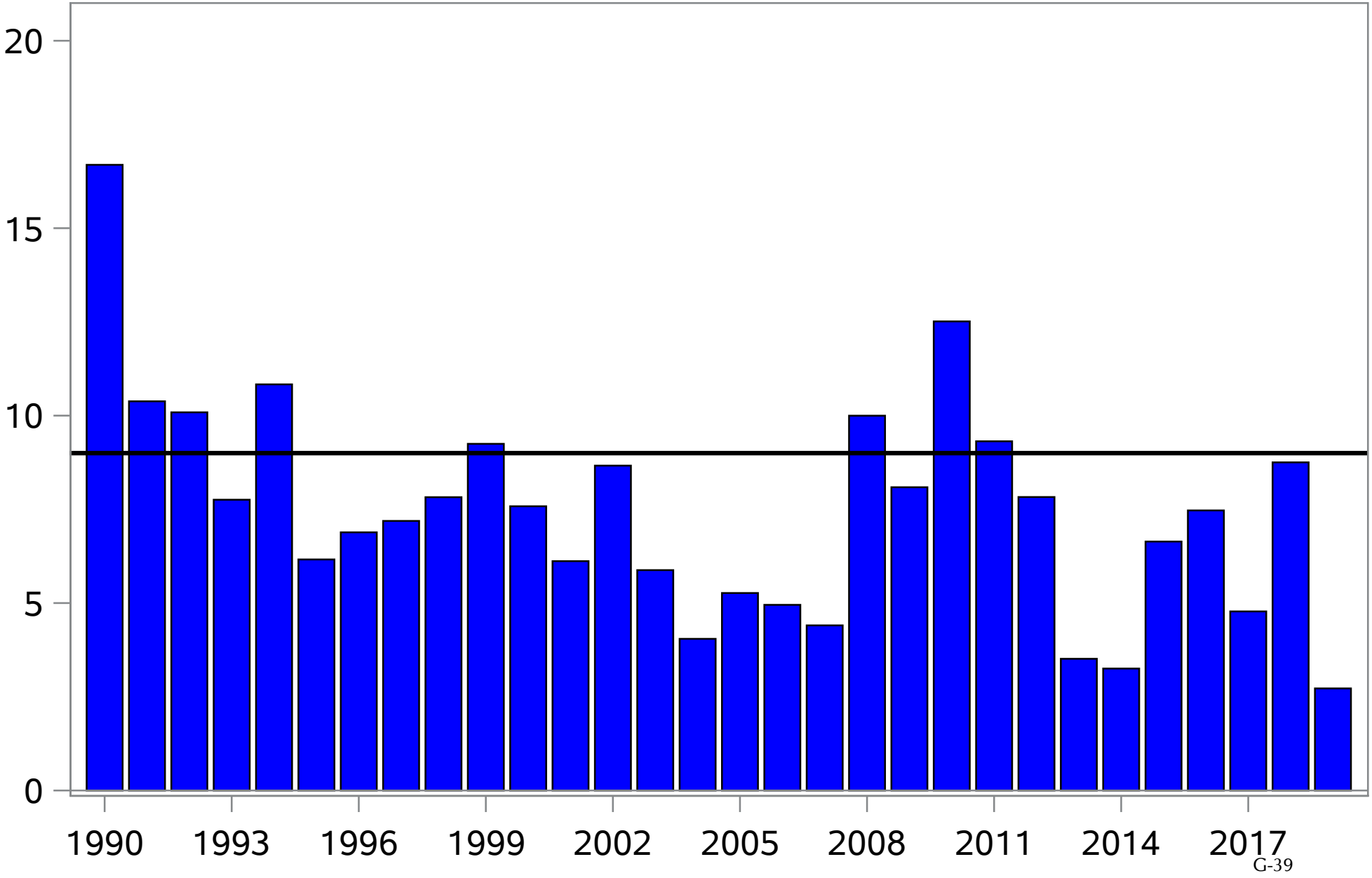
Reference Line = TMDL



WBID 2363B Halifax River (3M)

Chlorophyll AGM (ug/L)

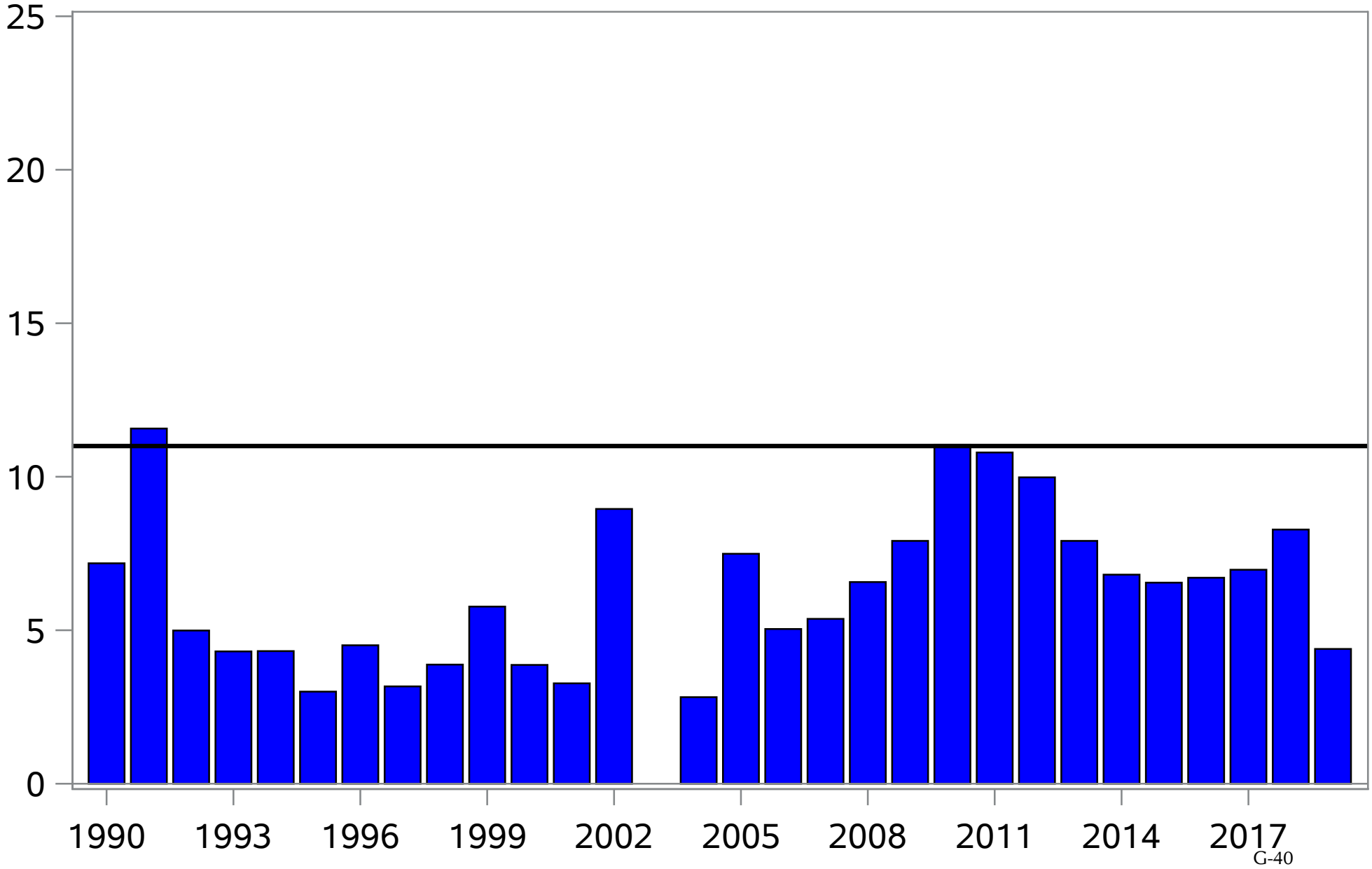
Reference Line = NNC



WBID 2363J Palm Coast - 3M

Chlorophyll AGM (ug/L)

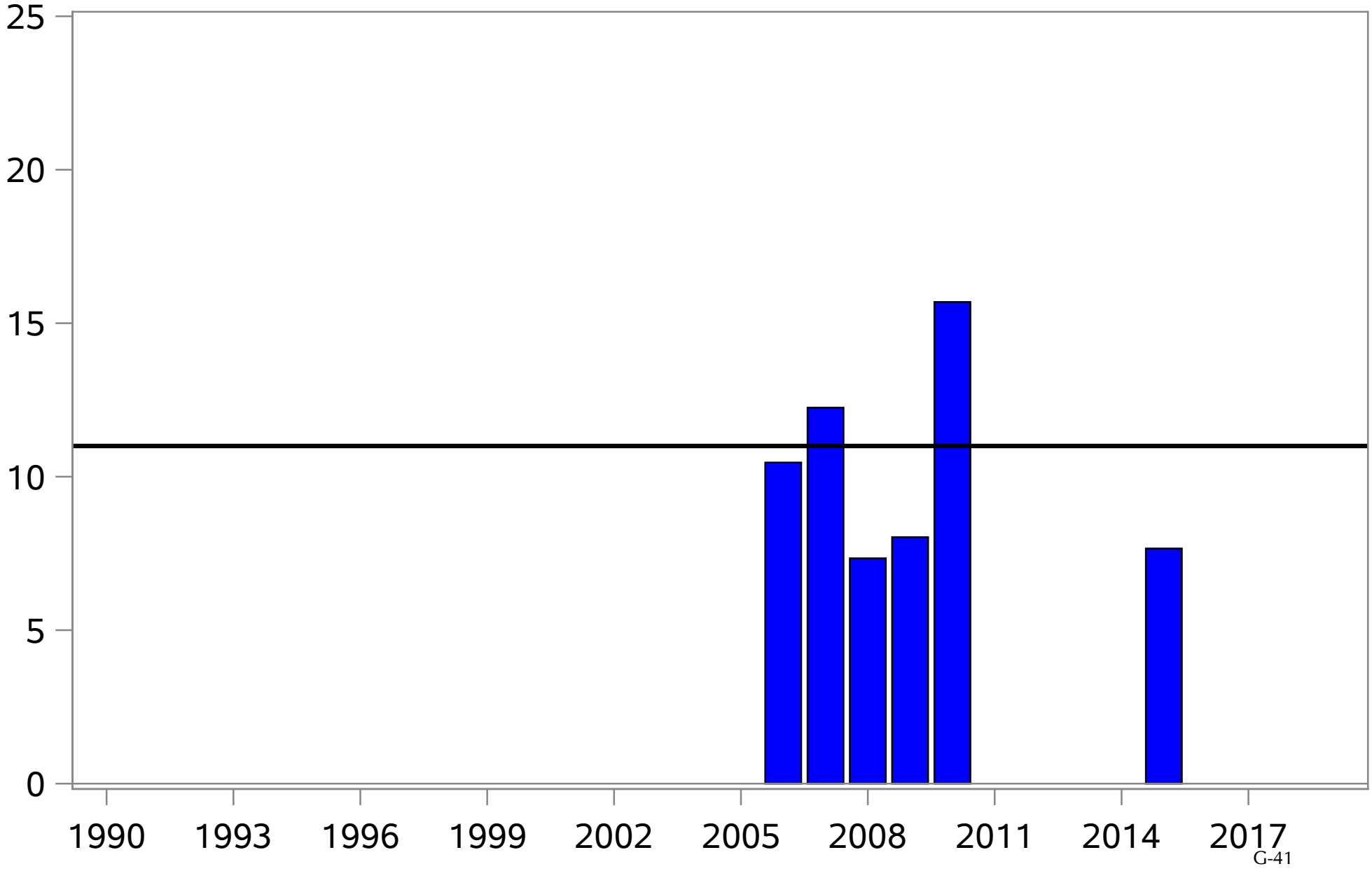
Reference Line = 11 ug/L



WBID 2640 Unnamed Branch - 3M

Chlorophyll AGM (ug/L)

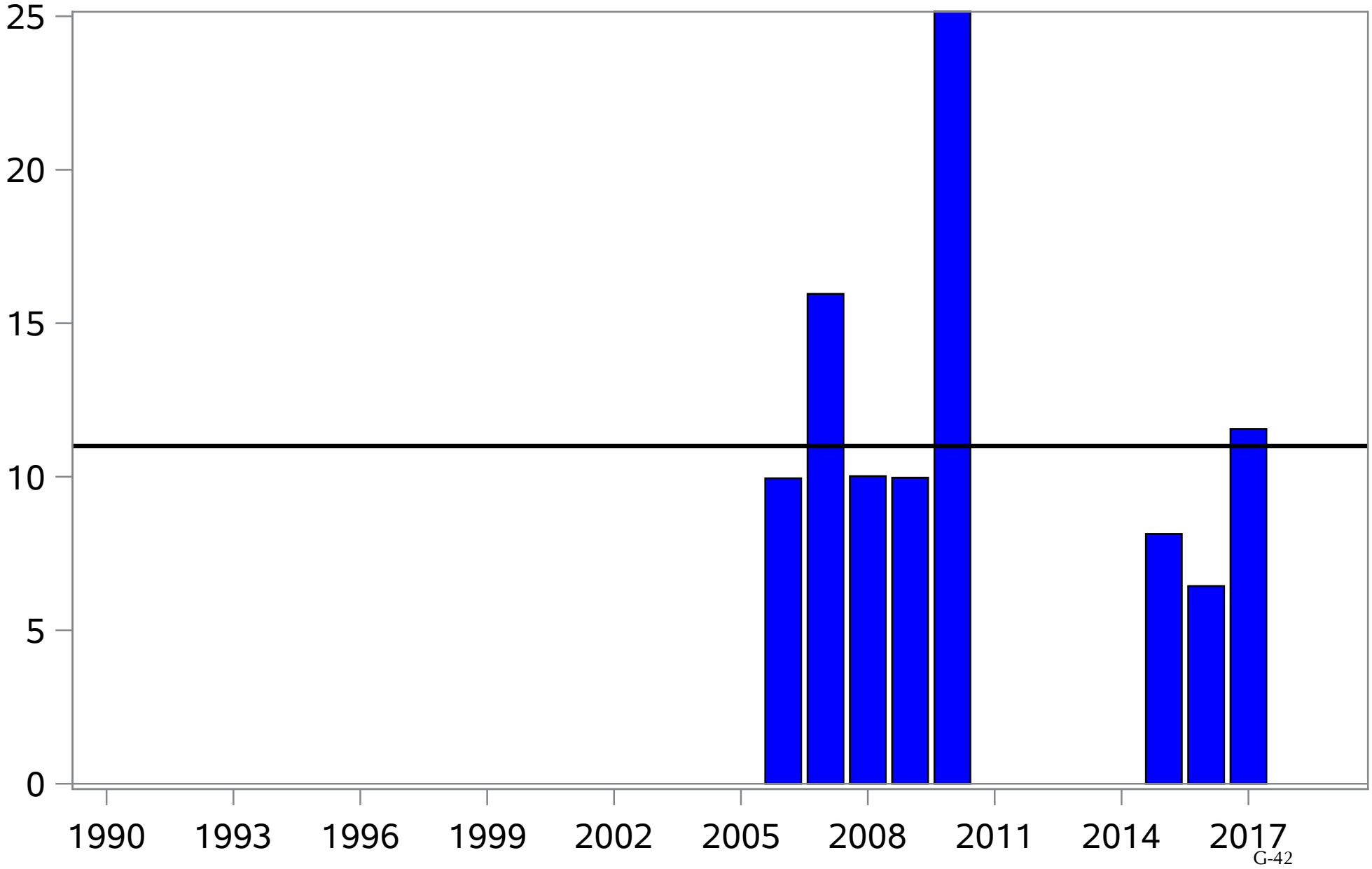
Reference Line = 11 ug/L



WBID 2642 Unnamed Branch - 3M

Chlorophyll AGM (ug/L)

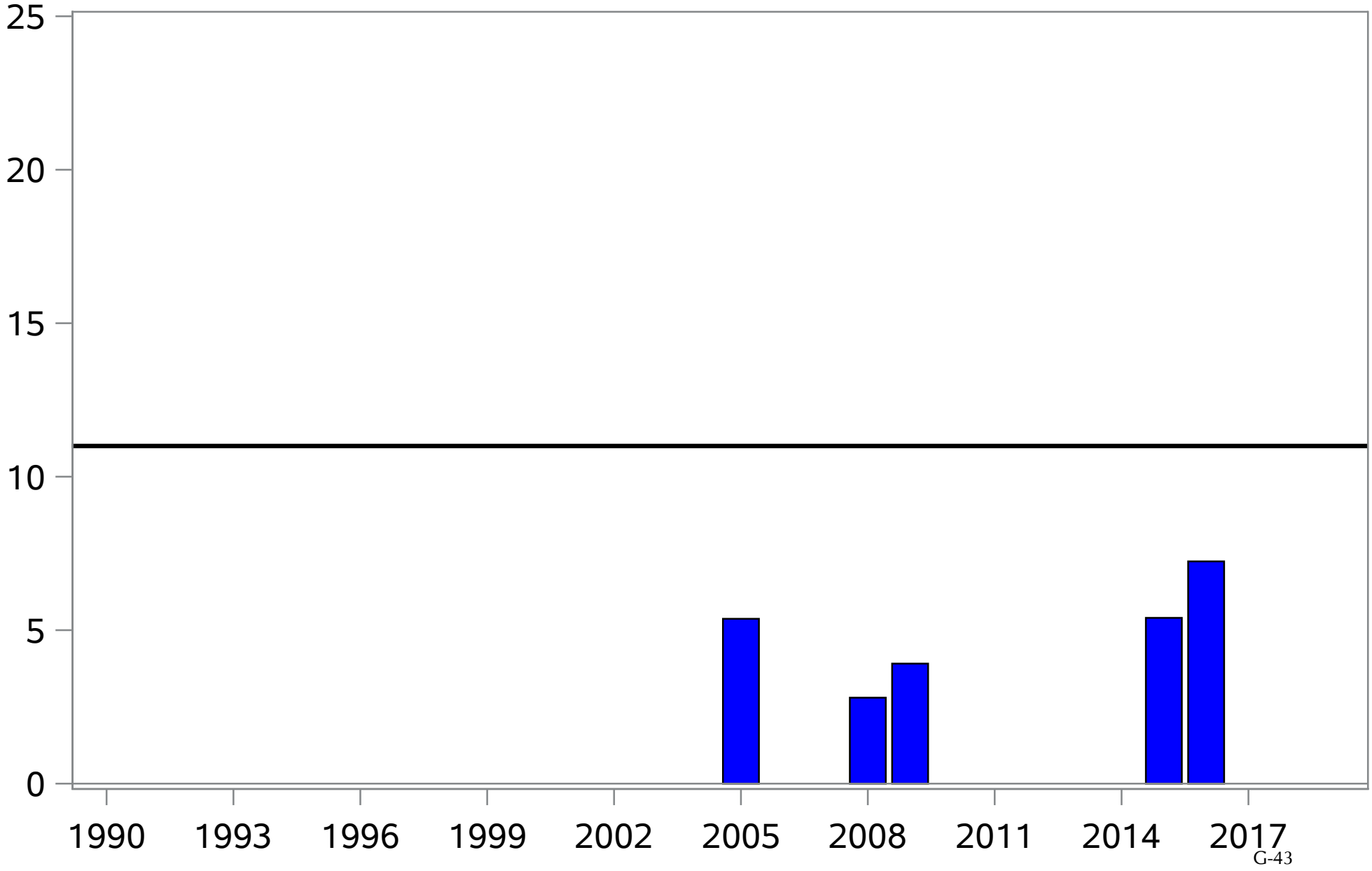
Reference Line = 11 ug/L



WBID 2647 Holly Hill Ditch - 3M

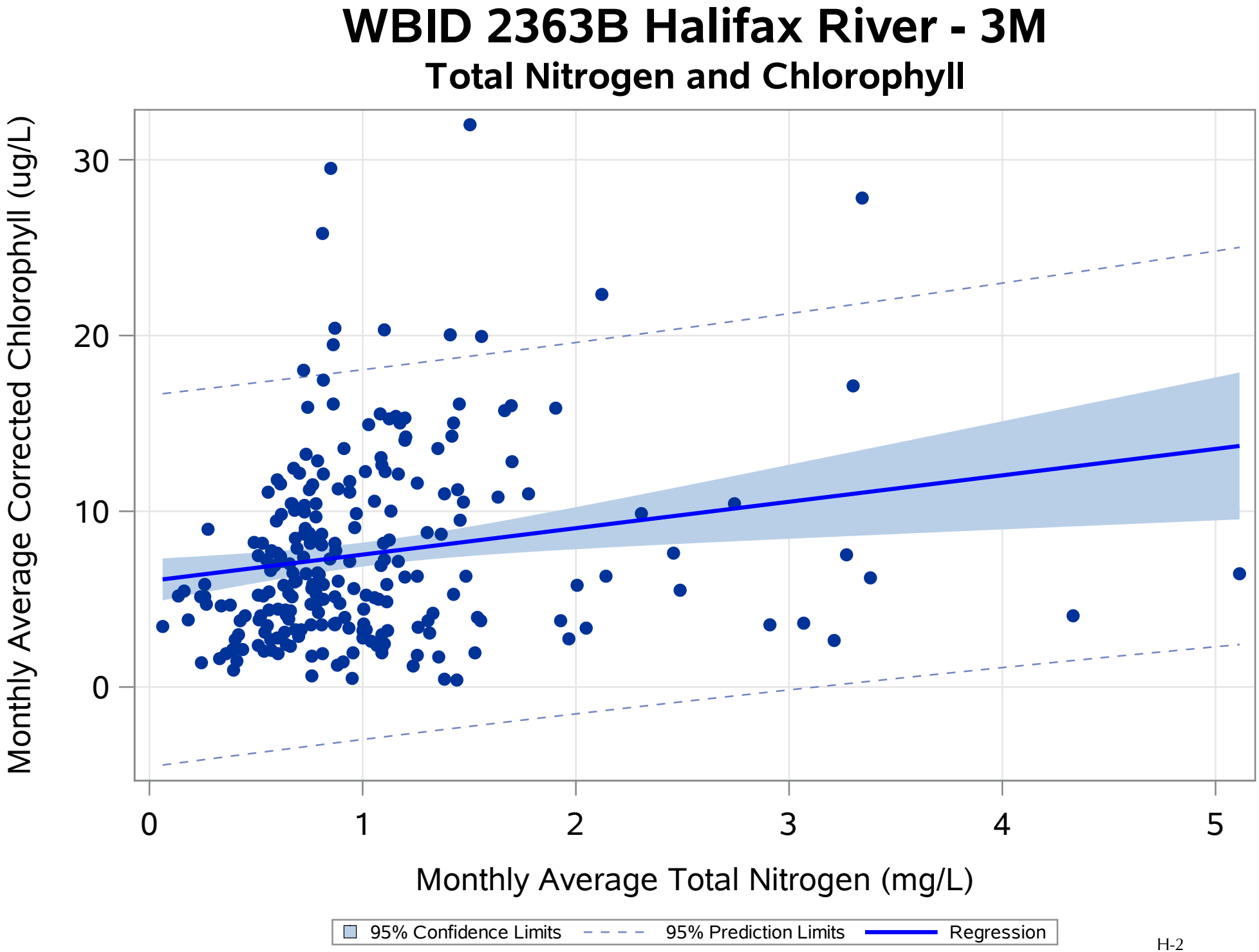
Chlorophyll AGM (ug/L)

Reference Line = 11 ug/L



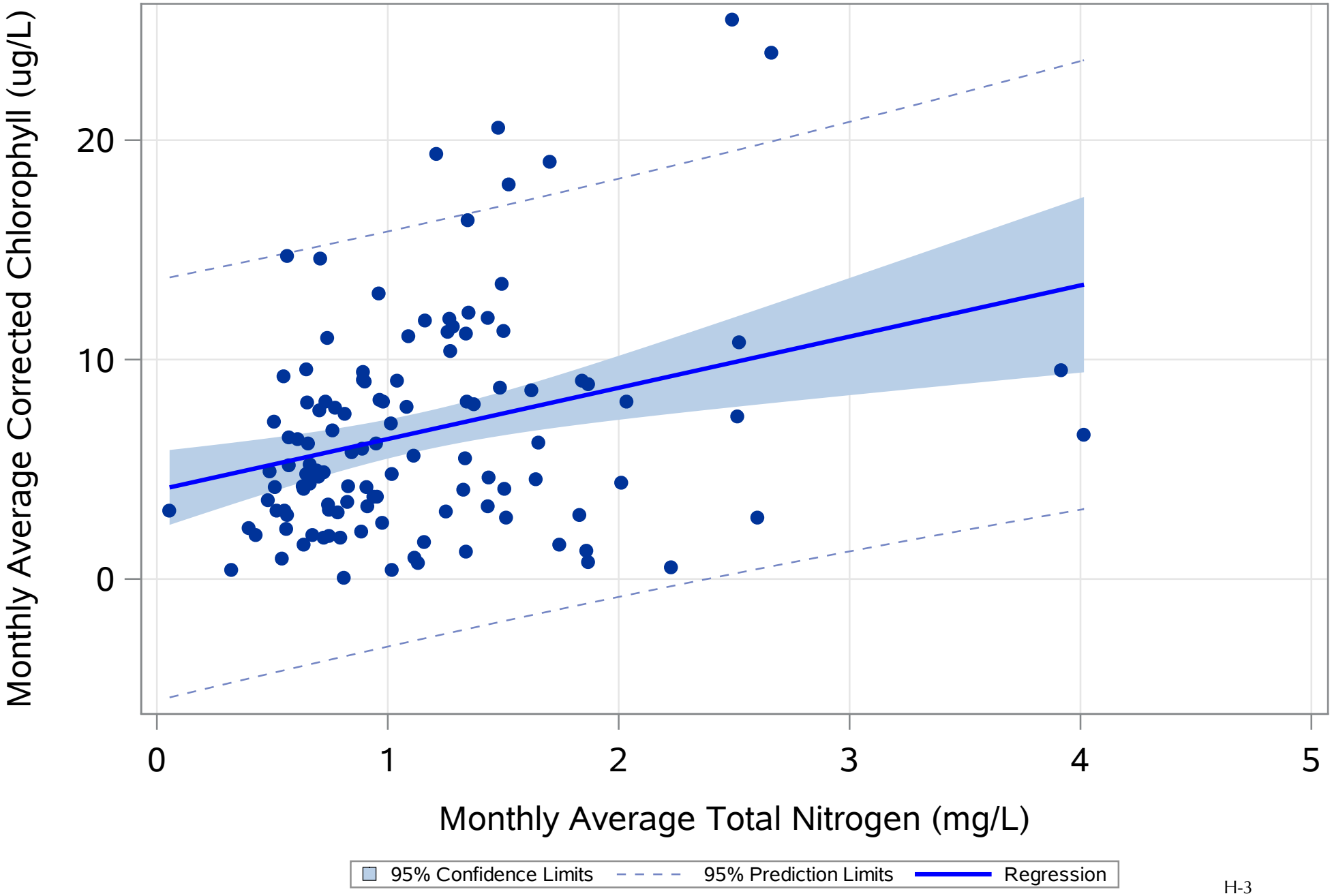
Appendix B-H

Relationships between Chlorophyll and Total Nitrogen/Total Phosphorus


WBID 2363B Halifax River - 3M
Total Nitrogen and Chlorophyll
Monthly Average Corrected Chlorophyll (ug/L)
30
20
10
0
0
1
2
3
4
5
Monthly Average Total Nitrogen (mg/L)
95% Confidence Limits
95% Prediction Limits
Regression

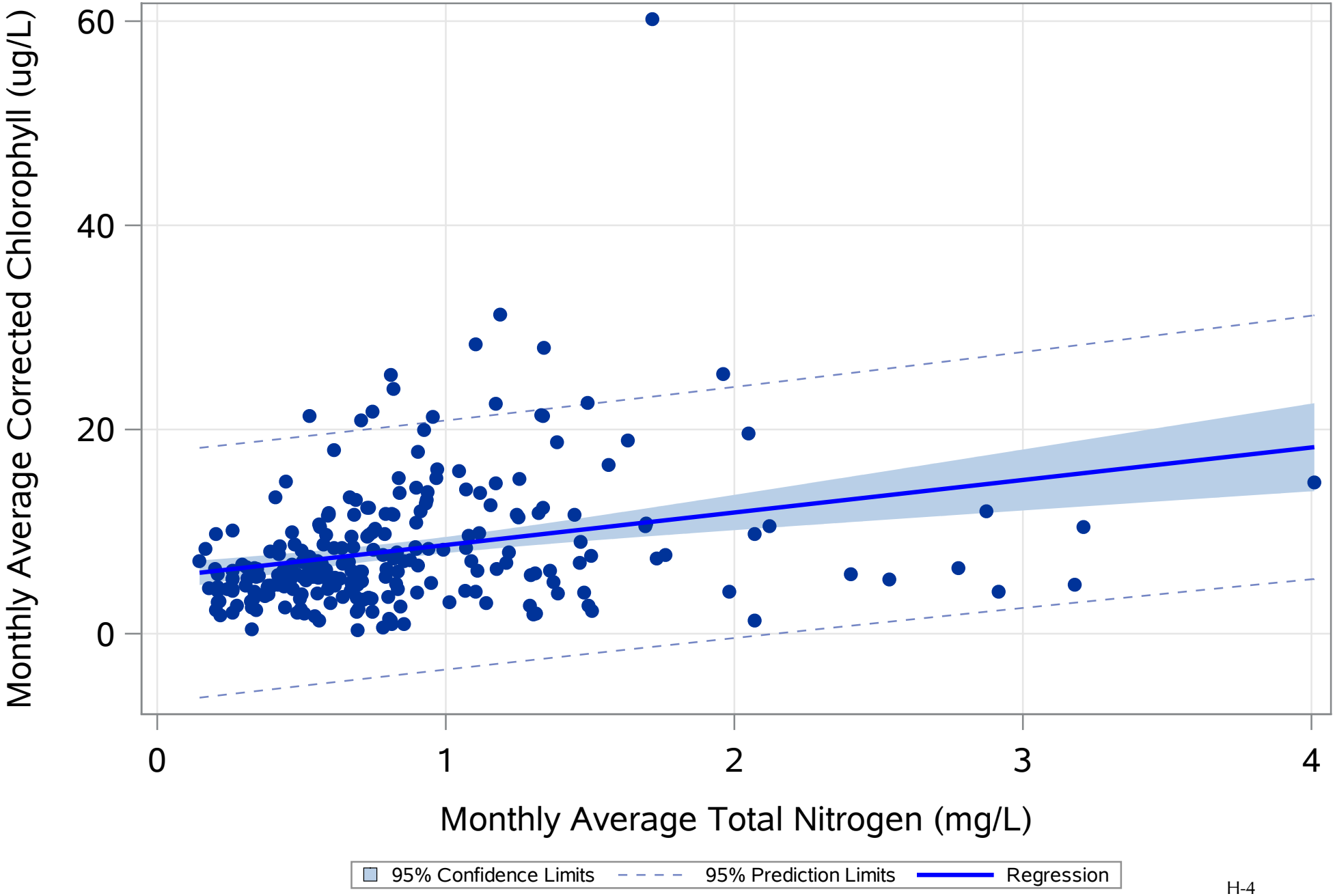
WBID 2363C Tomoka Basin - 3M

Total Nitrogen and Chlorophyll



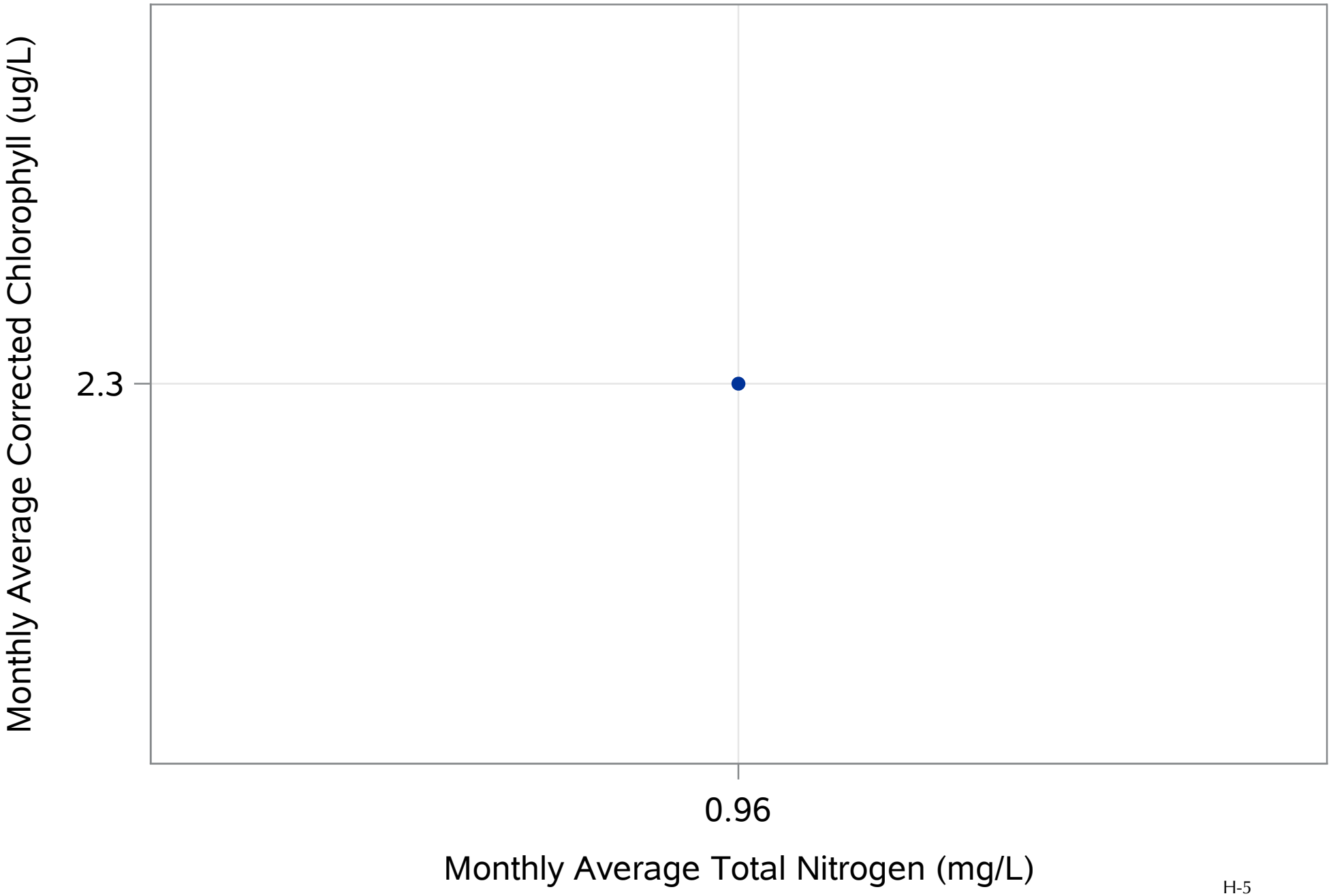
WBID 2363J Palm Coast - 3M

Total Nitrogen and Chlorophyll



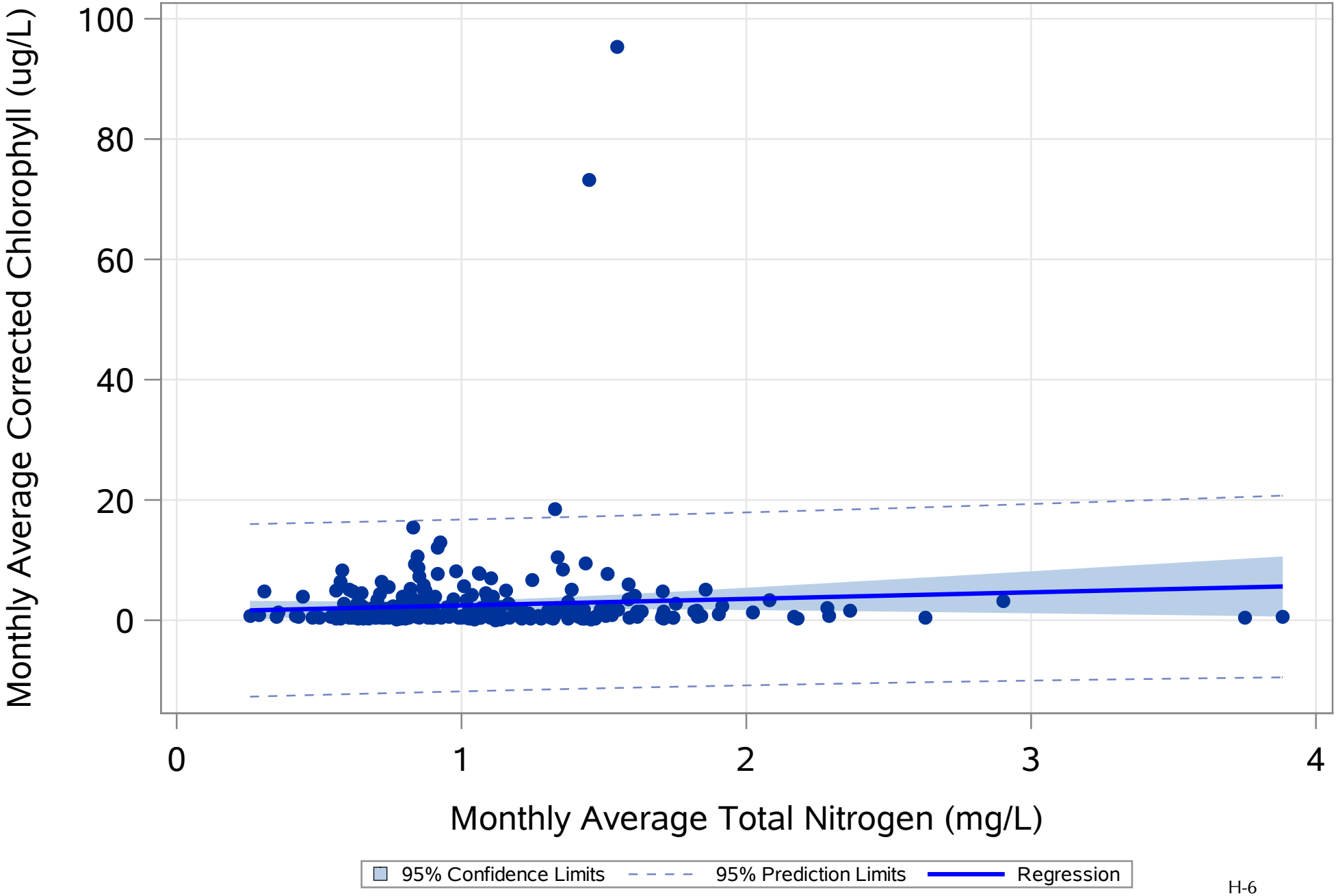
WBID 2631 Unnamed Ditch - 3F

Total Nitrogen and Chlorophyll



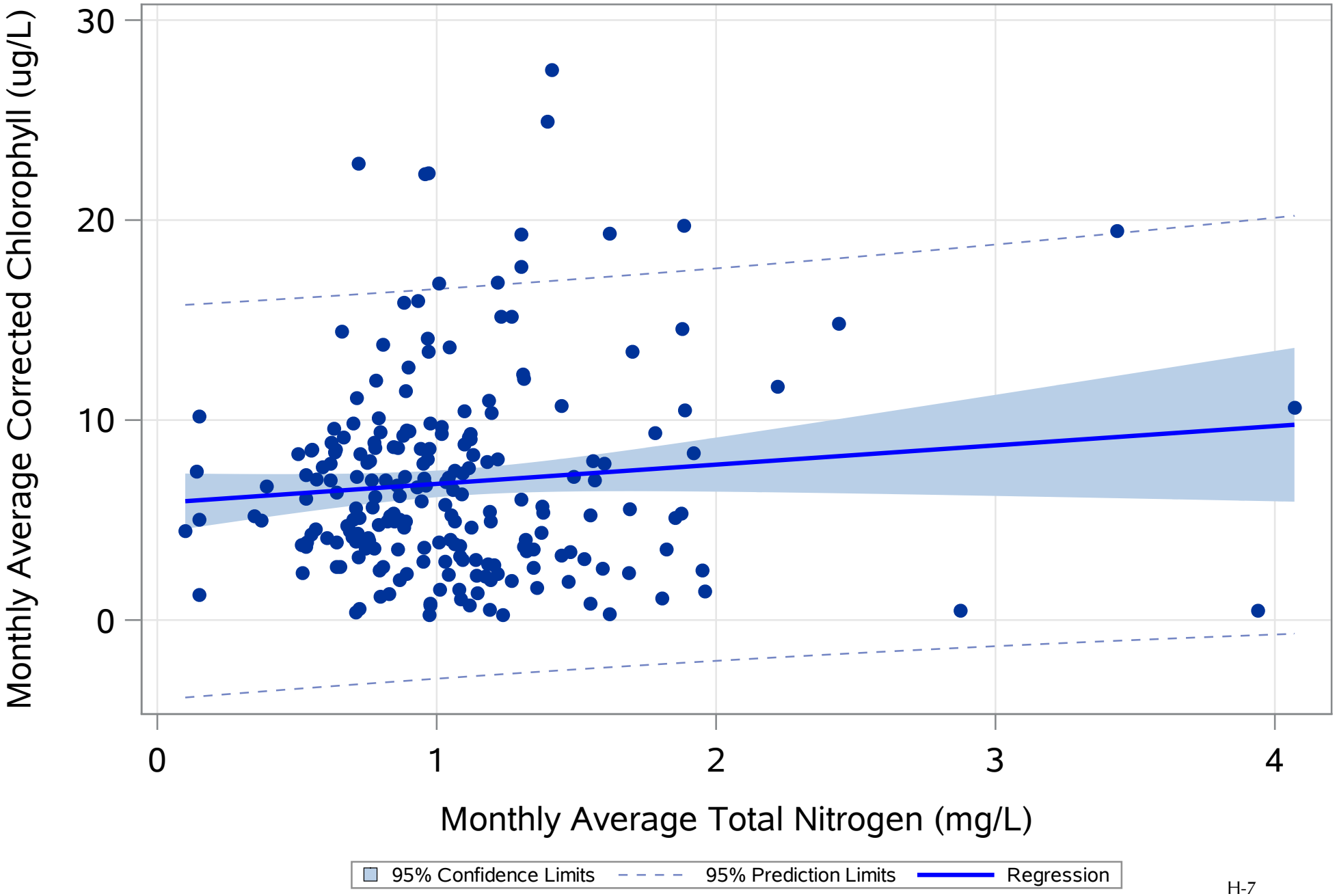
WBID 2634 Tomoka River - 3F

Total Nitrogen and Chlorophyll



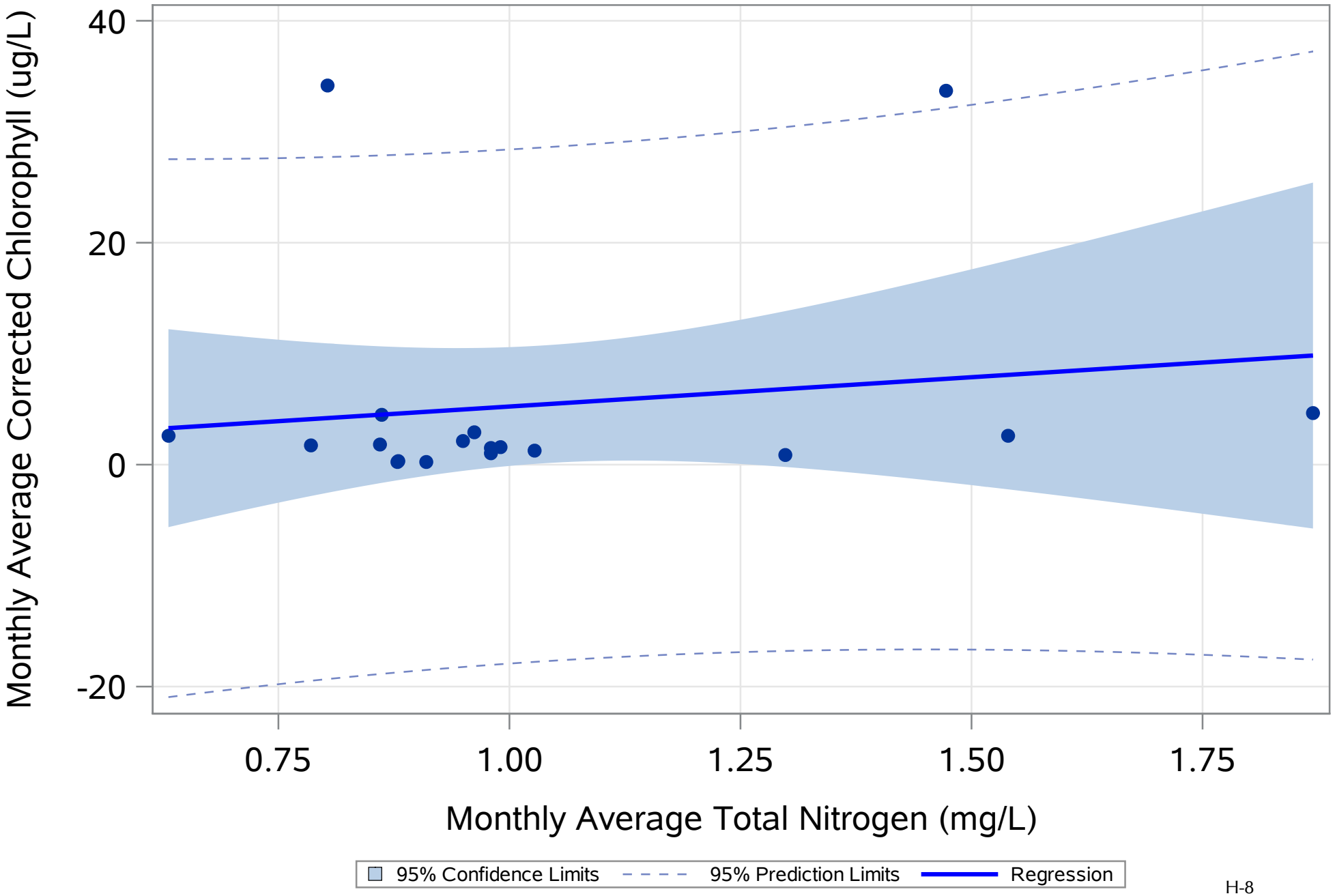
WBID 2634A Tomoka River - 3M

Total Nitrogen and Chlorophyll



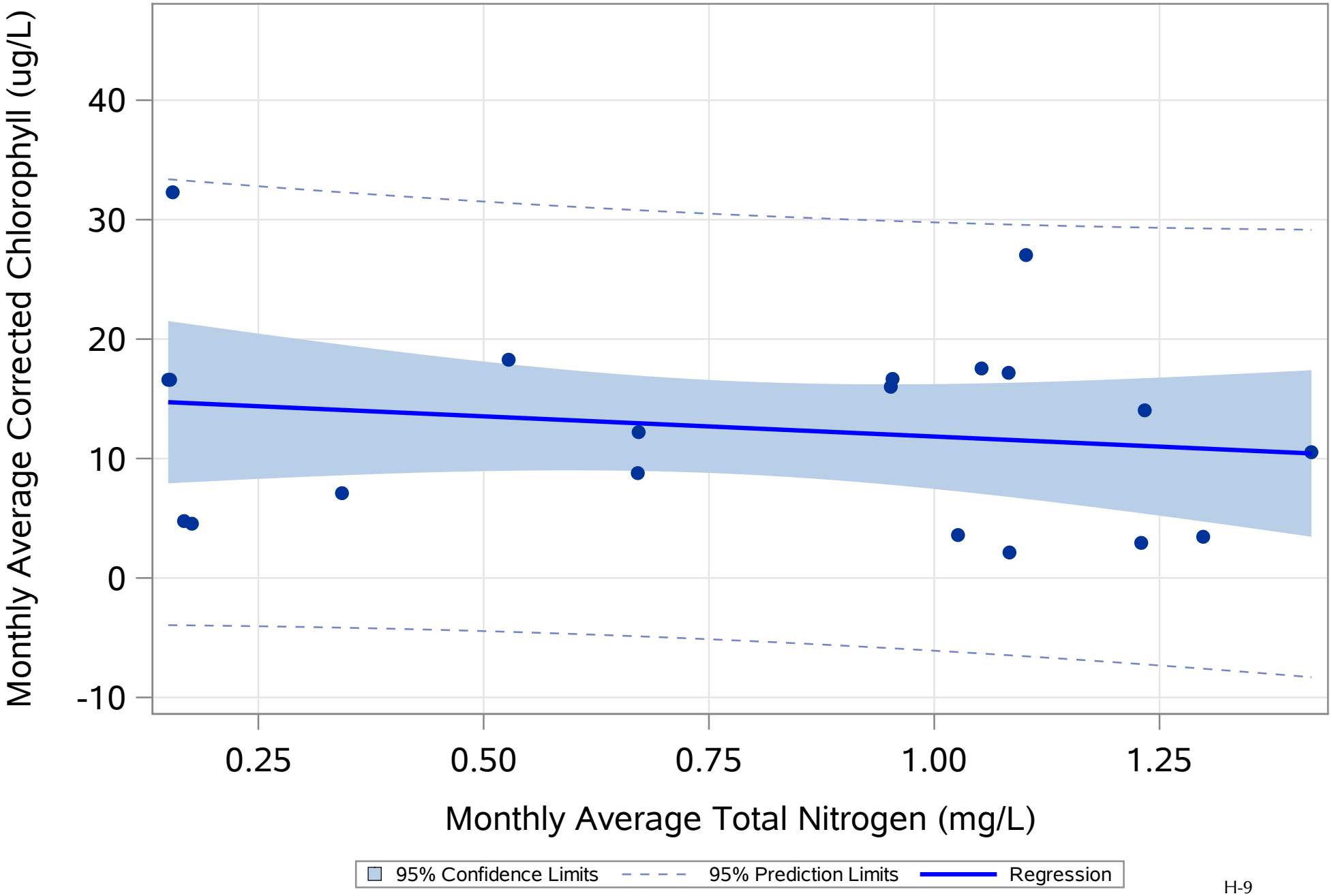
WBID 2635 Groover Branch - 3F

Total Nitrogen and Chlorophyll



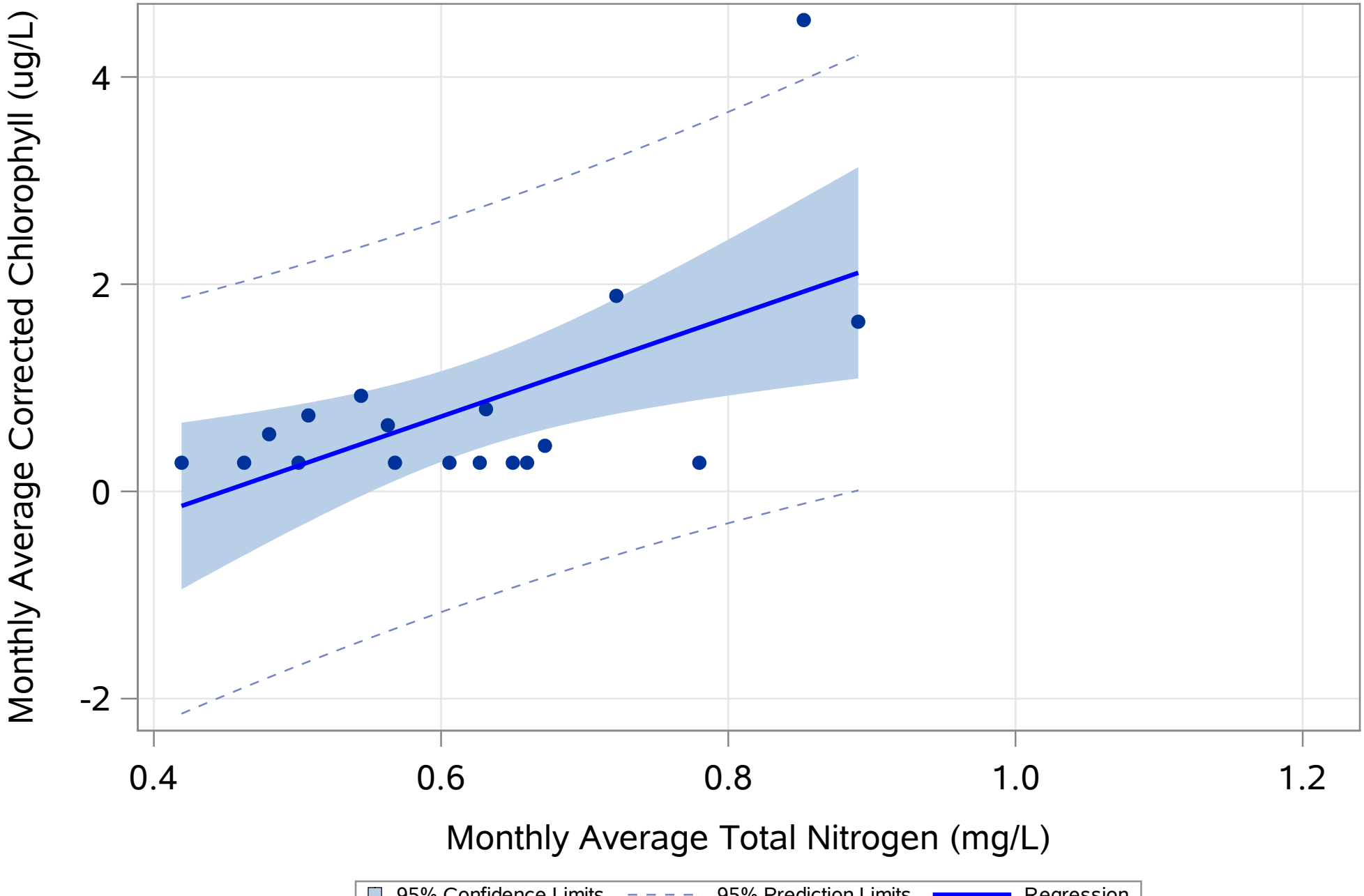
WBID 2640 Unnamed Branch - 3M

Total Nitrogen and Chlorophyll



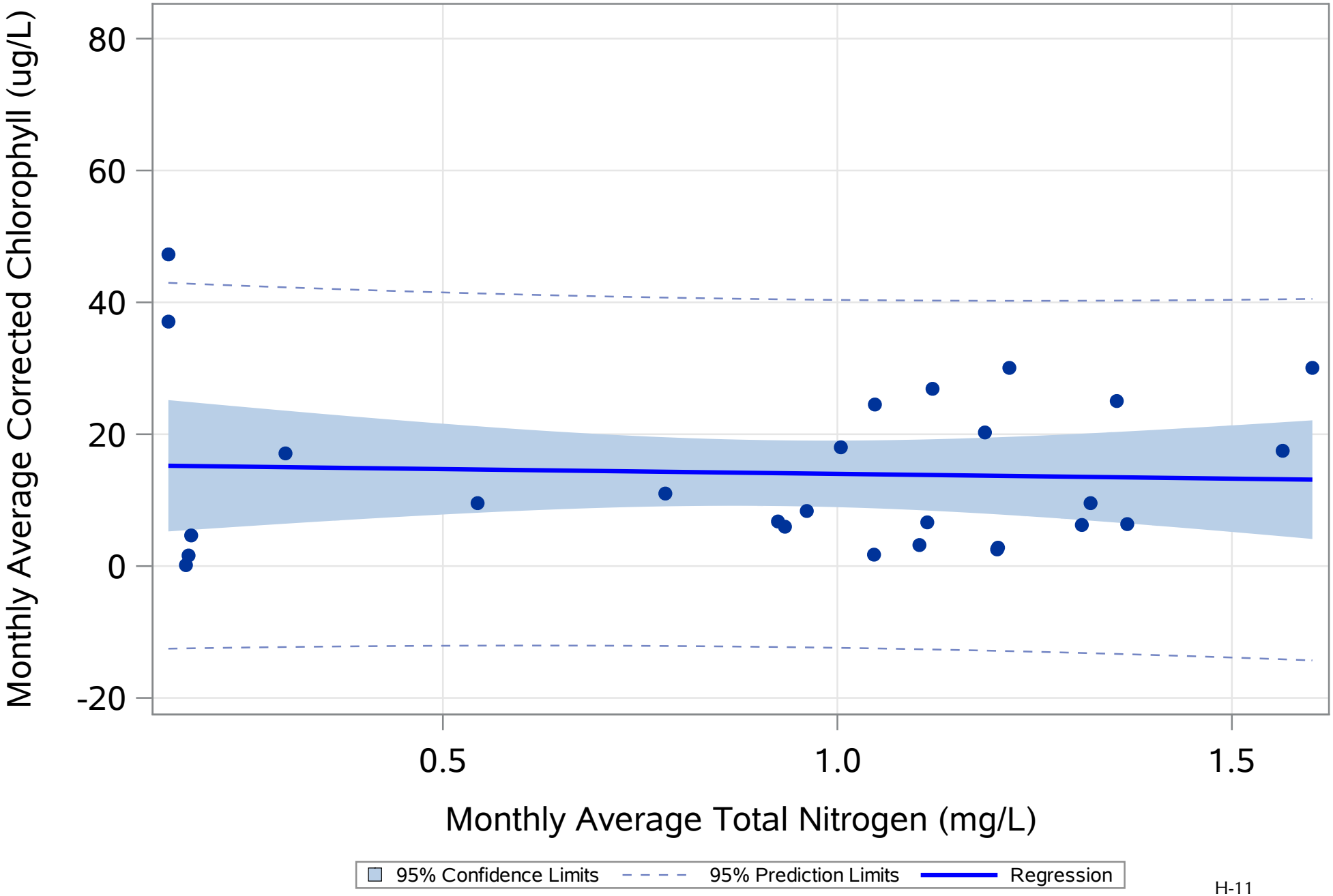
WBID 2641 Unnamed Branch - 3F

Total Nitrogen and Chlorophyll



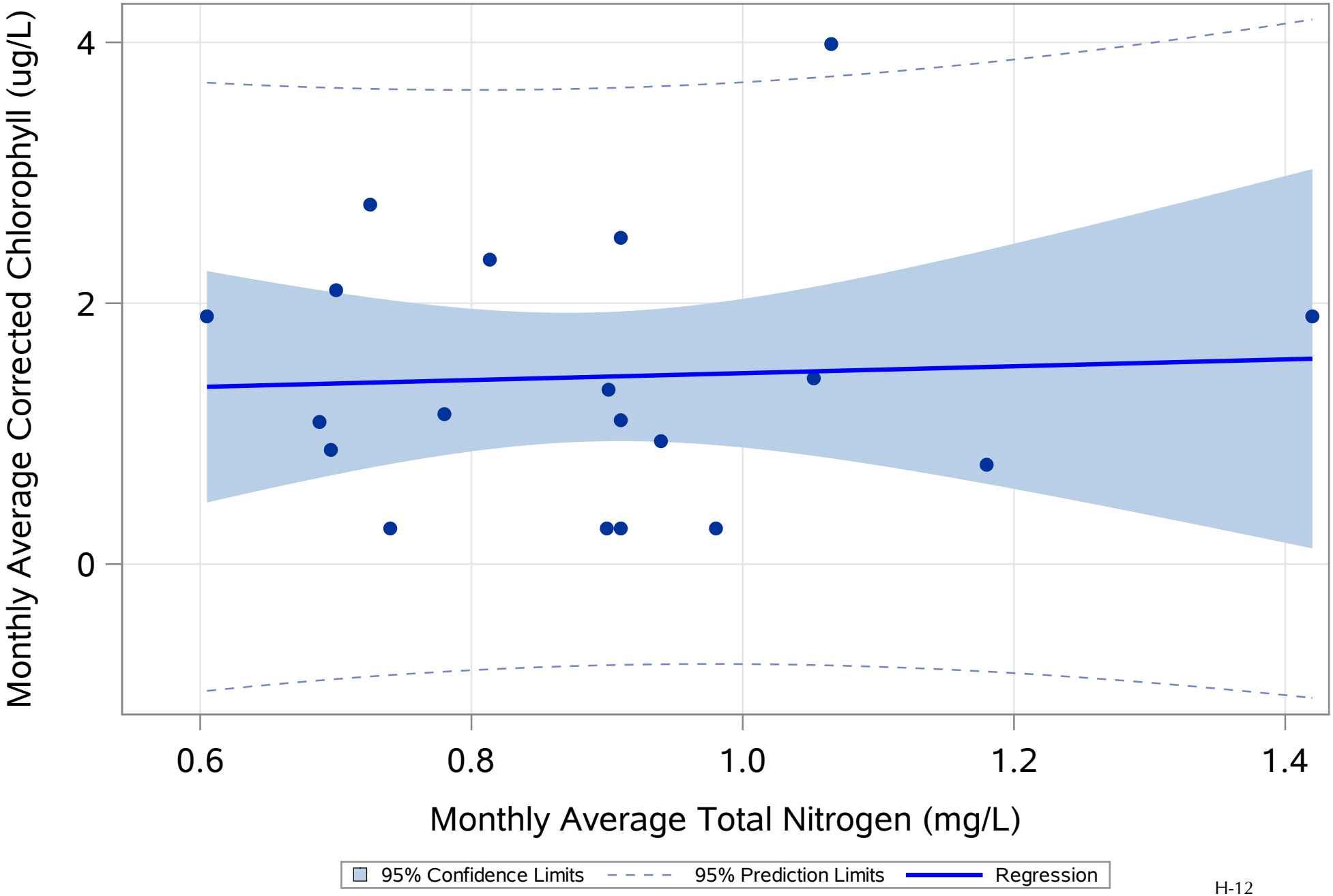
WBID 2642 Unnamed Branch - 3M

Total Nitrogen and Chlorophyll



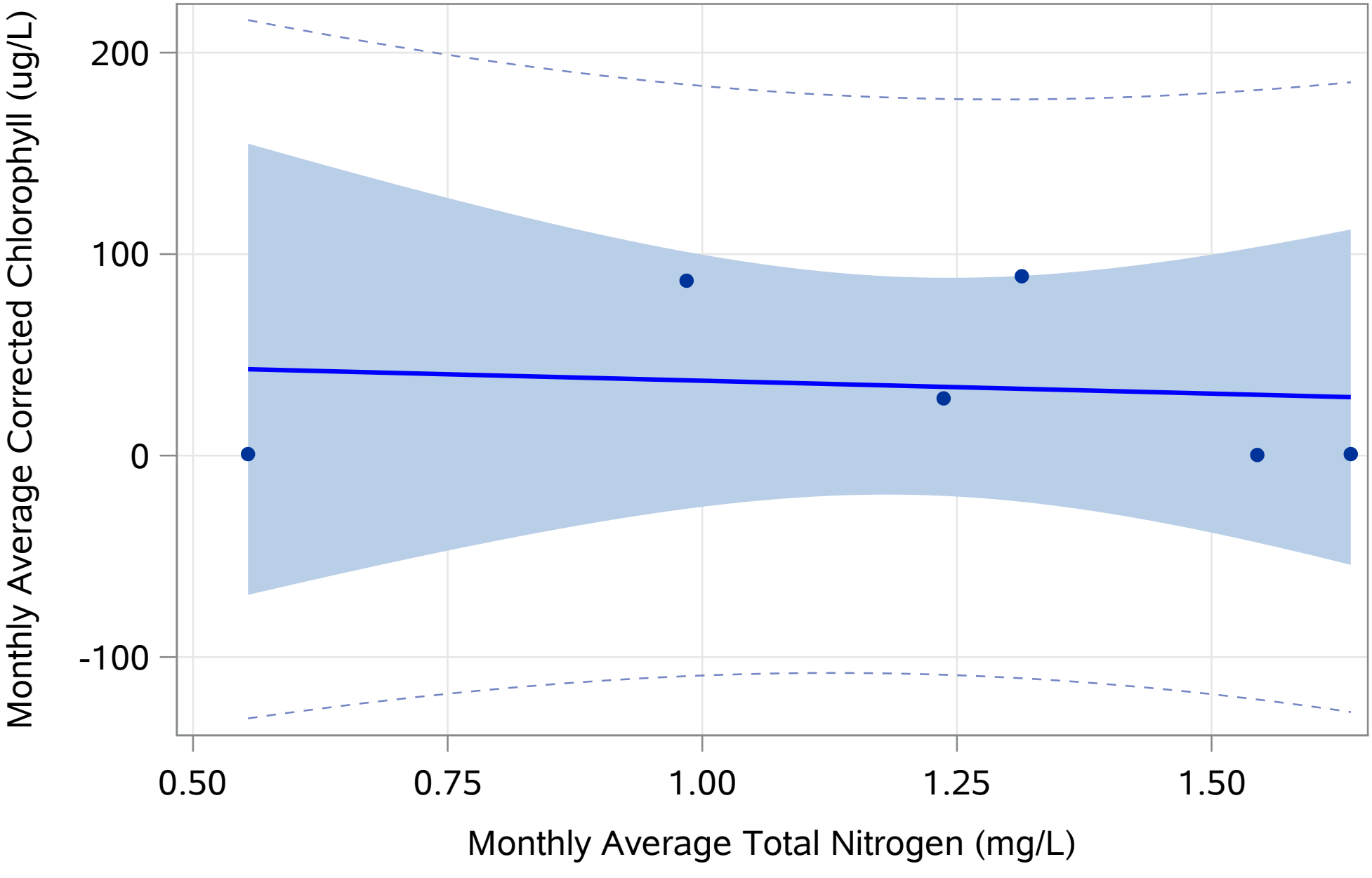
WBID 2645 Mizners Branch - 3F

Total Nitrogen and Chlorophyll



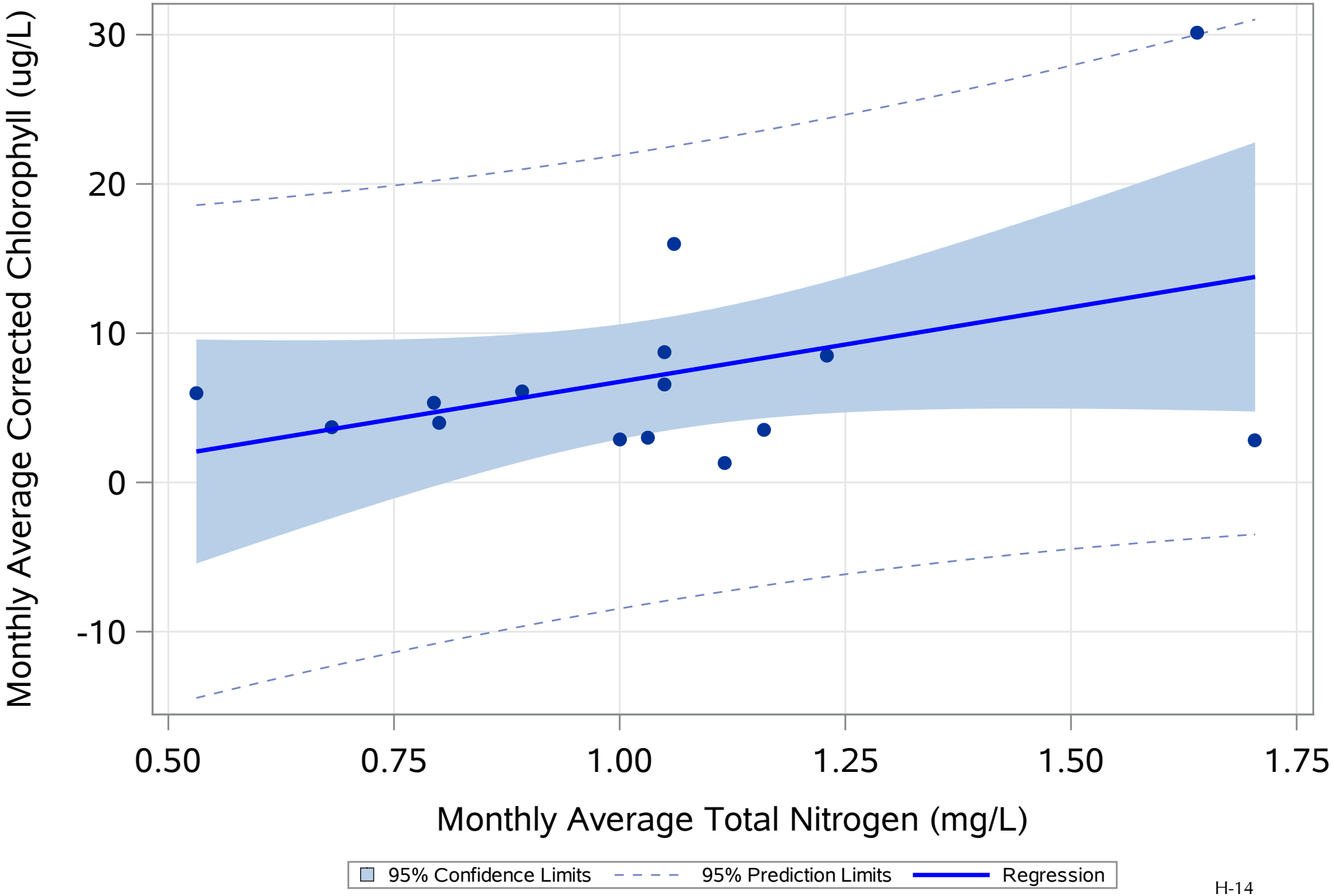
WBID 2646 Little Tomoka River - 3F

Total Nitrogen and Chlorophyll



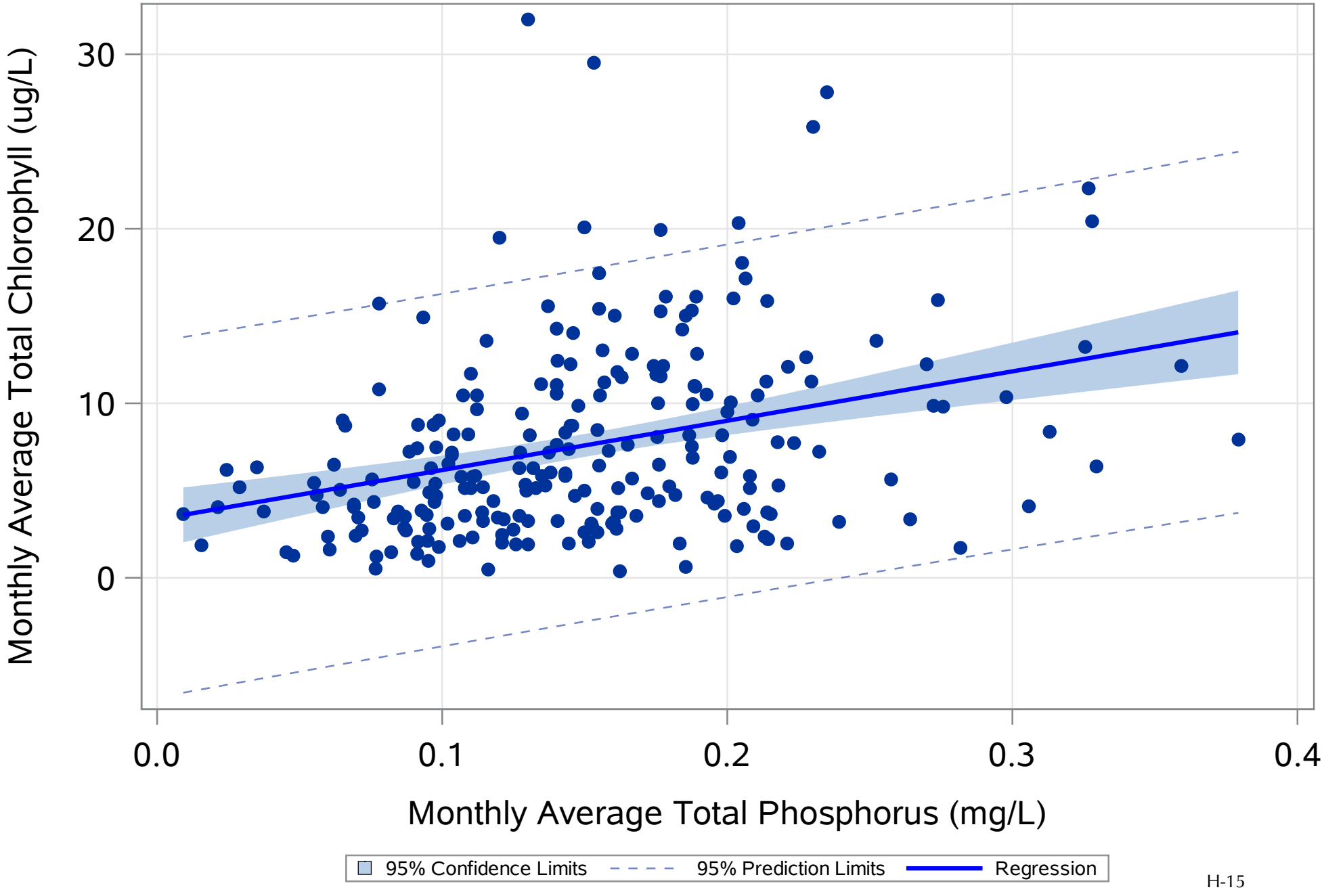
WBID 2647 Holly Hill Ditch - 3M

Total Nitrogen and Chlorophyll



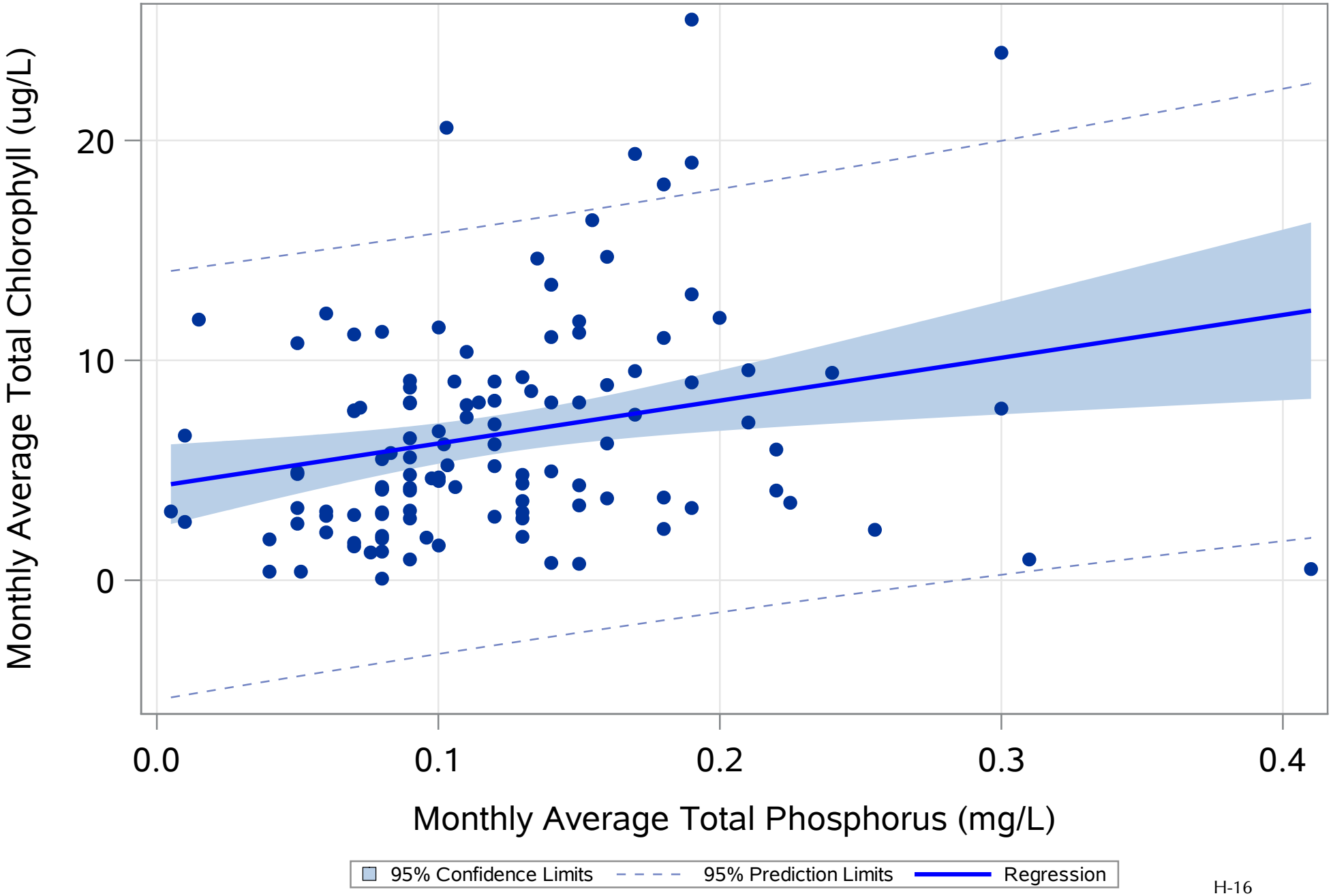
WBID 2363B Halifax River - 3M

Total Phosphorus and Chlorophyll



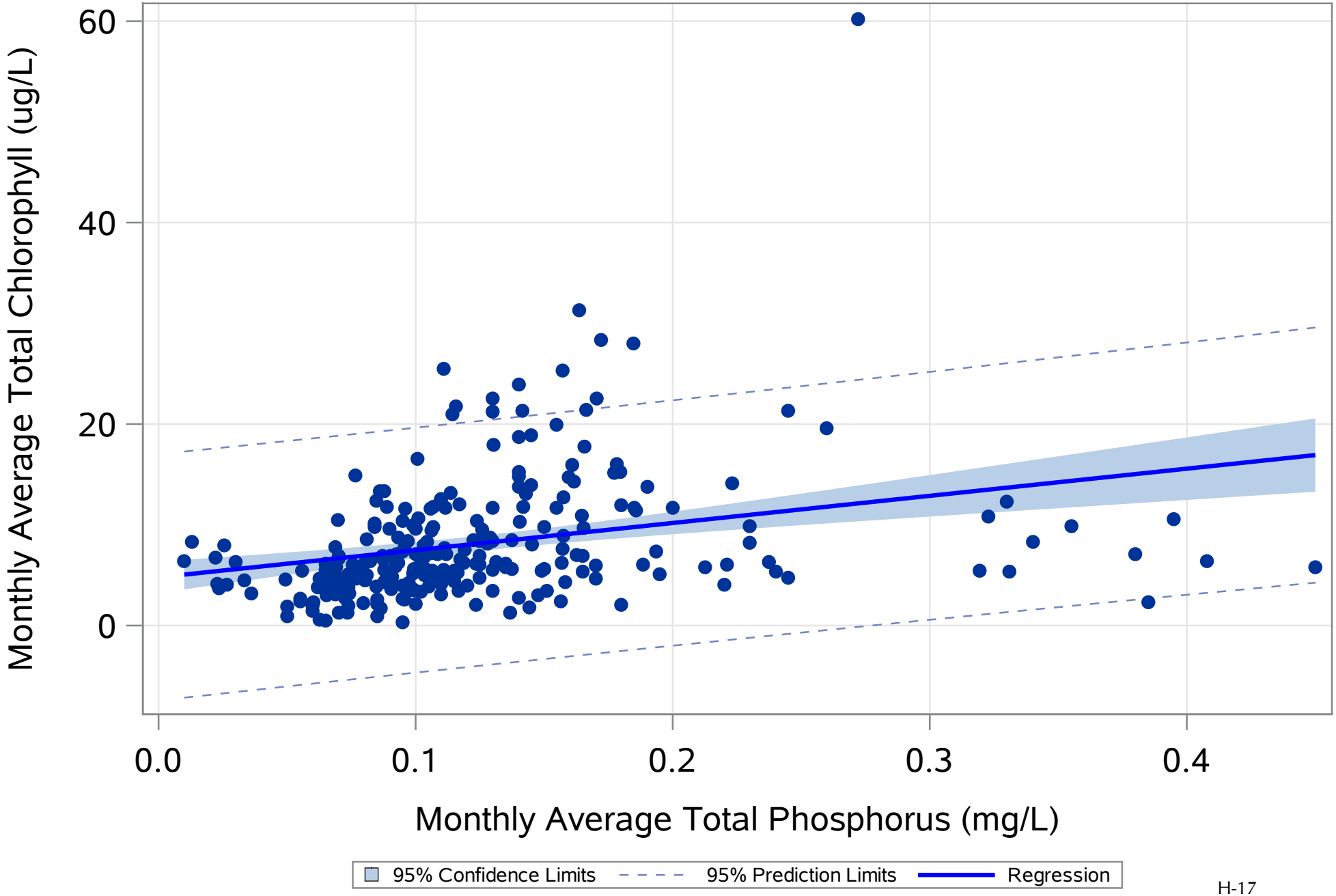
WBID 2363C Tomoka Basin - 3M

Total Phosphorus and Chlorophyll



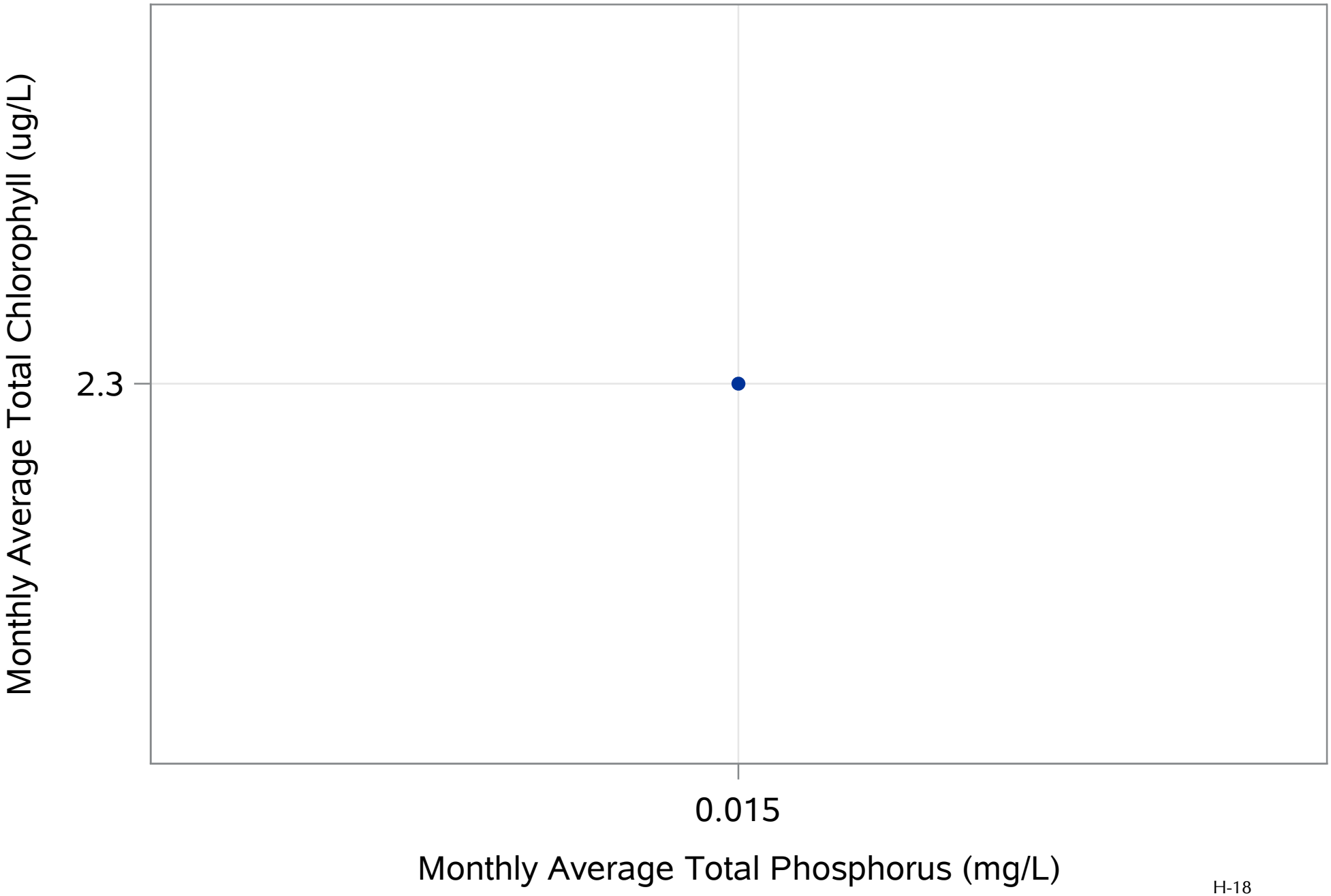
WBID 2363J Palm Coast - 3M

Total Phosphorus and Chlorophyll



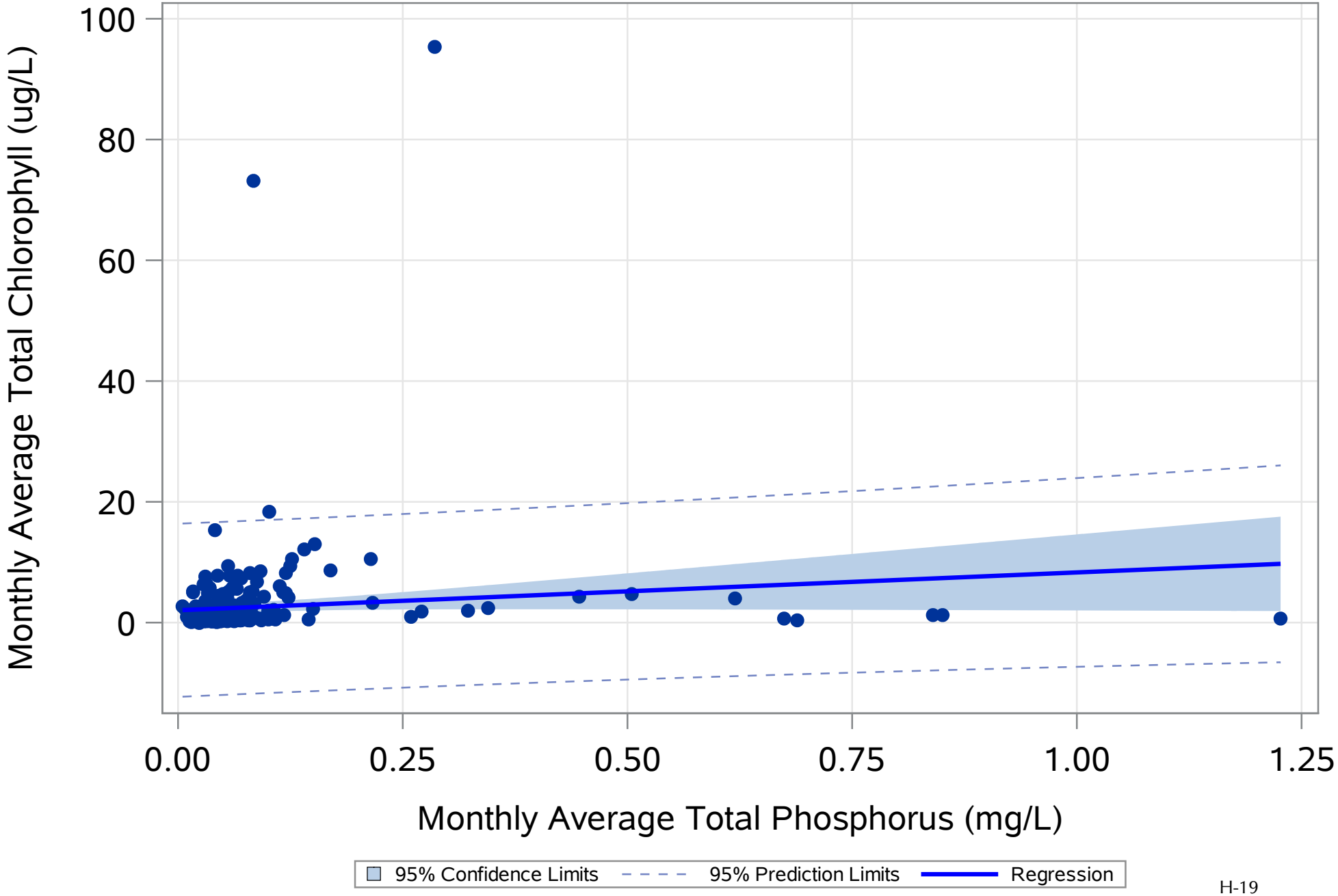
WBID 2631 Unnamed Ditch - 3F

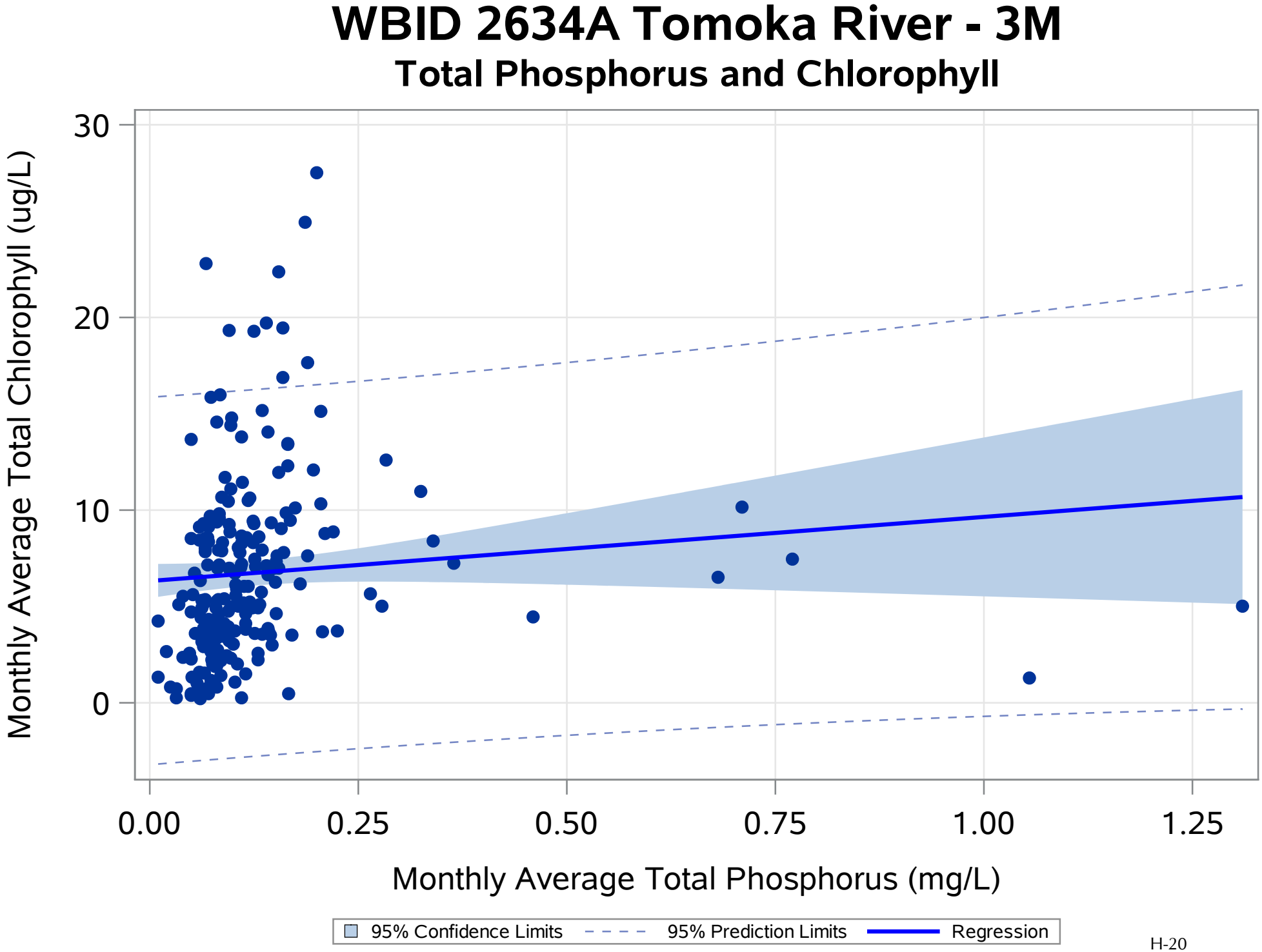
Total Phosphorus and Chlorophyll



WBID 2634 Tomoka River - 3F

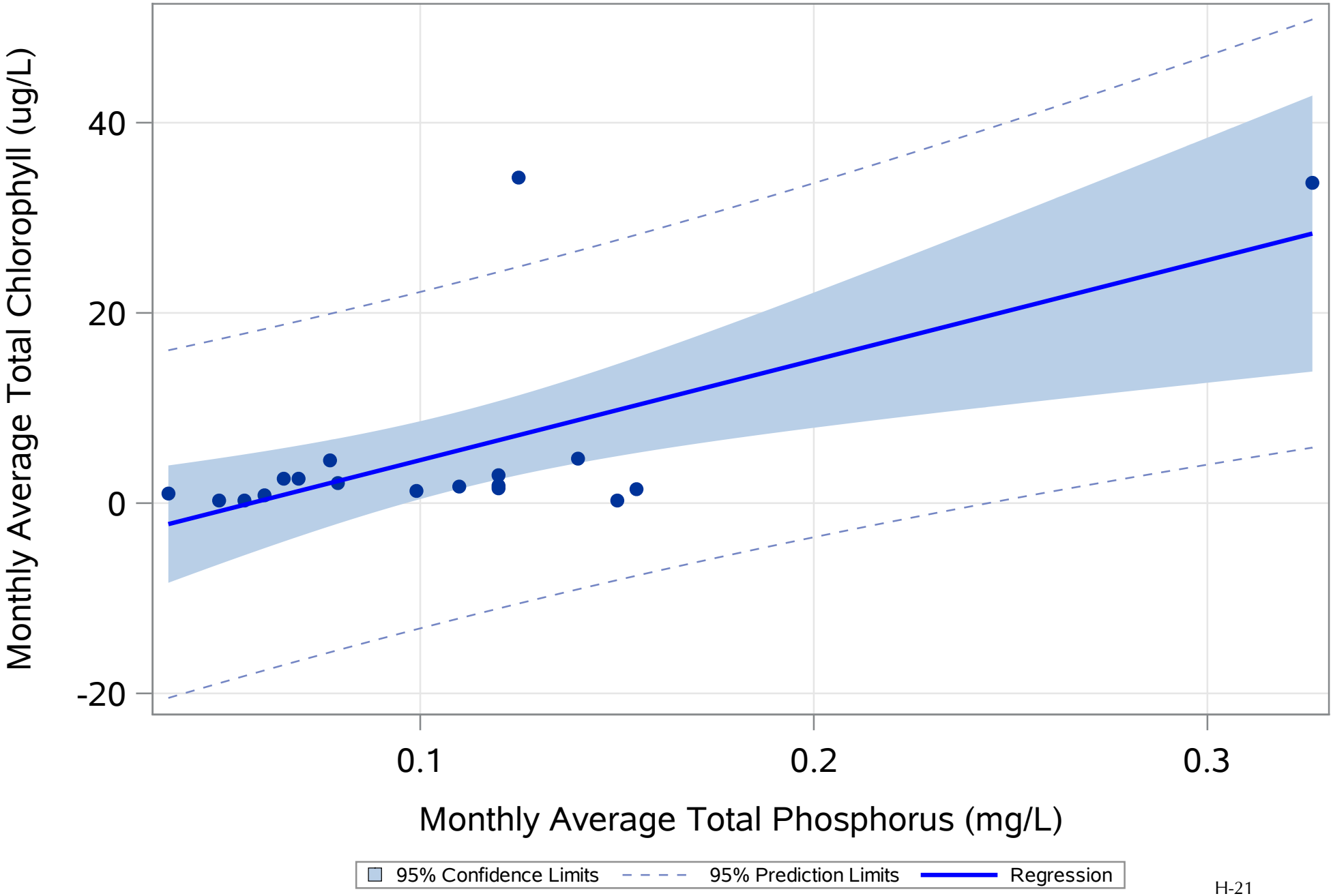
Total Phosphorus and Chlorophyll

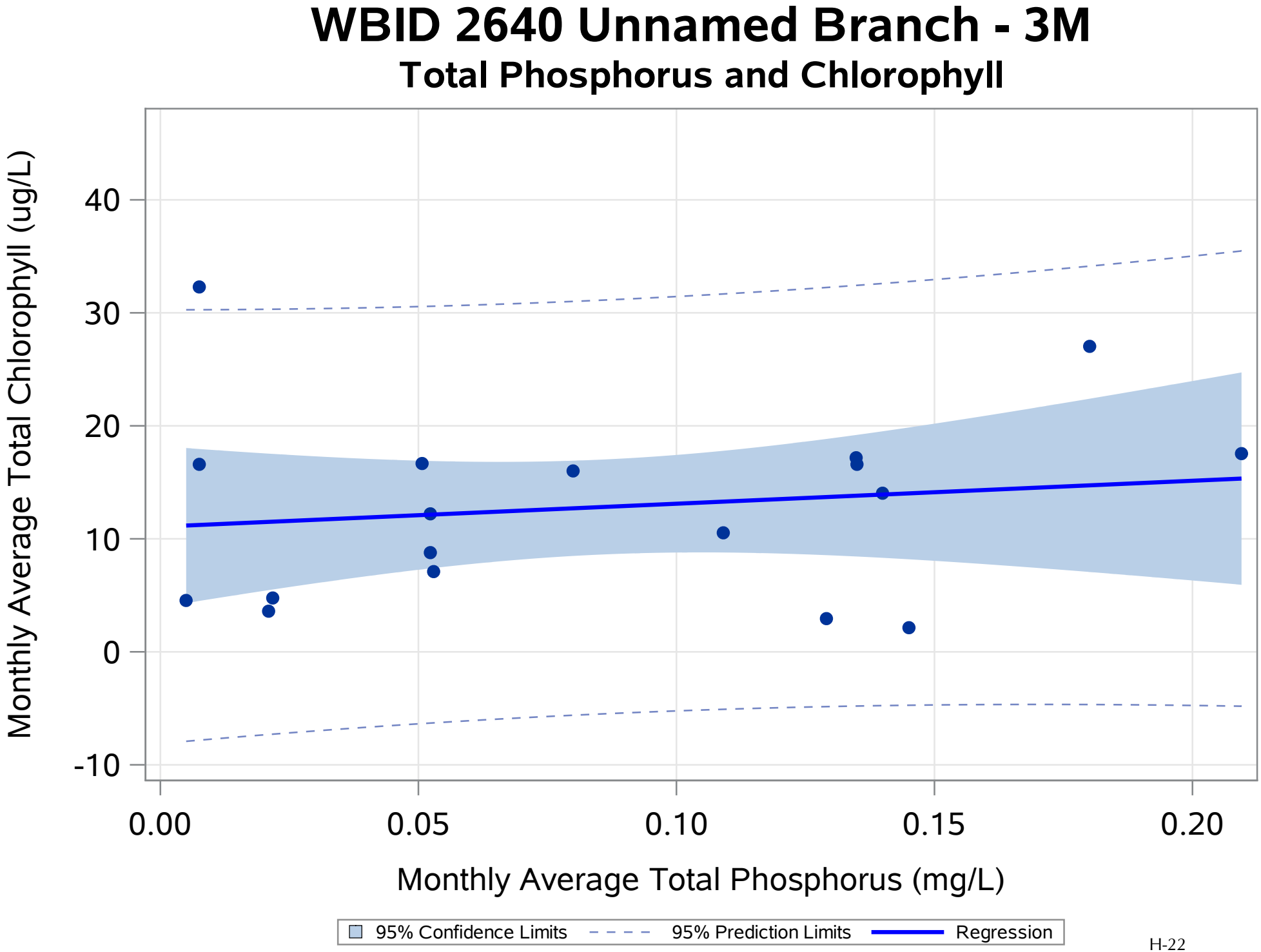



WBID 2634A Tomoka River - 3M
Total Phosphorus and Chlorophyll
Monthly Average Total Chlorophyll (ug/L)
30
20
10
0
0.00
0.25
0.50
0.75
1.00
1.25
Monthly Average Total Phosphorus (mg/L)
95% Confidence Limits
95% Prediction Limits
Regression

WBID 2635 Groover Branch - 3F

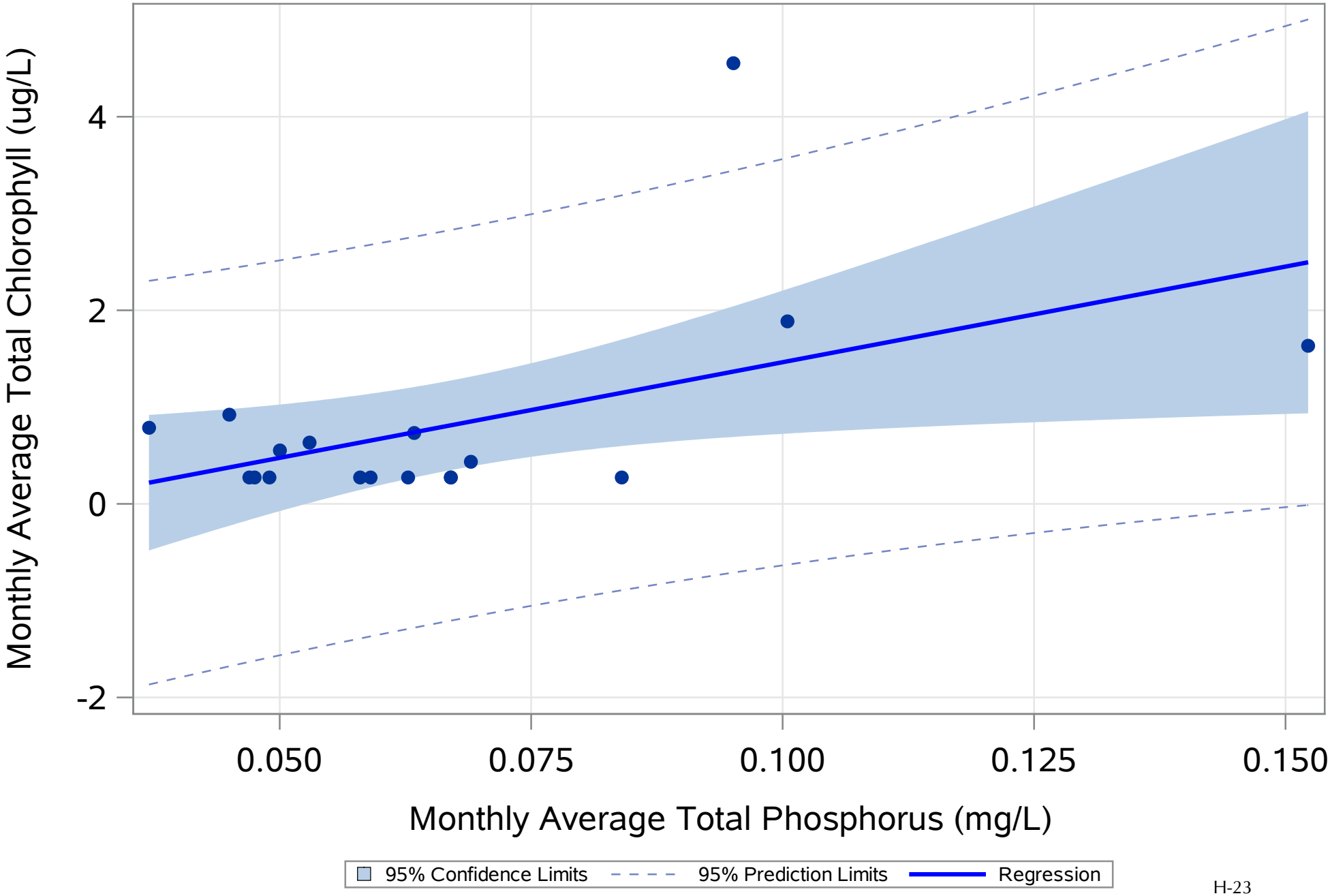
Total Phosphorus and Chlorophyll




WBID 2640 Unnamed Branch - 3M
Total Phosphorus and Chlorophyll
Monthly Average Total Chlorophyll (ug/L)
40
30
20
10
0
-10
0.00
0.05
0.10
0.15
0.20
Monthly Average Total Phosphorus (mg/L)
95% Confidence Limits
95% Prediction Limits
Regression

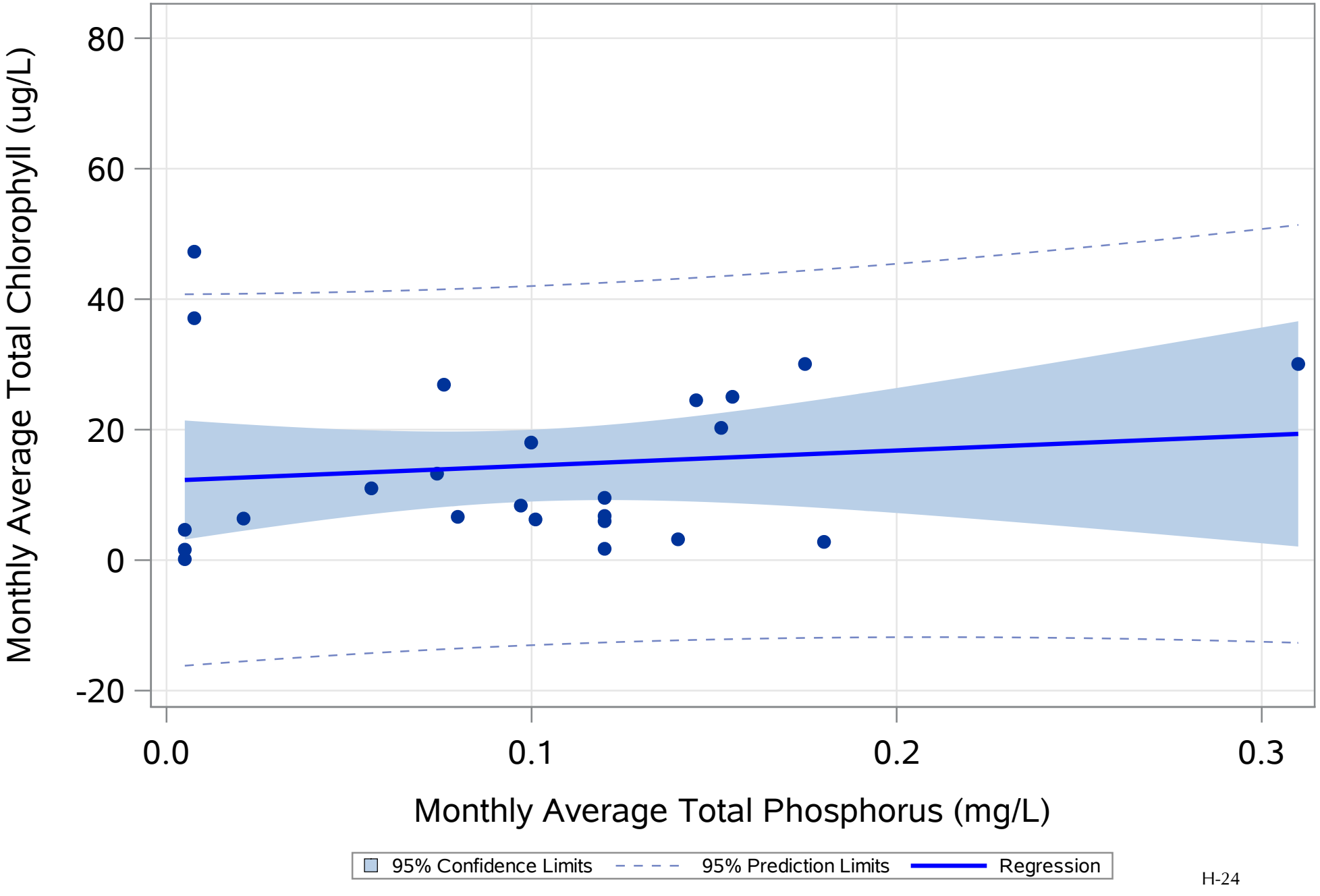
WBID 2641 Unnamed Branch - 3F

Total Phosphorus and Chlorophyll



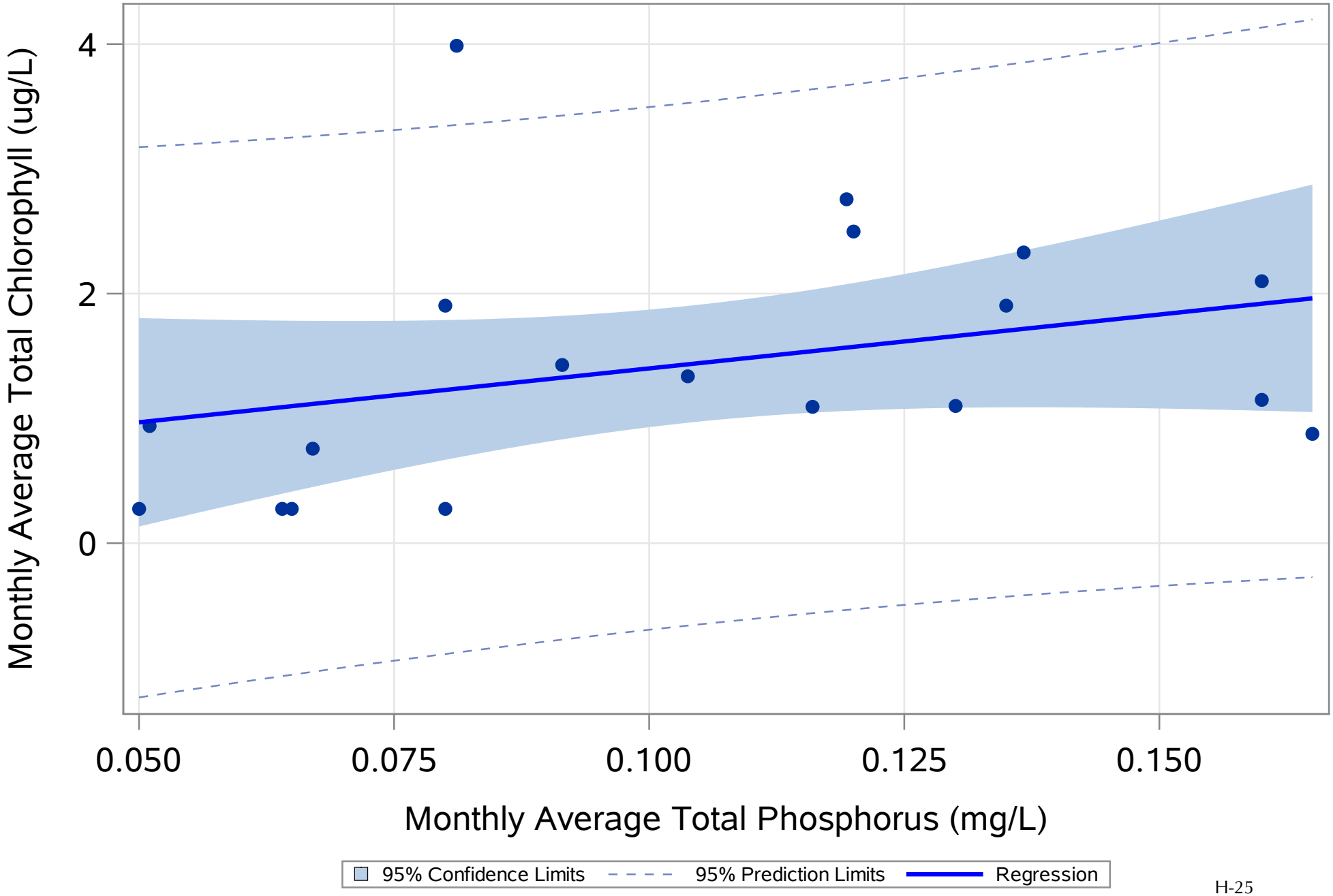
WBID 2642 Unnamed Branch - 3M

Total Phosphorus and Chlorophyll



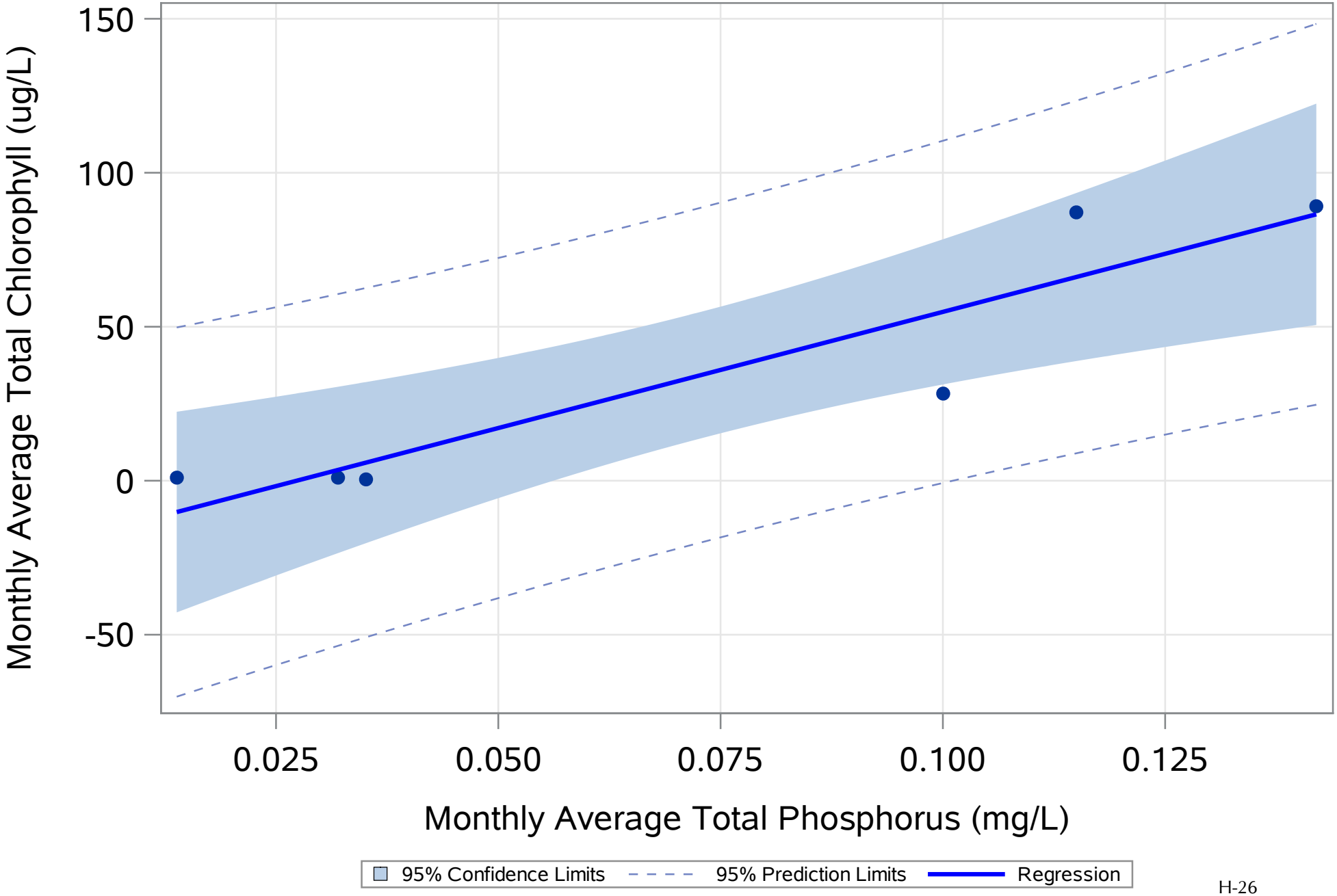
WBID 2645 Mizners Branch - 3F

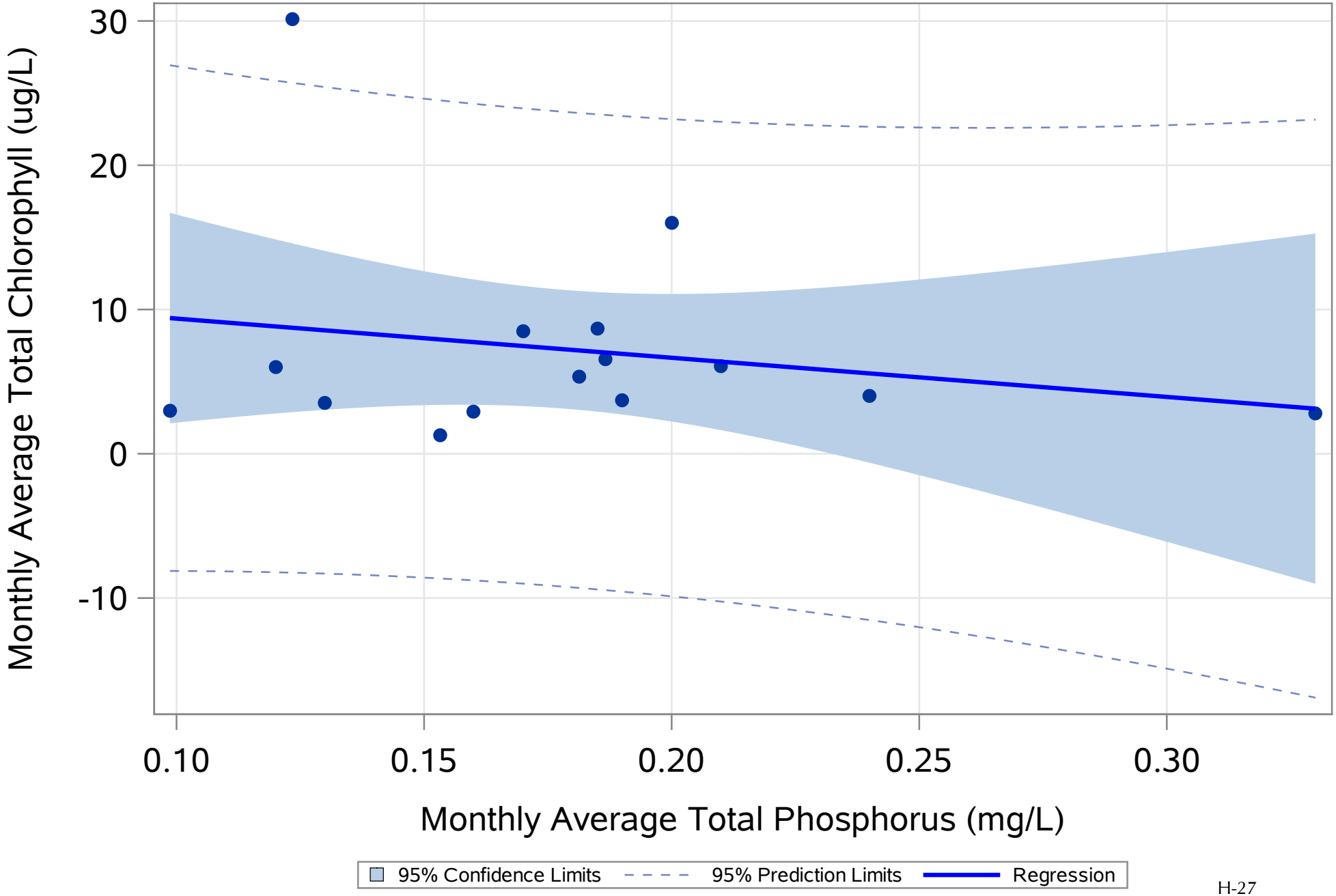
Total Phosphorus and Chlorophyll



WBID 2646 Little Tomoka River - 3F

Total Phosphorus and Chlorophyll

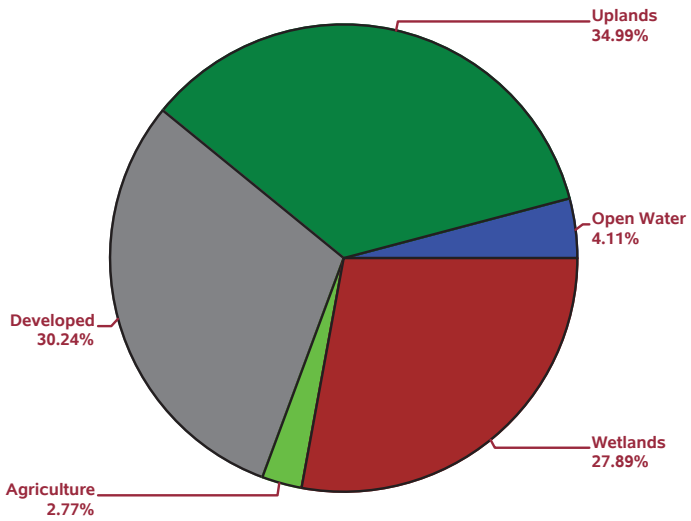



WBID 2647 Holly Hill Ditch - 3M
Total Phosphorus and Chlorophyll
Monthly Average Total Chlorophyll (ug/L)
30
20
10
0
-10
0.10
0.15
0.20
0.25
0.30
Monthly Average Total Phosphorus (mg/L)
95% Confidence Limits
95% Prediction Limits
Regression

Appendix B-I
Pie Charts of Basin-Specific Land Use Groups

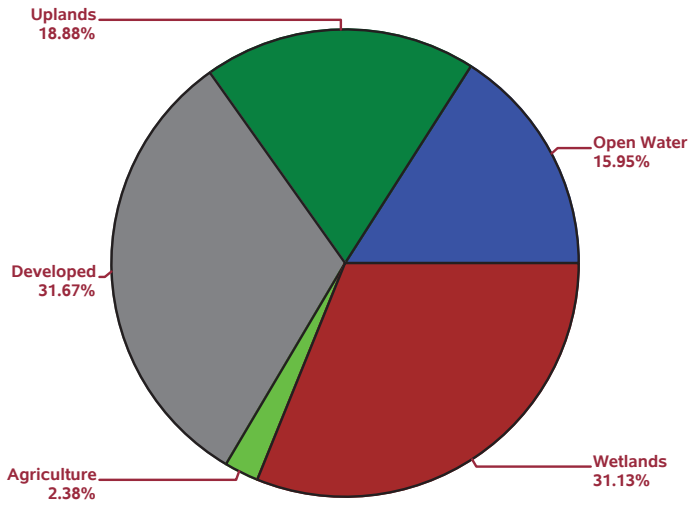
Landuse by Subbasin

Subbasin = H-1



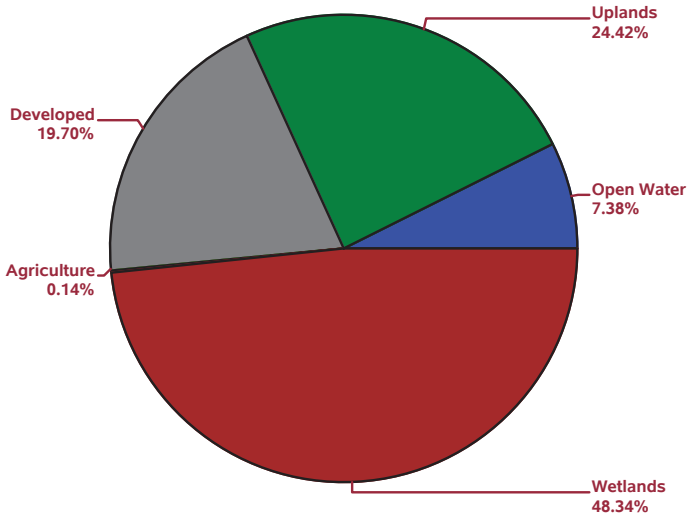
Landuse by Subbasin

Subbasin = H-2



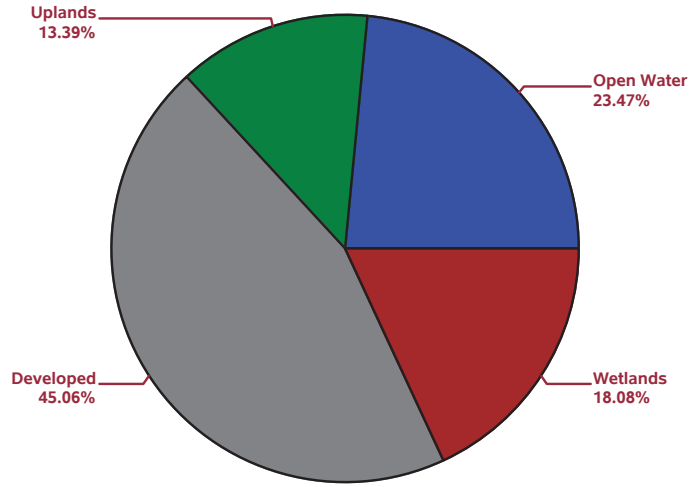
Landuse by Subbasin

Subbasin = H-3



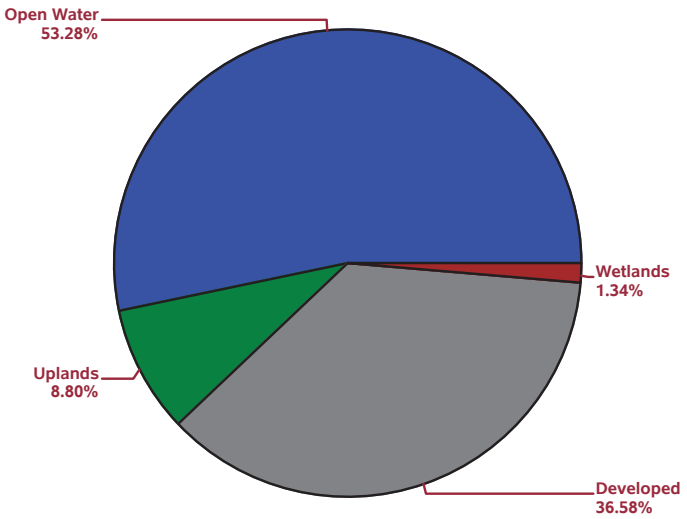
Landuse by Subbasin

Subbasin = H-4



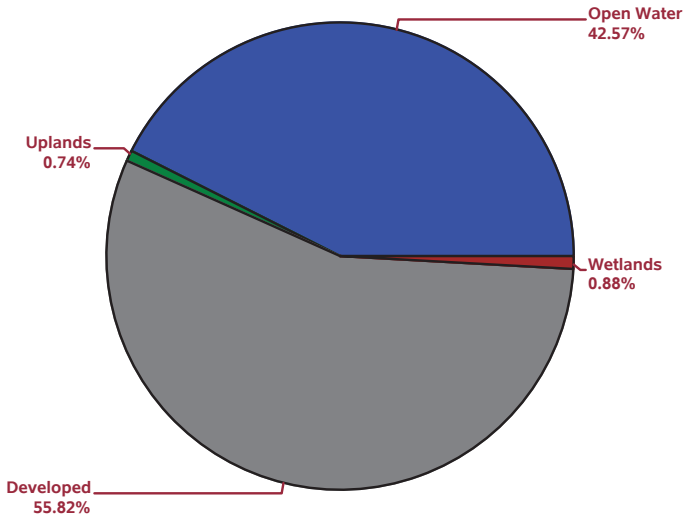
Landuse by Subbasin

Subbasin = H-5



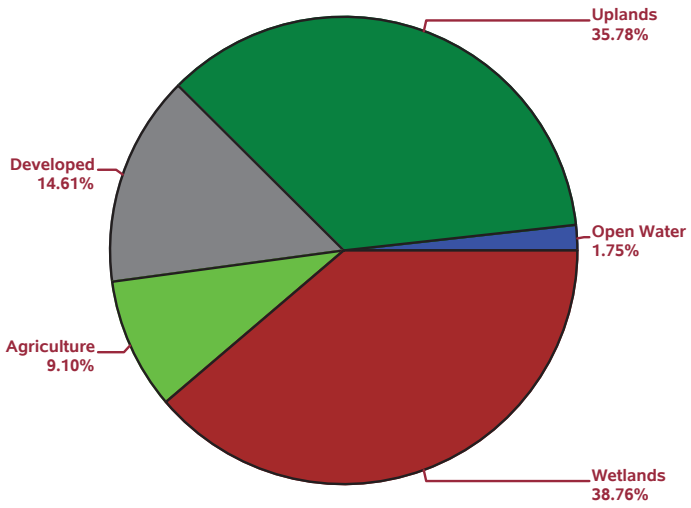
Landuse by Subbasin

Subbasin = H-6



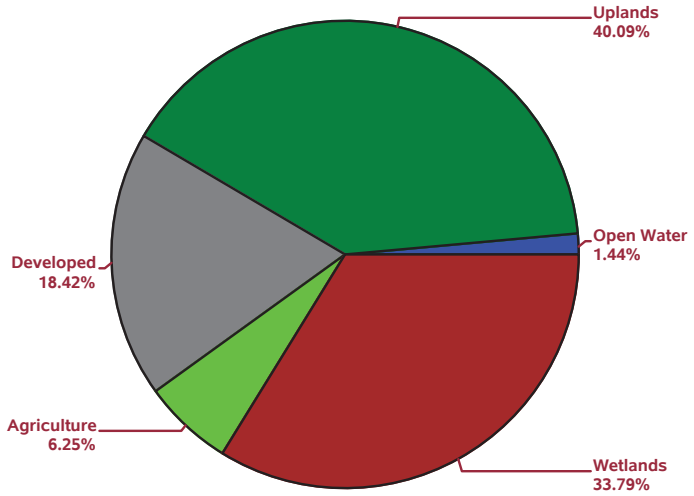
Landuse by Subbasin

Subbasin = T-1



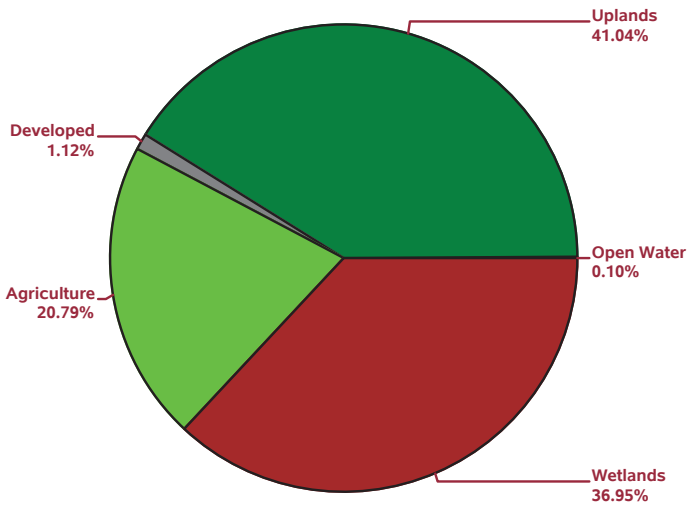
Landuse by Subbasin

Subbasin = T-2



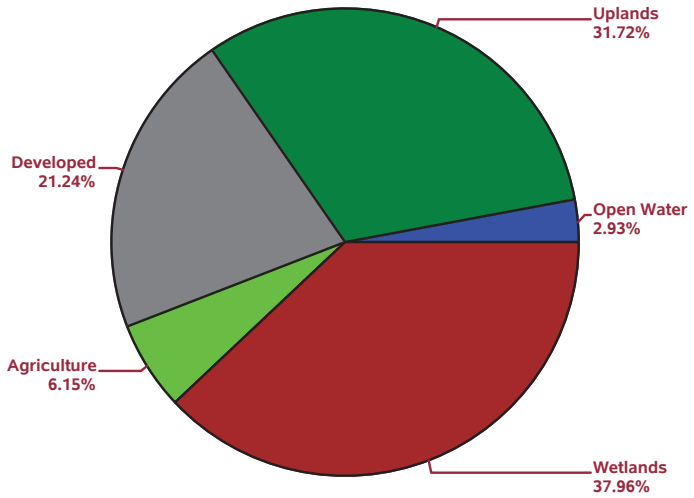
Landuse by Subbasin

Subbasin = T-3



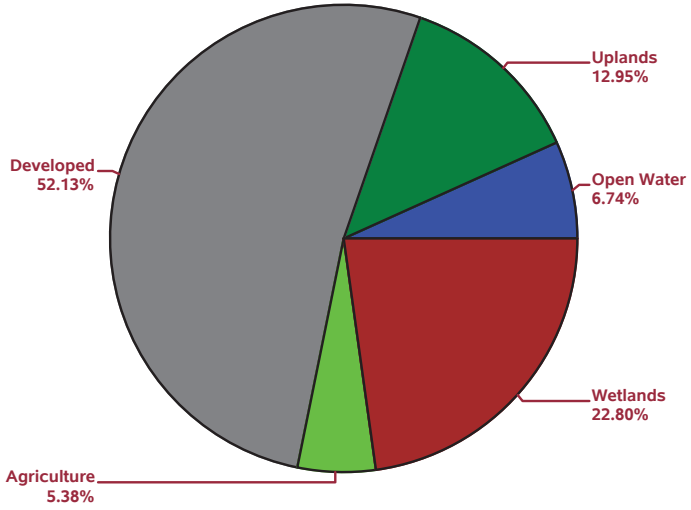
Landuse by Subbasin

Subbasin = T-4



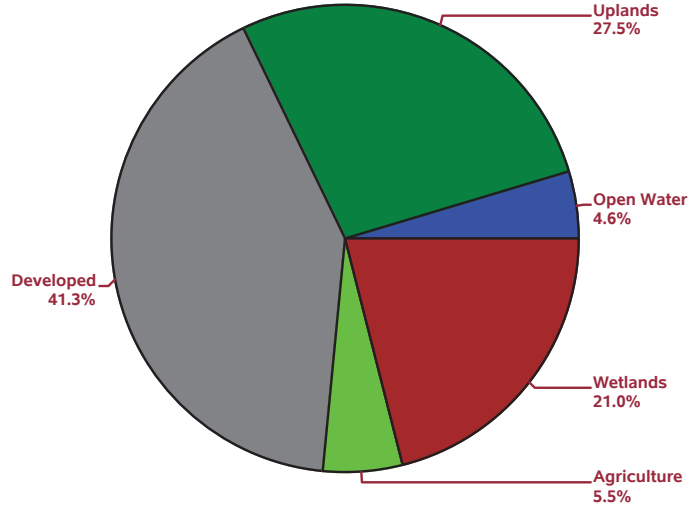
Landuse by Subbasin

Subbasin = T-5



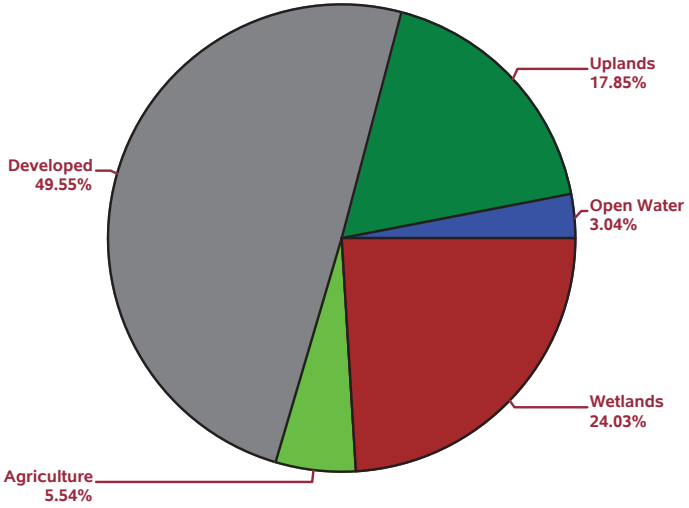
Landuse by Subbasin

Subbasin = T-6



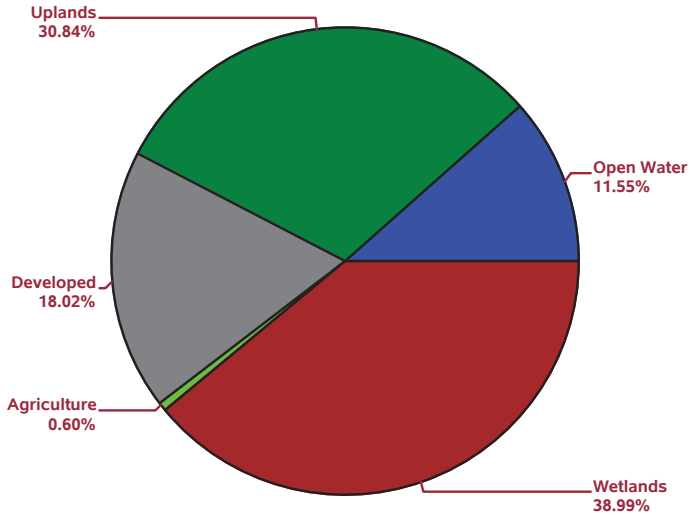
Landuse by Subbasin

Subbasin = T-7



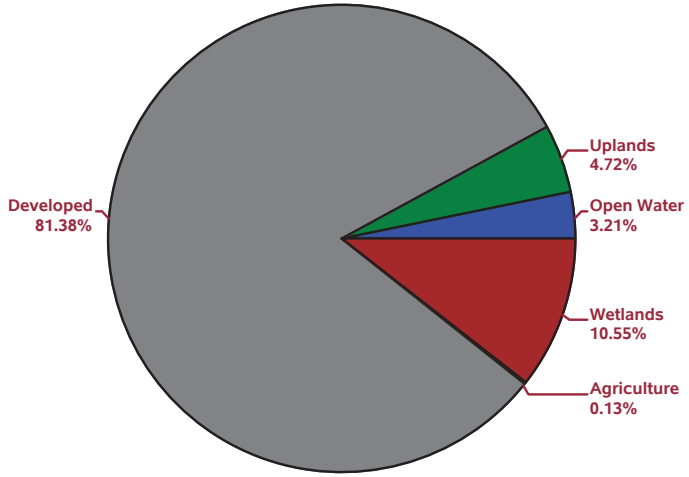
Landuse by Subbasin

Subbasin = T-8



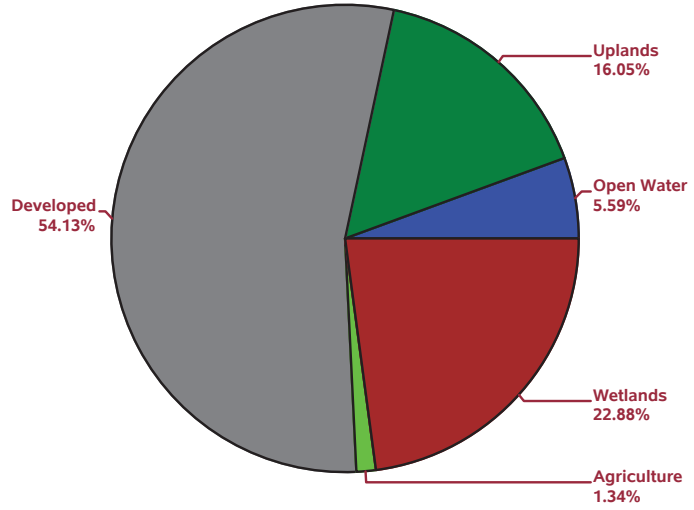
Landuse by Subbasin

Subbasin = T-9



Landuse by Subbasin

Subbasin = T-10



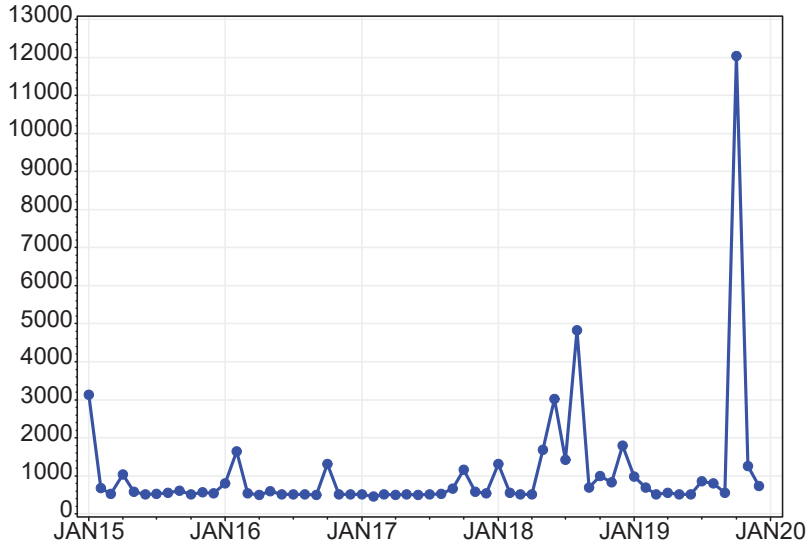
Appendix B-J

Time Series of Halifax and Tomoka River Watershed Loads by Basin

HALIFAX WATERSHED LOADS

TN Load (lbs/month)

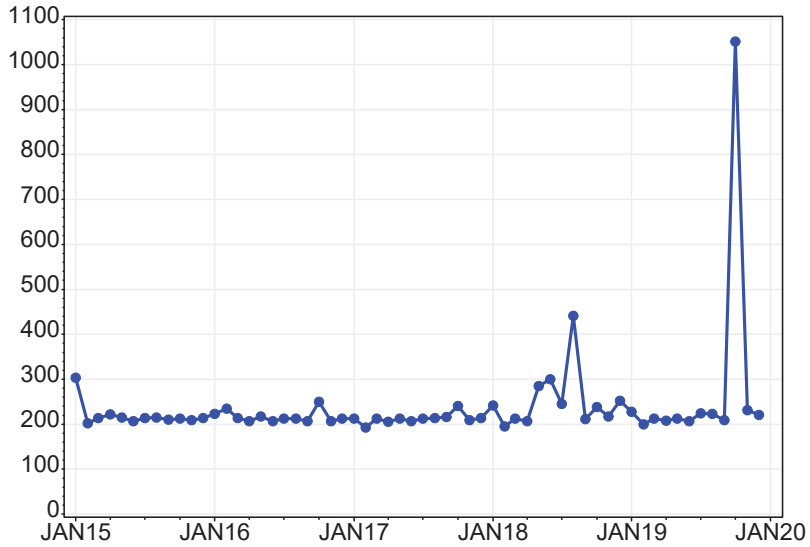
Basin = H-1



HALIFAX WATERSHED LOADS

TP Load (lbs/month)

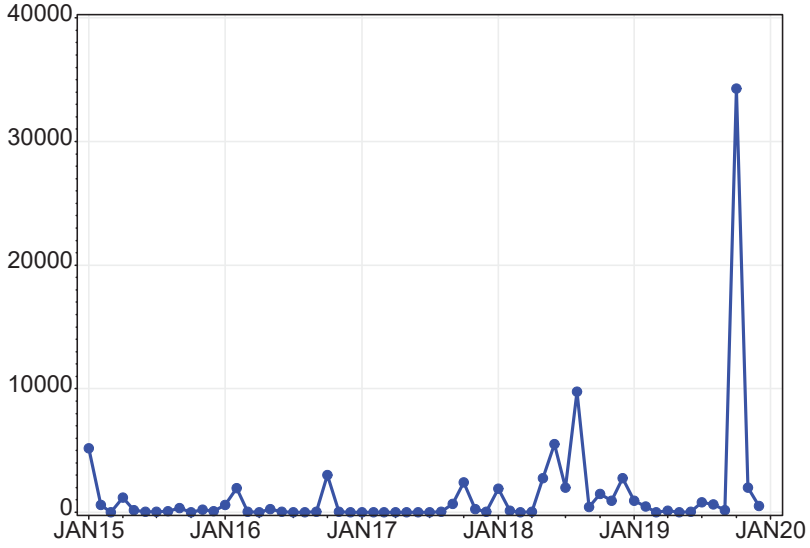
Basin = H-1



HALIFAX WATERSHED LOADS

BOD Load (lbs/month)

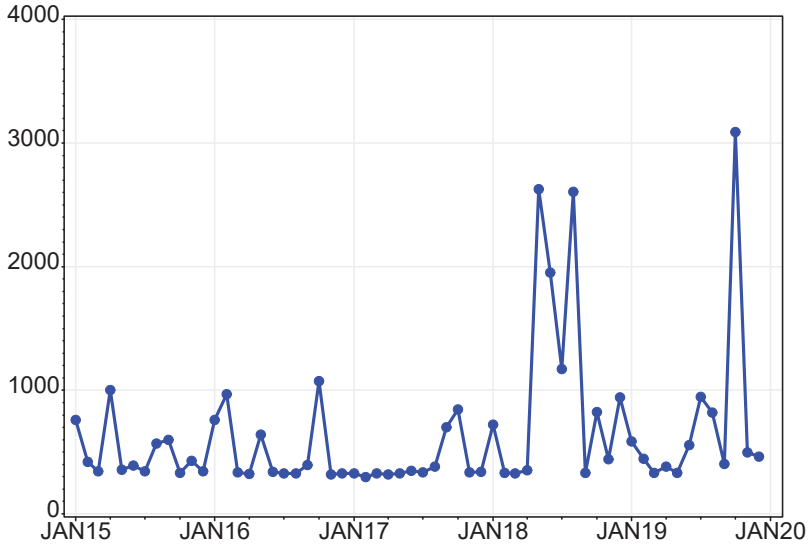
Basin = H-1



HALIFAX WATERSHED LOADS

TN Load (lbs/month)

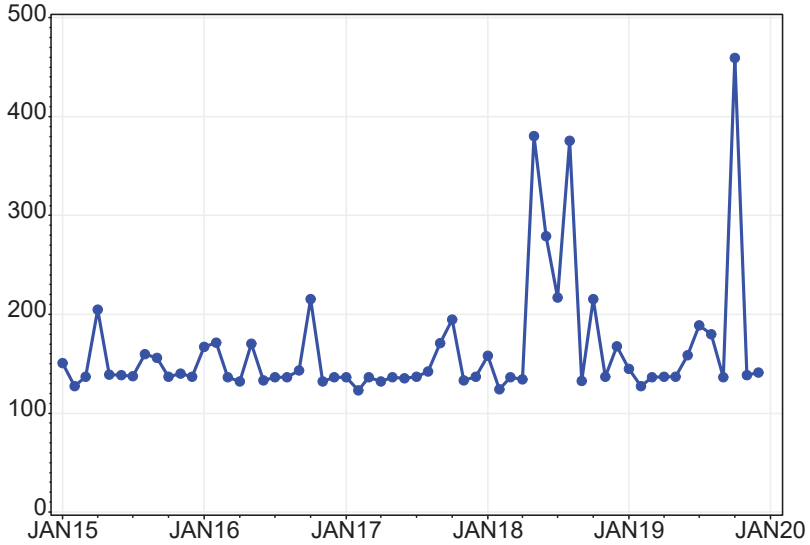
Basin = H-2



HALIFAX WATERSHED LOADS

TP Load (lbs/month)

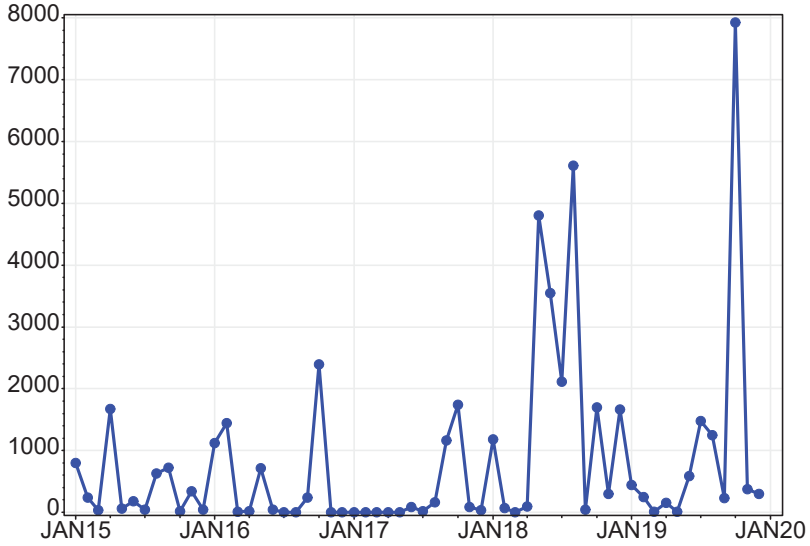
Basin = H-2



HALIFAX WATERSHED LOADS

BOD Load (lbs/month)

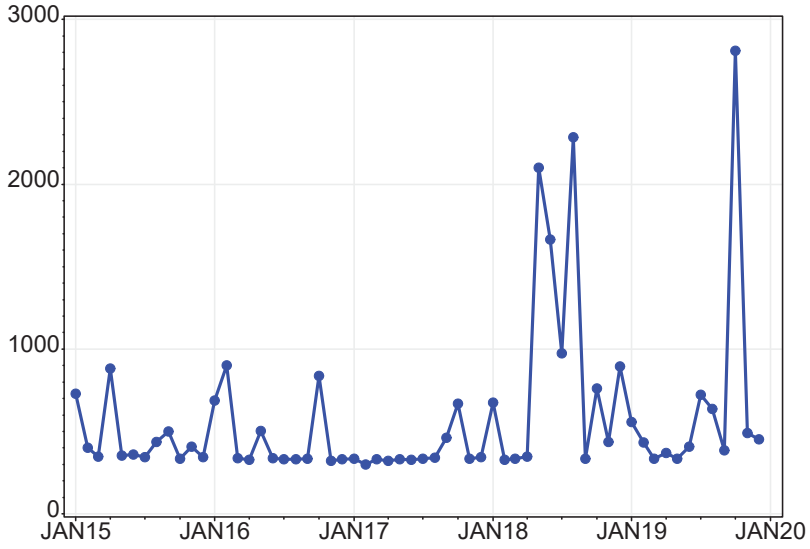
Basin = H-2



HALIFAX WATERSHED LOADS

TN Load (lbs/month)

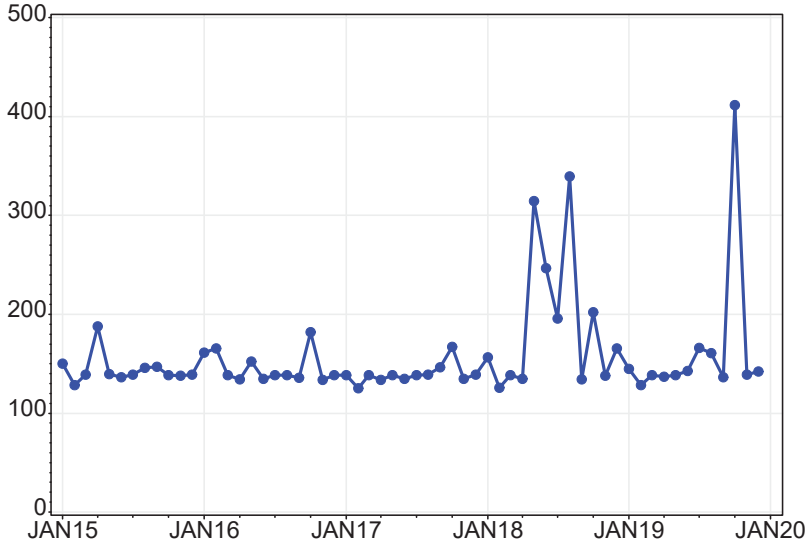
Basin = H-3



HALIFAX WATERSHED LOADS

TP Load (lbs/month)

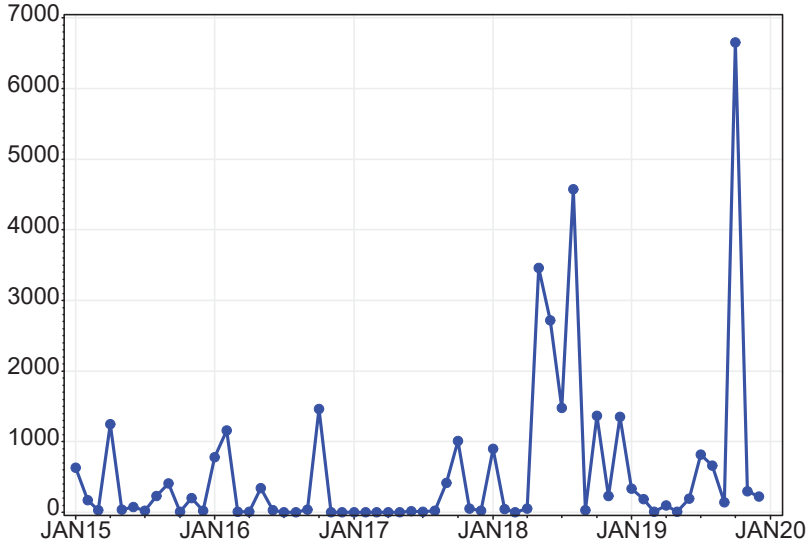
Basin = H-3



HALIFAX WATERSHED LOADS

BOD Load (lbs/month)

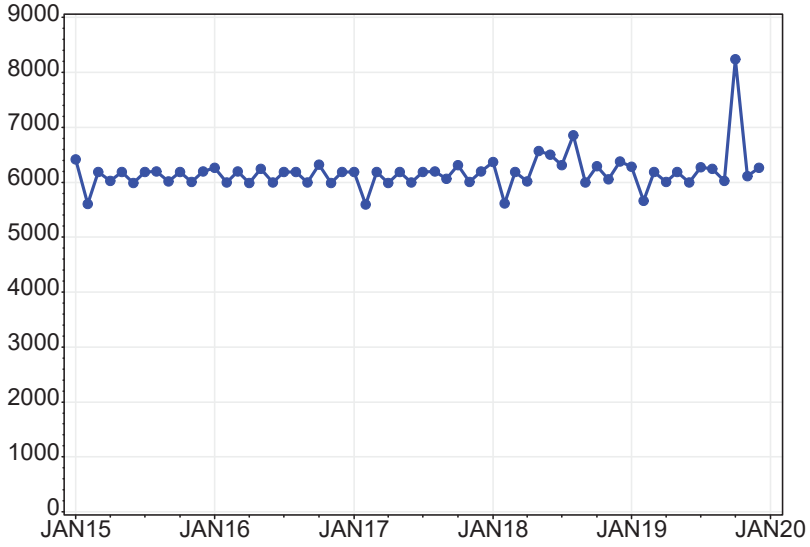
Basin = H-3



HALIFAX WATERSHED LOADS

TN Load (lbs/month)

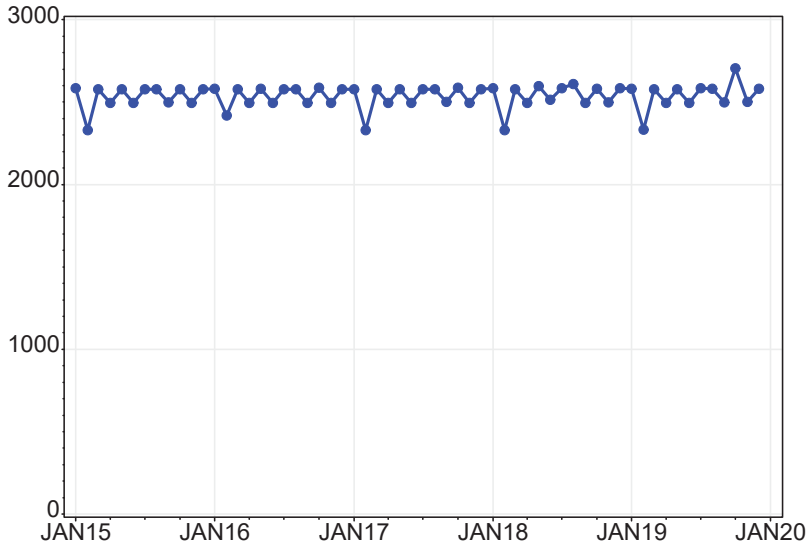
Basin = H-4



HALIFAX WATERSHED LOADS

TP Load (lbs/month)

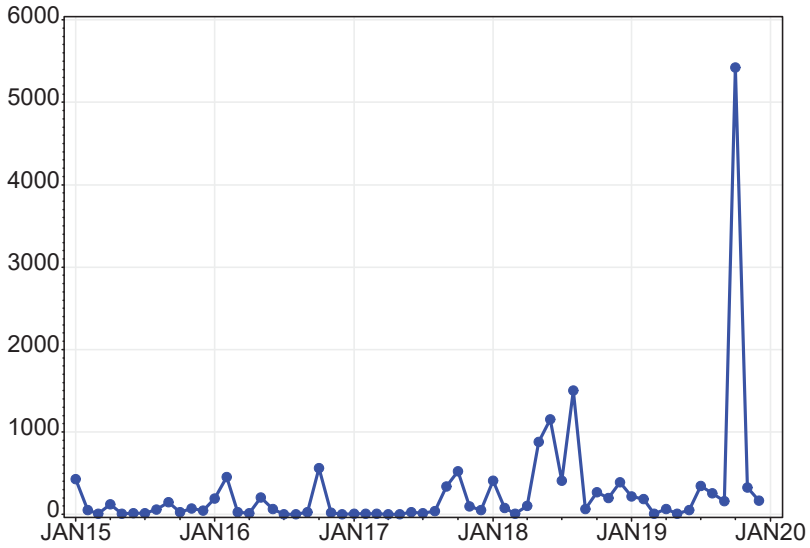
Basin = H-4



HALIFAX WATERSHED LOADS

BOD Load (lbs/month)

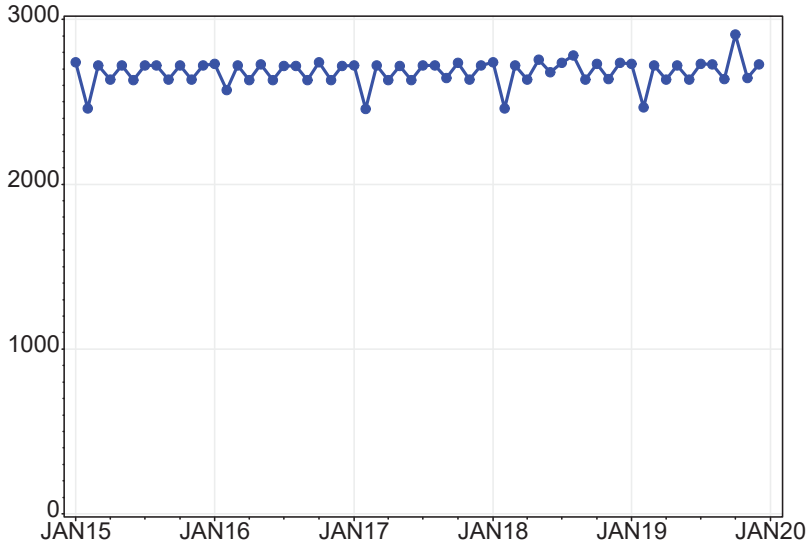
Basin = H-4



HALIFAX WATERSHED LOADS

TN Load (lbs/month)

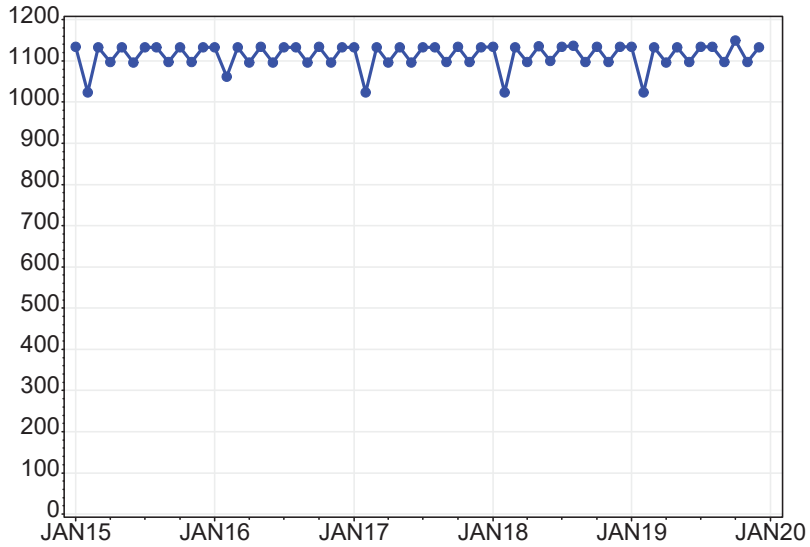
Basin = H-5



HALIFAX WATERSHED LOADS

TP Load (lbs/month)

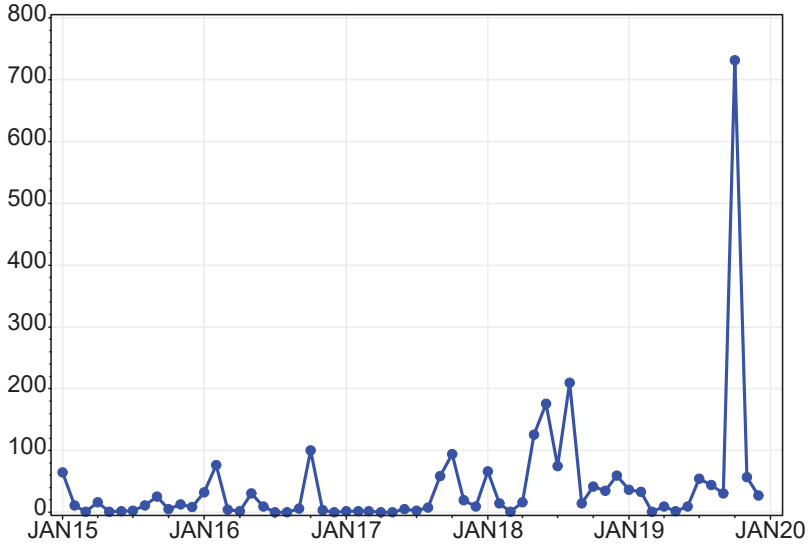
Basin = H-5



HALIFAX WATERSHED LOADS

BOD Load (lbs/month)

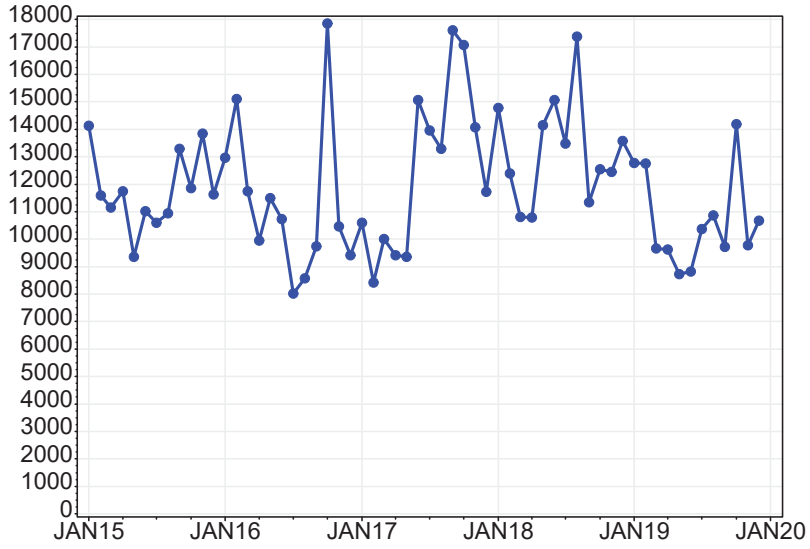
Basin = H-5



HALIFAX WATERSHED LOADS

TN Load (lbs/month)

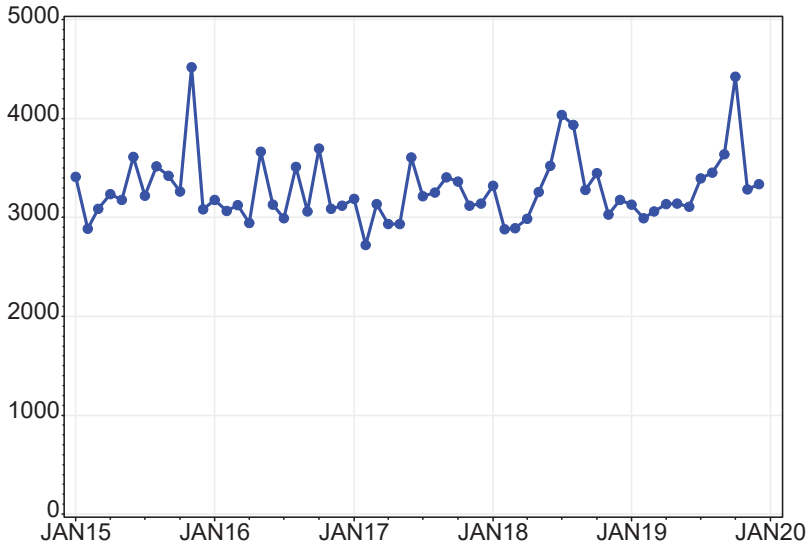
Basin = H-6



HALIFAX WATERSHED LOADS

TP Load (lbs/month)

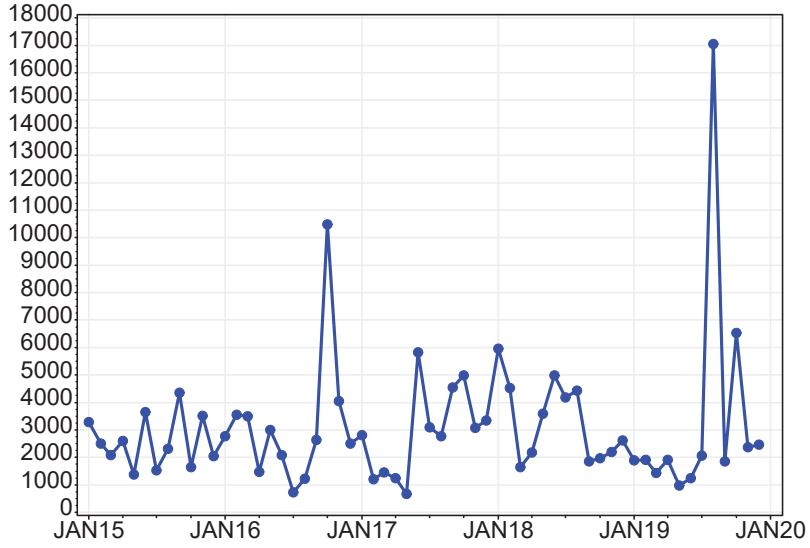
Basin = H-6



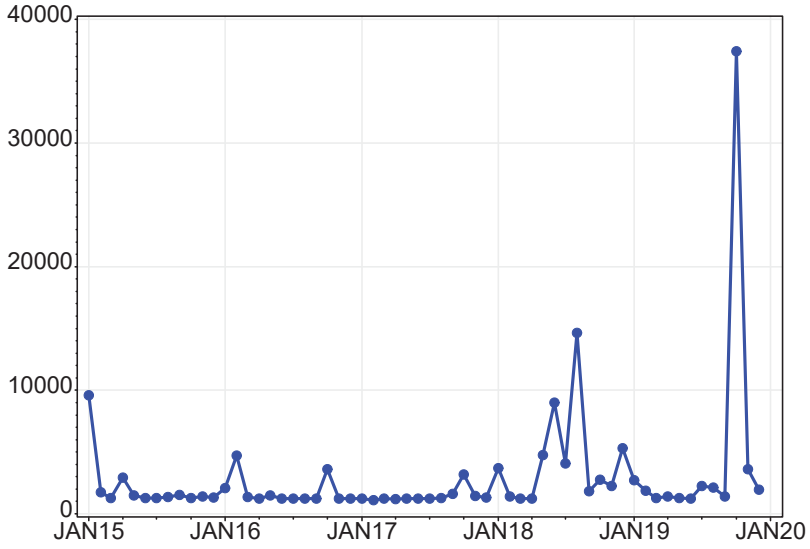
HALIFAX WATERSHED LOADS

BOD Load (lbs/month)

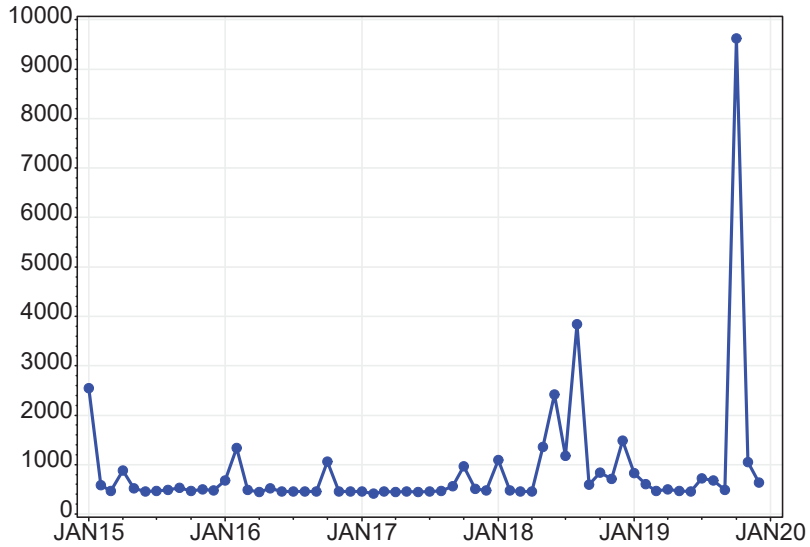
Basin = H-6



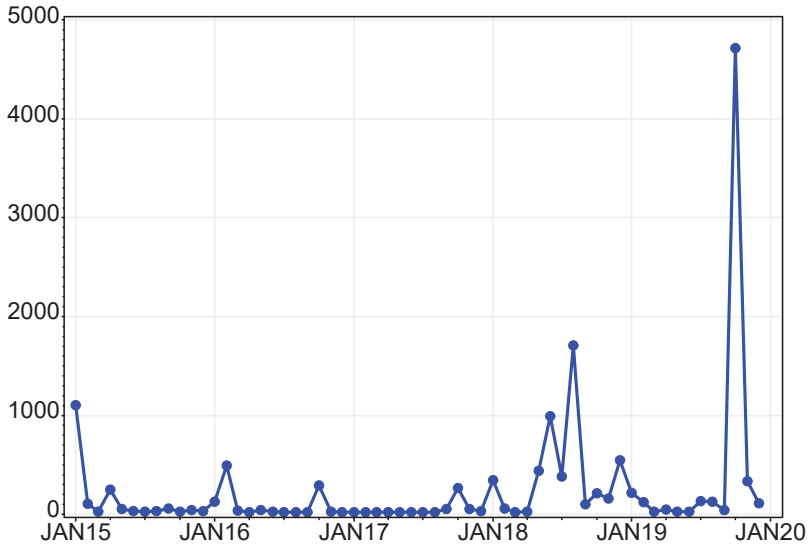
TOMOKA WATERSHED LOADS
TN Load (lbs/month)
Basin = T-1



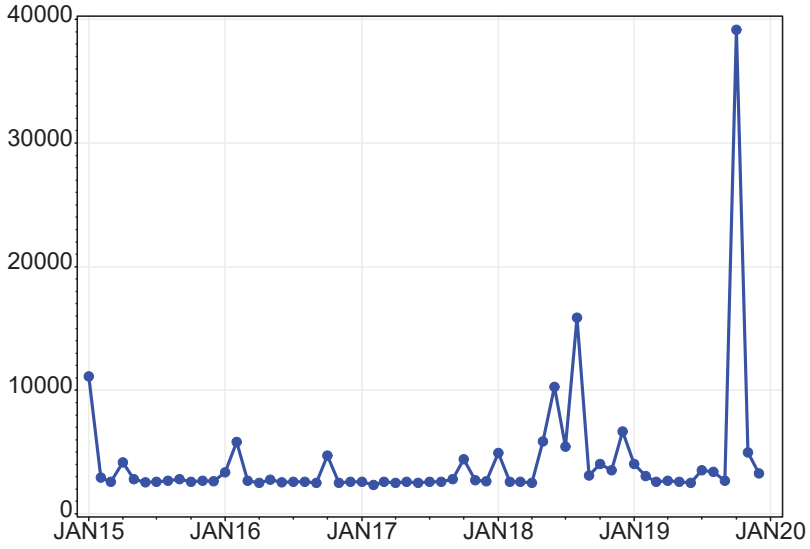
TOMOKA WATERSHED LOADS
TN Load (lbs/month)
Basin = T-2



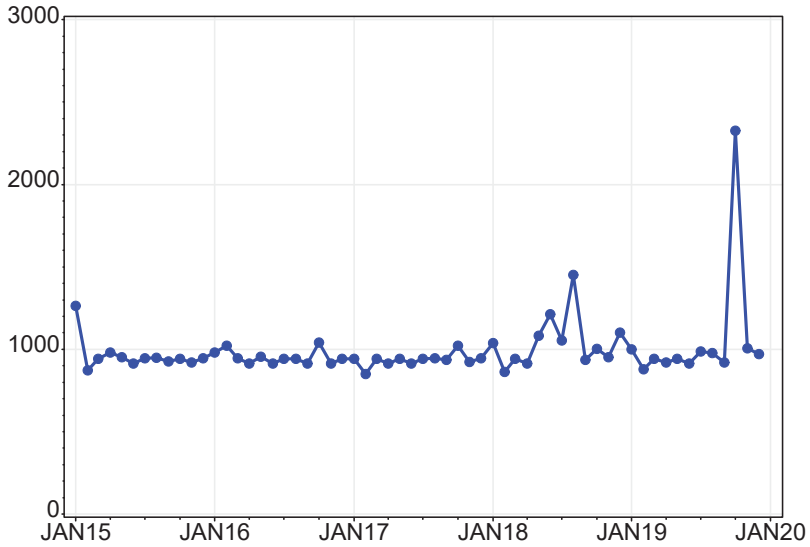
TOMOKA WATERSHED LOADS
TN Load (lbs/month)
Basin = T-3



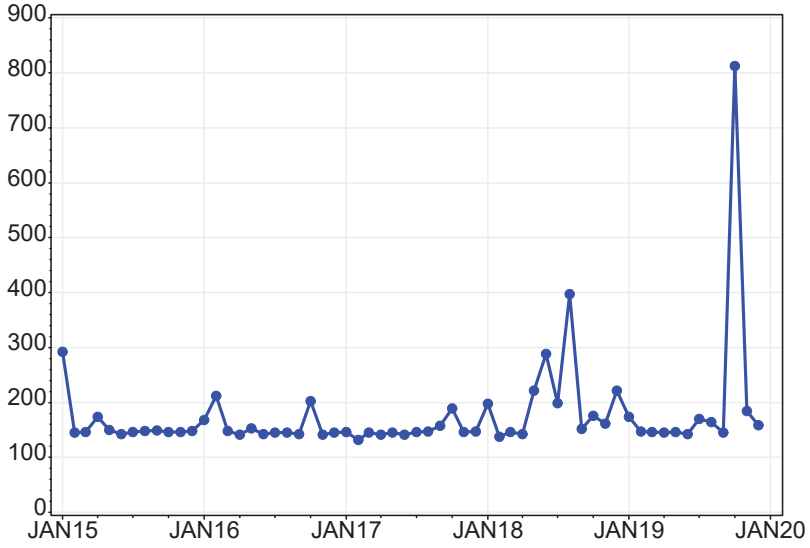
TOMOKA WATERSHED LOADS
TN Load (lbs/month)
Basin = T-4



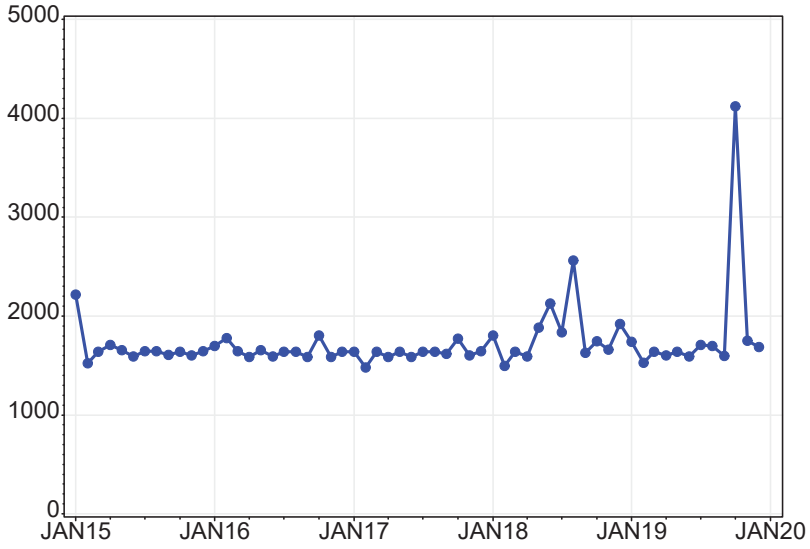
TOMOKA WATERSHED LOADS
TN Load (lbs/month)
Basin = T-5



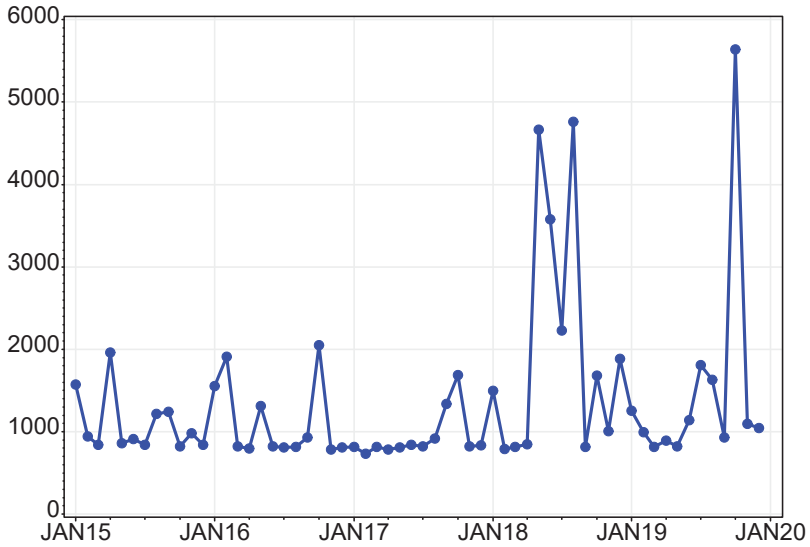
TOMOKA WATERSHED LOADS
TN Load (lbs/month)
Basin = T-6



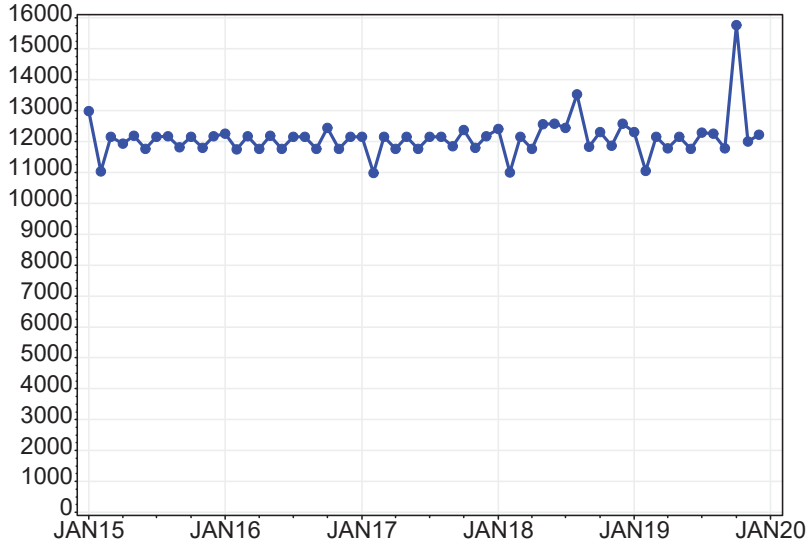
TOMOKA WATERSHED LOADS
TN Load (lbs/month)
Basin = T-7



TOMOKA WATERSHED LOADS
TN Load (lbs/month)
Basin = T-8



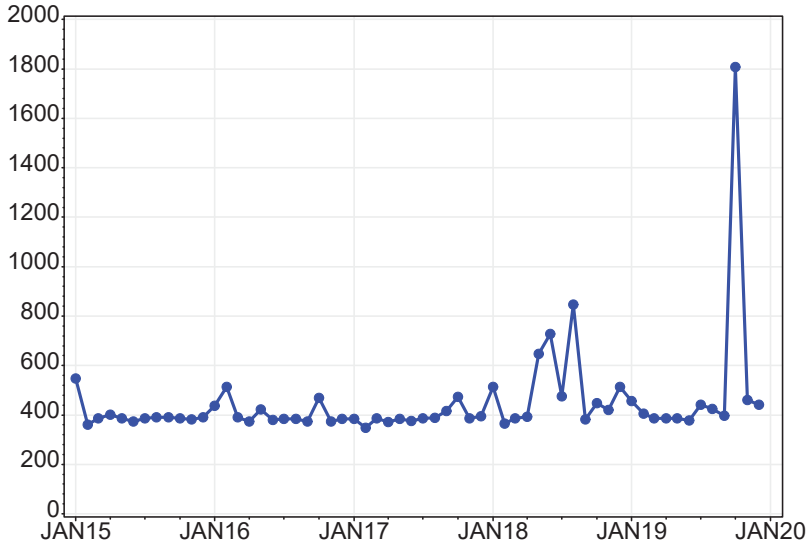
TOMOKA WATERSHED LOADS
TN Load (lbs/month)
Basin = T-9



TOMOKA WATERSHED LOADS

TN Load (lbs/month)

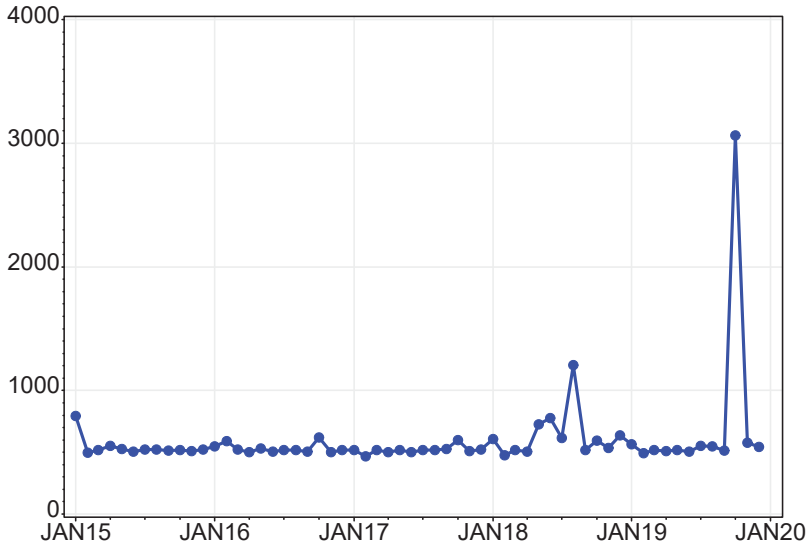
Basin = T-10



TOMOKA WATERSHED LOADS

TP Load (lbs/month)

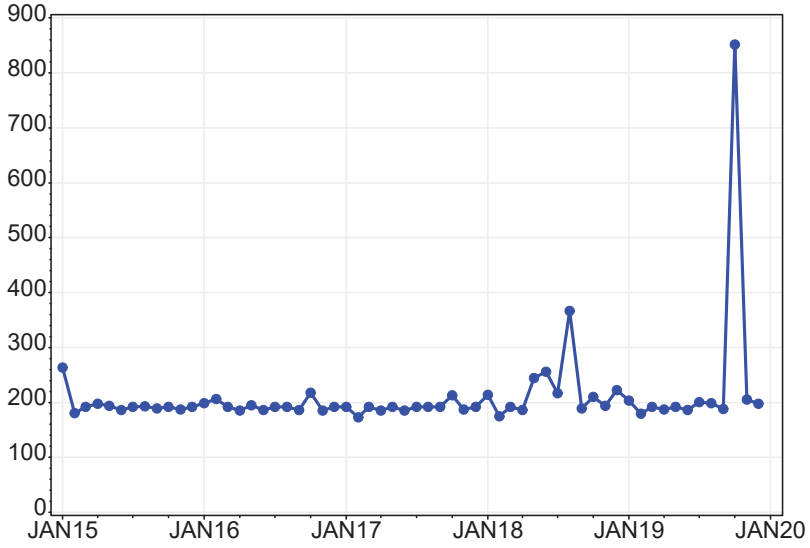
Basin = T-1



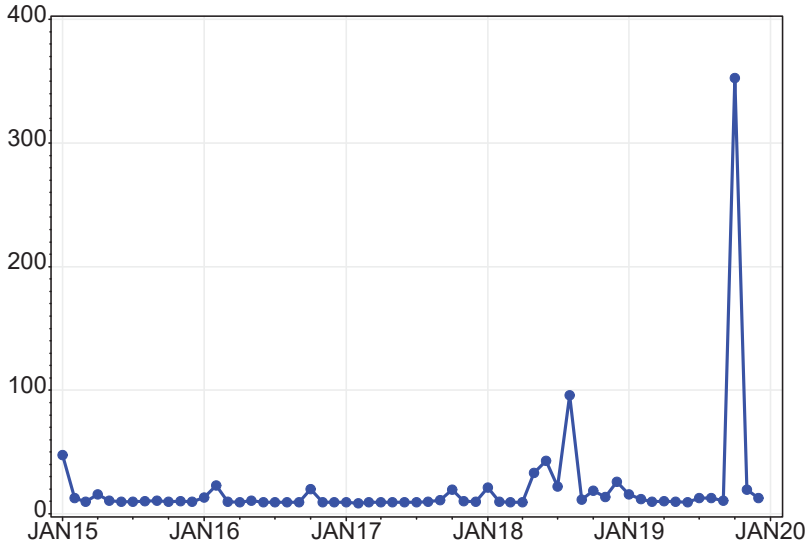
TOMOKA WATERSHED LOADS

TP Load (lbs/month)

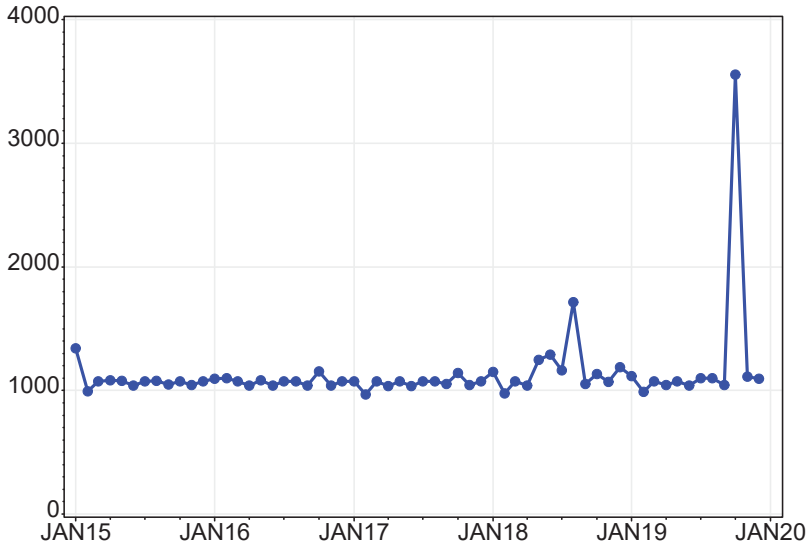
Basin = T-2



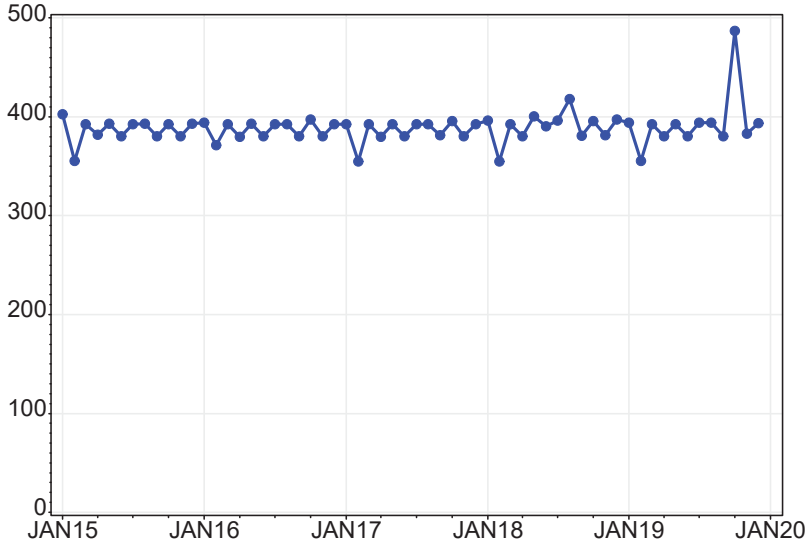
TOMOKA WATERSHED LOADS
TP Load (lbs/month)
Basin = T-3



TOMOKA WATERSHED LOADS
TP Load (lbs/month)
Basin = T-4



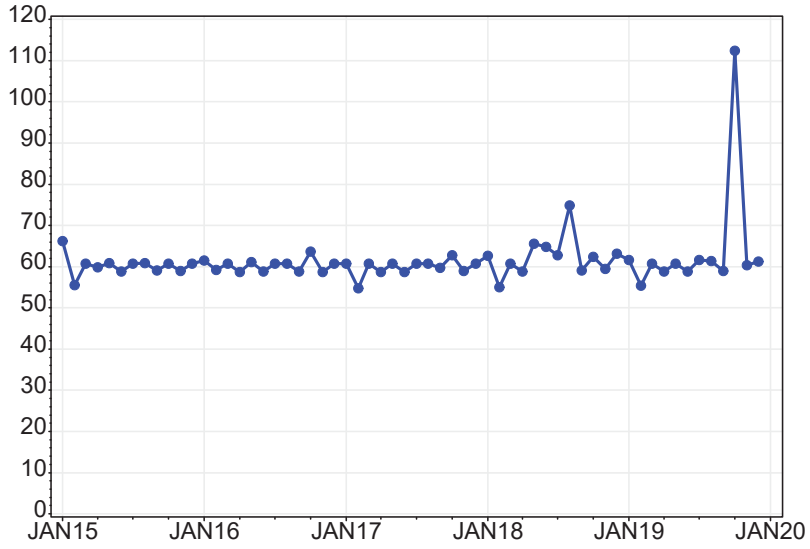
TOMOKA WATERSHED LOADS
TP Load (lbs/month)
Basin = T-5



TOMOKA WATERSHED LOADS

TP Load (lbs/month)

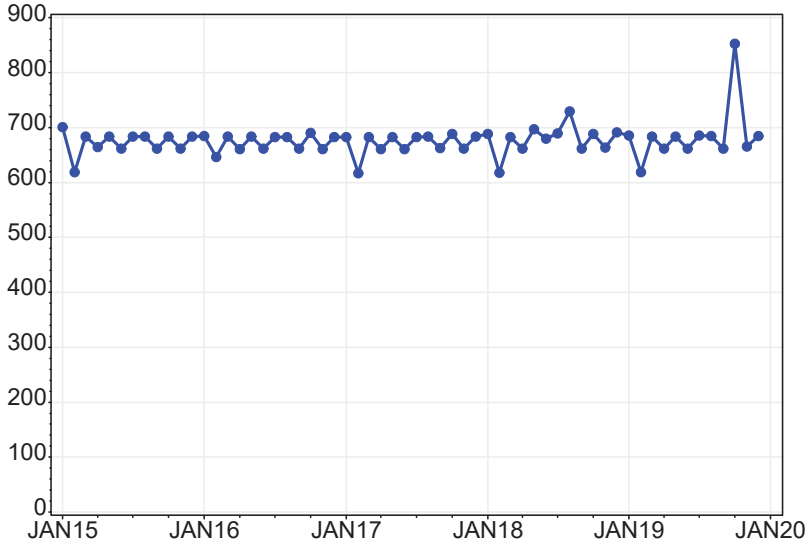
Basin = T-6



TOMOKA WATERSHED LOADS

TP Load (lbs/month)

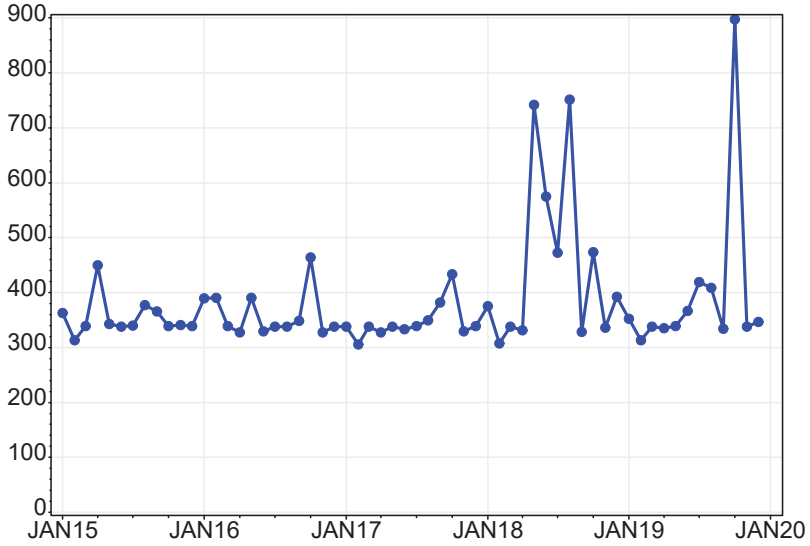
Basin = T-7



TOMOKA WATERSHED LOADS

TP Load (lbs/month)

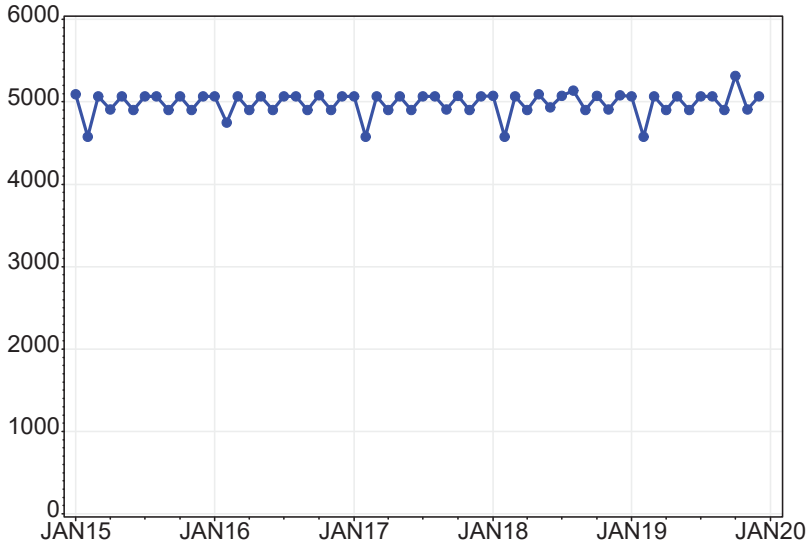
Basin = T-8



TOMOKA WATERSHED LOADS

TP Load (lbs/month)

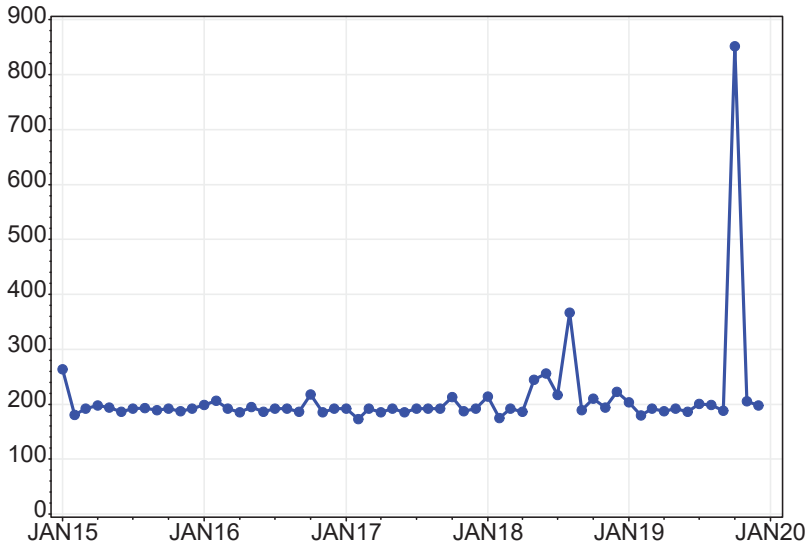
Basin = T-9



TOMOKA WATERSHED LOADS

TP Load (lbs/month)

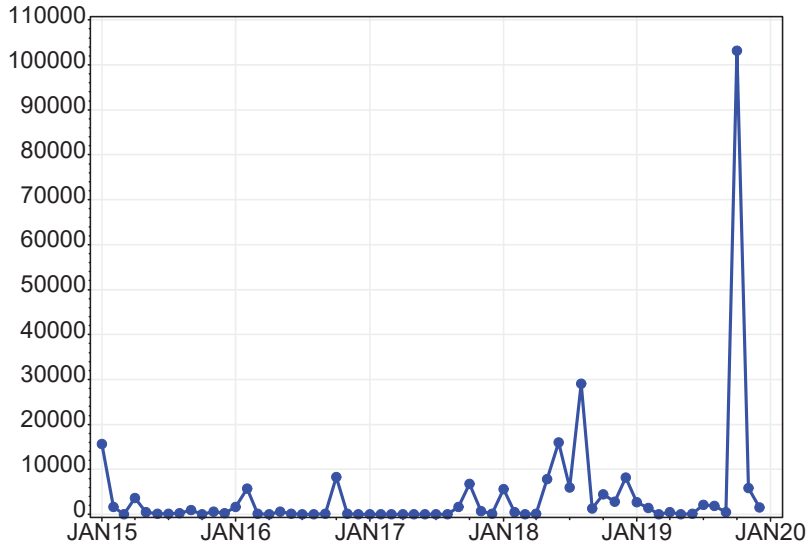
Basin = T-2



TOMOKA WATERSHED LOADS

BOD Load (lbs/month)

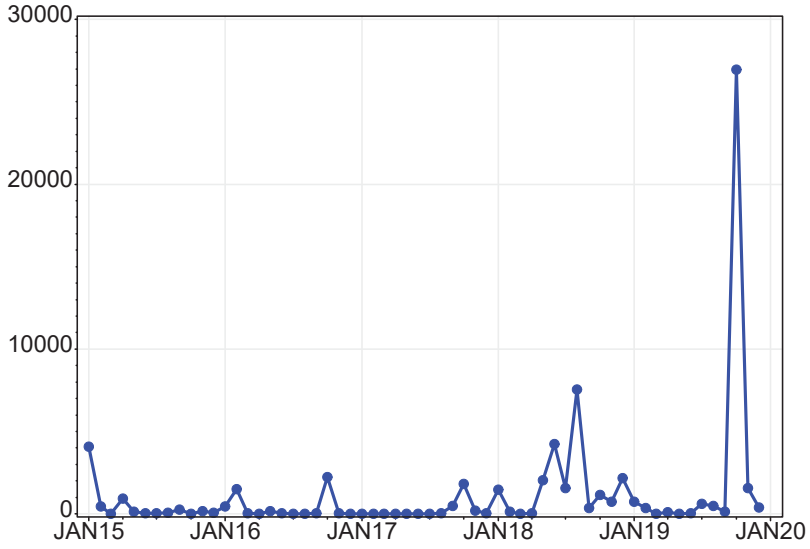
Basin = T-1



TOMOKA WATERSHED LOADS

BOD Load (lbs/month)

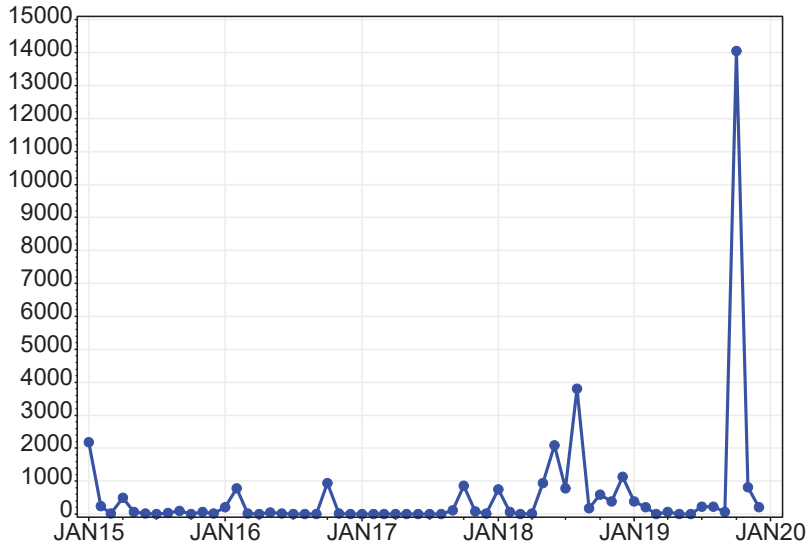
Basin = T-2



TOMOKA WATERSHED LOADS

BOD Load (lbs/month)

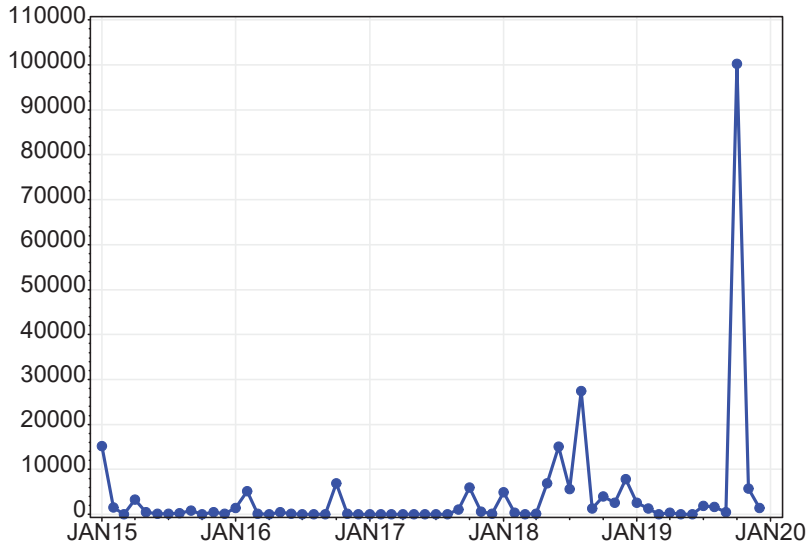
Basin = T-3



TOMOKA WATERSHED LOADS

BOD Load (lbs/month)

Basin = T-4



APPENDIX C

Inundation Charts for At-Risk City-Owned and/or Operated Assets

Chart 1: Evaluated Assets

ALTKEY	ASSET ID	OWNER 1	OWNER 2	DESCRIPTION
2966017	1	CITY OF ORMOND BEACH		Vacant lot - City owned
2995734	2	CITY OF ORMOND BEACH		Road in front of OB Middle School - City owned
2999462	3	CITY OF ORMOND BEACH		Vacant lot - City owned
2995866	4	CITY OF ORMOND BEACH		Vacant lot - City owned
2996161	5	CITY OF ORMOND BEACH		Vacant lot - City owned
3012321	6	CITY OF ORMOND BEACH		Vacant lot - City owned
3017340	7	CITY OF ORMOND BEACH		Vacant lot - City owned
3003098	8	CITY OF ORMOND BEACH		Vacant lot - City owned
3033752	9	CITY OF ORMOND BEACH		Vacant lot - City owned
3033671	10	CITY OF ORMOND BEACH		Municipal Airport - City owned
3034040	11	CITY OF ORMOND BEACH		Vacant lot - City owned
3043391	12	CITY OF ORMOND BEACH		Vacant lot - City owned
3044011	13	CITY OF ORMOND BEACH		Vacant lot - City owned
3044525	14	CITY OF ORMOND BEACH		Fishing park - City owned
3045696	15	CITY OF ORMOND BEACH		The Casements culture center - City owned
3045769	16	CITY OF ORMOND BEACH		Ormond Memorial Art Museum & Gardens - City owned
3051718	17	CITY OF ORMOND BEACH		Cassin Young Memorial Post - City owned
3051912	18	CITY OF ORMOND BEACH		OB Police Dept. & Animal Control - City owned
3052293	19	CITY OF ORMOND BEACH		Cassen Park for boating & fishing - City owned
3053966	20	CITY OF ORMOND BEACH		Bailey Riverbridge Gardens park - City owned
3037073	21	CITY OF ORMOND BEACH		Vacant lot - City owned
3054091	22	CITY OF ORMOND BEACH		Ormond Beach City Hall
3054288	23	CITY OF ORMOND BEACH		Vacant lot - City owned
3056493	24	CITY OF ORMOND BEACH		Vacant lot - City owned
3045106	25	CITY OF ORMOND BEACH		Speed Park motorsports - City owned
3045700	26	CITY OF ORMOND BEACH		MacDonald House Welcome Center - City owned
3046951	27	CITY OF ORMOND BEACH		Vacant lot - City owned
3065824	28	CITY OF ORMOND BEACH		Vacant lot - City owned
3051742	29	CITY OF ORMOND BEACH		Residential - City owned
3052129	30	CITY OF ORMOND BEACH		Ormond Beach Riverside Church - City owned
3052609	31	CITY OF ORMOND BEACH		Vacant lot - City owned
3052617	32	CITY OF ORMOND BEACH		Vacant lot - City owned
3054211	33	CITY OF ORMOND BEACH		Road next to OB Elementary School - City owned
3054911	34	CITY OF ORMOND BEACH		Nova Community Park - City owned
3054920	35	CITY OF ORMOND BEACH		Vacant lot - City owned
3067401	36	CITY OF ORMOND BEACH		Vacant lot - City owned
3075773	37	CITY OF ORMOND BEACH		Vacant lot - City owned
3078845	38	CITY OF ORMOND BEACH		Burial Mound - City owned
3064721	39	CITY OF ORMOND BEACH		Vacant lot - City owned
3065859	40	CITY OF ORMOND BEACH		Municipal Drainage Easement - City owned
3067428	41	CITY OF ORMOND BEACH		Vacant lot - City owned
3067436	42	CITY OF ORMOND BEACH		Vacant lot - City owned
3087232	43	CITY OF ORMOND BEACH		Local park - City owned
3075552	44	CITY OF ORMOND BEACH		Vacant lot - City owned
3075692	45	CITY OF ORMOND BEACH		Vacant lot - City owned
3076214	46	CITY OF ORMOND BEACH		Ormond Beach Fire Station #92 - City owned
3077857	47	CITY OF ORMOND BEACH		PAL Parking - City owned
3077865	48	CITY OF ORMOND BEACH		Ormond Beach Police Athletic - City owned
3078284	49	CITY OF ORMOND BEACH		Vacant lot - City owned
3078888	50	CITY OF ORMOND BEACH		Vacant land near Halifax river - City owned
3078896	51	CITY OF ORMOND BEACH		Office of City Attorney - City owned
3090021	52	CITY OF ORMOND BEACH		Vacant lot - City owned

ALTKEY	ASSET ID	OWNER 1	OWNER 2	DESCRIPTION
3084861	53	CITY OF ORMOND BEACH		Ormond Beach Fire Station #91 - City owned
3084993	54	CITY OF ORMOND BEACH		Small residential playground - City owned
3086970	55	CITY OF ORMOND BEACH		Vacant lot - City owned
3087330	56	CITY OF ORMOND BEACH		Vacant lot - City owned
3089162	57	CITY OF ORMOND BEACH		Vacant lot - City owned
3089171	58	CITY OF ORMOND BEACH		Vacant lot - City owned
3094646	59	CITY OF ORMOND BEACH		Andy Romano Beachfront Park
3146361	60	CITY OF ORMOND BEACH		Vacant lot - City owned
3146379	61	CITY OF ORMOND BEACH		Vacant lot - City owned
3152115	62	CITY OF ORMOND BEACH		Vacant lot - City owned
3154843	63	CITY OF ORMOND BEACH		COA Ormond Beach Senior Center - City owned
3158750	64	CITY OF ORMOND BEACH		Vacant canal lot near Halifax River - City owned
3158962	65	CITY OF ORMOND BEACH		OB Environmental Discovery Center - City owned
3159497	66	CITY OF ORMOND BEACH		Vacant lot near OB Env. Disc. Center - City owned
3159560	67	CITY OF ORMOND BEACH		Central Park & lake - City owned
3161319	68	CITY OF ORMOND BEACH		Vacant lot - City owned
3161955	69	CITY OF ORMOND BEACH		Fire Station #93
3165241	70	CITY OF ORMOND BEACH		Ormond Beach South Ormond Rec
3165811	71	CITY OF ORMOND BEACH		Central Park & lake - City owned
3167686	72	CITY OF ORMOND BEACH		Vacant lot near pond - City owned
3156404	73	CITY OF ORMOND BEACH		Ormond Beach Performing Arts Center - City owned
3156421	74	CITY OF ORMOND BEACH		Vacant lot - City owned
3156595	75	CITY OF ORMOND BEACH		Pollution Control Facility - City owned
3156846	76	CITY OF ORMOND BEACH		Vacant lot - City owned
3156854	77	CITY OF ORMOND BEACH		Land near OB Public Works Department - City owned
3156986	78	CITY OF ORMOND BEACH		Vacant lot - City owned
3159021	79	CITY OF ORMOND BEACH		Air Cooled of Ormond - City owned
3159063	80	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned
3159501	81	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned
3159519	82	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned
3159527	83	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned
3160681	84	CITY OF ORMOND BEACH		Lots near Water Treatment Facility - City owned
3161904	85	CITY OF ORMOND BEACH		Vacant lot - City owned
3162862	86	CITY OF ORMOND BEACH		Vacant lot - City owned
3165292	87	CITY OF ORMOND BEACH		Storage shed near Power Plant - City owned
3166329	88	CITY OF ORMOND BEACH		Lake in OB Env. Disc. Center - City owned
3188675	89	CITY OF ORMOND BEACH		Beach St. park on Halifax River - City owned
3209095	90	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned
3207157	91	CITY OF ORMOND BEACH		Vacant lot - City owned
4080139	92	CITY OF ORMOND BEACH		Vacant lot - City owned
4603638	93	CITY OF ORMOND BEACH		Security First Insurance - Vacant - City owned
4660127	94	CITY OF ORMOND BEACH		Vacant lot - City owned
4662294	95	CITY OF ORMOND BEACH		Vacant lot - City owned
4767185	96	CITY OF ORMOND BEACH		Vacant lot near Riviera Park - City owned
4746765	97	CITY OF ORMOND BEACH		Common Area Airport Business Park - City owned
4748440	98	CITY OF ORMOND BEACH		Vacant lot - City owned
4927719	99	CITY OF ORMOND BEACH		Lot near Police Athletic - City owned
4903984	100	CITY OF ORMOND BEACH		Breakaway Trail - City owned
4967613	101	CITY OF ORMOND BEACH		Vacant lot - City owned
5154378	102	CITY OF ORMOND BEACH		Vacant lot near OB Sports Complex - City owned
5234983	103	CITY OF ORMOND BCH LSD TO	RIVER BEND MGMT GROUP FL LLC	Municipal Golf Course - leased land
5178528	104	CITY OF ORMOND BEACH		Vacant lot - City owned
5184242	105	CITY OF ORMOND BEACH		Vacant lot - City owned
5187225	106	CITY OF ORMOND BEACH		Breakaway Trail - City owned

ALTKEY	ASSET ID	OWNER 1	OWNER 2	DESCRIPTION
5247619	107	CITY OF ORMOND BEACH		Vacant lot - City owned
5285839	108	CITY OF ORMOND BEACH		Airport Rd. Public Site(Fire Stat.?) - City owned
5318168	109	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned
5318371	110	CITY OF ORMOND BEACH		Vacant lot - City owned
5285855	111	CITY OF ORMOND BEACH		Irregular parcel for Water Plant - City owned
5285863	112	CITY OF ORMOND BEACH		Irregular parcel for City park - City owned
5286363	113	CITY OF ORMOND BEACH		Easement lot near Alpine Comm. Corp. - City owned
5391833	114	CITY OF ORMOND BCH LSD TO	STEPHEN SEARLE	Aircraft Hangar - leased lot
5391931	115	CITY OF ORMOND BCH LSD TO	ORMOND AIRPORT HANGARS INC	Aircraft Hangar - leased lot
5391850	116	CITY OF ORMOND BCH LSD TO	K C AVIATION INC	Aircraft Hangar - leased lot
5391876	117	CITY OF ORMOND BCH LSD TO	RAMS AVIATION OF ORMOND BEACH	Aircraft Hangar - leased lot
5391892	118	CITY OF ORMOND BCH LSD TO	DON WILLIS	Aircraft Hangar - leased lot
5391914	119	CITY OF ORMOND BCH LSD TO	MAC CHARTER INC	Aircraft Hangar - leased lot
5458326	120	CITY OF ORMOND BEACH		Vacant lot - City owned
5471225	121	CITY OF ORMOND BEACH		New Water Retention Area - City owned
5504395	122	CITY OF ORMOND BEACH		Vacant lot underground pipe enclosure - City owned
5613241	123	CITY OF ORMOND BCH LSD BAITHSE		Bait & Tackle Shop - Leased lot
5616258	124	CITY OF ORMOND BEACH		Aircraft Hangar - leased lot
5616266	125	CITY OF ORMOND BCH LSD CAVALIR		Aircraft Hangar - leased lot
5598322	126	CITY OF ORMOND BCH LSD TO		Aircraft Hangar - leased lot
5616274	127	CITY OF ORMOND BCH LSD TO		Aircraft Hangar - leased lot
5616282	128	CITY OF ORMOND BCH LSD TO	ANTHONY & SHEILA CASSATA	Aircraft Hangar - leased lot
5616339	129	CITY OF ORMOND BCH LSD CAVALIR		Aircraft Hangar - leased lot
5676684	130	CITY OF ORMOND BEACH	ST JOHNS RIVER WATER MGMT	Vacant lot resid. Little Tomoka River-City owned
5691527	131	CITY OF ORMOND BEACH		Aircraft Hangar - leased lot
5691543	132	CITY OF ORMOND BCH LSD TO	NEWSLOW	Aircraft Hangar - leased lot
5651258	133	CITY OF ORMOND BCH LSD TO	ORMOND BEACH AVIATION INC	Aircraft Hangar - leased lot
5651266	134	CITY OF ORMOND BCH LSD TO	RAMS AVIATION OF ORMOND BEACH	Aircraft Hangar - leased lot
5691551	135	CITY OF ORMOND BCH LSD TO	HANGER 7 AVIATION LLC	Aircraft Hangar - leased lot
5691560	136	CITY OF ORMOND BCH LSD TO	PORTER	Aircraft Hangar - leased lot
5691578	137	CITY OF ORMOND BCH LSD TO	ATTN BERT MORROW MD	Aircraft Hangar - leased lot
5834182	138	CITY OF ORMOND BCH LSD TO	SALTAIRE OF CNTRL FLORIDA INC	Aircraft Hangar - leased lot
5841901	139	CITY OF ORMOND BCH LSD TO	TOMLINSON AVIATION INC	Aircraft Hangar - leased lot
5849210	140	CITY OF ORMOND BEACH		Life station - City owned
5972569	141	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned
6083282	142	CITY OF ORMOND BEACH		Mysterious Park - City owned
6189242	143	CITY OF ORMOND BEACH		Vacant lot - City owned
6214930	144	CITY OF ORMOND BEACH		Vacant lot - City owned
6361363	145	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned
6361371	146	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned
6361631	147	CITY OF ORMOND BEACH		Vacant lot - City owned
6474613	148	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned
6827303	149	CITY OF ORMOND BCH LSD TO	MAC CHARTER INC	Aircraft Hangar - leased lot
6743053	150	CITY OF ORMOND BEACH		Sanitary sewer lift station - City owned
6867330	151	CITY OF ORMOND BCH LSD TO	AEROSPACE HOLDINGS LLC	Aircraft Hangar - leased lot
6887969	152	CITY OF ORMOND BEACH		Common area Airport Business Park - City owned
6887977	153	CITY OF ORMOND BEACH		Common area Airport Business Park - City owned
6887985	154	CITY OF ORMOND BEACH		Conservation tracts Airport park - City owned
6887993	155	CITY OF ORMOND BEACH		Conservation tracts Airport park - City owned
6852391	156	CITY OF ORMOND BEACH		National Gardens Park - City owned
6852651	157	CITY OF ORMOND BCH LSD TO	ORMOND BEACH AVIATION INC	Aircraft Hangar - leased lot
6857881	158	CITY OF ORMOND BEACH		Sanitary sewer lift station - City owned
6863261	159	CITY OF ORMOND BCH LSD TO	TOMLINSON AVIATION INC	Aircraft Hangar - leased lot
6867291	160	CITY OF ORMOND BCH LSD TO	MAC CHARTER INC	Aircraft Hangar Condos - leased lot

ALTKEY	ASSET ID	OWNER 1	OWNER 2	DESCRIPTION	
6867305	161	CITY OF ORMOND BCH LSD TO	BLUE SKIES AVIATION DAYTONA II	Aircraft Hangar Condos - leased lot	
6867313	162	CITY OF ORMOND BCH LSD TO	MYERS MICHAEL & PAMELA H	Aircraft Hangar Condos - leased lot	
6867321	163	CITY OF ORMOND BCH LSD TO	PEIER HEINZ TR	Aircraft Hangar Condos - leased lot	
7002892	164	CITY OF ORMOND BCH LSD TO	MAC HANGARS NO 2 CONDO ASSOC	Aircraft Hangar Condos - leased lot	
7002906	165	CITY OF ORMOND BCH LSD TO	CHARLIE LIMA HANGAR LLC	Aircraft Hangar Condos - leased lot	
6895678	166	CITY OF ORMOND BEACH		Vacant lot - City owned	
6895741	167	CITY OF ORMOND BEACH		Vacant lot - City owned	
7041171	168	CITY OF ORMOND BEACH		Vacant lot - City owned	
7216752	169	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	
7002914	170	CITY OF ORMOND BCH LSD TO	MAPPING RESOURCE GROUP INC	Aircraft Hangar Condos - leased lot	
7002922	171	CITY OF ORMOND BCH LSD TO	BERNARD D HARNER & SON INC	Aircraft Hangar Condos - leased lot	
7002931	172	CITY OF ORMOND BCH LSD TO	AIRCRAFT CHARTER & LOGISTICS	Aircraft Hangar Condos - leased lot	
7216621	173	CITY OF ORMOND BEACH		OB Public Works Dept. - City owned	WWTP
7216728	174	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	
7216736	175	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	
7400731	176	CITY OF ORMOND BEACH		Park in Tomoka Oaks CC Estates - City owned	
7400758	177	CITY OF ORMOND BEACH		Park in Tomoka Oaks CC Estates - City owned	
7561077	178	CITY OF ORMOND BEACH		Vacant - Security First Insurance - City owned	
7708701	179	CITY OF ORMOND BEACH		Drainage & Maint. easement - City owned	
7400723	180	CITY OF ORMOND BEACH		Park in Tomoka Oaks CC Estates - City owned	
7525879	181	CITY OF ORMOND BEACH		Pump station @ Airport Bus. Park - City owned	
7763265	182	CITY OF ORMOND BEACH		Vacant lot - City owned	
7796139	183	CITY OF ORMOND BEACH		Vacant lot near OB Riverside Church - City owned	
7974347	184	CITY OF ORMOND BEACH		Vacant lot - City owned	
7974398	185	CITY OF ORMOND BEACH		Vacant lot - City owned	
7975866	186	CITY OF ORMOND BEACH		Vacant lot - City owned	
8003606	187	CITY OF ORMOND BEACH		Vacant lot - City owned	
8004524	188	CITY OF ORMOND BEACH		Life station @ mobile home park - City owned	
8006489	189	CITY OF ORMOND BEACH UTILITIES		Vacant lot - City owned	

					Chart 2: Baseline (2020) - Water Depth Statistics								
					MHHW (1.5')			Cat 1 (5')			Cat 3 (8.8')		
ASSET ID	ALTKEY	OWNER 1	OWNER 2	DESCRIPTION	MIN	MAX	MEAN	MIN2	MAX2	MEAN4	MIN3	MAX4	MEAN5
2	2995734	CITY OF ORMOND BEACH		Road in front of OB Middle School - City owned	0.00	0.50	0.08	1.72	5.03	2.98	5.52	8.83	6.78
4	2995866	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.50	0.08	0.00	5.03	3.12	0.00	8.83	6.62
5	2996161	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.63	1.88	1.03
7	3017340	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.28	0.00	2.41	2.51	2.47	6.21	6.31	6.27
8	3003098	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.16
9	3033752	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.46	0.00	0.00	1.75	0.70	2.04	5.55	4.08
10	3033671	CITY OF ORMOND BEACH		Municipal Airport - City owned	0.00	0.50	0.01	0.00	5.03	0.36	0.00	8.83	0.76
11	3034040	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.21	0.21
12	3043391	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.46	0.01	0.00	5.00	1.69	0.00	8.80	4.23
14	3044525	CITY OF ORMOND BEACH		Fishing park - City owned	0.00	0.50	0.01	0.00	5.00	1.01	0.00	8.80	4.31
15	3045696	CITY OF ORMOND BEACH		The Casements culture center - City owned	0.00	0.50	0.00	0.00	5.00	1.08	0.00	8.80	3.10
17	3051718	CITY OF ORMOND BEACH		Cassin Young Memorial Post - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47	0.66
18	3051912	CITY OF ORMOND BEACH		OB Police Dept. & Animal Control - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.89	0.28
19	3052293	CITY OF ORMOND BEACH		Cassen Park for boating & fishing - City owned	0.00	0.50	0.02	0.00	5.03	2.00	0.00	8.83	5.44
20	3053966	CITY OF ORMOND BEACH		Bailey Riverbridge Gardens park - City owned	0.00	0.50	0.01	0.00	3.26	0.45	0.00	7.06	2.75
21	3037073	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.48	0.01	0.51	2.67	1.08	4.31	6.47	4.88
22	3054091	CITY OF ORMOND BEACH		Ormond Beach City Hall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	0.12
25	3045106	CITY OF ORMOND BEACH		Speed Park motorsports - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17	0.23
30	3052129	CITY OF ORMOND BEACH		Ormond Beach Riverside Church - City owned	0.00	0.50	0.01	0.00	5.03	1.32	0.00	8.83	3.21
32	3052617	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.53	0.30
33	3054211	CITY OF ORMOND BEACH		Road next to OB Elementary School - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	1.03
34	3054911	CITY OF ORMOND BEACH		Nova Community Park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.00
38	3078845	CITY OF ORMOND BEACH		Burial Mound - City owned	0.00	0.00	0.00	0.00	0.41	0.07	0.00	4.21	1.09
47	3077857	CITY OF ORMOND BEACH		PAL Parking - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.63	0.60
48	3077865	CITY OF ORMOND BEACH		Ormond Beach Police Athletic - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.10
49	3078284	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.79	0.79
50	3078888	CITY OF ORMOND BEACH		Vacant land near Halifax river - City owned	0.00	0.49	0.01	1.75	5.03	3.14	5.55	8.83	6.94
51	3078896	CITY OF ORMOND BEACH		Office of City Attorney - City owned	0.00	0.48	0.01	1.82	3.43	2.51	5.62	7.23	6.31
57	3089162	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.06
59	3094646	CITY OF ORMOND BEACH		Andy Romano Beachfront Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	0.02
60	3146361	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.50	0.03	1.26	5.00	2.87	5.06	8.80	6.67
61	3146379	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.50	0.02	0.73	4.67	2.55	4.53	8.47	6.35
63	3154843	CITY OF ORMOND BEACH		COA Ormond Beach Senior Center - City owned	0.00	0.00	0.00	0.00	1.42	0.44	3.45	5.22	4.21
64	3158750	CITY OF ORMOND BEACH		Vacant canal lot near Halifax River - City owned	0.00	0.50	0.07	0.00	4.57	2.38	1.88	8.37	5.87
65	3158962	CITY OF ORMOND BEACH		OB Environmental Discovery Center - City owned	0.00	0.50	0.04	0.00	5.03	2.60	0.00	8.83	5.61
66	3159497	CITY OF ORMOND BEACH		Vacant lot near OB Env. Disc. Center - City owned	0.00	0.49	0.01	0.00	5.03	0.97	2.24	8.83	4.72
67	3159560	CITY OF ORMOND BEACH		Central Park & lake - City owned	0.00	0.50	0.07	0.00	5.03	3.42	0.89	8.83	6.76
68	3161319	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.12	4.31	2.60
69	3161955	CITY OF ORMOND BEACH		Fire Station #93	0.00	0.00	0.00	0.00	2.67	0.69	3.65	6.47	4.47
70	3165241	CITY OF ORMOND BEACH		Ormond Beach South Ormond Rec	0.00	0.50	0.00	0.00	0.00	0.00	0.00	8.70	2.18
71	3165811	CITY OF ORMOND BEACH		Central Park & lake - City owned	0.00	0.00	0.00	0.00	5.03	2.38	1.65	8.83	5.82
72	3167686	CITY OF ORMOND BEACH		Vacant lot near pond - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.12	0.25
73	3156404	CITY OF ORMOND BEACH		Ormond Beach Performing Arts Center - City owned	0.00	0.00	0.00	0.00	3.10	1.27	3.22	6.90	5.03
74	3156421	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.50	0.04	0.18	5.00	3.44	3.98	8.80	7.24
75	3156595	CITY OF ORMOND BEACH		Pollution Control Facility - City owned	0.00	0.50	0.05	0.00	5.00	1.61	0.00	8.80	5.07
76	3156846	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.50	0.01	0.18	4.90	2.93	3.98	8.70	6.73
77	3156854	CITY OF ORMOND BEACH		Land near OB Public Works Department - City owned	0.00	0.50	0.01	0.00	5.00	2.02	1.39	8.80	5.42
78	3156986	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.50	0.02	0.00	4.84	1.76	2.47	8.64	5.44
79	3159021	CITY OF ORMOND BEACH		Air Cooled of Ormond - City owned	0.00	0.00	0.00	0.00	1.42	0.35	1.29	5.22	3.83
80	3159063	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	1.42	0.11	1.55	5.22	3.00
81	3159501	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	1.42	0.80	3.65	5.22	4.59
82	3159519	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	1.49	0.64	3.12	5.29	4.35
83	3159527	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.06	3.55	2.10
84	3160681	CITY OF ORMOND BEACH		Lots near Water Treatment Facility - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80	1.55
85	3161904	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.34	0.11	3.55	4.14	3.80
86	3162862	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.06	1.45	1.28
87	3165292	CITY OF ORMOND BEACH		Storage shed near Power Plant - City owned	0.00	0.12	0.00	0.00	3.65	1.91	2.96	7.45	5.68
88	3166329	CITY OF ORMOND BEACH		Lake in OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	5.03	1.96	0.00	8.83	5.35
89	3188675	CITY OF ORMOND BEACH		Beach St. park on Halifax River - City owned	0.00	0.50	0.01	0.00	5.03	1.43	3.39	8.83	5.21
90	3209095	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	0.73	0.12	3.39	4.53	3.63
91	3207157	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.96	0.74
92	4080139	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	5.03	3.37	2.14	8.83	7.00
94	4660127	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.04
96	4767185	CITY OF ORMOND BEACH		Vacant lot near Riviera Park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.09
98	4748440	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.50	0.06	4.02	5.00	4.40	7.82	8.80	8.20
99	4927719	CITY OF ORMOND BEACH		Lot near Police Athletic - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.11
101	4967613	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.53
103	5234983	CITY OF ORMOND BCH LSD TO	RIVER BEND MGMT GROUP FL LLC	Municipal Golf Course - leased land	0.00	0.50	0.00	0.00	5.03	0.14	0.00	8.83	0.34
113	5286363	CITY OF ORMOND BEACH		Easement lot near Alpine Comm. Corp. - City owned	0.00	0.25	0.01	0.00	5.03	2.97	2.04	8.83	6.47
121	5471225	CITY OF ORMOND BEACH		New Water Retention Area - City owned	0.00	0.00	0.00	0.00	5.03	1.88	0.00	8.83	5.06
123	5613241	CITY OF ORMOND BCH LSD BAITHSE		Bait & Tackle Shop - Leased lot	0.00	0.00	0.00	4.67	4.67	4.67	8.47	8.47	8.47
141	5972569	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	4.41	0.85	2.63	8.21	4.45

					MHHW (1.5')			Cat 1 (5')			Cat 3 (8.8')		
ASSET ID	**ALTKEY**	**OWNER 1**	**OWNER 2**	**DESCRIPTION**	**MIN**	**MAX**	**MEAN**	**MIN2**	**MAX2**	**MEAN4**	**MIN3**	**MAX4**	**MEAN5**
143	6189242	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	**3.43**	**0.40**	**0.63**	**7.23**	**3.40**
144	6214930	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	**0.83**	**0.83**	**0.83**	**4.63**	**4.63**	**4.63**
145	6361363	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	**0.20**	**1.55**	**0.80**
146	6361371	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**1.06**	**0.33**
148	6474613	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	**1.16**	**0.36**	**1.39**	**4.96**	**3.88**
169	7216752	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	0.00	**0.50**	**0.03**	0.00	**4.84**	**1.91**	**3.29**	**8.64**	**5.69**
173	7216621	CITY OF ORMOND BEACH		OB Public Works Dept. - City owned	0.00	**0.50**	**0.02**	0.00	**5.00**	**1.57**	**2.89**	**8.80**	**5.23**
174	7216728	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	0.00	**0.50**	**0.03**	0.00	**5.00**	**3.09**	**2.04**	**8.80**	**6.83**
175	7216736	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	0.00	**0.50**	**0.04**	**0.93**	**4.84**	**3.18**	**4.73**	**8.64**	**6.98**
182	7763265	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	**1.71**	**3.65**	**2.56**
184	7974347	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	**2.83**	**0.50**	**3.65**	**6.63**	**4.28**
185	7974398	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	**0.08**	**0.93**	**0.51**	**3.88**	**4.73**	**4.31**
186	7975866	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	**1.00**	**1.16**	**1.06**	**4.80**	**4.96**	**4.86**

Chart 3: Low - Water Depth Statistics

					2040 (+0.3')						2070 (+0.7')						2100 (+1.0')								
					MHHW (1.8')			Cat 1 (5.3')			Cat 3 (9.1')			MHHW (2.2')			Cat 1 (5.7')			Cat 3 (9.5')			MHHW (2.5')			Cat 1 (6')			Cat 3 (9.8')		
ASSET ID	ALTKEY	OWNER 1	OWNER 2	DESCRIPTION	MIN	MAX	MEAN	MIN2	MAX2	MEAN2	MIN6	MAX7	MEAN8	MIN7	MAX8	MEAN9	MIN8	MAX9	MEAN10	MIN9	MAX10	MEAN11	MIN10	MAX11	MEAN12	MIN11	MAX12	MEAN13	MIN12	MAX13	MEAN14
2	2995734	CITY OF ORMOND BEACH		Road in front of OB Middle School - City owned	0.00	0.80	0.14	2.02	5.33	3.28	5.82	9.13	7.08	0.00	1.20	0.24	2.42	5.73	3.68	6.22	9.53	7.48	0.00	1.50	0.33	2.72	6.03	3.98	6.52	9.83	7.78
3	2999462	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.97	0.97
4	2995866	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.80	0.17	0.00	5.33	3.38	0.00	9.13	6.91	0.00	1.20	0.31	0.00	5.73	3.73	0.00	9.53	7.29	0.00	1.50	0.44	0.00	6.03	4.00	0.00	9.83	7.58
5	2996161	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.93	2.18	1.33	0.00	0.00	0.00	0.00	0.00	0.00	1.33	2.58	1.73	0.00	0.00	0.00	0.00	0.00	0.00	1.63	2.88	2.03
7	3017340	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.58	0.01	2.71	2.81	2.77	6.51	6.61	6.57	0.00	0.98	0.02	3.11	3.21	3.17	6.91	7.01	6.97	0.00	1.28	0.04	3.41	3.51	3.47	7.21	7.31	7.27
8	3003098	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73	0.67
9	3033752	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.76	0.01	0.00	2.05	0.90	2.34	5.85	4.38	0.00	1.16	0.02	0.00	2.45	1.16	2.74	6.25	4.78	0.00	1.46	0.03	0.00	2.75	1.41	3.04	6.55	5.08
10	3033671	CITY OF ORMOND BEACH		Municipal Airport - City owned	0.00	0.80	0.01	0.00	5.33	0.39	0.00	9.13	0.80	0.00	1.20	0.02	0.00	5.73	0.43	0.00	9.53	0.84	0.00	1.50	0.03	0.00	6.03	0.46	0.00	9.83	0.87
11	3034040	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.51	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.91	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.21	0.54
12	3043391	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.76	0.03	0.00	5.30	1.89	0.00	9.10	4.43	0.00	1.16	0.06	0.00	5.70	2.16	0.00	9.50	4.69	0.00	1.46	0.09	0.00	6.00	2.36	0.00	9.80	4.89
14	3044525	CITY OF ORMOND BEACH		Fishing park - City owned	0.00	0.80	0.01	0.00	5.30	1.21	0.00	9.10	4.60	0.00	1.20	0.03	0.00	5.70	1.51	0.00	9.50	4.98	0.00	1.50	0.05	0.00	6.00	1.75	0.00	9.80	5.27
15	3045696	CITY OF ORMOND BEACH		The Casements culture center - City owned	0.00	0.80	0.01	0.00	5.30	1.22	0.00	9.10	3.34	0.00	1.20	0.03	0.00	5.70	1.41	0.00	9.50	3.68	0.00	1.50	0.05	0.00	6.00	1.54	0.00	9.80	3.95
17	3051718	CITY OF ORMOND BEACH		Cassin Young Memorial Post - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.77	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.17	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.06	3.47	1.55
18	3051912	CITY OF ORMOND BEACH		OB Police Dept. & Animal Control - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.19	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.59	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.89	0.55
19	3052293	CITY OF ORMOND BEACH		Cassen Park for boating & fishing - City owned	0.00	0.80	0.04	0.00	5.33	2.25	0.00	9.13	5.72	0.00	1.20	0.08	0.00	5.73	2.61	0.00	9.53	6.09	0.00	1.50	0.13	0.00	6.03	2.88	0.00	9.83	6.37
20	3053966	CITY OF ORMOND BEACH		Bailey Riverbridge Gardens park - City owned	0.00	0.80	0.02	0.00	3.56	0.58	0.00	7.36	2.96	0.00	1.20	0.03	0.00	3.96	0.78	0.00	7.76	3.23	0.00	1.50	0.05	0.00	4.26	0.95	0.00	8.06	3.43
21	3037073	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.78	0.02	0.81	2.97	1.38	4.61	6.77	5.18	0.00	1.18	0.04	1.21	3.37	1.78	5.01	7.17	5.58	0.00	1.48	0.07	1.51	3.67	2.08	5.31	7.47	5.88
22	3054091	CITY OF ORMOND BEACH		Ormond Beach City Hall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.75	0.15	0.00	0.00	0.00	0.00	0.35	0.00	0.00	4.15	0.21	0.00	0.00	0.00	0.00	0.65	0.00	0.00	4.45	0.29
25	3045106	CITY OF ORMOND BEACH		Speed Park motorsports - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.54	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.46	0.38
26	3045700	CITY OF ORMOND BEACH		MacDonald House Welcome Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.05
30	3052129	CITY OF ORMOND BEACH		Ormond Beach Riverside Church - City owned	0.00	0.80	0.02	0.00	5.33	1.46	0.00	9.13	3.37	0.00	1.20	0.04	0.00	5.73	1.65	0.00	9.53	3.60	0.00	1.50	0.06	0.00	6.03	1.79	0.00	9.83	3.79
31	3052609	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22	0.22
32	3052617	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.83	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.53	0.88
33	3054211	CITY OF ORMOND BEACH		Road next to OB Elementary School - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.75	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.08	4.15	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.38	4.45	1.85
34	3054911	CITY OF ORMOND BEACH		Nova Community Park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.04	0.00
38	3078845	CITY OF ORMOND BEACH		Burial Mound - City owned	0.00	0.00	0.00	0.00	0.71	0.14	0.00	4.51	1.20	0.00	0.00	0.00	0.00	1.11	0.23	0.00	4.91	1.42	0.00	0.00	0.00	0.00	1.41	0.29	0.00	5.21	1.58
43	3087232	CITY OF ORMOND BEACH		Local park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.80	3.12
47	3077857	CITY OF ORMOND BEACH		PAL Parking - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.93	0.90	0.00	0.00	0.00	0.00	0.00	0.00	1.27	1.33	1.30	0.00	0.00	0.00	0.00	0.00	0.00	1.57	1.63	1.60
48	3077865	CITY OF ORMOND BEACH		Ormond Beach Police Athletic - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.08	1.33	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.63	0.92
49	3078284	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.09	1.09	1.09	0.00	0.00	0.00	0.00	0.00	0.00	1.49	1.49	1.49	0.00	0.00	0.00	0.00	0.00	0.00	1.79	1.79	1.79
50	3078888	CITY OF ORMOND BEACH		Vacant land near Halifax river - City owned	0.00	0.79	0.02	2.05	5.33	3.44	5.85	9.13	7.24	0.00	1.19	0.15	2.45	5.73	3.84	6.25	9.53	7.64	0.00	1.49	0.35	2.75	6.03	4.14	6.55	9.83	7.94
51	3078896	CITY OF ORMOND BEACH		Office of City Attorney - City owned	0.00	0.78	0.02	2.12	3.73	2.81	5.92	7.53	6.61	0.00	1.18	0.06	2.52	4.13	3.21	6.32	7.93	7.01	0.00	1.48	0.16	2.82	4.43	3.51	6.62	8.23	7.31
57	3089162	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06	0.32
58	3089171	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.14
59	3094646	CITY OF ORMOND BEACH		Andy Romano Beachfront Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.77	0.05
60	3146361	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.80	0.08	1.56	5.30	3.17	5.36	9.10	6.97	0.00	1.20	0.16	1.96	5.70	3.57	5.76	9.50	7.37	0.00	1.50	0.26	2.26	6.00	3.87	6.06	9.80	7.67
61	3146379	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.80	0.05	1.03	4.97	2.85	4.83	8.77	6.65	0.00	1.20	0.14	1.43	5.37	3.25	5.23	9.17	7.05	0.00	1.50	0.26	1.73	5.67	3.55	5.53	9.47	7.35
63	3154843	CITY OF ORMOND BEACH		COA Ormond Beach Senior Center - City owned	0.00	0.00	0.00	0.00	1.72	0.72	3.75	5.52	4.51	0.00	0.00	0.00	0.35	2.12	1.11	4.15	5.92	4.91	0.00	0.00	0.00	0.65	2.42	1.41	4.45	6.22	5.21
64	3158750	CITY OF ORMOND BEACH		Vacant canal lot near Halifax River - City owned	0.00	0.80	0.15	0.00	4.87	2.61	2.18	8.67	6.17	0.00	1.20	0.33	0.00	5.27	2.92	2.58	9.07	6.57	0.00	1.50	0.48	0.00	5.57	3.16	2.88	9.37	6.87
65	3158962	CITY OF ORMOND BEACH		OB Environmental Discovery Center - City owned	0.00	0.80	0.09	0.00	5.33	2.79	0.00	9.13	5.89	0.00	1.20	0.17	0.00	5.73	3.04	0.00	9.53	6.28	0.00	1.50	0.24	0.00	6.03	3.24	0.00	9.83	6.57
66	3159497	CITY OF ORMOND BEACH		Vacant lot near OB Env. Disc. Center - City owned	0.00	0.79	0.02	0.00	5.33	1.25	2.54	9.13	5.02	0.00	1.19	0.04	0.00	5.73	1.64	2.94	9.53	5.42	0.00	1.49	0.07	0.00	6.03	1.93	3.24	9.83	5.72
67	3159560	CITY OF ORMOND BEACH		Central Park & lake - City owned	0.00	0.80	0.18	0.00	5.33	3.64	1.19	9.13	7.06	0.00	1.20	0.39	0.00	5.73	3.94	1.59	9.53	7.46	0.00	1.50	0.59	0.00	6.03	4.18	1.89	9.83	7.76
68	3161319	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.81	0.06	1.42	4.61	2.90	0.00	0.00	0.00	0.00	1.21	0.13	1.82	5.01	3.30	0.00	0.00	0.00	0.00	1.51	0.22	2.12	5.31	3.60
69	3161955	CITY OF ORMOND BEACH		Fire Station #93	0.00	0.00	0.00	0.15	2.97	0.97	3.95	6.77	4.77	0.00	0.00	0.00	0.55	3.37	1.37	4.35	7.17	5.17	0.00	0.03	0.00	0.85	3.67	1.67	4.65	7.47	5.47
70	3165241	CITY OF ORMOND BEACH		Ormond Beach South Ormond Rec	0.00	0.80	0.01	0.00	0.00	0.00	0.00	9.00	2.42	0.00	1.20	0.02	0.00	0.00	0.00	0.00	9.40	2.76	0.00	1.50	0.03	0.00	0.00	0.00	0.00	9.70	3.03
71	3165811	CITY OF ORMOND BEACH		Central Park & lake - City owned	0.00	0.12	0.00	0.00	5.33	2.57	1.95	9.13	6.12	0.00	0.52	0.06	0.00	5.73	2.85	2.35	9.53	6.52	0.00	0.82	0.17	0.00	6.03	3.09	2.65	9.83	6.82
72	3167686	CITY OF ORMOND BEACH		Vacant lot near pond - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42	0.30	0.00	0.00	0.00	0.00	0.02	0.00	0.00	3.82	0.37	0.00	0.00	0.00	0.00	0.32	0.00	0.00	4.12	0.43
73	3156404	CITY OF ORMOND BEACH		Ormond Beach Performing Arts Center - City owned	0.00	0.00	0.00	0.00	3.40	1.54	3.52	7.20	5.33	0.00	0.29	0.00	0.12	3.80	1.93	3.92	7.60	5.73	0.00	0.59	0.02	0.42	4.10	2.23	4.22	7.90	6.03
74	3156421	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.80	0.07	0.48	5.30	3.74	4.28	9.10	7.54	0.00	1.20	0.12	0.88	5.70	4.14	4.68	9.50	7.94	0.00	1.50	0.15	1.18	6.00	4.44	4.98	9.80	8.24
75	3156595	CITY OF ORMOND BEACH		Pollution Control Facility - City owned	0.00	0.80	0.08	0.00	5.30	1.84	0.00	9.10	5.36	0.00	1.20	0.13	0.00	5.70	2.17	0.00	9.50	5.75	0.00	1.50	0.17	0.00	6.00	2.44	0.00	9.80	6.04
76	3156846	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.80	0.03	0.48	5.20	3.23	4.28	9.00	7.03	0.00	1.20	0.06	0.88	5.60	3.63	4.68	9.40	7.43	0.00	1.50	0.08	1.18	5.90	3.93	4.98	9.70	7.73
77	3156854	CITY OF ORMOND BEACH		Land near OB Public Works Department - City owned	0.00	0.80	0.02	0.00	5.30	2.22	1.69	9.10	5.72	0.00	1.20	0.04	0.00	5.70	2.50	2.09	9.50	6.12	0.00	1.50	0.06	0.00	6.00	2.72	2.39	9.80	6.42
78	3156986	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.80	0.05	0.00	5.14	2.01	2.77	8.94	5.74	0.00	1.20	0.10	0.00	5.54	2.37	3.17	9.34	6.14	0.00	1.50	0.14	0.00	5.84	2.65	3.47	9.64	6.44
79	3159021	CITY OF ORMOND BEACH		Air Cooled of Ormond - City owned	0.00	0.00	0.00	0.00	1.72	0.57	1.59	5.52	4.13	0.00	0.00	0.00	0.00	2.12	0.89	1.99	5.92	4.53	0.00	0.00	0.00	0.00	2.42	1.14	2.29	6.22	4.83
80	3159063	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	1.72	0.18	1.85	5.52	3.30	0.00	0.00	0.00	0.00	2.12	0.31	2.25	5.92	3.70	0.00	0.00	0.00	0.00	2.42	0.45	2.55	6.22	4.00
81	3159501	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.15	1.72	1.09	3.95	5.52	4.89	0.00	0.20	0.00	0.55	2.12	1.49	4.35	5.92	5.29	0.00	0.50	0.00	0.85	2.42	1.79	4.65	6.22	5.59
82	3159519	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	1.79	0.88	3.42	5.59	4.65	0.00	0.00	0.00	0.02	2.19	1.25	3.82	5.99	5.05	0.00	0.00	0.00	0.32	2.49	1.55	4.12	6.29	5.35
83	3159527	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	0.05	0.00	1.36	3.85	2.40	0.00	0.00	0.00	0.00	0.45	0.01	1.76	4.25	2.80	0.00	0.00	0.00	0.00	0.75	0.02	2.06	4.55	3.10
84	3160681	CITY OF ORMOND BEACH		Lots near Water Treatment Facility - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.18	3.10	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.58	3.50	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.88	3.80	2.55
85	3161904	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.05	0.64	0.30	3.85	4.44	4.10	0.00	0.00	0.00	0.45	1.04	0.70	4.25	4.84	4.50	0.00	0.00	0.00	0.75	1.34	1.00	4.55	5.14	4.80
86	3162862	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.36	1.75	1.58	0.00	0.00	0.00	0.00	0.00	0.00	1.76	2.15	1.98	0.00	0.00	0.00	0.00	0.00	0.00	2.06	2.45	2.28
87	3165292	CITY OF ORMOND BEACH		Storage shed near Power Plant - City owned	0.00	0.42	0.02	0.00	3.95	2.20	3.26	7.75	5.98	0.00	0.82	0.13	0.00	4.35	2.59	3.66	8.15	6.38	0.00	1.12	0.24	0.16	4.65	2.88	3.96	8.45	6.68
88	3166329	CITY OF ORMOND BEACH		Lake in OB Env. Disc. Center - City owned	0.00	0.24	0.01	0.00	5.33	2.16	0.00	9.13	5.65	0.00	0.64	0.06	0.00	5.73	2.45	0.08	9.53	6.05	0.00	0.94	0.14	0.00	6.03	2.68	0.38	9.83	6.35
89	3188675	CITY OF ORMOND BEACH		Beach St. park on Halifax River - City owned	0.00	0.80	0.02	0.00	5.33	1.71	3.69	9.13	5.51	0.00	1.20	0.06	0.29	5.73	2.11	4.09	9.53	5.91	0.00	1.50	0.11	0.59	6.03	2.41	4.39	9.83	6.21
90	3209095	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	1.03	0.20	3.69	4.83	3.93	0.00	0.00	0.00	0.29	1.43	0.53	4.09	5.23	4.33	0.00	0.00	0.00	0.59	1.73	0.83	4.39	5.53	4.63
91	3207157	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.93	1.26	1.04	0.00	0.00	0.00	0.00	0.00	0.00	1.33	1.66	1.44	0.00	0.00	0.00	0.00	0.00	0.00	1.63	1.96	1.74
92	4080139	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	5.33	3.61	2.44	9.13	7.30	0.00	0.00	0.00	0.00	5.73	3.95	2.84	9.53	7.70	0.00	0.00	0.00	0.00	6.03	4.21	3.14	9.83	8.00
94	4660127	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.74	0.00	0.00	0.00	0.00	0.00	0.00	1.04	1.04	1.04
96	4767185	CITY OF ORMOND BEACH		Vacant lot near Riviera Park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57	0.45
98	4748440	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.80	0.13	4.32	5.30	4.70	8.12	9.10	8.50	0.00	1.20	0.26	4.72	5.70	5.10	8.52	9.50	8.90	0.00	1.50	0.38	5.02	6.00	5.40	8.82	9.80	9.20
99	4927719	CITY OF ORMOND BEACH		Lot near Police Athletic - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.06	1.89	0.81
101	4967613	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.35	1.66	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.65	1.96	1.46
103	5234983	CITY OF ORMOND BCH LSD TO	RIVER BEND MGMT GROUP FL LLC	Municipal Golf Course - leased land	0.00	0.80	0.00	0.00	5.33	0.16	0.00	9.13	0.36	0.00	1.20	0.01	0.00	5.73	0.17	0.00	9.53	0.38	0.00	1.50	0.01	0.00	6.03	0.19	0.00	9.83	0.40
109	5318168	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.83	6.45
113	5286363	CITY OF ORMOND BEACH		Easement lot near Alpine Comm. Corp. - City owned	0.00	0.55	0.04	0.00	5.33	3.20	2.34	9.13	6.77	0.00	0.95	0.13	0.00	5.73	3.51	2.74	9.53	7.17	0.00	1.25	0.27	0.00	6.03	3.75	3.04	9.83	7.47
121	5471225	CITY OF ORMOND BEACH		New Water Retention Area - City owned	0.00	0.00	0.00	0.00	5.33	2.76	0.00	9.13	5.32	0.00	0.00	0.00	0.00	5.73	2.99	0.00	9.53	5.66	0.00	0.00	0.00	0.00	6.03

Chart 4: NOAA Intermediate - Water Depth Statistics

					2040 (+0.6')						2070 (+1.7')						2100 (+3.2')					
					MHHW (2.1')			Cat 1 (5.6')			Cat 3 (9.4')			MHHW (3.2')			Cat 1 (6.7')			Cat 3 (10.5')		
ASSET ID	ALTKEY	OWNER 1	OWNER 2	DESCRIPTION	MIN13	MAX14	MEAN15	MIN14	MAX15	MEAN16	MIN15	MAX16	MEAN17	MIN16	MAX17	MEAN18	MIN17	MAX18	MEAN19	MIN18	MAX19	MEAN20
2	2995734	CITY OF ORMOND BEACH		Road in front of OB Middle School - City owned	0.00	1.10	0.21	2.32	5.63	3.58	6.12	9.43	7.38	0.00	2.20	0.55	3.42	6.73	4.68	7.22	10.53	8.48
3	2999462	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	1.67	1.67	1.67
4	2995866	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.10	0.27	0.00	5.63	3.64	0.00	9.43	7.19	0.00	2.20	0.78	0.00	6.73	4.64	0.00	10.53	8.27
5	2996161	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.23	2.48	1.63	0.00	0.00	0.00	0.00	0.00	0.00	2.33	3.58	2.73
7	3017340	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.88	0.02	3.01	3.11	3.07	6.81	6.91	6.87	0.00	1.98	0.13	4.11	4.21	4.17	7.91	8.01	7.97
8	3003098	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.33	2.43	1.26
9	3033752	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.06	0.02	0.00	2.35	1.10	2.64	6.15	4.68	0.00	2.16	0.08	0.00	3.45	1.99	3.74	7.25	5.78
10	3033671	CITY OF ORMOND BEACH		Municipal Airport - City owned	0.00	1.10	0.02	0.00	5.63	0.42	0.00	9.43	0.83	0.00	2.20	0.05	0.00	6.73	0.54	0.00	10.53	0.95
11	3034040	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.81	0.37	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.97	0.00
12	3043391	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.06	0.05	0.00	5.60	2.09	0.00	9.40	4.63	0.00	2.16	0.19	0.00	6.70	2.83	0.00	10.50	5.36
14	3044525	CITY OF ORMOND BEACH		Fishing park - City owned	0.00	1.10	0.03	0.00	5.60	1.43	0.00	9.40	4.89	0.00	2.20	0.16	0.00	6.70	2.35	0.00	10.50	5.93
15	3045696	CITY OF ORMOND BEACH		The Casements culture center - City owned	0.00	1.10	0.02	0.00	5.60	1.36	0.00	9.40	3.60	0.00	2.20	0.16	0.00	6.70	1.87	0.00	10.50	4.61
16	3045769	CITY OF ORMOND BEACH		Ormond Memorial Art Museum & Gardens - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	3051718	CITY OF ORMOND BEACH		Cassin Young Memorial Post - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.76	4.17	2.25
18	3051912	CITY OF ORMOND BEACH		OB Police Dept. & Animal Control - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.59	0.93
19	3052293	CITY OF ORMOND BEACH		Cassen Park for boating & fishing - City owned	0.00	1.10	0.07	0.00	5.63	2.52	0.00	9.43	6.00	0.00	2.20	0.33	0.00	6.73	3.50	0.00	10.53	7.03
20	3053966	CITY OF ORMOND BEACH		Bailey Riverbridge Gardens park - City owned	0.00	1.10	0.03	0.00	3.86	0.73	0.00	7.66	3.16	0.00	2.20	0.13	0.00	4.96	1.37	0.00	8.76	3.91
21	3037073	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.08	0.03	1.11	3.27	1.68	4.91	7.07	5.48	0.00	2.18	0.18	2.21	4.37	2.78	6.01	8.17	6.58
22	3054091	CITY OF ORMOND BEACH		Ormond Beach City Hall	0.00	0.00	0.00	0.00	0.25	0.00	0.00	4.05	0.20	0.00	0.00	0.00	0.00	1.35	0.01	0.00	5.15	0.63
25	3045106	CITY OF ORMOND BEACH		Speed Park motorsports - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.34	0.47
26	3045700	CITY OF ORMOND BEACH		MacDonald House Welcome Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.34
28	3065824	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.33	0.00	0.00	0.00	0.00	10.50	5.12
30	3052129	CITY OF ORMOND BEACH		Ormond Beach Riverside Church - City owned	0.00	1.10	0.03	0.00	5.63	1.60	0.00	9.43	3.54	0.00	2.20	0.13	0.00	6.73	2.13	0.00	10.53	4.29
31	3052609	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92
32	3052617	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.13	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.59	4.23	1.58
33	3054211	CITY OF ORMOND BEACH		Road next to OB Elementary School - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.05	1.45	0.00	0.00	0.00	0.00	0.00	0.00	1.08	5.15	2.55
34	3054911	CITY OF ORMOND BEACH		Nova Community Park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.74	0.06
38	3078845	CITY OF ORMOND BEACH		Burial Mound - City owned	0.00	0.00	0.00	0.00	1.01	0.21	0.00	4.81	1.36	0.00	0.00	0.00	0.00	2.11	0.45	0.00	5.91	2.04
40	3065859	CITY OF ORMOND BEACH		Municipal Drainage Easement - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	6.99	4.63
43	3087232	CITY OF ORMOND BEACH		Local park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	10.50	3.77
45	3075692	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47	3077857	CITY OF ORMOND BEACH		PAL Parking - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.17	1.23	1.20	0.00	0.00	0.00	0.00	0.00	0.00	2.27	2.33	2.30
48	3077865	CITY OF ORMOND BEACH		Ormond Beach Police Athletic - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.52	0.00	0.00	0.00	0.00	0.00	0.00	1.08	2.33	1.62
49	3078284	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.39	1.39	1.39	0.00	0.00	0.00	0.00	0.00	0.00	2.49	2.49	2.49
50	3078888	CITY OF ORMOND BEACH		Vacant land near Halifax river - City owned	0.00	1.09	0.10	2.35	5.63	3.74	6.15	9.43	7.54	0.00	2.19	0.97	3.45	6.73	4.84	7.25	10.53	8.64
51	3078896	CITY OF ORMOND BEACH		Office of City Attorney - City owned	0.00	1.08	0.04	2.42	4.03	3.11	6.22	7.83	6.91	0.00	2.18	0.70	3.52	5.13	4.21	7.32	8.93	8.01
53	3084861	CITY OF ORMOND BEACH		Ormond Beach Fire Station #91 - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.06
54	3084993	CITY OF ORMOND BEACH		Small residential playground - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.13
56	3087330	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.13
57	3089162	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.76	0.72
58	3089171	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.31
59	3094646	CITY OF ORMOND BEACH		Andy Romano Beachfront Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.29	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.59	0.09
60	3146361	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.10	0.14	1.86	5.60	3.47	5.66	9.40	7.27	0.00	2.20	0.58	2.96	6.70	4.57	6.76	10.50	8.37
61	3146379	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.10	0.11	1.33	5.27	3.15	5.13	9.07	6.95	0.00	2.20	0.69	2.43	6.37	4.25	6.23	10.17	8.05
63	3154843	CITY OF ORMOND BEACH		COA Ormond Beach Senior Center - City owned	0.00	0.00	0.00	0.25	2.02	1.01	4.05	5.82	4.81	0.00	0.00	0.00	1.35	3.12	2.11	5.15	6.92	5.91
64	3158750	CITY OF ORMOND BEACH		Vacant canal lot near Halifax River - City owned	0.00	1.10	0.28	0.00	5.17	2.84	2.48	8.97	6.47	0.00	2.20	0.84	0.00	6.27	3.77	3.58	10.07	7.57
65	3158962	CITY OF ORMOND BEACH		OB Environmental Discovery Center - City owned	0.00	1.10	0.15	0.00	5.63	2.98	0.00	9.43	6.18	0.00	2.20	0.41	0.00	6.73	3.74	0.00	10.53	7.24
66	3159497	CITY OF ORMOND BEACH		Vacant lot near OB Env. Disc. Center - City owned	0.00	1.09	0.04	0.00	5.63	1.54	2.84	9.43	5.32	0.00	2.19	0.14	0.14	6.73	2.62	3.94	10.53	6.42
67	3159560	CITY OF ORMOND BEACH		Central Park & lake - City owned	0.00	1.10	0.33	0.00	5.63	3.87	1.49	9.43	7.36	0.00	2.20	1.06	0.00	6.73	4.74	2.59	10.53	8.46
68	3161319	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	1.11	0.12	1.72	4.91	3.20	0.00	0.00	0.00	0.00	2.21	0.59	2.82	6.01	4.30
69	3161955	CITY OF ORMOND BEACH		Fire Station #93	0.00	0.00	0.00	0.45	3.27	1.27	4.25	7.07	5.07	0.00	0.73	0.02	1.55	4.37	2.37	5.35	8.17	6.17
70	3165241	CITY OF ORMOND BEACH		Ormond Beach South Ormond Rec	0.00	1.10	0.02	0.00	0.00	0.00	0.00	9.30	2.67	0.00	2.20	0.05	0.00	6.60	0.76	0.00	10.40	3.70
71	3165811	CITY OF ORMOND BEACH		Central Park & lake - City owned	0.00	0.42	0.04	0.00	5.63	2.78	2.25	9.43	6.42	0.00	1.52	0.47	0.00	6.73	3.72	3.35	10.53	7.52
72	3167686	CITY OF ORMOND BEACH		Vacant lot near pond - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73	3156404	CITY OF ORMOND BEACH		Ormond Beach Performing Arts Center - City owned	0.00	0.19	0.00	0.02	3.70	1.83	3.82	7.50	5.63	0.00	1.29	0.10	1.12	4.80	2.93	4.92	8.60	6.73
74	3156421	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.10	0.10	0.78	5.60	4.04	4.58	9.40	7.84	0.00	2.20	0.22	1.88	6.70	5.14	5.68	10.50	8.94
75	3156595	CITY OF ORMOND BEACH		Pollution Control Facility - City owned	0.00	1.10	0.12	0.00	5.60	2.09	0.00	9.40	5.65	0.00	2.20	0.26	0.00	6.70	3.07	0.00	10.50	6.72
76	3156846	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.10	0.05	0.78	5.50	3.53	4.58	9.30	7.33	0.00	2.20	0.15	1.88	6.60	4.63	5.68	10.40	8.43
77	3156854	CITY OF ORMOND BEACH		Land near OB Public Works Department - City owned	0.00	1.10	0.04	0.00	5.60	2.42	1.99	9.40	6.02	0.00	2.20	0.11	0.00	6.70	3.33	3.09	10.50	7.12
78	3156986	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.10	0.09	0.00	5.44	2.27	3.07	9.24	6.04	0.00	2.20	0.29	0.37	6.54	3.34	4.17	10.34	7.14
79	3159021	CITY OF ORMOND BEACH		Air Cooled of Ormond - City owned	0.00	0.00	0.00	0.00	2.02	0.80	1.89	5.82	4.43	0.00	0.00	0.00	0.00	3.12	1.78	2.99	6.92	5.53
80	3159063	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	2.02	0.28	2.15	5.82	3.60	0.00	0.00	0.00	0.00	3.12	0.95	3.25	6.92	4.70
81	3159501	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.10	0.00	0.45	2.02	1.39	4.25	5.82	5.19	0.00	1.20	0.01	1.55	3.12	2.49	5.35	6.92	6.29
82	3159519	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	2.09	1.15	3.72	5.89	4.95	0.00	0.00	0.00	1.02	3.19	2.25	4.82	6.99	6.05
83	3159527	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	0.35	0.01	1.66	4.15	2.70	0.00	0.00	0.00	0.00	1.45	0.20	2.76	5.25	3.80
84	3160681	CITY OF ORMOND BEACH		Lots near Water Treatment Facility - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.48	3.40	2.15	0.00	0.00	0.00	0.00	0.70	0.04	1.58	4.50	3.25
85	3161904	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.35	0.94	0.60	4.15	4.74	4.40	0.00	0.00	0.00	1.45	2.04	1.70	5.25	5.84	5.50
86	3162862	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.66	2.05	1.88	0.00	0.00	0.00	0.00	0.00	0.00	2.76	3.15	2.98
87	3165292	CITY OF ORMOND BEACH		Storage shed near Power Plant - City owned	0.00	0.72	0.10	0.00	4.25	2.49	3.56	8.05	6.28	0.00	1.82	0.61	0.86	5.35	3.58	4.66	9.15	7.38
88	3166329	CITY OF ORMOND BEACH		Lake in OB Env. Disc. Center - City owned	0.00	0.54	0.04	0.00	5.63	2.37	0.00	9.43	5.95	0.00	1.64	0.42	0.00	6.73	3.30	1.08	10.53	7.05
89	3188675	CITY OF ORMOND BEACH		Beach St. park on Halifax River - City owned	0.00	1.10	0.05	0.19	5.63	2.01	3.99	9.43	5.81	0.00	2.20	0.31	1.29	6.73	3.11	5.09	10.53	6.91
90	3209095	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.19	1.33	0.43	3.99	5.13	4.23	0.00	0.00	0.00	1.29	2.43	1.53	5.09	6.23	5.33
91	3207157	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.23	1.56	1.34	0.00	0.00	0.00	0.00	0.00	0.00	2.33	2.66	2.44
92	4080139	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	5.63	3.86	2.74	9.43	7.60	0.00	0.57	0.11	0.04	6.73	4.90	3.84	10.53	8.70
94	4660127	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.64	0.00	0.00	0.00	0.00	0.00	0.00	1.74	1.74	1.74
96	4767185	CITY OF ORMOND BEACH		Vacant lot near Riviera Park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27	0.93
98	4748440	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.10	0.22	4.62	5.60	5.00	8.42	9.40	8.80	0.00	2.20	0.77	5.72	6.70	6.10	9.52	10.50	9.90
99	4927719	CITY OF ORMOND BEACH		Lot near Police Athletic - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.76	2.59	1.51
101	4967613	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.25	1.56	1.06	0.00	0.00	0.00	0.00	0.00	0.00	1.35	2.66	2.16
103	5234983	CITY OF ORMOND BCH LSD TO	RIVER BEND MGMT GROUP FL LLC	Municipal Golf Course - leased land	0.00	1.10	0.01	0.00	5.63	0.17	0.00	9.43	0.38	0.00	2.20	0.03	0.00	6.73	0.23	0.00	10.53	0.45
109	5318168	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.53	5.95
110	5318371	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.72	0.35	0.00	0.00	0.00	0.00	1.02	0.04	0.00	4.82	0.60
113	5286363	CITY OF ORMOND BEACH		Easement lot near Alpine Comm. Corp. - City owned	0.00	0.85	0.10	0.00	5.63	3.43	2.64	9.43	7.07	0.00	1.95	0.65	0.00	6.73	4.37	3.74	10.53	8.17
121	5471225	CITY OF ORMOND BEACH		New Water Retention Area - City owned	0.00	0.00	0.00	0.00	5.63	2.93	0.00	9.43	5.58	0.00	0.00	0.00	0.00	6.73	3.57	0.00	10.53	6.59
123	5613241	CITY OF ORMOND BCH LSD BAITHSE		Bait & Tackle Shop - Leased lot	0.00	0.40	0.01	5.27	5.27	5.27	9.07	9.07	9.07	0.00	1.50	0.29	6.37	6.37	6.37	10.17	10.17	10.17
130	5676684	CITY OF ORMOND BEACH	ST JOHNS RIVER WATER MGMT	Vacant lot resid. Little Tomoka River-City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.74	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.58	0.21
141	5972569	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.52	0.02	0.00	5.01	1.34	3.23	8.81	5.05	0.00	1.62	0.12	0.53	6.11	2.35	4.33	9.91	6.15
142	6083282	CITY OF ORMOND BEACH		Mysterious Park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
143	6189242	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.10	0.00	0.00	4.03	0.66	1.23	7.83	4.00	0.00	1.20	0.12	0.00	5.13	1.40	2.33	8.93	5.10
144	6214930	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	1.43	1.43	1.43	5.23	5.23	5.23	0.00	0.00	0.00	2.53	2.53	2.53	6.33	6.33	6.33
145	6361363	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.80	2.15	1.40	0.00	0.00	0.00	0.00	0.00	0.00	1.90	3.25	2.50
146	6361371	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.48	1.66	0.91	0.00	0.00	0.00	0.00	0.00	0.00	1.58	2.76	2.01
148	6474613	CITY OF ORMOND BEACH		Vacant lot near lake - OB Env. Center - City owned	0.00	0.00	0.00	0.00	1.76	0.80	1.99	5.56	4.48	0.00	0.00	0.00	0.00	2.86	1.80	3.09	6.66	5.58
169	7216752	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	0.00	1.10	0.11	0.09	5.44	2.49	3.89	9.24	6.29	0.00	2.20	0.48	1.19	6.54	3.59	4.99	10.34	7.39
173	7216621	CITY OF ORMOND BEACH		OB Public Works Dept. - City owned	0.00	1.10	0.07	0.00	5.60	2.05	3.49	9.40	5.83	0.00	2.20	0.24	0.79	6.70	3.13	4.59	10.50	6.93
174	7216728	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	0.00	1.10	0.13	0.00	5.60	3.66	2.64	9.40	7.43	0.00	2.20	0.49	0.00	6.70	4.73	3.74	10.50	8.53
175	7216736	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	0.00	1.10	0.16	1.53	5.44	3.78	5.33	9.24	7.58	0.00	2.20	0.78	2.63	6.54	4.88	6.43	10.34	8.68
182	7763265	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.45	0.15	2.31	4.25	3.16	0.00	0.00	0.00	0.00	1.55	0.58	3.41	5.35	4.26
183	7796139	CITY OF ORMOND BEACH		Vacant lot near OB Riverside Church - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.22
184	7974347	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.45	3.43	1.08	4.25	7.23	4.88	0.00	0.00	0.00	1.55	4.53	2.18	5.35	8.33	5.98
185	7974398	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.68	1.53	1.11	4.48	5.33	4.91	0.00	0.00	0.00	1.78	2.63	2.21	5.58	6.43	6.01
186	7975866	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	1.60	1.76	1.66	5.40	5.56	5.46	0.00	0.00	0.00	2.70	2.86	2.76	6.50	6.66	6.56

					2100 (+3.2')																	
					MHHW (4.7')			Cat 1 (8.2')			Cat 3 (12')											
ASSET ID	ALTKEY	OWNER 1	OWNER 2	DESCRIPTION	MIN19	MAX20	MEAN21	MIN20	MAX21

Chart 5: NOAA High - Water Depth Statistics

					2040 (+1.1')						2070 (+3.8')						2100 (+7.8')					
					MHHW (2.6')			Cat 1 (6.1')		Cat 3 (9.9')			MHHW (5.3')			Cat 1 (8.8')		Cat 3 (12.6')			MHHW (9.3')			Cat 1 (12.8')		Cat 3 (16.6')		
ASSET ID	ALTKEY	OWNER 1	OWNER 2	DESCRIPTION	MIN22	MAX23	MEAN24	MIN23	MAX24	MEAN25	MIN24	MAX25	MEAN26	MIN25	MAX26	MEAN27	MIN26	MAX27	MEAN28	MIN27	MAX28	MEAN29	MIN28	MAX29	MEAN30	MIN29	MAX30	MEAN31	MIN30	MAX31	MEAN32
1	2966017	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.93	3.49
2	2995734	CITY OF ORMOND BEACH		Road in front of OB Middle School - City owned	0.00	1.60	0.36	2.82	6.13	4.08	6.62	9.93	7.88	0.00	4.30	1.26	5.52	8.83	6.78	9.32	12.63	10.58	0.00	8.30	2.60	9.52	12.83	10.78	14.10	17.42	15.37
3	2999462	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.07	1.07	1.07	0.00	0.00	0.00	0.00	0.00	0.00	3.77	3.77	3.77	0.59	3.10	2.07	3.97	3.97	3.97	8.53	8.53	8.53
4	2995866	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.60	0.48	0.00	6.13	4.09	0.00	9.93	7.68	0.00	4.30	1.94	0.00	8.83	6.62	0.00	12.63	10.35	0.00	8.30	4.46	0.00	12.83	10.55	4.53	17.42	15.13
5	2996161	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.73	2.98	2.13	0.00	0.00	0.00	0.63	1.88	1.03	4.43	5.68	4.83	1.13	2.44	1.54	4.63	5.88	5.03	12.03	13.28	12.43
7	3017340	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.38	0.05	3.51	3.61	3.57	7.31	7.41	7.37	1.63	4.08	2.09	6.21	6.31	6.27	10.01	10.11	10.07	5.63	8.08	6.09	10.21	10.31	10.27	17.62	17.72	17.68
8	3003098	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83	0.74	0.00	0.00	0.00	0.00	0.73	0.16	2.43	4.53	3.36	0.00	0.50	0.02	2.63	4.73	3.56	7.22	9.31	8.15
9	3033752	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.56	0.04	0.00	2.85	1.49	3.14	6.65	5.18	0.00	4.26	1.18	2.04	5.55	4.08	5.84	9.35	7.88	0.00	8.26	4.98	6.04	9.55	8.08	14.05	17.54	16.08
10	3033671	CITY OF ORMOND BEACH		Municipal Airport - City owned	0.00	1.60	0.03	0.00	6.13	0.47	0.00	9.93	0.88	0.00	4.30	0.11	0.00	8.83	0.76	0.00	12.63	1.33	0.00	8.30	0.28	0.00	12.83	1.36	0.00	16.63	1.96
11	3034040	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.31	0.59	0.00	0.00	0.00	0.00	2.21	0.21	0.10	6.01	2.77	0.00	3.40	0.41	0.30	6.21	2.97	8.24	14.24	10.90
12	3043391	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.56	0.11	0.00	6.10	2.43	0.00	9.90	4.96	0.00	4.26	0.75	0.00	8.80	4.23	0.92	12.60	7.07	0.00	8.26	3.08	1.12	12.80	7.27	5.55	17.19	11.67
13	3044011	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.87	2.44
14	3044525	CITY OF ORMOND BEACH		Fishing park - City owned	0.00	1.60	0.06	0.00	6.10	1.84	0.00	9.90	5.36	0.00	4.30	0.90	0.00	8.80	4.31	0.00	12.60	7.96	0.00	8.30	4.26	0.00	12.80	8.15	0.00	17.39	12.52
15	3045696	CITY OF ORMOND BEACH		The Casements culture center - City owned	0.00	1.60	0.06	0.00	6.10	1.59	0.00	9.90	4.04	0.00	4.30	0.91	0.00	8.80	3.10	0.00	12.60	6.68	0.00	8.30	2.93	0.00	12.80	6.88	3.99	17.24	11.32
16	3045769	CITY OF ORMOND BEACH		Ormond Memorial Art Museum & Gardens - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.19	0.70	0.00	0.58	0.00	0.00	5.39	0.80	0.00	9.97	4.41
17	3051718	CITY OF ORMOND BEACH		Cassin Young Memorial Post - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.16	3.57	1.65	0.00	0.13	0.00	0.00	2.47	0.66	2.86	6.27	4.35	0.00	4.13	1.22	3.06	6.47	4.55	7.48	10.89	8.97
18	3051912	CITY OF ORMOND BEACH		OB Police Dept. & Animal Control - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.99	0.59	0.00	0.00	0.00	0.00	2.89	0.28	1.18	6.69	2.88	0.00	3.50	0.27	1.38	6.89	3.08	5.81	11.32	7.50
19	3052293	CITY OF ORMOND BEACH		Cassen Park for boating & fishing - City owned	0.00	1.60	0.15	0.00	6.13	2.97	0.00	9.93	6.46	0.00	4.30	1.51	0.00	8.83	5.44	0.00	12.63	9.05	0.00	8.30	4.72	0.00	12.83	9.24	0.00	17.27	13.56
20	3053966	CITY OF ORMOND BEACH		Bailey Riverbridge Gardens park - City owned	0.00	1.60	0.06	0.00	4.36	1.01	0.00	8.16	3.50	0.00	4.30	0.85	0.00	7.06	2.75	0.00	10.86	5.50	0.00	8.30	3.92	0.00	11.06	5.66	0.00	15.50	9.38
21	3037073	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.58	0.08	1.61	3.77	2.18	5.41	7.57	5.98	0.00	4.28	1.62	4.31	6.47	4.88	8.11	10.27	8.68	0.00	8.28	5.61	8.31	10.47	8.88	12.89	15.06	13.47
22	3054091	CITY OF ORMOND BEACH		Ormond Beach City Hall	0.00	0.00	0.00	0.00	0.75	0.01	0.00	4.55	0.32	0.00	0.00	0.00	0.00	3.45	0.12	0.53	7.25	2.57	0.00	3.86	0.19	0.73	7.45	2.77	5.17	11.89	7.21
23	3054288	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.20	0.00	0.00	0.00	0.20	0.79	0.40	4.79	5.38	4.98
24	3056493	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.53	4.53	4.53
25	3045106	CITY OF ORMOND BEACH		Speed Park motorsports - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.57	0.39	0.00	0.00	0.00	0.00	2.17	0.23	0.00	7.03	0.93	0.00	0.00	0.00	0.00	7.28	0.97	0.00	9.54	2.20
26	3045700	CITY OF ORMOND BEACH		MacDonald House Welcome Center - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.35	3.51	2.39	0.00	0.07	0.00	1.55	3.71	2.59	5.99	8.15	7.03
27	3046951	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.77	2.59
28	3065824	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.60	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.30	1.09	0.00	0.00	0.00	0.00	12.60	6.97	0.00	8.30	3.27	0.00	12.80	7.15	0.00	16.60	10.68
29	3051742	CITY OF ORMOND BEACH		Residential - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	3.15	1.77
30	3052129	CITY OF ORMOND BEACH		Ormond Beach Riverside Church - City owned	0.00	1.60	0.07	0.00	6.13	1.84	0.00	9.93	3.85	0.00	4.30	0.84	0.00	8.83	3.21	0.53	12.63	6.19	0.00	8.30	2.59	0.73	12.83	6.39	5.17	17.27	10.83
31	3052609	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.32	0.32	0.00	0.00	0.00	0.00	3.02	3.02	3.02	3.02	3.02	0.00	0.00	0.00	3.22	3.22	3.22	7.65	7.65	7.65
32	3052617	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63	0.98	0.00	0.49	0.01	0.00	2.53	0.30	2.69	6.33	3.68	0.00	4.49	0.59	2.89	6.53	3.88	7.32	10.96	8.30
33	3054211	CITY OF ORMOND BEACH		Road next to OB Elementary School - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.48	4.55	1.95	0.00	0.39	0.00	0.00	3.45	1.03	3.18	7.25	4.65	0.00	4.39	0.74	3.38	7.45	4.85	7.81	11.88	9.27
34	3054911	CITY OF ORMOND BEACH		Nova Community Park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.14	0.00	0.00	0.00	0.00	0.00	2.04	0.00	0.00	5.84	0.24	0.00	2.81	0.01	0.00	6.04	0.27	0.00	10.63	1.51
35	3054920	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.57	0.04	0.00	0.00	0.00	0.00	0.00	0.00	1.15	3.27	2.06	0.00	0.00	0.00	0.00	0.00	0.00	5.15	7.27	6.06	0.00	0.00	0.00	0.20	0.20	0.20
38	3078845	CITY OF ORMOND BEACH		Burial Mound - City owned	0.00	0.00	0.00	0.00	1.51	0.32	0.00	5.31	1.64	0.00	0.78	0.08	0.00	4.21	1.09	1.18	8.01	4.04	0.00	4.78	1.77	1.38	8.21	4.24	6.07	12.89	8.92
40	3065859	CITY OF ORMOND BEACH		Municipal Drainage Easement - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	0.40	0.00	0.00	0.00	0.26	9.09	6.60	0.00	6.26	2.63	0.46	9.29	6.80	4.26	13.09	10.60
43	3087232	CITY OF ORMOND BEACH		Local park - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.90	3.20	0.00	0.83	0.17	0.00	0.00	0.00	5.47	15.97	9.24	0.00	4.83	2.58	5.73	16.24	9.51	8.81	19.00	12.13
45	3075692	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	2.10	1.92	0.00	0.00	0.00	1.38	2.30	2.12	5.97	6.89	6.66
47	3077857	CITY OF ORMOND BEACH		PAL Parking - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.67	1.73	1.70	0.00	0.00	0.00	0.57	0.63	0.60	4.37	4.43	4.40	0.27	1.30	0.66	4.57	4.63	4.60	9.23	9.29	9.26
48	3077865	CITY OF ORMOND BEACH		Ormond Beach Police Athletic - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.48	1.73	1.02	0.00	0.00	0.00	0.00	0.63	0.10	3.18	4.43	3.72	0.19	0.91	0.28	3.38	4.63	3.92	8.05	9.29	8.58
49	3078284	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.00	0.00	0.00	0.79	0.79	0.79	4.59	4.59	4.59	1.30	1.41	1.32	4.79	4.79	4.79	9.22	9.22	9.22
50	3078888	CITY OF ORMOND BEACH		Vacant land near Halifax river - City owned	0.00	1.59	0.43	2.85	6.13	4.24	6.65	9.93	8.04	0.00	4.29	3.04	5.55	8.83	6.94	9.35	12.63	10.74	0.00	8.29	7.00	9.55	12.83	10.94	14.24	17.52	15.56
51	3078896	CITY OF ORMOND BEACH		Office of City Attorney - City owned	0.00	1.58	0.21	2.92	4.53	3.61	6.72	8.33	7.41	0.00	4.28	2.79	5.62	7.23	6.31	9.42	11.03	10.11	0.00	8.28	6.77	9.62	11.23	10.31	14.06	15.67	14.75
52	3090021	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.82	2.82	2.82
53	3084861	CITY OF ORMOND BEACH		Ormond Beach Fire Station #91 - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.58	5.92	4.81	0.00	1.94	0.04	3.87	6.21	5.10	8.08	10.48	9.39
54	3084993	CITY OF ORMOND BEACH		Small residential playground - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09	5.79	5.48	0.00	0.00	0.00	5.37	6.07	5.76	9.05	9.73	9.40
56	3087330	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	4.94	6.13	5.60	0.00	4.09	0.62	5.21	6.40	5.87	7.21	8.49	8.00
57	3089162	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16	0.36	0.00	0.00	0.00	0.00	1.06	0.06	0.00	4.86	2.54	0.00	1.08	0.23	0.00	5.06	2.73	4.56	9.80	7.40
58	3089171	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.20	3.35	1.56	0.00	0.10	0.00	0.40	3.55	1.76	5.14	8.26	6.46
59	3094646	CITY OF ORMOND BEACH		Andy Romano Beachfront Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.87	0.05	0.00	0.65	0.00	0.00	1.59	0.02	0.00	6.13	0.62	0.00	4.65	0.03	0.00	6.37	0.72	1.31	9.81	3.59
60	3146361	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.60	0.30	2.36	6.10	3.97	6.16	9.90	7.77	0.00	4.30	2.13	5.06	8.80	6.67	8.86	12.60	10.47	0.00	8.30	6.62	9.06	12.80	10.67	13.81	17.78	15.40
61	3146379	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.60	0.30	1.83	5.77	3.65	5.63	9.57	7.45	0.00	4.30	2.70	4.53	8.47	6.35	8.33	12.27	10.15	0.00	8.30	6.62	8.53	12.47	10.35	13.12	17.06	14.94
62	3152115	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.72	0.72
63	3154843	CITY OF ORMOND BEACH		COA Ormond Beach Senior Center - City owned	0.00	0.00	0.00	0.75	2.52	1.51	4.55	6.32	5.31	0.17	1.87	0.82	3.45	5.22	4.21	7.25	9.02	8.01	4.17	5.87	4.82	7.45	9.22	8.21	12.04	13.81	12.80
64	3158750	CITY OF ORMOND BEACH		Vacant canal lot near Halifax River - City owned	0.00	1.60	0.53	0.00	5.67	3.24	2.98	9.47	6.97	0.00	4.30	2.03	1.88	8.37	5.87	5.68	12.17	9.67	0.00	8.30	5.24	5.88	12.37	9.87	10.46	17.00	14.46
65	3158962	CITY OF ORMOND BEACH		OB Environmental Discovery Center - City owned	0.00	1.60	0.27	0.00	6.13	3.31	0.00	9.93	6.66	0.00	4.30	1.03	0.00	8.83	5.61	0.00	12.63	9.29	0.00	8.30	3.21	0.00	12.83	9.49	0.00	17.42	14.03
66	3159497	CITY OF ORMOND BEACH		Vacant lot near OB Env. Disc. Center - City owned	0.00	1.59	0.08	0.00	6.13	2.03	3.34	9.93	5.82	0.00	4.29	1.14	2.24	8.83	4.72	6.04	12.63	8.52	0.00	8.29	5.11	6.24	12.83	8.72	10.81	17.40	13.28
67	3159560	CITY OF ORMOND BEACH		Central Park & lake - City owned	0.00	1.60	0.65	0.00	6.13	4.25	1.99	9.93	7.86	0.00	4.30	2.58	0.89	8.83	6.76	4.69	12.63	10.56	0.00	8.30	6.11	4.89	12.83	10.76	9.45	17.45	15.33
68	3161319	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	1.61	0.25	2.22	5.41	3.70	0.00	0.67	0.08	1.12	4.31	2.60	4.92	8.11	6.40	1.57	4.67	3.06	5.12	8.31	6.60	9.78	12.97	11.26
69	3161955	CITY OF ORMOND BEACH		Fire Station #93	0.00	0.13	0.00	0.95	3.77	1.77	4.75	7.57	5.57	0.00	2.83	0.66	3.65	6.47	4.47	7.45	10.27	8.27	3.73	6.83	4.65	7.65	10.47	8.47	12.23	15.06	13.06
70	3165241	CITY OF ORMOND BEACH		Ormond Beach South Ormond Rec	0.00	1.60	0.03	0.00	6.00	0.47	0.00	9.80	3.13	0.00	4.30	0.20	0.00	8.70	2.18	1.77	12.50	5.80	0.00	8.30	2.64	1.97	12.70	6.00	6.53	17.24	10.59
71	3165811	CITY OF ORMOND BEACH		Central Park & lake - City owned	0.00	0.92	0.21	0.00	6.13	3.17	2.75	9.93	6.92	0.00	3.62	1.63	1.65	8.83	5.82	5.45	12.63	9.62	1.87	7.62	5.39	5.65	12.83	9.82	10.18	17.61	14.44
72	3167686	CITY OF ORMOND BEACH		Vacant lot near pond - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27	1.03	0.00	0.00	0.00	0.00	2.47	1.15	0.00	7.53	4.53
73	3156404	CITY OF ORMOND BEACH		Ormond Beach Performing Arts Center - City owned	0.00	0.69	0.02	0.52	4.20	2.33	4.32	8.00	6.13	0.00	3.39	1.48	3.22	6.90	5.03	7.02	10.70	8.83	3.58	7.39	5.46	7.22	10.90	9.03	11.81	15.48	13.61
74	3156421	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.60	0.16	1.28	6.10	4.54	5.08	9.90	8.34	0.00	4.30	0.44	3.98	8.80	7.24	7.78	12.60	11.04	0.00	8.30	0.86	7.98	12.80	11.24	12.56	17.39	15.82
75	3156595	CITY OF ORMOND BEACH		Pollution Control Facility - City owned	0.00	1.60	0.18	0.00	6.10	2.53	0.00	9.90	6.14	0.00	4.30	0.76	0.00	8.80	5.07	0.00	12.60	8.76	0.00	8.30	3.28	0.00	12.80	8.95	0.00	17.39	13.48
76	3156846	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.60	0.09	1.28	6.00	4.03	5.08	9.80	7.83	0.00	4.30	0.44	3.98	8.70	6.73	7.78	12.50	10.53	0.00	8.30	1.10	7.98	12.70	10.73	12.56	17.29	15.31
77	3156854	CITY OF ORMOND BEACH		Land near OB Public Works Department - City owned	0.00	1.60	0.07	0.00	6.10	2.80	2.49	9.90	6.52	0.00	4.30	0.41	1.39	8.80	5.42	5.19	12.60	9.22	0.00	8.30	2.14	5.39	12.80	9.42	9.97	17.39	14.00
78	3156986	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	1.60	0.16	0.00	5.94	2.74	3.57	9.74	6.54	0.00	4.30	1.27	2.47	8.64	5.44	6.27	12.44	9.24	0.00	8.30	4.48	6.47	12.64	9.44	10.94	17.17	13.95
79	3159021	CITY OF ORMOND BEACH		Air Cooled of Ormond - City owned	0.00	0.00	0.00	0.00	2.52	1.23	2.39	6.32	4.93	0.00	1.56	0.29	1.29	5.22	3.83	5.09	9.02	7.63	2.89	5.56	4.24	5.29	9.22	7.83	9.85	13.79	12.40
80	3159063	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	2.52	0.51	2.65	6.32	4.10	0.00	1.58	0.25	1.55	5.22	3.00	5.35	9.02	6.80	2.03	5.58	3.74	5.55	9.22	7.00	10.11	13.79	11.56
81	3159501	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.60	0.00	0.95	2.52	1.89	4.75	6.32	5.69	0.00	3.30	0.86	3.65	5.22	4.59	7.45	9.02	8.39	3.92	7.30	4.86	7.65	9.22	8.59	12.20	13.78	13.15
82	3159519	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.42	2.59	1.65	4.22	6.39	5.45	0.00	1.26	0.63	3.12	5.29	4.35	6.92	9.09	8.15	3.91	5.26	4.63	7.12	9.29	8.35	11.67	13.84	12.91
83	3159527	CITY OF ORMOND BEACH		Vacant lot on OB Env. Disc. Center - City owned	0.00	0.00	0.00	0.00	0.85	0.03	2.16	4.65	3.20	0.00	0.35	0.00	1.06	3.55	2.10	4.86	7.35	5.90	1.89	4.35	2.61	5.06	7.55	6.10	9.61	12.11	10.65
84	3160681	CITY OF ORMOND BEACH		Lots near Water Treatment Facility - City owned	0.00	0.00	0.00	0.00	0.10	0.00	0.98	3.90	2.65	0.00	0.00	0.00	0.00	2.80	1.55	3.68	6.60	5.35	0.17	3.49	2.06	3.88	6.80	5.55	8.32	11.22	10.03
85	3161904	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.85	1.44	1.10	4.65	5.24	4.90	0.07	0.40	0.28	3.55	4.14	3.80	7.35	7.94	7.60	4.07	4.40	4.28	7.55	8.14	7.80	12.14	12.73	12.39
86	3162862	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.

					2040 (+1.1')									2070 (+3.8')									2100 (+7.8')								
					MHHW (2.6')			Cat 1 (6.1')			Cat 3 (9.9')			MHHW (5.3')			Cat 1 (8.8')			Cat 3 (12.6')			MHHW (9.3')			Cat 1 (12.8')			Cat 3 (16.6')		
ASSET ID	**ALTKEY**	**OWNER 1**	**OWNER 2**	**DESCRIPTION**	**MIN22**	**MAX23**	**MEAN24**	**MIN23**	**MAX24**	**MEAN25**	**MIN24**	**MAX25**	**MEAN26**	**MIN25**	**MAX26**	**MEAN27**	**MIN26**	**MAX27**	**MEAN28**	**MIN27**	**MAX28**	**MEAN29**	**MIN28**	**MAX29**	**MEAN30**	**MIN29**	**MAX30**	**MEAN31**	**MIN30**	**MAX31**	**MEAN32**
175	7216736	CITY OF ORMOND BEACH		Easement/drainage/canal - City owned	0.00	1.60	0.39	2.03	5.94	4.28	5.83	9.74	8.08	0.00	4.30	2.20	4.73	8.64	6.98	8.53	12.44	10.78	0.00	8.30	4.94	8.73	12.64	10.98	13.16	17.08	15.43
176	7400731	CITY OF ORMOND BEACH		Park in Tomoka Oaks CC Estates - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.43
182	7763265	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.00	0.95	0.32	2.81	4.75	3.66	0.00	0.00	0.00	1.71	3.65	2.56	5.51	7.45	6.36	2.21	2.37	2.31	5.71	7.65	6.56	10.30	12.23	11.14
183	7796139	CITY OF ORMOND BEACH		Vacant lot near OB Riverside Church - City owned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.35	3.45	2.13	0.00	0.34	0.01	1.55	3.65	2.33	5.99	8.09	6.77
184	7974347	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	0.95	3.93	1.58	4.75	7.73	5.38	0.29	1.04	0.32	3.65	6.63	4.28	7.45	10.43	8.08	4.29	5.04	4.32	7.65	10.63	8.28	12.23	15.22	12.87
185	7974398	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	1.18	2.03	1.61	4.98	5.83	5.41	0.03	1.58	0.32	3.88	4.73	4.31	7.68	8.53	8.11	4.03	5.58	4.32	7.88	8.73	8.31	12.46	13.32	12.90
186	7975866	CITY OF ORMOND BEACH		Vacant lot - City owned	0.00	0.00	0.00	2.10	2.26	2.16	5.90	6.06	5.96	0.00	1.83	1.09	4.80	4.96	4.86	8.60	8.76	8.66	3.72	5.83	5.09	8.80	8.96	8.86	13.38	13.55	13.45

We are engineers, scientists and innovators

Geosyntec is a specialized consulting and engineering firm that works with private and public sector clients to address their new ventures and complex problems involving the environment, our natural resources, and our civil infrastructure. Geosyntec has a staff of over 1,900 engineers, scientists, and related technical and project support staff located in more than 90 offices throughout the U.S. and in Canada, Sweden, Australia, and the United Kingdom.

Geosyntec consultants

engineers | scientists | innovators

Offices in Principal Cities of the United States and Select International Locations

www.geosyntec.com

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.H
Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2023-66
Strategic Goal:	Quality of Life – Other		
Department :	Leisure Services		
Subject:	Contract Award to American Janitorial, Inc		
Budget Impact:	The annual contract price for American Janitorial, Inc. is $428,823.70 with extra service costs and emergency service costs varying depending upon location and need. The current FY 2022-2023 budget is for $317,877.55 for professional janitorial services. As part of the FY 2022-23 budget process, a contingency for inflation of $400,000 was included in the budget. A transfer will be made from this contingency to the appropriate accounts for the amount of this award above budget.		
Summary:	This item requests approval to award American Janitorial, Inc. the professional janitorial services contract for City facilities identified in the attached RFP.		
Recommended Action:	The staff's recommendation is to award the Professional Janitorial Services contract to American Janitorial, Inc. at the annual cost of $428,823.70.		
Staff Contact:	Robert Carolin, Leisure Services Director, (386) 676-3279		

Approval:

Kelly McGuire, Finance Director	2/28/2023	
Claire Whitley, Assistant City Manager	3/15/2023	
Joyce Shanahan, City Manager	3/16/2023	

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Robert Carolin, Leisure Services Director

Date: March 21, 2023

Subject: Contract Award to American Janitorial, Inc

Commission Goal: Quality of Life – Other

Introduction

This is a recommendation for the City Commission to authorize the awarding of the Professional Janitorial Services contract to American Janitorial, Inc.

Background

At the December 6, 2022 City Commission meeting, staff notified the City Commission of the intent to advertise RFP #2023-05 for the professional janitorial services contract for City facilities identified in the RFP with a bid opening date of January 12, 2023.

Discussion

Six contractors submitted proposals as illustrated on the attached bid comparison sheet and were evaluated by the three members on the evaluation committee, comprised of Bill Rose, Contacts Manager, Mike Demchak, Contracts Manager, and John Fowler, Building Maintenance Supervisor. The proposals were evaluated and rated as per the attached proposal rating sheets (scoring was on a scale of 0-100 with 100 being the highest rating of each evaluator, 0 being the lowest rating,) based on the evaluation criteria in the RFP as follows:

- Contractor's Price - 30%
- Experience and Account Retention - 30%
- Stock of Required Equipment - 20%
- References - 20%

Based on the overall scores, the proposer scores were as follows:

- American Janitorial, Inc. - 238 points
- D & A Building Services, Inc. - 238 points

- Clean Space - 210 points
- TRU Disinfectectant - 30 points
- American Facility Services - 233 points
- Contractor Enterprises Inc. - 105 points

American Janitorial, Inc. and D & A Building Services, Inc, had a tie score, but American Janitorial, Inc. ranked higher due to the difference in cost. American Janitorial, Inc. is the successful proposer and staff is requesting authorization to award the Professional Janitorial Services contract to American Janitorial, Inc.

Budget Impact

The annual contract price for American Janitorial, Inc. is $428,823.70 with extra service costs and emergency service costs varying depending upon location and need. The current FY 2022-2023 budget is for $317,877.55 for professional janitorial services. As part of the FY 2022-23 budget process, a contingency for inflation of $400,000 was included in the budget. A transfer will be made from this contingency to the appropriate accounts for the amount of this award above budget.

Citizen Impact

By contracting with a qualified janitorial services provider, the City ensures the continuation of the great quality of life and sense of community pride our residents currently enjoy when visiting city facilities.

Recommendation

The staff's recommendation is to award the Professional Janitorial Services contract to American Janitorial, Inc. at the annual cost of $428,823.70.

Attachments:

1. 23-66 Janitorial Svcs - American Janitorial (P23-0032G)
2. American Janitorial agreement
3. AJI Response - RFP # 2023-05, Professional Janitorial Services
4. RFP 2023-05 score summary

Approvals:

Kelly A. McGuire

Date: February 28, 2023

Kelly McGuire, Finance Director



Date: March 15, 2023

Claire Whitley, Assistant City Manager



Date: March 16, 2023

Joyce Shanahan, City Manager

RESOLUTION NO. 2023-66

A RESOLUTION ACCEPTING THE PROPOSAL OF AMERICAN JANITORIAL, INC., REGARDING PROFESSIONAL JANITORIAL SERVICES; AUTHORIZING THE EXECUTION OF AN AGREEMENT AND PAYMENT THEREFOR; REJECTING ALL OTHER PROPOSALS; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City solicited proposals for professional janitorial services (the Project) (City RFP No. 2023-05), in accordance with Section 2-300(b), *Code of Ordinances*, and

WHEREAS, the City's evaluation committee reviewed the six (6) proposals received and determined that the most advantageous proposal for the City, taking into consideration contractor's price, past experience, account retention, stock of required equipment, and references, is the proposal submitted by American Janitorial, Inc. to provide professional janitorial services in the amount of $428,823.70 (a copy of said proposal being incorporated in the agreement which is attached hereto and incorporated herein by reference), and

recommendation, and

WHEREAS, the City Manager has certified that the money for the payment of the Project will deposited to the credit of the General Fund (301) through a budget amendment and will not be appropriated for any other purpose, and

WHEREAS, based on the foregoing the City's professional staff recommends that the City Commission accept the proposal of American Janitorial, Inc. and execute an agreement for the Project, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The proposal of American Janitorial, Inc. to provide professional janitorial services for the City is hereby accepted.

SECTION TWO. All other proposals relative to the aforedescribed Project shall be deemed rejected upon the execution of an agreement with American Janitorial, Inc.

SECTION THREE The Mayor and the City Manager are hereby authorized and directed to execute an Agreement between the City and American Janitorial, Inc. for the Project in an amount of $428,823.70, and to pay the cost thereof from the General Fund.

SECTION FOUR. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

AGREEMENT

THIS AGREEMENT is made and entered into by and between the **City of Ormond Beach** ("City"), a Florida municipal corporation, 22 South Beach Street, Ormond Beach, Volusia County, Florida and **American Janitorial, Inc.** ("Contractor"), 87 North Central Avenue, Umatilla, FL 32784, and in consideration of the mutual promises and covenants herein contained, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree to the following:

1. **Scope of Work.** The Proposal attached hereto as Exhibit "A" and the Request for Proposals (RFP 2023-05 "Professional Janitorial Services") attached hereto as Exhibit "B", are incorporated herein by reference and are a material part of this Agreement. The Contractor shall fully comply with the terms and conditions described in the attached exhibits.

2. **Term.** This Agreement shall be effective on the date it is fully executed by the parties and shall have an initial term of one (1) year. This Agreement shall be automatically renewed for four (4) additional one-year periods unless either party provides at least forty-five (45) days prior written notice of its intent not to renew.

3. **Consideration.** Contractor shall perform the services at the prices set forth on the attached exhibits. Contractor shall prepare and submit invoices to the City at the address set forth in Paragraph 9 of this Agreement. All such invoices shall be paid by the City within thirty (30) days.

4. **Delivery.** Contractor shall complete the project within the time frame set forth on the attached exhibits.

5. **Termination of Agreement**.
   (a) The City Commission shall have the right to terminate the Agreement in the event the Contractor files any petition or proceeding for bankruptcy relief, or is adjudicated to be bankrupt or insolvent, or fails to pay just debts as they ordinarily become due; or for a material breach of this agreement that remains uncured for at least thirty days after prior written receipt of a notice of violation of same.

   (b) This Agreement may not be terminated by the Contractor.

6. **Assignment**. The Contractor shall not assign, convey or transfer all or any part of this Agreement, or all or any part of Contractor's interest herein, or all or any part of any interest in the Contractor, without the prior written consent of the City Commission, which consent shall not be unreasonably withheld.

7. **Complete Agreement**. This Agreement, including the provisions set forth in the exhibits attached hereto and incorporated by reference herein, constitutes the entire and complete

agreement of the parties, and the promises and covenants herein contained shall survive the life of this Agreement.

8. **Amendment to Agreement**. Any amendment, change, or modification of this Agreement must be in writing and fully executed by both parties.

9. **Notices**. All notices which are required by this Agreement shall be provided to the parties at the following addresses, or such other addresses as may be requested in writing by either party:

City of Ormond Beach	**American Janitorial, Inc.**
Joyce Shanahan, City Manager	Jason Lay, CEO
(copy to City Attorney)	P.O. Box 2534
22 South Beach Street	Umatilla, FL 32784
Ormond Beach, FL 32174	

10. **Sovereign Immunity**. The City expressly retains and reserves all rights, privileges, immunities, and benefits of sovereign immunity. This provision shall be construed broadly in favor of the City.

11. **Venue**. The terms and conditions of this Agreement shall be construed and enforced under the laws of the State of Florida. Any action or proceeding, either at law or in equity, regarding this Agreement shall be brought in the circuit court, Seventh Judicial Circuit in and for Volusia County, Florida. Venue in any other jurisdiction or forum, whether it be any other circuit, state or federal venue, is hereby expressly waived.

12. **Waiver of Conditions**. No waiver by the City of any condition or breach of performance by the Contractor shall constitute an irrevocable, continuing, or subsequent waiver by the City of the same condition or breach of performance, or of any other condition or other breach of performance.

13. **Severability**. If any part of this Agreement is declared to be unenforceable or void by a court of competent jurisdiction, the remaining parts of the Agreement shall remain in full force and effect as long as the services to be provided by the Contractor are not materially affected, altered or impaired as a result of said judicial declaration.

14. **Conflicting Provisions.** In the event of any conflict between the provisions of this Agreement and any exhibits, the provision most favorable to the City shall control and shall be given full force and effect.

15. **Indemnification**. The City, its agents, employees, and officials, both elected and appointed, shall be indemnified and held harmless by Contractor from any and all liabilities, claims, and causes of action which may arise out of the willful, negligent, or unlawful acts or omissions of the Contractor or its subcontractors in the performance of this Agreement, unless such claims are a result of the City's sole negligence, as determined by the final decision maker of such claim.

16. **Duty to Defend.** The Contractor shall defend all suits and administrative actions, including all appellate proceedings, brought against the City, its agents, employees, and officials, both elected and appointed and shall pay all attorneys' fees and costs associated with the City's legal defense, as may be selected by the City, arising from all claims and causes of action described in Section 15 above. Such payment on behalf of the City shall be in addition to any and all other legal or equitable remedies available to the City and shall not be considered to be the City's exclusive remedy.

17. **Contractor's Insurance**. The Contractor shall purchase and maintain for the entire life of this Agreement, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under this Agreement, whether such operations be by the Contractor, or by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

18. **Types of Insurance and Limits of Liability**

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

19. **Requirements for Certificates of Insurance.**

(a) With the execution of this Agreement, the Contractor shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain a provision that the coverage under the policies will not be canceled, non-renewed or materially changed until at least **thirty (30)** days' prior written notice of such cancellation, non-renewal or change [except for nonpayment of premium, which shall be **ten (10)** days] has been given to the City. The Contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD

FORM 25-S (7/90), or its successor form, and shall be made a part of this Agreement.

(b) New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

(c) If requested by the City, the Contractor shall furnish complete copies of the Contractor's insurance policies, forms and endorsements.

(d) For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

(e) If the Contractor fails to obtain and maintain for the life of the Agreement the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City from the amount due the Contractor for the work covered by the Agreement.

(f) **Policies of Insurance**

1. Except as otherwise provided herein, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-) in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carriers; written confirmation is required.

3. All policies of insurance or certificates thereof referred to herein shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability and Automobile Liability policies of insurance and certificates thereof.

20. **Enforcement of Costs**. If any legal action or other proceeding is brought for the enforcement of this Agreement, or because of an alleged dispute, breach, default, or misrepresentation in connection with any provision of this Agreement, the successful or prevailing party or parties shall be entitled to recover reasonable attorneys' fees, court

costs, and all expenses even if not taxable court costs (including, without limitation, all such fees, costs and expenses incident to arbitration, appellate, bankruptcy, and post-judgment proceedings), incurred in that action or proceeding or any appeal, in addition to any other relief to which the party or parties may be entitled. Attorneys' fees include legal assistant fees, expert witness fees, investigative fees, administrative costs, and all other charges billed by the attorney for the prevailing party.

21. **Compliance With Laws.** Contractor shall comply with all applicable federal, state and local laws and regulations.

22. **Compliance With Florida Public Records Law.** Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK

22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32175. (386)677-0311
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

23. **Limitation of Remedy and Liability.** Contractor and Owner expressly waive any claim for consequential damages against the other including but not limited to, a waiver of claims for diminished bonding capacity, loss of financing, loss of business reputation, lost profits on other projects or other lost opportunity damage claims.

Contractor expressly agrees that any claim (tort, contract, claim in equity, or otherwise) by Contractor for damages against Owner shall not exceed the total amount of the contract price, less any amounts actually paid to the Contractor by the Owner.

24. **Waiver of Right to Jury Trial.** THE PARTIES HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHT WHICH ANY PARTY MAY HAVE TO TRIAL BY JURY IN RESPECT OF ANY PROCEEDING, LITIGATION OR COUNTERCLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. IF THE SUBJECT MATTER OF ANY LAWSUIT IS ONE IN WHICH THE WAIVER OF JURY TRIAL IS PROHIBITED, NO PARTY TO THIS AGREEMENT SHALL PRESENT AS A NON-COMPULSORY COUNTERCLAIM IN ANY SUCH LAWSUIT ANY CLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. FURTHERMORE, NO PARTY TO THIS AGREEMENT SHALL SEEK TO CONSOLIDATE ANY SUCH ACTION IN WHICH A JURY TRIAL CANNOT BE WAIVED.

25. **Verification of Employment Status Using E-Verify System**

(a) Section 448.09, *Florida Statutes*, makes it unlawful for any person to knowingly employ, hire, recruit, or refer, either for herself or himself, or on behalf of another, for private or public employment within the state, an alien who is not duly authorized to work in the United States. Contractor warrants that it is registered with the U.S. Department of Homeland Security's E-Verify system, and is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

(b) Contractor agrees that if the contractor enters into an agreement with a subcontractor, the subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and contractor warrants it shall maintain any such affidavits for the duration of the contract. If the City has a good faith belief that a subcontractor knowingly violated

Section 448.09 (1), the City shall promptly notify the contractor and order the contractor to immediately terminate the contract with the subcontractor.

(c) In the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and as provided by statute, the contractor may not be awarded a public contract for at least one (1) year after the date of termination. The contractor may also be held liable for any additional costs incurred by the City as a result of the termination of the contract.

26. **No Conflict of Interest.** The Contractor warrants and agrees that neither it, nor any of its employees, agents, officers, directors, shareholders and independent contractors are, or will become, under contract with or accept compensation from any individual, business, corporation or governmental entity that has the possibility of an adverse interest to those of the City of Ormond Beach. The Contractor and its officers, directors, shareholders, employers, agents and subcontractors, agree not to provide any services or assistance to any entity directly or indirectly relating to the services provided to the City and to immediately notify the City Manager and City Attorney of any contact with any entity that has, or potentially has, a conflict of interest with the City of Ormond Beach. This provision shall be interpreted as broadly as possible to prevent any potential or actual conflict of interest presently or in the future by the Contractor.

27. **Effective Date**. This Agreement shall become effective upon the date last signed by the parties hereto.

IN WITNESS WHEREOF, the undersigned parties have caused this Agreement to be signed on the dates indicated hereinbelow.

DATED this _____ day of _____, 2023.

Witnesses:

CITY OF ORMOND BEACH

_____

By: _____
BILL PARTINGTON
Mayor

Print Name: _____

_____

By: _____
JOYCE SHANAHAN
City Manager

Print Name: _____

DATED this _____ day of _____, 2023.

Witnesses:

AMERICAN JANITORIAL, INC.

_____

Print Name: _____

By: _____

Print Name: _____

Title: _____

_____

Print Name: _____

Attest: _____

Print Name: _____

Title: _____



American Janitorial Incorporated

The Best Value In Cleaning

Janitorial Services Proposal

RFP # 2023-05

Professional Janitorial Services

January 12, 2023

Focused Customer Service
Quality Workmanship
Experienced Staff
Competitive Pricing
24 Hour Emergency Service



City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3374

REQUEST FOR PROPOSALS

PROPOSER ACKNOWLEDGEMENT FORM

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP TITLE: **PROFESSIONAL JANITORIAL SERVICES**

RFP NUMBER: **2023-05**

RFP OPENING DATE & TIME: **January 12, 2023 - 3:00 PM**

RFP OPENING LOCATION: Training Room (Breezeway, City Hall) 22 S. Beach St.

PRE-SUBMITTAL MEETING: N/A

Submittals Received After the Above Date and Time Will Not Be Accepted.

PROPOSER'S NAME: American Janitorial, Inc. (AJI)

PROPOSER'S MAILING ADDRESS: PO Box 2534

CITY-STATE-ZIP: Umatilla, FL 32784

F.E.I.N.: 46-0557106

PHONE NUMBER: 352-551-7941

FAX NUMBER: 352-669-1408

If returning as a "No Submittal", please state reason (s): _____

I certify that this Proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Proposal for the same materials, services, supplies, or equipment, and is in all respects fair and made without collusion or fraud. I agree to abide by all conditions of this RFP and certify that I am authorized to sign this RFP for the Proposer. In submitting a RFP to the City of Ormond Beach, the Proposer offers and agrees that if the Proposal is accepted, the Proposer will convey, assign or transfer to the City of Ormond Beach all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Ormond Beach. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Proposer.

X _____
AUTHORIZED SIGNATURE (MANUAL)

Jason Lay
NAME (TYPED)

CEO
TITLE

1/10/2023
DATED

City of Ormond Beach
Request for Proposal

Professional Janitorial Services
(RFP No. 2023-05)

RFP RESPONSE FORM

THIS RESPONSE IS SUBMITTED TO:

Purchasing Coordinator
City of Ormond Beach
22 S. Beach Street, Room 101
Ormond Beach, Florida 32174

The undersigned SUBMITTER proposes and agrees, if this Submittal is accepted, to enter into a Contract with the CITY that is substantially in the form of this Request for Proposal (RFP) and to provide all services, as specified or indicated in the RFP Documents, in full accordance with the terms and conditions set forth in therein.

SUBMITTER accepts all of the terms and conditions of the General Conditions. SUBMITTER will sign the Contract and submit the Contract security (when applicable) and other documents required by the Contract Documents within ten (10) days after the date of CITY's Notice of Award.

In submitting this information, SUBMITTER represents, as more fully set forth in the Agreement, that:

SUBMITTER has examined copies of all the RFP Documents and of the following Addenda:

Addendum Date	Addendum Number
12/15/2022	1
1/4/2023	2
1/6/2023	3

Receipt of all of which is hereby acknowledged.

This Proposal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Proposer has not directly or indirectly induced or solicited any other Proposer to submit a false or sham Proposal; PROPOSER has not solicited or induced any person, firm or a corporation to refrain from bidding; and PROPOSER has not sought by collusion to obtain for himself any advantage over any other Proposer or over the CITY.

THIS RESPONSE IS SUBMITTED BY:

COMPANY NAME: American Janitorial, Inc. (AJI)

VENDOR/CONTRACTOR LICENSE NUMBER: 46-0557106 (FEIN)

ADDRESS: 87 North Central Ave, Umatilla, FL 32784 (Physical)
PO Box 2534, Umatilla, FL 32784 (Mailing)

PHONE NO.: 352-551-7941 FAX NO.: 352-669-1408

PROPOSER'S NAME: Jason Lay
(Typed or Printed in Ink)

TITLE: CEO

AUTHORIZED SIGNATURE: I, Jason Lay hereby
(Original signature required in each document)

declare that I have read and fully understand the RFP Documents and, including the General Conditions and the Scope of Work, and that I am duly authorized to sign and submit this Submittal.

The CITY reserves the right to reject any and all Submittals, to waive informalities, and to accept any Submittal or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

PROPOSER: PLEASE ENSURE THAT YOU HAVE SIGNED THE RFP RESPONSE FORM OF THIS REQUEST FOR PROPOSAL. OMISSION OF A SIGNATURE ON THAT PAGE MAY RESULT IN REJECTION OF YOUR PROPOSAL.

TITLE PAGE

Proposal for Professional Janitorial Services

RFP # 2023-05

City of Ormond Beach

Company Headquarters

American Janitorial, Inc. (AJI)
87 North Central Ave
Umatilla, FL 32784

Contact Person

Jeff Simmons, Director of Sales
352-551-7941 (cell)
352-669-1408 (fax)
jeff.simmons@ajiclean.com

Proposal Date

January 12, 2023

January 12, 2023

Mr. Rob Hart
City of Ormond Beach
22 South Beach Street
Ormond Beach, FL 32174

RE: Transmittal Letter
RFP 2023-05 Professional Janitorial Services

Dear Mr. Hart,

We are pleased to submit a proposal for janitorial services at the City of Ormond Beach locations. As you review our proposal, you will see that as the current vendor providing these services to these locations, American Janitorial, Inc. (AJI) understands your specific challenges and our proposal provides you with a program tailored specifically for the needs of the City of Ormond Beach. These key items separate AJI in the marketplace:

- Experience with large scale, multi-location projects – As the current janitorial contractor for several City and County government entities throughout Florida, including the Cities of Ormond Beach, Clermont, Dunedin and Palm Coast, as well as Lake, Volusia, and Flagler Counties, AJI understands the unique challenges of providing daily services for multiple locations spread out over large geographic areas. Additionally, we provide custodial and related services to over 5.5 million sq ft of space daily throughout our portfolio, employing over 250 people.

- Management - The Contract Managers we assign to oversee your account are the most integral part of our program. These are salaried positions, which coordinate, direct, and control all of the custodial functions in their area of operation. The assigned Contract Managers will continue to be available to City of Ormond Beach representatives 24 hours a day, 7 days a week.

- Proximity – Headquartered in Lake County, AJI has a strong presence in Central Florida, which places us in a unique position to be able to handle any issues that arise at the City of Ormond Beach locations promptly and efficiently.

American Janitorial, Inc. (AJI)
87 North Central Ave, Umatilla, FL 32784
P: 352-551-7941
F: 352-669-1408

AJI is a local cleaning company that has serviced Florida businesses and governments for over 35 years. AJI was founded in 1987 as a "one stop shop" commercial and industrial janitorial service and supply company.

AJI was previously known as ABC Clean-All, a Florida Corporation formed on September 24, 1987 by Theo Tingle. In 2004, the company was purchased by Mr. Tingle's grandson, our current President, Jordan Dailey and Stephanie Dailey, our current CFO & Vice President.

Under our current structure as American Janitorial, Inc., we are a Florida Corporation incorporated on July 12, 2012. Our officers are Jordan Daily (President), Stephanie Dailey (CFO) and Jason Lay (CEO). Our home office is located in the City of Umatilla, allowing us a central base in which to service a large geographical area throughout Florida. We have serviced hundreds of local businesses and government organizations over the years and stand by our reputation as the best cleaning value available.

We are very proud of our reference base, and I encourage you to contact any of our customers to hear about their experiences with AJI.

Our fundamental values of honesty, trust, integrity, respect, and quality drive our philosophy of cleaning at AJI; to deliver the best possible service to our customers each and every day. Our basic principles for achieving this goal are:

- Develop transparent relationships with employees, suppliers and customers
- Create a positive economic outcome for both our employees and our customers
- Seek to steadily improve our quality control system, CleanCheck ™
- Develop meaningful community interaction
- Protect and preserve the environment at all times
- Maintain our competitive edge

AJI is committed to performing the work within the time period specified by the City in the RFP, and we verify that all terms and conditions set forth by the City of Ormond Beach are understood and acknowledged by the undersigned. Additionally, this proposal is a firm and irrevocable offer for the engagement period. As CEO of AJI, I am legally authorized to bind the corporation through signature.

We look forward to continuing our an excellent working relationship with this contract, and we remain committed to giving the City of Ormond Beach the highest possible quality for the fairest possible price.

If you have any questions regarding this response, please contact me anytime at 352-910-0880 or by email at jason.lay@ajiclean.com.

Sincerely,



Jason Lay
CEO

American Janitorial, Inc. (AJI)
87 North Central Ave, Umatilla, FL 32784
P: 352-551-7941
F: 352-669-1408

PROFILE OF PROPOSER

American Janitorial Inc. (AJI) is a Florida Corporation founded in 1987 as a "one stop shop" commercial and industrial janitorial service and supply company.

AJI employs over 250 people to provide comprehensive cleaning services for over 225 facilities throughout the State of Florida, totaling over 5.5 million square feet serviced each day. We have serviced hundreds of local businesses and government organizations over the years and stand by our reputation as the best cleaning value available. Some of our current customers include The Villages HealthCare Centers, City of Gainesville RTS, Volusia County Board of County Commissioners, Flagler County Board of County Commissioners, The Villages Commercial Property Management, The Villages Community Development Districts, the Cities of Dunedin, Ormond Beach, Palm Coast and Clermont.



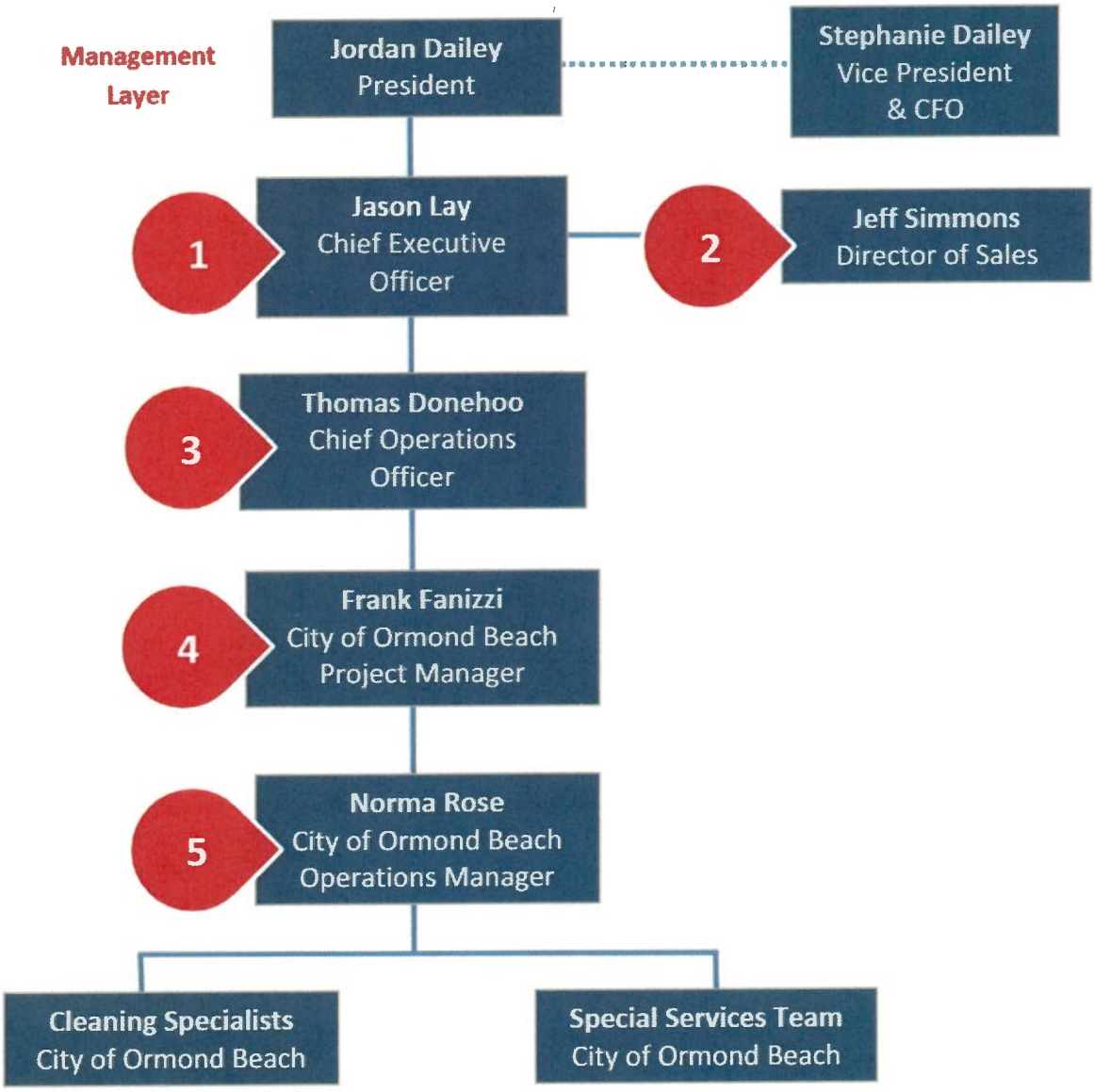
AJI started out as an energetic family business with only a few part-time employees. It has now grown to be one of the leading janitorial service contracting companies in Central Florida yet still remains a strong family business. AJI has always maintained a focus on hard work and dedication to customer service.

Our President is Jordan Dailey, the company founder's grandson. Mr. Dailey joined the company in 2000 to assist in the development of the commercial janitorial operations. Despite tough economic conditions, AJI has continued to grow under his leadership as he has demonstrated his ability to lead and adapt to ever-changing times.

AJI Contract Personnel

Our personnel approach is based on a team concept of highly trained individuals who are assigned to a specific duty throughout their assigned service area. AJI will have **5 layers of management** on this project to ensure the needs of the City of Ormond Beach are continued to be met on a consistent, daily basis. The following pages outline the janitorial service industry experience and primary responsibilities of AJI's management team.

Management Organizational Structure



Management Biographical Overview



Jordan Dailey

President

AJI's President joined the company in 2000 to assist in the development of the commercial janitorial operations. AJI has continued to grow under his leadership as he has demonstrated his ability to lead and adapt to ever-changing times and build upon AJI's legacy as one of the most popular janitorial service providers in the region. Part of this adaptation was the creation and implementation of a new quality assurance system that has drastically improved the overall performance level of the company's services. Mr. Dailey also expanded the service offerings that the company provides. This expansion has allowed the company to branch into new markets and add more services to a wider variety of customers, particularly in the governmental and medical fields.



Jason Lay

CEO

AJI's CEO joined AJI in 2022, after retiring from a successful, 28-year career as a Colonel in the United States Air Force and the Florida Air National Guard. His extensive experience as a senior military officer and commander, including multiple overseas combat deployments, makes him a trusted and valuable leader for the AJI Team. In addition, Mr. Lay brings a wealth of business experience and acumen from his time as President and CEO of his own construction and restoration company for 10 years. Mr. Lay earned his Bachelor of Science degree in mechanical engineering from the University of Portland in 1994, and he also earned a master's degree in Security Studies from Air University in 2016. As CEO, Mr. Lay is responsible for the business performance of the entire AJI organization, including Operations, Sales, Business Development, office management, accounting, support functions, and individual leadership development. In addition, he is responsible for establishing and implementing key business strategies and objectives that will maintain and secure AJI's future success.



Stephanie Dailey
Vice President & CFO

Ms. Daily joined AJI in 2001 and currently serves as our Vice President & Chief Financial Officer. In this role, Ms. Dailey is responsible for developing and implementing purchasing strategies to reduce costs, which allows AJI to stay competitive as well as maintaining strong supplier relationships to ensure our employees in the field have the proper equipment and materials necessary to do their jobs. Additionally, Ms. Daily is responsible for the overall administrative operation of janitorial service contracts and adherence to terms and conditions.



Jeff Simmons
Director of Sales

Since joining the company in 2010, Mr. Simmons has lead AJI through an unprecedented period of growth, generating over $8M in new business. Mr. Simmons currently serves as Director of Sales of AJI and has developed a set of performance metrics that drive improved financial performance, customer service, and overall operational accountability. Mr. Simmons is responsible for compliance and quality adherence, as well as satisfying quality systems and performance for all customer contracts.



Thomas Donehoo
Chief Operations Officer

As the COO, Mr. Donehoo is responsible for customer service, operational oversight, and purchasing. A member of the AJI team since 2010, Mr. Donehoo specializes in client communication, program development and staff training, ensuring that AJI's service is consistently exceptional and specialized for each client. Mr. Donehoo is responsible for overseeing the operations of the janitorial contract and the management of all cleaning technicians assigned to the contract. He will perform inspections, maintain checklists and quality control procedures, and schedule all services.



Frank Fanizzi

Project Manager

Mr. Fanizzi joined AJI in 2017 and has over 20 years of experience in the janitorial service industry. Mr. Fanizzi is currently responsible for several of AJI's Atlantic coast area janitorial projects, including the City of Ormond Beach, as well as our Volusia and Flagler County accounts. In his role as Project Manager, Mr. Fanizzi is responsible for overseeing the operations of the janitorial contract and the management of all cleaning technicians assigned to the contract. He will perform inspections, maintain checklists and quality control procedures, and schedule all services. Mr. Fanizzi is local and can be onsite to handle any issues on the City of Ormond Beach project within 60 minutes or less.



Norma Rose

Operations Manager

As Operations Manager, Ms. Rose will continue to be responsible for the daily cleaning operations at the City of Ormond Beach locations, including supervision, inspections, and control of all custodial and related services associated within the City of Ormond Beach janitorial contract. She has been a member of the AJI team since 2019, and currently oversees the City of Ormond Beach locations. Ms. Rose is responsible for quality control inspections, enforcing proper cleaning procedures, managing personnel, and overseeing additional services. For the City of Ormond Beach project, Ms. Rose will immediately respond to any issue that may arise.

QUALIFICATIONS OF CONTRACTOR

The basis of AJI's business operations and relationships are the core values of honesty, trust and integrity. Our longevity in an industry where many competitors have come and gone proves that the company's business principles are solid and consistent. ***American Janitorial always meets the needs of its customers, regardless of the money or time it takes to ensure satisfaction.***

Who We Are:

- We are a locally owned and operated company that takes pride in every facility we service. We have the resources and expertise of a national corporation combined with the quality customer service of a hometown cleaning company. Our reputation is our best asset!
- We are a company that builds and cultivates long lasting relationships with our customers through clear communication and outstanding customer support. We invest time and effort into relationships with our customers!
- We are a company that retains business. Every contract we have is important to us and we treat each one as if it's our only one.
- We are a company that cares about quality workmanship. Our custom quality control system, CleanCheck™ creates accountability for our staff and allows us to detect problems before they happen. We routinely inspect our own work so our customers don't have to.
- We are a company that does whatever it takes. Just ask our references.

Who We Aren't:

- We aren't a national or franchise company who treats its customers like just another number.
- We aren't a company who works off of volume and turns in "cookie cutter" bid packages based solely on pre-determined square footage pricing. We don't just move from one big contract to the next.
- We aren't a company that makes excuses – if something isn't right, we fix it.

Our company's core services include floor care, janitorial services, hard surface floor care, carpet cleaning, trash removal, bus stop maintenance, pressure washing, lawn services, and water/fire damage cleanup.

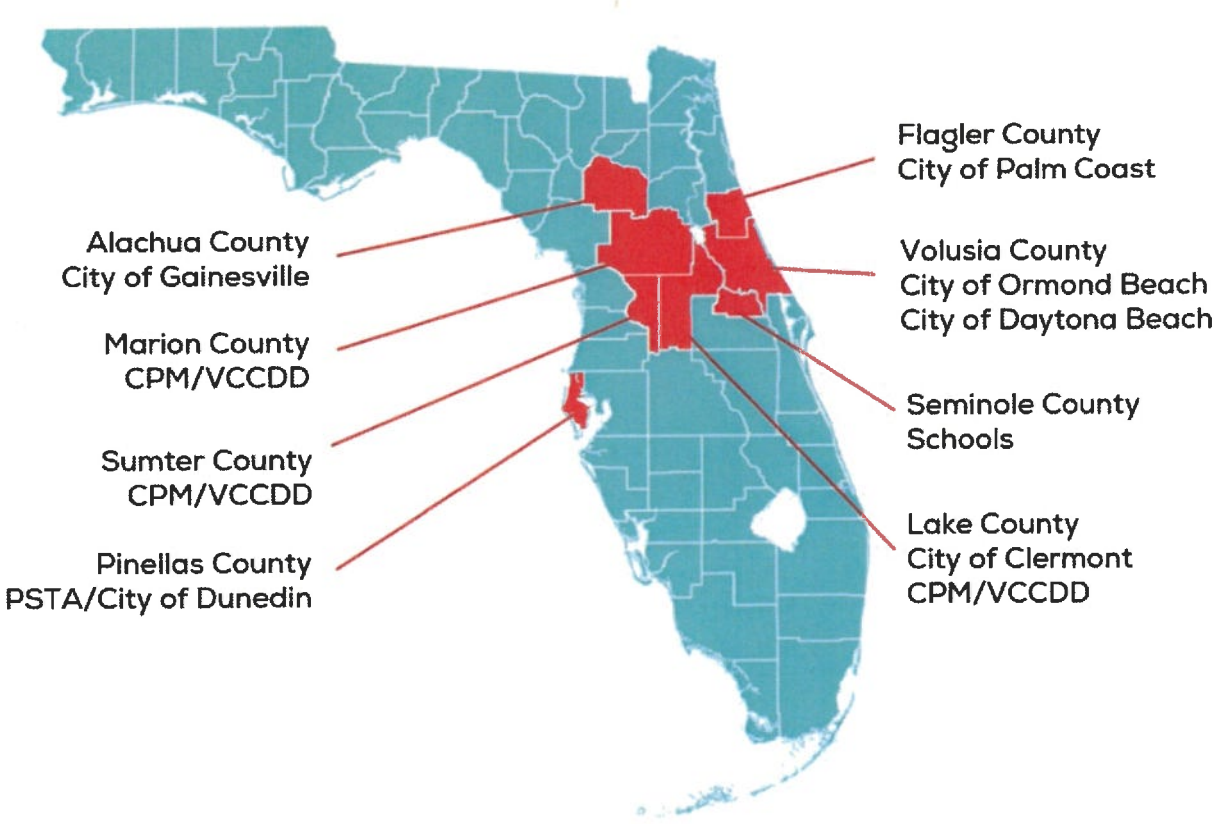
Our comprehensive service offerings make us a unique vendor that is able to meet all of the requirements set forth by the City of Ormond Beach in this solicitation. Our plan to continue managing the needs of the City at these locations includes:

- Employment of trustworthy and hardworking staff
- Continual process improvement and training programs, including safety training
- Competent personnel and friendly management
- Deployment of modern and environmentally-sensitive cleaning solutions
- Use of appropriate, high-quality equipment

All our clients are beyond satisfied with our services and, more importantly, they have come to trust and count on AJI as a dependable vendor. It is truly a winning arrangement for all involved. ***We will always go above and beyond to ensure customer satisfaction, even if it falls outside of the contract.***

AJI Experience

AJI is a local cleaning company that has serviced Central Florida businesses and governments for nearly 35 years. For decades, the company's headquarters have been based in Lake County. Our home office is located in the City of Umatilla, which approximately 50 miles from many of the City of Ormond Beach locations.



In addition, as current contractor at over ***225 separate locations throughout Central Florida, including the City of Ormond Beach,*** AJI is in a position to be able to handle any issues that arise at the City of Ormond Beach locations promptly and efficiently. Because of our strong presence in your area, we have the ability to respond quickly to your needs and provide additional manpower to cover unexpected situations as they occur.

Our valued customers in Central Florida include:

- Volusia County BOCC
- City of Ormond Beach
- City of Daytona Beach
- City of Palm Coast
- Flagler County BOCC
- Lake County BOCC
- The Villages Commercial Property Mgmt
- Villages Community Development Districts
- City of Gainesville RTS
- Citizens First Bank
- City of Clermont
- Citrus Cardiology
- Villages Endoscopy
- SECO Energy
- Cardiac and Vascular Consultants
- Surgical Specialists – Villages
- Lifetime Dentistry
- Lake Centre for Rehab

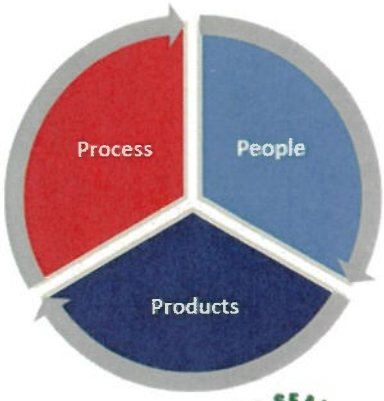
As stated previously, we have serviced hundreds of local businesses and government organizations over the years and stand by our reputation as the best cleaning value available. At present, our company provides cleaning services, including all floor care and day porter service, for over 5,500,000 square feet of office space across Central Florida. All our clients are beyond satisfied with our services and, more importantly, they have come to trust and count on AJI as a dependable vendor. It is truly a winning arrangement for all involved.

We will always go above and beyond to ensure customer satisfaction, even if it falls outside of the contract. We don't make excuses – if something isn't right, we will be on-site quickly to fix it.

PROJECT APPROACH

AJI's plan to continue providing janitorial services at the City of Ormond Beach locations is simple: take care of the City with professional, high-quality service, and ensure that all contract requirements are met or exceeded on a daily basis.

We believe that the secret to the company's success is through understanding our customer's needs and ensuring those needs are met on a consistent basis. AJI is dedicated to the continual development of stronger customer relations and consistent quality improvement. We do this by having a proven and tested cleaning system upon which our entire operations are based.



People: We are an organization that cares about our employees. As such, we take the time to ensure each and every one is properly trained to perform the work they are assigned, ensuring their safety and the safety of the building occupants in the facilities we service.

Products: In business for over 35 years, AJI understands what products and equipment are necessary to do the job correctly. We use **Green Seal** certified products whenever possible to maintain our commitment to preserving the environment.

Process: Our systematic cleaning process allows us to deliver service that results in a healthier environment, better customer relationships and lower costs than our competitors.

We have customized cleaning systems in place that will meet all of the needs of the City of Ormond Beach, and often exceed expectations. Implementation of this system involves:

- Customized daily checklist for all locations
- Cleaning request log and communications system
- Implementation of quality control system, CleanCheck™
- In-house training of all new employees
- Full-time Project Manager and Supervisor/Crew Leader
- Daily inspections and immediate support and response
- Detailed monthly inspections and reports
- Hot spot training and implementation

MANAGEMENT PLAN

Our cleaning approach is based on a team concept of highly trained technicians who are assigned to a specific duty throughout their assigned service area. Our technicians are:

- **Executive Technician**
- **Restroom Technician**
- **Vacuum Technician**

These three highly trained technicians work together to form an efficient team which is capable of providing the consistently high-quality service upon which our reputation was built.



EXECUTIVE TECHNICIAN:

The Executive Technician is our most versatile cleaning position. They are responsible for the emptying of all trash and recycling receptacles and the replacement of liners, as needed. They sanitize telephones and dust all appropriate horizontal and vertical surfaces up to 72". In preparation for the Vacuum Technician, they pick up paper clips and various other items from the floor such as papers and writing utensils. They mop hard surface flooring in common

areas and suites. They also spot clean various surfaces around the office: doors, glass, and walls. In addition, they are responsible for ensuring that the first-impression areas of your building are cleaned and maintained properly. They detail clean all interior glass walls and high visibility carpet areas. They polish all brass fixtures and maintain the cleanliness of the elevator tracks. They will also haul trash from various areas to on-site dumpsters and police the stairwells to remove all debris.



RESTROOM TECHNICIAN:

Primary responsibilities for our Restroom Technicians include restocking of all paper dispensers (toilet tissue, hand towels, etc.), emptying trash and replacing liners, cleaning and disinfecting all fixtures and mirrors, and wiping down stall partitions and doors. They are also responsible for scrubbing all flooring areas in each restroom. The primary function of the Restroom Technician is to disinfect and clean all surfaces while maintaining an odor free environment.



VACUUM TECHNICIAN:
The Vacuum Technician is responsible for the daily vacuuming of all traffic areas and spot vacuuming all other office areas. In addition, they vacuum office furniture to remove various small debris and spills. Depending on the size of the building, they may also help the Executive Technician with hard surface floor cleaning, such as mopping in kitchen areas and corridors.

DAY PORTERS:
AJI porters have experience working independently as well as proven customer service experience working with the general public. All AJI day porters will be proficient in the English language and be able to communicate with building representatives and visitors both orally and in writing. AJI day porters are trained to work independently, and be reliable, self-motivated, mature, and responsible. Duties include: service main lobbies, police & service restrooms, respond to complaints, perform special cleaning, setup rooms for meetings & conferences, post-meeting Cleanup and emergency cleaning.

REFERENCES

AJI currently provides cleaning services, including all floor care and day porter service, for over 5,500,000 square feet of office and medical space throughout Florida. We invite you to contact each of the below references to learn first-hand what makes AJI the ideal solution to your janitorial service needs at the City of Ormond Beach locations.



LAKE COUNTY GOVERNMENT
550 WEST MAIN STREET, TAVARES, FL 32778
DON GLESSNER
352-253-4973 (P)
352-343-5618 (F)
DGLESSNER@LAKECOUNTYFL.GOV

The Lake County Government awarded AJI with its janitorial cleaning services contract in 2011. AJI provides complete janitorial service for all of Lake County's facilities in the downtown Tavares area including the Lake County Judicial Center, the Lake County Administration Building, the Historic Courthouse, the Property Appraiser / Tax Collector building and the Public Defender offices. Our services are also contracted for high-traffic, high-usage public building such as the public libraries, the community center buildings, the fairground buildings and various warehouse and office space. Approx 900,000 total square feet.



THE VILLAGES HEALTHCARE CENTERS
280 FARNER PLACE
THE VILLAGES, FL 32162
DIANE MCINTYRE
352.267.7589
DIANE.MCINTYRE@THEVILLAGES.COM

AJI provides daily janitorial services to 15 locations for The Villages Healthcare Center. Our services include: evening janitorial cleaning of exam rooms, office areas and waiting rooms, carpet cleaning, tile stripping and waxing, and ceramic tile steam cleaning. In addition to Colony Plaza, American Janitorial cleans Creekside Care Center, Santa Barbara Care Center, Mulberry Grove Care Center, Pinellas Care Center and The Villages Health Specialty Care at the Center for Advanced Healthcare at Brownwood. We have been providing services to these locations since May 2014.



CITY OF CLERMONT
685 WEST MONTROSE STREET
CLERMONT, FL 34711
JOE MCMAHON
352.267.2398
JMCMAHON@CLERMONTFL.ORG

AJI provides daily janitorial and floor care services to 7 locations for the City of City of Clermont. Our contracted services include cleaning the Police Department Headquarters, City Hall, Clermont City Center, Public Works, Highlander Building, various restrooms and the Clermont Arts & Recreation Center, which is the social and entertainment hub of the Clermont community, hosting meetings and events on a daily basis. These locations total over 200,000 square feet and we have been providing services since 2016.



THE VILLAGES COMMERCIAL PROPERTY MGMT
1071 CANAL ST
THE VILLAGES, FL 32162
BRIAN HUFFMAN
352.483.6709
BRIAN.HUFFMAN@THEVILLAGES.COM

Since 2014, AJI has provided daily janitorial services to 6 recreation centers in The Villages, as well as 10 pool restroom locations. AJI ensures optimal levels of cleanliness and sanitation by detail cleaning and thoroughly mopping all hard service flooring each day. Additionally, we provide cleaning services to the offices and meeting room areas, paying special attention to the restrooms as they experience high levels of resident traffic each day.



FLAGLER COUNTY BOARD OF COUNTY COMMISSIONERS
1769 EAST MOODY BOULEVARD, BUNNELL, FL 32110
MIKE DICKSON
386-585-2525 (P)
386-313-4121 (F)
MDICKSON@FLAGLERCOUNTY.ORG

AJI provides daily janitorial and day porter services to over 50 separate locations for Flagler County, totaling over 450,000 square feet. AJI began services on March 1, 2018.



CITY OF ORMOND BEACH
399 NORTH US 1
ORMOND BEACH, FL 32174
BILL ROSE
386.212.8685
BILL.ROSE@ORMONDBEACH.ORG

AJI. provides janitorial and floor care services to 37 locations for the City of Ormond Beach. Our contracted services include cleaning the City Hall, Police Department, Public Works and park facilities. We provide carpet cleaning, floor stripping and waxing, hard surface floor buffing and ceramic tile steam cleaning. These locations total over 140,000 square feet and we have been providing services since 2015.



CITY OF PALM COAST
1 WELLFIELD GRADE
PALM COAST, FL 32137
ROGER LACHANCE
386-986-2340
RLACHANCE@PALMCOASTGOV.COM

AJI began providing daily cleaning of the City of Palm Coast locations on April 1, 2018. The City of Palm Coast consists of 15 locations totaling more than 90,000 square feet over multiple locations, including buildings with high transient populations like the City Hall and community center as well as public works, utilities and fire stations.



PINELLAS SUNCOAST TRANSIT AUTHORITY (PSTA)
3201 SCHERER DRIVE N.
ST. PETERSBURG, FL 33716
MISSY NEVITT
727-253-9468
MNEVITT@PSTA.NET

AJI began this project on October 1, 2015. This account consists of over 900 bus stops and bus shelters. We provide trash pickup, pressure washing, graffiti removal, weed eating, tree trimming, and lawn mowing within 20 feet of the shelter. We also provide full janitorial and pressure washing services at the PSTA bus terminals, as well as floor services for all PSTA buildings.

City of Ormond Beach
Janitorial Services-Facilities Cost Sheet
RFP 2023-05

LOCATION	ANNUAL COST	COST PER EACH EXTRA SERVICE	COST PER EACH EMERGENCY
Casements	$23,143.54	$148.36	$178.03
Gymnastics Center	$13,292.47	$63.91	$76.69
PAL Office	$2,804.95	$17.98	$21.58
Ames Park/Legal/Conference	$6,472.34	$41.49	$49.79
Central Park I	$4,346.80	$11.94	$14.33
Central Park II	$4,242.12	$11.65	$13.99
Sanchez Park	$1,824.36	$11.69	$14.03
Airport Sports Softball Building	$7,830.88	$21.51	$25.82
City Hall	$65,179.74	$250.69	$300.83
S Ormond Neighborhood Ctr	$29,153.59	$112.13	$134.56
Water Plant, Jefferson St.	$5,564.93	$21.40	$25.68
Water Plant, Tomoka Ave.	$2,682.05	$25.79	$30.95
Fleet	$7,339.09	$35.28	$42.34
Bailey's Riverbridge	$3,380.71	$21.67	$26.01
Senior Ctr - Bldg A	$7,655.03	$29.44	$35.33
Senior Ctr - Bldg B	$16,462.77	$63.32	$75.98
Senior Ctr - Bldg D	$6,164.48	$23.71	$28.45
Shuffleboard Building	$2,365.38	$22.74	$27.29
Airport Tower	$4,354.35	$27.91	$33.50
Wastewater	$6,371.47	$24.51	$29.41
Wastewater office	$3,093.89	$21.32	$25.58
Cassen Park	$6,001.30	$16.49	$19.78
Nova Outside Restrooms	$4,564.49	$12.54	$15.05
Leisures Services Offices	$10,130.01	$38.96	$46.75
PAC - 2nd Floor	$4,835.45	$92.99	$111.59
PAC - Backstage, Etc.	$11,782.19	$113.29	$135.95
PAC - Bldg C Blue Room	$5,718.12	$54.98	$65.98
Fortunato Park	$6,354.60	$17.46	$20.95
Airport Sports Soccer Building	$3,978.61	$15.30	$18.36
Airport Sports Greg Smith Fieldhouse	$8,995.69	$34.60	$41.52
Baseball Building	$4,243.89	$16.32	$19.59
Osceola Elementary	$2,187.68	$8.41	$10.10
Nova Athletic Field Restrooms	$2,405.25	$15.42	$18.50
Public Works	$14,327.47	$55.11	$66.13
Police Department	$45,440.09	$145.64	$174.77
Riverbend Park	$1,384.22	$8.87	$10.65
Nova Gymnasium	$36,882.10	$141.85	$170.23
Andy Romano Beachfront Park	$18,281.07	$50.22	$60.27

Environmental Discovery Center	$5,026.63	$19.33	$23.20
Nova rec. Skate Park	$5,192.72	$14.27	$17.12
Airport Sports Pride Restrooms	$2,507.55	$16.07	$19.29
Airport Sports Pop Warner restrooms	$4,859.63	$13.35	$16.02
TOTAL BID (Include all labor, material, equipment, etc.)	**$428,823.70**	**$1,909.91**	**$2,291.97**

EQUIPMENT

AJI has utilized modern cleaning equipment and "green" cleaning techniques in all facilities for the past six years. The use of these systems and equipment has allowed for more efficient cleaning processes, better sanitation of facilities, improved indoor air quality and lower costs for our customers.

Where possible, we utilize ProTeam Super CoachVac backpack vacuums on our projects. All vacuums are equipped with HEPA filters, which are an industry standard for high-quality air filtration. Backpack vacuums allow us to reach high spots and also places such as behind computer tables and desks, book racks, and closets. These are the places that would be extremely tough to clean while using a canister vacuum cleaner. Most important, AJI employees are trained in the proper use of all equipment at each individual account. This both ensures their safety as well as protects the property of our customers. Our equipment list includes back-pack vacuums, restroom carts, high and low-speed floor machines, ride-on automatic scrubbers, motorized sweeper, carpet extractor and various wet/dry vacuums.



For carpet cleaning at these locations, AJI will be using a van equipped with a CDS 4.8 truck mounted, van-powered cleaning system from HydraMaster. These systems feature OverDrive™ Power Train Technology which allows us to deliver a deep clean to your facilities. The system is equipped with two solution outlets for dual wand capability, three speed settings and a 100 gallon recovery tank for uninterrupted cleaning.



Using a truck mount carpet cleaning system is the best way to accomplish a deep carpet clean as well as reduce time spent on the job. This offers immense labor saving benefits which we are able to pass along to our customers. Additionally, we have invested in a large variety of attachments such as upholstery tools for upholstery cleaning, and power heads and rotary tools for carpet, which are also be used to further increase productivity and deliver enhanced results on certain carpet types and soil conditions. After carpet cleaning, AJI always applies carpet protectant at no additional cost. This protectant helps to prevent future staining and prolongs the life of the carpet and the cleaning. Additional equipment outlined on the following page.



Reflective
Safety Vests



Wet Floor Signs
Model# FG611277YEL



Unger Trash Grabber
NN140 Heavy Duty Nifty Nabber
51" Long Reaching Tool
Model U-NN140



ProTeam Backpack Vacuum
Super Coach Pro® 10
Model No.: 107303
Capacity: 10 qt.



Rubbermaid Cleaning
Cart with Zippered
Yellow Vinyl Bag
Model No.: 6173-88



Rubbermaid Brute Barrel
with Caddy Bag
Model No.: FG264200YEL



Checklist
Log Books



Rubbermaid Wavebrake
Yellow Dual Water
Side Press
Mop Bucket & Wringer
Model No.: 768000YW



Sanitaire® Bagless
HEPA Vacuum
Model No.: SC5845B



Tennant Wide Area
HEPA Vacuum
Model No.: V-WA-26



Tennant T2 Battery
Walk Behind Scrubber
Model No.: 9008842



Tennant EZ Scrubber
Ride-On Floor Scrubber
32" Cleaning Path



Rubbermaid Microfiber Flat
Mop Floor Finish System
Model No.: 5000050

FLOOR SERVICES

Tile & Grout Cleaning

AJI's deep cleaning process uses hot water to pressure wash the tile and grout. This high pressure process removes the deep down dirt that lies in the pours of the tile and grout lines. Each time we clean the tile and grout, we apply tile and grout sealer at no additional cost. The sealer helps to prevent staining and prolong the life of the tile. Our cleaning techs are IICRC certified for tile and grout cleaning and we use top of the line equipment.



VCT Care: Strip and Wax

AJI has years of experience refinishing VCT floors. We have customized a process for our customers that keeps the floors protected and looking great. Over the years, AJI has designed a custom, privately-labeled brand of floor cleaners and protectants for use at our clients' facilities. These chemicals provide a safe, non-slip surface, while producing a super hi-gloss shine that ensures floors look like brand new. Our floor crews are highly trained and have years of experience.

The following is a list of the different floor services offered by AJI:

- Complete strip and re-wax
- Deep scrub maintenance
- Light scrub maintenance
- Hi-speed burnishing
- Spray buffing

Cutting Edge Technology



AJI is constantly seeing new, innovative ways to help deliver exceptional services to our customers. One example of this is our recent investment in the EBG-28 Floor Surface Preparation Machine from Square Scrub®.

The EBG-28 allows us to remove existing finishes on your flooring without the use of water, which allows us to protect your valuable electronic equipment and baseboards. Another benefit to this dry method is that it eliminates the need for use harsh chemicals to remove floor finishes, which is better for the environment and the health of your employees and visitors.

Additional specialized floor service equipment below:



HydraMaster RX-20 Rotary Carpet Extractor
Model No.: OE-RX20-EA



Hawk 15 inch 1500 RPM Burnisher
Model No.: HAW-F1500-15



ProTeam ProGen 15 Upright Vacuum - HEPA
Model No.: OE-PROGEN15-EA



Hydro-Force SX-12 Tile Cleaning Tool
Model No.: AW104



Betco 27" Propane High Speed Burnisher
Model No.: E12314-00



Dri-Eaz Sahara Pro X3 Commercial Turbo Dryer
Model No.: F351

LOCATION	Chevy Silverado 1500	Hydra Master Carpet Cleaning Van	Chevy Sonic	Tennant Floor Scrubber	Sanitare Commercial Hepa Vacuum	Sanitare Commercial Wide Track Hepa Vacuum	Pro Team Back Pack Vacuum	Mop & Bucket	Cart or Brute Barrel	High Speed Buffer
ORMOND BEACH MGMT, PARKS & FLOOR CREW	1	1	1	1						1
Casements					1		1	2	2	
Gymnastics Center						1	1	1	1	
PAL Office					1		1	1	1	
Ames Park/Legal/Conference					1		1	1	1	
Central Park I								1	1	
Central Park II								1	1	
Sanchez Park								1	1	
Airport Sports Softball Building					1		1	1	1	
City Hall					1	1	1	2	2	
S Ormond Neighborhood Ctr					1		1	2	2	
Water Plant, Jefferson St.					1		1	1	1	
Water Plant, Tomoka Ave.					1		1	1	1	
Fleet					1		1	2	1	
Bailey's Riverbridge					1		1	1	1	
Senior Ctr - Bldg A					1		1	1	1	
Senior Ctr - Bldg B					1		1	1	1	
Senior Ctr - Bldg D					1		1	1	1	
Shuffleboard Building							1	1	1	
Airport Tower					1		1	1	1	
Wastewater					1		1	1	1	
Cassen Park								1	1	
Nova Outside Restrooms								1	1	
Leisures Services Offices					1		1	1	1	
PAC - 2nd Floor					1		1	1	1	
PAC - Backstage, Etc.					1		1	1	1	
PAC - Bldg C Blue Room					1		1	1	1	
Fortunato Park							1	1	1	
Airport Sports Soccer Building					1		1	1	1	
Airport Sports Greg Smith Fieldhouse					1		1	1	1	
Baseball Building					1		1	1	1	
Osceola Elementary								1	1	
Nova Athletic Field Restrooms								1	1	
Public Works					1		1	2	2	
Police Department					1		1	2	2	
Riverbend Park								1	1	
Nova Gymnasium					1		1	2	1	
Andy Romano Beachfront Park							1	1	1	
Environmental Discovery Center					1		1	1	1	
Nova rec. Skate Park					1		1	1	1	
Airport Sports Pride Restrooms								1	1	
Airport Sports Pop Warner Restrooms								1	1	
TOTALS	1	1	1	1	27	2	31	48	46	1

City of Ormond Beach
Request for Proposals (RFP)
Professional Cleaning Services
(RFP No. 2023-05)

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

American Janitorial, Inc. (AJI)
COMPANY NAME

AUTHORIZED SIGNATURE
Jason Lay
NAME
CEO
TITLE
1/10/2023
DATE

City of Ormond Beach
Request for Proposal
Professional Janitorial Services
(RFP No. 2023-05)

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[X] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[X] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

American Janitorial, Inc. (AJI)
COMPANY NAME

AUTHORIZED SIGNATURE

Jason Lay
SIGNER'S NAME (PRINT OR TYPE)

CEO
TITLE

1/10/2023
DATE

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

City of Ormond Beach
Request for Proposal
Professional Janitorial Services
(RFP No. 2023-05)

DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" SUBMITTALS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

American Janitorial, Inc. (AJI)
Company Name

Authorized Signature

Jason Lay, CEO
Print Name

City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3374

REQUEST FOR PROPOSALS

PROPOSER ACKNOWLEDGEMENT FORM

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP TITLE: **PROFESSIONAL JANITORIAL SERVICES**

RFP NUMBER: **2023-05**

RFP OPENING DATE & TIME: **January 12, 2023 - 3:00 PM**

RFP OPENING LOCATION: Training Room (Breezeway, City Hall) 22 S. Beach St.

PRE-SUBMITTAL MEETING: N/A

Submittals Received After the Above Date and Time Will Not Be Accepted.

PROPOSER'S NAME: American Janitorial, Inc. (AJI)

PROPOSER'S MAILING ADDRESS: PO Box 2534

CITY-STATE-ZIP: Umatilla, FL 32784

F.E.I.N.: 46-0557106

PHONE NUMBER: 352-551-7941

FAX NUMBER: 352-669-1408

If returning as a "No Submittal", please state reason (s): _____

I certify that this Proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Proposal for the same materials, services, supplies, or equipment, and is in all respects fair and made without collusion or fraud. I agree to abide by all conditions of this RFP and certify that I am authorized to sign this RFP for the Proposer. In submitting a RFP to the City of Ormond Beach, the Proposer offers and agrees that if the Proposal is accepted, the Proposer will convey, assign or transfer to the City of Ormond Beach all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Ormond Beach. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Proposer.

X _____
AUTHORIZED SIGNATURE (MANUAL)

Jason Lay
NAME (TYPED)

CEO
TITLE

1/10/2023
DATED

GENERAL CONDITIONS

PUBLIC ENTITY CRIMES: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a proposal on a contract to provide any goods or services to a public entity, may not submit a proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit Proposals on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

DISCRIMINATION: Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid or proposal on a contract to provide any goods or services to a public entity, may not submit a bid or proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit bid or proposal on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

PUBLIC RECORDS/NON-CONFIDENTIALITY OF BIDS AND/OR PROPOSALS. The City of Ormond Beach cannot and does not warrant the confidentiality of any information submitted in response to this solicitation. Florida law provides that municipal records shall at all times be open for personal inspection by any person, Section 119.01, F.S., The Public Records Law. Information and materials received by the City of Ormond Beach in connection with all Proposers' response shall be deemed to be public records subject to public inspection upon award, recommendation for award, or 30 days after bid opening, whichever occurs first. Section 119.071, F.S.

DISTRIBUTION OF BIDS AND RFP'S: The City uses the services of DemandStar (www.demandstar.com) to distribute its bids and RFP's on-line on the Internet. If you have received a copy of this RFP from any source other than DemandStar, please be aware that you may not have received the latest version of the RFP or any related addendums.

SUBMISSION OF RESPONSES: All Submittals shall be delivered in a sealed envelope. The Request for Proposals (RFP) number, title, and opening date shall be clearly displayed on the outside of the sealed envelope (and on the outside of any express shipping package). The delivery of said submittal to the Purchasing Office on or before the specified opening date and time is solely and strictly the responsibility of the Submitter. Any submittal received by the Purchasing Office after the specified date and time will not be accepted. Submittals must be presented on forms provided by the City. No other forms will be accepted. Responses submitted by telephone, fax or email will not be considered. No Submittal may be modified after opening. No Submittal may be withdrawn after opening for a period of ninety (90) days unless otherwise specified.

EXECUTION OF SUBMITTAL: Submittals must contain a manual signature of authorized representative in the space(s) provided. Submittals must be typed or printed in ink. Use of erasable ink is not permitted. All corrections made by Submitter to any Submittal entry must be initialed. The company name and Federal Employer Identification Number (F.E.I.N.) number shall appear in the space(s) provided.

RFP OPENING: Submittals shall be opened and the name of the submitters shall be read publicly. No discussion of the Submittals will occur at this time.

SUBMITTAL TABULATION: The RFP Tabulation will be posted on Demandstar (www.demandstar.com). Any submitter wishing to receive a paper copy of the tabulation is required to enclose a stamped, self-addressed envelope with their Submittal response.

CLARIFICATION/CORRECTION OF RFP ENTRY: The City of Ormond Beach reserves the right to allow for the clarification of questionable entries and for the correction of obvious mistakes.

INTERPRETATION: Any questions concerning conditions and specifications shall be directed to the Purchasing Coordinator. Those interpretations which may affect the eventual outcome of this Submittal will be furnished in writing to all prospective Submitters. No interpretation shall be considered binding unless provided in writing by the City of Ormond Beach.

MINORITY POLICIES: The City of Ormond Beach, Florida, encourages the full participation of Disadvantaged and Women Business Enterprises (D&WBE) in the provision of goods and services.

LICENSES AND PERMITS: The Vendor/Contractor is responsible for obtaining all necessary permits and licenses to comply with all Federal, State, local laws, rules and regulations required to perform work in accordance with the specifications.

ADDITIONAL TERMS AND CONDITIONS: The City of Ormond Beach reserves the right to reject Submittals containing any additional terms or conditions not specifically requested in the original conditions and specifications.

TAXES: The City of Ormond Beach is exempt from Federal Excise Taxes and all sales taxes.

SILENCE OF SPECIFICATIONS: The apparent silence of any specification and any supplemental specifications as to any details or the omission from same of any detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and that only materials of first quality and correct type, size, and design are to be used. All workmanship is to be first quality. All interpretations of the specifications shall be made upon the basis of this statement.

ASSIGNMENT: Any purchase order or contract issued pursuant to a Submittal and the monies which may become due hereunder are not assignable except with the prior written approval of the City Manager or City Commissioner, whichever authorized the purchase or Agreement.

LIABILITY: The Contractor shall hold and save the City of Ormond Beach, its officers, agents, and employees harmless against claims by third parties resulting from the Contractor's or supplier's breach of contract or negligence, including all attorney's fees and costs, and shall pay any and all damages, fees, and costs assessed on behalf of the City. The City expressly reserves all rights, privileges and benefits of sovereign immunity.

PATENTS AND ROYALTIES: The Contractor, without exception, shall indemnify and save harmless the City of Ormond Beach and its employees from liability of any kind, including cost and expenses for or on account of any copyrighted, patented, or unpatented invention, process, or article manufactured or used in the performance of the contract, including its use by the City of Ormond Beach. If the Contractor uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the Submittal prices shall include all royalties or cost arising from the use of such design, device, or materials in any way involved in the work.

NON-APPROPRIATION OF FUNDS: In the event sufficient budget funds are not available for a new fiscal period, the CITY shall notify the VENDOR/CONTRACTOR of such occurrence and the contract shall terminate on the last day of the current fiscal period, without any penalty or expense to the CITY of any kind whatsoever.

AWARDS: The CITY reserves the right, in its sole discretion, as the best interest of the CITY may require, to make award(s) by individual item, group of items, all or none, or a combination thereof; on a geographical basis and/or with one or more vendors, contractors, consultants or specialists; or to reject any and all Submittals or waive any minor irregularity or technicality in the Submittals received.

OTHER AGENCIES: All Bidder(s) awarded contracts from this bid or proposal may, permit any municipality or other government agency to participate in the contract under the same prices, terms, and conditions, if agreed to by both parties.

It is understood that at no time will any city, municipality, or other agency be obligated for placing an order for any other city, municipality, or agency: nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further, it is understood that each agency will issue its own purchase orders to the awarded bidder(s).

COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW:

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.

(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174
(386)676-0311
CITYCLERK@ORMONDBEACH.ORG
or online at
https://www.ormondbeach.org/prr

Ref: Fla. Stat. §119.0701(2016)

THE CITY OF ORMOND BEACH RESERVES THE RIGHT TO REJECT ANY OR ALL PROPOSALS, AND TO WAIVE INFORMALITIES AS MAY BE DEEMED TO BE IN THE BEST INTEREST OF THE CITY.

TERMS AND CONDITIONS

A. The City of Ormond Beach reserves the right without prejudice to reject any or all proposals, to request clarification of information submitted, and to request additional information of one or more proposers.

B. The City reserves the right to award the contract to the next most qualified firm if the successful firm fails to execute a contract within two weeks after the award of the contract by the City Commission.

C. In accordance with federal, State, and local regulations, the firm shall not discriminate under the contract against any person.

D. The firm shall not assign or transfer any interest in the contract without prior approval of the City Commission.

E. The City reserves the right to terminate the contract at any time due to the vendor's default under terms of agreement.

F. Submission of a proposal indicates acceptance by the firm of the conditions contained in this Request for Proposals unless clearly and specifically noted in the proposal submitted and confirmed in the contract between the City of Ormond Beach and the firm selected.

G. Submittals should include a copy of firm's insurance certificate, Conflict, Non-Conflict of Interest Statement/Litigation Statement, Drug Free Workplace Certificate and E-Verify Statement.

CITY OF ORMOND BEACH
PROFESSIONAL JANITORIAL SERVICES
RFP 2023-05

1 **Purpose**:

1.1 The City of Ormond Beach, Florida is seeking a professional company to provide janitorial services for various buildings and park facilities throughout the City.

1.2 To be considered, one (1) original, unbound copy and three (3) bound copies of the proposal must be received by the Purchasing Coordinator, City of Ormond Beach, 22 South Beach Street, Room 101, Ormond Beach, Florida, 32174, on or before 3:00 p.m. January 12, 2023. Responses shall be submitted in sealed envelopes and clearly identified as "Professional Janitorial Services" and reference RFP 2023-05 on the outside of the envelope. The City shall not be responsible for late deliveries or mail delays. The City of Ormond Beach reserves the right to reject any or all proposals submitted. During the evaluation process, additional information or clarifications from proposers may be required.

1.3 The City of Ormond Beach reserves the right to retain all proposals submitted regardless of whether that proposal is selected. Submission of a proposal indicates acceptance by the contractor of the conditions contained in this request for proposals, unless clearly and specifically noted in the proposal submitted and confirmed in the contract between the City of Ormond Beach and the contractor selected. There is no expressed or implied obligation for the City of Ormond Beach to reimburse responding contractors for any expenses incurred in preparing proposals in response to this request.

1.4

2 **Examination of Site Contract Documents and Other Relevant Material**:

2.1 The Contractor shall visit the facilities of this contract work and shall be familiar with conditions as they exist and the operations to be carried out under this contract. The contractor shall fully understand the facilities' difficulties and restrictions attending the execution of the work under this contract.

2.2 Contractor shall also be familiar with all of the Specifications included in this contract.

2.3 The failure or omission of the Contractor to receive or examine any instruction or document, or any part of these specifications or to be familiar with the sites and the existing conditions shall in no way relieve the Contractor from any obligation

with respect to this proposal, including that of furnishing all the material and labor necessary to perform work in accordance with these specifications.

2.4 By submitting a proposal, the contractor covenants and agrees that they have carefully examined the specifications and the sites and that from their own investigation they are satisfied as to the nature and location of the work, the general local conditions and all matters which may in any way affect the performance and that as a result of such examination, they fully understand the intent and purpose thereof and their obligations thereunder and that they will not make any claim for, or have any right to, damages resulting from any misunderstanding or misinterpretation of this contract because of any lack of information.

3 **Qualifications of Contractor**:

3.1 The City of Ormond Beach reserves the right to require any proposer to submit such evidence of qualifications as it may deem necessary and may consider evidence available concerning the financial and other qualifications and abilities of a contractor. The proposer should have commercial experience in providing professional janitorial services and must submit a list of references complete with contact names, addresses and telephone numbers. References must demonstrate the contractor's commercial experience with a minimum of five (5) years longevity. References should include clients, suppliers and financial institutions. Failure to provide any required information may result in the RFP being rejected as nonresponsive.

4 **Performance**:

4.1 The Proposer, upon the award of any contract, shall ensure that all items supplied and/or work to be performed will comply with all Federal, State, and local laws, rules, and regulations.

5 **Inspection**:

5.1 The City of Ormond Beach reserves the right to conduct any inspection, including site inspections, it deems necessary to assure items and services conform to all requirements and specifications, and the Contractor shall consent to the City's right of entry for the purpose of making such inspection.

6 **Scope of Work**:

6.1 Routine cleaning of all City facilities on a daily, weekly, monthly, quarterly, semiannually, or annual basis as specified. The contractor is expected to use their professional judgment to perform necessary cleaning which may not be specifically detailed or scheduled in these specifications, including but not limited to cleaning up spills, stains and other unforeseen occurrences. The City will not be charged

for cleaning not specifically outlined unless it exceeds the scope of work of these specifications and is agreed upon by the Contract Manager prior to the work being performed.

7 **Definition of Time Frames**:

D = Daily	Once a day Monday through Friday unless otherwise specified
W = Weekly	Must be completed by Friday of each week
M = Monthly	Must be completed by the last Friday of the month
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December, and March
S = Semiannually	Must be completed by the fifteenth (15) day of January and July
A = Annually	Must be completed by September fifteenth (15).

Cleaning hours are specified for each location; however, they are subject to change based on level of activity (i.e. the contractor may be allowed to perform janitorial services at times earlier or later than indicated with the approval of the Contract Manager).

8 **Schedule**:

8.1 Contractor must submit a schedule of the work to be performed during the following month to the Contract Manager on the last Friday of the current month (i.e. a schedule for the month of June must be submitted no later than the last Friday in May).

8.2 Contractor must submit a daily email to the Contract Manager listing completed tasks for previous day by facility.

9 **Unscheduled Services**:

9.1 Emergency: The Contractor must respond within four (4) hours to emergency calls placed by the Contract Manager.

9.2 Special Request: In the event the City requests janitorial services not specified herein, the contract rate most advantageous to the City (hourly, per square foot or a set fee as negotiated by the Contract Manager and the Contractor) will be applied to work as agreed upon by the Contract Manager.

9.3 Extraordinary Occurrences: It is agreed that in no event shall the City or Contractor be liable or responsible to each other or any other person due to any stoppage or delay in the work herein provided, where such stoppages or delays result from acts of God, fire, or any other cause not within the control of the City and/or the Contractor. Contractor recognizes the essential nature of the services to be performed herein and will use their best efforts to complete such work.

10 **Quality of Service**:

10.1 The direction and supervision of janitorial services shall be by competent and qualified personnel, and the Contractor shall devote sufficient personnel, time and attention to the direction of the operation to assure performance satisfactory to the City.

10.2 In the event the quality of work performed is not acceptable to the Contract Manager or the work is not performed when specified, the City will reduce the next payment using either the hourly rate, per square foot rate or a fixed fee of $25 per occurrence, whichever is greater. Occurrence is defined as a task in each part of a facility such as dusting an office, vacuuming a hallway, cleaning a restroom, etc.

11 **Supervision**:

11.1 The contractor is responsible for all supervision required to perform work in accordance with these specifications.

11.2 The Contractor and their employees must comply with all City regulations.

11.3 All janitorial keys are issued to the Contractor and are the responsibility of the Contractor. The Contractor will be charged for the replacement cost of any lost key(s) and/or the cost of changing locks as a result of any lost key(s).

12 **Contact Person**:

12.1 The contractor shall provide the name and telephone number(s) of an English-speaking contact person in case of an emergency.

12.2 The contractor shall provide the name and telephone number of an English-speaking representative to meet periodically with City personnel.

13 **Safety Standards**:

13.1 The Contractor will be responsible for instructing their employees in all safety measures. The Contractor shall not permit the placing or using of janitorial materials and equipment in traffic lanes or other locations in such manner to create safety hazards and shall provide appropriate warning signs for areas closed for performing janitorial services.

13.2 All materials and supplies shall be in clearly marked containers indicating content and warning labels.

14 **Contractor's Employees**:

14.1 Contractor's employees must be bonded.

14.2 The City may request the Contractor to provide a list of employees working certain days, hours, or assignments. Such list must be submitted within two (2) hours (unless otherwise indicated) of the City's request and may include Social Security numbers, driver's license numbers, and addresses.

14.3 The City reserves the right to accept or reject any employee of the Contractor.

14.4 All personnel must be visible as Contractor's employee(s) by uniform and/or badge while on City property. The Contractor's work force shall be neat and clean in appearance and shall wear identification. Identification shall include the employee's name and company name.

15 **Supplies**:

15.1 The contractor will provide all cleaning supplies at the Contractor's expense to perform tasks in accordance with these specifications. The contractor must provide MSDS sheets to the Contract Manager for all chemicals used.

15.2 The Contractor will provide all supplies at the Contractor's expense to perform janitorial services in accordance with these specifications. Supplies shall include but are not limited to cleaning supplies, trash can liners, and paper products, such as toilet tissue, paper towels, and toilet seat covers. The quality of all supplies must be equal to or better than what the City is using at the commencement of the contract. All supplies are subject to approval by the Contract Manager.

15.3 The contractor is responsible for refilling all dispensers including but not limited to soap, toilet tissue, seat covers and paper towels.

16 **Storage**:

16.1 The Contractor is responsible for storing all equipment and supplies off site. The City will not provide any storage space.

17 **Equipment**:

17.1 The contractor is responsible for furnishing and maintaining all equipment in safe operating condition to perform duties in accordance with these specifications.

18 **Moving Furniture and Equipment**:

18.1 The contractor shall move and return all furniture and equipment (i.e. desks, chairs, mats, tables, etc.) necessary to properly perform janitorial services.

19 **Damage**:

19.1 The contractor will be liable for all damage(s) caused by any products, supplies, or equipment used to perform duties under this contract.

19.2 The contractor will be held responsible for any breakage and/or loss of equipment, supplies or articles on City property caused by negligence on the part of the contractor and/or their employees.

19.3 In the event damage occurs, the contractor must report the damage to the Contract Manager by 9:00 A.M. on the following business day and submit a written report within Twenty-four (24) hours describing the location of the damage, cause of damage, when the damage occurred and what action is recommended or has been taken to correct the situation.

20 **City Equipment**:

20.1 The contractor and their employees are not allowed to use any City equipment to include but not limited to microwave ovens, copy machines, fax machines, computers, audio visual equipment, typewriters, etc.

20.2 The contractor and their employees are not allowed to use any City telephones, except in the case of an emergency, (emergency is defined as an urgent need for assistance).

21 **Securing Facilities**:

21.1 The contractor shall be responsible for keeping all buildings locked while he/she and their employees are on the premises. The contractor is also responsible for ensuring that no unauthorized personnel are permitted into any City facility while the Contractor is in the facility. The contractor shall be responsible for locking all doors and turning lights off when they leave the premises.

21.2 Should the Contractor find any facility unsecured upon arrival, they should notify the Contract Manager by 5:00 P.M. of the next business day.

22 **Dumpster**:

22.1 The Contractor will use the City's trash storage and removal services

22.2 All trash or loose debris at dumpster sites must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.

23 **Recyclable Materials**:

23.1 Contractor must keep recyclable materials separate from all other trash and place in appropriate recyclable materials container located at each facility.

24 **Outside Trash Receptacles and Ash Trays**:

24.1 Empty and clean trash receptacles and ashtrays. Reline trash receptacle as needed. Replace sand/ashtray filler as needed to maintain a presentable appearance.

25 **Subcontractors**:

25.1 The contractor is not permitted to use any subcontractors in performing any services related to these specifications unless the contractor obtains prior written approval from the Contract Manager.

25.2 Approval by the City does not make the City a party of such subcontract, or subject the City to liability of any kind to any subcontractor. No subcontract will, under any circumstances, relieve the Contractor of their liability and obligation under this Contract; and despite any such subletting the City shall deal through the Contractor. Subcontractors will be dealt with as employees and representatives of the Contractor, and as such shall be subject to the same requirements as are other employees of the Contractor.

26 **Vacation**:

26.1 Contractor shall not be allowed vacation time as part of this contract.

27 **Number of Facilities**:

27.1 The City makes no guarantee as to the number of facilities that will be included in this contract at any time. The City reserves the right to add or remove facilities or seek new proposals as deemed to be in the City's best interest. In the event the City adds or deletes facilities or areas within a facility, the contract will be adjusted in accordance with bid prices most advantageous to the City. In the event the facility is not included as part of this bid the Contract Manager will negotiate the services to be performed and a price with the Contractor.

28 **Contract Period**:

28.1 Contract Duration - The initial term of the Contract shall be for one (1) year commencing on the date the Contract is fully executed by all parties.

28.2 Contract Renewal - The Contract shall be automatically renewed for one (1) year periods unless either party provides a written notice of non-renewal forty-five (45) calendar days prior to the Contract expiration date under paragraph 28.1., not to exceed four (4), additional one-year terms.

29 **Award**:

29.1 The City will award all buildings to a single Contractor and all the park facilities will be awarded to the same Contractor.

29.2 The City reserves the right to award any contract(s) to the proposer(s) which it deems to offer the best overall service; therefore, the City is not bound to award any contract(s) based solely on lowest quoted price. The City also reserves the right to negotiate separately with competing proposers as deemed to be in the City's best interest.

30 **Annual Rate Adjustment:**

30.1 Following the first full year of the contract, and if the contract is allowed to automatically renew, the Contractor's rates may be adjusted annually for changes in the cost of doing business. Requests for adjustments shall be made, in writing, to the City's Contract Manager, no later than June 1, of each contract year. The rate adjustment may reflect up to the change in the cost of doing business, as measured by fluctuations in the Consumer Price Index (CPI), All Urban Consumers, as published by the U. S. Department of Labor, Bureau of Labor Statistics, for the preceding July 1 – June 30 period. The maximum increase for any annual period shall be four percent (4%), which will only apply to the future year. Increases will not be retroactive. It is the City's sole discretion whether to approve or disapprove any rate adjustment. The adjusted rate, if approved, shall take effect on October 1, of the year in which approved. If the parties cannot agree to an adjustment, either party may elect to terminate pursuant to the terms of the Agreement.

31 **Taxes**:

31.1 The Contractor is responsible for paying any and all taxes associated with this agreement.

32 **Cancellation of Contract**:

32.1 If the Proposer, upon the award of any contract, fails to perform the conditions of the contract, the City shall provide written notice of such violations. Payment may

be withheld for the affected facility. If the violations are not corrected to the Contract Manager's satisfaction or reoccur, the City may in its sole discretion immediately cancel the contract.

32.2 The City reserves the right to cancel the contract without cause with a forty-five (45) calendar day written notice.

32.3 Termination or cancellation of any contract will not relieve the Contractor from any obligation.

32.4 If contract is terminated for cause as outlined in 33.1, the vendor will be removed from the City's vendor list.

33 **Contractor Liability**:

33.1 The Contractor shall be responsible and liable for any and all equipment that is in the possession of the Contractor. The Contractor shall be responsible and liable for any and all losses or damages to City or any other agency's equipment regardless of the cause while such equipment is in the possession of the Contractor or its agents.

34 **Service Bond:**

34.1 The Contractor shall secure a service bond with a minimum $25,000 coverage limit for the period of the service agreement. The service bond covers dishonest acts of the contractor's employees against the City. A copy of the bond shall be provided to the City when the agreement commences.

35 **Hold Harmless**:

35.1 Professional Services Contracts -The City, its agents, employees, and officials, both elected and appointed shall be held harmless against all claims for bodily injury, sickness, disease, death or personal injury or damage to property or loss of use arising out of performance of the agreement or contract, unless such claims are a result of the City's sole negligence, as determined by the final arbiter of such claim.

35.2 The City, its agents, employees, and officials, both elected and appointed shall also be held harmless against all claims for financial loss with respect to the provision of or failure to provide professional or other services resulting in professional, malpractice, or errors and omissions liability arising out of performance of the agreement or contract, unless such claims are a result of the City's sole negligence, as determined by the final arbiter of such claim.

36 **Payment on Behalf of City**:

36.1 The Contractor agrees to pay on behalf of the City, and to pay the cost of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph.

36.2 Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

37 Loss Control/Safety:

37.1 Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special effort to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary.

37.2 The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such stoppage will not shift responsibility for any damages from the Contractor to the City.

38 Evaluation Criteria:

38.1 The evaluation and selection of the proposers will be performed by a Selection Committee. The following represent, but not limited to, the criteria which will be considered during the evaluation process:

a. Contractor's price	30pts.
b. Past experience and account retention	30pts.
c. Contractor's stock of required equipment	20pts.
d. Contractor's references	20pts

39 Submission of Proposals

The following material must be received no later than 3:00 p.m. on January 12, 2023 for a proposing company to be considered:

39.1 One (1) original, unbound copy and one electronic copy preferably on thumb drive but CD will be accepted:

a. Signed Request for Proposal (page 1 of RFP document), **and** the signed RFP Response Form (with acknowledgement of addendum if issued).

b. Title Page: Title page marked, "Proposal for Professional Janitorial Services," the firm's name; the name, address and telephone number of a contact person; and the date of the proposal.

c. Transmittal Letter: A signed letter of transmittal briefly stating the proposer's understanding of the work to be done, the commitment to perform the work within the time period, a statement why the company believes itself to be best qualified to perform the engagement and a statement that the proposal is a firm and irrevocable offer for the engagement period. The transmittal letter shall have an original signature of an authorized official of the company who has been designated to submit the proposal on behalf of the company. (See section 2 of RFP)

d. Profile of Proposer: State whether your firm is local, national or international in size. State the size of staff, and over-all experience of assigned staff for this project.

e. Qualifications of Contractor: Describe the commercial experience in providing professional janitorial services. (See section 3 of RFP) Comment on other areas which make your firm different you're your competitors.

f. References: List the name, address and telephone number of references from five (5) clients indicating the services provided, and longevity of contract. (See section 3 of RFP)

g. Contractor's pricing: Completed Facilities Cost Sheet listing cost per each service including total bid.

h. Listing of Contractor's stock of required equipment.

i. Completed Conflict, Non-Conflict of Interest Statement/Litigation Statement. (Form provided in RFP documents)

j. Completed Drug-Free workplace Certification. (Form provided in RFP)

k. Copy of company's certificate of insurance and business registration.

l. Completed Verification of Employment status using E-Verify System Form

REGISTRATION AND INSURANCE REQUIREMENTS FOR VENDOR/CONTRACTOR WORKING ON CITY PROJECTS

Registration Requirements

VENDOR'S doing business within the City Limits must be registered with the City. Requirements for registering a business are as follows:

Copy of City Business Tax Receipt (where your business is located).
Certificate of Insurance showing General Liability and Workers' Comp (or State Workers' Comp Exemption form).
Application Fee: $25.00 For more information, contact the City's Business Tax Receipt official.

State Certified/Registered Contractors

All registered contractors must be registered with Volusia County. Volusia County Contractor Licensing, 123 W. Indiana Ave., Rm 203, Deland, Fl. 32720 (386) 736-5957 Opt. 2 –(386) 248-8158 Fax. Certified Contractors have the option of registering with Volusia County, or providing information directly to the business tax receipt official.

If you have any questions regarding the above requirements, please contact the business tax receipt official at (386) 676-3370.

EXHIBIT "A"

A. Payment and Performance Bonds

1. Except as otherwise provided herein, the Contractor shall, prior to beginning performance, deliver to the City, and the City shall record in the public records of Volusia County, Florida, the Contractor's Payment and Performance Bond in an amount equal to the full amount of the Contract.

2. **(a)** Payment and Performance Bonds shall not be required for any contract except those which are for the construction of a public building, for the prosecution and completion of a public work (as described in Section 180.06, **Florida Statutes,** as amended from time to time) or for repairs upon a public building or public work (as described in Section 180.06, **Florida Statutes**, as amended from time to time).

(b) With respect to those Contracts for which Payment and Performance Bonds are otherwise required:

i. Unless the City Manager, or designee, determines such Bond to be necessary to protect the interests of the City, no Contractor shall be required to provide a Payment and Performance Bond for any Contract which is for $25,000.00 or less.

ii. Upon the request of the contractor, good cause shown by the Contractor, and a determination that the public health, safety and welfare will be sufficiently protected, the City Commission may exempt the contractor from the requirement of providing a Payment and Performance Bond for any Contract which is for more than $25,000.00 but is less than $200,000.00.

3. The Payment and Performance Bond shall list the Contractor as Principal and be issued by a surety insurer authorized to do business in Florida as a surety and listed as an acceptable surety in the Federal Register.

4. The Payment and Performance Bond shall be executed pursuant to Section 255.05, **Florida Statutes**, and be in a form substantially similar to the form set forth in Section 255.05(3), **Florida Statutes**.

5. The Payment and Performance Bond shall specifically provide coverage for delay damages due to a default by the Contractor.

6. The Payment and Performance Bond shall not make the Contract part of the Bond agreement.

7. In lieu of the Payment and Performance Bond, the Contractor may file with the Finance Director of the City, in an amount equal to the full amount of the Contract, cash, a money order, a certified check, a cashier's check, an irrevocable letter of credit, or a security of a type listed in Part II, Chapter 625, **Florida Statutes**.

8. In the event the surety on any Payment and Performance Bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business in the State of Florida is terminated, the Contractor shall, within five (5) working days thereafter, substitute another Payment and Performance Bond and surety acceptable to the City.

9. The Contractor is totally and solely responsible for keeping its surety informed as to the Base Contract Price as bid, significant changes in the Project Scope, and the overall progress and completion of the Project for the entire life of the Contract.

10. The payment and performance bond requirements stated herein above shall not be applicable to service-related contracts unless otherwise determined by the City Manager in order to protect the health, safety and welfare of the general public.

B. Contractual Provisions Relative to Risk Management

All contracts for any public works to be performed, and service-related contracts, for or on behalf of the City shall include at a minimum, the following, or substantially similar, provisions:

1. Hold Harmless and Indemnity

The Contractor agrees to assume liability for and indemnify, hold harmless, and defend the City, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with

any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor, its agents, officers, contractors, subcontractors, employees, or anyone else employed or utilized by the Contractor in the performance of this Contract. The Contractor's liability hereunder shall include all attorney's fees and costs incurred by the City in the enforcement of this provision.

2. Payment on Behalf of City

The Contractor shall pay all costs of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph.

Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

3. Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary.

The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such work stoppage will not shift responsibility for any damages from the Contractor to the City.

4. Service Bond

For Service-related contracts only, the City may require the Contractor to secure a service bond with a minimum $25,000 coverage limit for the period of the service agreement. The service bond covers dishonest acts of the contractor's employees against the City. A copy of the bond shall be provided to the City when the agreement commences.

Service-related contracts include and are not limited to businesses providing janitorial, pest control, general repair, security, carpet cleaning, locksmith, temporary employment, painting, moving services or other contracts as determined in the discretion of the Risk Manager as necessary to minimize loss.

C. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or

death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability

f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include

coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

D. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service-related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM 25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

E. Policies of Insurance

1. Except as otherwise provided in this Exhibit, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-), in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carrier; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Exhibit shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability including products and completed operations and Automobile Liability policies of insurance and certificates thereof.

City of Ormond Beach
Request for Proposal

Professional Janitorial Services
(RFP No. 2023-05)

RFP RESPONSE FORM

THIS RESPONSE IS SUBMITTED TO:

Purchasing Coordinator
City of Ormond Beach
22 S. Beach Street, Room 101
Ormond Beach, Florida 32174

The undersigned SUBMITTER proposes and agrees, if this Submittal is accepted, to enter into a Contract with the CITY that is substantially in the form of this Request for Proposal (RFP) and to provide all services, as specified or indicated in the RFP Documents, in full accordance with the terms and conditions set forth in therein.

SUBMITTER accepts all of the terms and conditions of the General Conditions. SUBMITTER will sign the Contract and submit the Contract security (when applicable) and other documents required by the Contract Documents within ten (10) days after the date of CITY's Notice of Award.

In submitting this information, SUBMITTER represents, as more fully set forth in the Agreement, that:

SUBMITTER has examined copies of all the RFP Documents and of the following Addenda:

Addendum Date	Addendum Number
12/15/2022	1
1/4/2023	2
1/6/2023	3

Receipt of all of which is hereby acknowledged.

This Proposal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Proposer has not directly or indirectly induced or solicited any other Proposer to submit a false or sham Proposal; PROPOSER has not solicited or induced any person, firm or a corporation to refrain from bidding; and PROPOSER has not sought by collusion to obtain for himself any advantage over any other Proposer or over the CITY.

THIS RESPONSE IS SUBMITTED BY:

COMPANY NAME: American Janitorial, Inc. (AJI)

VENDOR/CONTRACTOR LICENSE NUMBER: 46-0557106 (FEIN)

ADDRESS: 87 North Central Ave, Umatilla, FL 32784 (Physical)
PO Box 2534, Umatilla, FL 32784 (Mailing)

PHONE NO.: 352-551-7941 FAX NO.: 352-669-1408

PROPOSER'S NAME: Jason Lay
(Typed or Printed in Ink)

TITLE: CEO

AUTHORIZED SIGNATURE: I, Jason Lay hereby
(Original signature required in each document)

declare that I have read and fully understand the RFP Documents and, including the General Conditions and the Scope of Work, and that I am duly authorized to sign and submit this Submittal.

The CITY reserves the right to reject any and all Submittals, to waive informalities, and to accept any Submittal or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

PROPOSER: PLEASE ENSURE THAT YOU HAVE SIGNED THE RFP RESPONSE FORM OF THIS REQUEST FOR PROPOSAL. OMISSION OF A SIGNATURE ON THAT PAGE MAY RESULT IN REJECTION OF YOUR PROPOSAL.

City of Ormond Beach
Request for Proposals (RFP)
Professional Cleaning Services
(RFP No. 2023-05)

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

American Janitorial, Inc. (AJI)
COMPANY NAME

AUTHORIZED SIGNATURE

Jason Lay
NAME

CEO
TITLE

1/10/2023
DATE

City of Ormond Beach
Request for Proposal
Professional Janitorial Services
(RFP No. 2023-05)

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[X] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[X] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

American Janitorial, Inc. (AJI)

COMPANY NAME

Jason Lay

AUTHORIZED SIGNATURE

Jason Lay

SIGNER'S NAME (PRINT OR TYPE)

CEO

TITLE

1/10/2023

DATE

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

City of Ormond Beach
Request for Proposal
Professional Janitorial Services
(RFP No. 2023-05)

DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" SUBMITTALS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

American Janitorial, Inc. (AJI)
Company Name

Authorized Signature

Jason Lay, CEO
Print Name

City of Ormond Beach
Janitorial Services-Facilities Cost Sheet
RFP 2023-05

LOCATION	ANNUAL COST	COST PER EACH EXTRA SERVICE	COST PER EACH EMERGENCY
Casements	$23,143.54	$148.36	$178.03
Gymnastics Center	$13,292.47	$63.91	$76.69
PAL Office	$2,804.95	$17.98	$21.58
Ames Park/Legal/Conference	$6,472.34	$41.49	$49.79
Central Park I	$4,346.80	$11.94	$14.33
Central Park II	$4,242.12	$11.65	$13.99
Sanchez Park	$1,824.36	$11.69	$14.03
Airport Sports Softball Building	$7,830.88	$21.51	$25.82
City Hall	$65,179.74	$250.69	$300.83
S Ormond Neighborhood Ctr	$29,153.59	$112.13	$134.56
Water Plant, Jefferson St.	$5,564.93	$21.40	$25.68
Water Plant, Tomoka Ave.	$2,682.05	$25.79	$30.95
Fleet	$7,339.09	$35.28	$42.34
Bailey's Riverbridge	$3,380.71	$21.67	$26.01
Senior Ctr - Bldg A	$7,655.03	$29.44	$35.33
Senior Ctr - Bldg B	$16,462.77	$63.32	$75.98
Senior Ctr - Bldg D	$6,164.48	$23.71	$28.45
Shuffleboard Building	$2,365.38	$22.74	$27.29
Airport Tower	$4,354.35	$27.91	$33.50
Wastewater	$6,371.47	$24.51	$29.41
Wastewater office	$3,093.89	$21.32	$25.58
Cassen Park	$6,001.30	$16.49	$19.78
Nova Outside Restrooms	$4,564.49	$12.54	$15.05
Leisures Services Offices	$10,130.01	$38.96	$46.75
PAC - 2nd Floor	$4,835.45	$92.99	$111.59
PAC - Backstage, Etc.	$11,782.19	$113.29	$135.95
PAC - Bldg C Blue Room	$5,718.12	$54.98	$65.98
Fortunato Park	$6,354.60	$17.46	$20.95
Airport Sports Soccer Building	$3,978.61	$15.30	$18.36
Airport Sports Greg Smith Fieldhouse	$8,995.69	$34.60	$41.52
Baseball Building	$4,243.89	$16.32	$19.59
Osceola Elementary	$2,187.68	$8.41	$10.10
Nova Athletic Field Restrooms	$2,405.25	$15.42	$18.50
Public Works	$14,327.47	$55.11	$66.13
Police Department	$45,440.09	$145.64	$174.77
Riverbend Park	$1,384.22	$8.87	$10.65
Nova Gymnasium	$36,882.10	$141.85	$170.23
Andy Romano Beachfront Park	$18,281.07	$50.22	$60.27

Environmental Discovery Center	$5,026.63	$19.33	$23.20
Nova rec. Skate Park	$5,192.72	$14.27	$17.12
Airport Sports Pride Restrooms	$2,507.55	$16.07	$19.29
Airport Sports Pop Warner restrooms	$4,859.63	$13.35	$16.02
TOTAL BID (Include all labor, material, equipment, etc.)	**$428,823.70**	**$1,909.91**	**$2,291.97**

City of Ormond Beach
Janitorial Services
RFP 2023-05
SPECIFICATION SHEETS

SUPPLIES

ITEM		SIZE
Multi Fold Paper Towels – 2TOWMFW White	4000/case	9.125" X 9.5"
Multi Fold Paper Towels - 2TOWMFN Natural	4000/case	9.125" X 9.5"
Toilet Tissue Heavenly Choice 2Ply 2TP57371634	96 rolls/case	4.5" X 4"
Inopak Lotionized Pink Enrich Hand Soap with Aloe Vera - 2IP5011-420-02	4 gallons/case	
Fusion Metered Aerosols by Fresh	12 cans/case	6.25 oz
Duracell size D batteries	48/Case	D-Cell
Urinal Screens by Fresh - Odor Control	10 screens/box	45-60 Days
Neat Seats Disposable Toilet Seat Covers 2SANI3325	5000/case	25 packs of 200
Toilet Tissue Gen. 202 2ply JRT	12/Case	
Trash Bags	250/Case	40X48
Trash Bags	250/Case	24X32
Foaming Soap/Autofoam	8/Case	1100 ml

NOTE: Quantities of the above supplies will vary and there is no historical data available. Bidders should use their best estimate of each of the supplies and provide their cost in the appropriate spaces on the Bid Reply form.

City of Ormond Beach
Janitorial Services
RFP 2023-05

LOCATION	TOILETS	SINKS	URINALS	SHOWERS
Casements	9	12	3	0
Gymnastics Center	2	2	0	0
PAL Office	1	2	0	0
Ames Park/Legal/Conference	5	6	0	0
Central Park I	2	2	1	0
Central Park II	2	2	1	0
Sanchez Park	6	2	2	0
Airport Sports Softball Building	5	4	2	0
City Hall	14	15	5	0
S Ormond Neighborhood Ctr	10	12	5	0
Water Plant, Jefferson St	2	2	0	1
Water Plant, Tomoka Ave	3	3	1	2
Fleet	5	3	2	2
Bailey's Riverbridge	2	3	1	0
Senior Ctr - Bldg A	2	3	1	0
Senior Ctr - Bldg B	4	5	2	0
Senior Ctr - Bldg D	2	4	1	0
Shuffleboard Building	2	2	0	0
Airport Tower	1	3	0	0
Wastewater	4	6	1	0
Wastewater Treatment Plant Maint. Office.	2	2	2	1
Cassen Park	3	2	1	0
Nova Outside Restrooms	5	6	2	0
Leisures Services Offices	3	2	1	0
PAC - 2nd Floor	2	2	0	2
PAC - Backstage, Etc.	7	6	2	1
PAC - Bldg C Blue Room	3	2	1	0
Fortunato Park	3	4	1	0
Airport Sports Soccer Building	9	12	4	1
Airport Sports Greg Smith Field House	7	6	1	0
Airport Sports Baseball Building	8	6	4	0
Osceola Elementary	3	2	1	0
Nova Athletic Field Restrooms	5	7	2	0
Public Works	12	7	4	3
Police Department	10	12	4	2
Riverbend Park	2	2	1	0
Nova Gymnasium	6	11	2	0
Andy Romano Beachfront Park	8	8	1	7 (outside)
Environmental Discovery Center	3	4	0	0

Nova rec. Skate Park	1	1	0	0
Airport Sports Pride Restrooms	2	2	0	0
Airport Sports Rick Boehm Fields Softball Restrooms	4	4	1	0
Airport Sports Pop Warner Restrooms	3	4	1	0

City of Ormond Beach
Janitorial Services
RFP 2023-05
CASEMENTS
25 RIVERSIDE DRIVE

D = Daily — Once a day Monday through Friday unless otherwise specified.
W = Weekly — Must be completed by Friday of each week.
M = Monthly — Must be completed by the last Friday of the month.
Q = Quarterly — Must be completed by the fifteenth (15) day of June, September, December and Ma
S = Semiannually — Must be completed by the fifteenth (15) day of January and July.
I = Inspection — Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	9,069 sq. ft.
Wood Floor	3,883 sq. ft.
Tile Floor	1,262 sq. ft.
Carpet Floor	3,910 sq. ft.

Cleaning hours between **12:00 A.M. and 6:00 A.M.**
Days of service: **3 days – Sunday – Tuesday - Thursday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed.		X				
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers and counter top appliances. Also wash the inside of the aluminum can recycling container.	X					
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, etc.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean and disinfect telephone. Clean desk top by special request only.	X					
53	Floors	Ceramic Tile - Sweep and mop use - solution of Tide with bleach and water.	X					
11		Ceramic Tile - Sweep, mop, wax and buff tile floors with non-slip wax.			X			
48		Wood - Sweep and damp mop.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method.				X		
14		Cement - Sweep and clean walkways and stair wells.		X				
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.				X		
9		Pick up all trash and debris off floor.	X					
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.			X			

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
17		Lighting Fixtures - Clean track lighting fixtures to remove dust and dirt.				X		
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
22		Clean stairway to include the carpeting on the floors and walls. Clean banisters to remove dirt and wax build up.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
26		Hallways and Entryways - Clean walls, doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.	X					
31		Elevator - Clean inside and outside elevator doors, frame and floor and polish all chrome.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed. **DO NOT TOUCH PICTURES OR PLAQUES**		X				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks. Including privacy glass.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
33		Trash Cans/Waste Baskets - Empty and reline as needed.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
37		Clean blinds to remove all dust and dirt.		X				
49	Classrooms	Wash Chalk Boards, table tops, chairs and sink.	X					
50	Dance Room	Clean ballet handrails.		X				
30	Display Cases	Clean glass to remove dust, dirt, fingerprints and smudges.		X				
51	Rockefeller Room	**DO NOT ENTER** (Located on the Second Floor)						
12	Stage	Vacuum Carpet, dust ledges and steps.		X				

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
GYMNASTICS CENTER
440 N. NOVA ROAD

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	7,712 sq. ft.
Carpet Floor	7,712 sq. ft.

Cleaning hours between **10:00 P.M. and 10:30 A.M.**
Days of service: **4 days: Mon – Tues – Thurs - Fri**
Contact Contract Manager: 386-212-8685

TASK No.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		X				
12	Floors	Carpet - Vacuum carpeting, rugs and other floor coverings (lift under edges).	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.				X		
9		Pick up all trash and debris off floor.	X					
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
25		Clean and sanitize all drinking fountains.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
33		Clean and disinfect telephone.	X					
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.		X				

TASK No.	ROOM	TASK	D	W	M	Q	S	I
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.			X			
37		Clean blinds to remove all dust and dirt.				X		
67		Clean large garage door inside.				X		
57		Wipe down mats (special cleaner).		X				
58		Wipe down handrails.		X				

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
PAL OFFICE
194 Central Avenue

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	800 sq. ft.
Carpet Floor	800 sq. ft.

Cleaning hours between **8:00 A.M. and 5:00 P.M**
Days of service: **3 days: Monday – Wednesday - Friday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers and counter top appliances. Also wash the inside of the aluminum can recycling container.		X				
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.	X					
9	Floors	Pick up all trash and debris off floor.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.				X		
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.		X				
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle and ashtray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
33		Clean and disinfect telephone.	X					
35		Recycled Materials - Empty containers and dispose of properly.		X				
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.	X					
37		Clean blinds to remove all dust and dirt.				X		

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
AMES PARK – AMES HOUSE
LEGAL OFFICE & CONFERENCE ROOM
173 S. BEACH STREET

D = Daily — Once a day Monday through Friday unless otherwise specified.
W = Weekly — Must be completed by Friday of each week.
M = Monthly — Must be completed by the last Friday of the month.
Q = Quarterly — Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually — Must be completed by the fifteenth (15) day of January and July.
I = Inspection — Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total 2,325 sq. ft.
Carpet 2,059 sq. ft.
Concrete Floor 266 sq. ft.

Cleaning hours between 6:00 A.M. and 6:00 P.M.
Days of Service: (3) days Monday – Wednesday - Friday
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floor.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
2	Legal Office	Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
1		Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers. .	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
16		Upholstered Furniture - Vacuum and dust all upholstered furniture.					X	
8		Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		X				
2	Ames Conference Room	Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
12		Carpet - Vacuum carpeting, rugs and other floor coverings		X				

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
8		Dust all furniture including but not limited to filing cabinets, tables and bookcases with polish cloth.		X				
16		Upholstered Furniture - Vacuum and dust all upholstered furniture.		X				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
CENTRAL PARK 1
FLEMING AVENUE

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Cleaning hours between 6:00 A.M. and 6:00 P.M.

Total 192 sq. ft.
Concrete Floor 192 sq. ft.

Days Of Service: (7) (Twice Daily, Fri ,Sat, Sun. March 1st thru Oct 31st)
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and wet mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floor.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
63		Grills - Clean unit of all debris.	X					

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
CENTRAL PARK 2
HAMMOCK LANE

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Cleaning hours between 6:00 A.M. and 6:00 P.M.

Total 104 sq. ft.

Days of Service: (7) (Twice Daily, Fri ,Sat, Sun. March 1st thru Oct 31st)

Concrete Floor 104 sq. ft.

Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and wet mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floor.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
63		Grills - Clean unit of all debris.	X					

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
SANCHEZ PARK
SANCHEZ AVENUE

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Cleaning hours between 6:00 A.M. and 6:00 P.M.
Days of Service: (3) Monday – Wednesday - Friday
Contact Contract Manager: 386-212-8685

Total	495 sq. ft.
Concrete Floor	495 sq. ft.

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and wet mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floors.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.			X			
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
32		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
63		Grills - Clean unit of all debris.	X					

Inspection Comments:_____

_____

_____

_____
Inspection Date

_____
Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
AIRPORT SPORTS COMPLEX
700 HULL ROAD
SOFTBALL BUILDING

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

1st Floor	986 sq. ft.	Cleaning hours between **6:00 A.M. and 9:00 A.M.**
2nd Floor	750 sq. ft.	SEASONAL - **Approximately 275-300 days of service**
Cement Floor	986 sq. ft.	Days of service: **(7) days per Week – Will vary depending on Season**
Total	1,736 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and wet mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floors.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings on second floor.	X					

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
CITY HALL
FIRST AND SECOND FLOOR
22 S. BEACH STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	24,326 sq. ft.
Carpet Floor	18,890 sq. ft.
Tile Floor	3,140 sq. ft.
Concrete	2,300 sq. ft.

Cleaning hours of service **5:00 P.M. to 7:00 a.m.**
Days of service - **5 days: Monday – Friday**
1st floor public restrooms twice daily Monday-Friday.
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.		3X				
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.		X				
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.		X				
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2X				
33		Clean and disinfect telephone.	X					
9	Floors	Pick up all trash and debris off floor.	X					
11		Ceramic Tile - Sweep, mop, scrub and clean with necessary agents.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
14		Cement - Sweep and clean walkways and stair wells.		X				
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.			X			
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
19		Corridor - Vacuum corridor.		X				
20		Corridor - Clean inside and outside all glass walls, doors, and windows. (1st Floor)			X			
21		Corridor - Clean behind doors and door jams.		X				
22		Clean stairway to include the carpeting on the floors and walls. Clean banisters to remove dirt and wax build up.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
26		Hallways and Entryways - Clean doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.		X				
27		Storage Areas - Keep storage areas neat.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks. Including privacy glass.	X					
31		Elevator - Clean inside and outside elevator doors, frame and polish all chrome.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
37		Clean blinds to remove all dust and dirt.				X		
38	Commission Chambers	Dust and vacuum carpeting, rugs and other floor coverings (before City Commission meetings, usually held on the first and third Tuesday of the month)		X				
8		Dust and treat with furniture polish complete dais to include top, front, sides and rear			X			
16		Upholstered furniture – Vacuum, dust and disinfect all upholstered furniture including audience seating.				X		
77	Exterior Windows	Clean exterior windows, removing all insects, handprints, debris, etc				X		

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
SOUTH ORMOND NEIGHBORHOOD CTR.
176 DIVISION STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	16,244 sq. ft.
Cement	348 sq. ft.
Rubberized	662 sq. ft.
Wood Floor	7,840 sq. ft.
Vinyl Floor	2,412 sq. ft.
Carpet	417 sq. ft.
Tile Floor	365 sq. ft.

Cleaning hours between **11:00 P.M. - 9:00 A.M.**
Days of service : **5 days: Monday-Friday**
Additional Kitchen Cleaning (6) Times Yearly.
Outside restrooms (7) Days
Twice daily Fri. Sat. Sun.
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.	X					
10	Floors	Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, scrub and clean with necessary agents.			X			
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
44		Wood - Dust mop.	X					
71	Gymnasium	Dust mop wood floor with "treated dust mop", remove gum spots.	X					
76		Wood gym floor should be cleaned by a water cleaning machine to remove surface dirt and grit.				X		
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
39		Concrete (painted) - Sweep and mop.	X					
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.			X			

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.		X				
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
25		Hallways and Entryways - Clean and sanitize all drinking fountains.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.	X					
32		Ceilings - Clean air conditioning vents to remove dust and dirt build up.			X			
33		Clean and disinfect telephone.		X				
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.	X					
54	Gymnasium	Clean bleachers of debris top and underneath.			X			
55		Wipe down back boards.			X			
56	Weight Room	Wipe down exercise machines and padding	X					
46		Vacuum rubberized floor.	X					
34	Outdoor Restroom	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks. Including privacy glass						

Inspection Comments:_____

_____

_____

_____

Inspection Date

_____

Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
WATER PLANT
ADMINISTRATION OPERATIONS
301 JEFFERSON STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	1,216 sq. ft.
Vinyl Floor	264 sq. ft.
Carpet	700 sq. ft.
Ceramic	348 sq. ft.

Cleaning hours between **7:00 A.M. - 4:00 P.M.**
5 Days of service – **Monday-Friday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances, such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.	X					
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.	X					
10	Floors	Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, scrub and clean with necessary agents.		X				
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats. Exterior mats will be cleaned using best method and manner.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
9		Pick up all trash and debris off floor.	X					
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.				X		
17		Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.				X		
22		Clean stairway to include the carpeting on the floors. Clean banisters to remove dirt.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle and ashtray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Clean and sanitize all drinking fountains and ashtrays.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
40		Ceilings - Clean ceilings to remove dust and dirt build up.				X		
33		Clean and disinfect telephone.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.			X			
37		Clean blinds to remove all dust and dirt.				X		

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
WATER PLANT
298 TOMOKA AVENUE

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	1,216 sq. ft.
Vinyl Floor	264 sq. ft.
Carpet	700 sq. ft.
Ceramic	348 sq. ft.

Cleaning hours between **7:00 A.M. - 4:00 P.M.**
2 Days of service – **Monday & Thursday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances, such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.	X					
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.	X					
10	Floors	Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, scrub and clean with necessary agents.		X				
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats. Exterior mats will be cleaned using best method and manner.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
9		Pick up all trash and debris off floor.	X					
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.				X		
17		Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.				X		
22		Clean stairway to include the carpeting on the floors. Clean banisters to remove dirt.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle and ashtray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Clean and sanitize all drinking fountains and ashtrays.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
40		Ceilings - Clean ceilings to remove dust and dirt build up.				X		
33		Clean and disinfect telephone.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.			X			
37		Clean blinds to remove all dust and dirt.				X		

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
FLEET OPERATIONS
500 N. ORCHARD STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	2,015 sq. ft.	Cleaning hours between **7:00 PM - 6:00 A.M.**
Vinyl Floor	1,672 sq. ft.	Days of service - 4 days: **Monday, Tuesday, Thursday, Friday**
Tile Floor	343 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, counters around and behind counter top appliances, such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.	X					
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean and disinfect telephone. Clean desk top by special request only.	X					
10	Floors	Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, strip, wax and buff floors with non-slip wax.				X		
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
9		Pick up all trash and debris off floor.	X					
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.				X		
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
25		Hallways and Entryways - Clean and sanitize all drinking fountains.	X					
26		Hallways and Entryways - Clean walls, doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			

TASK No.	ROOM	TASK	D	W	M	Q	S	I
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, spot clean as needed.			X			
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.				X		
33		Trash Cans/Waste Baskets - Empty and reline as needed.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.				X		
		Outside cleaning – windows.					X	
37		Clean blinds to remove all dust and dirt.			X			

Inspection Comments:_____

_____

_____

_____

Inspection Date

_____

Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
BAILEY RIVERBRIDGE GARDENS
25 NORTH BEACH STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	1,284 sq. ft.
Wood Floor	612 sq. ft.
Vinyl Floor	672 sq. ft.

Cleaning hours between 12:00 AM - 6:00 AM
This facility is used 7 days a week with heaviest usage on weekends.
Days of service - **(3) days: Tuesday – Thursday - Saturday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed.		X				
3		Clean stall walls	X					
4		Clean and disinfect floors.		X				
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.		X				
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.		X				
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.		X				
42	Floors	Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.					X	
44		Wood - Sweep and, mop.	X					
45		Wood - Sweep, mop, strip, wax and buff floor with non-slip wax.					X	
9		Pick up all trash and debris off floor.	X					
15		Floor Mats - Thoroughly clean all inside and outside floor (entry) mats.		X				
16	General	Furniture - Vacuum and dust all furniture.			X			
17		Lighting Fixtures - Clean track lighting fixtures to remove dust and dirt.			X			
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
27		Storage Areas - Keep storage areas neat.				X		
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs.		X				
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed.		X				
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.				X		
33		Trash Cans/Waste Baskets - Empty and reline as needed.		X				
34		Wash inside and outside trash cans and wastebaskets.				X		
35		Recycled Materials - Empty containers and dispose of properly.			X			
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
37		Clean blinds to remove all dust and dirt.		X				

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
BUILDING "A"
351 ANDREWS STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	2,973 sq. ft.
Carpet Floors	1,961 sq. ft.
Vinyl Floor	920 sq. ft.
Ceramic Floors	92 sq. ft.

Cleaning hours between **12:00 A.M. and 6:00 A.M.**
Days of service: **5 Days: - Tues – Wed-Thurs – Friday - Sun**
Contact Contract Manager: 386-212-8685

Task No.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies, including deodorizers. Clean and disinfect floors.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed.	X					
3		Clean stall walls	X					
4		Ceramic floors should be mopped and spot cleaned using germicidal solution.	X					
9	Floors	Pick up all trash and debris off floors.	X					
11		Ceramic Tile - Sweep, mop, wax and buff tile floors with non-slip wax.				X		
42		Vinyl - Sweep, mop, strip, wax and buff vinyl floor with non-slip wax.				X		
45		Wood - Sweep, mop, strip, wax and buff wood floor with non-slip wax.				X		
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Clean all carpet areas using scrub and extraction method. Spots to be cleaned daily.			X			
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.				X		
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.		X				
43		Vinyl - Sweep and mop.	X					
10		Ceramic Tile - Sweep and mop.	X					
14		Cement - Sweep and clean walkways.	X					
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.	X					

Task No.	ROOM	TASK	D	W	M	Q	S	I
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.		X				
17		Lighting Fixtures - Clean track lighting fixtures to remove dust and dirt.			X			
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside Ash Trays - Empty and clean ashtray. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
26		Hallways and Entryways - Clean walls, doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed.		X				
33		Trash Cans/Waste Baskets - Empty and reline as needed.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
37		Clean blinds to remove all dust and dirt.		X				
59		All tables and chairs are to be arranged for daily uses as directed.	X					

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
BUILDING "B"
351 ANDREWS STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	6,915 sq. ft.
Carpet Floors	1,735 sq. ft.
Vinyl Floor	360 sq. ft.
Ceramic Floors	4,420 sq. ft.

Cleaning hours between **12:00 PM and 6:00 AM.**
Days of service: **5 Days: - Tues – Wed-Thurs – Friday- Sun**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies, including deodorizers. Clean and disinfect floors.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean and disinfect telephone. Clean desk top by special request only.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.	X					
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed.	X					
35		Recycled Materials - Empty containers and dispose of properly.		X				
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.		X				
26		Hallways and Entryways - Clean walls, doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.		X				
33		Empty and clean (trash) waste baskets; reline waste basket as needed.	X					
48	Ballroom Area	Dust mop wood floor and stage area as required. Revision: Damp mop as required. Use only a damp mop. All excess water must be wrung out of mop. Never wax the floor or use cleaners. Manufacturer's specifications.	X					
17		Lighting Fixtures - clean all lighting fixtures to remove dust and dirt.			X			
42	Kitchen Area	Sweep and damp mop vinyl floor.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.	X					
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.	X					
9	Floors	Pick up all trash and debris off floors.	X					
11		Ceramic Tile - Sweep, mop, wax and buff tile floors with non-slip wax.				X		
43		Vinyl - Sweep, mop, strip, wax and buff vinyl floor with non-slip wax.				X		
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method. Spot clean daily.				X		
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.		X				
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.		X				
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
22		Clean stairway to include the carpeting on the floors and walls. Clean banisters to remove dirt and wax build up.		X				
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
27		Storage Areas - Keep storage areas neat.	X					
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed.		X				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks. Including privacy glass.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
34		Wash inside and outside trash cans and wastebaskets.			X			
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
37		Clean blinds to remove all dust and dirt.		X				
61		Polish piano/organ with appropriate cleaner.		X				

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
SENIOR CENTER
BUILDING "D"
359 ANDREWS STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	1,720 sq. ft.	Cleaning hours between **12:00 A.M. and 6:00 A.M.**
Tile Floors	96 sq. ft.	Days of service : **5 Days: - Tues – Wed-Thurs – Friday- Sun**
Vinyl Floor	1,624 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies, including deodorizers. Clean and disinfect floors.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
42	Floors	Vinyl - Sweep and mop.	X					
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.	X					
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.	X					
36		Windows - dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks. Clean blinds to remove all dust and dirt.		X				
9	Floors	Pick up all trash and debris off floors.	X					
42	Floors	Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff vinyl floor with non-slip wax.				X		
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.		X				
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.		X				
17		Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.			X			
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
26		Hallways and Entryways - Clean walls, doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.			X			
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed.			X			
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
33		Trash Cans/Waste Baskets - Empty and reline as needed.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
35		Recycled Materials - Empty containers and dispose of properly.		X				

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
ANNEX
SHUFFLEBOARD OFFICE
725 Hull Road

D = Daily	Once a day Monday through Friday unless otherwise specified.	
W = Weekly	Must be completed by Friday of each week.	
M = Monthly	Must be completed by the last Friday of the month.	
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.	
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.	
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory	
Total	1,296 sq. ft.	Cleaning hours between 12:00 AM and 6:00 AM
Vinyl Floor	1,088 sq. ft.	**Days of Service: (2) days Monday and Friday**
Concrete Floor	208 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed.			X			
3		Clean stall walls	X					
4		Clean and disinfect floors.			X			
9	Floors	Pick up all trash and debris off floor.	X					
42		Vinyl - Sweep and wet mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
14		Cement - Sweep and clean walkways.	X					
17	General	Lighting Fixtures - Clean track lighting fixtures to remove dust and dirt.				X		
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.		X				
25		Clean and sanitize all drinking fountains and ashtrays.	X					
27		Storage Areas - Keep storage areas neat.			X			
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed.			X			
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.				X		
35		Recycled Materials - Empty containers and dispose of properly.			X			
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
37		Clean blinds to remove all dust and dirt.		X				

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
ANNEX
AIRPORT TOWER
725 Hull Road

D = Daily — Once a day Monday through Friday unless otherwise specified.
W = Weekly — Must be completed by Friday of each week.
M = Monthly — Must be completed by the last Friday of the month.
Q = Quarterly — Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually — Must be completed by the fifteenth (15) day of January and July.
I = Inspection — Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total 960 sq. ft.
Carpet Floor 790 sq. ft.
VCT Tile 170 sq. ft.

Cleaning hours between **7:00 AM AND 6:00 PM**
Days of Service: **3 Days Monday, Wednesday, Friday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed.			X			
3		Clean stall walls	X					
4		Clean and disinfect floors.			X			
9	Floors	Pick up all trash and debris off floor.	X					
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
14		Cement - Sweep and clean walkways and stair wells. (outside bathrooms)	X					
17	General	Lighting Fixtures - Clean track lighting fixtures to remove dust and dirt.				X		
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
25		Clean and sanitize all drinking fountains and ashtrays.	X					
27		Storage Areas - Keep storage areas neat.			X			
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed.			X			
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.				X		
33		Clean and disinfect telephone.	X					
35		Recycled Materials - Empty containers and dispose of properly.			X			
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.	X					
37		Clean blinds to remove all dust and dirt.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date — Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
WASTEWATER OFFICE
550 N. ORCHARD STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

		2 x = Two times
Total	1,894 sq. ft.	Cleaning hours between **6:00 A.M. and 4:00 P.M.**
Carpet Floor	1,171 sq. ft.	Days of service: **5 days – Monday-Friday**
Vinyl Floor	723 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed.				X		
3		Clean stall walls	X					
4		Clean and disinfect floors.			X			
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.			X			
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean and disinfect telephone. Clean desk top by special request only.	X					
42	Floors	Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floors with non-slip wax.				X		
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method.					X	
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.				X		
9		Pick up all trash and debris off floor.	X					
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.			X			
17		Lighting Fixtures - Clean track lighting fixtures to remove dust and dirt.			X			
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
68		Sweep corridor.	X					
20		Corridor - Clean inside and outside all glass walls, doors, and windows.		X				
21		Corridor - Clean behind doors and door jams.		X				
22		Clean stairway to include the carpeting on the floors and walls. Clean banisters to remove dirt and wax build up.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed.			X			
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.				X		
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
33		Trash Cans/Waste Baskets - Empty and reline as needed.	X					
35		Recycled Materials - Empty containers and dispose of properly.	X					
37		Clean blinds to remove all dust and dirt.		X				

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
CASSEN PARK
1 S. BEACH STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

		Cleaning hours between 6:00 A.M. and 6:00 P.M
Total	198 sq. ft.	**Days of Service: (7)**
		(Twice Daily, Fri, Sat, Sun. March 1st thru Oct 31st)
Carpet Floor	198 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floors.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
32		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
63		Grills - Clean unit of all debris.	X					

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
WASTE WATER TREATMENT PLANT
MAINTENANCE OFFICE
550 N. ORCHARD STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	1,216 sq. ft.
Vinyl Floor	264 sq. ft.
Carpet	700 sq. ft.
Ceramic	348 sq. ft.

Cleaning hours between **7:00 A.M. - 4:00 P.M.**
2 Days of service – **Monday & Thursday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances, such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.	X					
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.	X					
10	Floors	Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, scrub and clean with necessary agents.		X				
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats. Exterior mats will be cleaned using best method and manner.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
9		Pick up all trash and debris off floor.	X					
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.				X		
17		Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.				X		
22		Clean stairway to include the carpeting on the floors. Clean banisters to remove dirt.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle and ashtray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Clean and sanitize all drinking fountains and ashtrays.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
40		Ceilings - Clean ceilings to remove dust and dirt build up.				X		
33		Clean and disinfect telephone.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.			X			
37		Clean blinds to remove all dust and dirt.				X		

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
Bid 2023-05
NOVA OUTSIDE RESTROOM
440 N. NOVA ROAD

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Cleaning hours between 11:00 P.M. and 8:30 A.M.

Total 375 sq. ft.

Days of service – **(7) Days**
(Twice Daily, Fri, Sat, Sun. March 1st thru Oct 31st)

Vinyl Floor 375 sq. ft.

Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and wet mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floor.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
63		Grills - Clean unit of all debris.	X					

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
LEISURE SERVICES OFFICE
399 U.S. 1

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	2,457 sq. ft.	Days of service : **(5) Monday-Friday 12:00 am – 6:00 am**
Carpet Floors	2,376 sq. ft.	**Contact Contract Manager: 386-212-8685**
Tile Floor	81 sq. ft.	

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies, including deodorizers. Clean and disinfect floors.	X					
30	Lobby Area	Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
33		Empty and clean (trash) waste baskets; reline waste basket as needed.	X					
59		All tables and chairs are to be arranged for daily uses as directed.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean floor appropriately according to the type of flooring. Clean desk top by special request only.	X					
10	Floors	Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, strip, wax and buff floors with non-slip wax.				X		
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum carpeting, rugs and other floor coverings. Clean all carpet areas using scrub and extraction method.				X		
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.	X					
31		Elevator - Clean inside and outside elevator doors, frame and floor and polish all chrome.	X					
17		Lighting Fixtures - Clean track lighting fixtures to remove dust and dirt.			X			
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
22		Clean stairway to include the carpeting on the floors and walls. Clean banisters to remove dirt and wax build up.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside Ash Trays - Empty and clean ashtray. Replace sand or ashtray filter as needed to maintain a presentable appearance.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
26		Hallways and Entryways - Clean walls, doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.	X					
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, spot clean as needed.	X					
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks. Including privacy glass.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
33		Trash Cans/Waste Baskets - Empty and reline as needed.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.			X			
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.	X					
9	Floors	Pick up all trash and debris off floors.	X					
45		Wood - Sweep, mop, strip, wax and buff wood floor with non-slip wax.	X					
36	General	Windows - dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks. Clean blinds to remove all dust and dirt.	X					
47		Steam clean all upholstered furniture.				X		
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method.				X		
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
SECOND FLOOR REHEARSAL ROOM, DRESSING ROOM AND RESTROOM
399 U.S. 1

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	2,680 sq. ft.
Carpet Floor	40 sq. ft.
Vinyl Floor	800 sq. ft.
Tile Floor	40 sq. ft.
Wood Floor	1,800 sq. ft.

Cleaning hours between **12:00 am and 6:00 am**
Days of service: **1 day - Monday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
9	Floors	Pick up all trash and debris off floor.	X					
10		Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, strip, wax and buff floors with non-slip wax.				X		
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method.				X		
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.				X		
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.				X		
17		Lighting Fixtures - Clean track lighting fixtures to remove dust and dirt.				X		
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
25		Clean and sanitize all drinking fountains and ashtrays.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.	X					
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, etc. and kick boards, spot clean as needed.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
33		Trash Cans/Waste Baskets - Empty and reline as needed.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.	X					
37		Clean blinds to remove all dust and dirt.	X					

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
BACKSTAGE AND LOBBY RESTROOMS, ATRIUM AREA AND FRONT STAGE
399 U.S. 1

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	5,750 sq. ft.
Carpet Floor	4,900 sq. ft.
Vinyl Floor	50 sq. ft.
Tile Floor	800 sq. ft.

Cleaning hours between **12:00 am and 6:00 am**
Days of service: **2 days – Monday and Saturday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
9	Floors	Pick up all trash and debris off floor.	X					
10		Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, strip, wax and buff floors with non-slip wax.				X		
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method.				X		
14		Cement - Sweep and clean walkways and stair wells.	X					
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.				X		
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.				X		
17		Lighting Fixtures - Clean track lighting fixtures to remove dust and dirt.				X		
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle and ashtray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Clean and sanitize all drinking fountains and ashtrays.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, etc. and kick boards, spot clean as needed.	X					
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
33		Trash Cans/Waste Baskets - Empty and reline as needed.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.	X					
37		Clean blinds to remove all dust and dirt.	X					

Inspection Comments:_____

_____

_____

_____

Inspection Date

_____

Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
BLUE ROOM - STUDIO
BUILDING "C"
399 NORTH US #1

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	3,422 sq. ft.
Carpet Floor	352 sq. ft.
Vinyl Floor	580 sq. ft.
Wood Floor	2,490 sq. ft.

Cleaning hours between **12:00 A.M. and 6:00 A.M.**
Days of service: **2 days: Sunday and Friday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies, including deodorizers. Clean and disinfect floors. Wax with non-slip wax.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed.						
3		Clean stall walls	X					
4		Clean and disinfect floors.	X					
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.	X					
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.	X					
42		Vinyl floors shall be mopped and spot cleaned with all catering debris removed.	X					
12	Assembly Room	Vacuum all rug areas including front and back stairways and wood dance floor.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
59		All tables and chairs are to be arranged for daily uses as directed.		X				
61		Polish piano/organ with appropriate cleaner.		X				
62		Clean green board.	X					
9	Floors	Pick up all trash and debris off floors.	X					
43		Vinyl - Sweep, mop, strip, wax and buff vinyl floor with non-slip wax.				X		
45		Wood - Sweep, mop, strip, wax and buff wood floor with non-slip wax.			X			
48		Wood - Sweep & mop as per manufacturer's specs.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method.				X		
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.	X					
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.		X				
17		Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.			X			

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
22		Clean stairway to include the carpeting on the floors and walls. Clean banisters to remove dirt and wax build up.		X				
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside Ash Trays - Empty and clean ashtray. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
26		Hallways and Entryways - Clean walls, doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.			X			
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Clean all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm poll stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc. and spot clean as needed.			X			
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
31		Elevator - Clean inside and outside elevator doors, frame and polish all chrome.		X				
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
33		Trash Cans/Waste Baskets - Empty and reline as needed.	X					
34		Wash inside and outside trash cans and wastebaskets.			X			
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
37		Clean blinds to remove all dust and dirt.		X				
35		Recycled Materials - Empty containers and dispose of properly.	X					

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
FORTUNATO PARK
1 JOHN ANDERSON

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Cleaning hours between 6:00 A.M. and 6:00 P.M.

Total 495 sq. ft.
Concrete Floor 495 sq. ft.

Days of Service: (7) (Twice Daily, Fri, Sat, Sun. March 1st thru Oct 31st)
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floors.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.				X		
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
32		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
63		Grills - Clean unit of all debris.	X					

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
AIRPORT SPORTS COMPLEX
SOCCER BUILDING & FIELD # 7
Restroom
700 HULL ROAD

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	748 sq. ft.	Cleaning hours between 6:00 A.M. and 9:00 A.M.
Cement Floor	270 sq. ft.	**Days of service - Seasonal: Approximately 235-250 days of Service**
Tile Floor	478 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and wet mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floor.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.			X			
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.				X		

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
AIRPORT SPORTS COMPLEX
GREG SMITH FIELD HOUSE
700 HULL ROAD

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	4,100 sq. ft	Cleaning hours between 6:00 A.M. and 9:00 A.M.
		Days of service - Seasonal: Approximately 235-250 days of Service
Kinetex Carpet Floor	4,100 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and wet mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floor.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.			X			
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.				X		
12		Carpet – Vacuum and clean all carpeting, rugs and other floor coverings.	X					

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
AIRPORT SPORTS COMPLEX
700 HULL ROAD
Baseball Building

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Tile Floor	267 sq. ft.	Cleaning hours between **6:00 A.M. and 9:00 A.M.**
Cement Floor	704 sq. ft.	SEASONAL - **Approximately 235-250 days of service**
Total	971 sq. ft.	Days of service - **Will vary depending on season**
		Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and wet mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floors.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.	X					
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.	X					

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
OSCEOLA ELEMENTARY SCHOOL PLAYGROUND
100 OSCEOLA AVENUE

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Cleaning hours between 6:00 A.M. and 6:00 P.M.
Days of service - 5 days - Monday through Friday (During School Year)
2 days – Tuesday and Friday (Summertime)
Contact Contract Manager: 386-212-8685

Total	108 sq. ft.
Cement Floor	108 sq. ft.

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floors.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.	X					
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.	X					

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
ATHLETIC FIELD RESTROOMS
Field # 1 Restroom and
Restroom between Field # 3 and #4
440 N. NOVA ROAD

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Cleaning hours between 6:00 A.M. and 9:00 A.M.
SEASONAL - Approximately 180 days of service

Total 464 sq. ft.
Tile Floor 464 sq. ft.

Days of Service: (3) days Monday – Wednesday - Friday
Contact Contract Manager: 386-212-8685

TASK NO	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floor.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.			X			
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
PUBLIC WORKS
501 N. ORCHARD STREET

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	5,120 sq. ft.
Carpet	120 sq. ft
Tile Floor	1,250 sq. ft.
Vinyl Floor	3,750 sq. ft.

Cleaning hours between 5:00 P.M. and 6:30 A.M.
Days of Service: (5) days - Monday- Friday
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.			X			
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances, such as a microwave oven. Replenish supplies such as soap and paper towels.		X				
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.			X			
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.		X				
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		X				
10	Floors	Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, scrub and clean with necessary agents.					X	
42		Vinyl - Sweep and mop.	X					
43		Vinyl - Sweep, mop, strip, wax and buff floor with non-slip wax.					X	
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method.					X	
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.				X		
9		Pick up all trash and debris off floors.	X					
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.			X			
TASK NO.	ROOM	TASK	D	W	M	Q	S	I

17		Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.				X		
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.		X				
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.		X				
25		Clean and sanitize all drinking fountains.	X					
26		Hallways and Entryways - Clean walls, doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.		X				
27		Storage Areas - Keep storage areas neat.		X				
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks. Including privacy glass.		X				
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
33		Clean and disinfect telephone.	X					
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
37		Clean blinds to remove all dust and dirt.				X		
2	Facilities Maint. Office	Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
1		Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
8		Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		X				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
42		Vinyl – Sweep and Mop	X					
2	Streets/ Signs Offices	Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
1		Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
8		Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		X				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
42		Vinyl – Sweep and Mop	X					
2	Wastewater Office	Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
1		Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
8		Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		X				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
42		Vinyl – Sweep and Mop	X					

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
POLICE DEPARTMENT
170 W. GRANADA BLVD.

D = Daily — Once a day Monday through Friday unless otherwise specified.
W = Weekly — Must be completed by Friday of each week.
M = Monthly — Must be completed by the last Friday of the month.
Q = Quarterly — Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually — Must be completed by the fifteenth (15) day of January and July.
I = Inspection — Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	17,426 sq. ft.
Concrete Floor	2,280 sq. ft.
Vinyl Floor	5,864 sq. ft.
Carpet Floor	6,968 sq. ft.
Ceramic Tile Floor	1,786 sq. ft.
Rubber Tile	528 sq. ft.

Cleaning hours between **6:00 P.M. and 7:00 A.M.**
Days of service: **6 days: Mon – Tues –Wed- Thurs – Fri - Sun**

Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
43	All Vinyl Floors in Bldg	Vinyl – Sweep, mop, strip, wax and buff floor with non-slip wax.				X		
12	Lobby 101	Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
10		Ceramic Tile - Sweep and mop.		3X				
4		Clean and disinfect floors.			X			
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks. Including privacy glass.	X					
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
8		Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		3X				
33		Clean and disinfect telephone.	X					
12	Victim Waiting Room 104	Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.			X			
8		Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2x				
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
33		Clean and disinfect telephone.		X				
1	Restrooms 102, 103, 114, 126, 131, 142, 160, 162, 175, Jail	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
10		Ceramic Tile - Sweep and mop.	X					
4		Clean and disinfect floors.		X				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
5		Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
	NID 128, 129, 130, 133 (break room)	Spray dust surfaces as requested by on duty staff		2x				
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.			X			
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
37		Clean blinds to remove all dust and dirt.			2x			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
33		Clean and disinfect telephone.		X				
1		Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
5		Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.		X				
8	Records 105,106,107, 108, 109	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2x				
12		Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
33		Clean and disinfect telephone.		X				
12	Conference Room 117	Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
8		Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2x				

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
33		Clean and disinfect telephone.	X					
8	Admin. Offices w/windows 111, 112, 113, 119, 120	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2x				
12		Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
37		Clean blinds to remove all dust and dirt.			2x			
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.		2x				
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		2x				
33		Clean and disinfect telephone.		X				
1		Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
8	Admin. Offices 123, 124, 125	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2x				
12		Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
33		Clean and disinfect telephone.		X				
8	Admin. Common Areas 110, 115, 116, 118, 121, 122	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2x				
1		Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.		2x				
12		Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
10		Ceramic Tile - Sweep and mop.		2x				
4		Clean and disinfect floors.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
		Empty Shredder	X					
8	W. Corridor Offices 137, 139, 143, 144, 146, 147, 150, 151, 152	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2x				
12		Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				
13		Carpet - Vacuum and clean all carpet areas using scrub and				X		

		extraction method or other appropriate method.						
TASK NO.	**ROOM**	**TASK**	**D**	**W**	**M**	**Q**	**S**	**I**
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
37		Clean blinds to remove all dust and dirt.		2x				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.		2x				
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		2x				
33		Clean and disinfect telephone.		X				
8	S. Corridor Offices 158, 168, 169, 170, 171, 172, 174, 176,187	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2x				
12		Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
37		Clean blinds to remove all dust and dirt.		2x				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.		2x				
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		2x				
33		Clean and disinfect telephone.		X				
12	135 - Training Room	Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
5		Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.		2x				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.		2x				
33		Clean and disinfect telephone.		X				
12	Break Rooms 133, 145, 145A	Carpet - Vacuum carpeting, rugs and other floor coverings.		3x				
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.		X				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
5		Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.		3x				
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.		X				

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
8		Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2x				
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		2x				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.		2x				
33		Clean and disinfect telephone.		X				
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
12	164 - Weight Room	Carpet - Vacuum carpeting, rugs and other floor coverings.		3x				
56		Wipe down exercise machines and padding		3x				
57		Wipe down mats (special cleaner).		X				
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.		3x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
12	154, 156 – Pre-briefing & Briefing Room	Carpet - Vacuum carpeting, rugs and other floor coverings.		3x				
4		Clean and disinfect floors.			X			
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
8		Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		3x				
1		Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.		3x				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.		3x				
33		Clean and disinfect telephone.		X				
1	178, 179, 181, 182, 183, 184, 185 - Jail Cells	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, benches, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.		3x				
12		Carpet - Vacuum carpeting, rugs and other floor coverings.		3x				
10		Ceramic Tile - Sweep and mop.		3x				
4		Clean and disinfect floors.		3x				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
		Clean & Sanitize bench areas in jails	3x					
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	3x					

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	160, 161, 162, 163 - Locker Rooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, benches, lockers, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
10		Ceramic Tile - Sweep and mop.		X				
4		Clean and disinfect floors.		X				
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.				X		
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.	X					
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.		X				
3		Clean stall walls		X				
14	Miscellaneous	Cement - Sweep and clean walkways and stair wells.	X					
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.28		X				
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
37		Clean blinds to remove all dust and dirt.			2x			
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.	X					
16		Upholstered Furniture - Vacuum and dust all upholstered furniture.		X				
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.		X				
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
2	204 Firing Range	**This is a restricted area. Must ask on duty supervisor for access** Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.senior		2x				
14		Cement – Sweep		2x				
12	167 Storage/Shredder Room	**This is a restricted area. Must ask on duty supervisor for access** Carpet - Vacuum carpeting, rugs and other floor coverings.		2x				

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
RIVERBEND PARK
775 AIRPORT ROAD

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Cleaning hours between 6:00 A.M. and 6:00 P.M.

Total 125 sq. ft.
Concrete Floor 125 sq. ft.

Days of Service: (3) Days Mon – Wed - Fri
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floors.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.			X			
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.			X			
32		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
63		Grills - Clean unit of all debris.	X					

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach

Janitorial Services
RFP 2023-05
NOVA GYMNASIUM
440 N. NOVA ROAD

D = Daily		Once a day Monday through Friday unless otherwise specified.
W = Weekly		Must be completed by Friday of each week.
M = Monthly		Must be completed by the last Friday of the month.
Q = Quarterly		Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually		Must be completed by the fifteenth (15) day of January and July.
I = Inspection		Facility Inspection Results: S = Satisfactory, U = Unsatisfactory
Total	17,156 sq. ft.	Cleaning hours will be variable depending on activity schedule, otherwise between **11:00 P.M. and 8:30 A.M.**
Wood Floor	13,600 sq. ft.	Days of service **-5 days : Sun – Mon – Tues – Thurs - Fri**
Vinyl Floor	3,556 sq. ft.	
Vinyl Floor	3,556 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
34	Outdoor Restroom	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4	Floors	Clean and disinfect floors.	X					
42		Vinyl - Dust mop and wet mop.	X					
43		Vinyl - Dust mop, wet mop, strip, wax and buff floor with non-slip wax.				X		
15		Floor Mats - Thoroughly clean and shake and vacuum all inside and outside floor (entry) mats. Exterior mats will be cleaned using best method and manner.	X					
9		Pick up all trash and debris off floor.	X					
18	General	Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
25		Clean and sanitize all drinking fountains.	X					
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks. Including privacy glass.		X				
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
33		Clean and disinfect telephone.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
67		Dust inside large garage door.					X	

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
58		Wipe down handrails.		X				
17		Lighting Fixtures - Clean lighting fixtures to remove dust and dirt except in the gymnasium (basketball courts).				X		
35		Recycled Materials - Empty containers and dispose of properly.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
73		Vinyl upholstery - damp wipe as needed and clean under cushions.		X				
69	Activity Room	Dust mop wood floor and remove gum spots.	X					
70	Activity Room	Damp mop and spot treat as needed.	X					
71	Gymnasium	Dust mop wood floor with "treated dust mop", remove gum spots, and remove debris behind red mats.	X					
74	Trophy Case	Clean outside glass to remove finger prints, smudges, and streaks.		X				
76		Wood gym floor should be cleaned by a water cleaning machine to remove surface dirt and grit.				X		
54	Gymnasium	Clean bleachers of debris and wipe top and underneath.		3 X				

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
Andy Romano Beachfront Park
839 S. Atlantic Avenue

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Cleaning hours between: 6:00 A.M. and 6:00 P.M.

Total 827 sq. ft.
Ceramic Tile Floor 827 sq. ft.

Days of Service: (7) Days (Twice per Day March 1st thru Oct 31)
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
34	Outdoor Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
2	Outdoor Trash Cans	Empty, clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is in the container.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is in the container.	X					
4		Clean and disinfect floors.	X					
9		Pick up all trash and debris off floor.	X					
10		Ceramic Tile - Sweep and mop.	X					
11		Ceramic Tile - Sweep, mop, strip, wax and buff floors with non-slip wax.			X			
17		Lighting Fixtures - Clean lighting fixtures to remove dust and dirt.			X			
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
27		Storage Areas – Keep storage areas neat.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.	X					
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.		X				
1		Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
ENVIRONMENTAL DISCOVERY CENTER
601 DIVISION AVE.

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	1,629 sq. ft.
Vinyl	1,485 sq. ft.
Tile Floor	144 sq. ft.

Cleaning hours of service **5:00 P.M. to 7:00 a.m.**
Days of service - **5 days: Monday-Friday**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.		3X				
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.		X				
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.		X				
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2X				
33		Clean and disinfect telephone.	X					
9	Floors	Pick up all trash and debris off floor.	X					
11		Ceramic Tile - Sweep, mop, scrub and clean with necessary agents.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
14		Cement - Sweep and clean walkways and stair wells.		X				
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.			X			
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
23		Dumpster - All trash or loose debris at dumpster must be properly containerized and the immediate (enclosed) area must be kept clean and clear of debris.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
26		Hallways and Entryways - Clean doors, floors, handrails and stairs. Clean around plants and other objects in the hallway.		X				
27		Storage Areas - Keep storage areas neat.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
37		Clean blinds to remove all dust and dirt.				X		
16		Upholstered furniture – Vacuum, dust and disinfect all upholstered furniture including audience seating.				X		
77	Exterior Windows	Clean exterior windows, removing all insects, handprints, debris, etc				X		

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
Nova rec. Skate Park building
400 North Nova Rd.

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total	730 sq. ft.
Carpet Floor	600 sq. ft.
Tile Floor	100 sq. ft.
Concrete	30 sq. ft.

Cleaning hours of service **9:00 P.M. to 7:00 a.m.**
Days of service - **7 days**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
4		Clean and disinfect floors.		3X				
5	Kitchen	Thoroughly clean and disinfect all sinks, tables, and counters around and behind counter top appliances such as a microwave oven. Replenish supplies such as soap and paper towels.	X					
6		Clean outside of refrigerators, aluminum can recycling containers, vending machines (i.e. candy and soda machines), and counter top appliances. Also wash the inside of the aluminum can recycling container.		X				
7		Clean and disinfect floors around tables, chairs, stoves, refrigerators, and vending machines (i.e. candy and soda machines), etc.		X				
8	Office Area	Dust all furniture including but not limited to filing cabinets, tables, bookcases, computers, etc. Clean desk top by special request only.		2X				
33		Clean and disinfect telephone.	X					
9	Floors	Pick up all trash and debris off floor.	X					
11		Ceramic Tile - Sweep, mop, scrub and clean with necessary agents.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings.	X					
13		Carpet - Vacuum and clean all carpet areas using scrub and extraction method or other appropriate method.					X	
14		Cement - Sweep and clean walkways and stair wells.		X				
15		Floor Mats - Thoroughly clean and scrub all inside and outside floor (entry) mats.			X			
16	General	Upholstered Furniture - Vacuum and dust all upholstered furniture.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
18		Mirrors - Clean all mirrors to remove finger prints, smudges, and streaks.	X					
24		Outside trash Receptacles and Ash Trays - Empty and clean trash receptacle tray. Reline trash receptacle as needed. Replace sand or ashtray filler as needed to maintain a presentable appearance.	X					
25		Hallways and Entryways - Clean and sanitize all drinking fountains and ashtrays.	X					
27		Storage Areas - Keep storage areas neat.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
30		Glass Doors - Clean inside and outside all glass doors to remove all fingerprints, smudges, and streaks.	X					
31		Elevator - Clean inside and outside elevator doors, frame and polish all chrome.	X					
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
35		Recycled Materials - Empty containers and dispose of properly.	X					
36		Windows - Dust all window ledges, spot clean inside all windows to remove finger prints, smudges, and streaks.		X				
37		Clean blinds to remove all dust and dirt.				X		
77	Exterior Windows	Clean exterior windows, removing all insects, handprints, debris, etc				X		

Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
Airport Sports Pride Restrooms
700 Hull Rd.

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total 550 sq. ft.
Concrete 550 sq. f

Cleaning hours of service 6**:00 pm. to 9:00 a.m.**
Days of service – **Seasonal: Approximately 100-125 days of service.**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39		Cement floors – sweep and wet mop. Clean off exterior walkways		3X				
9	Floors	Pick up all trash and debris off floor.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
40		Ceilings - clean to remove dust, dirt build up and foreign debris.	X					

Inspection Comments:_____
_____
_____

_____ _____
Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
AIRPORT SPORTS COMPLEX
700 HULL ROAD
RICK BOEHM SOFTBALL BUILDING

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

1st Floor	986 sq. ft.	Cleaning hours between **6:00 A.M. and 9:00 A.M.**
		SEASONAL - **Approximately 275-300 days of service**
Cement Floor	986 sq. ft.	Days of service: **(7) days per Week – Will vary depending on Season**
Total	1,736 sq. ft.	**Contact Contract Manager: 386-212-8685**

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39	Floors	Cement - Sweep and wet mop. Clean off exterior walkways.	X					
9		Pick up all trash and debris off floors.	X					
17	General	Lighting Fixtures - Clean lighting fixtures to remove dust, dirt, cob webs, etc.			X			
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.		X				
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
40		Ceilings - Clean to remove dust, dirt build up and foreign debris.			X			
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.	X					
12		Carpet - Vacuum carpeting, rugs and other floor coverings on second floor.	X					

Inspection Comments: _____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature

City of Ormond Beach
Janitorial Services
RFP 2023-05
Airport Sports Pop Warner Restrooms
700 Hull Rd.

D = Daily	Once a day Monday through Friday unless otherwise specified.
W = Weekly	Must be completed by Friday of each week.
M = Monthly	Must be completed by the last Friday of the month.
Q = Quarterly	Must be completed by the fifteenth (15) day of June, September, December and March.
S = Semiannually	Must be completed by the fifteenth (15) day of January and July.
I = Inspection	Facility Inspection Results: S = Satisfactory, U = Unsatisfactory

Total 450 sq. ft.
Concrete 450 sq. f

Cleaning hours of service 6**:00 pm. to 9:00 a.m.**
Days of service – **Seasonal: Approximately 235-250 days of service.**
Contact Contract Manager: 386-212-8685

TASK NO.	ROOM	TASK	D	W	M	Q	S	I
1	Restrooms	Thoroughly clean and disinfect all fixtures including showers, urinals, toilets, sinks, counters, faucets, mirrors, empty waste baskets, and replenish restroom articles and supplies including but not limited to soap, toilet paper, deodorizers, and seat covers.	X					
3		Clean stall walls	X					
39		Cement floors – sweep and wet mop. Clean off exterior walkways		3X				
9	Floors	Pick up all trash and debris off floor.	X					
2		Clean and disinfect waste baskets and trash cans and reline as needed when liquid or debris is on the container.		X				
28		Doors - Clean inside and outside door surfaces to include the door jam, door knobs and floor behind the door.			X			
29		Walls - Dust and remove all visible marks as needed from all wall surfaces from ceiling to floor including wall hangings (pictures, etc.), fire alarm boxes, fire alarm pull stations, fire extinguishers, exit signs, partitions, base boards, kick boards, etc.		X				
32		Ceilings - Clean air conditioning vents and ceiling fans to remove dust and dirt build up.			X			
40		Ceilings - clean to remove dust, dirt build up and foreign debris.	X					

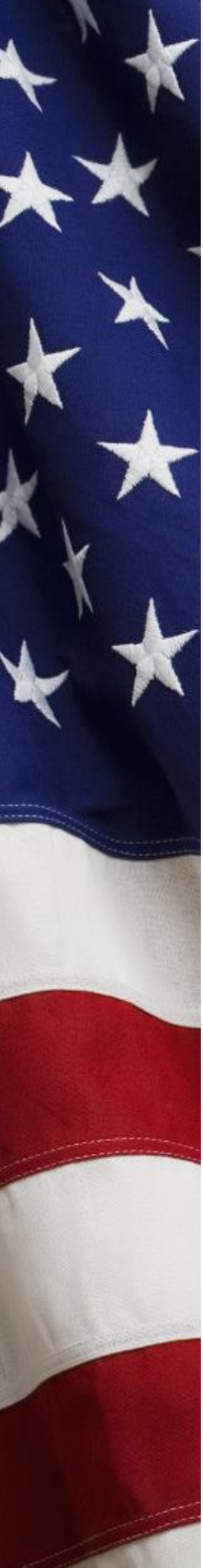
Inspection Comments:_____

_____

_____

_____ _____

Inspection Date Facility Manager's Signature



American Janitorial Incorporated

The Best Value In Cleaning

Janitorial Services Proposal

RFP # 2023-05

Professional Janitorial Services

January 12, 2023

Focused Customer Service
Quality Workmanship
Experienced Staff
Competitive Pricing
24 Hour Emergency Service

ORMOND BEACH Florida

City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3374

REQUEST FOR PROPOSALS

PROPOSER ACKNOWLEDGEMENT FORM

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP TITLE: **PROFESSIONAL JANITORIAL SERVICES**

RFP NUMBER: **2023-05**

RFP OPENING DATE & TIME: **January 12, 2023 - 3:00 PM**

RFP OPENING LOCATION: Training Room (Breezeway, City Hall) 22 S. Beach St.

PRE-SUBMITTAL MEETING: N/A

Submittals Received After the Above Date and Time Will Not Be Accepted.

PROPOSER'S NAME: American Janitorial, Inc. (AJI)

PROPOSER'S MAILING ADDRESS: PO Box 2534

CITY-STATE-ZIP: Umatilla, FL 32784

F.E.I.N.: 46-0557106

PHONE NUMBER: 352-551-7941

FAX NUMBER: 352-669-1408

If returning as a "No Submittal", please state reason (s): _____

I certify that this Proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Proposal for the same materials, services, supplies, or equipment, and is in all respects fair and made without collusion or fraud. I agree to abide by all conditions of this RFP and certify that I am authorized to sign this RFP for the Proposer. In submitting a RFP to the City of Ormond Beach, the Proposer offers and agrees that if the Proposal is accepted, the Proposer will convey, assign or transfer to the City of Ormond Beach all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Ormond Beach. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Proposer.

X _____
AUTHORIZED SIGNATURE (MANUAL)

Jason Lay
NAME (TYPED)

CEO
TITLE

1/10/2023
DATED

City of Ormond Beach
Request for Proposal

Professional Janitorial Services
(RFP No. 2023-05)

RFP RESPONSE FORM

THIS RESPONSE IS SUBMITTED TO:

Purchasing Coordinator
City of Ormond Beach
22 S. Beach Street, Room 101
Ormond Beach, Florida 32174

The undersigned SUBMITTER proposes and agrees, if this Submittal is accepted, to enter into a Contract with the CITY that is substantially in the form of this Request for Proposal (RFP) and to provide all services, as specified or indicated in the RFP Documents, in full accordance with the terms and conditions set forth in therein.

SUBMITTER accepts all of the terms and conditions of the General Conditions. SUBMITTER will sign the Contract and submit the Contract security (when applicable) and other documents required by the Contract Documents within ten (10) days after the date of CITY's Notice of Award.

In submitting this information, SUBMITTER represents, as more fully set forth in the Agreement, that:

SUBMITTER has examined copies of all the RFP Documents and of the following Addenda:

Addendum Date	Addendum Number
12/15/2022	1
1/4/2023	2
1/6/2023	3

Receipt of all of which is hereby acknowledged.

This Proposal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Proposer has not directly or indirectly induced or solicited any other Proposer to submit a false or sham Proposal; PROPOSER has not solicited or induced any person, firm or a corporation to refrain from bidding; and PROPOSER has not sought by collusion to obtain for himself any advantage over any other Proposer or over the CITY.

THIS RESPONSE IS SUBMITTED BY:

COMPANY NAME: American Janitorial, Inc. (AJI)

VENDOR/CONTRACTOR LICENSE NUMBER: 46-0557106 (FEIN)

ADDRESS: 87 North Central Ave, Umatilla, FL 32784 (Physical)
PO Box 2534, Umatilla, FL 32784 (Mailing)

PHONE NO.: 352-551-7941 FAX NO.: 352-669-1408

PROPOSER'S NAME: Jason Lay
(Typed or Printed in Ink)

TITLE: CEO

AUTHORIZED SIGNATURE: I, Jason Lay hereby
(Original signature required in each document)

declare that I have read and fully understand the RFP Documents and, including the General Conditions and the Scope of Work, and that I am duly authorized to sign and submit this Submittal.

The CITY reserves the right to reject any and all Submittals, to waive informalities, and to accept any Submittal or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

PROPOSER: PLEASE ENSURE THAT YOU HAVE SIGNED THE RFP RESPONSE FORM OF THIS REQUEST FOR PROPOSAL. OMISSION OF A SIGNATURE ON THAT PAGE MAY RESULT IN REJECTION OF YOUR PROPOSAL.

Title Page

Proposal for Professional Janitorial Services

RFP # 2023-05
City of Ormond Beach

Company Headquarters

American Janitorial, Inc. (AJI)
87 North Central Ave
Umatilla, FL 32784

Contact Person

Jeff Simmons, Director of Sales
352-551-7941 (cell)
352-669-1408 (fax)
jeff.simmons@ajiclean.com

Proposal Date

January 12, 2023

American Janitorial Incorporated
The Best Value In Cleaning

January 12, 2023

Mr. Rob Hart
City of Ormond Beach
22 South Beach Street
Ormond Beach, FL 32174

RE: Transmittal Letter
RFP 2023-05 Professional Janitorial Services

Dear Mr. Hart,

We are pleased to submit a proposal for janitorial services at the City of Ormond Beach locations. As you review our proposal, you will see that as the current vendor providing these services to these locations, American Janitorial, Inc. (AJI) understands your specific challenges and our proposal provides you with a program tailored specifically for the needs of the City of Ormond Beach. These key items separate AJI in the marketplace:

- Experience with large scale, multi-location projects – As the current janitorial contractor for several City and County government entities throughout Florida, including the Cities of Ormond Beach, Clermont, Dunedin and Palm Coast, as well as Lake, Volusia, and Flagler Counties, AJI understands the unique challenges of providing daily services for multiple locations spread out over large geographic areas. Additionally, we provide custodial and related services to over 5.5 million sq ft of space daily throughout our portfolio, employing over 250 people.

- Management - The Contract Managers we assign to oversee your account are the most integral part of our program. These are salaried positions, which coordinate, direct, and control all of the custodial functions in their area of operation. The assigned Contract Managers will continue to be available to City of Ormond Beach representatives 24 hours a day, 7 days a week.

- Proximity – Headquartered in Lake County, AJI has a strong presence in Central Florida, which places us in a unique position to be able to handle any issues that arise at the City of Ormond Beach locations promptly and efficiently.

American Janitorial, Inc. (AJI)
87 North Central Ave, Umatilla, FL 32784
P: 352-551-7941
F: 352-669-1408

AJI is a local cleaning company that has serviced Florida businesses and governments for over 35 years. AJI was founded in 1987 as a "one stop shop" commercial and industrial janitorial service and supply company.

AJI was previously known as ABC Clean-All, a Florida Corporation formed on September 24, 1987 by Theo Tingle. In 2004, the company was purchased by Mr. Tingle's grandson, our current President, Jordan Dailey and Stephanie Dailey, our current CFO & Vice President.

Under our current structure as American Janitorial, Inc., we are a Florida Corporation incorporated on July 12, 2012. Our officers are Jordan Daily (President), Stephanie Dailey (CFO) and Jason Lay (CEO). Our home office is located in the City of Umatilla, allowing us a central base in which to service a large geographical area throughout Florida. We have serviced hundreds of local businesses and government organizations over the years and stand by our reputation as the best cleaning value available.

We are very proud of our reference base, and I encourage you to contact any of our customers to hear about their experiences with AJI.

Our fundamental values of honesty, trust, integrity, respect, and quality drive our philosophy of cleaning at AJI; to deliver the best possible service to our customers each and every day. Our basic principles for achieving this goal are:

- Develop transparent relationships with employees, suppliers and customers
- Create a positive economic outcome for both our employees and our customers
- Seek to steadily improve our quality control system, CleanCheck ™
- Develop meaningful community interaction
- Protect and preserve the environment at all times
- Maintain our competitive edge

AJI is committed to performing the work within the time period specified by the City in the RFP, and we verify that all terms and conditions set forth by the City of Ormond Beach are understood and acknowledged by the undersigned. Additionally, this proposal is a firm and irrevocable offer for the engagement period. As CEO of AJI, I am legally authorized to bind the corporation through signature.

We look forward to continuing our an excellent working relationship with this contract, and we remain committed to giving the City of Ormond Beach the highest possible quality for the fairest possible price.

If you have any questions regarding this response, please contact me anytime at 352-910-0880 or by email at jason.lay@ajiclean.com.

Sincerely,

Jason Lay
CEO

American Janitorial, Inc. (AJI)
87 North Central Ave, Umatilla, FL 32784
P: 352-551-7941
F: 352-669-1408

Profile of Proposer

American Janitorial Inc. (AJI) is a Florida Corporation founded in 1987 as a "one stop shop" commercial and industrial janitorial service and supply company.

AJI employs over 250 people to provide comprehensive cleaning services for over 225 facilities throughout the State of Florida, totaling over 5.5 million square feet serviced each day. We have serviced hundreds of local businesses and government organizations over the years and stand by our reputation as the best cleaning value available. Some of our current customers include The Villages HealthCare Centers, City of Gainesville RTS, Volusia County Board of County Commissioners, Flagler County Board of County Commissioners, The Villages Commercial Property Management, The Villages Community Development Districts, the Cities of Dunedin, Ormond Beach, Palm Coast and Clermont.



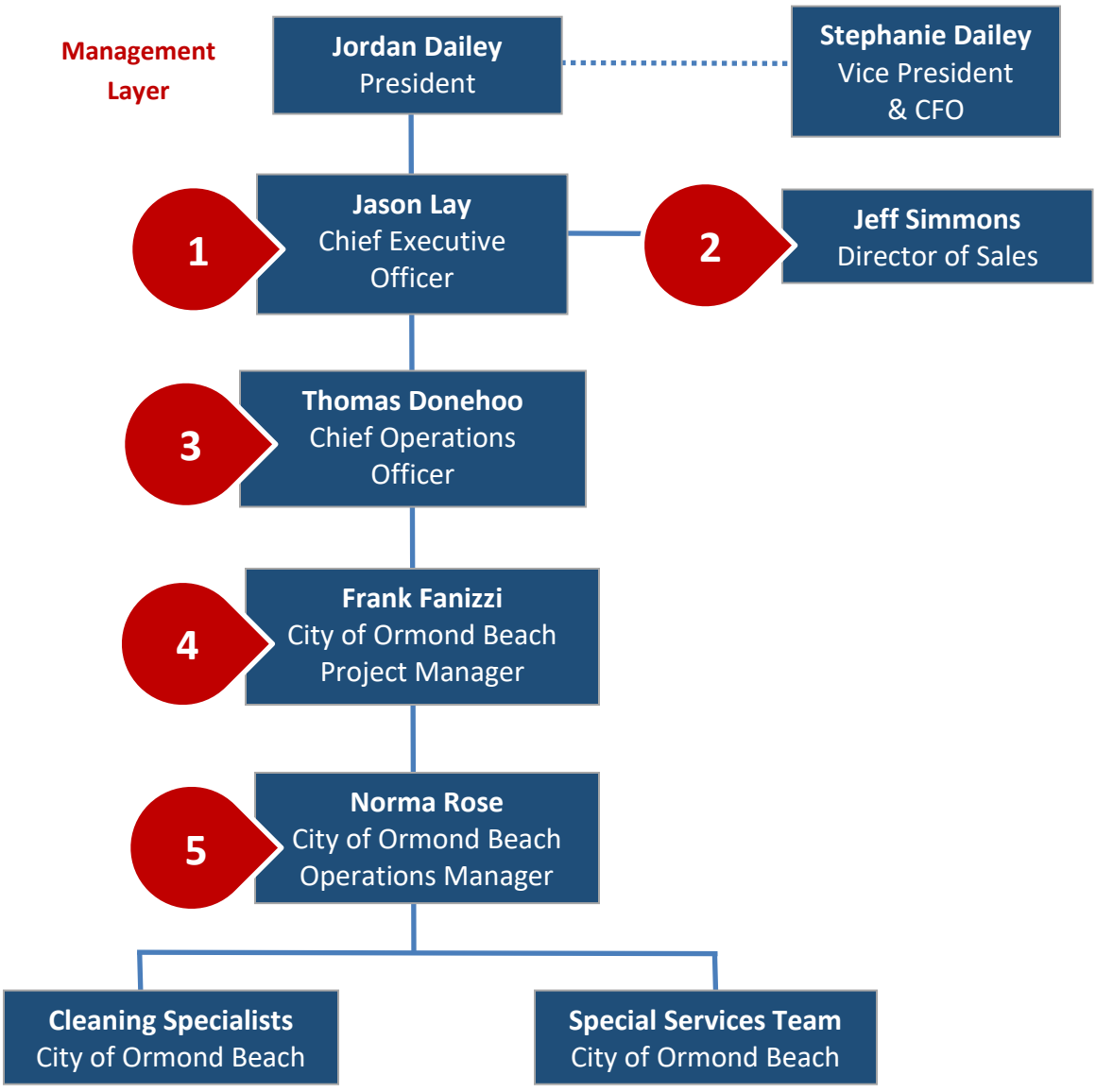
AJI started out as an energetic family business with only a few part-time employees. It has now grown to be one of the leading janitorial service contracting companies in Central Florida yet still remains a strong family business. AJI has always maintained a focus on hard work and dedication to customer service.

Our President is Jordan Dailey, the company founder's grandson. Mr. Dailey joined the company in 2000 to assist in the development of the commercial janitorial operations. Despite tough economic conditions, AJI has continued to grow under his leadership as he has demonstrated his ability to lead and adapt to ever-changing times.

AJI Contract Personnel

Our personnel approach is based on a team concept of highly trained individuals who are assigned to a specific duty throughout their assigned service area. AJI will have **5 layers of management** on this project to ensure the needs of the City of Ormond Beach are continued to be met on a consistent, daily basis. The following pages outline the janitorial service industry experience and primary responsibilities of AJI's management team.

Management Organizational Structure



Management Biographical Overview



Jordan Dailey

President

AJI's President joined the company in 2000 to assist in the development of the commercial janitorial operations. AJI has continued to grow under his leadership as he has demonstrated his ability to lead and adapt to ever-changing times and build upon AJI's legacy as one of the most popular janitorial service providers in the region. Part of this adaptation was the creation and implementation of a new quality assurance system that has drastically improved the overall performance level of the company's services. Mr. Dailey also expanded the service offerings that the company provides. This expansion has allowed the company to branch into new markets and add more services to a wider variety of customers, particularly in the governmental and medical fields.



Jason Lay

CEO

AJI's CEO joined AJI in 2022, after retiring from a successful, 28-year career as a Colonel in the United States Air Force and the Florida Air National Guard. His extensive experience as a senior military officer and commander, including multiple overseas combat deployments, makes him a trusted and valuable leader for the AJI Team. In addition, Mr. Lay brings a wealth of business experience and acumen from his time as President and CEO of his own construction and restoration company for 10 years. Mr. Lay earned his Bachelor of Science degree in mechanical engineering from the University of Portland in 1994, and he also earned a master's degree in Security Studies from Air University in 2016. As CEO, Mr. Lay is responsible for the business performance of the entire AJI organization, including Operations, Sales, Business Development, office management, accounting, support functions, and individual leadership development. In addition, he is responsible for establishing and implementing key business strategies and objectives that will maintain and secure AJI's future success.



Stephanie Dailey

Vice President & CFO

Ms. Daily joined AJI in 2001 and currently serves as our Vice President & Chief Financial Officer. In this role, Ms. Dailey is responsible for developing and implementing purchasing strategies to reduce costs, which allows AJI to stay competitive as well as maintaining strong supplier relationships to ensure our employees in the field have the proper equipment and materials necessary to do their jobs. Additionally, Ms. Daily is responsible for the overall administrative operation of janitorial service contracts and adherence to terms and conditions.



Jeff Simmons

Director of Sales

Since joining the company in 2010, Mr. Simmons has lead AJI through an unprecedented period of growth, generating over $8M in new business. Mr. Simmons currently serves as Director of Sales of AJI and has developed a set of performance metrics that drive improved financial performance, customer service, and overall operational accountability. Mr. Simmons is responsible for compliance and quality adherence, as well as satisfying quality systems and performance for all customer contracts.



Thomas Donehoo

Chief Operations Officer

As the COO, Mr. Donehoo is responsible for customer service, operational oversight, and purchasing. A member of the AJI team since 2010, Mr. Donehoo specializes in client communication, program development and staff training, ensuring that AJI's service is consistently exceptional and specialized for each client. Mr. Donehoo is responsible for overseeing the operations of the janitorial contract and the management of all cleaning technicians assigned to the contract. He will perform inspections, maintain checklists and quality control procedures, and schedule all services.



Frank Fanizzi

Project Manager

Mr. Fanizzi joined AJI in 2017 and has over 20 years of experience in the janitorial service industry. Mr. Fanizzi is currently responsible for several of AJI's Atlantic coast area janitorial projects, including the City of Ormond Beach, as well as our Volusia and Flagler County accounts. In his role as Project Manager, Mr. Fanizzi is responsible for overseeing the operations of the janitorial contract and the management of all cleaning technicians assigned to the contract. He will perform inspections, maintain checklists and quality control procedures, and schedule all services. Mr. Fanizzi is local and can be onsite to handle any issues on the City of Ormond Beach project within 60 minutes or less.



Norma Rose

Operations Manager

As Operations Manager, Ms. Rose will continue to be responsible for the daily cleaning operations at the City of Ormond Beach locations, including supervision, inspections, and control of all custodial and related services associated within the City of Ormond Beach janitorial contract. She has been a member of the AJI team since 2019, and currently oversees the City of Ormond Beach locations. Ms. Rose is responsible for quality control inspections, enforcing proper cleaning procedures, managing personnel, and overseeing additional services. For the City of Ormond Beach project, Ms. Rose will immediately respond to any issue that may arise.

QUALIFICATIONS OF CONTRACTOR

The basis of AJI's business operations and relationships are the core values of honesty, trust and integrity. Our longevity in an industry where many competitors have come and gone proves that the company's business principles are solid and consistent. ***American Janitorial always meets the needs of its customers, regardless of the money or time it takes to ensure satisfaction.***

Who We Are:

- We are a locally owned and operated company that takes pride in every facility we service. We have the resources and expertise of a national corporation combined with the quality customer service of a hometown cleaning company. Our reputation is our best asset!
- We are a company that builds and cultivates long lasting relationships with our customers through clear communication and outstanding customer support. We invest time and effort into relationships with our customers!
- We are a company that retains business. Every contract we have is important to us and we treat each one as if it's our only one.
- We are a company that cares about quality workmanship. Our custom quality control system, CleanCheck™ creates accountability for our staff and allows us to detect problems before they happen. We routinely inspect our own work so our customers don't have to.
- We are a company that does whatever it takes. Just ask our references.

Who We Aren't:

- We aren't a national or franchise company who treats its customers like just another number.
- We aren't a company who works off of volume and turns in "cookie cutter" bid packages based solely on pre-determined square footage pricing. We don't just move from one big contract to the next.
- We aren't a company that makes excuses – if something isn't right, we fix it.

Our company's core services include floor care, janitorial services, hard surface floor care, carpet cleaning, trash removal, bus stop maintenance, pressure washing, lawn services, and water/fire damage cleanup.

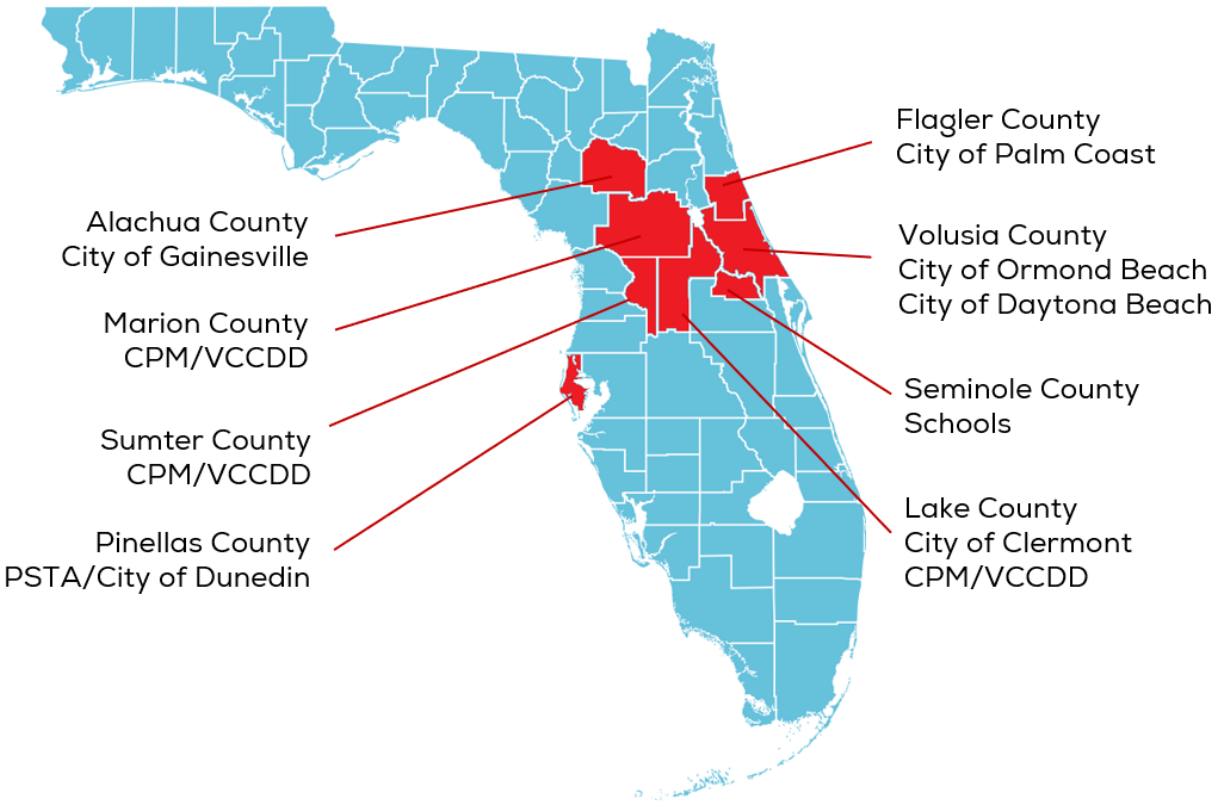
Our comprehensive service offerings make us a unique vendor that is able to meet all of the requirements set forth by the City of Ormond Beach in this solicitation. Our plan to continue managing the needs of the City at these locations includes:

- Employment of trustworthy and hardworking staff
- Continual process improvement and training programs, including safety training
- Competent personnel and friendly management
- Deployment of modern and environmentally-sensitive cleaning solutions
- Use of appropriate, high-quality equipment

All our clients are beyond satisfied with our services and, more importantly, they have come to trust and count on AJI as a dependable vendor. It is truly a winning arrangement for all involved. ***We will always go above and beyond to ensure customer satisfaction, even if it falls outside of the contract.***

AJI Experience

AJI is a local cleaning company that has serviced Central Florida businesses and governments for nearly 35 years. For decades, the company's headquarters have been based in Lake County. Our home office is located in the City of Umatilla, which approximately 50 miles from many of the City of Ormond Beach locations.



In addition, as current contractor at over ***225 separate locations throughout Central Florida, including the City of Ormond Beach,*** AJI is in a position to be able to handle any issues that arise at the City of Ormond Beach locations promptly and efficiently. Because of our strong presence in your area, we have the ability to respond quickly to your needs and provide additional manpower to cover unexpected situations as they occur.

Our valued customers in Central Florida include:

- Volusia County BOCC
- City of Ormond Beach
- City of Daytona Beach
- City of Palm Coast
- Flagler County BOCC
- Lake County BOCC
- The Villages Commercial Property Mgmt
- Villages Community Development Districts
- City of Gainesville RTS
- Citizens First Bank
- City of Clermont
- Citrus Cardiology
- Villages Endoscopy
- SECO Energy
- Cardiac and Vascular Consultants
- Surgical Specialists – Villages
- Lifetime Dentistry
- Lake Centre for Rehab

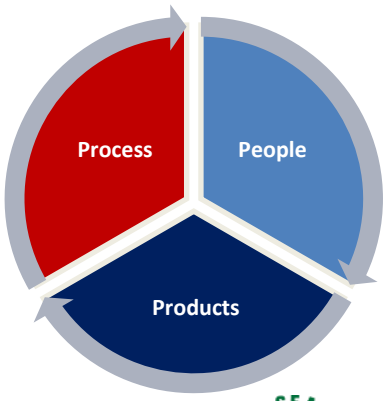
As stated previously, we have serviced hundreds of local businesses and government organizations over the years and stand by our reputation as the best cleaning value available. At present, our company provides cleaning services, including all floor care and day porter service, for over 5,500,000 square feet of office space across Central Florida. All our clients are beyond satisfied with our services and, more importantly, they have come to trust and count on AJI as a dependable vendor. It is truly a winning arrangement for all involved.

We will always go above and beyond to ensure customer satisfaction, even if it falls outside of the contract. We don't make excuses – if something isn't right, we will be on-site quickly to fix it.

Project Approach

AJI's plan to continue providing janitorial services at the City of Ormond Beach locations is simple: take care of the City with professional, high-quality service, and ensure that all contract requirements are met or exceeded on a daily basis.

We believe that the secret to the company's success is through understanding our customer's needs and ensuring those needs are met on a consistent basis. AJI is dedicated to the continual development of stronger customer relations and consistent quality improvement. We do this by having a proven and tested cleaning system upon which our entire operations are based.



People: We are an organization that cares about our employees. As such, we take the time to ensure each and every one is properly trained to perform the work they are assigned, ensuring their safety and the safety of the building occupants in the facilities we service.

Products: In business for over 35 years, AJI understands what products and equipment are necessary to do the job correctly. We use **Green Seal** certified products whenever possible to maintain our commitment to preserving the environment.

Process: Our systematic cleaning process allows us to deliver service that results in a healthier environment, better customer relationships and lower costs than our competitors.

We have customized cleaning systems in place that will meet all of the needs of the City of Ormond Beach, and often exceed expectations. Implementation of this system involves:

- Customized daily checklist for all locations
- Cleaning request log and communications system
- Implementation of quality control system, CleanCheck™
- In-house training of all new employees
- Full-time Project Manager and Supervisor/Crew Leader
- Daily inspections and immediate support and response
- Detailed monthly inspections and reports
- Hot spot training and implementation

Management Plan

Our cleaning approach is based on a team concept of highly trained technicians who are assigned to a specific duty throughout their assigned service area. Our technicians are:

- Executive Technician
- Restroom Technician
- Vacuum Technician

These three highly trained technicians work together to form an efficient team which is capable of providing the consistently high-quality service upon which our reputation was built.



EXECUTIVE TECHNICIAN:

The Executive Technician is our most versatile cleaning position. They are responsible for the emptying of all trash and recycling receptacles and the replacement of liners, as needed. They sanitize telephones and dust all appropriate horizontal and vertical surfaces up to 72". In preparation for the Vacuum Technician, they pick up paper clips and various other items from the floor such as papers and writing utensils. They mop hard surface flooring in common

areas and suites. They also spot clean various surfaces around the office: doors, glass, and walls. In addition, they are responsible for ensuring that the first-impression areas of your building are cleaned and maintained properly. They detail clean all interior glass walls and high visibility carpet areas. They polish all brass fixtures and maintain the cleanliness of the elevator tracks. They will also haul trash from various areas to on-site dumpsters and police the stairwells to remove all debris.



RESTROOM TECHNICIAN:

Primary responsibilities for our Restroom Technicians include restocking of all paper dispensers (toilet tissue, hand towels, etc.), emptying trash and replacing liners, cleaning and disinfecting all fixtures and mirrors, and wiping down stall partitions and doors. They are also responsible for scrubbing all flooring areas in each restroom. The primary function of the Restroom Technician is to disinfect and clean all surfaces while maintaining an odor free environment.



VACUUM TECHNICIAN:

The Vacuum Technician is responsible for the daily vacuuming of all traffic areas and spot vacuuming all other office areas. In addition, they vacuum office furniture to remove various small debris and spills. Depending on the size of the building, they may also help the Executive Technician with hard surface floor cleaning, such as mopping in kitchen areas and corridors.

DAY PORTERS:

AJI porters have experience working independently as well as proven customer service experience working with the general public. All AJI day porters will be proficient in the English language and be able to communicate with building representatives and visitors both orally and in writing. AJI day porters are trained to work independently, and be reliable, self-motivated, mature, and responsible. Duties include: service main lobbies, police & service restrooms, respond to complaints, perform special cleaning, setup rooms for meetings & conferences, post-meeting Cleanup and emergency cleaning.

REFERENCES

AJI currently provides cleaning services, including all floor care and day porter service, for over 5,500,000 square feet of office and medical space throughout Florida. We invite you to contact each of the below references to learn first-hand what makes AJI the ideal solution to your janitorial service needs at the City of Ormond Beach locations.



LAKE COUNTY GOVERNMENT
550 WEST MAIN STREET, TAVARES, FL 32778
DON GLESSNER
352-253-4973 (P)
352-343-5618 (F)
DGLESSNER@LAKECOUNTYFL.GOV

The Lake County Government awarded AJI with its janitorial cleaning services contract in 2011. AJI provides complete janitorial service for all of Lake County's facilities in the downtown Tavares area including the Lake County Judicial Center, the Lake County Administration Building, the Historic Courthouse, the Property Appraiser / Tax Collector building and the Public Defender offices. Our services are also contracted for high-traffic, high-usage public building such as the public libraries, the community center buildings, the fairground buildings and various warehouse and office space. Approx 900,000 total square feet.



THE VILLAGES HEALTHCARE CENTERS
280 FARNER PLACE
THE VILLAGES, FL 32162
DIANE MCINTYRE
352.267.7589
DIANE.MCINTYRE@THEVILLAGES.COM

AJI provides daily janitorial services to 15 locations for The Villages Healthcare Center. Our services include: evening janitorial cleaning of exam rooms, office areas and waiting rooms, carpet cleaning, tile stripping and waxing, and ceramic tile steam cleaning. In addition to Colony Plaza, American Janitorial cleans Creekside Care Center, Santa Barbara Care Center, Mulberry Grove Care Center, Pinellas Care Center and The Villages Health Specialty Care at the Center for Advanced Healthcare at Brownwood. We have been providing services to these locations since May 2014.



CITY OF CLERMONT
685 WEST MONTROSE STREET
CLERMONT, FL 34711
JOE MCMAHON
352.267.2398
JMCMAHON@CLERMONTFL.ORG

AJI provides daily janitorial and floor care services to 7 locations for the City of City of Clermont. Our contracted services include cleaning the Police Department Headquarters, City Hall, Clermont City Center, Public Works, Highlander Building, various restrooms and the Clermont Arts & Recreation Center, which is the social and entertainment hub of the Clermont community, hosting meetings and events on a daily basis. These locations total over 200,000 square feet and we have been providing services since 2016.



THE VILLAGES COMMERCIAL PROPERTY MGMT
1071 CANAL ST
THE VILLAGES, FL 32162
BRIAN HUFFMAN
352.483.6709
BRIAN.HUFFMAN@THEVILLAGES.COM

Since 2014, AJI has provided daily janitorial services to 6 recreation centers in The Villages, as well as 10 pool restroom locations. AJI ensures optimal levels of cleanliness and sanitation by detail cleaning and thoroughly mopping all hard service flooring each day. Additionally, we provide cleaning services to the offices and meeting room areas, paying special attention to the restrooms as they experience high levels of resident traffic each day.



FLAGLER COUNTY BOARD OF COUNTY COMMISSIONERS
1769 EAST MOODY BOULEVARD, BUNNELL, FL 32110
MIKE DICKSON
386-585-2525 (P)
386-313-4121 (F)
MDICKSON@FLAGLERCOUNTY.ORG

AJI provides daily janitorial and day porter services to over 50 separate locations for Flagler County, totaling over 450,000 square feet. AJI began services on March 1, 2018.



CITY OF ORMOND BEACH
399 NORTH US 1
ORMOND BEACH, FL 32174
BILL ROSE
386.212.8685
BILL.ROSE@ORMONDBEACH.ORG

AJI. provides janitorial and floor care services to 37 locations for the City of Ormond Beach. Our contracted services include cleaning the City Hall, Police Department, Public Works and park facilities. We provide carpet cleaning, floor stripping and waxing, hard surface floor buffing and ceramic tile steam cleaning. These locations total over 140,000 square feet and we have been providing services since 2015.



CITY OF PALM COAST
1 WELLFIELD GRADE
PALM COAST, FL 32137
ROGER LACHANCE
386-986-2340
RLACHANCE@PALMCOASTGOV.COM

AJI began providing daily cleaning of the City of Palm Coast locations on April 1, 2018. The City of Palm Coast consists of 15 locations totaling more than 90,000 square feet over multiple locations, including buildings with high transient populations like the City Hall and community center as well as public works, utilities and fire stations.



PINELLAS SUNCOAST TRANSIT AUTHORITY (PSTA)
3201 SCHERER DRIVE N.
ST. PETERSBURG, FL 33716
MISSY NEVITT
727-253-9468
MNEVITT@PSTA.NET

AJI began this project on October 1, 2015. This account consists of over 900 bus stops and bus shelters. We provide trash pickup, pressure washing, graffiti removal, weed eating, tree trimming, and lawn mowing within 20 feet of the shelter. We also provide full janitorial and pressure washing services at the PSTA bus terminals, as well as floor services for all PSTA buildings.

City of Ormond Beach
Janitorial Services-Facilities Cost Sheet
RFP 2023-05

LOCATION	ANNUAL COST	COST PER EACH EXTRA SERVICE	COST PER EACH EMERGENCY
Casements	$23,143.54	$148.36	$178.03
Gymnastics Center	$13,292.47	$63.91	$76.69
PAL Office	$2,804.95	$17.98	$21.58
Ames Park/Legal/Conference	$6,472.34	$41.49	$49.79
Central Park I	$4,346.80	$11.94	$14.33
Central Park II	$4,242.12	$11.65	$13.99
Sanchez Park	$1,824.36	$11.69	$14.03
Airport Sports Softball Building	$7,830.88	$21.51	$25.82
City Hall	$65,179.74	$250.69	$300.83
S Ormond Neighborhood Ctr	$29,153.59	$112.13	$134.56
Water Plant, Jefferson St.	$5,564.93	$21.40	$25.68
Water Plant, Tomoka Ave.	$2,682.05	$25.79	$30.95
Fleet	$7,339.09	$35.28	$42.34
Bailey's Riverbridge	$3,380.71	$21.67	$26.01
Senior Ctr - Bldg A	$7,655.03	$29.44	$35.33
Senior Ctr - Bldg B	$16,462.77	$63.32	$75.98
Senior Ctr - Bldg D	$6,164.48	$23.71	$28.45
Shuffleboard Building	$2,365.38	$22.74	$27.29
Airport Tower	$4,354.35	$27.91	$33.50
Wastewater	$6,371.47	$24.51	$29.41
Wastewater office	$3,093.89	$21.32	$25.58
Cassen Park	$6,001.30	$16.49	$19.78
Nova Outside Restrooms	$4,564.49	$12.54	$15.05
Leisures Services Offices	$10,130.01	$38.96	$46.75
PAC - 2nd Floor	$4,835.45	$92.99	$111.59
PAC - Backstage, Etc.	$11,782.19	$113.29	$135.95
PAC - Bldg C Blue Room	$5,718.12	$54.98	$65.98
Fortunato Park	$6,354.60	$17.46	$20.95
Airport Sports Soccer Building	$3,978.61	$15.30	$18.36
Airport Sports Greg Smith Fieldhouse	$8,995.69	$34.60	$41.52
Baseball Building	$4,243.89	$16.32	$19.59
Osceola Elementary	$2,187.68	$8.41	$10.10
Nova Athletic Field Restrooms	$2,405.25	$15.42	$18.50
Public Works	$14,327.47	$55.11	$66.13
Police Department	$45,440.09	$145.64	$174.77
Riverbend Park	$1,384.22	$8.87	$10.65
Nova Gymnasium	$36,882.10	$141.85	$170.23
Andy Romano Beachfront Park	$18,281.07	$50.22	$60.27

Environmental Discovery Center	$5,026.63	$19.33	$23.20
Nova rec. Skate Park	$5,192.72	$14.27	$17.12
Airport Sports Pride Restrooms	$2,507.55	$16.07	$19.29
Airport Sports Pop Warner restrooms	$4,859.63	$13.35	$16.02
TOTAL BID (Include all labor, material, equipment, etc.)	**$428,823.70**	**$1,909.91**	**$2,291.97**

EQUIPMENT

AJI has utilized modern cleaning equipment and "green" cleaning techniques in all facilities for the past six years. The use of these systems and equipment has allowed for more efficient cleaning processes, better sanitation of facilities, improved indoor air quality and lower costs for our customers.

Where possible, we utilize ProTeam Super CoachVac backpack vacuums on our projects. All vacuums are equipped with HEPA filters, which are an industry standard for high-quality air filtration. Backpack vacuums allow us to reach high spots and also places such as behind computer tables and desks, book racks, and closets. These are the places that would be extremely tough to clean while using a canister vacuum cleaner. Most important, AJI employees are trained in the proper use of all equipment at each individual account. This both ensures their safety as well as protects the property of our customers. Our equipment list includes back-pack vacuums, restroom carts, high and low-speed floor machines, ride-on automatic scrubbers, motorized sweeper, carpet extractor and various wet/dry vacuums.



For carpet cleaning at these locations, AJI will be using a van equipped with a CDS 4.8 truck mounted, van-powered cleaning system from HydraMaster. These systems feature OverDrive™ Power Train Technology which allows us to deliver a deep clean to your facilities. The system is equipped with two solution outlets for dual wand capability, three speed settings and a 100 gallon recovery tank for uninterrupted cleaning.



Using a truck mount carpet cleaning system is the best way to accomplish a deep carpet clean as well as reduce time spent on the job. This offers immense labor saving benefits which we are able to pass along to our customers. Additionally, we have invested in a large variety of attachments such as upholstery tools for upholstery cleaning, and power heads and rotary tools for carpet, which are also be used to further increase productivity and deliver enhanced results on certain carpet types and soil conditions. After carpet cleaning, AJI always applies carpet protectant at no additional cost. This protectant helps to prevent future staining and prolongs the life of the carpet and the cleaning. Additional equipment outlined on the following page.



Reflective
Safety Vests



Wet Floor Signs
Model# FG611277YEL



Unger Trash Grabber
NN140 Heavy Duty Nifty Nabber
51" Long Reaching Tool
Model U-NN140



ProTeam Backpack Vacuum
Super Coach Pro® 10
Model No.: 107303
Capacity: 10 qt.



Rubbermaid Cleaning
Cart with Zippered
Yellow Vinyl Bag
Model No.: 6173-88



Rubbermaid Brute Barrel
with Caddy Bag
Model No.: FG264200YEL



Checklist
Log Books



Rubbermaid Wavebrake
Yellow Dual Water
Side Press
Mop Bucket & Wringer
Model No.: 768000YW



Sanitaire® Bagless
HEPA Vacuum
Model No.: SC5845B



Tennant Wide Area
HEPA Vacuum
Model No.: V-WA-26



Tennant T2 Battery
Walk Behind Scrubber
Model No.: 9008842



Tennant EZ Scrubber
Ride-On Floor Scrubber
32” Cleaning Path



Rubbermaid Microfiber Flat
Mop Floor Finish System
Model No.: 5000050

Floor Services

Tile & Grout Cleaning

AJI's deep cleaning process uses hot water to pressure wash the tile and grout. This high pressure process removes the deep down dirt that lies in the pours of the tile and grout lines. Each time we clean the tile and grout, we apply tile and grout sealer at no additional cost. The sealer helps to prevent staining and prolong the life of the tile. Our cleaning techs are IICRC certified for tile and grout cleaning and we use top of the line equipment.



VCT Care: Strip and Wax

AJI has years of experience refinishing VCT floors. We have customized a process for our customers that keeps the floors protected and looking great. Over the years, AJI has designed a custom, privately-labeled brand of floor cleaners and protectants for use at our clients' facilities. These chemicals provide a safe, non-slip surface, while producing a super hi-gloss shine that ensures floors look like brand new. Our floor crews are highly trained and have years of experience.

The following is a list of the different floor services offered by AJI:

- Complete strip and re-wax
- Deep scrub maintenance
- Light scrub maintenance
- Hi-speed burnishing
- Spray buffing

Cutting Edge Technology



AJI is constantly seeing new, innovative ways to help deliver exceptional services to our customers. One example of this is our recent investment in the EBG-28 Floor Surface Preparation Machine from Square Scrub®.

The EBG-28 allows us to remove existing finishes on your flooring without the use of water, which allows us to protect your valuable electronic equipment and baseboards. Another benefit to this dry method is that it eliminates the need for use harsh chemicals to remove floor finishes, which is better for the environment and the health of your employees and visitors.

Additional specialized floor service equipment below:



HydraMaster RX-20 Rotary Carpet Extractor
Model No.: OE-RX20-EA



Hawk 15 inch 1500 RPM Burnisher
Model No.: HAW-F1500-15



ProTeam ProGen 15 Upright Vacuum - HEPA
Model No.: OE-PROGEN15-EA



Hydro-Force SX-12 Tile Cleaning Tool
Model No.: AW104



Betco 27" Propane High Speed Burnisher
Model No.: E12314-00



Dri-Eaz Sahara Pro X3 Commercial Turbo Dryer
Model No.: F351

LOCATION	Chevy Silverado 1500	Hydra Master Carpet Cleaning Van	Chevy Sonic	Tennant Floor Scrubber	Sanitare Commercial Hepa Vacuum	Sanitare Commercial Wide Track Hepa Vacuum	Pro Team Back Pack Vacuum	Mop & Bucket	Cart or Brute Barrel	High Speed Buffer
ORMOND BEACH MGMT, PARKS & FLOOR CREW	1	1	1	1						1
Casements					1		1	2	2	
Gymnastics Center						1	1	1	1	
PAL Office					1		1	1	1	
Ames Park/Legal/Conference					1		1	1	1	
Central Park I								1	1	
Central Park II								1	1	
Sanchez Park								1	1	
Airport Sports Softball Building					1		1	1	1	
City Hall					1	1	1	2	2	
S Ormond Neighborhood Ctr					1		1	2	2	
Water Plant, Jefferson St.					1		1	1	1	
Water Plant, Tomoka Ave.					1		1	1	1	
Fleet					1		1	2	1	
Bailey's Riverbridge					1		1	1	1	
Senior Ctr - Bldg A					1		1	1	1	
Senior Ctr - Bldg B					1		1	1	1	
Senior Ctr - Bldg D					1		1	1	1	
Shuffleboard Building							1	1	1	
Airport Tower					1		1	1	1	
Wastewater					1		1	1	1	
Cassen Park								1	1	
Nova Outside Restrooms								1	1	
Leisures Services Offices					1		1	1	1	
PAC - 2nd Floor					1		1	1	1	
PAC - Backstage, Etc.					1		1	1	1	
PAC - Bldg C Blue Room					1		1	1	1	
Fortunato Park							1	1	1	
Airport Sports Soccer Building					1		1	1	1	
Airport Sports Greg Smith Fieldhouse					1		1	1	1	
Baseball Building					1		1	1	1	
Osceola Elementary								1	1	
Nova Athletic Field Restrooms								1	1	
Public Works					1		1	2	2	
Police Department					1		1	2	2	
Riverbend Park								1	1	
Nova Gymnasium					1		1	2	1	
Andy Romano Beachfront Park							1	1	1	
Environmental Discovery Center					1		1	1	1	
Nova rec. Skate Park					1		1	1	1	
Airport Sports Pride Restrooms								1	1	
Airport Sports Pop Warner Restrooms								1	1	
TOTALS	**1**	**1**	**1**	**1**	**27**	**2**	**31**	**48**	**46**	**1**

City of Ormond Beach
Request for Proposal
Professional Janitorial Services
(RFP No. 2023-05)

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[X] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[X] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

American Janitorial, Inc. (AJI)

COMPANY NAME

Jason Lay

AUTHORIZED SIGNATURE

Jason Lay

SIGNER'S NAME (PRINT OR TYPE)

CEO

TITLE

1/10/2023

DATE

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

City of Ormond Beach
Request for Proposal
Professional Janitorial Services
(RFP No. 2023-05)

DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" SUBMITTALS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

American Janitorial, Inc. (AJI)
Company Name

Authorized Signature

Jason Lay, CEO
Print Name

State of Florida
Department of State

I certify from the records of this office that AMERICAN JANITORIAL, INC. is a corporation organized under the laws of the State of Florida, filed on July 11, 2012.

The document number of this corporation is P12000061074.

I further certify that said corporation has paid all fees due this office through December 31, 2022, that its most recent annual report/uniform business report was filed on January 30, 2022, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Second day of June, 2022

Secretary of State

Tracking Number: 1588878680CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

City of Ormond Beach
Request for Proposals (RFP)
Professional Cleaning Services
(RFP No. 2023-05)

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

American Janitorial, Inc. (AJI)
COMPANY NAME

AUTHORIZED SIGNATURE

Jason Lay
NAME

CEO
TITLE

1/10/2023
DATE

RFP Evaluation Summary

Project: Professional Janitorial Services

RFP Number: 2023-05

Date & Time: January 25, 2023 @ 11:30 AM

The RFP's were scored on the following criteria:

Contractor's Price (30 points)
Past experience and account rentention (30 points)
Contractor's stock of required equipment (20 points)
Contractor's references (20 points)

Recommendation of Award: American Janitoral
(once all requirements meet)

Summary																				
Firm	**Bill**	**Mike**	**John**	**Price 30 max**	**Bill**	**Mike**	**John**	**Exp. 30 max**	**Bill**	**Mike**	**John**	**Stock 20 max**	**Bill**	**Mike**	**John**	**Ref. 20 max**	**Bill Totals**	**Mike Totals**	**John Totals**	**total score**	**rank**
D&A Building Services	**15**	**15**	**20**	50	**25**	**25**	**30**	80	**18**	**15**	**20**	53	**20**	**15**	**20**	55	**78**	**70**	**90**	238	2
Clean Space Inc	**25**	**25**	**25**	75	**10**	**25**	**20**	55	**10**	**15**	**10**	35	**15**	**15**	**15**	45	**60**	**80**	**70**	210	4
TRU Disinfectant Service	**10**	**10**	**10**	30	**0**	**0**	**0**	0	**0**	**0**	**0**	0	**0**	**0**	**0**	0	**10**	**10**	**10**	30	6
American Janitorial	**20**	**20**	**25**	65	**25**	**25**	**15**	65	**18**	**15**	**20**	53	**20**	**15**	**20**	55	**83**	**75**	**80**	238	2
American Facility Servies	**30**	**28**	**25**	83	**20**	**25**	**20**	65	**15**	**15**	**20**	50	**15**	**10**	**10**	35	**80**	**78**	**75**	233	3
Contractor Enterprises Incorporated	**0**	**5**	**5**	10	**5**	**20**	**15**	40	**0**	**15**	**0**	15	**15**	**15**	**10**	40	**20**	**55**	**30**	105	5

Rob Hart
Purchasing Coordinator

Bill Rose
Contract Manager

Mike Demchak
Contract Manaager

John Fowler
Building Maint. Supervisor

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.I
Section:	CONSENT AGENDA		
Item Category:	Consent - Resolution	**Res./Ord. No:**	2023-67
Strategic Goal:	Quality of Life – Other		
Department :	Leisure Services		
Subject:	Contract Award for Management and Operation of Nova Skate Court Concession Stand		
Budget Impact:	The Nova Community Park General Fund budget includes $33,766 for this service. If a contract award is approved, a budget amendment for $15,062 will be prepared to increase the annual budget to $48,828.		
Summary:	This is a request to award the Management and Operation of the Nova Skate Court Concession Stand to Trauma Skateboards, LLC.		
Recommended Action:	Staff's recommendation is to award the Management and Operation of the Nova Skate Court Concession Stand contract to Trauma Skateboards, LLC. as per the attached agreement.		
Staff Contact:	Robert Carolin, Leisure Services Director, (386) 676-3279		

Approval:

Kelly McGuire, Finance Director	3/16/2023	Kelly A. McGuire
Claire Whitley, Assistant City Manager	3/16/2023	
Joyce Shanahan, City Manager	3/16/2023	Joyce Shanahan

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Robert Carolin, Leisure Services Director

Date: March 21, 2023

Subject: Contract Award for Management and Operation of Nova Skate Court Concession Stand

Commission Goal: Quality of Life – Other

Introduction

Staff is requesting the authorization to award the contract for the Management and Operation of the Nova Skate Court Concession Stand to Trauma Skateboards, LLC.

Background

At the December 6, 2022 City Commission meeting, staff notified the City Commission of the intent to advertise RFP # 2023-07 for the Management and Operation of the Nova Skate Court Concession Stand.

Discussion

Birdstown Skate and Surf has been managing the Management and Operation of the Nova Skate Court Concession Stand since April of 2015, along with their other skate park location in New Smyrna Beach. Birdstown Skate and Surf is reducing their staff and will be concentrating on the New Smyrna Beach location. Keith Krenichen, owner of Trauma Skateboards, LLC has worked with Birdstown Skate and Surf for the last three years and has learned what the customers want and expect. This experience fully qualifies the vendor to successfully manage the concession stand and operations.

The Management and Operations of the Nova Skate Court Concession Stand was advertised for proposals in December of 2022. The City received and opened the proposals in January of 2023. One (1) proposal was received. The City's evaluation committee meeting was held on January 11, 2023, at which time the proposal was rated to ensure all stipulations of the RFP had been met. Trauma Skateboards, LLC is the only vendor who submitted a bid which met all the RFP requirements.

The proposal from Trauma Skateboards, LLC requests a subsidy of $939 per week for

coverage of its staffing cost for up to 49 staff hours worked per week to operate the concession. The total would not exceed $539 per week in staffing costs and $400 per week in management compensation. The initial term of this agreement is for a period of two (2) years and will be automatically renewed for an additional two-year period thereafter unless either party provides at least ninety (90) days prior written notice to the other party of their intent not to renew the agreement.

Budget Impact

The Nova Community Park General Fund budget includes $33,766 for this service. If a contract award is approved, a budget amendment for $15,062 will be prepared to increase the annual budget to $48,828.

Citizen Impact

The Management and Operation of the Nova Skate Court Concession Stand will assure that concessions are provided in a consistent and professional manner for the community.

Recommendation

Staff's recommendation is to award the Management and Operation of the Nova Skate Court Concession Stand contract to Trauma Skateboards, LLC. as per the attached agreement.

Attachments:

1. 23-67 Nova Skate Court - Trauma Skateboards (P23-0041G)
2. Trauma Skateboards LLC agreement
3. Binder1
4. RFP 2023-07 Management and Operations of the Nova Skate Court Concession score summary

Approvals:

Kelly A. McGuire

Date: March 16, 2023

Kelly McGuire, Finance Director

Date: March 16, 2023

Claire Whitley, Assistant City Manager

Joyce Shanahan

Joyce Shanahan, City Manager

Date: March 16, 2023

RESOLUTION NO. 2023-67

A RESOLUTION ACCEPTING THE PROPOSAL OF TRAUMA SKATEBOARDS, LLC REGARDING MANAGEMENT AND OPERATION OF THE CONCESSION STAND AT THE NOVA SKATE COURT; AUTHORIZING THE EXECUTION OF AN AGREEMENT; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City solicited proposals for the management and operation of the concession stand at the Nova Skate Court (the Project) (City RFP No. 2023-07), in accordance with Section 2-300(b), *Code of Ordinances*, and

WHEREAS, the City's professional staff evaluated the only proposal received and determined that the most advantageous proposal for the City is the proposal submitted by Trauma Skateboards, LLC, a copy of which is attached hereto and incorporated herein by reference, and

WHEREAS, based on the foregoing the City's professional staff recommends that the City Commission accept the proposal of Trauma Skateboards, LLC, now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The proposal of Trauma Skateboards, LLC for the management and operation of the concession stand at the Nova Skate Court is hereby accepted.

SECTION TWO. The Mayor and the City Manager are hereby authorized and directed to execute an Agreement with Trauma Skateboards, LLC regarding the aforedescribed Project. A copy of said Agreement is attached hereto and incorporated herein by reference.

SECTION THREE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____

BILL PARTINGTON
Mayor

ATTEST:

_____

SUSAN CARROLL DAUDERIS
City Clerk

AGREEMENT FOR THE OPERATION AND MAINTENANCE OF
THE CITY OF ORMOND BEACH
NOVA SKATE COURT CONCESSION STAND

THIS AGREEMENT is made and entered into by and between the CITY OF ORMOND BEACH ("City"), a municipal corporation and TRAUMA SKATEBOARDS, LLC ("Vendor").

WHEREAS, City advertised for proposals (RFP 2023-07) for the management and operation of a concession stand (referred to as "concession stand" or "premises") immediately adjacent to the Nova Skate Court (also referred to as "skate court") located at 440 N. Nova Road, Ormond Beach, to include selling miscellaneous food items and the sale or lease of skate related merchandise; and

WHEREAS, City received one proposal, from Vendor, for operation of the concession stand; and

WHEREAS, the City and Vendor desire to enter into an agreement to manage and operate the concession stand; and

WHEREAS, it is the intent of this agreement that Vendor encourage visitor participation to the Nova Skate Court by providing a quality facility, friendly service, and by providing quality food, sundries and skate court related merchandise or services, at reasonable prices; and

NOW THEREFORE, in consideration of the terms, covenants and conditions hereinafter contained to be kept and performed by the respective parties, it is agreed as follows:

1. Vendor Operation.

A. For and in consideration herein provided, City grants to Vendor the exclusive right and obligation to operate and maintain the concession stand. Vendor agrees to provide a quality clean facility, friendly service, provide quality food, sundries and skate court related merchandise for sale or lease, or services, at reasonable prices, thus resulting in the highest quality service. The Vendor shall conduct such activities within the confines of the premises as depicted in Exhibit A. No temporary stands or other places of operation shall be allowed during special events or any other time without the express written authorization of the City. Vendor agrees that it will not make use of the premises in any manner which might interfere with the recreational uses of the skate court. Vendor shall not use the premises in violation of any laws, ordinances, rules and regulations at any time. The City shall have access to the premises at all times.

B. The City shall provide a refrigerator, countertop, a television set, and lounge seating for use at the premises. Vendor shall provide all other necessary furnishings, equipment, food and merchandise related to operating and managing a successful skate court concession business. Any equipment or furnishings supplied by the City shall remain the property of the City. Purchase, pricing, sale, rental and inventory control are the sole responsibility of Vendor. Vendor is responsible for the security of the interior of the premises and all property of the Vendor contained therein. Merchandise must not contain any wording or depictions inappropriate for minors in a public facility. The Vendor shall provide quality products at competitive prices consistent with similar goods and services being offered locally. All pricing must be posted and visible to all customers. Vendor shall not install any vending machines or electronic games without express written approval of the City.

C. The Vendor shall maintain all concession facilities and equipment in a clean and sanitary condition. All food and beverage facilities shall be in accordance with all applicable rules, ordinances and/or laws pertinent to the health authorities of Volusia County, the Florida State Board of Health and any other health department having jurisdiction. If any public agency having jurisdiction over such matters requires safety or other improvements to any of the equipment used by the Vendor in their operations, Vendor shall be required to effect these improvements at its sole expense.

D. Vendor shall not conduct any lessons or instructions to the skate court attendees without express written approval from the City. For any approved special event, Vendor shall comply with all rules and regulations pertaining to athletic special events and meet all of the insurance and waiver requirements. Vendor may not use the City logo in any manner whatsoever without the express written approval by the City.

E. Vendor shall be responsible to provide a check-in service for the access to the skate court assuring that all participants have a City-approved release and waiver of liability on file, that they understand the rules of the skate court and have appropriate safety equipment upon entering the skate court.

F. Vendor shall conduct business in a manner which is conducive to a family-oriented environment by setting and managing appropriate standards of conduct for skate court attendees.

2. Term of the Agreement. The term of the agreement shall be for two (2) years beginning on April 1, 2023 and ending on March 30, 2025, and will be automatically renewed for additional two-year periods unless either party provides at least ninety (90) days prior written notice of their intent not to renew the agreement.

3. Compensation and Books and Records. The City shall pay to Vendor the amount of nine hundred thirty nine and no/100 dollars ($939.00) per week for the term of this Agreement. Payments shall be made by the City each Friday for the

services performed the previous week from a weekly invoice provided by the Vendor, the first payment being due on April 14, 2023. Vendor agrees to keep adequate books and records pertaining to the use of the concession stand and to allow upon request City the right of inspection of those books and records at all reasonable times. City requires the Vendor to submit a monthly statement of gross and net profits. City may also demand that Vendor provide City with an audited balance sheet at the end of each calendar year's operation.

4. Hours of Operation. The concession stand must be open to the public every day (with exception of the specific holidays stated below) during the following hours:

Monday through Friday 4:00 pm to 9pm
Saturday and Sunday (and Holidays) 9:00 am to 9pm.

The hours stated above are material to this agreement. Vendor may, but is not required to, open the concession stand on the following holidays: Thanksgiving Day, Christmas, New Year's Day, and the 4th of July. Vendor may close the premises if severe weather conditions prohibit the reasonable use of the skate court.

5. Requirements of Employees of Vendor. All employees working for the Vendor must be at least eighteen (18) years of age. All employees must have a criminal background screening at Vendor's expense. Vendor shall not allow any employee on the premises that has pled "Guilty" or "Nolo Contendere" to, or been found guilty by a jury or a court of, a misdemeanor involving a physical violence, theft, or possession or sale of drugs, or of any felony, or any criminal act involving a minor victim, regardless of whether or not adjudication has been withheld and/or probation imposed. Vendors shall wear neat and clean uniforms identifying the Vendor, Trauma Skateboards, LLC. All personnel of Vendor shall be courteous to the public. Vendor shall use its best efforts to permit no intoxicated person, profane, or indecent language in or about the concession stand, or knowingly allow illegal drugs or controlled substances on the premises.

6. Utilities and Maintenance. Vendor shall be responsible for keeping the concession stand, office and lounge areas clean. The City's janitorial service will provide janitorial services to the public restrooms. The City shall be responsible for the routine external cleaning of the building structure however, Vendor shall keep the area surrounding the building, at least 20 feet, clean and sanitary and free from litter generated by the concession operation. The City is responsible for general pest control however; Vendor is responsible for any pest conditions created by leaving food supply accessible to pests or any other unclean conditions.

The City shall make available a city land line telephone service, internet service and basic cable for Vendor and public use. The City will pay for trash pickup, electricity, water and sewer. Vendor shall develop and adhere to a recycling program approved by the City of Ormond Beach.

The City will be responsible for the major internal and external repairs to the building including lighting, electrical system, heating and air conditioning, unless such damage was caused by misuse, neglect or negligence of the Vendor.

Vendor shall not erect, construct, or place any signs, banners, ads, or displays of any kind whatsoever upon any portion of the premises without the prior written approval of the City. At the termination of the agreement, Vendor shall remove all of its signs and displays of the premises and restore the premises in the same condition as before the placement of the signage.

No fixtures, appurtenances, construction, partitions, modifications or changes to the premise shall be installed or performed without prior written approval by the Director of Leisure Services or his/her designee. All approved modifications become property of the City. At the end of the term of the agreement, all appurtenances installed by the City shall become the property of the City. Upon termination, Vendor shall return the premises to the City in its original condition. At City's option, Vendor may remove its appurtenances and fixtures, providing Vendor restores the site to its original condition.

7. Termination.

A. In the event Vendor defaults or fails to observe the terms and conditions of this agreement in any material aspect, City shall have the right to do any one of the following:

1. give Vendor notice of default, specify required corrective action, and the time period within which corrective action is required to avoid immediate termination of this agreement;

2. give Vendor fifteen (15) days written notice of its intention to terminate this agreement for cause. Fifteen days thereafter, this agreement and Vendor's occupation of the premises will end regardless of any corrective action by the Vendor; and/or

3. immediately terminate this agreement, if in the sole discretion of the City, the default or failure to observe terms and conditions is so egregious as to warrant immediate termination. Upon such termination, Vendor's right to occupy the premises shall end forthwith.

B. In the event the City defaults or fails to observe the terms and conditions of this agreement in any material aspect, Vendor shall have the right to terminate the agreement after notifying the City in writing of the action required to correct the default and giving the City thirty days from receipt of the notice to correct the problem. In the event Vendor terminates the agreement for any reason whatsoever, Vendor's sole remedy is

termination. Vendor shall not have any claim for damages, including but not limited to any claim lost profits or other business related damages against the City.

C. Either party may terminate this Agreement, without cause, for any reason whatsoever, in the terminating party's sole discretion, by providing the other party with sixty (60) days written notice of the intent to terminate.

8. Insurance, Indemnity and Hold Harmless. The City, its agents, employees, and officials, both elected and appointed, shall be indemnified and held harmless by Contractor from any and all liabilities, claims, and causes of action which may arise out of the willful, negligent, or unlawful acts or omissions of the Contractor or its subcontractors in the performance of this Agreement, unless such claims are a result of the City's sole negligence, as determined by the final decision maker of such claim. Vendor shall maintain all insurance required as stated in Exhibit B.

9. Duty to Defend. The Contractor shall defend all suits and administrative actions, including all appellate proceedings, brought against the City, its agents, employees, and officials, both elected and appointed and shall pay all attorneys' fees and costs associated with the City's legal defense, as may be selected by the City, arising from all claims and causes of action described in Section 15 above. Such payment on behalf of the City shall be in addition to any and all other legal or equitable remedies available to the City and shall not be considered to be the City's exclusive remedy.

10. Risk of Loss. City shall not be liable for injury or damage to the property or merchandise of the Vendor or its employees, invitees, patrons occurring in or about the premises caused by or resulting from anyone or any peril whatsoever which may affect the premises, including, without limitation, fire, water, rain, vandalism, theft or any act of God.

11. Assignment. This agreement is not assignable without the express written consent of the City.

12. Notices. All notices required by this agreement shall be in writing and directed to:

For the City:
Joyce Shanahan, City Manager
City of Ormond Beach
22 S. Beach Street
Ormond Beach, FL 32174

For the Vendor:
Keith Krenichen, Owner
Trauma Skateboards, LLC
935 S. Atlantic Ave., Unit 136
Daytona Beach, FL 32118

13. Venue and Waiver of Jury Trial. The venue for any dispute, action, or proceeding involving this Agreement, whether at law or in equity, shall be in the county or circuit courts for the Seventh Judicial Circuit, Volusia County, Florida.
THE PARTIES HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHT WHICH ANY PARTY MAY HAVE TO TRIAL BY JURY IN RESPECT OF ANY PROCEEDING, LITIGATION OR COUNTERCLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. IF THE SUBJECT MATTER OF ANY LAWSUIT IS ONE IN WHICH THE WAIVER OF JURY TRIAL IS PROHIBITED, NO PARTY TO THIS AGREEMENT SHALL PRESENT AS A NON-COMPULSORY COUNTERCLAIM IN ANY SUCH LAWSUIT ANY CLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. FURTHERMORE, NO PARTY TO THIS AGREEMENT SHALL SEEK TO CONSOLIDATE ANY SUCH ACTION IN WHICH A JURY TRIAL CANNOT BE WAIVED.

14. Severability. If any provision of the agreement, or any paragraph, sentence, clause, phrase, or word, or the application thereof is held invalid, the remainder of the agreement shall be construed as if such invalid part were never included herein and the agreement shall be and remain valid and enforceable to the fullest extent permitted by law.

15. Independent Contractor and Nondiscrimation. Vendor and its employees and agents shall be deemed to be independent contractors, and not agents, employees or representatives of the City and shall not attain rights or benefits as an employee of the City Vendor agrees that there will be no discrimination against any person based upon race, religion, sex, ancestry, age, national origin, disability, in the use of the premises.

16. Compliance with Laws. Vendor shall comply with all applicable federal, state and local laws, regulations, orders, ordinances and codes pertaining to its performance under this agreement.

17. Complete Agreement. This Agreement, including the provisions set forth in the exhibit attached hereto and incorporated by reference herein, constitutes the entire and complete agreement of the parties, and the promises and covenants herein contained shall survive the life of this Agreement.

18. Amendment to Agreement. Any amendment, change, or modification of this Agreement must be in writing and fully executed by both parties.

19. Sovereign Immunity. The City expressly retains and reserves all rights, privileges, immunities, and benefits of sovereign immunity. This provision shall be construed broadly in favor of the City.

20. Waiver of Conditions. No waiver by the City of any condition or breach of performance by the Contractor shall constitute an irrevocable, continuing, or subsequent waiver by the City of the same condition or breach of performance, or of any other condition or other breach of performance.

21. Conflicting Provisions. In the event of any conflict between the provisions of this Agreement and any exhibits, the provision most favorable to the City shall control and shall be given full force and effect.

22. Compliance With Florida Public Records Law. Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.

(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.

(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.

(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32175. (386)677-0311
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

23. Limitation of Remedy and Liability. Contractor and Owner expressly waive any claim for consequential damages against the other including but not limited to, a waiver of claims for diminished bonding capacity, loss of financing, loss of business reputation, lost profits on other projects or other lost opportunity damage claims.

Contractor expressly agrees that any claim (tort, contract, claim in equity, or otherwise) by Contractor for damages against Owner shall not exceed the total amount of the contract price, less any amounts actually paid to the Contractor by the Owner.

24. Verification of Employment Status Using E-Verify System.

(a) Section 448.09, *Florida Statutes*, makes it unlawful for any person to knowingly employ, hire, recruit, or refer, either for herself or himself, or on behalf of another, for private or public employment within the state, an alien who is not duly authorized to work in the United States. Contractor warrants that it is registered with the U.S. Department of Homeland Security's E-Verify system, and is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

(b) Contractor agrees that if the contractor enters into an agreement with a subcontractor, the subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and contractor warrants it shall maintain any such affidavits for the duration of the contract. If the City has a good faith belief that a subcontractor knowingly violated Section 448.09 (1), the City shall promptly notify the contractor and order the contractor to immediately terminate the contract with the subcontractor.

(c) In the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and as provided by statute, the contractor may not be awarded a public contract for at least one (1) year after the date of termination. The

contractor may also be held liable for any additional costs incurred by the City as a result of the termination of the contract.

25. No Conflict of Interest. The Contractor warrants and agrees that neither it, nor any of its employees, agents, officers, directors, shareholders and independent contractors are, or will become, under contract with or accept compensation from any individual, business, corporation or governmental entity that has the possibility of an adverse interest to those of the City of Ormond Beach. The Contractor and its officers, directors, shareholders, employers, agents and subcontractors, agree not to provide any services or assistance to any entity directly or indirectly relating to the services provided to the City and to immediately notify the City Manager and City Attorney of any contact with any entity that has, or potentially has, a conflict of interest with the City of Ormond Beach. This provision shall be interpreted as broadly as possible to prevent any potential or actual conflict of interest presently or in the future by the Contractor.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the date below.

DATED this _____ day of _____, 2023.

Witnesses:

_____
Print Name: _____

_____
Print Name: _____

CITY OF ORMOND BEACH

By: _____
Bill Partington
Mayor

Attest: _____
Joyce A. Shanahan
City Manager

DATED this _____ day of _____, 2023.

Witnesses:

TRAUMA SKATEBOARDS, LLC

_____
Print Name: _____

By: _____

Title: _____

_____
Print Name: _____

Attest: _____

Title: _____

Exhibit A

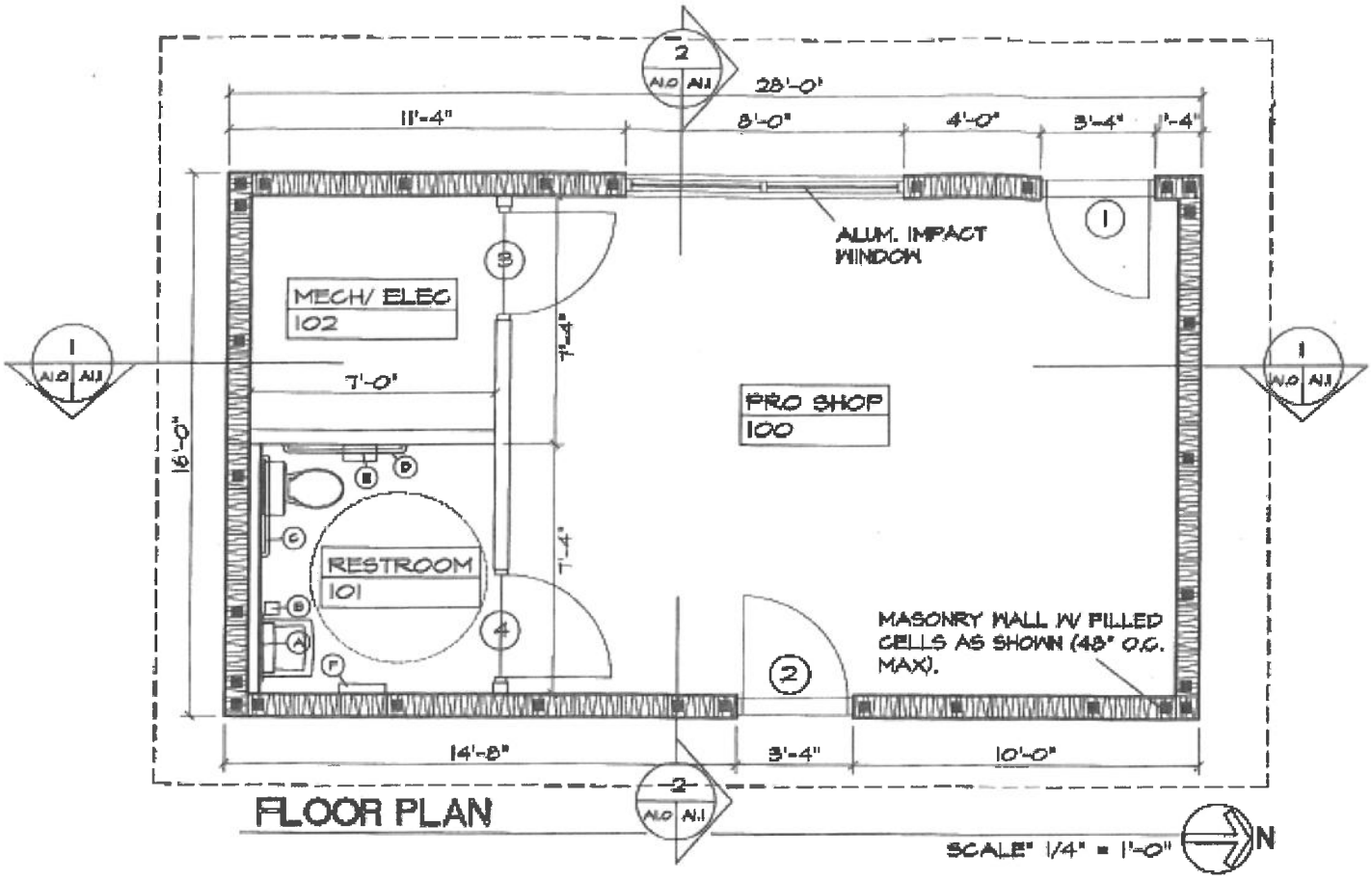

28'-0"
11'-4"
8'-0"
4'-0"
3'-4"
1'-4"
ALUM. IMPACT WINDOW
MECH/ ELEC
102
PRO SHOP
100
RESTROOM
101
7'-0"
7'-4"
7'-4"
16'-0"
MASONRY WALL W/ FILLED CELLS AS SHOWN (48" O.C. MAX).
14'-8"
3'-4"
10'-0"
FLOOR PLAN
SCALE: 1/4" = 1'-0"
N

EXHIBIT "B"

A. Payment and Performance Bonds

1. Except as otherwise provided herein, the Contractor shall, prior to beginning performance, deliver to the City, and the City shall record in the public records of Volusia County, Florida, the Contractor's Payment and Performance Bond in an amount equal to the full amount of the Contract.

2. **(a)** Payment and Performance Bonds shall not be required for any contract except those which are for the construction of a public building, for the prosecution and completion of a public work (as described in Section 180.06, **Florida Statutes,** as amended from time to time) or for repairs upon a public building or public work (as described in Section 180.06, **Florida Statutes**, as amended from time to time).

   (b) With respect to those Contracts for which Payment and Performance Bonds are otherwise required:

      i. Unless the City Manager, or designee, determines such Bond to be necessary to protect the interests of the City, no Contractor shall be required to provide a Payment and Performance Bond for any Contract which is for $25,000.00 or less.

      ii. Upon the request of the contractor, good cause shown by the Contractor, and a determination that the public health, safety and welfare will be sufficiently protected, the City Commission may exempt the contractor from the requirement of providing a Payment and Performance Bond for any Contract which is for more than $25,000.00 but is less than $200,000.00.

3. The Payment and Performance Bond shall list the Contractor as Principal and be issued by a surety insurer authorized to do business in Florida as a surety and listed as an acceptable surety in the Federal Register.

4. The Payment and Performance Bond shall be executed pursuant to Section 255.05, **Florida Statutes**, and be in a form substantially similar to the form set forth in Section 255.05(3), **Florida Statutes**.

5. The Payment and Performance Bond shall specifically provide coverage for delay damages due to a default by the Contractor.

6. The Payment and Performance Bond shall not make the Contract part of the Bond agreement.

7. In lieu of the Payment and Performance Bond, the Contractor may file with the Finance Director of the City, in an amount equal to the full amount of the Contract, cash, a money order, a certified check, a cashier's check, an irrevocable letter of credit, or a security of a type listed in Part II, Chapter 625, **Florida Statutes**.

8. In the event the surety on any Payment and Performance Bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business in the State of Florida is terminated, the Contractor shall, within five (5) working days thereafter, substitute another Payment and Performance Bond and surety acceptable to the City.

9. The Contractor is totally and solely responsible for keeping its surety informed as to the Base Contract Price as bid, significant changes in the Project Scope, and the overall progress and completion of the Project for the entire life of the Contract.

10. The payment and performance bond requirements stated herein above shall not be applicable to service-related contracts unless otherwise determined by the City Manager in order to protect the health, safety and welfare of the general public.

B. Contractual Provisions Relative to Risk Management

All contracts for any public works to be performed, and service-related contracts, for or on behalf of the City shall include at a minimum, the following, or substantially similar, provisions:

1. Hold Harmless and Indemnity

The Contractor agrees to assume liability for and indemnify, hold harmless, and defend the City, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor, its agents, officers, contractors, subcontractors, employees, or anyone else employed or utilized by the Contractor in the performance of this Contract. The Contractor's liability hereunder shall include all attorney's fees and costs incurred by the City in the enforcement of this provision.

2. Payment on Behalf of City

The Contractor shall pay all costs of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph.

Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

3. Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary.

The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such work stoppage will not shift responsibility for any damages from the Contractor to the City.

4. Service Bond

For Service-related contracts only, the City may require the Contractor to secure a service bond with a minimum $25,000 coverage limit for the period of the service agreement. The service bond covers dishonest acts of the contractor's employees against the City. A copy of the bond shall be provided to the City when the agreement commences.

Service-related contracts include and are not limited to businesses providing janitorial, pest control, general repair, security, carpet cleaning, locksmith, temporary employment, painting, moving services or other contracts as determined in the discretion of the Risk Manager as necessary to minimize loss.

C. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)

k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

D. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service-related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM 25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

E. Policies of Insurance

1. Except as otherwise provided in this Exhibit, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-), in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carrier; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Exhibit shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability including products and completed operations and Automobile Liability policies of insurance and certificates thereof.

City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3374

REQUEST FOR PROPOSALS

PROPOSER ACKNOWLEDGEMENT FORM

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP TITLE: **Management and Operation of the Nova Skate Court Concession (rebid)**

RFP NUMBER: 2023-07

RFP OPENING DATE & TIME: January 11, 2023 2:30 pm

RFP OPENING LOCATION: City Hall Training Room (breezeway)

PRE-SUBMITTAL MEETING: N/A

Submittals Received After the Above Date And Time Will Not Be Accepted.

PROPOSER'S NAME: Trauma Skateboards, LLC

PROPOSER'S MAILING ADDRESS: 935 S. Atlantic Ave, Unit 136

CITY-STATE-ZIP: Daytona Beach, FL 32118

F.E.I.N.: 92-0920926

PHONE NUMBER: 386-334-6045 FAX NUMBER: _____

If returning as a "No Submittal", please state reason (s): _____

I certify that this Proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Proposal for the same materials, services, supplies, or equipment, and is in all respects fair and made without collusion or fraud. I agree to abide by all conditions of this RFP and certify that I am authorized to sign this RFP for the Proposer. In submitting a RFP to the City of Ormond Beach, the Proposer offers and agrees that if the Proposal is accepted, the Proposer will convey, assign or transfer to the City of Ormond Beach all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Ormond Beach. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Proposer.

X _____
AUTHORIZED SIGNATURE (MANUAL)

Keith Krenichen
NAME (TYPED)

Owner
TITLE

1/10/2023
DATED

City of Ormond Beach
Request for Proposals (RFP)
Management and Operation of the Nova Skate Court Concession
(RFP No. 2023 -07)

RFP RESPONSE FORM

THIS RESPONSE IS SUBMITTED TO:

Purchasing Coordinator
City of Ormond Beach
22 S. Beach Street, Room 101
Ormond Beach, Florida 32174

The undersigned SUBMITTER proposes and agrees, if this Submittal is accepted, to enter into a Contract with the CITY that reflects the items of this Request for Proposal (RFP) and to provide all services, as specified or indicated in the RFP Documents, in full accordance with the terms and conditions set forth in therein.

SUBMITTER accepts all of the terms and conditions of the General Conditions. SUBMITTER will sign the Contract) and submit the Contract security (when applicable) and other documents required by the Contract Documents within ten (10) days after the date of CITY's Notice of Award.

In submitting this information, SUBMITTER represents, as more fully set forth in the Agreement, that:

SUBMITTER has examined copies of all the RFP Documents and of the following Addenda:

Addendum Date	Addendum Number
_____	_____
_____	_____
_____	_____

Receipt of all of which is hereby acknowledged.

This Submittal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; SUBMITTER has not directly or indirectly induced or solicited any other Submitter to submit a false or sham Submittal; SUBMITTER has not solicited or induced any person, firm or a corporation to refrain from bidding; and SUBMITTER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the CITY.

THIS RESPONSE IS SUBMITTED BY:

COMPANY NAME: Trauma Skateboards LLC

VENDOR/CONTRACTOR LICENSE NUMBER: State License # L22000458563

ADDRESS: 935 S Atlantic Avenue, Unit 136, Daytona Beach, FL 32118

PHONE NO.: 386-334-6045 FAX NO.:

SUBMITTER'S NAME: Keith Krenichen
(Typed or Printed in Ink)

TITLE: Owner / Managing Member

AUTHORIZED SIGNATURE: I, _____ hereby
(Original signature required in each document)

declare that I have read and fully understand the RFP Documents and, including the General Conditions and the Scope of Work, and that I am duly authorized to sign and submit this Submittal.

The CITY reserves the right to reject any and all Submittals, to waive informalities, and to accept any Submittal or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

PROPOSER: PLEASE ENSURE THAT YOU HAVE SIGNED THE RFP RESPONSE FORM OF THIS REQUEST FOR PROPOSAL. OMISSION OF A SIGNATURE ON THAT PAGE WILL RESULT IN REJECTION OF YOUR PROPOSAL.

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

City of Ormond Beach

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[ ] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[ ] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

Trauma Skateboards LLC
COMPANY NAME

AUTHORIZED SIGNATURE

Keith Krenichen
SIGNER'S NAME (PRINT OR TYPE)

Owner / Managing Member
TITLE

01-10-2023
DATE

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

City of Ormond Beach
Request for Proposals (RFP)
Management and Operation of the Nova Skate Court Concession
(RFP No. 2023 -07)
CITY OF ORMOND BEACH, FLORIDA
DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" SUBMITTALS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

Trauma Skateboards LLC
Company Name

Authorized Signature
Keith Krenichen
Print Name

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

Trauma Skateboards LLC
COMPANY NAME

AUTHORIZED SIGNATURE

Keith Krenichen
NAME

Owner / Managing Member
TITLE

01-10-2023
DATE

TRAUMA SKATEBOARDS LLC

RFP 2023-07 Management and Operation of the Nova Skate Court Concession
ID: RFP-RFP 2023-07-0-2023/RH

JANUARY 10, 2023

TRAUMA SKATEBOARDS LLC
935 S. Atlantic Avenue, Daytona Beach, FL 32118

01/10/2022

CITY OF ORMOND BEACH

22 SOUTH BEACH STREET
ORMOND BEACH, FL 32174

Dear Sir or Madam,

On behalf of Trauma Skateboards LLC, I would like to thank you for the opportunity to submit our proposal for RFP-RFP 2023-07-0-2023/RH. If you have any questions or require any additional information, please contact Keith Krenichen at 386-334-6045 or kkrenichen@gmail.com.

SINCERELY,



KEITH KRENICHEN
TRAUMA SKATEBOARDS LLC

Contents

Submittal Letter 4

Profile - Trauma Skateboards, LLC 5

- History 5
- Organizational Structure 6
- Designation of Legal Entity 7
- Ownership Interests 8
- Active Business Venues 8
- Present Status & Projected Direction of Business 8
- Business Qualifications 8
- Employee Qualifications 10
  - Keith Krenichen 10
  - Art Lohman 10
- Legal Entity - Documentation & Type 11
- Federal Identification Number 11

Business Plan 12

References 12

Business Tax Receipt 13

Concessionaire Registration/License 14

Pricing and Fees 14

- Services Offered 14
- Concessions List & Pricing 15

Capital Improvements 16

- Monthly Subsidy Request 16

Confirmation of Operational Hours 17

Intent to Comply 17

Appendices 18

- Appendix A - Sunbiz Profile & Detail 18
- Appendix B - Articles of Incorporation 19
- Appendix C – EIN #92-0920926 | Notice # CP 575 A 20
- Appendix D – Programs & Promotions 21
  - Learn to Skate – Skate Camp Flyer 21
  - Summer Skate Camp Application 22

After School and Summer Camp Mentorship Programs 23
Appendix E - References 25
1. Reference from Amber Cabrera via Email on October 28th 2022 25
2. Reference from Marci Shirley via Email on October 29th 2022 25
3. Reference from David Stuart via Email on October 31st 2022 26
4. Reference from Ashley Lekan via Email on October 31st 2022 26
5. Reference from Jason Lomoriello via Email on November 2nd 2022 27
6. Reference from Sammy Butler via Email on November 2nd 2022 27
7. Reference from Scott Compton via Email on November 3rd 2022 28
Appendix F – Business Tax Receipts 29
BTR - Florida Department of Revenue 29
BTR – The City of Daytona Beach 31

Proposal for Management and Operations of the Nova Skate Park Concession

RFP 2023-07

Memorandum of Authority

This Memorandum of Authority is to certify that Keith Krenichen is authorized as founder and owner of Trauma Skateboards LLC, to represent this organization and enter into contracts and agreements as necessary, and assigned below:

Keith Krenichen
Trauma Skateboards LLC
935 S Atlantic Avenue, Unit 136
Daytona Beach, FL 32118
(386) 334-6045
kkrenichen@gmail.com

Notary Public State of Florida
Alexandra J Wood
My Commission GG 355930
Expires 07/16/2023

Alexandra J Wood – Notary Signature
Notary Commission #: GG355930

Profile - Trauma Skateboards, LLC

History

Hi, my name is Keith Krenichen, and I am the owner of Trauma Skateboards. I have been managing the Ormond Beach Skatepark for the current contract holder for over 3 years. With 30+ years' experience doing business in big box retail, movie theater management, marketing, and sales, I thought working a skatepark concession stand and pro-shop would be child's play. I cannot begin to tell you how monumentally wrong and unprepared I was. In my journey, I discovered that running the Ormond Beach Skatepark was not just about selling concessions and skateboards or doing P&L sheets and inventory management. That was the easy part. To make the park work, I had to think like skateboarders, BMX riders, rollerbladers, quad skaters, and scooter riders. I had to discover the fundamentals that drove them to be excellent. To successfully manage the skatepark, I had to learn and understand the Lessons in Concrete.

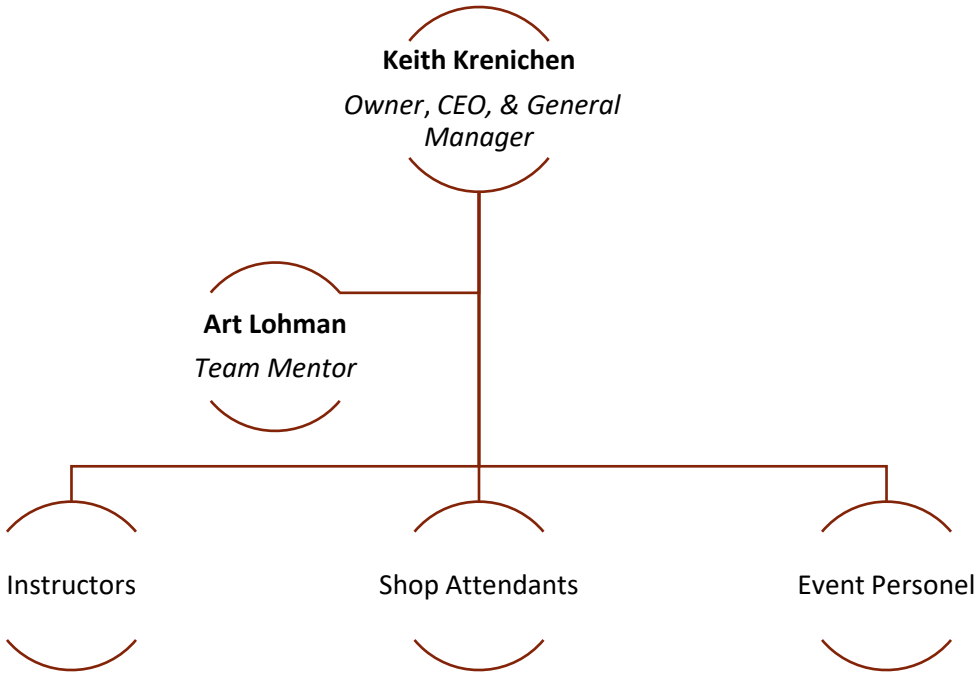
Here are just a few of those life lessons:

- If you fall down, get back up. Skateboarding is HARD and the concrete is even harder. It takes a strong will to get up and keep going.
- You will never learn a trick on the first try, so try again and again and again. It takes perseverance, so never give up.
- The better you get the harder it gets, so keep raising the bar. You have unlimited potential, and the only metric is how hard you are willing to work.

I have incorporated these lessons and more into the daily routine at the Ormond Beach Skatepark, and I use the platform to encourage, strengthen, and motivate the families and children that come to the park. Working at the skatepark, I have rediscovered my own personal potential and I want to keep going. I want to keep pushing myself and see just how far I can take this adventure. Three years ago, if you typed the Ormond Beach Skatepark into Google, the first auto-fill option that came up was "is causing problems again." I am proud to say that is no longer the case, but there is still much more work to be done. Please allow me the opportunity to be the one that does it.

Organizational Structure

In the graphic below, you will find the current organizational structure of Trauma Skateboards LLC. Keith Krenichen is the sole Owner and Managing Member, and Art Lohman is the team mentor who will run the After School and Summer Camp Program Director.



Designation of Legal Entity

The Legal Structure of Trauma Skateboards LLC is a Limited Liability Company. The Document Number for the Business Entity known as Trauma Skateboards LLC is L22000458563 (shown below) and a copy of the Detail by Entity Name is also shown in Appendix A.

State of Florida
Department of State

I certify from the records of this office that TRAUMA SKATEBOARDS LLC, is a limited liability company organized under the laws of the State of Florida, filed electronically on October 25, 2022, effective October 25, 2022.

The document number of this company is L22000458563.

I further certify that said company has paid all fees due this office through December 31, 2022, and its status is active.

I further certify that this is an electronically transmitted certificate authorized by section 15.16, Florida Statutes, and authenticated by the code noted below.

Authentication Code: 221026160641-000396611030#1

Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this the
Twenty Sixth day of October, 2022

Cord Byrd
Secretary of State

Ownership Interests

The managing member and owner of Trauma Skateboards LLC is Keith Krenichen. Keith Krenichen is also the registered agent and is entitled to 100% of the ownership interests. An electronic copy of the Articles of Incorporation for Trauma Skateboards LLC is shown in Appendix B.

Active Business Venues

Trauma Skateboards LLC will inject energy and fun into the Ormond Beach Skate Park. Our team of qualified mentors and instructors will see to the daily operations of the Ormond Beach Skate Park Pro-shop and Concession Stand. We will also host After School Programs, Summer Skate Camps, Community Skate Nights, and Skateboard Lessons. The active business venue is the Ormond Beach Skate Park, located at 440 N Nova Road, Ormond Beach, FL 32174.

Present Status & Projected Direction of Business

Competitive Advantage

Our staffing team has already been in place at the Ormond Beach Skate Park for nearly 4 years. We know the local crowd and they know us. We do not just love skateboarding, we live it. We have traveled for skateboard competitions all over the United States. We have seen how some of the best parks are operated as well as some of the worst. We will put this knowledge to work at the Ormond Beach Skate Park and elevate our park to the highest level.

The Business Opportunity

We will provide a safe, fun, friendly environment where children and adults of all ages can come together and experience the joy of action sports. We will provide a fully stocked concession stand and skateboard Pro-Shop to meet the needs of the local action sports community.

Hours of Operation

The Ormond Beach Skate Park will be open from 9am until 9pm 7 days a week.

The Concession Stand and Pro-shop will operate from 4pm until 9pm weekdays and from 9am until 9pm on weekends. We are open to earlier and extended hours as needed.

Business Qualifications

Keith Krenichen is the founder and CEO of Trauma Skateboards LLC. He has spent the last 4 years managing and running the Ormond Beach Skate Park under the guide of Tary Valle. He has been embedded in the skateboard community for roughly 7 years and has traveled much of the United States taking his son to competitions. He has built relationships with The Grind for Life Skateboard Competition and Charity, The Florida Amateur Skateboard League (FASL) and the California Amateur Skateboard League (CASL). His son Tristan Phoenix is the current CASL/FASL National Champion.

Art Lohman is the team mentor who will run the After School and Summer Camp Program Director. Having served as a State Trooper and security cleared investigator for the United

States Dept of Defense, Art desires to use his 35 years of experience to encourage and inspire young adults to strive for their personal best, as well as become good citizens. He became involved with skateboarding while mentoring young adults from the greater Daytona area through high adventure activities.

Art brings together many members of the community that would otherwise be overlooked or labeled as troublemakers. He serves as a role model and welcomes them into friendship and the sport of skateboarding, challenging the participants to be physically strong and mentally focused, demanding the self-control and humility required to face both the success of becoming an accomplished skater, and the many failures that mark the path of that success. Art resides in Ormond Beach with his wife of 29 years and his daughter. His son recently commissioned as a United States Marine Officer through the Embry-Riddle University in Daytona Beach, and his oldest daughter is pursuing a career with the State Department and speaks 5 languages.

Job Responsibilities

General Manager:

- Create and execute marketing strategies for community exposure and growth
- Implement and maintain After School and Summer Camp programs
- Implement and maintain Family Community Nights at the Skatepark
- Negotiating contracts with vendors.
- Ensure legal compliance for the business.

- Continually examine the external environment for new market opportunities
- Control inventory to ensure optimal levels are attained.
- Manage day-to-day operations of the skate court.
- Interview and hire new employees.
- Assist in the onboarding and training process for new employees.

Shop Attendants:

- Maintain cleanliness and organization of shop interior and surrounding exterior
- Greet customers when they enter
- Help customers with food/beverages selections
- Help customers with Pro-Shop sales
- Ensure compliance to the posted rules and regulations
- Ensure all guests enjoy a fun and safe environment while at the skatepark

Mentors & Instructors:

- Encourage children and young adults to set goals
- Show children and young adults how to achieve set goals
- Build relationships with local families and encourage healthy skatepark activity
- Strengthen the rigidity and wellbeing of the local community
- Provide valid pointed instruction and guidance

Employee Qualifications

Keith Krenichen

Keith learned the retail industry while working at a Wal-Mart Supercenter. He worked in Electronics, Human Resources, Shipping/Receiving, Department Manager and an Overnight Shift Supervisor. During his tenure at the retail giant, he was awarded Employee of the Month two times. After graduating from college, he left Wal-Mart to go full time with his own company. The Virtual Universe started at the Daytona Flea Market as a small buy, sell and trade video game company and eventually expanded to 7 markets around Central Florida. The company eventually expanded, sold new, used computers, and offered upgrades, repairs, training, and networking services. His concession experience was learned after he sold The Virtual Universe and went to work for United Artists Theatres where he became a General Manager. This happened quite by accident as he started the job simply to help a friend who was having a challenging time finding good employees. Keith went from Projectionist to General Manager in under 11 months and one summer his theater was selling over $260,000 in concessions per month.

The skateboarding journey started in 2015 when his son Tristan turned 6 and discovered the Ormond Beach Skate Park. It didn't take long to realize the boy was good at it and they became regulars at the park. After a few years of practice, a lot of traveling and plenty of losing, Tristan started winning. By 2019 Keith had become friends with Tary Valle and had started working for him at the Ormond Beach Skate Park. Keith has been there ever since and his son is now a two-time Florida Amateur Skateboard League State Champion, California/Florida Amateur Skateboard League National Champion and is ranked in the top 20 Skateboarders in the world in his division. Both are proud to call the Ormond Beach Skate Park their HOME park.

Art Lohman

Having served as a State Trooper and security cleared investigator for the United States Dept of Defense, Art desires to use his 35 years of experience to encourage and inspire young adults to strive for their personal best, as well as become good citizens. He became involved with skateboarding while mentoring young adults from the greater Daytona area through high adventure activities.

Art brings together many members of the community that would otherwise be overlooked or labeled as troublemakers. He serves as a role model and welcomes them into friendship and the sport of skateboarding, challenging the participants to be physically strong and mentally focused, demanding the self-control and humility required to face both the success of becoming an accomplished skater, and the many failures that mark the path of that success. Art resides in Ormond Beach with his wife of 29 years and his daughter. His son recently commissioned as a United States Marine Officer through the Embry-Riddle University in Daytona Beach, and his oldest daughter is pursuing a career with the State Department and speaks 5 languages.

Legal Entity - Documentation & Type

ARTICLE I

The name of the Limited Liability Company is

TRAUMA SKATEBOARDS LLC

ARTICLE II

The street address of the principal office of the Limited Liability Company is:

440 N NOVA RD
SKATEPARK
ORMOND BEACH, FL 32174
The mailing address of the Limited Liability Company is:

935 S ATLANTIC AVE
#136
DAYTONA BEACH, FL 32118

ARTICLE III

The name and Florida street address of the registered agent is:

KEITH KRENICHEN
935 S ATLANTIC AVE
#136
DAYTONA BEACH, FL 32118

ARTICLE IV

The name and address of person(s) authorized to manage LLC:

Title: MGR
KEITH KRENICHEN
935 S ATLANTIC AVE
#136
DAYTONA BEACH, FL 32118

ARTICLE V

The effective date for this Limited Liability Company Shall be:

10/25/2022

The Articles of Organization were electronically filed on October 25th, 2022, at 8:00 am with the Secretary of State. A copy of this document is shown in Appendix B.

Federal Identification Number

The EIN that will identify Trauma Skateboards LLC is 92-0920926 and was assigned on 11-03-2022. The formal notice of number CP 575 A can be found in Appendix C.

Business Plan

Vision

Trauma Skateboards LLC will inject energy, excitement, and fun into the Ormond Beach Skate Park. Our team of qualified mentors and instructors will see to the daily operations of the Ormond Beach Skate Park, Pro-shop, and Concession Stand. We will also host After School Programs, Summer Skate Camps, Community Skate Nights along with group and private Skateboard Lessons.

Target Market

Skating is an inclusive activity, which includes BMX, scooters, in-line skates, longboards, and skateboards. It is also a highly social, physical, and mental activity that requires a level of athleticism, fitness and skill which has positive health results. Participating in skating can improve self-esteem and confidence, provide opportunities for peer support and role models, and helps young adults feel more included. We want to provide an environment where all ages feel welcome and can enjoy the skatepark facilities.

Promotions & Goals

We will maximize traffic via promotion on social media, Online and Print Magazines, and Flyers. We will work to form partnerships with action sports companies, charities, and industry professionals to bring events and competitions to the Ormond Beach Skate Park. We will strive to increase participation, improve access, and increase performance through purpose driven events and collaboration.

With regards to the future direction and plans for Trauma Skateboards LLC, please see Appendix C for examples of promotions, specifically,

The Learn to Skate - Skate Camp Flyer and Application Form, as well as the schedule and itinerary for the After School and Summer Camp Mentorship Program is shown in Appendix D.

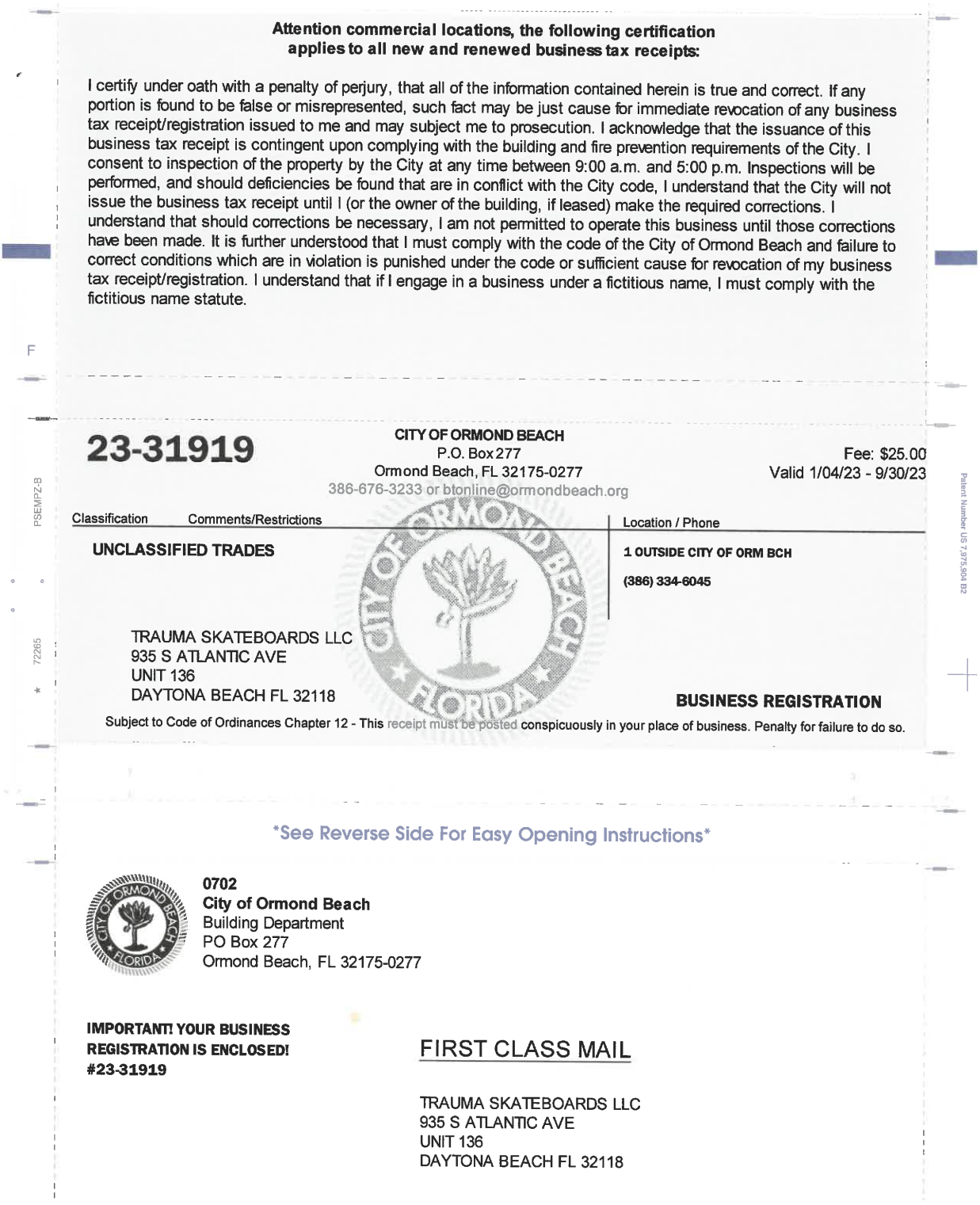
References

In Appendix E, you will find 7 references given by Personal Advocates, Parents of Skaters, and Skate Park & Shop Attendees for Keith Krenichen. The following is a list of the individuals who have given references via email for Keith Krenichen and Trauma Skateboards LLC:

- Marci Shirley – Parent of Two Skaters
- David Stuart – Skate Park & Shop Attendee
- Ashley Lekan – Parent of Two Skaters
- Amber Cabrera – Parent of a New Skater
- Jason Lomoriello – Advocate; Skate Park & Shop Attendee
- Sammy Butler – Skate Park Veteran & Grandfather of a Skater
- Scott Compton – Parent of Skaters

Business Tax Receipt

The Business Tax Receipt Registration is shown below. Copies of the Business Tax Receipts with the Florida Department of Revenue and The City of Daytona Beach are shown in Appendix F.



Attention commercial locations, the following certification applies to all new and renewed business tax receipts:

I certify under oath with a penalty of perjury, that all of the information contained herein is true and correct. If any portion is found to be false or misrepresented, such fact may be just cause for immediate revocation of any business tax receipt/registration issued to me and may subject me to prosecution. I acknowledge that the issuance of this business tax receipt is contingent upon complying with the building and fire prevention requirements of the City. I consent to inspection of the property by the City at any time between 9:00 a.m. and 5:00 p.m. Inspections will be performed, and should deficiencies be found that are in conflict with the City code, I understand that the City will not issue the business tax receipt until I (or the owner of the building, if leased) make the required corrections. I understand that should corrections be necessary, I am not permitted to operate this business until those corrections have been made. It is further understood that I must comply with the code of the City of Ormond Beach and failure to correct conditions which are in violation is punished under the code or sufficient cause for revocation of my business tax receipt/registration. I understand that if I engage in a business under a fictitious name, I must comply with the fictitious name statute.

23-31919

CITY OF ORMOND BEACH
P.O. Box 277
Ormond Beach, FL 32175-0277
386-676-3233 or btonline@ormondbeach.org

Fee: $25.00
Valid 1/04/23 - 9/30/23

Classification	Comments/Restrictions	Location / Phone
UNCLASSIFIED TRADES		**1 OUTSIDE CITY OF ORM BCH** **(386) 334-6045**

TRAUMA SKATEBOARDS LLC
935 S ATLANTIC AVE
UNIT 136
DAYTONA BEACH FL 32118

BUSINESS REGISTRATION

Subject to Code of Ordinances Chapter 12 - This receipt must be posted conspicuously in your place of business. Penalty for failure to do so.

See Reverse Side For Easy Opening Instructions

0702
City of Ormond Beach
Building Department
PO Box 277
Ormond Beach, FL 32175-0277

IMPORTANT! YOUR BUSINESS REGISTRATION IS ENCLOSED!
#23-31919

FIRST CLASS MAIL

TRAUMA SKATEBOARDS LLC
935 S ATLANTIC AVE
UNIT 136
DAYTONA BEACH FL 32118

Concessionaire Registration/License

Trauma Skateboards LLC is in the process of obtaining a Concessionaire License.

Pricing and Fees

Services Offered

Services Offered	Price*
Skate Lessons ***Every 1st & 3rd Saturday*** ***9am to 10am***	**FREE**
Rentals	**Daily**
Skateboard Rental	**$5.00**
Scooter Rental	**$5.00**
Helmet Rental	**$3.00**
Knee Pad Rental	**$2.00**
Elbow Pad Rental	**$2.00**
Wrist Guard Rental	**$2.00**
Helmet & All Pads	**$7.00**
Skateboard & Helmet	**$7.00**
Skateboard, Helmet & Pads	**$10.00**
Summer Camp	
Daily	**$50.00**
Weekly	**$225.00**
2nd Kid Discount	**10%**
3rd Kid Discount	**15%**
After School Program	**3pm until 6pm**
Daily	**$50.00**
Weekly	**$225.00**
2nd Kid Discount	**10%**
3rd Kid Discount	**15%**
Private Lessons	
Group Beginner (2 or More)	**$35.00**
Individual Beginner	**$45.00**
Individual Advanced	**$65.00**

Prices are subject to change

Sample Concession Inventory with Current *Pricing*			
Item	**Price**	**Item**	**Price**
Beverages		**Candy**	
Bottled Water	$1.00	Baby Ruth	$1.50
A&W Root Beer	$1.00	Butterfinger	$1.50
Dr. Pepper	$1.00	Hershey's	$1.50
Faygo Grape	$1.00	Hershey's Almond	$1.50
Faygo Orange	$1.00	Kit Kat	$1.50
Faygo Red Pop	$1.00	Mentos Fruits	$1.50
Mtn Dew	$1.00	Milky Way	$1.50
Nestea	$1.00	Rainbow Straws	$1.50
Pepsi	$1.00	Reese's Peanut Butter Cups	$1.50
Sprite	$1.00	Skittles	$1.50
Lipton Citrus Green Tea 16.9oz	$1.00	Snickers	$1.50
Lipton Peach Tea 16.9oz	$1.00	Sour Patch Kids	$1.50
Juice		Sour Punch Straws	$1.50
Apple Juice 10oz	$1.00	Starburst	$1.50
Orange Juice 10oz	$1.00	**Chips**	
Gatorade 12oz		Cheetos	$1.50
Cool Blue	$1.00	Cheetos Flaming Hot	$1.50
Fruit Punch	$1.00	Cheetos Flaming Hot Lime	$1.00
Glacier Cherry	$1.00	Cheetos Puffs	$1.00
Lemon Lime	$1.00	Chester's Hot Fries	$1.00
Orange	$1.00	Doritos Cool Ranch	$1.00
Snapple 20oz		Doritos Flaming Hot	$1.00
Apple	$1.50	Doritos Nacho Cheese	$1.00
Black Cherry Lemonade	$1.50	Fritos	$1.00
Kiwi Strawberry	$1.50	Funyuns	$1.00
Mango	$1.50	Funyuns Flaming Hot	$1.00
Strawberry Pineapple	$1.50	Lays BBQ Chips	$1.00
Watermelon Lemonade	$1.50	Lays Potato Chips	$1.00
Frozen Treats		Lays Salt and Vinegar Chips	$1.00
Drumsticks Cones	$1.50	Lays Sour Cream Potato Chips	$1.00
Fat Boy Ice Cream Sandwich	$1.00	Sun Chips Garden Salsa	$1.00
Icee Pops	$1.00	Sun Chips Harvest Cheddar	$1.00
Kit Kat Cones	$1.50	Sun Chips Original	$1.00
Oreo Bar	$1.50	Sun Chips Sour Cream	$1.00
Outshine Bar	$1.50	Sun Chips Sour Cream	$1.00
Oreo Sandwich Cookie	$2.00	Sun Chips Sour Cream	$1.00
Miscellaneous			
Apple Pie	$1.00	Kraft Easy Mac Cup	$1.50
Blueberry Muffins	$1.25	Pop Tarts	$1.00
Chocolate Donuts	$1.25	Powdered Donuts	$1.00
Honey Bun	$1.00	Ramen Noodles	$1.00

Prices are subject to change based on cost of goods, other variables, and inflation

Capital Improvements

Trauma Skateboards LLC requests that the City of Ormond Beach include in the Contract the ability for open dialogue regarding improvements to the Skate Park and the Concession Building. Many of such improvements will not require bids, estimates, or contracts and are simply additions to existing or removal of existing shelves, countertops, and fixtures. Some examples of things that may be requested include but are not limited to:

- Commercial Glass Door Beverage Refrigerator
- TV and Swivel/Telescoping Wall Mount
- New Carpeting or Textured Anti-Slip Floor Covering
- New Paint and Permission to Paint Interior of Concession Structure
- A/C Vents Repaired or Replaced

In order to operate the Nova Skate Court and maximize attendance Trauma Skateboards LLC request permission to discuss and implement the following:

- Co-Ordinate with City IT to include Skate Park events in the City On-Line Calendar
- Hang Quality Custom Signs or Banners Announcing Events around the Skate Court
- Ability to display Skatepark Flag/Banner signs at the Nova Rec Entrance
- A presentation area allocated inside the Nova Rec Center Gymnasium Display Case
- Access to City Owned resources that are available upon request for events to Parks and Recreation

Monthly Subsidy Request

Trauma Skateboards LLC requests the following compensation:

> Trauma Skateboards LLC asks for Nine Hundred thirty-nine and 0/100 ($939.00) per week for the term of any agreement. Payments shall be made by the City each Friday for the services performed the previous week from a weekly invoice provided by the Vendor.

For this proposal we have requested the Current Florida Minimum Wage as of September 30, 2022, of $11.00 per hour for the Concession Attendant.

Confirmation of Operational Hours

Concession Hours of Operation:

Monday through Friday 4pm until 9pm for a total of 25 hours.

Saturday and Sunday 9am until 9pm for a total of 24 hours.

Total hours of Concession Operational hours are 49 hours.

Forty-nine hours at $11.00 per hour is $539.00 per week.

In addition to the Concession Attendant Hourly Compensation Trauma Skateboards LLC asks for a Weekly Management Compensation of $400.00.

Intent to Comply

Trauma Skateboards LLC recognizes that some things required to obtain RFP 2023-07 Management and Operation of the Nova Skate Court Concession have not been completed or are not included in this proposal. This includes but is not limited to:

- Concessionaire Registration License
- Transition Plan and Timeline

If the City of Ormond Beach shows interest in Trauma Skateboards LLC and determines that we are well qualified to operate the Nova Skate Court, we will adhere to all instructed guidelines and acquire everything requested by the City to obtain the contract. **Trauma Skateboards LLC can acquire all necessary paperwork and be ready to transition and take over the Nova Skate Court Concession with 2 weeks notification.**

Detail by Entity Name

Florida Limited Liability Company
TRAUMA SKATEBOARDS LLC

Filing Information

Document Number	L22000458563
FEI/EIN Number	NONE
Date Filed	10/25/2022
Effective Date	10/25/2022
State	FL
Status	ACTIVE

Principal Address

440 N NOVA RD
SKATEPARK
ORMOND BEACH, FL 32174

Mailing Address

935 S ATLANTIC AVE
#136
DAYTONA BEACH, FL 32118

Registered Agent Name & Address

KRENICHEN, KEITH
935 S ATLANTIC AVE
#136
DAYTONA BEAH, FL 32118

Authorized Person(s) Detail

Name & Address

Title MGR

KRENICHEN, KEITH
935 S ATLANTIC AVE
DAYTONA BEACH, FL 32118

Annual Reports

No Annual Reports Filed

Document Images

10/25/2022 -- Florida Limited Liability View image in PDF format

Electronic Articles of Organization For Florida Limited Liability Company

L22000458563
FILED 8:00 AM
October 25, 2022
Sec. Of State
amrivers

Article I

The name of the Limited Liability Company is:

TRAUMA SKATEBOARDS LLC

Article II

The street address of the principal office of the Limited Liability Company is:

440 N NOVA RD
SKATEPARK
ORMOND BEACH, FL. 32174

The mailing address of the Limited Liability Company is:

935 S ATLANTIC AVE
#136
DAYTONA BEACH, FL. 32118

Article III

The name and Florida street address of the registered agent is:

KEITH KRENICHEN
935 S ATLANTIC AVE
#136
DAYTONA BEAH, FL. 32118

Having been named as registered agent and to accept service of process for the above stated limited liability company at the place designated in this certificate, I hereby accept the appointment as registered agent and agree to act in this capacity. I further agree to comply with the provisions of all statutes relating to the proper and complete performance of my duties, and I am familiar with and accept the obligations of my position as registered agent.

Registered Agent Signature: KEITH KRENICHEN

Article IV

L22000458563
FILED 8:00 AM
October 25, 2022
Sec. Of State
amrivers

The name and address of person(s) authorized to manage LLC:

Title: MGR
KEITH KRENICHEN
935 S ATLANTIC AVE
DAYTONA BEACH, FL. 32118

Article V

The effective date for this Limited Liability Company shall be:

10/25/2022

Signature of member or an authorized representative

Electronic Signature: KEITH KRENICHEN

I am the member or authorized representative submitting these Articles of Organization and affirm that the facts stated herein are true. I am aware that false information submitted in a document to the Department of State constitutes a third degree felony as provided for in s.817.155, F.S. I understand the requirement to file an annual report between January 1st and May 1st in the calendar year following formation of the LLC and every year thereafter to maintain "active" status.

IRS DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
CINCINNATI OH 45999-0023

Date of this notice: 11-03-2022

Employer Identification Number:
92-0920926

Form: SS-4

Number of this notice: CP 575 A

TRAUMA SKATEBOARDS LLC
KEITH KRENICHEN SOLE MBR
935 S ATLANTIC AVE UNIT 136
DAYTONA BEACH, FL 32118

For assistance you may call us at:
1-800-829-4933

IF YOU WRITE, ATTACH THE
STUB AT THE END OF THIS NOTICE.

WE ASSIGNED YOU AN EMPLOYER IDENTIFICATION NUMBER

Thank you for applying for an Employer Identification Number (EIN). We assigned you EIN 92-0920926. This EIN will identify you, your business accounts, tax returns, and documents, even if you have no employees. Please keep this notice in your permanent records.

Taxpayers request an EIN for their business. Some taxpayers receive CP575 notices when another person has stolen their identity and are opening a business using their information. If you did **not** apply for this EIN, please contact us at the phone number or address listed on the top of this notice.

When filing tax documents, making payments, or replying to any related correspondence, it is very important that you use your EIN and complete name and address exactly as shown above. Any variation may cause a delay in processing, result in incorrect information in your account, or even cause you to be assigned more than one EIN. If the information is not correct as shown above, please make the correction using the attached tear-off stub and return it to us.

Based on the information received from you or your representative, you must file the following forms by the dates shown.

Form 940	01/31/2024
Form 944	01/31/2024

If you have questions about the forms or the due dates shown, you can call us at the phone number or write to us at the address shown at the top of this notice. If you need help in determining your annual accounting period (tax year), see Publication 538, *Accounting Periods and Methods*.

We assigned you a tax classification (corporation, partnership, etc.) based on information obtained from you or your representative. It is not a legal determination of your tax classification, and is not binding on the IRS. If you want a legal determination of your tax classification, you may request a private letter ruling from the IRS under the guidelines in Revenue Procedure 2020-1, 2020-1 I.R.B. 1 (or superseding Revenue Procedure for the year at issue). Note: Certain tax classification elections can be requested by filing Form 8832, *Entity Classification Election*. See Form 8832 and its instructions for additional information.

IMPORTANT INFORMATION FOR S CORPORATION ELECTION:
If you intend to elect to file your return as a small business corporation, an election to file a Form 1120-S, U.S. Income Tax Return for an S Corporation, must be made within certain timeframes and the corporation must meet certain tests. All of this information is included in the instructions for Form 2553, Election by a Small Business Corporation.

Learn to Skate – Skate Camp Flyer





Ormond Beach Skate Park Summer Skate Camp Application FORM

NAME OF CHILD	
DATE OF BIRTH	
EMERGENCY CONTACT	
CONTACT PHONE NUMBER	
EMAIL ADDRESS	
MEDICAL CONDITIONS/	

Camp will run from Monday to Friday 9am to 4pm with group lessons from 9am until Noon. Lunch and Adult Supervised Free Skate/Scooter and limited one on one instruction will be after lunch until 4pm.

Water will be provided throughout the day and lunch will be provided. Please wear suitable skate clothes and shoes.

Every camper MUST have their own Skateboard. Skateboard Rentals will be available on a 1st come 1st serve basis for an additional fee of $5.00 per day. Helmet Rentals are also available for $2 per day.

$50 per day or $195 per week

Period	Day1	Day2	Day3	Day4	Day5	Amount $
11 July to 15 July						
25 July to 29 July						
1 August to 5 August						
8 August to 12 August						
Total						

Day 1

Assertive vs Anger. Focus on Leadership and communication.

Verbal
Non-Verbal
My body and words can be positive tools to build, or negative tools to tear down.
Attitude- Circumstances should not dictate our attitude.
Assertive vs Angry
- Assertive is the confident explanation of what you are thinking.
- Are you assertive when you are angry?
- How is anger destructive.

Assess the students' level of skating ability. Open skate session applying the lessons learned.

Day 2

Who am I? Having a positive self-image.
- Past mistakes do not define me.
- My identity does not rest in the opinion of others

The great lie.
- Feeling alone and left out because everyone else is having fun.
- Comparing yourself on social media

What do you think about this statement: "Try not to be a person of success, but a person of value." Albert Einstein
Success vs Value. Temporary vs a Lifetime.
Skate session focused on enriching your own life, not to impress others.

Day 3

Relationships. Interacting with others.
- The dating disaster, (Gossip, Trophy, Pressure for risky behavior, expense).
- Convenience vs Commitment
- Enjoy your youth. Dream of Careers, Playing and sports should rehearse the values and our roles in later life.
- Friends who inspire, Role models, Heroes.
- Communication based craft. Make a friendship bracelet and write a note to the person for whom you make it.
- Skate session focused on friendship, make a new friend, and find 3 things you have in common.
- Teambuilding exercise, "The Spider Web"

Day 4

Money Treasure and Goals
- Remember: "Try not to be a person of success, but rather a person of value."
- What does this mean to you?
- What are the greatest treasures, or things of value in life?
  - Friendships, Reputation, Stories
- What treasure can be stolen from you? What Can't?

Introspective craft: Make a skate bearing ring.
- Skate session.

Day 5

The Body Machine- Health
- Physically hard, mentally strong, healthy character
  - Which are related to physical, mental or character and why.
  - Strength and Endurance, Decision making, Positive attitude, Gratitude, Hope
- How do drugs and alcohol affect these?
- What is depression?
- What role do your friends and family play in your complete health?
- Developing a workout routine for your body and mind.
- Teambuilding exercises, Relay races

Each day will feature snacks, drinks, time with mentors and open sessions to skate or ride. Instruction for skating skills will be available each day as well.

Appendix E - References

1. Reference from Amber Cabrera via Email on October 28th 2022

From: Amber Cabrera <acabrera0819@gmail.com>
Sent: Friday, October 28, 2022 2:47:22 PM
To: kkrenichen@gmail.com <kkrenichen@gmail.com>
Subject: Reference for Contract Renewal

Hi Keith,

My name is Amber Cabrera and I got your information from Brittany Brown. She had said that you needed a few references from the community about our experience with what the park offers so I wanted to help out. Please find my experience below 🙂

I started taking my 4 year old son here a couple of months ago. We have had to move around a lot over the last few years and have tried out other skateparks around the state but we found that the environment in the other parks wasn't conducive to a brand new learner. We were skeptical when new friends of ours recommended that we try the Ormond Beach Skatepark out.

We were shocked that the environment at Ormond Beach Skatepark was way more welcoming to all experience levels and more family friendly as well. We have never seen a skatepark with employees who keep an eye out for everyone either, which completely changes the vibe. Everyone knows they're being watched so they are on their best behavior in order to stay.

I absolutely love this gem of a resource in Ormond Beach and can't wait to be more engrained in the community they've worked so hard to build. Our son always looks forward to spending time there and can't wait to try out the camps that they offer too. I couldn't be happier that we finally found a place where our son can safely learn! Thank you Ormond Beach Skatepark for everything you do to keep the park clean, safe and friendly!

Amber Cabrera
Owner and Founder of Tidal Wave Organics

2. Reference from Marci Shirley via Email on October 29th 2022

From: Marci Shirley <marcikshirley@yahoo.com>
Sent: Saturday, October 29, 2022 8:15:41 PM
To: kkrenichen@gmail.com <kkrenichen@gmail.com>
Subject: Ormond Beach Skate Park

To whom it may concern,

I have been bringing my sons to the skate park for years and they absolutely love it!

I brought my youngest, who's 9, up there almost every night this past summer and the leadership under Keith and Art has been awesome. They are great with the kids, older and younger. They make sure the rules are followed with no cussing or vaping and that helmets are always worn if you're under 16. They are very friendly every time we are there.

The park is always kept clean and we feel very fortunate to live near such an awesome place!

We appreciate their leadership and willingness to take the time to pour into our kids!

Thank you!
Marci Shirley

3. Reference from David Stuart via Email on October 31st 2022

From: David Stuart <dsstuart1990@yahoo.com>
Sent: Monday, October 31, 2022 1:36:10 PM
To: kkrenichen@gmail.com <kkrenichen@gmail.com>
Subject: Ormond Beach Skate Park Reference from David Stuart (Rollerblader)

My name is David Stuart. I am 32 years old and have been rollerblading at the Ormond Beach Skate Park at least 3 times a week for the last 2 years.

The environment at Ormond Beach Skate Park is different from any other skatepark specifically because of the guys that work in the shop and look after the park. They do a really great job and have always been very friendly and professional. I cannot stress enough what an asset it is to the Ormond Beach Community to not only have a free skatepark with a shop (and staff) but also to have these specific guys running the shop. A skatepark is a place where many different types of people at many different ages and from many different walks of life all are confined into a small place and inevitably interact with each other. This can be a great thing but also, obviously, presents some challenges. People can crash into each other, accidentally cut each other off, stand in each other's way, overhear each other saying things that they disagree with that get them riled up. At other skateparks with no shop/staff this can sometimes lead to heated confrontations but I have never seen an issue like this at Ormond Beach Skate Park and I fully attribute that to having friendly people that work the shop and set a certain vibe about the place before you even head out into the park to start skating. These guys will greet you on your way in, remember your name, reference and ask for updates about things that you talked about in previous interactions, and remind you to have fun out there.

But its not just all about sending out good vibes either. The crew does a really good job of making sure everybody knows what is and is not acceptable behavior at the park AND enforcing the rules. Reminders are frequent, and fair. Even when there is nobody in the shop people are on their best behavior because they know that word can, and often times does, get back to the guys that work the shop.

In all my time spent at the skatepark I have never heard any complaints about Keith from anyone ranging from young kids, through teenagers, and all the way up to old men and women. The odds of that, I think, are incredible. If I were the city of Ormond Beach I would try to keep Keith working in that shop for as long as you guys can hold onto him.

4. Reference from Ashley Lekan via Email on October 31st 2022

From: Ashley Lekan <a.lekan@hotmail.com>
Sent: Monday, October 31, 2022 10:15:37 AM
To: kkrenichen@gmail.com <kkrenichen@gmail.com>
Subject: Ormond Skate Park reference

My son and daughter, ages 10 & 11 have been coming to the ormond skate park for a couple years now an absolutely love it. Since Keith has been running the skate park, we have noticed a clean environment. There is never any trash in the park and they are always cleaning any mulch from the skate park that blows in around the edges to keep the area clean and safe for riders. The management does an excellent job of monitoring the skaters and staying on top of the rules. Skaters are routinely reminded that anyone under the age of 16 must wear a helmet and that profanity is not tolerated. This is so important as a parent because I really appreciate being able to bring my kids to a safe, well-monitored location where they can enjoy skating and just being kids. The skate shop is convenient, as we have purchased two custom skateboards for my kids. Since I know nothing about skateboarding, it was very nice to have Keith and his staff help us pick out everything we needed as well as build the boards right in the shop for my kids. We spend over half of our week at the ormond skate park, for several hours each visit. This is definitely a place my kids, as well as myself, love and enjoy coming to on a regular basis.
Thank you,
Ashley Lekan

5. Reference from Jason Lomoriello via Email on November 2nd 2022

From: Jason Lomoriello <jlomoriello@gmail.com>
Sent: Wednesday, November 2, 2022 1:37:09 PM
To: kkrenichen@gmail.com <kkrenichen@gmail.com>
Subject: Re: Letter of Recommendation - Keith Krenichen

To whom it may concern,

I met Keith at the skating park two years ago. Being from Ormond Beach it was nice meeting someone who was a true local. Having lived away for so many years, when I got back to Ormond Keith was very generous trying to help me understand the current layout of the skate scene and gave me great advice on events, other parks and a thorough overview of the ormond park and the general vibe of what the park is all about.

Keith was not shy with his advice and offered valuable tips and suggestions about how to proceed locally with my business ventures, skating contests, and local fun spots to hang out with my son.

Keith also is a great dad. Having met his son Triston it is clear that Keith has a strong moral character that was passed on to his boy. Triston embodies a fun spirited, kind and gifted young man with talents that go beyond your average 12 year old. People like Keith and Triston are a rare breed and the city park is blessed to people like this to consider when opportunities like this come up.

Keith has become a staple to the skate park. When he asked me to write a letter of recommendation I was personally honored to do so since I can't think of a man more respected or qualified to take over the role as Head Honcho. Keith is a great role model and someone deserving of this new opportunity. If you need to contact me further I can be reached at:
(386) 301-6534

Best of Luck to you Keith you deserve this more than anyone!!

Your good friend,

Jason Lomoriello
President/CEO
www.schianocorp.com

6. Reference from Sammy Butler via Email on November 2nd 2022

From: Sammy Butler Sr <butlersrsammy@yahoo.com>
Sent: Wednesday, November 2, 2022 7:31:50 PM
To: kkrenichen@gmail.com <kkrenichen@gmail.com>
Subject: Recommendation

To Whom It May Concern:
I would like to recommend the staff at the Nova Recreation Center **Skate Park** for the followng reasons:

- The staff is always good with the kids (skaters and bikers) at the park, they treat them like family.
- The kids understand the boundarys and except the staff as in control but fun to be around.
- I have seen them many times assist the kids with their skateboards and scooter with repairs and adjustments.
- The staff make it a place the kids want to go, which is good because it keeps them busy and busy is good for kids

I would give the current staff a 5 star rating (0 bad-5 great) for the following:

- Friendly
- Caring
- Fun
- Professionalism
- Alll around good people

I have been going to this skate park since my grandson was 3 years olds (he is 12 now) and the current staff has been the best I have come across and I believe they are good for the kids that go there and will continue to be in the future

Sincerely
Sammy Lee Butler Sr

7. Reference from Scott Compton via Email on November 3rd 2022

From: Scott Compton <sjeroldc@gmail.com>
Sent: Thursday, November 3, 2022 9:46:53 AM
To: kkrenichen@gmail.com <kkrenichen@gmail.com>
Subject: Keith - Ormond Beach Skate Park

I met Keith a few years ago when I took my kids to the skatepark. He was the guy behind the counter making sure the kids knew that they needed to always wear a helmet at the skatepark. Over the years I have come to spend many hours at the skatepark and got to know Keith a little better. He is always looking out for the kids, not only making sure they follow the rules, but also telling them to have fun skating, and always willing to lend a hand, a tool, a helmet for someone who forgot theirs or maybe just a friendly smile, and a "have a good day." He knows all the kids by name, and a lot of the parents as well. He puts in extra time to make sure things are running smoothly, and puts on events like Halloween costume parties with giveaways, and free pizza, and skate camp during the summer. He organizes this all, getting parents, and the community involved, all for the kids, and they really love it. It's not just a skatepark to a lot of the kids, it's a cool place to hang out with friends. This is because of the way Keith runs the place. I would definitely recommend Keith for running the skatepark, because he basically has been doing it for the last few years.

Scott Compton
65 Woodmere Cir
Ormond Beach, FL

Welcome, kkrenichen

Florida Business Tax Application

Certificate Details

The *Florida Business Tax Application* you submitted online has been **APPROVED**.

DOR Comments

Comments: NONE

Business Details

Business Name
Trauma Skateboards LLC

Business Partner Number
6810192

Business Address
440 N NOVA RD, Ormond Beach, FL, US, 32174-9498

Certificate/Account Numbers

Reemployment Tax Employer Account Number
3925419

Sales & Use Tax Certificate Number
74-8018954734-4

e-Services Enrollment User ID & Password
Receive by mail or call

You will receive certificates of registration or other official notification by mail within ten days. If you registered for *Sales And Use Tax* or *Communications Services Tax* and need to make resale purchases before receipt of certificates, your suppliers may use the Department's resale certificate verification system here (https://verify-taxcerts.floridarevenue.com/) or may call 877-FL RESALE (877-357-3725 (tel:8773573725)) to obtain a transaction authorization code for your resale purchases.

Service Center

If you require further assistance, you may call or visit your local taxpayer service center:

Daytona Beach Service Center
1180 N Williamson Blvd Ste 160
Daytona Beach, FL 32114-8179
386-274-6600 (tel:386-274-6600)

- If you did not enroll in the e-Services program to file and pay taxes electronically when you registered, you may wish to do so. Learn more about e-Services here (https://floridarevenue.com/taxes/eservices).
- A start-up kit for new business owners (http://floridarevenue.com/dor/businesses/newbusiness_startup.html) is available for you to view, download or print.
- If you are interested in becoming a Florida Lottery Retailer, learn more here (https://www.flalottery.com/site/retailers.do)

You may also call Taxpayer Services at 850-488-6800 (tel:). Telephones are staffed from 8:00 a.m. to 5:00 p.m., ET, Monday through Friday.

Print Page Close Page

© 2022 Florida Department of Revenue
5050 West Tennessee Street, Tallahassee, FL 32399

12/29/22, 12:57 AM eTRAKIT License

THE CITY OF DAYTONA BEACH

DEVELOPMENT SERVICES DEPARTMENT
PERMITS & LICENSING DIVISION
301 S. RIDGEWOOD, SUITE # 127
DAYTONA BEACH, FL 32114
Phone: 386-671-8140

LOCAL BUSINESS TAX RECEIPT # BT-82508

Business Name:	Trauma Skateboards LLC	BT-82508	Bus Lic No.
Business Location:	935 S Atlantic Ave 136	9/30/2023	Valid To
Business Type:	BUSINESS SERVICE	UNDER REVIEW	Status
License Notes:	State License # L22000458563	12/22/2022	Date Paid

Fee Code Description

Mail To: Trauma Skateboards LLC
935 S Atlantic Ave 136
DAYTONA BEACH FL 32118

2023

LOCAL BUSINESS TAX RECEIPT

DISPLAY AT PLACE OF BUSINESS FOR PUBLIC INSPECTION
THE CITY DOES NOT CERTIFY OR IMPLY COMPETENCE OF BUSINESS.

CONTACT INFORMATION

Bus Owner: Keith Krenichen kkrenichen@gmail.com Phone: (386) 334-6045
Mailing Addr: 935 S. Atlantic Ave., Unit 136 DAYTONA BEACH FL 32118 Fax:

LAST PAYMENT INFORMATION

Fee Code	Description	Reference	Amt Paid	Date Paid	Pay Method
0260	BUSINESS SERVICE		70.00	12/22/2022	CREDIT

Fees Paid: $70.00
Receipt #: WEB-46547

https://crw.codb.us/eTRAKIT3/custom/License2_CODB.aspx?licenseno=BT-82508 1/1

Attention commercial locations, the following certification applies to all new and renewed business tax receipts:

I certify under oath with a penalty of perjury, that all of the information contained herein is true and correct. If any portion is found to be false or misrepresented, such fact may be just cause for immediate revocation of any business tax receipt/registration issued to me and may subject me to prosecution. I acknowledge that the issuance of this business tax receipt is contingent upon complying with the building and fire prevention requirements of the City. I consent to inspection of the property by the City at any time between 9:00 a.m. and 5:00 p.m. Inspections will be performed, and should deficiencies be found that are in conflict with the City code, I understand that the City will not issue the business tax receipt until I (or the owner of the building, if leased) make the required corrections. I understand that should corrections be necessary, I am not permitted to operate this business until those corrections have been made. It is further understood that I must comply with the code of the City of Ormond Beach and failure to correct conditions which are in violation is punished under the code or sufficient cause for revocation of my business tax receipt/registration. I understand that if I engage in a business under a fictitious name, I must comply with the fictitious name statute.

23-31919

CITY OF ORMOND BEACH
P.O. Box 277
Ormond Beach, FL 32175-0277
386-676-3233 or btonline@ormondbeach.org

Fee: $25.00
Valid 1/04/23 - 9/30/23

Classification	Comments/Restrictions	Location / Phone
UNCLASSIFIED TRADES		**1 OUTSIDE CITY OF ORM BCH** **(386) 334-6045**

TRAUMA SKATEBOARDS LLC
935 S ATLANTIC AVE
UNIT 136
DAYTONA BEACH FL 32118

BUSINESS REGISTRATION

Subject to Code of Ordinances Chapter 12 - This receipt must be posted conspicuously in your place of business. Penalty for failure to do so.

See Reverse Side For Easy Opening Instructions

0702
City of Ormond Beach
Building Department
PO Box 277
Ormond Beach, FL 32175-0277

IMPORTANT! YOUR BUSINESS REGISTRATION IS ENCLOSED!
#23-31919

FIRST CLASS MAIL

TRAUMA SKATEBOARDS LLC
935 S ATLANTIC AVE
UNIT 136
DAYTONA BEACH FL 32118

State of Florida
Department of State

I certify from the records of this office that TRAUMA SKATEBOARDS LLC, is a limited liability company organized under the laws of the State of Florida, filed electronically on October 25, 2022, effective October 25, 2022.

The document number of this company is L22000458563.

I further certify that said company has paid all fees due this office through December 31, 2022, and its status is active.

I further certify that this is an electronically transmitted certificate authorized by section 15.16, Florida Statutes, and authenticated by the code noted below.

Authentication Code: 221026160641-000396611030#1

Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this the
Twenty Sixth day of October, 2022

Cord Byrd
Secretary of State

Welcome, kkrenichen

Florida Business Tax Application

Certificate Details

The *Florida Business Tax Application* you submitted online has been **APPROVED**.

DOR Comments

Comments: NONE

Business Details

Business Name
Trauma Skateboards LLC

Business Partner Number
6810192

Business Address
440 N NOVA RD, Ormond Beach, FL, US, 32174-9498

Certificate/Account Numbers

Reemployment Tax Employer Account Number
3925419

Sales & Use Tax Certificate Number
74-8018954734-4

e-Services Enrollment User ID & Password
Receive by mail or call

You will receive certificates of registration or other official notification by mail within ten days. If you registered for *Sales And Use Tax* or *Communications Services Tax* and need to make resale purchases before receipt of certificates, your suppliers may use the Department's resale certificate verification system here (https://verify-taxcerts.floridarevenue.com/) or may call 877-FL RESALE (877-357-3725 (tel:8773573725)) to obtain a transaction authorization code for your resale purchases.

Service Center

If you require further assistance, you may call or visit your local taxpayer service center:

Daytona Beach Service Center
1180 N Williamson Blvd Ste 160
Daytona Beach, FL 32114-8179
386-274-6600 (tel:386-274-6600)

- If you did not enroll in the e-Services program to file and pay taxes electronically when you registered, you may wish to do so. Learn more about e-Services here (https://floridarevenue.com/taxes/eservices).
- A start-up kit for new business owners (http://floridarevenue.com/dor/businesses/newbusiness_startup.html) is available for you to view, download or print.
- If you are interested in becoming a Florida Lottery Retailer, learn more here (https://www.flalottery.com/site/retailers.do)

You may also call Taxpayer Services at 850-488-6800 (tel:). Telephones are staffed from 8:00 a.m. to 5:00 p.m., ET, Monday through Friday.

Print Page | Close Page

© 2022 Florida Department of Revenue

5050 West Tennessee Street, Tallahassee, FL 32399

IRS DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
CINCINNATI OH 45999-0023

Date of this notice: 11-03-2022

Employer Identification Number:
92-0920926

Form: SS-4

Number of this notice: CP 575 A

TRAUMA SKATEBOARDS LLC
KEITH KRENICHEN SOLE MBR
935 S ATLANTIC AVE UNIT 136
DAYTONA BEACH, FL 32118

For assistance you may call us at:
1-800-829-4933

IF YOU WRITE, ATTACH THE
STUB AT THE END OF THIS NOTICE.

WE ASSIGNED YOU AN EMPLOYER IDENTIFICATION NUMBER

Thank you for applying for an Employer Identification Number (EIN). We assigned you EIN 92-0920926. This EIN will identify you, your business accounts, tax returns, and documents, even if you have no employees. Please keep this notice in your permanent records.

Taxpayers request an EIN for their business. Some taxpayers receive CP575 notices when another person has stolen their identity and are opening a business using their information. If you did **not** apply for this EIN, please contact us at the phone number or address listed on the top of this notice.

When filing tax documents, making payments, or replying to any related correspondence, it is very important that you use your EIN and complete name and address exactly as shown above. Any variation may cause a delay in processing, result in incorrect information in your account, or even cause you to be assigned more than one EIN. If the information is not correct as shown above, please make the correction using the attached tear-off stub and return it to us.

Based on the information received from you or your representative, you must file the following forms by the dates shown.

Form 940	01/31/2024
Form 944	01/31/2024

If you have questions about the forms or the due dates shown, you can call us at the phone number or write to us at the address shown at the top of this notice. If you need help in determining your annual accounting period (tax year), see Publication 538, *Accounting Periods and Methods*.

We assigned you a tax classification (corporation, partnership, etc.) based on information obtained from you or your representative. It is not a legal determination of your tax classification, and is not binding on the IRS. If you want a legal determination of your tax classification, you may request a private letter ruling from the IRS under the guidelines in Revenue Procedure 2020-1, 2020-1 I.R.B. 1 (or superseding Revenue Procedure for the year at issue). Note: Certain tax classification elections can be requested by filing Form 8832, *Entity Classification Election*. See Form 8832 and its instructions for additional information.

IMPORTANT INFORMATION FOR S CORPORATION ELECTION:
If you intend to elect to file your return as a small business corporation, an election to file a Form 1120-S, U.S. Income Tax Return for an S Corporation, must be made within certain timeframes and the corporation must meet certain tests. All of this information is included in the instructions for Form 2553, Election by a Small Business Corporation.

If you are required to deposit for employment taxes (Forms 941, 943, 940, 944, 945, CT-1, or 1042), excise taxes (Form 720), or income taxes (Form 1120), you will receive a Welcome Package shortly, which includes instructions for making your deposits electronically through the Electronic Federal Tax Payment System (EFTPS). A Personal Identification Number (PIN) for EFTPS will also be sent to you under separate cover. Please activate the PIN once you receive it, even if you have requested the services of a tax professional or representative. For more information about EFTPS, refer to Publication 966, *Electronic Choices to Pay All Your Federal Taxes*. If you need to make a deposit immediately, you will need to make arrangements with your Financial Institution to complete a wire transfer.

The IRS is committed to helping all taxpayers comply with their tax filing obligations. If you need help completing your returns or meeting your tax obligations, Authorized e-file Providers, such as Reporting Agents or other payroll service providers, are available to assist you. Visit www.irs.gov/mefbusproviders for a list of companies that offer IRS e-file for business products and services.

IMPORTANT REMINDERS:

* Keep a copy of this notice in your permanent records. This notice is issued only one time and the IRS will not be able to generate a duplicate copy for you. You may give a copy of this document to anyone asking for proof of your EIN.

* Use this EIN and your name exactly as they appear at the top of this notice on all your federal tax forms.

* Refer to this EIN on your tax-related correspondence and documents.

* Provide future officers of your organization with a copy of this notice.

Your name control associated with this EIN is TRAU. You will need to provide this information along with your EIN, if you file your returns electronically.

Safeguard your EIN by referring to Publication 4557, Safeguarding Taxpayer Data: A Guide for Your Business.

You can get any of the forms or publications mentioned in this letter by visiting our website at www.irs.gov/forms-pubs or by calling 800-TAX-FORM (800-829-3676).

If you have questions about your EIN, you can contact us at the phone number or address listed at the top of this notice. If you write, please tear off the stub at the bottom of this notice and include it with your letter.

Thank you for your cooperation.

(IRS USE ONLY) 575A 11-03-2022 TRAU B 9999999999 SS-4

Keep this part for your records. CP 575 A (Rev. 7-2007)

Return this part with any correspondence
so we may identify your account. Please
correct any errors in your name or address.

CP 575 A

9999999999

Your Telephone Number
( ) -
_____

Best Time to Call
_____

DATE OF THIS NOTICE: 11-03-2022
EMPLOYER IDENTIFICATION NUMBER: 92-0920926
FORM: SS-4 NOBOD

INTERNAL REVENUE SERVICE
CINCINNATI OH 45999-0023

TRAUMA SKATEBOARDS LLC
KEITH KRENICHEN SOLE MBR
935 S ATLANTIC AVE UNIT 136
DAYTONA BEACH, FL 32118

My Dashboard

Permits
Apply / New Permit
Search Permit
Pay Fees

Projects
Apply for New Project
Search Projects
Pay Fees

Contractor
Search Contractors

Properties
Search Property

Inspections
Schedule
Cancel
Scheduled

License
Apply for New Licenses
Search Licenses
Pay Fees

Code Cases
Search
Pay Fees

Issues & Violations
Report Issue
Search Issues

Shopping Cart
Pay All Fees
Paid Items

Contact
Contact us

Payment Summary

This is your receipt
The Transaction is Approved
Credit Card number: **** **** **** 5449
Authorization Code: 863600195
Receipt No: WEB-48547
Paymethod:CREDIT

Paid Date: 12/22/2022

LICENSE	**BT-82508**	**935 S Atlantic Ave DAYTONA BEACH, FL 32118**	
		BUSINESS SERVICE	$70.00
		SUB TOTAL:	**$70.00**
TOTAL AMOUNT PAID:			**$70.00**

PRINT SUMMARY

Name: Keith Krenichen
Address: 935 S. Atlantic Ave #136
City, State, Zip: Daytona Beach, FL 32118
Phone: (386) 334-6045
Email: kkrenichen@gmail.com

Notes:
Public or Contractor login is required before making payments or scheduling.
Contractors must register their license with **Volusia County** before using this site.

Permits:
Construction permit applications are available to Contractor Logins only.
Garage Sale permit applications are available to Public Registration Logins only.
Permits must have an APPROVED or ISSUED status before paying fees or scheduling inspections.

Licenses:
Business license applications are available to Public or Contractor logins.
Upload required documents and certificates when applying online. Your dashboard will show license application status.

Public Registration users can link their permit(s), project(s), and license(s) to their login username for Dashboard display.

Click the Forgot Password/Username link to have login information sent to registered email address.
If you need assistance, please use the **CONTACT** link at bottom right side to send us an email. Be sure to include your record ID (license, permit, etc.) in the message. You will receive a reply back during business hours.

The City of Daytona Beach, Florida makes every effort to produce and publish the most current and accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use, or its interpretation. Utilization of this website indicates understanding and acceptance of this statement.

THE CITY OF DAYTONA BEACH

DEVELOPMENT SERVICES DEPARTMENT
PERMITS & LICENSING DIVISION
301 S. RIDGEWOOD, SUITE # 127
DAYTONA BEACH, FL 32114
Phone: 386-671-8140

LOCAL BUSINESS TAX RECEIPT # BT-82508

Business Name:	Trauma Skateboards LLC	BT-82508	Bus Lic No.
Business Location:	935 S Atlantic Ave 136	**9/30/2023**	Valid To
Business Type:	BUSINESS SERVICE	UNDER REVIEW	Status
License Notes:	State License # L22000458563	12/22/2022	Date Paid

Fee Code *Description*

Mail To: Trauma Skateboards LLC
935 S Atlantic Ave 136
DAYTONA BEACH FL 32118

2023

LOCAL BUSINESS TAX RECEIPT

DISPLAY AT PLACE OF BUSINESS FOR PUBLIC INSPECTION
THE CITY DOES NOT CERTIFY OR IMPLY COMPETENCE OF BUSINESS.

CONTACT INFORMATION

Bus Owner:	**Keith Krenichen kkrenichen@gmail.com**	Phone:	**(386) 334-6045**
Mailing Addr:	**935 S. Atlantic Ave., Unit 136 DAYTONA BEACH FL 32118**	Fax:	

LAST PAYMENT INFORMATION

Fee Code	*Description*	*Reference*	*Amt Paid*	*Date Paid*	*Pay Method*
0260	BUSINESS SERVICE		70.00	12/22/2022	CREDIT

Fees Paid: **$70.00**
Receipt #: **WEB-48547**

RFP Evaluation Summary

Project: Management and Operation of the Nova Skate Court Concession

Recommendation of Award: Trauma Skateboards LLC
(once all vendor requirements meet)

RFP Number: 2023-07

Date & Time: January 27, 2023 10:00AM

The RFP's were scored on the following criteria:

Qualifications and experience (20 pts Max)
Vision/Business Plan/Marketing (15 pts Max)
Monthly subsidy, if any (25 pts Max)
Operational hours as shown (15 pts Max)
References (20 pts Max)
Licensing/Insurance (5 pts Max)

Summary

Firm	Bill	Lori	Marc	Qualifications and Experience 60 pts max	Bill	Lori	Marc	Vision Business Plan Marketing 45 pts max	Bill	Lori	Marc	Monthly subsidy 75 pts max	Bill	Lori	Marc	Operational hours 45 pts max	Bill	Lori	Marc	References 60 pts max	Bill	Lori	Marc	Licensing and Insurance 15 pts max	Total 300 pts max	Rank based on points
Trauma Skateboards, LLC	15	20	16	51	10	15	12	37	15	23	5	43	15	14	10	39	15	20	16	51	2	4	5	11	232	1

Bill Total Points	Lori Total Points	Marc Total Points
72	96	64



Rob Hart

Purchasing Coordinator



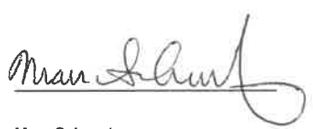
Bill Rose

Contracts Manaager



Lori Koplin

Nova Community Center Coordinator



Marc Schwartz

Performing Arts Center Supervisor

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.J
Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Public Safety – Other		
Department :	Public Works - Engineering		
Subject:	Intent to Bid - CDBG - North Ridgewood Ave. East Side Sidewalk Improvements		
Budget Impact:	Funding for this project will be derived from CDBG funds. Funds in the amount of $149,403 are available from CDBG Fiscal Year 2022-2023.		
Summary:	The proposed project will replace a heavily used sidewalk by the neighborhood and school children with a new 5' foot ADA-compliant sidewalk.		
Recommended Action:	The City intends to publicly advertise the CDBG North Ridgewood Avenue East Side Sidewalk Improvements for competitive bidding unless otherwise directed by the City Commission.		
Staff Contact:	Shawn Finley, Public Works Director, (386) 676-3292		

Approval:

Kelly McGuire, Finance Director	2/28/2023	Kelly A. McGuire
Claire Whitley, Assistant City Manager	3/6/2023	
Joyce Shanahan, City Manager	3/14/2023	Joyce Shanahan

CITY OF ORMOND BEACH

22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Shawn Finley, Public Works Director

Date: March 21, 2023

Subject: Intent to Bid - CDBG - North Ridgewood Ave. East Side Sidewalk Improvements

Commission Goal: Public Safety – Other

Introduction

This disposition item provides public notice of the City's intent to advertise for competitive bidding for the Community Development Block Grant (CDBG) North Ridgewood Avenue East Side Sidewalk Improvements, 2023-12.

Background

On January 10, 2023, with the approval of Resolution 2023-17, the City Commission approved the Subrecipient Agreement with Volusia County for CDBG Fiscal Year 2022-2023 funding which included the North Ridgewood Avenue Sidewalk Improvements as a Department of Housing and Urban Development (HUD) approved eligible activity.

Discussion

The North Ridgewood Avenue East Side Sidewalk Improvements work consists of removing an existing 4' foot non-ADA deteriorated concrete sidewalk and replacing it with a new 5' foot ADA compliant concrete sidewalk, including ADA compliant detectable mats and curbing in strict accordance with the Americans with Disabilities Act (ADA) requirements on the east side of North Ridgewood Avenue from Hernandez Avenue to the south side of New Britain Avenue per the approved plans, specifications and Invitation to Bid. A bid alternate #1 section from Wilmette Avenue to Hernandez Avenue will be a part of this bid and will be included if sufficient funding is available.

Budget Impact

Funding for this project will be derived from CDBG funds. Funds in the amount of $149,403 are available from CDBG Fiscal Year 2022-2023.

Citizen Impact

The construction of this new sidewalk will have short-term impacts on the residents and general public while the project is being completed. Upon completion, it will provide safe and ADA walkability within this neighborhood.

Recommendation

The City intends to publicly advertise the CDBG North Ridgewood Avenue East Side Sidewalk Improvements for competitive bidding unless otherwise directed by the City Commission.

Attachments:

1. 32_Map_NorthRidgewood_Sidewalks
2. _2023_12_FINAL_PROJECT_MANUAL
3. FINAL_01-30-23_N_RIDGEWOOD_SIDEWALK_PLANSET

Approvals:

Kelly A. McGuire

Date: February 28, 2023

Kelly McGuire, Finance Director

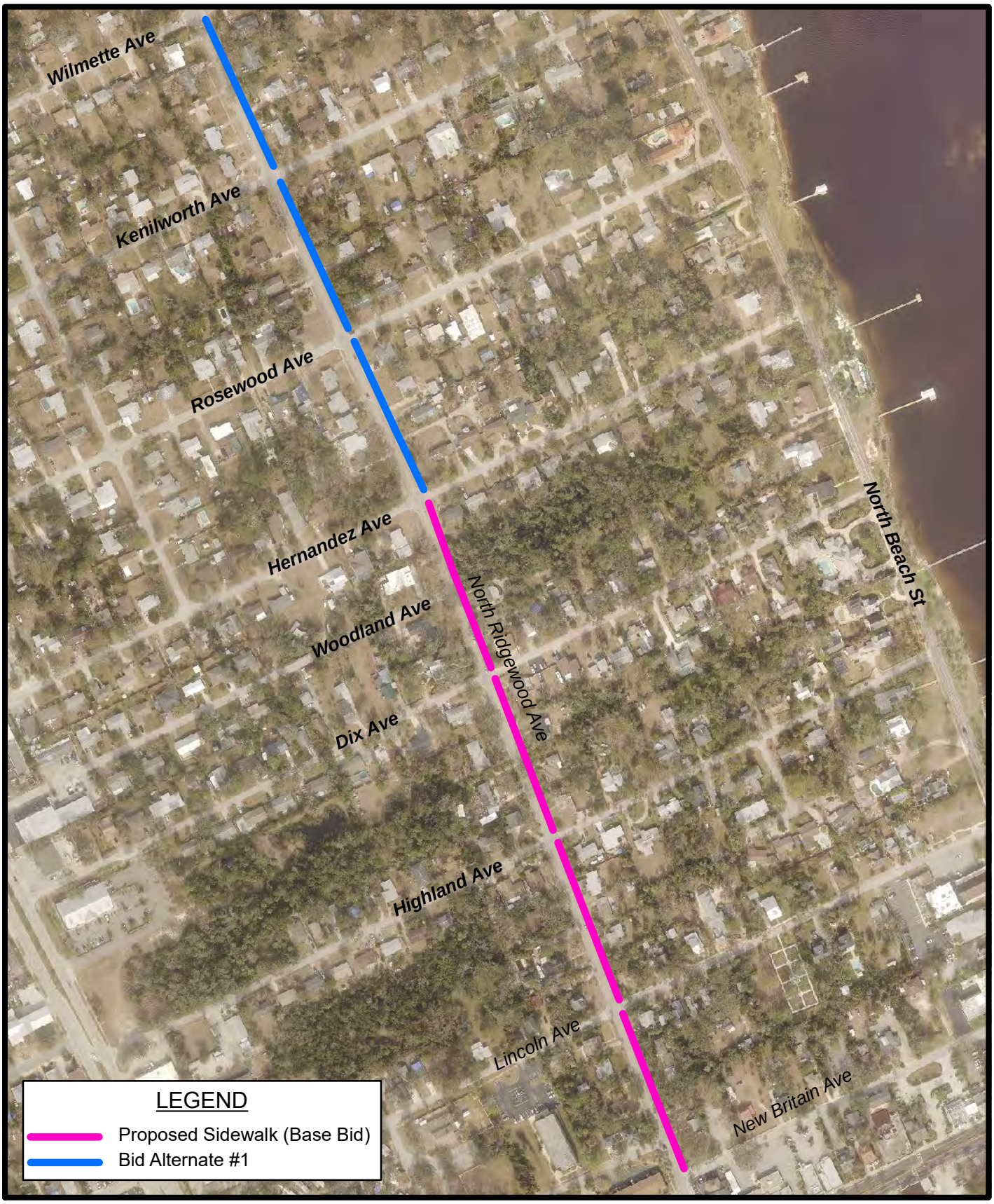
Date: March 06, 2023

Claire Whitley, Assistant City Manager

Joyce Shanahan

Date: March 14, 2023

Joyce Shanahan, City Manager



NORTH RIDGEWOOD AVE
EAST SIDE SIDEWALK
IMPROVEMENTS

Prepared By: The City of Ormond Beach
G.I.S. Department - January 10, 2023

N
W E
S

CDBG – North Ridgewood Ave East Side Sidewalk Improvements

Bid No. 2023-12

City of Ormond Beach

Project Manual

PREPARED BY:

ENGINEERING DIVISION OF PUBLIC WORKS
22 South Beach Street
Ormond Beach, Florida 32174

CDBG North Ridgewood Ave East Side Sidewalk Improvements
Ormond Beach, Florida

TABLE OF CONTENTS

Section No.	Title	Pages
	BIDDING REQUIREMENTS	
00030	Advertisement for Bid	1 - 1
00100	Instructions to Bidders	1 - 9
00300	Bid	1 - 16
00410	Bid Bond	1 - 1
	CONTRACT FORMS	
00500	Form of Agreement	1 - 5
00610	Performance Bond	1 - 2
00615	Payment Bond	1 - 2
00670	Opinion of Attorney	1 - 1
	CONDITIONS OF CONTRACT	
00700	General Conditions	1 - 35
00800	Supplementary Conditions	1 - 7
L.W.	Lien Waiver	1 - 1
	TECHNICAL SPECIFICATIONS	
	DIVISION 1 - GENERAL REQUIREMENTS	
01010	Summary of Work	1 - 5
01025	Measurement and Payment	1 - 5
01040	Coordination	1 - 1
01050	Field Engineering	1 - 1
01200	Project Meetings	1 - 1
01300	Submittals	1 - 4
01400	Quality Control	1 - 1
01500	Temporary Facilities and Controls	1 - 5
01600	Materials and Equipment	1 - 3
01630	Substitutions and Product Options	1 - 3
01700	Contract Closeout	1 - 4
01710	Final Cleaning	1 - 2

CDBG North Ridgewood Ave East Side Sidewalk Improvements

TABLE OF CONTENTS (Continued)

Section No.	Title	Pages
	DIVISION 2 – DIVISION 16	
02050	Demolition	1 - 3
02200	Earthwork	1 – 6
02210	Site Grading	1 – 1
02222	Trenching, Backfilling & Compacting	1 – 5
02801	Restoration of Surface Improvements	1 – 5
02822	Sodding	1 – 4
03300	Concrete	1 – 5
	LOCATION MAP	
Project Location Map		1 - 1
	CDBG REQUIREMENTS	
CDBG Requirements		1 – 34
Attachment A – Wage Determination		29-34
	PROJECT DRAWINGS	
CDBG – North Ridgewood Ave East Side Sidewalk Improvements (11x17 Drawings Scaled at 1"=40'-0")		1 – 16

END
TABLE OF CONTENTS

SECTION 00030
ADVERTISEMENT FOR BIDS

Sealed bids for furnishing all labor, materials and equipment necessary for constructing the **CDBG North Ridgewood Ave East Side Sidewalk Improvements, Bid No. 2023-12** for the City of Ormond Beach, Florida, will be received at the Office of the Purchasing Coordinator, City Hall, Ormond Beach, Florida, until **April 25, 2023 at 2:00 p.m**., at which time bids will be opened and publicly read aloud in the Training Room located in the breezeway between City Hall and the Public Library. Bids received after the above time and date will be returned unopened.

The work consists of removing an existing 4' foot non-ADA deteriorated concrete sidewalk and replacing it with a new 5' foot ADA compliant concrete sidewalk, including ADA compliant detectable mats and curbing in strict accordance with the American Disabilities Act (ADA) requirements on the east side of North Ridgewood Avenue from Hernandez Avenue to the south side of New Britain Avenue per the approved plans, specifications and Invitation to Bid. A bid alternate #1 section from Wilmette Avenue to Hernandez Avenue will be a part of this bid and will be included if sufficient funding is available.

All work done on the sidewalk improvements project must adhere to the **Highway Wage Determination**, FL 20230191, see **Attachment "A"** in the project manual. The work is shown on the Drawings and specified in the Project Manual.

The project Drawings, Specifications and related Bidding documents are available on-line at **www.demandstar.com**, or by calling DemandStar at (206) 940-0305. If you have difficulty obtaining these documents, please contact the City's purchasing office at (386) 676-3223.

A **pre-bid conference** to discuss the details and requirements of the contract will be held on **April 13, 2023 at 2:30 p.m**., in the Training Room at City Hall. All prospective bidders are strongly encouraged to attend. The deadline for submitting questions is **April 19, 2023 at 5:00 p.m.**

This is a federally assisted project and is subject to Federal Labor Standards which include, the Davis-Bacon Act (payment of prevailing wage rates) and the Copeland Act (anti-kickback of wages & submission of weekly certified payroll reports), as well as other provisions including 24 CFR 85.36 (bonding requirements), and Section 3 & M/WBE. Laborers and mechanics employed by primary contractors and sub-contractors performing construction work on this project shall be paid wages at rates not less than the prevailing rates as determined by the Secretary of Labor in accordance with the Davis-Bacon Act. The prime contractor is responsible for the enforcement of wage compliance and support documentation for the duration of the project and may be held liable for wage restitution. The applicable information regarding the laws and regulations stated above are included in the bid packet.

END OF SECTION

SECTION 00100
INSTRUCTION TO BIDDERS

00101. Defined Terms

Terms used in these Instructions to Bidders are defined in the General Conditions of the Construction Contract and have the meanings assigned to them in the General Conditions. The term "Successful Bidder" means the lowest, qualified, responsible Bidder to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

The OWNER for this project is:

The City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174

The ENGINEER for this project is:

The City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174

00102. Copies of Bidding Documents

2.1 The City uses the services of DemandStar (www.demandstar.com) to advertise/distribute its bids and RFP's via the internet.

2.2 Complete sets of the Bidding Documents may be obtained from the issuing office designated in the Advertisement for Bids.

2.3 Complete sets of Bidding Documents shall be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.4 OWNER and ENGINEER in making copies of Bidding Documents available, on the above terms, do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

00102.1 COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.

(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.

(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.

(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174 (386) 676-0311
CITYCLERK@ORMONDBEACH.ORG

Ref: Fla. Stat. §119.0701(2016)

00102.2 Public Records/Non-Confidentiality of Bids

The City of Ormond Beach cannot and does not warrant the confidentiality of any information submitted in response to this bid solicitation. Florida law provides that municipal records shall at all times be open for personal inspection by any person, Section 119, F.S., the Public Records Act. Information and materials received by the City of Ormond Beach in connection with responsive bids

shall be deemed to be public records subject to public inspection upon award, recommendation of award, or 30 days after bid opening, whichever occurs first.

00103. Qualifications of Bidders

To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit, within seven days after the OWNER's request, written evidence of his ability to perform the work, such as financial data, previous experience, and evidence of authority to conduct business in the jurisdiction where the Project is located. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.

00104. Public Entity Crimes:

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Proposal on a contract to provide any goods or services to a public entity, may not submit a Proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit Proposals on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

4.1 Discrimination Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

00105. Examination of Contract Documents and Site

5.1 Before submitting a Bid, each Bidder must (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, (c) familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work; and (d) study and carefully correlate Bidder's observations with the Contract Documents.

5.2 Reference is made to the Supplementary Conditions for the identification of those reports of investigations and tests for subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by ENGINEER in preparing the Drawings and Specifications. OWNER will make such reports available for inspection to any Bidder or copies may be obtained from the ENGINEER by the Bidder at reproduction cost. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract

Documents. Before submitting his Bid each Bidder will, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

5.3 On request OWNER will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid. Bidders making such investigations shall return site to original condition and shall pay for any damages resulting therefrom.

5.4 The lands upon which the Work is to be performed, rights-of-way for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Supplementary Conditions, General Requirements, or Drawings.

5.5 The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 4 and that the Contract Documents are sufficient in Scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

00106. Clarification/Correction of Proposal

The City of Ormond Beach reserves the right to allow for the clarification of questionable entries and for the correction of obvious mistakes.

00107. Interpretations

All questions about the meaning or intent of the Contract Documents shall be submitted in writing to the Purchasing Coordinator via email to Rob.Hart@ormondbeach.org. Replies will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

00108. Minority Policies

The City of Ormond Beach, Florida, encourages the full participation of Disadvantaged and Women Business Enterprises (D&WBE) in the provision of goods and services.

00109. Bid Security

9.1 Bids shall be accompanied by a Bid Security. The Security shall be made payable to OWNER, in the amount of five percent (5%) of the total bid, and in the form of a certified or cashier's check or a Bid Bond issued by a Surety meeting the requirements of paragraph 5.1 of the General Conditions. The Bid Security shall be irrevocable after the time and date set for the opening of bids, and for a period of ninety (90) days thereafter.

9.2 The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required Contract Security, whereupon it will be returned; if the successful Bidder fails to execute and deliver the Agreement and furnish the required Contract Security within fifteen (15) days of the Notice of Award, OWNER may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of any Bidder whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the seventh day after the "effective date of the Agreement" or the first day after the expiration of the period that Bids are specified to remain open in the Advertisement for Bids. Bid Security of other Bidders will be returned within seven (7) days of the Bid opening.

00110. Contract Time

The number of days within which, or the date by which, the Work is to be completed (the Contract Time) is set forth in the Bid Form and will be included in the Agreement.

00111. Liquidated Damages

Provisions for liquidated damages, if any, are set forth in the Bid Form and Agreement.

00112. Subcontractors

12.1 If the Supplementary Conditions, Bid Form and/or Specifications require the identity of certain subcontractors to be submitted to the OWNER with the bid, the bidder will list in his bid all subcontractors proposed for those portions of the work for which such identification is so required. When requested, an experience statement, pertinent information as to similar projects satisfactorily completed and other evidence of qualifications for each listed subcontractor shall be submitted within seven (7) days after the bid. If the OWNER after due investigation has reasonable objection to any proposed subcontractor, OWNER may before giving the Notice of Award request the apparent low bidder to submit an acceptable substitute without an increase in his bid price. If the apparent Successful Bidder declines to make any such substitution, the contract shall not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any Subcontractor so listed and to whom OWNER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER.

12.2 In contracts where the Contract Price is on the basis of Cost-of-the-Work Plus a Fee, the apparent Successful Bidder, prior to the Notice of Award, shall identify in writing to OWNER those portions of the Work that such Bidder proposes to subcontract and after the Notice of Award may only subcontract other portions of the Work with OWNER's written consent.

00113. Material and Equipment List (Manufacturers)

If the Supplementary Conditions, Bid Form and/or Specifications require the identity of certain material and equipment manufacturers be submitted to the OWNER with the bid, the bidder will list in his bid all material and equipment manufacturers proposed for those portions of the work for which such identification is so required. Such list shall be supplemented by product descriptions for each listed material and equipment item. Supplemental information will be submitted with the bid

unless it has been prefiled with the ENGINEER. In this latter case, the bid shall state that the information has been prefiled. Equipment manufacturers/suppliers must agree to OWNER'S terms of purchase. In no event will OWNER accept terms of sale that limit OWNER'S ability to reasonably recover in the event of equipment failure/defect such as, but not limited to; mandatory arbitration clauses, venue of court proceedings and applicable law outside of Volusia County, Florida, or damage limitations that preclude recovery for failed or defective equipment that would be less than full compensation for OWNER's loss. If the OWNER after due investigation has reasonable objection to any proposed material or equipment item, OWNER may before giving the Notice of Award request the apparent low bidder to submit an acceptable substitute without an increase in his bid price. If the apparent Successful Bidder declines to make any such substitution, the contract may not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any material or equipment manufacturer so listed and to whom OWNER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER. This acceptance of a material or equipment manufacturer does not relieve the CONTRACTOR from the responsibility of submitting shop drawings in accordance with Section 01300 before incorporating said material and/or equipment into the Work.

00114. Material and Equipment Substitutions

Excluding items called for in the bidders Equipment and Subcontractors List in the Bid, Section 00300, whenever it is indicated on the Drawings or specified in the Specifications that a substitute or "or equivalent" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the "effective date of the Agreement". The procedure for submittal of any such application by CONTRACTOR and consideration by ENGINEER is set forth in Section 01630 - Substitutions and Product Options.

00115. Bid Form

15.1 Bids shall be submitted on standard forms which are furnished in this Project Manual.

15.2 Bid Forms must be completed in ink or by typewriter. All blank spaces must be filled. Where indicated on the Bid Form, the Bid price of each item on the form must be stated in words and numerals; in case of a conflict, words will take precedence.

15.3 The estimate of the various quantities of work applicable to unit price items as shown on the Bid Form is approximate and is intended solely to provide the basis of comparison upon which the award of contract is made. Final payment will be made on the basis of the actual completed quantities of each item.

15.4 Bids by corporations must be executed in the corporate name by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

15.5 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

15.6 Bids by a Joint Venture must be executed by all individuals, Partners, or Corporations interested in the Joint Venture in the same manner that bids by these separate entities are required to be executed.

15.7 All names must be typed or printed below the signature.

15.8 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).

15.9 The address to which communications regarding the Bid are to be directed must be shown.

15.10 Only one bid from any individual, firm, partnership or corporation under the same or different names, will be considered. Should it appear to the OWNER that any Bidder is interested in more than one bid, all bids in which such Bidder is interested will be rejected.

00116. Submission of Bids

Bids shall be submitted at the time and place indicated in the Advertisement for Bids and shall be included in an opaque sealed envelope, marked with the Bid Number, Project Title, and Bidder's Name and Address, accompanied by the Bid Security and other required documents. Include one (1) original bid form and (1) electronic file (thumb/flash drive or CD). If the Bid is sent through the mail or other delivery system, the sealed Bid shall be sent in a separate envelope with the notation "BID ENCLOSED" as well as the Bid Number, Project Title, and Bid Opening Date clearly displayed on the shipping envelope/package.

Submit bids to:

City of Ormond Beach
Purchasing Coordinator
22 South Beach Street
Ormond Beach, FL 32174

00117. Modification and Withdrawal of Bids

Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

00118. Opening of Bids

Bids will be opened publicly and read aloud and an abstract of the amounts of the base Bids and major alternates (if any) will be made available after the opening of Bids.

00119. Bids to Remain Open

All Bids shall remain open for ninety (90) days after the day of the Bid opening, but OWNER may, in his sole discretion, release any Bid and return the Bid Security prior to that date.

00120. Award of Contract

20.1 OWNER reserves the right to reject any and all Bids, to waive any and all informalities and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, nonresponsive or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated product of quantities and unit prices and the correct product thereof will be resolved in favor of the correct product. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

20.2 In evaluating Bids, OWNER shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and alternates and unit prices if requested in the Bid forms. It is OWNER's intent to accept alternates (if any are accepted) in the order in which they are listed in the Bid form but OWNER may accept them in any order or combination.

20.3 OWNER may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items or material or equipment) proposed for those portions of the Work as to which the identity of Subcontractors and other persons and organizations must be submitted as provided in the Supplementary Conditions. Operating costs, maintenance considerations, performance data and guarantees of materials and equipment may also be considered by OWNER.

20.4 Irregular bids may be rejected. Irregular bids are defined as those containing serious omissions, unauthorized alternative bids, incomplete bids or unbalanced bids. Failure to provide all of the information required to accompany the bid will be considered to be a serious omission.

20.5 OWNER may conduct such investigations as he deems necessary to assist in the evaluation of any Bid.

20.6 OWNER reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to OWNER's satisfaction.

20.7 If the contract is to be awarded it will be awarded to the lowest responsible Bidder whose evaluation by OWNER indicates that the award will be in the best interests of the Project. The low bid will be based on the total cost of the Base Bid and, when applicable, any Additive or Deductive Alternates that are to be included in the Contract, as decided by the OWNER.

20.8 If the contract is to be awarded, OWNER will give the Successful Bidder a Notice of Award within the number of days after the day of the Bid opening specified in the Advertisement for Bids to remain open.

00121. Performance and Other Bonds

Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth OWNER's requirements as to performance and other Bonds. When the Successful Bidder delivers the executed Agreement to OWNER it shall be accompanied by the required Contract Security.

00122. Signing of Agreement

When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by at least five (5) unsigned counterparts of the Agreement and all other Contract Documents. Within ten (10) days thereafter CONTRACTOR shall sign all and deliver at least five (5) counterparts of the Agreement to OWNER with other Contract Documents attached. Within ten (10) days thereafter OWNER will deliver fully signed counterparts to CONTRACTOR.

00123. Special Requirements

23.1 Financing. Funds will be available for payment of estimate draws as they become due.

23.2 Prohibited Interests. No official of the OWNER who is authorized in such capacity, and on behalf of the OWNER to negotiate, make, accept or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project shall become directly or indirectly interested, personally, in this Contract or in any part thereof. No officer, employee, architect, attorney, engineer, or inspector of or for the OWNER who is authorized in such capacity and on behalf of the OWNER to exercise legislative, executive, supervisory, or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally, in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

23.3 Performance of Work by CONTRACTOR:

Contract Assignment. The successful Bidder (or Bidders) will be required to perform the work as a prime contractor.

The CONTRACTOR shall not sublet, sell, transfer, assign or otherwise dispose of the contract or any portion thereof, or of his right, title or interest therein, without written consent of the OWNER.

This is a federally assisted project and is subject to the Fair Labor Standards Act, which include Davis-Bacon (Certified Payroll), 24 CFR 85.36 (bonding requirements), Section 3 & M/WBE and related acts. Laborers and mechanics employed by general contractors and subcontractors performing construction work on this project shall be paid wages at rates not less than the prevailing rates as determined by the Secretary of Labor in accordance with the Davis-Bacon Act. The prime contractor is responsible for the enforcement of wage compliance and support documentation for the duration of the project and may be held liable for wage restitution. The applicable information regarding the laws and regulations stated above are included in the bid packet.

END OF INSTRUCTION TO BIDDERS

SECTION 00300
BID

CONTRACTORS NAME _____ LICENSE NO. _____

PROJECT IDENTIFICATION: **CDBG – NORTH RIDGEWOOD AVE. EAST SIDE SIDEWALK IMPROVEMENTS**

CONTRACT IDENTIFICATION AND NUMBER: Bid No. **2023-12**

THIS BID IS SUBMITTED TO:
(Name and Address of Owner)

City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

2. BIDDER certifies that he has investigated the requirements to do business in the jurisdiction where the project is located, and that he is either qualified to do business or will obtain such prequalification prior to award of the contract.

3. BIDDER accepts all of the terms and conditions of the Instructions to Bidders (Section 00100) including, without limitation, those dealing with the disposition of Bid Security, Public Entity Crimes, and Minority Policies. This Bid will remain open for 90 days after the day of Bid opening. BIDDER will sign the Agreement and submit the Contract security and other documents required by the Contract Documents within ten (10) days after the date of OWNER'S Notice of Award.

4. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

(a) BIDDER has examined copies of all the Contract Documents and of the following addenda:

Date	Number
_____	_____
_____	_____
_____	_____
_____	_____

(receipt of all of which is hereby acknowledged) and also copies of the Advertisement to Bid and the Instructions to Bidders;

(b) BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as BIDDER deems necessary.

(c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER; and

5. BIDDER will complete the Work for the following price(s):

BID SCHEDULE

Item No.	Description	Unit	Total Estimated Price
1.	Demolition from Hernandez to New Britain Avenue for Existing 4' Sidewalk, Driveway Aprons, Asphalt, concrete pavers & curbing *Approximately 7,490 SF, 646 SF & 122 LF Curbing* Includes Removal and Disposal	LS	$_____
2.	Install from Hernandez to New Britain Avenue 5' ADA Compliant Sidewalk at 4" depth *Approximately 8,162 SF* Includes – Layout, Excavation, Compacted Base, 4" - 3,000 PSI Concrete Complete Restoration (including Bahia sod)	LS	$_____
3.	Install from Hernandez to New Britain Avenue Right of Way Driveway Aprons at 6" depth *Approximately 1,873 SF* Includes – Layout, Excavation, Compacted Base, 6" - 3,000 PSI Concrete Complete Restoration (including Bahia sod)	LS	$_____
4.	Install from Hernandez Avenue to New Britain Avenue for ADA Compliant Curbing Modifications *Approximately 172 LF* Includes – Layout, Excavation, Compacted Base, 4" - 3,000 PSI Concrete Complete Restoration (including Bahia sod)	LS	$_____

5.	Install Eleven (11) ADA Detectable Warning Mats (FDOT Approved) from Hernandez Avenue to New Britain	LS	$_____

TOTAL BASE BID $_____
(Figures)

_____
(Words)

*** Bidder is responsible to verify all takeoffs as this is a lump sum bid. Bid in accordance with the plans, scope and specifications.**

BID ALTERNATE 1:

1.	Demolition from Wilmette to Hernandez Avenue for Existing 5' Sidewalk & Curb Modifications (See Detail B) *Approximately 200 SF for Sidewalk & 50 LF for curbing * Includes Removal and Disposal	LS	$_____
2.	Demolition from Wilmette to Hernandez Avenue for Existing 5' Sidewalk Cracked Panels *Approximately 377 SF* Includes Removal and Disposal	LS	$_____
3.	Install Wilmette to Hernandez Avenue for 5' ADA Sidewalk at 4" depth & Curb Modifications (See Detail B) *Approximately 200 SF for Sidewalk & 50 LF for curbing * Includes – Layout, Excavation, Compacted Base, 4" - 3,000 PSI Concrete Complete Restoration (including Bahia sod)	LS	$_____
4.	Install Wilmette to Hernandez Avenue for 5' Sidewalk Cracked Panel Replacement *Approximately 377 SF* Includes – Layout, Excavation, Compacted Base, 4" - 3,000 PSI Concrete Complete Restoration (including Bahia sod)	LS	$_____
5.	Install Five (5) ADA Detectable Warning Mats (FDOT Approved) from Wilmette to Hernandez Avenue	LS	$_____

TOTAL BID ALTERNATE 1 $_____
(Figures)

_____
(Words)

*** Bidder is responsible to verify all takeoffs as this is a lump sum bid. Bid in accordance with the plans, scope and specifications.**

TOTAL FOR BASE BID: **$**_____

TOTAL BID ALTERNATE 1: **$**_____

GRAND TOTAL FOR BASE BID & BID ALTERNATE 1: **$**_____

Scope of Work

The work consists of removing an existing 4' foot non-ADA deteriorated concrete sidewalk and replacing it with a new 5' foot ADA compliant concrete sidewalk, 4" – 3,000 PSI concrete for sidewalks & & 6" – 3,000 PSI concrete for driveway aprons, including ADA compliant detectable mats and curbing in strict accordance with the American Disabilities Act (ADA) requirements on the east side of North Ridgewood Avenue from Hernandez Avenue to the south side of New Britain Avenue per the approved plans, specifications and Invitation to Bid. A bid alternate #1 section from Wilmette Avenue to Hernandez Avenue will be a part of the bidding process. The sidewalk in this section is in good shape and is 5' wide but it lacks ADA compliant detectable mats and curbing. This bid alternate #1 would include the modification of the sidewalk/curbing and adding detectable mats. If sufficient funding is available, this section will be included. All excavated material must be removed from the project sites. The City will also be responsible to contract with a material testing company but the contractor responsibility to coordinate with them to do the testing. Contractor is responsible to layout/ stake all proposed improvements for City approval **prior** to construction**. Note: Proposed cross-slopes can't exceed 2%, and running slopes must be less than 5%. All new concrete will be flush with; or feathered into existing grade as to not create tripping hazards.**

This is a federally assisted project and is subject to Federal Labor Standards which include, the Davis-Bacon Act (payment of prevailing wage rates) and the Copeland Act (anti-kickback of wages & submission of weekly certified payroll reports), as well as other provisions including 24 CFR 85.36 (bonding requirements), and Section 3 & M/WBE. Laborers and mechanics employed by primary contractors and sub-contractors performing construction work on this project shall be paid wages at rates not less than the prevailing rates as determined by the Secretary of Labor in accordance with the Davis-Bacon Act. The prime contractor is responsible for the enforcement of wage compliance and support documentation for the duration of the project and may be held liable for wage restitution. The applicable information regarding the laws and regulations stated above are included in the bid packet.

BIDDER acknowledges that the quantities are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents.

BIDDER agrees that the Work will be substantially completed within **90** calendar days after the date when the Contract Time commences to run, and completed within **120** calendar days after the date when the Contract Time commences to run.

BIDDER recognizes that time is of the essence to complete this Project and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The BIDDER also recognize the delays, expense and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by OWNER if the Work is not substantially complete

on time. Accordingly, instead of requiring any such proof, OWNER has determined and BIDDER agrees to accept that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER **Three Hundred Dollars ($300.00)** for each calendar day that expires after the time specified above for substantial completion until the Work is substantially complete. After substantial completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified above for completion and readiness for final payment or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining work. In the event the CONTRACTOR is terminated or abandons the work prior to the scheduled date for final completion, the CONTRACTOR may be liable for both liquidated damages attributable to delay and for excess completion costs.

6. The following documents are attached to and made a condition of this Bid:

   (a) Required Bid Security in the form of

   (1) a certified check drawn in favor of the City of Ormond Beach in the amount of 5 percent of the total bid; or

   (2) a Bid Bond in the amount of 5 percent of the total bid.

   (b) Equipment, Material, and Subcontractors List

   (c) All information required by the Trench Safety Act (Part VI, Chapter 553, Florida Statutes).

   (d) Drug Free Workplace Certificate

   (e) Conflict, Non-Conflict of Interest, Litigation Statement

   (f) Verification of Employment Status Using E-Verify System

   (g) **CDBG Requirements and Supplemental Conditions**

7. Communications to the BIDDER concerning this Bid shall be addressed to:

Mailing Address: _____
Street Address: _____
City, State, Zip Code: _____
Email: _____
Telephone No.: _____ Fax No.: _____

8. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract DOCUMENTS have the meanings assigned to them in the General Conditions.

SUBMITTED on _____, 20 ___.

If BIDDER is:

An Individual

By _____
(Individual's Name - Signature)

_____ (SEAL)
(Individual's Name - Typed or Printed)

doing business as _____

Business address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Partnership

By _____ (SEAL)
(Firm Name)

_____
(General Partner - Signature)

_____
(General Partner - Typed or Printed)

Business Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Corporation

By _____
(Corporation Name)

_____
(State of Incorporation)

By _____
(Name of Person Authorized to Sign - Signature)

_____
(Name of Person Authorized to Sign - Typed or Printed)

_____
(Title)

(Corporate Seal)

Attest _____

Business address: _____

_____

_____

Phone No.: _____

Fax No.: _____

If BIDDER is:

A Joint Venture

By _____
(Name - Signature)

_____
(Name - Typed or Printed)

Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

By _____
(Name - Signature)

_____
(Name - Typed or Printed)

Address: _____

_____

_____

Phone No.: _____

Fax No.: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

EQUIPMENT AND SUBCONTRACTORS LIST

List the names of the manufacturers whose product is proposed for use. No more than one manufacturer's name shall be inserted for each item of material and/or equipment listed. Failure to list materials and equipment supplier may result in the Bid being rejected as incomplete and nonresponsive. If any Subcontractors are proposed to be used for any portions of the Work, the names, addresses, phone numbers and work classifications of each such Subcontractor must be listed. The failure to list all Subcontractors proposed for the work may result in the Bid being rejected as incomplete and nonresponsive. If more than one manufacturer or subcontractor is listed, selection will be made by the OWNER. If none is listed, those listed as the "Basis for Design" will be used.

Materials and Equipment:

Item	Supplier
Form Boards	
Limerock Base (as needed)	
3,000 PSI Concrete	
ADA Mats (FDOT Approved)	
Bahia Sod	

The City of Ormond Beach reserves the right to require any bidder to submit such evidence of qualifications as it may deem necessary and may consider evidence available concerning the financial and other qualifications and abilities of a Contractor. Failure to provide all required information may result in the proposal being **rejected** as nonresponsive. The minimum qualifications for this project are as follows:

1. The contractor must have a minimum five (5) years experience installing projects of a similar scope in nature with verifiable references in the following areas:

Contractor References

Municipal Projects

Project Name / City and State	Contact Information
1.	
2.	
3.	

Concrete Sidewalks and/or Parking

Project Name / City and State | Contact Information

1._____ _____

2._____ _____

3._____ _____

Projects Exceeding $75K as Prime Contractor

Project Name / City and State | Contact Information

1._____ _____

2._____ _____

3._____ _____

Subcontractors:

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

Work Classification: _____

Name: _____

Address: _____

Phone Number: _____ Fax Number: _____

TRENCH SAFETY STANDARDS

If this project includes trench excavation in excess of five (5) feet in depth, the following trench safety standards will be in effect during the period of construction of the project:

The Occupational Safety and Health Administration's excavation safety standards, 29 C.F.R.s. 1926.650 Subpart P, and any regulation promulgated there under are hereby incorporated as the standard for this project.

The Bidder hereby certifies that the Contractor performing the trench excavation will comply with the applicable trench safety standards.

The Bidder further certifies that the cost (which is included in his unit cost) of compliance with applicable trench safety standards is:

ITEM	Estimated Quantity	Units	Unit Price	Total Estimated Price
1. Trench Excavation	_____	L.F.	_____	_____
2. Sheeting/Shoring	_____	S.F.	_____	_____

_____
Name (signature) Date

_____
Name (typed or printed)

_____
Title

DRUG-FREE WORKPLACE CERTIFICATION

Identical Or "Tie" Bids: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

_____
Name (signature) Date

_____
Name (typed or printed)

_____
Title

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[ ] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[ ] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME (PRINT OR TYPE)

_____
TITLE

_____
DATE

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.
2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.
3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.
4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.
5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME (PRINT OR TYPE)

_____
TITLE

_____
DATE

END OF BID

00300-16

SECTION 00410
BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____

_____
(*hereinafter called Principal*) and

_____
(hereinafter called the Surety) a corporation chartered and existing under the Laws of the State _____ of with its principal offices in the County of _____ and authorized to do business in the State of Florida, in the full and just sum of _____
_____Dollars ($_____) good and lawful money of the United States of America, to be paid upon demand of the _____, Florida, to which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally and firmly by these presents,

WHEREAS, the Principal is about to submit, or has submitted to the City of Ormond Beach, Florida, a bid for work to be done on the **CDBG North Ridgewood Avenue East Side Sidewalk Improvements, Bid No. 2023-12** in, and for the City and

WHEREAS, the Principal desires to file this bond in accordance with law, in lieu of a certified or cashier's check otherwise required to accompany this Bid.

NOW, THEREFORE: the conditions of this obligation are such that if the Bid be accepted the Principal shall within ten (10) days after the receipt of notification of the acceptance thereof execute a contract in accordance with the Bid and upon the terms, conditions and unit or lump sum prices set forth therein, in the form and manner required by the Owner, and execute a sufficient and satisfactory Contract Bond payable to the Owner, in an amount not less than the total contract price, as indicated by the approximate quantities shown in the Bid, in form and with security satisfactory to the said City, then this obligation to be void; otherwise to be and remain in full force and virtue in law; and the Surety shall upon the failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid City upon demand the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this _____ day _____, 20_____.

_____
(Principal)

By: _____

ATTEST:

_____
(Surety)

_____ By: _____
(SEAL)

END OF SECTION
00410 - 1

SECTION 00500
FORM OF AGREEMENT

THIS AGREEMENT is by and between City of Ormond Beach, a Municipal Corporation in the State of Florida (hereinafter called OWNER) and

_____

(hereinafter called CONTRACTOR)

The bid for this contract was approved by the City Commission on _____, 2023.

Article 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

The work consists of removing an existing 4' foot non-ADA deteriorated concrete sidewalk and replacing it with a new 5' foot ADA compliant concrete sidewalk, including ADA compliant detectable mats and curbing in strict accordance with the American Disabilities Act (ADA) requirements on the east side of North Ridgewood Avenue from Hernandez Avenue to the south side of New Britain Avenue per the approved plans, specifications and Invitation to Bid.

The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

CDBG North Ridgewood Avenue East Side Sidewalk Improvements
Bid No. 2023-12

Article 2. ENGINEER

The Project has been designed by City Engineer, 22 South Beach Street, Ormond Beach, FL 32174, who is hereinafter called ENGINEER and who will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

Article 3. CONTRACT TIME

3.1 The Work will be substantially completed within **90** calendar days after the date when the Contract Time commences to run as provided in paragraph 2.3 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.10 of the General Conditions within **120** calendar days after the date when the Contract Time commences to run.

3.2 Liquidated Damages. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified in paragraph 3.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER **Three Dollars**

($300.00) for each calendar day that expires after the time specified in paragraph 3.1 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified in paragraph 3.1 for completion and readiness for final payment or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining work. In the event the Contractor is terminated or abandons the Work prior to the scheduled date for final completion, the Contractor may be liable for both liquidated damages attributable to delay and for excess completion costs.

Article 4. CONTRACT PRICE

OWNER shall pay CONTRACTOR for completion of the Work, in accordance with the Contract Documents, an amount in current funds equal to the Lump Sum TOTAL BID of $_____ ___, as listed in the Bid Form. Payment shall be for the actual completed work, as specified in the Measurement and Payment section of the project Manual and in accordance with Article 14 of the General Conditions.

Article 5. PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

5.1 Progress Payments. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment as recommended by ENGINEER, on or about the 15th day of each month during construction as provided below, provided Applications for Payment are timely delivered pursuant to Article 14.1 of the General Conditions. All progress payments will be on the basis of the progress of the Work measured by the schedule of values provided for in paragraph 14.1 of the General Conditions.

5.1.1 When applicable, all progress payments shall be in an amount equal to:

Ninety-Five percent (95%) of the Work completed.

Ninety-Five percent (95%) of materials and equipment not incorporated in the Work but delivered and suitably stored, less in each case the aggregate of payments previously made and less such amounts as ENGINEER shall determine in accordance with paragraph 14.4 of the General Conditions.

5.2 Final Payment. Upon final completion and acceptance of the Work in accordance with paragraph 14.10 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.10.

Article 6. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

6.1 CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work.

6.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by ENGINEER in the preparation of the Drawings and Specifications and which have been identified in the Supplementary Conditions.

6.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in paragraph 6.2 as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

6.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

6.5 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

Article 7. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

7.1 This Agreement (pages 1 to 5 , inclusive).

7.2 Exhibits to this Agreement (pages ___ to ___ , inclusive).

7.3 Performance and other Bonds, identified as exhibits 00610 AND 00615 and consisting of 4 pages.

7.4 Notice of Award.

7.5 General Conditions (pages 1 to 35 , inclusive).

7.6 Supplementary Conditions (pages 1 to 7 , inclusive).

7.7 Specifications bearing the title:

CDBG North Ridgewood Avenue East Side Sidewalk Improvements

and consisting of 16 divisions, as listed in table of contents thereof.

7.8 Drawings, consisting of **16** sheets numbered 1 through 16 inclusive and bearing the following general title:

CDBG North Ridgewood Avenue East Side Sidewalk Improvements

7.9 Addenda numbers ___ to ____ , inclusive.

7.10 CONTRACTOR'S Bid (pages 1 to 16 , inclusive) marked exhibit _____ (Attach Bid Form only in special circumstances).

7.11 Documentation submitted by CONTRACTOR prior to Notice of Award (pages ____ to ____ , inclusive).

7.12 Any Modification, including Change Orders, duly delivered after execution of Agreement.

There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a Modification (as defined in Section 1 of the General Conditions).

Article 8. MISCELLANEOUS

8.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions shall have the meanings indicated in the General Conditions.

8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement. One counterpart each has been delivered to OWNER and CONTRACTOR, and to ENGINEER as applicable. All portions of the Contract Documents have been signed by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on _____, 2023

OWNER City of Ormond Beach

By _____

Bill Partington
Mayor

[CITY SEAL]

Attest _____

Joyce A. Shanahan
City Manager

Address for giving notices:

City of Ormond Beach

PO Box 277

Ormond Beach, FL 32175-0277

CONTRACTOR _____

By _____

_____
(Title)

[SEAL]

Attest _____

_____
(Title)

Address for giving notices:

_____

_____

_____

License No. _____

Registered Agent for service process:

_____
(Name)

_____
(Title)

END OF AGREEMENT

SECTION 00610
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a(n) _____ , hereinafter called Principal, and
(Corporation, Partnership or Individual)

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____
(Name of Owner)

_____
(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

_____ Dollars, ($_____) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with OWNER, dated _____ day of _____, 20____, for the construction of:

CDBG North Ridgewood Avenue East Side Sidewalk Improvements
Bid No. 2023-12

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one-year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be
(number)
deemed an original, this _____ day of _____, 20_____.

ATTEST:

_____
Principal

_____
(Principal) Secretary

By _____ (s)

(SEAL)

_____
(Witness to Principal)

_____
(Address)

_____
(Address)

_____

_____
(Surety)

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____
Witness to Surety

_____
(Address)

_____

_____
Attorney-In-Fact

_____
(Address)

_____

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND. All BONDS signed by an agent must be accompanied by a certified copy of the authority to act.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

END OF SECTION

SECTION 00615
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a(n) _____ , hereinafter called Principal, and
(Corporation, Partnership or Individual)

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____
(Name of Owner)

_____
(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

_____ Dollars, ($_____) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with OWNER, dated _____ day of _____, 20____, for the construction of:

CDBG North Ridgewood Avenue East Side Sidewalk Improvements
Bid No. 2023-12

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ (number) counterparts, each one of which shall be deemed an original, this _____ day of _____, 20_____.

ATTEST:

_____
Principal

_____
(Principal) Secretary

By _____ (s)

(SEAL)

_____
(Witness to Principal)

_____
(Address)

_____
(Address)

_____

_____
(Surety)

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____
Witness to Surety

_____
(Address)

_____

_____
Attorney-In-Fact

_____
(Address)

_____

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND. All BONDS signed by an agent must be accompanied by a certified copy of the authority to act.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

END OF SECTION

OPINION OF ATTORNEY

This is to certify that I have examined the attached Contract Documents, and that I am of the opinion that such documents conform to the Laws of the State of Florida, and that the execution of the Contract is in due and proper form, and that the foregoing agreements constitute valid and binding obligations on such parties.

_____

Attorney for Owner

This the _____ day of _____, 2023.

END OF SECTION

SECTION 00700
GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1 - DEFINITIONS

Whenever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

1.01. Addenda -Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding documents of the Contract Documents.

1.02. Agreement - The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.03. Application for Payment - The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payment and which is to include such supporting documentation as required by the Contract Documents.

1.04. Approve - The word approve is defined to mean review of the material, equipment or methods for general compliance with the design concepts and with the information given in the Contract Documents. It does not imply a responsibility on the part of the ENGINEER to verify in every detail conformance with the Drawings and Specifications.

1.05. Bid -The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.06. Bonds - Bid, Performance and Payment Bonds and other instruments of security.

1.07. Change Order - A written order to CONTRACTOR signed by OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after the effective date of the Agreement.

1.08. Contract - The Agreement.

1.09. Contract Documents - The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the bid and any post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, Notice of Award, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, any other exhibits identified in the Agreement, together with all Modifications issued after the execution of the Agreement.

1.10. Contract Price - The Contract Price constitutes the total compensation (subject to authorized adjustments) payable by OWNER to CONTRACTOR for performing the Work.

1.11. Contract Time - The number of days (computed as provided in paragraph 16.2) or the

date stated in the Agreement for the completion of the Work.

1.12. CONTRACTOR - The person, firm or corporation with whom OWNER has entered into the Agreement.

1.13. Day - A calendar day of twenty-four hours measured from midnight to the next midnight.

1.14. Defective - Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment.

1.15. Drawings - The drawings, which will be identified in the Agreement, which show the character and scope of the Work to be performed and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents.

1.16. Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

1.17. ENGINEER - The City Engineer of the City of Ormond Beach, Florida, or the designee of such Engineer.

1.18. Engineering Order - A written request issued by ENGINEER to CONTRACTOR requesting a cost for certain modifications to the Work. An Engineering Order is not an authorization to perform the modifications.

1.19. Field Order - A written order issued by ENGINEER which clarifies or interprets the Contract Documents or orders minor changes in the Work in accordance with paragraph 10.2, but which does not involve a change in the Contract Price or the Contract Time.

1.20. Furnish - The words "furnish", "furnish and install", "install", and "provide" or words with similar meaning shall be interpreted, unless otherwise specifically stated, to mean "furnish and install complete in place and ready for service".

1.21. General Requirements - Sections of Division 1 of the Specifications.

1.22. Inspection - The term "Inspection" and the act of inspecting as used in these Contract Documents is defined to mean examination of construction to ensure that it conforms to the design concept expressed in the Drawings and Specifications. These terms shall not be construed to mean supervision, superintending and/or overseeing.

1.23. Modification - (a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order, or (c) a Field Order. A modification may only be issued after the effective date of the Agreement and must be in writing to be effective.

1.24. Notice of Award - The written notice by OWNER to the apparent successful Bidder stating that upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.25. Notice to Proceed - A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligation under the Contract Documents.

1.26. OWNER - The City of Ormond Beach, Florida.

1.27. Product - Materials, systems, and equipment provided by the CONTRACTOR.

1.28. Project - The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.29. Project Manual - The term "Project Manual" includes Bidding Requirements, Conditions of the Contract, Specifications, and Drawings.

1.30. Project Representative - The authorized representative of ENGINEER who is assigned to the site or any part thereof.

1.31. Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by CONTRACTOR, a Subcontractor, manufacturer, fabricator, supplier or distributor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a manufacturer, fabricator, supplier or distributor and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

1.32. Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

1.33. Subcontractor - An individual, firm or corporation having a contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.34. Substantial Completion - The point reached when the Work (or a specified part thereof), in the opinion of ENGINEER as evidenced by his final certificate of Substantial Completion, is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended; or if there be no such certificate issued, when final payment is due in accordance with paragraph 14.10. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.

1.35. Surety - Any person, firm or corporation which is bound with CONTRACTOR and which engages to be responsible for CONTRACTOR and his acceptable performance of the Work by a Performance or Payment Bond, or by a Public Construction Bond.

1.36. Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

Delivery of Bonds:

2.1. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

Copies of Documents:

2.2. OWNER shall furnish to CONTRACTOR, at OWNER's expense, up to three copies of the Contract Documents. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Time; Notice to Proceed:

2.3. The Contract Time will commence on the day indicated in the Notice to Proceed.

Starting the Project:

2.4. CONTRACTOR shall start to perform the work on the date when the Contract Time commences to run, but no work shall be done at the site prior to the date on which the Contract Time commences to run, and no work shall be done at the site before the Payment and Performance Bond is executed, delivered to the OWNER, and recorded in the public records of Volusia County, Florida.

Before Starting Construction:

2.5. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover; however, CONTRACTOR shall not be liable to OWNER for failure to report any conflict, error or discrepancy in the Drawings or Specifications, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. No verbal agreement or conversation with any officer, agent or employee of OWNER, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

2.6. Before any Work at the site is started, CONTRACTOR shall deliver to OWNER certificates (and other evidence of insurance requested by OWNER) which CONTRACTOR is

required to purchase and maintain in accordance with paragraphs 5.3, 5.4, 5.6 and 5.7.

2.7. CONTRACTOR shall not allow any on-site Subcontractor to commence work on his subcontract until insurance required of the Subcontractor has been obtained and approved by the CONTRACTOR. Failure to obtain this insurance will be the sole responsibility of the CONTRACTOR.

ARTICLE 3 - CONTRACT DOCUMENTS; INTENT AND REUSE

3.1. The Contract Documents comprise the entire Agreement between OWNER and CONTRACTOR concerning the Work. They may be altered only by a Modification.

3.2. The Contract Documents are complementary; a requirement contained in one is applicable to all. If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, he shall report it to ENGINEER in writing at once and before proceeding with the Work affected thereby; however, CONTRACTOR shall not be liable to OWNER for failure to report any conflict, error or discrepancy in the Specifications or Drawings unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. The various Contract Documents shall be given precedence, in case of conflict, error or discrepancy, as follows: Modifications, Agreement, Addenda, Supplementary Conditions, General Conditions, Drawings and Specifications. In a series of Modifications or Addenda the latest will govern.

3.3. It is the intent of the Specifications and Drawings to describe a complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work that may reasonably be inferred from the Specifications or Drawings as being required to produce the intended results shall be supplied whether or not it is specifically called for. When words which have well-known technical or trade meaning are used to describe Work, materials or equipment such words shall be interpreted in accordance with such meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the code of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual or code in effect at the time of opening of Bids (or, on the effective date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their agents or employees from those set forth in the Contract Documents. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided for in paragraph 9.2.

3.4. The Contract Documents will be governed by the law of the State of Florida, and venue for any action brought thereunder shall lie solely and exclusively in the Circuit Court in and for Volusia County, Florida.

Reuse of Documents:

3.5. Neither CONTRACTOR nor any Subcontractor, manufacturer, fabricator, supplier or distributor shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

4.1. OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER's furnishing these lands or easements entitles him to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

Physical Conditions - Investigations and Reports:

4.2. Reference is made to the Supplementary Conditions for identification of those reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by ENGINEER in preparation of the Drawings and Specifications. Such reports are not guaranteed as to accuracy or completeness and are not part of the Contract Documents.

Unforeseen Physical Conditions:

4.3. CONTRACTOR shall promptly, after becoming aware of and before further disturbing conditions affected thereby or performing any work in connection therewith, notify ENGINEER in writing of any subsurface or latent physical conditions at the site or in an existing structure differing materially from those indicated or referred to in the Contract Documents. CONTRACTOR, upon discovering and notifying OWNER of such subsurface or latent conditions, shall not perform work in the affected area until authorized to do so by OWNER. ENGINEER will promptly review those conditions and determine if further investigation or tests are necessary. If so determined by the ENGINEER, OWNER shall promptly obtain the necessary additional investigations and tests and furnish copies to CONTRACTOR. If ENGINEER finds that the results of such investigations or tests indicate that there are subsurface or latent physical conditions which differ materially from those intended in the Contract Documents, and which could not reasonably have been anticipated by CONTRACTOR, a Change Order authorizing CONTRACTOR to perform the additional work may be issued incorporating the necessary revisions.

Reference Points:

4.4. OWNER shall provide engineering surveys for construction to establish reference points which in his judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified in the General Requirements), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for replacement or relocation of such reference points by professionally qualified personnel.

ARTICLE 5 - BONDS AND INSURANCE

Performance and Other Bonds:

5.1. CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. The City will record the bonds in the public records at the CONTRACTOR's expense. These Bonds shall remain in effect at least until one (1) year after the date of final payment, except as otherwise provided by law. All bonds shall be deemed to contain all of the Conditions of Section 255.05, Florida Statutes, even if such language is not directly contained within the bond. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the forms prescribed by the bidding documents or Supplementary Conditions and be executed by such Sureties as (i) are licensed to conduct business in the State of Florida, and (ii) are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

5.2. If the Surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in the State of Florida or it ceases to meet the requirements of clauses (i) and (ii) of paragraph 5.1, CONTRACTOR shall within five (5) days after notice thereof, substitute another Bond and Surety, both of which shall meet the requirements of clauses (i) and (ii) of paragraph 5.1.

CONTRACTOR's Liability Insurance:

5.3. CONTRACTOR and on-site Subcontractors shall purchase and maintain such Commercial General Liability and other insurance as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether such performance is by CONTRACTOR, by any Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable;

5.3.1. Claims under workers' compensation, disability benefits and other similar employee benefit acts;

5.3.2. Claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

5.3.3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees.

5.3.4. Claims for damages insured by personal injury liability coverage which are sustained (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason.

5.3.5. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom; and

5.3.6. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

The insurance required by this paragraph 5.3 shall include the specific coverages and be written for not less than the limits of liability and coverages provided in the **Supplementary Conditions**, or required by law, whichever is greater. The Commercial General Liability insurance shall include completed operations insurance. All such insurance shall contain a provision that the coverage afforded will not be canceled, materially changed or renewal refused until at least **sixty** (60) days prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be fifteen (15) days) has been given to OWNER. All such insurance shall remain in effect until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with paragraph 13.12. In addition, CONTRACTOR shall maintain such completed operations insurance for at least two years after final payment and furnish OWNER with evidence of continuation of such insurance at final payment and one year thereafter.

Contractual Liability Insurance:

5.4. The Commercial General Liability insurance required by paragraph 5.3 will include contractual liability insurance applicable to CONTRACTOR's obligations under paragraphs 6.15 and 6.16. The OWNER shall be named as "Additionally Insured" under the CONTRACTOR's Commercial General Liability insurance policy.

Owner's Liability Insurance:

5.5. OWNER may, at its option, purchase and maintain its own liability insurance and, at its option, may purchase and maintain such insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

Property Insurance:

5.6. CONTRACTOR shall purchase and maintain property insurance upon the Work at the site to the full insurable value thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by law). This insurance shall include the interests of

OWNER, CONTRACTOR, and Subcontractors in the Work, shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in the Supplementary Conditions, and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including fees and charges of engineers, architects, attorneys and other professionals). If not covered under the "all risk" insurance or otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when such portions of the Work are to be included in the Application for Payment. The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with paragraphs 5.6 and 5.7 shall contain provisions that the coverage afforded will not be canceled or materially changed until at least **sixty** (60) days prior written notice has been given to OWNER.

5.7. CONTRACTOR shall purchase and maintain such boiler and machinery insurance as may be required by the Supplementary Conditions or by law. This insurance shall include the interests of OWNER, CONTRACTOR and Subcontractors in the Work.

5.8. OWNER shall not be responsible for purchasing and maintaining any property insurance to protect the interests of CONTRACTOR or Subcontractors in the Work to the extent of any deductible amounts that are provided in the Supplementary Conditions. If CONTRACTOR wishes property insurance coverage within the limits of such amounts, CONTRACTOR may purchase and maintain it at his own expense.

5.9. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policy, OWNER shall, if possible, include such insurance, and the cost thereof shall be charged to CONTRACTOR by appropriate Change Order. Prior to commencement of the Work at the site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

Waiver of Rights:

5.10. OWNER and CONTRACTOR waive all rights against each other and the Subcontractors and their agents and employees and separate contractors (if any) and their subcontractors' agents and employees, for damages caused by fire or other perils to the extent covered by insurance provided under paragraphs 5.6 and 5.7, inclusive, or any other property insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance held by OWNER as trustee. OWNER shall require similar written waivers from each separate contractor, and CONTRACTOR shall require similar written waivers from each Subcontractor (in accordance with paragraph 6.8 as applicable); each such waiver will be in favor of all other parties enumerated in this paragraph 5.10.

Receipt and Application of Proceeds:

5.11. Any insured loss under the policies of insurance required by paragraphs 5.6 and 5.7 shall be adjusted with CONTRACTOR and made payable to CONTRACTOR as trustee for the insured, as their interests may appear, subject to the requirements of paragraph 5.12. CONTRACTOR shall

deposit in a separate account any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order.

5.12. CONTRACTOR as trustee shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to CONTRACTOR's exercise of this power. If such objection be made, CONTRACTOR as trustee shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If required in writing by any party in interest, CONTRACTOR as trustee shall upon the occurrence of an insured loss, give bond for the proper performance of his duties.

Acceptance of Bonds and Insurance:

5.13. If OWNER has any objection to the coverage afforded by or other provisions of the Bonds or Insurance required to be purchased and maintained by CONTRACTOR in accordance with Article 5 on the basis of non-conformance with the Contract Documents, OWNER shall so notify CONTRACTOR in writing within ten days after receipt of the certificates (or other evidence requested) required by paragraph 2.6. CONTRACTOR shall provide to OWNER such additional information in respect of insurance provided as OWNER may reasonably request. If CONTRACTOR does not purchase or maintain all of the Bonds and Insurance required of CONTRACTOR by the Contract Documents, CONTRACTOR shall notify OWNER in writing of such failure to purchase prior to the start of the Work, or such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, OWNER may elect to obtain equivalent Bonds or Insurance to protect OWNER's interests at the expense of CONTRACTOR, and a Change Order shall be issued to adjust the Contract Price accordingly.

Partial Utilization - Property Insurance:

5.14. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.7; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies that the property insurance shall not be canceled or lapse on account of any such partial use of occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

6.1. CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction.

CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.2. CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

Materials and Equipment:

6.3. All materials and equipment installed in the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment.

Equipment manufacturers/suppliers must agree to OWNER'S terms of purchase. In no event will OWNER accept terms of sale that limit OWNER'S ability to reasonably recover in the event of equipment failure/defect such as, but not limited to; mandatory arbitration clauses, venue of court proceedings and applicable law outside of Volusia County, Florida, or damage limitations that preclude recovery for failed or defective equipment that would be less than full compensation for OWNER's loss.

6.4. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Contract Documents.

Concerning Subcontractors:

6.5. CONTRACTOR shall not employ any Subcontractor or other person or organization (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, to which OWNER may have any reasonable objection. CONTRACTOR shall submit with his Bid in writing the names, mailing addresses, and work classifications of all Subcontractors proposed for the Work. The failure to list all Subcontractors proposed for the Work may result in the Bid being rejected as incomplete and nonresponsive. A Subcontractor or other person or organization identified in writing to OWNER by CONTRACTOR prior to the Notice of Award and not objected to in writing by OWNER prior to the Notice of Award will be deemed acceptable to OWNER. Acceptance of any Subcontractor, other person or organization of OWNER shall not constitute a waiver of any right of OWNER to reject defective Work. If OWNER after due investigation has reasonable objection to any Subcontractor, other person or organization proposed by CONTRACTOR after the Notice of Award because the qualifications and experience of the Subcontractor, other person or organization indicate that he cannot perform or provide work, materials or equipment which will perform the specified functions, CONTRACTOR shall submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order may be issued. CONTRACTOR shall not be required to employ any Subcontractor, other person or organization to which CONTRACTOR has any reasonable objection. Whether

objections are reasonable shall be determined as specified in paragraph 9.8.

6.6. CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that CONTRACTOR is responsible for the acts and omissions of persons directly employed by CONTRACTOR. Nothing in the Contract Documents shall create any contractual relationship between OWNER and any Subcontractor or other person or organization having a direct contact with CONTRACTOR, nor shall it create any obligation on the part of OWNER to pay or to see to the payment of any moneys due any Subcontractor or other person or organization, except as may otherwise be required by law. OWNER may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done.

6.7. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or delineating the Work to be performed by any specific trade.

6.8. All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and contains waiver provisions as required by paragraph 5.10. CONTRACTOR shall pay each Subcontractor an appropriate share of any insurance proceeds received by CONTRACTOR on account of losses under policies issued pursuant to paragraphs 5.6 through 5.8.

6.9. Neither the OWNER nor the ENGINEER will undertake to settle any differences between CONTRACTOR and his Subcontractors or between Subcontractors.

Patent Fees and Royalties:

6.10. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. CONTRACTOR shall **indemnify** and **hold harmless** OWNER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights. OWNER will promptly notify CONTRACTOR of any such allegation of infringement of such rights.

Safety and Protection:

6.11. Precaution shall be exercised at all times by the CONTRACTOR for the protection of all persons, including employees, and property. The CONTRACTOR shall comply with all laws, regulations or ordinances related to safety and health, shall make special effort to detect hazardous conditions, and shall take prompt action where loss control/safety measures are reasonably expected. The OWNER may order work to be stopped if conditions exist that present on immediate danger to persons or property. The CONTRACTOR acknowledges that such stoppage will not shift responsibility for any damages from the CONTRACTOR to the OWNER.

6.12. CONTRACTOR be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.12.1. All employees on the Work and other persons who may be affected thereby.

6.12.2. All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and

6.12.3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the Work may affect them. All damage, injury or loss to any property referred to in paragraph 6.12.2 or 6.12.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR. CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.12 that the Work is acceptable.

6.13. CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

Emergencies:

6.14. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give OWNER prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby.

Indemnification/Hold Harmless:

6.15 The parties recognize that the CONTRACTOR is an independent contractor. The CONTRACTOR agrees to assume liability for and indemnify, hold harmless, and defend the CITY, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the CONTRACTOR, its agents, officers, contractors, subcontractors, employees, or anyone else utilized by the CONTRACTOR in the performance of this Agreement. The CONTRACTOR's liability hereunder shall include all attorney's fees and costs incurred by the CITY in the enforcement of this indemnification provision. This includes claims made by the employees of the CONTRACTOR against the CITY and the CONTRACTOR hereby waives its entitlement, if any, to immunity under Section 440.11, Florida Statutes. Such obligations contained in this provision shall survive termination of this Agreement and shall not be limited by the amount of any insurance required to be obtained or maintained under this Agreement.

In the event of any claim arising out of the paragraph above, the CITY will elect, in its sole discretion, that either:

1) The CONTRACTOR assume control of the defense of any claim asserted by a third party against the CITY and, in connection with such defense, shall appoint lead counsel, in each case at the CONTRACTOR's expense. The CITY shall have the right, at its option, to participate in the defense of any third party claim, without relieving CONTRACTOR of any of its obligations hereunder. If the CONTRACTOR assumes control of the defense of any third party claim in accordance with this paragraph, the CONTRACTOR shall obtain the prior written consent of the CITY before entering into any settlement of such claim. If the CONTRACTOR assumes control of the defense and the CONTRACTOR has failed or is failing to prosecute or defend vigorously the third party claim, the CITY may assume the control of the defense as provided by sub (2); or

2) The CITY will assume control of the defense of any third party claim, but CONTRACTOR shall pay the fees of counsel retained by the CITY and all expenses, including experts' fees.

Each party shall cooperate, and cause its agents to cooperate, in the defense or prosecution of any third party claim and shall furnish or cause to be furnished such records and information, and attend such conferences, discovery proceedings, hearings, trials, or appeals, as may be reasonably requested in connection therewith. It is further the specific intent and agreement of said parties that all the Contract Documents on this Project are hereby amended to include the foregoing indemnification. CONTRACTOR expressly agrees that it will not claim, and waives any claim, that this indemnification violates Section 725.06, Florida Statutes or is unenforceable pursuant to Section 725.06, Florida Statutes.

Nothing contained in the foregoing indemnification shall be construed as a waiver of any immunity or limitation of liability the CITY may have under the doctrine of sovereign immunity or Section 768.28, Florida Statutes.

Precaution shall be exercised at all times by the CONTRACTOR for the protection of all persons, including employees and property. The CONTRACTOR shall comply with all applicable laws, regulation and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action with loss control/safety measures as are reasonably necessary. The CITY may order work to be stopped if conditions exist that present an immediate danger to persons or property. The CONTRACTOR acknowledges that such work stoppage will not shift responsibility for any damages from the CONTRACTOR to the CITY.

Payment on Behalf of OWNER:

6.16. The CONTRACTOR agrees to pay on behalf of the OWNER, and to pay the cost of the OWNER's legal defense, as may be selected by the OWNER, for all claims described in 6.15 Indemnification/Hold Harmless. Such payment on behalf of the OWNER shall be in addition to any and all other legal remedies available to the OWNER and shall not be considered to be the OWNER's exclusive remedy.

ARTICLE 7 - WORK BY OTHERS

7.1. OWNER may perform additional work related to the Project by itself, or have additional work performed by utility service companies, or let other direct contracts therefor which shall contain General Conditions similar to these. CONTRACTOR shall afford the utility service companies and the other contractors who are parties to such direct contracts (or OWNER, if OWNER is performing the additional work with OWNER's employees) reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his Work with theirs.

7.2. If any part of CONTRACTOR's Work depends for proper execution or results upon the work of any such other contractor or utility service company (or OWNER), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any patent or apparent defects or deficiencies in such work that render it unsuitable for such proper execution and results. CONTRACTOR's failure so to report shall constitute an acceptance of the work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other work.

7.3. If the performance of additional work by other contractors or utility service companies or OWNER was not noted in the Contract Documents, written notice thereof shall be given to CONTRACTOR prior to starting any such additional work. If CONTRACTOR believes that the performance of such additional work by OWNER or others involves additional expense to CONTRACTOR or requires an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

7.4. Should any other contractor having, or who shall hereafter have, a contract with

OWNER for the performance of work upon the site of the Work to be performed hereunder sustain any damage through any act or omission of CONTRACTOR hereunder or through any act or omission of any Sub-contractor of CONTRACTOR, CONTRACTOR agrees to reimburse such other contractor for all such damages and to indemnify, defend and hold OWNER harmless from all such claims.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.1. OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2. OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.3 and 14.10.

8.3. OWNER's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting performance of the Work which have been relied upon by ENGINEER in preparing the Drawings and Specifications.

8.4. OWNER's responsibilities with respect to the purchase and maintenance of liability insurance are set forth in paragraph 5.5.

8.5. In connection with OWNER's rights to request changes in the Work in accordance with Article 10, OWNER (especially in certain instances as provided in paragraph 10.4) may execute Change Orders.

8.6. OWNER's responsibility with respect to certain inspections, tests and approvals is set forth in paragraph 13.4.

8.7. The provisions relative to the OWNER's right to stop Work or suspend Work are set forth in paragraphs 6.11, 13.10 and 15.1.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.1. ENGINEER will be OWNER's representative during the construction period. The authority of ENGINEER shall, under no circumstances, relieve CONTRACTOR from CONTRACTOR's responsibilities to perform the Work in accordance with this Contract.

Clarifications and Interpretations:

9.2. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall

intent of the Contract Documents. If CONTRACTOR believes that a written clarification or interpretation justifies an increase in the Contract Price or Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

Rejecting Defective Work:

9.3. ENGINEER will have authority to disapprove or reject WORK which is defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

Change Orders and Payments:

9.4. In connection with ENGINEER's responsibilities as to Change Orders, see Articles 10, 11 and 12.

9.5 In connection with ENGINEER's responsibilities as to Applications for Payment, etc., see Article 14.

Project Representation:

9.6. ENGINEER may designate a Project Representative to assist ENGINEER in inspecting the performance of the Work. The duties, responsibilities and limitations of authority of any such Project Representative and assistants will be as provided in paragraphs 9.6.1 through 9.6.3.

9.6.1. General: Project Representative is ENGINEER's Agent. He shall have the authority to do anything which the ENGINEER could do. His dealings in matters pertaining to the on-site work will in general be only with OWNER, ENGINEER and CONTRACTOR. His dealings with subcontractors will only be through or with the full knowledge of CONTRACTOR or his superintendent.

9.6.2. Duties and Responsibilities: Project Representative shall:

9.6.2.1. Schedules: Review the progress schedule, schedule of Shop Drawing submissions, schedule of values and other schedules prepared by CONTRACTOR and consult with ENGINEER concerning their acceptability.

9.6.2.2. Conferences: Attend preconstruction conferences.

9.6.2.3. Liaison: Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent, and assist him in understanding the intent of the Contract Documents. Assist in obtaining from OWNER additional details or information, when required at the job site for proper execution of the Work.

9.6.2.4. Shop Drawings and Samples: Receive and record date of receipt of Shop Drawings and samples which have been furnished by CONTRACTOR. Review the Shop Drawings for conformance with the information given in the Contract Documents. Provide office review and approval of Shop Drawings (as that term is defined in Article 1) and samples, the results of tests

and inspections and other data which any contractor is required to submit, but only for conformance with the design concept of the project and compliance with the information given in the Contract Documents; determine the acceptability of substitute materials and equipment proposed by CONTRACTOR(S); and receive and review (for general content as required by the Specifications) maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection which are to be assembled by CONTRACTOR(S) in accordance with the Contract Documents.

9.6.2.5. Review of Work, Rejection of Defective Work, Inspections and Tests: Conduct on-site inspections of the Work in progress to assist ENGINEER in determining that the Project is proceeding in accordance with the Contract Documents and that completed Work will conform to the Contract Documents. Report to ENGINEER whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspections, tests or approvals required to be made; and advise ENGINEER when he believes Work should be corrected or rejected or should be uncovered for observation, or requires special testing or inspection. Verify that tests, equipment and systems start-ups and operating and maintenance instructions are conducted as required by the Contract Documents and in the presence of the required personnel, and that CONTRACTOR maintains adequate records thereof; observe, record and report appropriate details relative to the test procedures and start-ups.

9.6.2.6. Modifications: Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report them to ENGINEER with recommendations. Prepare change orders as required; he may, as OWNER's representative, require special inspection or testing of the work; he shall act as interpreter of the requirements of the Contract Documents, judge of the performance thereunder by the parties thereto, and transmitter of clarification and interpretation of the Contract Documents. Process contract change orders to reflect final measured contract quantities and to reflect changes in the contract Drawings and Specifications.

9.6.2.7. Payment Requisitions: Based on his on-site observations and on his review of CONTRACTOR(S) applications for payment and the accompanying data and schedules, determine the amounts owed the CONTRACTOR(S). The ENGINEER will then approve in writing payments to CONTRACTOR(S) in such amounts; such approvals of payment will constitute a presentation to OWNER, based on such observations and review, that the Work has progressed to the point indicated and that, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, and to any qualifications stated in his approval).

9.6.2.8. Guarantees, Certificates, Maintenance and Operation Manuals: During the course of the Work verify that guarantees, certificates, maintenance and operation manuals and other data required to be assembled and furnished by CONTRACTOR are applicable to the items actually installed; and deliver this data to ENGINEER for his review prior to final acceptance of the Project.

9.6.2.9. Completion: Before ENGINEER issues a Certificate of Substantial Completion, submit to CONTRACTOR a list of observed items requiring correction. Conduct final inspection in the company of CONTRACTOR and prepare a final list of items to be corrected. Verify that all items

on final list have been corrected and make recommendations to ENGINEER concerning acceptance.

9.6.3. Limitations of Authority: The Project Representative; shall not undertake any of the responsibilities of CONTRACTOR, subcontractors or CONTRACTOR's superintendent; shall not expedite Work for CONTRACTOR; shall not advise on or issue directions as to safety precautions and programs in connection with the Work; and shall not assist CONTRACTOR in maintaining up-to-date copies of Record Drawings.

Decisions on Disagreements:

9.7. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the Work shall be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter shall be delivered by the claimant to ENGINEER and the other party to the Agreement within fifteen days of the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. Failure to give the required notice constitutes a waiver of the claim.

9.8. The rendering of a decision by ENGINEER pursuant to paragraph 9.7 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.13) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or at law in respect of any such claim, dispute or other matter. If the Owner agrees to pay all or part of a claim for which notice was not timely made, such agreement shall not be deemed a waiver of the right to enforce notice requirements in connection with any other claim.

Limitations on ENGINEER's Responsibilities:

9.9. Neither ENGINEER's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any manufacturer, fabricator, supplier or distributor, or any of their agents or employees or any other person performing any of the Work.

9.10. Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed" or terms of like effect or import are used, or the adjective "reasonable", "suitable" , "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used, to describe requirements, decision, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective never indicates that ENGINEER shall have

authority to supervise or direct performance of the Work or authority to undertake responsibility contrary to the provisions of paragraphs 9.11 or 9.12.

9.11. ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

9.12. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractors, or of the agents or employees of any CONTRACTOR or Subcontractor, or of any other persons at the site or otherwise performing any of the Work.

ARTICLE 10 - CHANGES IN THE WORK

10.1. Without invalidating the Agreement, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, CONTRACTOR shall proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 11 or Article 12 on the basis of a claim made by either party.

10.2. ENGINEER may authorize minor changes in the Work not involving an adjustment in the Contract Price of the Contract Time, which are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and shall be binding on OWNER, and also on CONTRACTOR who shall perform the change promptly. If CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

10.3. Additional Work performed without authorization of a Change Order will not entitle CONTRACTOR to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency as provided in paragraph 6.14 and except as provided in paragraphs 10.2 and 13.9.

10.4. OWNER may execute appropriate Change Orders covering changes in the Work which are required by OWNER, or required because of unforeseen physical conditions or emergencies, or because of uncovering Work found not to be defective or as provided in paragraph 11.9, or because of any other claim of CONTRACTOR for a change in the Contract Time or the Contract Price which is recommended by ENGINEER.

10.5. If notice of any change affecting the general scope of the Work or change in the Contract Price is required by the provisions of any Bond to be given to the Surety, it will be CONTRACTOR's responsibility to so notify the Surety, and the amount of each applicable Bond shall be adjusted accordingly. CONTRACTOR shall furnish proof of such adjustment to OWNER.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.1. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable by OWNER to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered to ENGINEER within fifteen days of the occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain accurate cost data.

11.3. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.9).

11.3.2. By mutual acceptance of a lump sum.

11.3.3. On the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a Contractor's Fee for overhead and profit (determined as provided in paragraph 11.6).

Cost of the Work:

11.4. The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon in advance by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis for their time spent on the Work. Payroll cost shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site.

11.4.2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds, and all returns from sale of surplus materials

and equipment shall accrue to OWNER and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3. Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR's Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4. Costs of special consultants (including, but not limited to, engineers, architects, testing laboratories, surveyors, lawyers and accountants) employed for services specifically related to the Work. Any such special consultants covered by the Consultants' Competitive Negotiations Act (Section 287.055, Florida Statutes), shall be selected in accordance with such Act.

11.4.5. Supplemental costs including the following:

11.4.5.1. The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

11.4.5.2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof - all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4. Sales, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by any government authority.

11.4.5.5. Deposits lost for causes other than CONTRACTOR's negligence, royalty payments and fees for permits and licenses.

11.4.5.6. Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the execution of the Work, provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's Fee. If, however, any such loss or damage requires construction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7. The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9. Cost of premiums for additional Bonds and insurance required because of changes in the Work.

11.5. The term Cost of the Work shall not include any of the following:

11.5.1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and estimators, lawyers, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in his principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in subparagraph 11.4.1. - all of which are to be considered administrative costs covered by the Contractor's Fee.

11.5.2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

11.5.3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

11.5.4. Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for additional Bonds and insurance required because of changes in the Work).

11.5.5. Costs, including damages, due to the negligence of intentional acts of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

Contractor's Fee:

11.6. The Contractor's Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1. A mutually acceptable fixed fee; or if none can be agreed upon,

11.6.2. A fee based on the following percentages of the various portions of the Cost of the Work;

11.6.2.1. For costs incurred under paragraphs 11.4.1. and 11.4.2., the Contractor's Fee shall be ten percent,

11.6.2.2. For costs incurred under paragraph 11.4.3., the Contractor's Fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to the Subcontractor as a fee for overhead and profit shall be ten percent, and

11.6.2.3. No fee shall be payable on the basis of costs itemized under paragraphs 11.4.4., 11.4.5. and 11.5.

11.7. The amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in costs, will be the amount of the actual net decrease. When both additions and credits are involved in any one change, the combined overhead and profit shall be figured on the basis of the net increase, if any.

Adjustment of Unit Prices:

11.8. Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4. and 11.5., CONTRACTOR will submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.9. Where the quantity of Work with respect to any item that is covered by a unit price differs materially and significantly from the quantity of such Work indicated in the Contract Documents, an appropriate Change Order may be issued on recommendation of ENGINEER to adjust the unit price.

ARTICLE 12 - CHANGE OF THE CONTRACT TIME

12.1. The Contract Time may only be changed by a written Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to ENGINEER within fifteen days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. All claims for adjustment in the Contract Time shall be determined by ENGINEER if OWNER and CONTRACTOR cannot otherwise agree. Any change in the Contract Time resulting from any such claim shall be incorporated in a written Change Order.

12.2. The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefor as provided in paragraph 12.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional Work as contemplated by Article 7, or fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.

12.3. All time limits stated in the Contract Documents are of the essence of the Agreement. The CONTRACTOR shall not be entitled to any claim for damages on account of hindrances or delays from any cause whatsoever, but if occasioned by an act of God, or by any act or omission

on the part of the Owner, such act, hindrance or delay may entitle the CONTRACTOR to an extension of time in which to complete the work which shall be determined by the ENGINEER, provided that the CONTRACTOR will give notice in writing of the cause of such act, hindrance or delay within ten (10) days after its occurrence.

ARTICLE 13 - WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

Warranty and Guarantee:

13.1. CONTRACTOR warrants and guarantees to OWNER that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

13.2. ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspection and testing. CONTRACTOR shall provide proper and safe conditions for such access.

Tests and Inspections:

13.3. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

13.4. If any law, ordinance, rule, regulation, code, or order of any public body having jurisdiction requires any Work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER's acceptance of a manufacturer, fabricator, supplier, or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. The cost of all other inspections, tests and approvals required by the Contract Documents shall be paid by OWNER (unless otherwise specified).

13.5. All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR.

13.6. If any Work that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover such Work and ENGINEER

has not acted with reasonable promptness in response to such notice.

13.7. Neither observations by ENGINEER, nor inspections, tests or approvals by others shall relieve CONTRACTOR from his obligations to perform the Work in accordance with the Contract Documents, and in all events in no less than a workmanlike manner.

Uncovering Work:

13.8. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

13.9. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, CONTRACTOR shall bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if he makes a claim therefor as provided in Articles 11 and 12.

Owner May Stop the Work:

13.10. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workmen or suitable materials or equipment, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause of such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

Correction or Removal of Defective Work:

13.11. If required by ENGINEER, CONTRACTOR shall promptly, without cost to OWNER and as specified by ENGINEER, either correct any defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with nondefective Work.

One Year Correction Period:

13.12. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions, either correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with nondefective Work. If CONTRACTOR does not promptly comply with the terms of such

instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by CONTRACTOR.

Acceptance of Defective Work:

13.13. If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. In such case, if acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price; or, if the acceptance occurs after such recommendation, an appropriate amount shall be paid by CONTRACTOR to OWNER.

OWNER May Correct Defective Work:

13.14. If CONTRACTOR fails, within a reasonable time after written notice of ENGINEER to proceed, to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11., or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including any requirements of the progress schedule), OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising his rights under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise his rights under this paragraph. All direct and indirect costs of OWNER in exercising such rights shall be charged against CONTRACTOR in an amount verified by ENGINEER, and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents and a reduction in the Contract Price. Such direct and indirect costs shall include, in particular but without limitation, compensation for additional professional services required and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER's rights hereunder.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

Application for Progress Payment:

14.1. At least ten days before each progress payment falls due (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the

Application and accompanied by such supporting documentation as is required by the Contract Documents and also as ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to OWNER, as will establish OWNER's title to the material and equipment and protect OWNER's interest therein, including applicable insurance. Each subsequent Application for Payment shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied to discharge in full all of CONTRACTOR's obligations reflected in prior Applications for Payment. The amount of retainage with respect to progress payments will be as stipulated in the Form of Agreement, Article 5.

CONTRACTOR's Warranty of Title:

14.2. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by an Application for Payment, whether incorporated in the project or not, will pass to OWNER at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

Review of Applications for Progress Payment:

14.3. ENGINEER will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. OWNER shall, within ten days of presentation to him of the ENGINEER's recommendation of payment, pay CONTRACTOR the amount recommended.

14.4. ENGINEER may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations to OWNER. He may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

14.4.1. The Work is defective, or completed Work has been damaged requiring correction or replacement;

14.4.2. Written claims have been made against OWNER or Liens have been filed in connection with the Work;

14.4.3. The Contract Price has been reduced because of Modifications;

14.4.4. OWNER has been required to correct defective Work or complete the Work in accordance with paragraph 13.14;

14.4.5. Of CONTRACTOR's unsatisfactory prosecution of the Work in accordance with the Contract Documents, including failure to clean up;

14.4.6. Of liquidated damages payable by CONTRACTOR; or

14.4.7. CONTRACTOR's failure to make payment to Subcontractors, or for labor, materials or equipment.

Substantial Completion:

14.5. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall, in writing to ENGINEER, certify that the entire Work is substantially complete and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving his reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare a certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a list of items to be completed or corrected before final payment.

14.6. OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the list.

Partial Utilization:

14.7. Use by OWNER of completed portions of the Work may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.7.1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any part of the Work which OWNER believes to be substantially complete and which may be so used without significant interference with construction of the other parts of the Work. If CONTRACTOR agrees, CONTRACTOR will certify to ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time thereafter CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify CONTRACTOR in writing giving his reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, ENGINEER will execute and deliver to CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion as to that part of the Work, attaching thereto a list of items to be completed or corrected before final payment. OWNER shall have the right to exclude CONTRACTOR from any part of the Work which ENGINEER has so certified to be substantially complete, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the list.

14.7.2. In lieu of the issuance of a certificate of Substantial Completion as to part of the Work, OWNER may take over operation of a facility constituting part of the Work whether or not it is substantially complete if such facility is functionally and separately usable; provided that prior to any such takeover, OWNER and CONTRACTOR have agreed as to the division of responsibilities

between OWNER and CONTRACTOR for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

14.7.3. No occupancy of part of the Work or taking over of operations of a facility will be accomplished prior to compliance with the requirements of paragraph 5.14 with regard to property insurance.

Final Inspection:

14.8. Upon written notice from CONTRACTOR that the work is complete, ENGINEER will make a final inspection with CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

Final Application for Payment:

14.9. After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents and other documents - all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable (subject to the provisions of paragraph 14.13), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as ENGINEER may reasonably require, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or his property might in any way be responsible, have been paid or otherwise satisfied; and consent of the Surety, if any, to final payment. If any Subcontractor, manufacturer, fabricator, supplier or distributor fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

Final Payment and Acceptance:

14.10. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract Documents, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing his recommendation of payment and present the Application for payment. Thereupon ENGINEER will give written notice to CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.13. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.

If the Application and accompanying documentation are appropriate as to form and substance, OWNER shall, within thirty days after receipt thereof pay CONTRACTOR the amount recommended by ENGINEER.

14.11. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

CONTRACTOR's Continuing Obligation:

14.12. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.10, nor any correction of defective Work by OWNER shall constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents.

Waiver of Claims:

14.13. The making and acceptance of final payment shall constitute:

14.13.1. A waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled or unfiled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.8 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it shall not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents; and

14.13.2. A waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled or unfiled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

Owner May Suspend Work:

15.1. OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and Surety which

shall fix the date on which Work shall be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR may be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension of work at OWNER's request if he makes a claim therefor as provided in Articles 11 and 12.

Owner May Terminate:

15.2. Upon the occurrence of any one or more of the following events:

15.2.1. If CONTRACTOR is adjudged a bankrupt or insolvent;

15.2.2. If CONTRACTOR makes a general assignment for the benefit of creditors;

15.2.3. If a trustee or receiver is appointed for CONTRACTOR or for any of CONTRACTOR's property;

15.2.4. If CONTRACTOR files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws;

15.2.5. If CONTRACTOR repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment;

15.2.6. If CONTRACTOR repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment;

15.2.7. If CONTRACTOR violates any laws, ordinances, rules, regulations or orders of any public body having jurisdiction;

15.2.8. If CONTRACTOR disregards the authority of ENGINEER; or

15.2.9. If CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents.

OWNER may after giving CONTRACTOR and his Surety seven (7) days' written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and demand the Surety to finish the Work by whatever methods he may deem expedient but subject to the approval of OWNER. The Surety shall use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may require. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Work, including compensation for additional professional services, such excess shall be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR and the Surety shall be jointly and severely liable to pay the difference to OWNER. Such costs incurred by OWNER shall be incorporated in a Change Order, but in

finishing the Work OWNER shall not be required to accept the lowest figure for the Work to be performed by the Surety.

15.3. Where CONTRACTOR's services have been so terminated by OWNER, the termination shall not affect any rights of OWNER against CONTRACTOR or the Surety then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4. Upon seven (7) days' written notice to CONTRACTOR and Surety, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed, any expense sustained plus reasonable termination expenses.

CONTRACTOR May Stop Work or Terminate:

15.5. If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety (90) days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty (30) days after it is submitted, or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, the CONTRACTOR may, upon seven (7) days' written notice to OWNER, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if ENGINEER has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven (7) days' notice to OWNER stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of his obligations to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

ARTICLE 16 - MISCELLANEOUS

Giving Notice:

16.1. Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

Computation of Time:

16.2. When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

General:

16.3. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.15, 13.1, 13.11, 13.14, 14.2, and 15.2, and all of the rights and remedies available to OWNER thereunder, shall be in addition to, and not in limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by law or contractor, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph shall be as effective as if repeated specifically in the contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents shall survive final payment and termination or completion of this Agreement.

Liquidated Damages:

16.4. OWNER and CONTRACTOR recognize that time is of the essence to complete this Project and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified in Agreement, plus any extensions thereof allowed in accordance with Article 12. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER the amount stated in the Contract for each day that expires after the time specified in the Contract for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified in the Contract or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER an amount equal to all actual expenses incurred by the OWNER as a direct result of the CONTRACTOR'S negligence, refusal, or failure to so complete the remaining Work. In the event the CONTRACTOR is terminated or abandons the Work prior to the scheduled date for final completion, the CONTRACTOR may be liable for both liquidated damages attributable to delay and for excess completion costs.

Reports of Investigations and Tests of Subsurface and Latent Physical Conditions:

16.5. Reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the work which have been relied upon by ENGINEER in preparing the Drawings and Specifications are as listed in the Supplementary Conditions. OWNER will make such reports available for inspection to any Bidder or copies may be obtained from the ENGINEER by the Bidder at reproduction cost. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents.

Performance of Work by CONTRACTOR:

16.6. Contract Assignment. The successful bidder (or bidders) will be required to perform the work as a prime contractor. CONTRACTOR shall not sublet, sell, transfer, assign or otherwise dispose of the contract or any portion thereof, or of his right, title, or interest therein. CONTRACTOR shall perform on the site and with his own organization work equivalent to not

less than fifty (50%) percent of the total dollar value of the work to be performed under this contract except that work designated in the Supplementary Conditions as specialty work may be performed by subcontractors and the cost of any such specialty work so performed by subcontracts may be deducted from the total contract amount before computing the amount of work required to be performed by CONTRACTOR with his own organization.

Limitation of Remedy and Liability:

16.7 Contractor and Owner expressly waive any claim for consequential damages against the other including but not limited to, a waiver of claims for diminished bonding capacity, loss of financing, loss of business reputation, lost profits on other projects or other lost opportunity damage claims.

Contractor expressly agrees that any claim (tort, contract, claim in equity, or otherwise) by Contractor for damages against Owner shall not exceed the total amount of the contract price, less any amounts actually paid to the Contractor by the Owner (or by an insurer of the Owner).

All liability of the City allegedly resulting from, arising out of or connected with this Agreement, or from the performance or breach thereof, shall terminate three years from the termination of this Agreement.

Waiver of Right to Jury Trial:

16.8 THE PARTIES HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHT WHICH ANY PARTY MAY HAVE TO TRIAL BY JURY IN RESPECT OF ANY PROCEEDING, LITIGATION OR COUNTERCLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. IF THE SUBJECT MATTER OF ANY LAWSUIT IS ONE IN WHICH THE WAIVER OF JURY TRIAL IS PROHIBITED, NO PARTY TO THIS AGREEMENT SHALL PRESENT AS A NON-COMPULSORY COUNTERCLAIM IN ANY SUCH LAWSUIT ANY CLAIM BASED ON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. FURTHERMORE, NO PARTY TO THIS AGREEMENT SHALL SEEK TO CONSOLIDATE ANY SUCH ACTION IN WHICH A JURY TRIAL CANNOT BE WAIVED.

END OF SECTION

SECTION 00800
SUPPLEMENTARY CONDITIONS

The following supplements modify, change, delete from, or add to the General Conditions of the Construction Contract (Section 00700). Where any article of the General Conditions is modified or any paragraph, subparagraph or clause thereof is modified or deleted by these supplements, the unaltered provisions of that article, paragraph, subparagraph or clause shall remain in effect.

ARTICLE 16 - MISCELLANEOUS

Section 16.5 – Reports of Investigations and Test of Subsurface and Latent Physical Conditions

Add the following subparagraph:

16.5.1 The list of reports of investigations and tests of subsurface and latent physical conditions as referred to in General Conditions Section 16.5 are as follows:

None

Add the following:

16.7 Minimum Requirements for the provision and maintenance of Payment and Performance Bonds, and Contractor's Insurance

In accordance with Resolution 2021-144 as it presently exists or may hereafter change, or applicable state, federal or local law, whichever is stricter, the following minimum requirements have been established:

A. Payment and Performance Bonds

1. Except as otherwise provided herein, the Contractor shall, prior to beginning performance, deliver to the City, and the City shall record in the public records of Volusia County, Florida, the Contractor's Payment and Performance Bond in an amount equal to the full amount of the Contract.

2. **(a)** Payment and Performance Bonds shall not be required for any contract except those which are for the construction of a public building, for the prosecution and completion of a public work (as described in Section 180.06, **Florida Statutes,** as amended from time to time) or for repairs upon a public building or public work (as described in Section 180.06, **Florida Statutes**, as amended from time to time).

(b) With respect to those Contracts for which Payment and Performance Bonds are otherwise required:

i. Unless the City Manager, or designee, determines such Bond to be necessary to protect the interests of the City, no Contractor shall be

required to provide a Payment and Performance Bond for any Contract which is for $25,000.00 or less.

ii. Upon the request of the contractor, good cause shown by the Contractor, and a determination that the public health, safety and welfare will be sufficiently protected, the City Commission may exempt the contractor from the requirement of providing a Payment and Performance Bond for any Contract which is for more than $25,000.00 but is less than $200,000.00.

3. The Payment and Performance Bond shall list the Contractor as Principal and be issued by a surety insurer authorized to do business in Florida as a surety and listed as an acceptable surety in the Federal Register.

4. The Payment and Performance Bond shall be executed pursuant to Section 255.05, **Florida Statutes**, and be in a form substantially similar to the form set forth in Section 255.05(3), **Florida Statutes**.

5. The Payment and Performance Bond shall specifically provide coverage for delay damages due to a default by the Contractor.

6. The Payment and Performance Bond shall not make the Contract part of the Bond agreement.

7. In lieu of the Payment and Performance Bond, the Contractor may file with the Finance Director of the City, in an amount equal to the full amount of the Contract, cash, a money order, a certified check, a cashier's check, an irrevocable letter of credit, or a security of a type listed in Part II, Chapter 625, **Florida Statutes**.

8. In the event the surety on any Payment and Performance Bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business in the State of Florida is terminated, the Contractor shall, within five (5) working days thereafter, substitute another Payment and Performance Bond and surety acceptable to the City.

9. The Contractor is totally and solely responsible for keeping its surety informed as to the Base Contract Price as bid, significant changes in the Project Scope, and the overall progress and completion of the Project for the entire life of the Contract.

10. The payment and performance bond requirements stated herein above shall not be applicable to service-related contracts unless otherwise determined by the City Manager in order to protect the health, safety and welfare of the general public.

B. Contractual Provisions Relative to Risk Management

All contracts for any public works to be performed, and service-related contracts, for or on behalf of the City shall include at a minimum, the following, or substantially similar, provisions:

1. Hold Harmless and Indemnity

The Contractor agrees to assume liability for and indemnify, hold harmless, and defend the City, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor, its agents, officers, contractors, subcontractors, employees, or anyone else employed or utilized by the Contractor in the performance of this Contract. The Contractor's liability hereunder shall include all attorney's fees and costs incurred by the City in the enforcement of this provision.

2. Payment on Behalf of City

The Contractor shall pay all costs of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph.

Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

3. Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary.

The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such work stoppage will not shift responsibility for any damages from the Contractor to the City.

4. Service Bond

For Service-related contracts only, the City may require the Contractor to secure a service bond with a minimum $25,000 coverage limit for the period of the service agreement. The service bond covers dishonest acts of the contractor's employees against the City. A copy of the bond shall be provided to the City when the agreement commences.

Service-related contracts include and are not limited to businesses providing janitorial, pest control, general repair, security, carpet cleaning, locksmith,

temporary employment, painting, moving services or other contracts as determined in the discretion of the Risk Manager as necessary to minimize loss.

C. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability
g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions (N/A for construction contracts)

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

D. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service-related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM

25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

E. Policies of Insurance

1. Except as otherwise provided in this Exhibit, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-), in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carrier; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Exhibit shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability including products and completed operations and Automobile Liability policies of insurance and certificates thereof.

END OF SECTION

LIEN WAIVER

The undersigned does hereby certify that through _____, 2023, the undersigned has performed labor and/or furnished materials for the construction of the _____ located at _____ owned by _____, at a price of $_____, and in consideration of the payment to the undersigned of such sum, the receipt of which is hereby acknowledged, the undersigned does hereby release and waive all liens and claims to liens which the undersigned may have as a result of the performance of such labor and/or the furnishing of such materials, and that the undersigned has paid in full for all materials purchased by the undersigned in connection with such project and for all labor furnished by the undersigned in connection with such project. The undersigned further certifies that the last date on which the undersigned furnished such labor and/or materials was _____, 2023.

_____ CONTRACTOR

By _____ DATE: _____

TITLE:_____

THE STATE OF _____

COUNTY OF _____

Before me, the undersigned authority, on this day personally appeared _____ _____, the _____ of _____, a corporation, known to me to be the person and officer whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, and as the act and deed of said corporation, and in capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this _____ day of _____, 2023.

_____
Notary Public in and for
said County and State

SECTION 01010
SUMMARY OF WORK

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

Work Covered by Contract Documents:

Work under this Contract is described as: **CDBG North Ridgewood Avenue East Side Sidewalk Improvements, Bid No. 2023-12**

The work consists of removing an existing 4' foot non-ADA deteriorated concrete sidewalk and replacing it with a new 5' foot ADA compliant concrete sidewalk, including ADA compliant detectable mats and curbing in strict accordance with the American Disabilities Act (ADA) requirements on the east side of North Ridgewood Avenue from Hernandez Avenue to the south side of New Britain Avenue per the approved plans, specifications and Invitation to Bid. A bid alternate #1 section from Wilmette Avenue to Hernandez Avenue will be a part of this bid and will be included if sufficient funding is available.

All work done on the sidewalk improvements project must adhere to the **Highway Wage Determination**, FL 20230191, see **Attachment "A"** in the project manual. The work is shown on the Drawings and specified in the Project Manual.

The Specification Divisions and Drawings are an integrated part of the Contract Documents and as such will not stand alone if used independently as individual Sections, Divisions or Drawings sheets.

The Specifications and Drawings establish minimum standards of quality for this project. They do not purport to cover all details entering into the design and construction of materials or equipment.

The CONTRACTOR is advised that the equipment arrangements as shown on the drawings may vary with different manufacturers and the CONTRACTOR is responsible at no cost to the OWNER for making the changes necessary to accommodate the specific equipment installed.

Omission of a specific item or component part of a system obviously necessary for the proper functioning of the system shall not relieve the CONTRACTOR of the responsibility of furnishing the item as part of the work at no additional cost to the OWNER.

Contracts:

Construct work under a single, lump sum price contract.

1.02 QUALITY ASSURANCE

Laws and Regulations:

The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations applicable to the work. If the CONTRACTOR observes that the Specifications or Drawings are at variance therewith, the CONTRACTOR shall give the ENGINEER prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate modification. If the CONTRACTOR performs any work knowing or having reason to know that it is contrary to such laws, ordinances, rules and regulations, and without such notice to ENGINEER, the CONTRACTOR shall bear all costs arising therefrom; however, it shall not be the CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with such laws, ordinances, rules and regulations.

1.03 JOB CONDITIONS

Taxes:

The CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by him in accordance with the law of the place of the project.

Permits and Business Tax Receipts:

The CONTRACTOR shall obtain and pay for all construction permits and business tax receipts. The OWNER shall assist the CONTRACTOR, when necessary, in obtaining such permits and business tax receipts. The CONTRACTOR shall provide OWNER with copies of all permits prior to commencing work.

The CONTRACTOR shall pay all charges of utility service companies for connections to the work, and the OWNER shall pay all charges of such companies for capital costs related thereto.

It shall be the responsibility of the CONTRACTOR to verify the existence of all necessary permits and business tax receipts prior to the start of work. The OWNER will obtain permits involving interagency agreements, i.e., State Highway Crossing Permits, Railroad Crossing Permits, and similar permits.

Fees for building permits and impact fees are the responsibility of CONTRACTOR.

The CONTRACTOR and each Subcontractor must be Registered with Volusia County or with the City of Ormond Beach. Requirements for registering a business are as follows:

STATE CERTIFIED CONTRACTORS

1. Register with Volusia County Contractor Licensing (386-248-8158)

OR

2. Provide City with:
   Copy of local business tax receipt (where your business is located)
   Copy of State License (if applicable)
   Certificate of Insurance

For additional information regarding registration, permits or business tax receipts, please call: (386) 676-3233

Labor, Materials and Equipment:

The CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the work and perform construction as required by the Contract Documents. The CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the work or property at the site or adjacent thereto, and except as otherwise indicated in the Supplementary Conditions, all work at the site shall be performed during regular working hours, and the CONTRACTOR will not permit overtime work or the performance of work on Saturday, Sunday or any legal holiday without the OWNER's written consent given after prior written notice to the ENGINEER.

Unless otherwise shown, the CONTRACTOR shall furnish all materials, equipment, labor transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of the work.

The CONTRACTOR shall be responsible for all materials furnished by him and shall replace at his own expense all such material found to be defective in manufacture or damaged in handling. This shall include the furnishing of all material and labor required for the replacement of installed material discovered defective prior to the final acceptance of the work.

Contractor Use of Premises:

The CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workmen to areas permitted by law, ordinances, permits or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment.

The CONTRACTOR shall not enter upon private property for any purpose without first securing the permission of the property owner in writing and furnishing the ENGINEER with a copy of said permission. This requirement will be strictly enforced, particularly with regard to such vacant properties as may be utilized for material storage.

The CONTRACTOR shall conduct his work in such a manner as to avoid damage to adjacent private or public property. Any damage to existing structures or work of any kind, including permanent reference markers or property corner markers, or the interruption of utility service, shall be repaired or restored promptly at no additional expense to the OWNER.

The CONTRACTOR shall preserve and protect all existing vegetation such as trees, shrubs and grass on or adjacent to the site which do not reasonably interfere with the construction, as determined by the ENGINEER. The CONTRACTOR will be responsible for all unauthorized cutting or damaging of trees and shrubs, including damage due to careless operation of equipment, stockpiling of materials or tracking of grass by equipment. The CONTRACTOR will be liable for, or will be required to replace or restore at no additional expense to the OWNER, all vegetation not protected or preserved as required herein that may be destroyed or damaged.

The CONTRACTOR will not be required to move or remove any utilities except as specifically required by the Drawings and Specifications.

During the progress of the work, the CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from work. At the completion of the work, the CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by the OWNER. The CONTRACTOR shall restore to their original condition those portions of the site not designated for alteration by the Contract Documents.

The CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall the CONTRACTOR subject any part of the work or adjacent property to stresses or pressures that will endanger it.

Subsurface Reports:

None

Notification of Construction:

The CONTRACTOR shall notify, in writing, all residents and businesses adjacent to the project work area of pending construction no later than 48 hours prior to commencement of actual construction. Copies of the written Notice shall be provided to the ENGINEER for approval of wording prior to public distribution.

Notification of Street Closure: N/A

The CONTRACTOR is required to obtain permission from the City Engineer prior to initiating street closures.

In the event a street closure is required, the CONTRACTOR shall notify, in writing, all emergency services and agencies, residents and businesses directly effected by any partial or full street closure caused by the construction no later than 48 hours prior to actual closure.

Below is a list of the agencies that are required to be notified in the event of a street closure:

Agency:	Contact phone number:
EVAC Ambulance Service	(386) 252-4911
Ormond Beach City Hall	(386) 677-0311
Ormond Beach Fire Dept. Administration	(386) 676-3255
Ormond Beach Police Dept. Dispatch	(386) 676-3508
Ormond Beach Public Works Department	(386) 676-3220
Ormond Beach Postmaster (US Postal Service)	(386) 676-0693
Volusia County School Board - Transportation	(386) 258-4677
Volusia County VOTRAN	(386) 756-7496

If a **County** or **State Road** is to be closed, add the following agencies to the list:

Volusia County Department of Public Works	(386) 239-6535
Volusia County Emergency Management	(386) 254-1500
Volusia County Fire Services	(386) 254-4657
Florida Highway Patrol Dispatch	(407) 737-2200

If the closure will last longer than 5 days, the CONTRACTOR shall also notify the general public of such closures by placing an advertisement in the "Area" section of the local newspaper no later than 48 hours prior to the closure. The advertisement shall include information describing the extent of the closure (i.e. between which streets; detour routes, etc.), the date the closure will begin, and estimated date the road will be reopened. Provide a copy of the proposed notification, for approval by the ENGINEER, before placing the advertisement.

The CONTRACTOR shall maintain full compliance with the traffic regulations found in Paragraph 1.06, Section 01500 of this Contract.

Contractor's Hours of Operation:

Except in the event of an emergency, no work shall be done between the hours of 7:00 P.M. and 7:00 A.M., or on Saturdays and Sundays. If the proper and efficient execution of the work requires operations during the night or on week-ends, the written permission of the ENGINEER shall be obtained prior to starting such items of the work.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

This section defines the method which will be used to determine the quantities of work performed or materials supplied and establishes the basis upon which payment will be made.

1.02 ESTIMATED QUANTITIES

Where quantities are shown they are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. OWNER or ENGINEER do not assume any responsibility that the final quantities, nor shall CONTRACTOR claim misunderstanding because of such estimate of quantities. Final payment will be made only for the satisfactorily completed quantity of each item.

1.03 MEASUREMENT STANDARDS

All work completed under the Contract shall be measured according to United States Standard Methods.

1.04 METHOD OF MEASUREMENT

Measurement of Length:

Unless otherwise specified for the particular items involved, all measurements of distance for items to be paid for on the basis of length shall be taken horizontally or vertically.

Measurement of Area:

In the measurement of items paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the actual dimensions measured along the surface of the completed work within the neat lines shown or designated. At intersections, the measurement used for length of side area will be measured from the outside edge of the width allowed along the main trench.

1.05 PAYMENT

Lump Sum Items:

Where payment for items is shown to be paid for on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum item within the limits of work shown or specified.

Unit Price Items:

Where payment for items is shown to be paid for on a unit price basis, separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

1.06 COSTS INCLUDED IN PAYMENT ITEMS

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work.

Clearing and grubbing (including disposal of material).
Trench excavation, including necessary pavement removal and removal of vegetative surfaces.
Dewatering and disposal of surplus water.
Structural fill, backfill, and grading.
Replacement of unpaved roadways, grass and shrubbery plots.
Cleanup.
Foundation and borrow materials, except as hereinafter specified.
Testing and placing system in operation.
Any material and equipment required to be installed and utilized for tests.
Pipe, structures, pavement replacement, restoration and/or appurtenances included within the limits of lump sum work, unless otherwise shown.
Maintaining or detouring of the traffic.
Appurtenant work as required for a complete and operable system.
Surface restoration including removal and replacement of trees (under 4-inch diameter), shrubs, and sod disturbed by construction activities.
Relocation and/or replacement of irrigation systems disturbed by construction.
Relocation and/or replacement of mail boxes disturbed by construction.
Furnishing adequate sanitary facilities for workers.
Adjustment of valve boxes.
Supporting of existing utilities during construction

Cleanup:

CONTRACTOR's attention is called to the fact that cleanup is considered a part of the work of construction. No payment will be made until cleanup is essentially complete.

At the end of each week of construction, the CONTRACTOR shall perform cleaning of the work site, to the satisfaction of the Owner, before proceeding to the next week's scheduled work.

Work Outside Authorized Limits:

No payment will be made for work constructed outside the authorized limits of work.

1.07 APPLICATIONS FOR PAYMENT

Applications for payment shall be prepared by the CONTRACTOR and submitted to the ENGINEER in accordance with the schedule established by the Conditions of the Contract and the Agreement. The applications for payment shall be submitted in the number and form established by the ENGINEER at the Preconstruction Conference. The form shall be completely filled out and executed by an authorized representative of the CONTRACTOR. Supporting data such as schedules of stored materials shall be attached to each copy of the application.

1.08 CHANGE ORDER PROCEDURE

As defined in the General Conditions, a Change Order is a written order to the CONTRACTOR signed by the OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time which is issued after the execution of the Agreement.

The following procedure shall be used in processing Change Orders:

For Additions to the Work:

The OWNER shall issue a written order to the CONTRACTOR directing him to accomplish the additional work. The CONTRACTOR shall review the order and if he feels that the additional work entitles him to additional payment or additional time, he may submit a claim as prescribed in the Conditions of the Contract.

For Deletions From the Work:

The OWNER shall issue a written order to the CONTRACTOR directing him to make the change. If the OWNER feels that the Contract price should be reduced as a result of the change, the OWNER shall make a claim for the reduction as provided in the Conditions of the Contract.

Cost of the changes in the work shall be determined in accordance with the requirements spelled out in the Conditions of the Contract. Modifications to incorporate the changes in cost will be made as the amount of any change is determined.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 BID ITEMS FOR CDBG North Ridgewood Avenue East Side Sidewalk Improvements

Bid Item No. 1 Demolition from Hernandez Avenue to New Britain Ave for Existing 4' Sidewalk & Driveway Aprons

Payment for removing existing 4' wide concrete sidewalk, driveway aprons, asphalt, concrete pavers and curbing shall be made at the Contract lump sum price and shall be full compensation for all labor and equipment necessary to do the work. Payment shall be full compensation for

removal and disposal as specified on the drawings and project manual.

Bid Item No. 2 Install Hernandez Avenue to New Britain Avenue 5' ADA Compliant Sidewalk at 4" depth

Payment for constructing 5' ADA compliant sidewalk at 4" inch depth at 3,000 PSI shall be made at the Contract lump sum price in place and accepted and shall be full compensation for all labor, material and equipment necessary to do the work. Payment shall be full compensation for excavation, disposal, grading, compaction, form work, site restoration, concrete and finishing as specified on the drawings and project manual.

Bid Item No. 3 Install Hernandez Avenue to New Britain Avenue Right of Way Driveway Aprons at 6" depth

Payment for constructing right of way driveway aprons at 6" inch depth at 3,000 PSI shall be made at the Contract lump sum price in place and accepted and shall be full compensation for all labor, material and equipment necessary to do the work. Payment shall be full compensation for excavation, disposal, grading, compaction, form work, site restoration, concrete and finishing as specified on the drawings and project manual.

Bid Item No. 4 Install Hernandez Avenue to New Britain Avenue ADA Compliant Curbing Modifications

Payment for constructing ADA compliant curbing modifications 4" inch depth at 3,000 PSI shall be made at the Contract lump sum price in place and accepted and shall be full compensation for all labor, material and equipment necessary to do the work. Payment shall be full compensation for excavation, disposal, grading, compaction, form work, site restoration, concrete and finishing as specified on the drawings and project manual.

Bid Item No. 5 Install ADA Detectable Warning Mats from Hernandez Avenue to New Britain Avenue

Payment for installing ADA detectable warning mats, FDOT approved shall be made at the Contract unit price per each detectable mat in place and accepted and shall be full compensation for all labor, material and equipment necessary to do the work. Payment shall be full compensation for all labor, material and equipment necessary to do the work.

Bid Alternate 1

Bid Item No. 1 Demolition from Wilmette to Hernandez Avenue for Existing 5' Sidewalk & Curbing Modifications as per Detail B

Payment for removing existing 5' wide concrete sidewalk and curbing shall be made at the Contract lump sum price and shall be full compensation for all labor and equipment necessary to do the work. Payment shall be full compensation for removal and disposal as specified on the drawings and project manual.

Bid Item No. 2 Demolition from Wilmette to Hernandez Avenue for Existing 5' Sidewalk Cracked Concrete Panels

Payment for removing existing 5' wide concrete sidewalk shall be made at the Contract lump sum price and shall be full compensation for all labor and equipment necessary to do the work. Payment shall be full compensation for removal and disposal as specified on the drawings and project manual.

Bid Item No. 3 Install from Wilmette to Hernandez Avenue for 5' ADA Compliant Sidewalk at 4" depth & Curb Modifications per Detail B

Payment for constructing 5' ADA compliant sidewalk and curbing modifications at 4" inch depth at 3,000 PSI shall be made at the Contract lump sum price in place and accepted and shall be full compensation for all labor, material and equipment necessary to do the work. Payment shall be full compensation for excavation, disposal, grading, compaction, form work, site restoration, concrete and finishing as specified on the drawings and project manual.

Bid Item No. 4 Install from Wilmette to Hernandez Avenue for 5' ADA Compliant Sidewalk Cracked Panel Replacement at 4" depth

Payment for constructing 5' ADA compliant sidewalk at 4" inch depth at 3,000 PSI shall be made at the Contract lump sum price in place and accepted and shall be full compensation for all labor, material and equipment necessary to do the work. Payment shall be full compensation for excavation, disposal, grading, compaction, form work, site restoration, concrete and finishing as specified on the drawings and project manual.

Bid Item No. 5 Install ADA Detectable Warning Mats from Wilmette to Hernandez Avenue

Payment for installing ADA detectable warning mats, FDOT approved shall be made at the Contract unit price per each detectable mat in place and accepted and shall be full compensation for all labor, material and equipment necessary to do the work. Payment shall be full compensation for all labor, material and equipment necessary to do the work.

END OF SECTION

SECTION 01040
COORDINATION

PART 1 - GENERAL

1.01 PROJECT COORDINATION

A. The Contractor shall provide for the complete coordination of the construction efforts. This shall include, but not necessarily be limited to, coordination of the following:

1. the work of subcontractors
2. the flow of material and equipment from suppliers
3. the interrelated work with public utilities companies
4. the interrelated work with the Owner where tie-ins to existing facilities are required
5. the effort of independent testing agencies.

B. The Contractor will be allowed the widest practicable latitude in establishing his work plan. Contractor shall submit a plan of work to Owner and Engineer.

1.02 CUTTING AND PATCHING

A. The Contractor shall do all cutting, fitting and patching of his work that may be required to make its several parts come together properly and integrate with such other work. The Contractor shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of the Engineer and the others whose work will be affected.

PART 2 - MATERIALS AND EQUIPMENT

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01050
FIELD ENGINEERING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

The Contractor shall provide and pay for field engineering service required for the project. Such work shall include survey work to establish lines and levels and to locate and lay out site improvements, structures, and controlling lines and levels required for the construction of the work. Also included are such Engineering services as are specified or required to execute the Contractor's construction methods. Engineers and Surveyors shall be licensed professionals under the laws of the state where the project is located.

1.02 GRADES, LINES AND LEVELS

Existing basic horizontal and vertical control points for the project are those designated on the Drawings. The Contractor shall locate and protect control points prior to starting site work and shall preserve all permanent reference points prior to starting site work and shall preserve all permanent reference points during construction. In working near any permanent property corners or reference markers, the Contractor shall use care not to remove or disturb any such markers. In the event that markers must be removed or are disturbed due to the proximity of the construction work, the Contractor shall have them referenced and reset by a Land Surveyor qualified under the laws of the state of the project.

1.03 LAYOUT DATA

The Contractor shall lay out the work at the location and to the lines and grades shown on the Drawings. Survey notes indicating the information and measurements used in establishing locations and grades shall be kept and furnished with the record drawings for the project.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01200
PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

Project meetings shall be scheduled as needed throughout the progress of the work. Those responsible for scheduling the meetings shall prepare the agenda, distribute written notice of each meeting not less than four days in advance of the meeting date, make physical arrangements for the meeting, preside at the meeting, record the minutes (include all significant proceedings and decisions), and reproduce and distribute copies of the minutes to all participants, all parties affected by decisions made, and the Engineer.

Representatives attending the meetings shall be qualified and authorized to act on behalf of the entities they represent.

1.02 PRE CONSTRUCTION CONFERENCE

Before the Contractor starts the work at the site, the Engineer will schedule a preconstruction conference which will be held for review and acceptance of the schedules referred to in Section 01300, to establish procedures for handling shop drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the work.

The date for the start of construction shall be established at this conference.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

The type of submittal requirements specified in this section include the following:

Progress Schedules and Reports
Product Data
Shop Drawings
Manufacturer's Data
Miscellaneous

Submittals shall be clear and legible, printed or typed. Submittals received that are not so, shall be returned to be resubmitted when in legible form.

1.02 PROGRESS SCHEDULES AND REPORTS

Within 10 days after the effective date of the Agreement, the Contractor shall submit to the Engineer for review and acceptance an estimated progress schedule indicating the starting and completion dates of the various stages of the work, a preliminary schedule of shop drawing submissions, and a preliminary schedule of values of the work. Include subschedules of related activities which are essential to its progress.

Revised schedules shall be submitted periodically as changes become apparent.

Unless other format or use of a network analysis system is required, schedules shall be prepared in the form of a horizontal bar chart. A separate horizontal bar shall be provided for each trade or operation. The first work day of each week shall be identified on the horizontal time scale. Scale and spacing will be such as to allow space for notations and revisions.

Schedules shall show the complete sequence of construction by activity with dates for the beginning and completion of each major element of construction. Projected percentage of completion for each item as of the first day of each month shall be shown.

Progress Reports:

The Contractor shall prepare and submit a monthly progress report. The report shall indicate the progress at the date of submission of each activity shown on his progress schedule. It shall show changes occurring since previous submissions, activities modified since previous submissions, and revised projections of progress and completion. The submittal shall include a narrative report to define: problem areas, anticipated delays, and the impact on the schedule, and corrective action recommended and its effect.

1.03 PRODUCT DATA (Shop Drawings and Manufacturer's Data)

The Contractor shall prepare and submit to the Engineer a schedule of the shop drawings, product data and samples which are required for the work together with anticipated submittal time. Any drawings which require critical timing for maintaining delivery or construction schedules shall be so noted. Shop drawing submittal schedule shall be coordinated with the requirements of construction progress schedules.

Those submittals required under various sections of the specifications, but not listed on the Contract Submittal List shall be submitted as "RECORD SUBMITTALS" and given to the Engineer along with the Record Drawings as specified in Section 01700 - Contract Closeout.

Product data submitted for substitutions shall be handled as specified in Section 01630 - Substitutions and Product Options.

Definitions:

Work-related submittals of this section are categorized for convenience as follows:

> Shop drawings include specially-prepared technical data for this project, including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for general application to several projects.
>
> Product data include standard printed information on materials, products and systems; not specially-prepared for this project, other than the designation of selections from among available choices printed in the information.
>
> Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standard, record drawings, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the work and not processed as shop drawings, product data or samples.

1.04 GENERAL SUBMITTAL REQUIREMENTS

After checking and verifying all field measurements, the Contractor shall submit to the Engineer for review and approval, in accordance with the accepted schedule of shop drawing submissions, five copies of all shop drawings, which shall have been checked by and stamped with the approval of the Contractor and identified as the Engineer may require. The data shown on the shop drawings will be complete with respect to dimensions, design criteria, materials of construction and like information to enable the Engineer to review the information as required.

The Contractor shall also submit to the Engineer for review and approval with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples will have

been checked by and stamped with the approval of the Contractor, identified clearly as to material, manufacturer, and pertinent catalog numbers and the use for which intended. At the time of each submission, the Contractor shall, in writing, call the Engineer's attention to any deviations that the shop drawings or samples may have from the requirements of the Contract Documents.

The Engineer will review and approve with reasonable promptness shop drawings and samples, but the Engineer's review and approval shall be only for conformance with the design concept of the project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, sequences, techniques or procedures of construction or to safety precautions or programs incident to the work. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. The Contractor shall make any corrections required by the Engineer and shall return the required number of corrected copies of shop drawings and resubmit new samples for review and approval. The Contractor shall direct specific attention, in writing, to revisions other than the corrections called for by the Engineer on previous submittals. The Contractor's stamp of approval on any shop drawing or sample shall constitute a representation to the Owner and the Engineer that the Contractor has either determined and verified all quantities, dimension, field construction criteria, materials, catalog numbers, and similar data or assumes full responsibility for doing so, and that the Contractor has reviewed or coordinated each shop drawing or sample with the requirements of the work and the Contract Documents.

Where a shop drawing or sample is required by the Specifications, no related work shall be commenced until the submittal has been reviewed and approved by the Engineer.

The Engineer's review and approval of shop drawings or samples shall not relieve the Contractor from responsibility for any deviations from the Contract Documents unless the Contractor has in writing called the Engineer's attention to such deviations at the time of submission and the Engineer has given written concurrence and approval to the specific deviation, nor shall any concurrence or approval by the Engineer relieve the Contractor from responsibility for errors or omissions in the shop drawings.

Systems to be submitted in the shop drawing submittal shall include but not necessarily be limited to:

1. Each item of equipment and/or materials listed in the project equipment and material schedules;

Certifications:

Whenever a standard of quality is established by a reference specification, the Contractor shall submit a certificate by the manufacturer that the material supplied meets the requirements of both the project and reference specification.

Schedule of Values:

At least 10 days prior to submitting the first Application for a progress payment, the Contractor shall submit to the Engineer a schedule of values of the work. This schedule shall be satisfactory in form and substance to the Engineer. The schedule of values shall include quantities and unit prices aggregating the contract price, and shall subdivide the work into component parts in sufficient detail to serve as the basis for progress payments during construction. Upon acceptance of the schedule of values by the Engineer, it shall be incorporated into a form of Application for Payment acceptable to the Engineer.

Where estimated quantities and unit prices are shown in the Bid Form as the basis of payment, the quantities shown in the Bid Form are approximate and are given only as a basis of calculation upon which the award of the contract is to be made. The Owner or Engineer do not assume any responsibility that the final quantities will remain in accordance with estimated quantities, nor shall the Contractor claim misunderstanding or deception because of such estimate of quantities. Final payment will be made on the basis of the actual completed quantities of each item.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 - GENERAL

1.01 TESTING LABORATORY SERVICES

Arrangements for testing laboratory services will be made by the Owner. Payment for testing to show compliance with specified requirements will be paid for by the Owner. The cost for tests, when materials and workmanship fail to meet specified requirements (failed tests), will be billed directly to the Contractor by the soils testing laboratory, or deducted from monies due the Contractor.

1.02 INSPECTION SERVICES

The authorized representative of all applicable Federal and/or State agencies, including Environmental Protection Agency, Corps of Engineers and Department of Environmental Regulation, shall be permitted to inspect all work, materials, payrolls, records of personnel, invoice of materials, and other relevant data and records. The Owner and his authorized representatives shall be permitted free access and every reasonable facility for the inspection of all work and materials, including the removal or uncovering of such portions of the finished work as may be directed. The Owner and his authorized representative shall also be permitted to inspect payrolls, invoices of materials and other relevant data and records.

1.03 INSPECTION OF WORK AWAY FROM SITE

If work to be done away from the construction site is to be inspected on behalf of the Owner during its fabrication, manufacture or testing or before shipment, the Contractor shall give notice to the Engineer of the time and place where such fabrication, manufacturing, testing or shipping is to be done. Such notice shall be in writing and delivered to the Engineer in ample time so that the necessary arrangements for the inspection can be made.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

This section specifies the minimum requirements for temporary facilities, utilities to be brought to the site, refuse/waste collection and control required to enable the construction of the project to progress adequately. The providing of adequate facilities at every stage of performing the work is the Contractor's sole responsibility, and is not limited by the requirement of this section.

Except as otherwise indicated, the Contractor may, at his option, provide stand-alone utility plants to provide needed services, in lieu of connected services from available public utilities, provided such stand-along plant facilities comply with governing regulations. Prior to availability of temporary utility services, provide trucked-in/trucked-out containerized or unitized services for startup of construction operations at the site.

Except as otherwise indicated, the costs of providing and using temporary utility services are included in the Contract Sum.

1.02 TEMPORARY FACILITIES

The types of utility services required for general temporary use at the project site include the following (other specific services may be required for specific construction methods or operations):

Electrical Power Service
Water Service (potable for certain uses)
Sanitary
Storm Sewer or Open Drainage/Run-off Control
Refuse/Waste Collection

Temporary Electricity:

The Contractor shall make necessary applications and arrangements and pay all fees and charges for electrical energy for power and light necessary for proper completion of the work and during its entire progress up to time of final acceptance by the Owner. The Contractor shall provide and pay for all temporary switches, connections and meters.

Temporary Water:

The Contractor shall make all necessary application and arrangements, and pay all fees and charges for water necessary for the proper completion of the project up to the time of final acceptance. The Contractor shall provide and pay for any temporary piping and connections.

Temporary Sanitary Facilities:

The Contractor shall provide adequate sanitary facilities for the use of those employed on the work. Such facilities shall be made available when the first employees arrive on the site of the work, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the work in suitable numbers and at such points and in such manner as may be required or approved.

The Contractor shall provide these portable sanitary facilities "on-site" for use by workers. Transporting workers to the nearest "public" sanitary facility will not be considered an acceptable alternative to these requirements.

The Contractor shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. He shall rigorously prohibit the committing of nuisances on the site of the work, on the lands of the Owner, or on adjacent property. The cost of providing these sanitary facilities shall be included in the Contractor's applicable pay items of work and no separate payment shall be made thereof.

Temporary Refuse/Waste Collection

The Contractor shall provide for adequate refuse/waste collection and disposal. City Ordinance requires that all rental open-top rolloff container units or rental cubic-yard container units must be procured from one of the City's franchised construction and demolition debris providers. For a list of the City's current Franchised Providers, please call Public Works at 386-676-3220.

It will be the Contractor's responsibility to make all necessary arrangements for refuse/waste collection and disposal. The cost of providing for such refuse/waste collection and disposal shall be included in the Contractor's applicable pay items of work and no separate payment shall be made thereof.

Termination and Removal:

At the time the need for temporary utility service or a substantial portion thereof has ended, or when its service has been replaced by use of permanent services, or not later than the time of substantial completion, promptly remove the installation unless requested by the Engineer to retain it for a longer period. Complete and restore work which may have been delayed or affected by the installation and use of the temporary utility, including repairs to construction and grades and restoration and cleaning of exposed surfaces. Replace work damaged beyond acceptable restoration.

1.03 TEMPORARY CONTROLS

Noise Control:

The Contractor shall provide adequate protection against objectionable noise levels caused by the operation of construction equipment.

Dust Control:

The Contractor shall provide for adequate protection against raising objectionable dust clouds caused by moving construction equipment, high winds or any other cause.

Water Control:

The Contractor shall provide for satisfactory disposal of surplus water and shall submit a plan to the Engineer for his review prior to initiation and implementation of the plan. Prior approval shall be obtained from the proper authorities for the use of public or private lands or facilities for such disposal.

Pollution Control:

The Contractor shall provide for adequate protection against polluting any public or private lands, lakes, ponds, rivers, streams, creeks, and other such areas, by the disposal of surplus material in the form of solids, liquids, or gases or from any other cause. The Contractor shall provide for adequate refuse/waste collection and disposal as described in Part 1, paragraph 1.02 of this Section.

The Contractor shall evaluate and assess the impact of any adverse effects on the natural environment which may result from construction operations and shall operate to minimize pollution of air, ground or surface waters vegetation, and afford the neighboring community the maximum protection during and up to completion of the construction project.

The Contractor shall take sufficient precautions to prevent pollution of streams, lakes and reservoirs with fuels, oils, bitumens, calcium chloride or other harmful materials. He shall conduct and schedule his operations so as to avoid or otherwise prevent pollution of siltation of streams, lakes and reservoirs and to avoid interference with movement of migratory fish.

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

Erosion Control:

The Contractor shall not expose, by construction operations, a larger area of erosive land at any one time than the minimum necessary for efficient construction operations, and the duration of exposure of the uncompleted construction to the elements shall be as short as practicable.

Erosion control features shall be constructed concurrently with other work and at the earliest practicable time.

1.04 STORAGE FACILITIES

All products, materials and equipment shall be stored in accordance with the manufacturer's instructions, with seals and labels intact and legible. Products subject to damage by the elements shall be stored in weathertight enclosures. Temperature and humidity shall be maintained within the ranges required by the manufacturer's instructions. Fabricated products shall be stored above the

ground on blocking or skids. Products which are subject to deterioration shall be covered with impervious coatings with adequate ventilation to avoid condensation. Loose granular materials shall be stored in a well-drained area on solid surfaces to prevent mixing with foreign matter. Any products which will come in contact with potable water shall be stored off the ground so as to prevent contamination.

Storage shall be arranged in such a manner to provide easy access for inspection. Periodic inspections shall be made of all stored products to assure that they are maintained under specified conditions, and free from damage or deterioration.
After installation, Contractor shall provide substantial coverings as necessary to installed products to protect from damage from traffic and subsequent construction operations. Coverings shall be removed when no longer needed.

1.05 PRESERVATION OF PROPERTY

Preserve from damage all property along the line of the work, or which is in the vicinity of or in any wise affected by the work, the removal or destruction of which is not called for by the plans. Wherever such property is damaged due to the activities of the Contractor, it shall be immediately restored to its original condition by the Contractor at no cost to the Owner.

In case of failure on the part of the Contractor to restore such property, or make good such damage or injury, the Owner may, after 48 hours notice to the Contractor, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary and the cost thereof will be deducted from any monies due or which may become due the Contractor under this Contract.

The Contractor shall be responsible for the protection of property, in the areas in the vicinity of the project; and for the protection of his equipment, supplies, materials and work, against any damage resulting from the elements, such as flooding, by rainstorm, wind damage, or other elemental cause resulting from the project configuration. The Contractor shall take all precautions against any such damage occurrence, and shall be responsible for damage resulting from same. The Contractor shall provide adequate drainage facilities, tie-downs, or other protection, throughout the Contract period, for the protection of his, the Owner's, and other properties from such damage.

1.06 TRAFFIC REGULATION

Signs, marking barricades and procedures shall conform to the requirements of the Florida Department of Transportation Manual on Traffic Controls and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations.

The Contractor shall maintain one-lane, two-way traffic at all times and maintain customer access to local businesses at all times throughout the course of the work.

The Contractor shall provide and maintain adequate barricades, construction signs, torches, flashers, guards and flagmen as required in pedestrian and vehicular traffic areas. Regulations of local authorities shall be complied with.

The contractor shall provide suitable crossings at street intersections and driveways, and supply such aid as may be required for pedestrians and motorists, including delivery vehicles, to safely negotiate the construction areas.

The Contractor shall carry on the work in a manner that will cause the least interruption in traffic. Closing to through travel of more than two consecutive blocks, including the cross streets intersected will not be permitted without specific authorization from the local authorities. Where traffic must cross open trenches, the Contractor shall provide suitable bridges at street intersections and driveways and provide adequate ingress and egress to dwellings, business facilities, utilities and services. At any time the streets are required to be closed, the Contractor shall notify, in writing, law enforcement agencies, fire departments, and parties operating emergency vehicles before the street is closed and again as soon as it is opened. Access to fire hydrants and other fire extinguishing equipment shall be provided and maintained at all times. Refer to Section 01010 of these Specifications for "Notification of Construction" and "Notification of Street Closure" requirements.

On completion of work, the Contractor shall remove all debris, excess materials, barricades and temporary work leaving walkways and road clear of obstructions.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01600
MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

Materials and equipment furnished by CONTRACTOR shall be new and shall not have been in service at any other installation unless otherwise provided. Materials and equipment shall conform to applicable specifications and standards and comply with the size, make, type and quality specified, or as specifically approved in writing by ENGINEER.

Manufactured and fabricated items shall be designed, fabricated and assembled in accordance with the best engineering and shop practices. Like parts of duplicate units shall be manufactured to standard sizes and gauges to be interchangeable.

Two or more things of the same kind shall be identical, by the same manufacturer.

Materials and equipment shall be suitable for service conditions shown or specified.

Equipment which requires auxiliary devices or equipment in order to operate properly shall have such auxiliary devices or equipment included as a part of its system.

Equipment sizes, capacities and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

Materials and equipment shall not be used for any purpose other than that for which it is designed or is specified.

Where existing materials or equipment is specifically shown or specified to be reused in the work, special care shall be used in removal, handling, storage, and reinstallation, to assure proper function in the completed work.

CONTRACTOR shall arrange for transportation, storage and handling of products which require off-site storage, restoration or renovation.

Salvaged Materials. In the absence of special provisions to the contrary, salvaged materials, equipment or supplies are the property of OWNER and shall be cleaned and stored as directed by ENGINEER.

Manufacturer's Instructions. The installation of all work shall comply with manufacturer's written instructions. CONTRACTOR shall obtain and distribute copies of such instructions to parties involved in the installation including two copies to ENGINEER. One complete set of instructions shall be maintained at the job site during installation and until completion All products and equipment shall be handled, installed, connected, cleaned, conditioned and adjusted in accordance with the manufacturers instructions and specified requirements. Should job

conditions or specified requirements conflict with manufacturers instructions, such conflicts shall be called to ENGINEER'S attention for resolution and revised instructions.

Equipment Guarantee. All mechanical and electrical equipment, together with devices of whatever nature and all components, which are furnished and/or installed by CONTRACTOR shall be guaranteed. The guarantee shall be against manufacturing and/or design inadequacies, materials and workmanship, improper assembly, hidden damage, failure of devices and/or components, excessive leakage or other circumstances which would cause the equipment to fail under normal design and/or specific operating conditions for a period of one year or such longer period as may be shown and/or specified from and after the date of acceptance of the equipment by OWNER. Each piece of equipment, device or component which shall fail within the above specified term shall be replaced with reasonable promptness by CONTRACTOR without cost to OWNER.

Operating Characteristics. Rotating machinery shall be designed and fabricated to provide satisfactory operation without excessive wear and without excessive maintenance during its operating life. Rotating parts shall be statically and dynamically balanced and shall operate without excessive vibration.

Lubrication System. The minimum design criteria for lubrication of moving parts of the equipment shall include one week of continuous operation during which no lubricants shall be added to the system. The system shall also be designed to receive lubricants whether in operation or shut down, and shall not leak or waste lubricants under either condition. The manufacturer's recommendations of grade and quality and a supply of the lubricants so recommended in quantities sufficient to conduct startup and testing operations shall be furnished with the equipment.

Safety Requirements. Screens, guards or cages shall be provided for all exposed, rotating or moving parts in accordance with accepted practices of applicable governmental agencies.

Nameplates. Each major component of equipment shall have the manufacturers name, catalog and/or model number, serial number and applicable performance requirements and characteristics embossed, stamped, or engraved on a stainless steel plate securely attached to the item of equipment.

Anchor Bolts. The manufacturer shall provide stainless steel anchor bolts for each piece of equipment furnished.

1.02 TRANSPORTATION AND HANDLING

Materials and equipment shall be loaded and unloaded by methods affording adequate protection against damage. Every precaution shall be taken to prevent injury to the materials or equipment during transportation and handling. Suitable power equipment will be used and the materials or equipment shall be under control at all times. Under no condition shall the materials or equipment be dropped, bumped or dragged. When a crane is used, a suitable hook or lift sling shall be used. The crane shall be so placed that all lifting is done in a vertical plane. Materials or equipment skid loaded, palletized or handled on skidways shall not be skidded or rolled against materials or equipment already unloaded.

Materials and equipment shall be delivered to the job site by means that will adequately support it and not subject it to undue stresses. Contractor shall promptly inspect the products for damage and defects and conformance with the specification. Materials and equipment damaged or injured in the process of transportation, unloading or handling will be rejected and shall be immediately removed from the site.

1.03 STORAGE AND PROTECTION

All materials and equipment shall be stored in accordance with the manufacturer's instructions, with seals and labels intact and legible. Items subject to damage by the elements shall be stored in weathertight enclosures. Temperature and humidity shall be maintained within the ranges required by the manufacturers instructions. Fabricated items shall be stored above the ground on blocking or skids. Items which are subject to deterioration shall be covered with impervious coatings with adequate ventilation to avoid condensation. Loose granular materials shall be stored in a well-drained area on solid surfaces to prevent mixing with foreign matter. Any items which will come in contact with potable water shall be stored off the ground so as to prevent contamination.

Storage shall be arranged in such a manner to provide easy access for inspection. Periodic inspections shall be made of all stored items to assure that they are maintained under specified conditions, and free from damage or deterioration.

After installation, CONTRACTOR shall provide substantial coverings as necessary to protect installed items from damage, from traffic, and subsequent construction operations. Coverings shall be removed when no longer needed.

PART 2 - MATERIALS AND EQUIPMENT

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01630
SUBSTITUTIONS AND PRODUCT OPTIONS

PART 1 - GENERAL

1.01 REQUESTS FOR REVIEW

A. Requests to review substitute items of material and equipment will not be accepted by the Engineer from anyone other than the Contractor. If the Contractor wishes to furnish or use a substitute or equivalent item of material or equipment, the Contractor shall make written application to the Engineer for acceptance, certifying that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equivalent substance to that specified and be suited to the same use and capable of performing the same function as that specified. The application will state whether or not acceptance of the substitute for use in the work will require a change in Drawings or Specifications to adapt the design to the substitute and whether or not incorporation or use of the substitute in connection with the work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by the Engineer in evaluating the proposed substitute. The Engineer may require the Contractor to furnish at the Contractor's expense additional data about the proposed substitute. The Engineer will be the sole judge of acceptability, and no substitute will be ordered or installed without the Engineer's prior written acceptance. The Owner may require the Contractor to furnish at the Contractor's expense, a special performance guarantee or other surety with respect to any substitute.

1.02 SUBSTITUTION AFTER EXECUTION OF AGREEMENT

A. After execution of the Agreement, substitution of materials or equipment supplied by manufacturers or suppliers other than those listed, will be considered only if it is demonstrated by the Contractor that:

1. the material or equipment proposed for substitution is superior in design, construction and/or efficiency to that of the listed manufacturer or supplier;

2. the material proposed for substitution is in every way equal to that of the listed supplier, and that availability and/or delivery of listed materials within the time frame scheduled cannot be met; or

3. the material proposed for substitution is in every way equal to that of the listed

supplier and is available at a lower cost. In the event such a substitution is allowed, the Contractor shall accept and execute a Change Order reducing the Contract Price by an amount equal to the cost differential.

1.03 EQUIVALENT MATERIALS AND EQUIPMENT

A. Whenever materials or equipment are specified or described in the Drawings or Specifications by using the name of a proprietary item or the name of a particular manufacturer, fabricator, supplier or distributor, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other manufacturers, fabricators, suppliers or distributors may be accepted by the Engineer to determine that the material or equipment proposed is equivalent to that named.

B. It is not the intent of the Contract Documents to function as proprietary specifications. Where a particular manufacturer make and model are cited and specifically required for interchangeability of parts and/or match existing equipment, this has been so stated in the Specifications.

C. The standard products of manufacturers other than those specified may be considered when it is demonstrated to the ENGINEER that they are equal in quality, composition, durability, usefulness and convenience for the purpose intended. Requests for substitutions will only be considered, provided the following minimum conditions are met:

1. The proposed coating system shall use an equal or greater number of separate coats to achieve the required dry film thickness.

2. The proposed coating system shall use coatings of the same generic type.

3. All requests for substitutions shall have the directions for application and descriptive literature which includes generic type, nonvolatile content by volume and information confirming that the substitution is equal to the specified coating system.

4. The CONTRACTOR shall provide Certified Laboratory Data Sheets showing the results of complete spectrographic and durability tests performed on the proposed substitute. Tests shall be performed by a laboratory which conforms to the provisions of the American Society for Testing and Materials (ASTM E329) and which is a member of the American Council of Independent Laboratories. Costs incurred in the testing program shall be borne by the CONTRACTOR.

5. The cost of all testing and analyzing of the proposed substitute materials that may be required by the ENGINEER, shall be paid by the CONTRACTOR. If the proposed substitution requires changes in the contract work, the CONTRACTOR shall bear all such costs involved and the costs of allied trades affected by the substitution.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

Definition:

Closeout is defined to include general requirements near end of Contract Time, in preparation for final acceptance, final payment, normal termination of contract, occupancy by OWNER and similar actions evidencing completion of the work. Specific requirements for individual units of work are specified in sections of Division 2 through 16. Time of closeout is directly related to "Substantial Completion", and therefore may be either a single time period for entire work or a series of time periods for individual parts of the work which have been certified as substantially complete at different dates. That time variation (if any) shall be applicable to other provisions of this section.

1.02 PREREQUISITES TO SUBSTANTIAL COMPLETION

When the CONTRACTOR considers the work to be substantially complete, he shall submit to the ENGINEER: a written notice that the work, or designated portion thereof, is substantially complete; and a list of items to be completed or corrected.

Within a reasonable time after receipt of such notice, the ENGINEER will make an inspection to determine the status of completion.

Should the ENGINEER determine that the work is not substantially complete, the ENGINEER will promptly notify the CONTRACTOR, in writing, giving the reasons. The CONTRACTOR shall remedy the deficiencies in the work and send a second written notice of substantial completion to the ENGINEER. The ENGINEER will reinspect the work.

When the ENGINEER finds that the work is substantially complete, he will prepare and deliver to the OWNER a tentative Certificate of Substantial Completion with a tentative list of items to be completed or corrected before final payment. After consideration of any objections made by the OWNER as provided in Conditions of the Contract, and when the ENGINEER considers the work substantially complete, the ENGINEER will execute and deliver to the OWNER and the CONTRACTOR a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

When the CONTRACTOR considers the work complete, he shall submit written certification that the Contract Documents have been reviewed, the work has been inspected for compliance with the Contract Documents, the work has been completed in accordance with the Contract Documents, equipment and systems have been tested in the presence of the OWNER's representative and are operational, and the work is completed and ready for final inspection.

With reasonable promptness after receipt of such certification, the ENGINEER will make an inspection to verify the status of completion. Should the ENGINEER consider that the work is

incomplete or defective, he will promptly notify the CONTRACTOR, in writing, listing the incomplete or defective work. The CONTRACTOR shall take immediate steps to remedy the stated deficiencies and send a second written certification to the ENGINEER that the work is complete. The ENGINEER will reinspect the work.

Should the ENGINEER perform reinspections due to failure of the Work to comply with the claims of status of completion made by the CONTRACTOR, the OWNER will compensate the ENGINEER for such additional services, and the OWNER will deduct the amount of such compensation from the final payment to the CONTRACTOR.

1.03 CLOSEOUT SUBMITTALS

When the ENGINEER finds that the work is acceptable under the Contract Documents, he shall request the CONTRACTOR to make closeout submittals.

The CONTRACTOR's closeout submittals shall include:

1. Evidence of compliance with requirements of governing authorities.
2. Project Record Documents.
3. Evidence of Payment and Release of Liens.
4. Certificate of Insurance for Products and Completed Operations.
5. Warranties and Bonds.

1.04 ADDITIONAL CLOSEOUT REQUIREMENTS

Project Record Documents:

The CONTRACTOR shall keep one Record copy of all specifications, drawings, addenda, modifications, shop drawings, field test records, and samples at the site in good order and annotated in red to show all changes made during the construction process. These shall be available to the ENGINEER for examination and shall be delivered to the ENGINEER for the OWNER upon completion of the work.

Documents and samples shall be stored in the CONTRACTOR's field office apart from documents used for construction. The CONTRACTOR shall provide files and racks for storage of documents, and a locked cabinet or secure storage space for storage of samples. Documents shall be maintained in a clean, dry, legible condition and in good order.

Record Documents shall not be used for construction purposes.
Each Document shall be labeled "PROJECT RECORD" in neat, large printed letters.

Information shall be recorded by the CONTRACTOR, on a daily basis, concurrently with construction progress. No work shall be concealed until required information is recorded on the CONTRACTOR’s Record Drawings.

Drawings shall be legibly marked to record actual construction information on: depths of various elements of foundation in relation to finish first floor datum; horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements; location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure; field changes of dimension and detail; changes made by Field Order or by Change Order; and details not on original contract drawings.

Specifications and Addenda shall have each section legibly marked to record: manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed; and changes made by Field Order or by Change Order.

At contract closeout Record Documents shall be delivered to the ENGINEER for the OWNER. The submittal shall be accompanied with a transmittal letter in duplicate, containing:

1. Date
2. Project title and number
3. CONTRACTOR's name and address
4. Title and number of each Record Document
5. Signature of CONTRACTOR or his authorized representative

As-Built Survey Requirements: (Not Applicable)

The CONTRACTOR shall provide the ENGINEER with an as-built survey as follows:

1. After completion of the construction, the as-built configuration (both horizontally and vertically) of all the facilities shall be determined and a complete set of as-built drawings prepared.

2. The survey drawing shall be prepared in AutoCAD (R12 or later version) format showing all the as-built improvements and elevations where proposed work is shown on the construction drawings. The CONTRACTOR shall submit three (3) sets of check prints to the ENGINEER for approval prior to the request for final inspection. After the check prints are approved, the CONTRACTOR shall submit one final set of reproducible mylars, four sets of certified prints and a copy of the AutoCAD drawings on diskette.

The as-built survey shall be performed and certified by a registered Florida Land Surveyor meeting the Florida minimum technical standards for surveys and the Surveyor shall provide to the ENGINEER a copy of the Surveyor's professional liability insurance coverage in the amount of one million dollars ($1,000,000.00). The survey shall be certified to the OWNER.

Operating and Maintenance Data:

The CONTRACTOR shall compile product data and related information appropriate for OWNER's maintenance and operation of products furnished under the Contract.
The submittals shall include but not necessarily be limited to:

Manufacturer's specifications.

Directions and instructions relating to assembly, installation, operation and maintenance.

Parts list with catalog numbers and other data necessary for ordering replacements.

1.05 WARRANTIES AND BONDS

The CONTRACTOR shall compile and submit to the ENGINEER in duplicate, for review and transmittal to the OWNER, warranties, bonds, service and maintenance contracts as specified in the respective sections of Specifications. Submittal shall be made within ten days after Substantial Completion and prior to final request for payment.

1.06 FINAL STATEMENT OF ACCOUNTING

The CONTRACTOR shall submit a final statement of accounting to the ENGINEER. The statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum
2. Additions and deductions resulting from:
   - Previous Change Orders
   - Deductions for uncorrected work
   - Deductions for liquidated damages
   - Deductions for reinspection payments
   - Other adjustments
3. Total Contract Sum, as adjusted
4. Previous payments
5. Sum remaining due

1.07 FINAL CHANGE ORDER

The ENGINEER will prepare a final Change Order, if required, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.08 FINAL APPLICATION FOR PAYMENT

The CONTRACTOR shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01710
FINAL CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

The CONTRACTOR shall execute cleaning, during progress of the work, and at the completion of the work, as required by General Conditions.

Cleaning and disposal operations shall comply with all applicable codes, ordinances, regulations, and anti-pollution laws.

Refer to Section 01500 - Temporary Facilities And Controls for additional requirements.

PART 2 - MATERIALS

The CONTRACTOR shall:

Use only those materials which will not create hazards to health or property and which will not damage surfaces.

Use only those cleaning materials and methods recommended by manufacturer of the surfaces to be cleaned.

Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 CLEANING DURING CONSTRUCTION

The CONTRACTOR shall:

Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.

Provide on-site containers for the collection of waste materials, debris and rubbish. Rental of refuse/waste containers must fully comply with the requirements of Section 01500 - Temporary Facilities And Controls.

Remove waste materials, debris and rubbish from the site at least once a week and dispose of at legal disposal areas away from the site.

Prior to final completion, CONTRACTOR shall conduct an inspection of work areas, to verify that the entire work is clean.

3.02 FINAL CLEANING

The CONTRACTOR shall:

Employ skilled workmen for final cleaning.

Remove grease, mastic, adhesives, dust, dirt, stains, and other foreign materials from sight-exposed surfaces.

Broom clean exterior paved surface; rake clean other surfaces of the grounds.

Except as otherwise indicated or requested by the ENGINEER, remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction project.

Prior to final completion, CONTRACTOR shall conduct an inspection of work areas, to verify that the entire work is clean.

Where extra materials of value remaining after completion of the associated work have become the OWNER's property, dispose or store at the site, as directed by the ENGINEER.

END OF SECTION

SECTION 02050
DEMOLITION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The work includes, but is not limited to, demolition and removal of the top slabs for lift station valve vaults and wet wells, removal of concrete pavement, removal of pumps, piping, electrical controls, wiring and lighting within grassed and landscaped dedicated easements as shown on the drawings.

1.02 QUALITY ASSURANCE

A. Accomplish all demolition work so there is no injury to any persons and no damage to adjacent structures or property. All demolition methods shall be in full compliance with municipal, county, state, and federal ordinances. Demolition work shall comply with the requirements of the Occupational Safety and Health Administration (OSHA).

B. The Contractor shall comply with all municipal, county, state, and federal ordinances regarding the disposal of rubble, scrap metal, and refuse.

C. Demolition procedures shall provide for safe conduct of the work, protection of property which is to remain undisturbed, and coordination with other work in progress.

1.03 JOB CONDITIONS

A. General:

1. It shall be the responsibility of the Contractor to visit the site and inspect the nature and condition of the items to be removed and salvaged before submitting his bid.

B. Dust Control:

1. Control the amount of dust resulting from demolition to prevent the spread of dust to occupied portions of buildings and to avoid creation of a nuisance in the surrounding area. Do not use water when it will result in, or create, hazardous or objectionable conditions such as flooding and pollution.

C. Protection of Existing Work:

1. Protect existing work. Work damaged by the Contractor shall be repaired to match existing work.

1.04 PERMITS AND NOTICES

A. Permits and Licenses: Contractor shall obtain all necessary permits and licenses for

performing the work and shall furnish a copy of same to the Engineer prior to commencing the work. The contractor shall comply with the requirements of the permits.

B. Notices: Contractor shall issue written notices of planned demolition to Owner, Engineer and businesses or local residents located in the vicinity of the project site. Notices shall be received at least 48 hours in advance of the planned demolition activity.

C. Utility Services: Contractor shall notify utility companies or local authorities furnishing gas, sewer, water, electrical or telephone to remove any equipment owned by them in structures to be demolished and to remove, disconnect, cap or plug their services to facilitate demolition.

1.05 TRAFFIC AND ACCESS

A. Conduct demolition and modification operation, and removal of piping and debris to ensure minimum interference with roads, streets and sidewalks both onsite and off site and to ensure minimum interference with occupied or used facilities.

B. Contractor shall at all times maintain safe and convenient access to the existing site.

C. Do not close or obstruct streets or walks without permission from the Owner and Engineer. Provide alternate traffic routes around closed or obstructed access ways.

1.06 UTILITIES

A. Existing utilities to remain in service and protected against damage during demolition operations. This may include the installation/construction of bypass piping where necessary.

B. Do not interrupt existing utilities serving occupied or used facilities, except when authorized by the Owner and Engineer. Provide temporary services during interruption to existing utilities as required by the Owner.

C. The Contractor shall cooperate with the Owner to shut off utilities serving the existing facilities as required by demolition operations. If service must be cut off to existing customers, the Owner must have at least three (3) days notice to make necessary preparations.

D. The Contractor shall be solely responsible for making all necessary arrangements and for performing any necessary work involved in connection with the discontinuance or interruption of all public and private utilities or services under this jurisdiction of utility companies.

1.07 POLLUTION CONTROL

A. For pollution control, use water sprinkling, temporary enclosures and other suitable methods as necessary to limit the amount of dust and dirt rising and scattering in the air to the lowest level of air pollution practical for the conditions or work. Comply with the governing regulations.

B. Clean structures and improvements of all dust, dirt and debris caused by demolition operations as directed by the Engineer. Return areas to conditions existing prior to the start of work.

1.08 QUALITY CONTROL

A. Protect all existing materials and equipment to be salvaged or reused from damage.

B. Cap or plug all lines to be abandoned.

C. Leave all exposed ends of all pipe covered and safe.

PART 2 - PRODUCTS

NONE

PART 3 - EXECUTION

3.01 DISPOSAL

A. Equipment, piping, and materials which are designated to remain the property of the Owner shall be moved to a location designated by the Owner.

B. All removed materials not specifically designated to remain the property of the Owner shall become the property of the Contractor and shall be removed from the site and disposed of in a lawful manner.

C. Do not allow debris and rubbish to accumulate on the site. Remove debris and rubbish from the site.

3.02 CLEAN-UP

A. Clean-up in areas where other work is to be done following demolition shall be as specified in the applicable Sections.

B. Clean-up the job site in areas where no other work is to be done under this Contract following demolition. Remove all debris and rubbish, temporary facilities, and equipment. Level surface irregularities to eliminate depressions. Leave the work in a neat and presentable condition.

END OF SECTION

SECTION 02200
EARTHWORK

PART 1 - GENERAL

1. 01 DESCRIPTION OF WORK

A. The extent of earthwork is shown on the drawings.

B. Related Work Specified Elsewhere:

Section 02222 - Trenching, Backfilling and Compacting.

1. 02 QUALITY ASSURANCE

A. Codes and Standards:

1. Perform earthwork in compliance with applicable requirements of governing authorities having jurisdiction.

B. Testing and Inspection Service:

1. The Owner will engage a testing and inspection service, to include testing soil materials proposed for use in the work and field facilities for quality control testing during earthwork operations.

2. Soil survey for satisfactory soil materials and samples of soil materials shall be furnished to the testing service by the Contractor.

3. All test reports must be signed by a licensed engineer.

1. 03 JOB CONDITIONS

A. Existing Utilities:

1. Locate existing underground utilities in the areas of work before starting earthwork operations. Where utilities are to remain in place, provide adequate means of protection during earthwork operations.

2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the utility owner immediately for directions. Cooperate with the Owner and public and private utility companies in keeping their respective services and facilities in operation. Repair damaged utilities to the satisfaction of the utility owner.

3. Do not interrupt existing utilities serving facilities occupied and used by the Owner or others, except when permitted in writing by the Engineer and then only after acceptable

temporary utility services have been provided.

4. Demolish and completely remove from the site underground utilities indicated to be removed. Coordinate with local utility companies for shut-off of services if lines are active.

B. Use of Explosives:

1. The use of explosives is not permitted.

C. Temporary Protection:

1. Barricade open excavations made as a part of earthwork operations and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.

2. Protect structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

PART 2 - PRODUCTS

2. 01 SOIL MATERIALS

A. Backfill and Fill Materials:

1. Soil materials for use as backfill and fill shall be free of rock or gravel larger than 2-inches in any dimension, debris, waste, vegetable, and other deleterious matter.

2. Use excavated or borrows material that has been sampled, tested and certified as satisfactory soil material.

B. Subbase Material:

1. Properly graded mixture of natural and crushed gravel, crushed stone, crushed slag, natural or processed sand that will readily compact to the required density.

2. Use material complying with AASHTO M147, Grade A, unless otherwise indicated or acceptable to the Engineer.

PART 3 - EXECUTION

3. 01 INSPECTION

A. Examine the areas and conditions under which earthwork is to be performed and notify the Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3. 02 EXCAVATION

A. Excavation consists of the removal and disposal of materials encountered when establishing the required grade elevations.

1. Where it is necessary to cut roots projecting into an excavation or to trim branches for equipment clearance, all severed root ends or cuts to branches over 1/2-inch diameter shall be treated with an asphalt base pruning paint. Backfill over exposed roots as soon as possible.

B. Excavation Classifications:

1. The following classifications of excavation will be made when unanticipated rock excavation is encountered in the work. Do not perform such work until material to be excavated has been cross-sectioned and classified by the Engineer. Such excavation will be paid for under the appropriate bid item in the Bid Proposal.

a. Earth excavation includes the removal and disposal of pavements and other obstructions visible on the ground surface, underground structures and utilities indicated to be demolished and removed, material of any classification indicated in data on subsurface conditions, and all other materials encountered that are not classified as rock excavation or unauthorized excavation.

b. Rock excavation consists of the removal and disposal of materials encountered that cannot be excavated with a 3/4 cubic yard capacity power shovel without drilling and blasting, or continuous use of a ripper or other special equipment, except such materials that are classified as earth excavation. Typical of materials classified as rock are boulders 1/2 cu. yd. or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits.

c. Intermittent drilling that may be performed to increase production and is not necessary to permit excavation of the material encountered will be classified as earth excavation.

C. Rock shall be removed to the following limits:

1. Two feet outside of concrete work for which forms are required, except footings. One foot outside the perimeters of footings.

2. In pipe trenches, a minimum of 4-inches below invert elevation of pipe and 2-feet wider than the inside diameter of pipe, but not less than 3-foot minimum trench width.

3. Neat outside dimensions of concrete work where no forms are required.

4. Under slabs on grade, 6-inches below bottoms of concrete slab.

D. Unauthorized excavation consists of removal of materials beyond indicated elevations without the specific direction of the Engineer. Replace unauthorized excavation by backfilling and compacting as specified for authorized excavations of the same classification, unless otherwise directed by the Engineer.

E. Additional Excavation:

1. When excavation has reached required subgrade elevations, notify the Engineer who will make an inspection of conditions.

2. If unsuitable materials are encountered at the required subgrade elevations, carry excavations deeper and replace the excavated material as directed by the Engineer.

3. Removal of unsuitable material and its replacement as directed will be paid for under the appropriate bid item in the Bid Proposal.

F. Dewatering:

1. Prevent surface water and subsurface or groundwater from flowing into excavations, and flooding the project site and surrounding area.

2. Do not allow water to accumulate in excavations. Remove water from excavations to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to the stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey the water away from the site.

3. Convey water removed from excavations and rainwater to collecting or run-off areas. Do not use trench excavations for site utilities as temporary drainage ditches.

4. Contractor shall be required to obtain any demolition permits as may be required due to dewatering volume requirements set by local and state agencies.

G. Material Storage:

1. Stockpile excavated materials classified as satisfactory soil material where directed, until required for fill. Place, grade, and shape stockpiles for proper drainage.

2. Dispose of excess unsatisfactory soil material, trash and debris, as specified.

3. 03 BACKFILL AND FILL

A. Ground Surface Preparation:

1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break-up sloped

surfaces steeper than one vertical to four horizontal so that fill material will bond with existing surface.

2. When the existing ground surface has a density less than that specified under "Compaction" for the particular area classification, break-up the ground surface, pulverize, moisture-condition to the optimum moisture content, and compact to the required depth and percentage of maximum density.

B. Placement and Compaction:

1. Place backfill and fill materials in layers not more than 8-inches in loose depth for material compacted by heavy compaction equipment, and not more than 4-inches loose depth for material compacted by hand-operated equipment.

2. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content of the soil material. Compact each layer to the required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

a. Backfill excavations as promptly as the work permits, but not until completion of inspection, testing, approval, and recording location of underground utilities, as required.

3. 04 COMPACTION

A. General:

1. Control soil compaction during construction, providing the minimum percentage of density specified for each area classification.

2. Percentage of Maximum Density Requirement:

a. Lawn Areas: Compact each layer of backfill or fill material at 85% maximum density (optimum moisture).

b. Walkways: Compact top 6-inches of subgrade and each layer of backfill or fill material at 95% maximum density (optimum moisture).

B. Moisture Control:

1. Where the subgrade or layer of soil materials must be moisture conditioned before compaction, uniformly apply water to the surface of subgrade, or layer of soil material, to prevent free water appearing on the surface during or subsequent to compaction operations. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.

2. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by disking, harrowing or pulverizing, until the moisture content is reduced to a satisfactory value.

3. 05 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction:

1. Testing service must inspect and approve subgrades and fill layers before further construction work is performed thereon.

2. Secure representative samples of the fill material and determine the Standard Density and required moisture content to be maintained by the Moisture-Density Relation Test ASTM D-1557.

3. Make in-place soil density tests during compaction operations in accordance with ASTM D-1556.

4. If, in the opinion of the Engineer, based on reports of the testing service and inspection, the subgrade or fills which have been placed are below the specified density, additional compaction and testing will be required until satisfactory results are obtained.

a. The results of density tests of soil-in-place will be considered satisfactory if the average of any four consecutive density tests which may be selected are in each instance equal to or greater than the specified density, and if not more than one density test out of five has a value more than 2% below the required density.

3. 06 MAINTENANCE

A. Reconditioning Compacted Areas:

1. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, re-shape, and compact to the required density prior to further construction.

3. 07 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Removal from Owner's Property:

1. Remove waste materials, including excavated material classified as unsatisfactory soil material, trash and debris, and dispose of it off the Owner's property in a lawful manner.

END OF SECTION

SECTION 02210
SITE GRADING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Uniformly grade areas within the limits of site grading under this section, including adjacent transition areas. Smooth finished within specified tolerances, compact with uniform levels or slope between points where elevations area shown, or between such points and existing grades.

B. The degree of finish required for general site grading will be that ordinarily obtainable from either blade-grader or scraper operations.

C. Fine grading of finished areas around structures shall be graded smooth and hand raked to meet the elevations and contours shown on the drawings. Lumber, earth, clods, rocks and other undesirable materials shall be removed from the site.

PART 2 – PRODUCTS
(Not Applicable)

PART 3 – EXECUTION

3.01 DITCHES (Not Applicable)

A. Finish ditches and swales to ensure proper flow and drainage. Conduct final rolling operations to produce a hard, uniform and smooth cross-section.

3.02 LAWN OR UNPAVED AREAS

A. Finish areas to receive topsoil to within not more than 0.10 feet above or below the required sub-grade elevations, compacted as specified, and free from irregular surface changes.

3.03 WALKS

A. Shape the surface of areas under walks to line, grade and cross-section, with the finish surface not more than 0.00-feet above or 0.10-feet below the required sub-grade elevation, compacted as specified, and graded to prevent ponding of water after rains.

3.04 PROTECTION OF GRADED AREAS

A. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances.

END OF SECTION

SECTION 02222
TRENCHING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The extent of trenching, backfilling and compacting is shown on the drawings.

B. This section includes furnishing equipment, labor and materials, and performing all operations necessary and incidental to perform the required work.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 CLEARING OF THE SITE

A. The site of the work shall be cleared of all trees, shrubs, paving and objectionable material which interfere with the prosecution of the proposed work. Trees and shrubs which will not interfere with construction shall be protected from damage. Clearing shall be considered as an incidental item of excavation.

3.02 EXCAVATION

A. General:

1. Perform excavation described of whatever substance encountered to the dimensions and depths specified or shown on the drawings. Undercutting will not be permitted, except when ordered by the ENGINEER. Material suitable for backfill shall be stockpiled near the site. Rock or other material undesirable for backfill shall be spoiled outside the area in a neat manner, as directed by the ENGINEER. Where it is necessary to cut roots projecting into an excavation or where it is necessary to trim branches for equipment clearance, all severed root ends or cuts to branches over 1/2-inch diameter shall be treated with an asphalt base pruning paint. Backfill over exposed roots as soon as possible.

B. Rock:

1. Where encountered in the trench bed, rock shall be excavated to a depth of 1/4 of the pipe diameter below the bottom of the pipe but in no case less than 4-inches. All undercut trench excavation shall be backfilled and tamped with materials as specified in the following paragraphs under Unstable Subgrade.

C. Unstable Subgrade:

1. In the event that unsuitable material is encountered at or below the excavation depth specified or shown on the drawings, the ENGINEER shall be notified. Such material shall be removed and replaced with suitable material. Methods and materials used for replacement shall be one of the following as directed by the ENGINEER in writing.

a. Suitable earth or sand, compacted in the trench. Materials shall be furnished as a part of the Bid Proposal item covering excavation and backfill.

b. Gravel or crushed limerock, compacted in the trench and paid for under the appropriate item.

c. Existing materials, stabilized after removal and then replaced and compacted in the trench at no additional cost to the OWNER.

2. The ENGINEER shall determine the methods and materials to be used, based upon the condition of the excavation, the pipe structure to be supported, and the availability and character of stabilizing materials.

D. Trenches:

1. Keep pipe laying operation as close to the excavation operation as possible during the prosecution of the work. The ENGINEER reserves the right to stop the excavation at any time when, in his opinion, the excavation is opened too far in advance of the pipe laying.

2. Pipe trenches shall be only of sufficient width to provide a free working space on each side of the pipe. To prevent excess pressure on the pipe, the maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than 2-feet more than the greatest exterior diameter of the pipe. If this maximum width is exceeded, it shall be the CONTRACTOR's responsibility to provide, at no additional cost to the OWNER, such additional bedding or select backfill materials as the ENGINEER may require. The excavation below the spring line shall be made to conform as near as possible to the shape of the lower third of the pipe. To protect the pipe lines from unusual stresses, all work shall be done in open trenches. Excavation shall be made for bells of all pipes and of sufficient depth to permit access to the joint for construction and inspections. In no case will the bells be used to support the body of the pipe.

3. In order to avoid existing utilities, at times it may be necessary for the pipe to be laid deeper than the minimum cover specified in the preceding paragraph. At such time the CONTRACTOR will not be allowed extra compensation for additional excavation involved.

4. In case excavation has been made deeper than necessary, a layer of concrete, fine gravel or other material satisfactory to the ENGINEER shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe. Where possible, excavated material shall be placed so as not to interfere with public travel. Bridging shall be

provided to afford necessary access to public or private premises. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the OWNER.

E. Structural: (For inlets, manholes, and similar structures)

1. Remove sufficient material to allow proper space for erecting and removing forms. The elevations of the bottoms of footings, if shown on the drawings, shall be considered as approximate only, and the ENGINEER may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary to secure a satisfactory foundation. Excavation for structures shall be sufficient to leave at least 12-inches in the clear between their outer surfaces and the embankment or timber that may be used to protect them. Backfill of earth under structures will not be permitted. Excess excavation for structures shall be filled with thoroughly compacted sand, gravel, or concrete at the expense of the CONTRACTOR.

2. After excavation for a structure is completed, the CONTRACTOR shall notify the ENGINEER to that effect. No concrete or reinforcing steel shall be placed until the ENGINEER has approved the depth of the excavation and the character of the foundation material.

F. Sheeting and Shoring:

1. The CONTRACTOR shall provide all trench and structural bracing, sheeting or shoring necessary to construct and protect the excavation, existing utilities, structures and private property of all types and as required for the safety of the employees. Sheeting shall be removed or cut off by the CONTRACTOR during backfilling operations as directed by the ENGINEER. Removal of shoring for structures shall be done in such a manner as not to disturb or mar finished masonry or concrete surfaces.

3.03 DRAINAGE

A. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas. Any water which accumulates in the excavations shall be removed promptly by well point or by other means satisfactory to the ENGINEER in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Trenches shall be kept dry while pipe is being laid. Bridging of dewatering pipe shall be provided where necessary. Pumps and engines for well point systems shall be operated with mufflers, and at a minimum noise level suitable to a residential area. The CONTRACTOR will not be allowed to discharge water into the OWNER's storm drainage system without the written approval of the ENGINEER. Approval will be subject to the condition that the storm sewer be returned to its original condition.

B. The CONTRACTOR is responsible for carrying the water to the nearest ditch or body of water and for obtaining the necessary permission to use same. The CONTRACTOR shall be financially responsible for any nuisance created due to carrying off water from his drainage system.

3.04 BACKFILL

A. Trenches:

1. Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipe line is provided. Clean earth, sand, crushed limerock or other material approved by the ENGINEER shall be used for backfill. Backfill material shall be selected, deposited and compacted (simultaneously on both sides of the pipe) so as to eliminate the possibility of lateral displacement of the pipe. Backfill material shall be solidly tamped around the pipes in layers to a level at least 1-foot above the top of the pipe. Each layer shall be compacted to a maximum thickness of 6-inches.

2. In unpaved areas, the remainder of the backfill shall be deposited and then compacted by puddling, water flooding or mechanical tampers. Mechanical tamping of layers in unpaved areas shall be to a maximum thickness of 12-inches. In areas to be paved or repaved, the entire depth of backfill shall be deposited in layers and compacted by hand or mechanical tampers to a maximum thickness of 6-inches. Compaction shall be carried out to achieve a density of at least 98% of the maximum density as determined by AASHTO, Method T-180. Under areas to be paved, puddling may be used for backfill consolidation after tamping to 1-foot over the pipe, as specified, provided the method is first approved by the ENGINEER and the density requirements are met.

3. In areas to be paved, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced one in every 300-feet of trench cut. It is the intent of this specification to secure a condition where no further settlement of trenches will occur. When backfilling is completed, the roadway base for pavement replacement may be placed immediately. It will be the responsibility of the CONTRACTOR to restore the surface to the original grade wherever settlement occurs.

B. Structural:

1. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, forms shall be removed and the excavation shall be cleared of all trash and debris. Material for backfilling shall consist of the excavation, borrow sand or other approved materials, and shall be free of trash, lumber or other debris. Backfill shall be placed in horizontal layers not in excess of 9-inches in thickness, and have a moisture content such that a density may be obtained to prevent excessive settlement or shrinkage. Each layer shall be compacted by hand or approved machine tampers with extreme care being exerted not to damage pipe or structures. Backfill shall be placed and compacted evenly against the exposed surfaces to prevent undue stress on any surface.

3.05 RESTORATION OF SURFACE IMPROVEMENTS

A. Roadways, including shoulders, alleys and driveways of shell, limerock, stabilized soil or gravel, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other surface improvements on public or private property which have been damaged or removed in

excavating, shall be restored to conditions equal to or better than conditions existing prior to beginning work. Restoration of shoulders shall consist of sodding, seeding and mulching, or stabilizing with limerock as selected by the ENGINEER. The cost of doing this work shall be included in the cost of the various applicable items.

B. Materials for unpaved roadways, road shoulders, alleys, or drive-ways, shall be compacted to a minimum of 98% of the maximum density as determined by AASHTO, Method T-180. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made, unless a separate bid item is provided.

3.06 FINE GRADING

A. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours shown on the drawings. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

3.07 DISPOSAL OF MATERIAL

A. Such portions of the excavated materials as needed and as suitable, shall be used for backfilling and grading about the completed work to the elevations as shown on the drawings or as directed. Excavated material in excess of the quantity required for this purpose shall be disposed of by the CONTRACTOR. The CONTRACTOR shall leave the earth over the trenches or other excavations in a neat and uniform condition acceptable to the OWNER.

3.08 TESTS

A. The CONTRACTOR shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the OWNER and at such locations as may be recommended by the ENGINEER. The CONTRACTOR shall pay for all tests where the densities, as determined by the specified tests, fall below the required minimums (failed tests).

END OF SECTION

SECTION 02801
RESTORATION OF SURFACE IMPROVEMENTS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

The work includes the restoration of driveways, lawn areas, trees and plants, roadways, sprinkler systems, walks and any other existing improvement affected by the proposed work.

This section includes furnishing equipment, labor and materials, and performing all necessary and incidental operations to perform the required work.

1.02 QUALITY ASSURANCE

Standards. Florida Grades and Standards for Nursery Plants, Part 1:

Irrigation Contractor Qualifications. Irrigation Competency Card is required for contractor or sub-contractor doing any irrigation repair, including relocation of heads, lines or valves, or any new irrigation work.

PART 2 - MATERIALS AND EQUIPMENT

2.01 SOD

Sod used for restoration shall match the existing sod in the area. St. Augustine sod shall be replaced with St. Augustine Floratam. In areas without irrigation, Argentina Bahia sod shall be used, unless otherwise directed by the Engineer/Landscape Architect.

Sod shall have well matted roots.

The sod shall be sufficiently thick to secure a dense stand of live grass, with a minimum thickness of two-inches. The sod shall be live, fresh and uninjured at the time of planting. It shall be planted as soon as possible after being dug and shall be shaded and kept moist from the time it is dug until it is planted.

The sod shall be commercial size rectangles measuring 12-inches by 24-inches or larger, except where 6-inch strip sodding is called for on the drawings.

Sod shall be planted as soon as possible after being harvested and shall be shaded and kept moist from the time of harvesting until it is planted.

The source of the sod may be inspected and approved by the Engineer/Architect prior to construction.

2.02 PLANTS

Existing damaged plants shall be replaced by plants of equal type, quality and size whenever possible. All new plants shall be sound, healthy, vigorous and free from defects, decay, disfiguring, bark abrasions, plant diseases, insect pests, their eggs or larvae. The new plants shall be approved by the Engineer/Landscape Architect before placing.

Existing plants may be removed, preserved, and replaced at the Contractors option, in which case, the plants shall be handled and maintained by approved nursery staff.

Plants shall be watered and cared for until new growth appears. Dead and dying plants shall be immediately replaced.

Plants used shall be in accordance with the standards for Florida No. 1 or better, as given in the current "Grades and Standards for Nursery Plants," State of Florida, Department of Agriculture, or their equal as approved by the Engineer/Landscape Architect.

Plants shall conform to the sizes indicated by the Owner.

2.03 MULCH

Mulch for all planter areas shall be shredded cypress or eucalyptus, clean, bright and free from weeds, moss, sticks, and other debris.

2.04 WATER

The water used in the performance of this Contract shall be of drinking water quality, clean and free from injurious amounts of oil, acid, alkali, organic matter, or any substance which might be harmful to plant growth or obnoxious to traffic.

2.05 PLANTING MIXTURE

The planting mixture, when required, shall consist of a thorough mixture of 40% peat and 60% sand. The peat shall be Florihome peat or equivalent and the sand shall be clean and free from debris of any kind.

2.06 FERTILIZER

Fertilizer shall be granular 8-8-8, or equivalent.

Commercial fertilizers shall comply with the State fertilizer laws.

Fertilizer may, at the discretion of the Engineer/Architect, upon satisfactory evidence of its feasibility from the manufacturer, be applied in liquid form.

2.07 ASPHALTIC CONCRETE

Asphaltic concrete for surface and base course applications shall be Type S-9.5 as specified in the Florida Department of Transportation's Standard Specifications for Road and Bridge Construction and shall be in accordance with the project specifications and plans.

2.08 PORTLAND CEMENT CONCRETE

Portland cement concrete used in the performance of this Contract shall have a compressive strength of 3000 psi at 28 days and shall conform to the requirements of Section 03300.

PART 3 - EXECUTION

3.01 LANDSCAPING RESTORATION

All grass areas disturbed by construction shall be restored with the same type of sod as was existing prior to disturbance.

Lawn Areas. Any lawn area affected by the required work shall be restored to a condition equal or better than the conditions existing before the commencement of work.

Balled Plants. Plants where required shall be adequately balled with firm natural balls of soil, sized as set forth in "Grades and Standards". Balls shall be firmly wrapped with burlap or equally approved strong cloth. No balled plant will be planted if the ball is cracked or broken before or during the process of planting.

Option. Plants may be furnished as container grown instead of balled if all other requirements are met.

Preparation of Plant Pits. All plant pits shall be circular in outline and have vertical sides. Tree pits shall be two feet wider than the width of the ball and one foot deeper than the depth of the ball. Shrubs that are either B&B or in 3 gallon and under containers shall have pits that are one foot wider than the width of the plant ball and 6-inches deeper than the depth of the ball.

Setting Plants. All plants except as otherwise specified, shall be centered in pits. Deep planting shall be avoided and unless otherwise specified, plants shall be set at such a level that after settlement they will bear the same relation to the required grade as they have to the natural grade before being transplanted.

Balled and burlapped plants and palms shall be placed on 6-inches to 12-inches of tamped planting mixture and adjusted so as to be at the proper level. The rope and burlap shall be cut away and the burlap folded down to the bottom of the pit. Very large B&B plants shall remain wrapped until fully backfilled and then just the upper portion of the burlap shall be removed. Backfill of planting mix shall be placed halfway up the pit and then water tamped. After this water has drained away, backfill around the edge of the pit to form a saucer and fill area three times with water.

Water. Water to be used initially during plant installation shall be furnished by the Contractor. The existing irrigation system, where damaged, shall be promptly repaired after the installation of the plants.

Sod Placement. The provisions for the preparation of the area to be sodded shall include scarifying and loosening the soil and application of fertilizer.
Sodding shall not be performed when weather and soil conditions are, in the Engineer's opinion, unsuitable for proper results.

The sod shall be placed on the prepared surface with edges in close contact, and shall be firmly and smoothly embedded by light tamping with appropriate tools.

Where sodding is used in drainage ditches or ponds, the setting of the pieces shall be staggered, such as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall not exceed 6-inches.

In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a featheredge effect.

On areas where the sod may slide, due to height and slopes, it shall be pegged, with pegs driven through the sod blocks into firm soil and at intervals as shown on the drawings or as directed by the Engineer/Architect.

Any pieces of sod which, after placing, show appearance of extreme dryness shall be removed from the work.

The sod shall be kept in a moist condition after planting and for the duration of the Contract.

Maintenance. Contractor shall maintain the planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include mowing, edging, weed control, watering, filling, leveling and repairing of any washed or eroded areas as may be necessary.

3.02 PAVEMENT REPLACEMENT

Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible.

Prior to replacing concrete or asphalt pavement replacement, a limerock base shall be laid. The base for concrete pavement shall be six (6) inches of compacted thickness, and that for asphalt pavement shall be twelve (12) inches of compacted thickness for City roadways. The base course for each shall be compacted in two equal layers to a minimum of 98% of the maximum density as determined by AASHTO, Method T-180. The Owner will have tests made by an independent testing laboratory to verify compaction results.

Non-asphalt pavement replacement shall be replaced of like material and thickness. Asphalt or built-up asphalt pavement replacement shall be replaced with like material or concrete as directed by the Engineer/Architect. Where asphalt or built-up asphalt pavement is replaced by concrete,

the concrete shall have a minimum of six (6) inches in thickness and be reinforced with 6 by 6 No. 6 gage welded wire fabric. Where the pavement replacement is of like material, it shall be replaced in thickness equal to or better than that existing at the time of removal.

Unless the base is sealed or other temporary paving applied over driveway areas to be repaved, pavement shall be replaced not later than three weeks after completion of backfill.

3.03 CURB REMOVAL AND REPLACEMENT

Curb removal and replacement required in the construction of this work shall be done by the Contractor. Reasonable care shall be exercised in removing the curb, and the Contractor shall either stockpile or dispose of this material as directed by the Engineer/Architect. Curb shall be replaced of like material in a manner and condition equal to or better than that existing at the time of removal.

3.04 TESTS

The Contractor shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the Owner and at such locations as may be recommended by the Engineer/Architect. If the densities as determined by the specified tests fall below the required minimums, the Contractor shall pay for all retests.

END OF SECTION

SECTION 02822
SODDING (RESTORATION ONLY)

PART I - GENERAL

1.01 SCOPE OF WORK:

A. Provide all labor, materials, equipment and incidentals required to prepare lawn bed and install sodding in accordance with the drawings and as specified.

1.02 WORK SPECIFIED ELSEWHERE (N/A):

A Section 02441 - Landscape Irrigation System
B. Section 02800 - Landscape Planting

1.03 SUBMITTALS:

A. Submit representative sod samples for approval by Landscape Architect.

B. Submit certifications for sod supplier.

1.04 QUALITY ASSURANCE:

A. Sod shall be grown by a certified Florida State Plant Board approved SOD FARM.

PART II - PRODUCTS

2.01 SOD:

A. Sod shall be Paspalum notatum (Bahia), with compacted growth and good root development. Provide for areas as shown on plans.

B. Sod shall be certified to meet Florida State Plant Board specifications, absolutely true to varietal type, and free from weeds or other objectionable vegetation, fungus, insects and disease of any kind.

C. Before being cut and lifted the sod shall have been mowed (3) times with final mowing not more than a week before cutting into uniform dimensions.

2.02 SOIL CONDITIONERS:

A. Fertilizer:

1. Fertilizer shall be complete fertilizer, the elements of which are derived from organic sources. Fertilizer shall be a standard product complying with State and Federal fertilizer laws.

2. Percentages of nitrogen, phosphorus and potash shall be based on laboratory tests on soils outlined in Paragraph 1.03(I) of Section 02800 -Landscaping Planting and approved by the Landscape Architect. For purpose of bidding, assume 8% nitrogen, 8% phosphorus and 8% potash by weight. At least 50% of the total nitrogen shall contain no less than 3% water-insoluble nitrogen.

3. Fertilizer shall be delivered to the site, mixed as specified, in the original unopened standard size bags showing weight, analysis and name of manufacturer. Containers shall bear the manufacturer's guaranteed statement of analysis, or a manufacturers certificate of compliance covering analysis shall be furnished to the Landscape Architect. Store fertilizer in a waterproof place and in such a manner that it will be kept dry and its effectiveness will not be impaired.

B. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes containing not less than 20% available phosphoric acid.

PART III - EXECUTION

3.01 LAWN BED PREPARATION:

A. Areas to be sodded shall be cleared of all rough grass, weeds, and debris and the ground brought to an even grade as approved.

B. The soil shall then be thoroughly tilled to a minimum 8 inch depth.

C. Superphosphate at a rate for bidding purposes of 5 pounds per 1000 square foot and complete fertilizer at a rate for bidding purposes of 16 pounds per 1000 square foot shall be evenly distributed over entire area and cross-disked in to a depth of 4-6 inches.

D. The areas shall then be brought to proper grade, free of sticks, stones, or other foreign matter over 1-inch in diameter or dimension. The surface shall conform to

finish grade, less the thickness of sod, free of water retaining depressions, the soil friable and of uniformly firm texture.

3.02 SOD HANDLING AND INSTALLATION

A. During delivery, prior to planting, and during the planting of the lawn areas, the sod panels shall at all times be protected from excessive drying and unnecessary exposure of the roots to the sun. All sod shall be stacked during construction and planting so as not to be damaged by sweating or excessive heat and moisture. No sod shall remain stacked for periods longer than five days of original field preparation. Any sod left stacked for longer than five days shall be rejected, removed from site and replaced by the Contractor at no additional expense to the Owner.

B. Alter completion of soil conditioning as specified above, sod panels shall be laid tightly together so as to make a solid sodded lawn area. On mounds and other slopes the sod panels shall be staggered to prevent water channelization, with the short dimension of the sod laid perpendicular to the slope. Immediately following sod laying the lawn areas shall be rolled with a lawn roller customarily used for such purposes, and then thoroughly watered.

C. Bring the sod edge in a neat, clean manner even with the edge of all paving and shrub areas. Top dressing with approved, clean, weed free, sand may be required at no additional cost to the Owner if deemed necessary by the Landscape Architect.

3.03 MAINTENANCE:

A. The Contractor shall produce a dense, well established lawn. The Contractor shall be responsible for the repair and resodding of all eroded or bare spots until project acceptance. Repair sodding shall be accomplished as in the original work except that fertilizing may be omitted.

B. Sufficient watering shall be done by the Contractor until final acceptance to maintain adequate moisture for optimum development of the lawn areas. Sodded areas shall receive no less than 1.5 inches of water per week or as directed by Landscape Architect.

C. Mow sodded lawn area as soon as sod is rooted sufficiently to permit mowing. Mowing shall be the Contractor's responsibility until final acceptance is given. All mowing shall be done in accordance with standard horticulture practices.

D. Do not permit new lawn areas to grow in excess of 4" high for bahia and 4" high for St. Augustine during maintenance period.

E. After an established stand of grass has been accepted by the Owner or his representative, the Owner assumes all responsibility for maintenance; however, it is the contractor's responsibility to instruct the Owner in proper maintenance procedures.

3.04 REPAIRS TO LAWN AREAS DISTURBED BY CONTRACTOR OPERATIONS

A. Lawn areas planted under this Contract and lawn areas outside the designated areas damaged by Contractor's operations shall be repaired at once by proper sod bed preparations, fertilizing and resodding, in accordance with these specifications.

3.05 ACCEPTANCE:

A. For the purpose of establishing an "Acceptance" standard, the following criteria is to be used:

B. Sod shall be healthy, well-rooted, even colored, viable, free of weeds, open joints and bare spots.

3.06 GUARANTEE AND REPLACEMENT:

A. All sod shall be guaranteed for a period of three (3) months after the date of acceptance by the Owner. All sod areas shall be full, without bare spots, healthy, and even colored.

END OF SECTION

SECTION 03300
CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Work consists of the forming, mixing, placing and curing concrete for use in small structures, sidewalk, and curb replacement.

1.02 QUALITY ASSURANCE

A. Concrete may be standard design and product of commercial ready-mix or transit-mix supplier conforming to the following requirements:

Class	Cement Content per cubic yard	Minimum 28-day Strength (lb. per sq. in.)
Structural	6.25 bags or 600 pounds	4000
Non-Structural	5.75 bags or 560 pounds	3000

B. Job mixes of small quantities shall conform to the same requirements.

1.03 SUBMITTALS

A. Compressive strength tests, when required by the Engineer, shall be made by breaking standard 6-inch diameter by 12-inch high test specimens prepared, cured and broken in accordance with the ASTM C31 and C39. Three specimen test cylinders shall be taken from each concrete pour of three cubic yards. One additional test cylinder shall be taken for quantities up to one truck load. Test specimens shall be taken in the presence of the Engineer. One cylinder from each pour shall be broken at seven days, the remainder at twenty-eight days. Additional test cylinders may be ordered for determining the characteristics of a new design mix or changes in equipment or methods, and under adverse weather or curing conditions.

B. Slump test shall be made in accordance with ASTM C143, and shall be made whenever directed by the Engineer.

C. Responsibility for Tests and Reports:

1. The Contractor shall supply all cylinder molds, slump cones, tools and labor for preparing specimens, and shall provide clean, moist sand or burlap for curing. Cylinders shall be shipped to the testing laboratory until the third day following preparation, and shall be protected from accidental damage at all times.

2. The test cylinders shall be tested in a recognized commercial testing laboratory.

1.04 DELIVERY AND STORAGE

A. Ready-mixed concrete delivered shall be accompanied by delivery tickets showing the following:

Date and time leaving plant
Type of cement and weight
Quantity of water and time added
Additive (if any).

B. Bulk or bagged cement or bagged concrete mix shall be stored off the ground in a sheltered area.

PART 2 - PRODUCTS

2.01 CEMENT

A. Portland cement shall conform to the latest revision of Federal and/or ASTM Specifications enumerated below:

1. For general concrete construction, ASTM C150, Type I.

2. Type II (meeting ASTM C150) cement shall be used in all areas where the concrete will be subjected to a hydrogen sulfide environment (i.e., direct contact with groundwater).

2.02 AGGREGATES

A. Fine Aggregate:

1. Fine aggregate shall be clean, hard, strong, durable, uncoated particles of natural sand.

2. The fine aggregate shall be reasonably well graded from coarse to fine.

B. Coarse Aggregate:

1. Coarse aggregate shall be washed and consist of hard, tough, durable components, free from adherent coatings, salt, alkali, vegetable matter, and shall no contain an excessive number of soft, friable, thin or elongated particles. Coarse aggregate shall be properly grades from fine to coarse to produce concrete of the desired strength, density, and workability.

2. Where the cover over reinforcing is two inches or more, the maximum size of aggregate shall be 1-1/2 inches. Where the cover over reinforcing is less than two inches, the maximum size of aggregate shall be 3/4-inch. The maximum size of aggregate shall not exceed one-fifth of the narrowest dimension between forms nor three-fourths of the minimum clear spacing between reinforcing bars.

2.03 BAGGED CONCRETE MIX

A. For very small amounts of concrete a premixed sand, gravel and cement in 40 lb. (1/3 cu. ft.) or 80 lb. (2/3 cu. ft.) bags may be used. The Engineer must give approval for its use.

2.04 ADMIXTURES

A. The design mix may be based upon the use of such admixtures as the designer may select to improve the workability, plasticity or rate of curing of the concrete.

2.05 MIXING WATER

A. The water used in mixing concrete shall be fresh, clean and free from injurious amounts of oil, acid, alkali, or organic matter.

B. Water from any source other than a municipal water supply shall be shown by test to comply with Florida State Department of Transportation requirements for mixing water.

2.06 STEEL BAR AND WIRE FABRIC REINFORCEMENT

A. The reinforcing shall be fabricated to the proper shapes and dimensions. Before placing, all reinforcements shall be thoroughly cleaned of rust, mill scale and/or coatings.

B. Reinforcing bars shall conform to the requirements of ASTM A615, Grade 60 including hoops and stirrups.

C. Reinforcing steel shall be detailed, fabricated and placed according to the methods and standards recommended in the "Manual of Standard Practice for Detailing Reinforced Concrete Structures" of the American Concrete Institute.

D. Splices in reinforcing mats shall be staggered. Horizontal mats shall be supported on metal chairs with all sills or pads below subgrade. Spacers shall be provided for wall and column steel and shall be removed as the concrete is placed.

E. Wire fabric, unless otherwise shown or specified, shall be 6-inches by 6-inches by W1.4 x W1.4 woven or electrically welded wire fabric conforming to the requirements of ASTM A185.

PART 3 - EXECUTION

3.01 FORMS

A. Material:

1. Forms shall be of wood, metal, or other approved materials, shall be built true to line and grade, mortar-tight, adequately braced and supported, and sufficiently rigid to prevent

displacement or sagging. Metal forms shall be of a type and manufacture acceptable to the Engineer. Plywood, fiberboard, or absorptive type form linings may be used where appropriate.

2. Form work shall be constructed conforming to AC1 347 Chapter 2. Joints of sectional forms shall be located in a modular manner with as few fillers as possible. Voids in plywood and joints between form modules used for concrete exposed to view or hydraulic action shall be filled with silicone sealant and shall be tool smooth. Profile items such reglets and anchors shall be securely fastened with flush mechanical fasteners.

3. Pours shall not be scheduled until all erection and bracing of form work has been completed.

3.02 CONCRETE PLACING

A. Concrete shall not be placed until forms and reinforcing have been inspected.

B. Concrete shall be placed with the aid of mechanical vibrating equipment supplemented by hand forking or spading. Vibration shall be transmitted directly to the concrete and not through the forms. The duration of vibration at any location in the forms shall be held to the minimum necessary to produce through consolidation.

C. Concrete shall be compacted and worked in an approved manner into all corners and angles of the forms and around reinforcement and embedded fixtures in such a manner as to prevent segregation of the coarse aggregate.

D. Before depositing new concrete on or against concrete which has set, the existing surfaces shall be cleaned of all laitance, foreign matter and loose particles, and slushed with a neat cement grout. Grout for horizontal construction joints shall be of cement and fine aggregate in the same proportions as in the concrete to be placed, and shall be from 1/2- to 1-inch thickness.

E. The concrete shall be placed by suitable equipment as nearly as possible to its final location and without any segregation of the aggregate. Free vertical drop shall not exceed three feet.

3.03 CONCRETE CURING

A. Water for curing shall be clear and entirely free from any elements which might cause staining or discoloration.

B. Concrete shall be kept wet by covering with water, water saturated covering, or by alternate methods which will keep all surfaces continuously wet, for a period of seven days.

C. Where wood forms are left in place during curing, they shall be kept wet at all times.

3.04 WEATHER PROTECTION

A. No concrete shall be mixed or placed when the air temperature in the shade and away

from artificial heat is as low as 40 degrees F., and falling. Concrete may be mixed and placed when the air temperature in the shade and away from artificial heat is 35 degrees Fahrenheit, and rising.

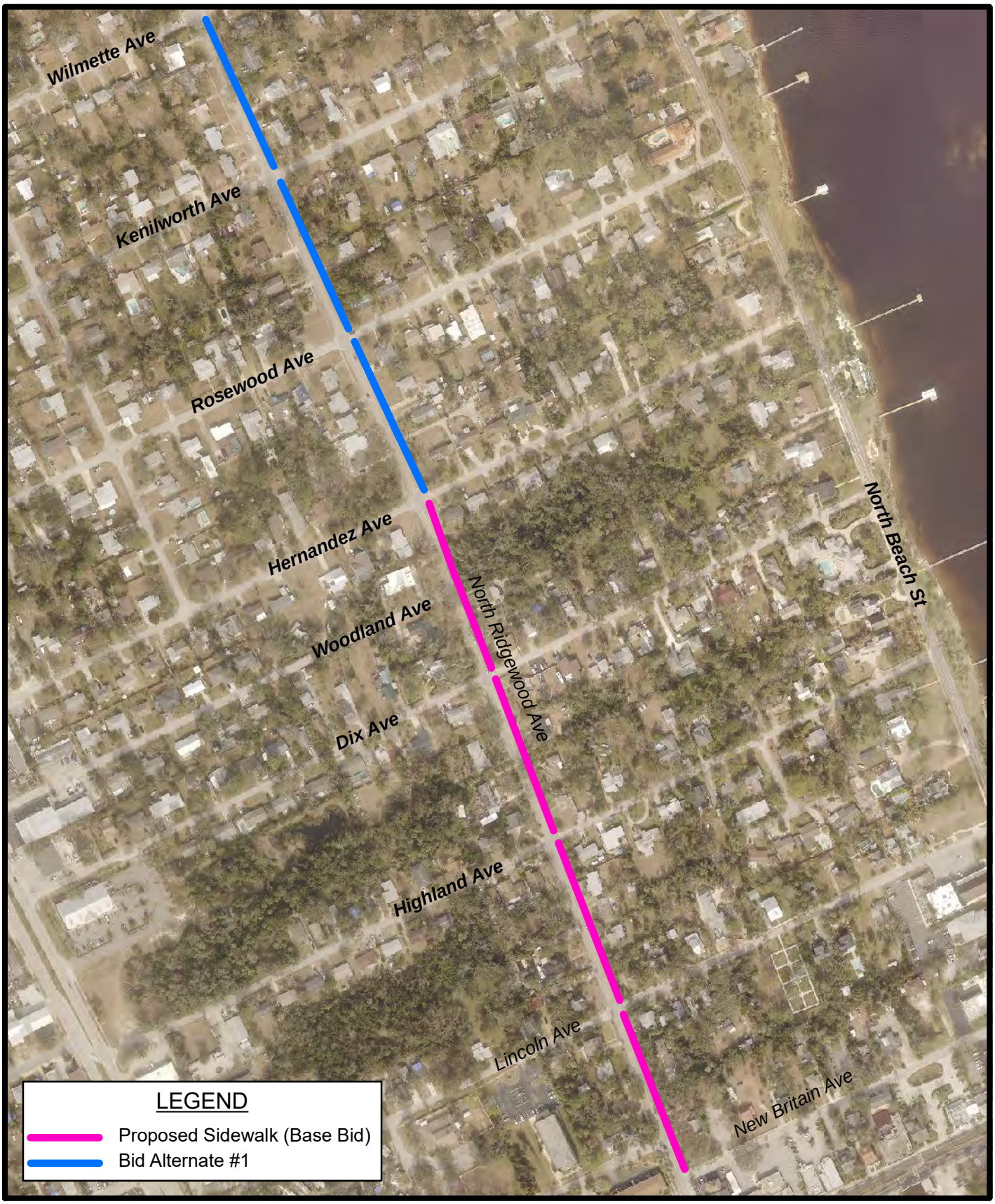
B. Fresh concrete shall be protected from rain, flowing water and mechanical injury.

3.05 CONCRETE FINISHING

A. Slabs, Walks and Pavements shall be brought to a true and even finish by power or hand-floating. The surface shall be floated to a true, smooth finish. Troweling shall be the minimum to obtain a smooth, dense surface and shall not be done until the mortar has hardened sufficiently to prevent excess fine material from being worked to the surface. All walk and pavement surfaces, shall, immediately after troweling, be lightly broomed. The brooming shall be sufficient to mark the surface without appreciably disturbing the troweled finish.

END OF SECTION

Location Map



NORTH RIDGEWOOD AVE
EAST SIDE SIDEWALK
IMPROVEMENTS

Prepared By: The City of Ormond Beach
G.I.S. Department - January 10, 2023

N
W E
S

CDBG Requirements

Part of the Advertisement/RFP for any CDBG Project

This is a federally assisted project and is subject to Federal Labor Standards which include, the Davis-Bacon Act (payment of prevailing wage rates) and the Copeland Act (anti-kickback of wages & submission of weekly certified payroll reports), as well as other provisions including 24 CFR 85.36 (bonding requirements), and Section 3 & M/WBE. Laborers and mechanics employed by primary contractors and sub-contractors performing construction work on this project shall be paid wages at rates not less than the prevailing rates as determined by the Secretary of Labor in accordance with the Davis-Bacon Act. The prime contractor is responsible for the enforcement of wage compliance and support documentation for the duration of the project and may be held liable for wage restitution. The applicable information regarding the laws and regulations stated above are included in the bid packet.

SUPPLEMENTAL CONDITIONS FOR FEDERALLY ASSISTED PROJECTS

The supplemental conditions contained in this section are intended to cooperate with, to supplement, and to modify the general conditions and other specifications. In case of disagreement with any other section of this contract, the Supplemental Conditions shall govern. This contract is funded in whole or in part with federal funds made available from the U.S. Department of Housing and Urban Development (HUD). The contractor and all of its subcontractors shall comply with these federal provisions. The contractor shall include these supplemental conditions in all subcontracts.

1. Davis-Bacon Act
2. Copeland "Anti-Kick Back" Act
3. Federal Labor Standards
4. Environmental Compliance
5. Lead Based Paint Requirements
6. Historic Preservation
7. Energy Efficiency
8. Flood Disaster Protection
9. Special Equal Opportunity Provisions
10. Section 3
11. Conflict of Interest
12. Utilization of Minority and Women-owned Businesses
13. Fair Housing Laws
14. Drug Free Workplace
15. Debarred Contractors
16. Lobbying
17. Access to Records
18. Records Retention

Attachment I - Federal Labor Standards Provisions

1. Davis- Bacon Act- 29 CFR Parts 1,3,5,6 and 7

The contractor agrees to comply with the requirements of the Davis-Bacon Act, which requires the payment of prevailing wage rates (which are determined by the U.S. Department of Labor) to all laborers and mechanics on federally funded construction projects in excess of $2,000. A Davis-Bacon wage decision (or wage determination) is a listing of various construction work classifications and the minimum wage rates (and fringe benefits, where prevailing) that workers who perform work in those classifications must be paid.

2. Copeland "Anti-Kickback" Act- 18 USC 874 and 40 USC 276c; 29 CFR Part 3

The contractor and subcontractor(s) shall comply with the requirements of the Copeland "Anti-Kickback" Act as supplemented in the U.S. Department of Labor regulations 29 CFR Part 3. The Copeland Act makes it a federal crime for anyone to require any laborer or mechanic (employed on a federally assisted project) to kickback (i.e. give up or pay back) any part of their wages. The Copeland Act requires every contractor and subcontractor to submit weekly payroll reports (certified payroll) and regulates permissible payroll deductions.

3. Federal Labor Standards

The project or program to which the construction work covered by this contract pertains is a federally assisted project and the Federal Labor Standards Provisions are included in this contract pursuant to the provisions applicable to such Federal assistance. See Attachment 1 for a complete copy of these labor standards.

4. Environmental Compliance- Section 306 of the Clean Air Act, Section 508 of the Clean Water Act and EPA Regulations- 42 U.S.C. 1857(h)

The contractor shall comply with the requirements of the Federal Clean Air Act and the Federal Water Pollution Control Act, as amended. Requirements for compliance with these regulations apply to contracts and subcontracts in amounts in excess of $100,000. all applicable standards, orders, or requirements issued under (), (33 U.S.C. 1368), Executive Order 11738, and U.S. Environmental Protection Agency regulations (40 C.F.R. Part 15).

5. Lead- Based Paint Requirements- 24 CFR Part 35

All housing that is assisted by the contractor through this project with federal funds is subject to the lead-based paint requirements, found at 24 CFR Part 35. These rules apply to properties that were constructed prior to 1978, and require:

- Certain disclosures (in the form of notices) to occupants and applicants about any known or potential lead-based paint hazards
- Testing, assessing, and stabilization or reduction of lead-based paint hazards in accordance with established procedures, based on activity type and level of Federal assistance (for rehabilitation)
- Use of safe work practices
- Certain provisions included in all contracts and subcontracts related to lead-based paint
- Ongoing maintenance to monitor controls put in place to limit the hazards associated with the presence of lead-based paint.

6. Historic Preservation- 16 USC 470; 36 CFR Part 800

The contractor's performance may be subject to the Historic Preservation requirements set forth in the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470) and the procedures set forth in 36 CFR Part 800, Advisory Council on Historic Preservation Procedures for Protection of Historic Properties.

7. Energy Efficiency

The contractor shall comply with any mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163).

8. Flood Disaster Protection- 42 USC 4001

The contractor's performance may be subject to the Flood Disaster Protection Act of 1973 which requires that activities located in an area identified by the Federal Emergency Management Agency (FEMA) as having special flood hazards, flood insurance under the National Flood Insurance Program must be obtained and maintained as a condition of financial assistance for acquisition or construction purposes (including housing rehabilitation.)

9. Special Equal Opportunity Provisions

A. Activities and Contracts Not Subject to Executive Order 11246, as Amended

(Applicable to Federally assisted construction contracts and related subcontracts $10,000 and under.)

During the performance of this contract, the Contractor agrees as follows:

i. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

ii. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by Contracting Officer seeking forth the provisions of this nondiscrimination clause. The Contractor shall state that all qualified applicants be considered without regard to race, color, religion, sex or national origin.

iii. Contractors shall incorporate foregoing requirements in all subcontracts.

B. Executive Order 11246 (contracts/subcontracts above $10,000)

During the performance of this contract, the contractor agrees as follows:

i. Section 202 Equal Opportunity Clause

a. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are

treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment, or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in a conspicuous place, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

b. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration without regard to race, color, religion, sex, or national origin.

c. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice to be provided by the Contract Compliance Officer advising the said labor union or workers representatives of the Contractors commitment under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

d. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the Rules, Regulations, and Relevant Orders of the Secretary of Labor.

e. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Department and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and others.

C. Certification of Non-segregated Facilities- E.O. 11246; 41 CFR Part 60-1.8

By the submission of this bid, the bidder, offeror, applicant or subcontractor certifies that he/she does not maintain or provide for his/her employees any segregated facility at any of his/her establishments, and that he/she does not permit employees to perform their services at any location, under his/her control, where segregated facilities are maintained. He/She certifies further that he/she will not maintain or provide for employees any segregated facilities at any of his/her establishments, and he/she will not permit employees to perform their services at any location under his/her control where segregated facilities are maintained. The bidder, offeror, applicant or subcontractor agrees that a breach of this certification is violation of the Equal Opportunity Clause of this contract. As used in this certification, the term segregated facilities means any waiting rooms, work eating areas, time clocks, locker rooms, and other storage or dressing areas, transportation and housing facilities provided for employees

which are in fact segregated on the basis of race, color, religion, or otherwise. He/She further agrees that (except where he/she has obtained identical certifications from proposed subcontractors prior to the award of subcontractors have submitted identical certifications for specific time periods).

D. Equal Employment Opportunity- Title VII of the Civil Rights Act of 1964 E.O. 11246

Under Title VI of the Civil Rights Act of 1964, no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

E. Americans with Disabilities Act of 1990- E.O. 11250; 42 U.S.C 12131; 24 CFR Part 35

The contractor shall not exclude on the basis of handicap persons from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

F. Section 109 of the Housing and Community Development Act of 1974

No person in the United States shall on the grounds of race, color, national original, or sex is excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

G. Section 504 of the Rehabilitation Act of 1973- 29 USC 794, 24 CFR Parts 8 and 9

i. The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

ii. The Contractor agrees to comply with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.

iii. In the event of the Contractors noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

iv. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be

prescribed by the Director, provided by or through the contracting officer. Such notices shall state the Contractors obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.

v. The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or their contract understanding, that the contractor is bound by the terms of Section 503 of the Rehabilitation Act of 1973, and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.

vi. The Contractor will include the provisions of this clause in every subcontract or purchase order of $2,500 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to Section 503 of the Act, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.

H. Age Discrimination Act of 1975- 42 U.S.C. 6101, et seq; 24 CFR Part 146

The contractor shall comply with the Age Discrimination Act of 1975, which provides that no person, on the basis of age be excluded from participation in, be denied the benefits of, or be subjected to discrimination under, any program, or activity receiving Federal Financial assistance.

I. NSP 3 Vicinity Hiring and Contracting Preference-

A contractor that is awarded a project involving the use of NSP3 funds, as provided by the Dodd-Frank "Wall Street Reform and Consumer Protection Act" of January 5, 2010, sec 1497 (a)(8), is required to take actions to hire employees who reside in the vicinity of NSP3-funded projects, and provide contracting opportunities to small businesses that are owned and operated by residents in this vicinity.

10. Section 3- 24 CFR Part 75

The contractor shall comply with the purposes of the Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701U) (Section 3) and ensure that employment and other economic opportunities generated by HUD funded programs, to the greatest extent feasible, and consistent with Federal, State, and local laws and regulations, be directed to low- and very-low income persons, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low and very low-income persons. Sub-recipients, contractors and subcontractors for a Section 3 project must meet the requirements of § 75.19, regardless of whether Section 3 language is included in related agreements or contracts.

11. Conflict Of Interest- 24 CFR Part 85.36 and 24 CFR Part 570.611

No officer or employee of the local jurisdiction or its designees or agents, no member of the governing body, and no other public official of the locality who exercises any function or responsibility with respect to this contract, during his/her tenure or for one year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, for work to be performed. Further, the Contractor shall cause to be incorporated in all subcontracts the language set forth in this paragraph prohibiting conflict of interest.

12. Utilization Of Minority And Women Firms (M/WBE)- 24 CFR Part 85 (e)

The contractor shall take affirmative steps to assure that M/WBE firms are utilized when possible as suppliers and/or subcontractors, as applicable.

Prior to contract award, the contractor shall document efforts to utilize M/WBE firms, including identifying what firms were solicited as suppliers and/or subcontractors, as applicable. Information regarding certified M/WBE firms can be obtained from:

- State of Florida at 904-487-4698 (all goods and services)
- State of Florida at 904-921-7370 (construction services, particularly highway)
- Minority Business Development Center in most major cities
- Local government M/WBE programs in many large counties and cities

13. Fair Housing Laws

The contractor shall company with the Fair Housing Act, and related laws that prohibit discrimination on the basis of race, color, national origin, religion, sex, familial status and handicap in the provision of housing, including rental, purchase, advertising, financing, insurance and multi-family housing on the basis of race, color, national origin, religion, sex, familial status and handicap. The requirements of the Fair Housing Act (42 U.S.C. 3601-20) and implementing regulations at 24 CFR part 100; Executive Order 11063, as amended by Executive Order 12259 (3 CFR, 1958-1063 Comp., p. 652 and 3 CFR, 1980 Comp., p. 307) (Equal Opportunity in Housing) and implementing regulations at 24 CFR part 107; and title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d) (Nondiscrimination in Federally Assisted Programs) and implementing regulations issued at 24 CFR part 1 shall apply to any housing related contract awarded hereunder.

14. Drug Free Workplace- 41 USC 701, 24 CFR Part 21

The Contractor shall comply with the requirements of the Drug-Free Workplace Act of 1988. The Contractor certifies to comply with the drug-free workplace requirements in accordance with the Act, and with U.S. Department of Housing and Urban Development regulations.

15. Debarred Contractors

This project is subject to requirements prohibiting use of federal funds to directly or indirectly employ, award contracts to, or otherwise engage the services of any contractor, subcontractor or subrecipient during any period of federal debarment, suspension, or placement of ineligibility status. The County is required to check the eligibility status of all contractors, subcontractors, and subrecipients against the federal publication that lists debarred and ineligible contractors. This list can be found on the The System for Award Management (SAM) at https://www.sam.gov

16. Lobbying

The Contractor certifies, to the best of his or her knowledge and belief, that:

A. No federally appropriated funds have been paid or will be paid, by or on behalf of the Contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal loan, the entering into of any cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan or cooperative agreement.

B. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

C. The Contractor shall require that the language of this certification be included in the award documents for all sub-awards at all tiers including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements.

D. This certification is a material representation of fact upon which reliance was placed when this contract was made or entered into. Agreement to this certification is a prerequisite for making or entering into this contract imposed by Section 1352, title 31, U.S. Code. Any person or agency that makes an expenditure prohibited by this section is subject to a civil penalty from $10,000 up to $100,000 for each failure. This penalty also applies to any person or agency that fails to submit or amend the disclosure form (LLL), when required. Failure to submit the required certification may result in payment under this contract being delayed or denied.

17. Access to Records- 24 CFR Part 85.42 (e) & (f)

The contractor shall give access to all records, pertinent books, documents, papers or other records related to this contract to the awarding agency, the County of Volusia, the U.S. Department of Housing and Urban Development, the Comptroller General of the United States, and any of their duly authorized representatives for the purpose of making audit, examination, excerpts, and transcriptions as needed.

18. Records Retention- 24 CFR Part 85.42 (a)-(d)

The contractor shall comply with the CDBG records retention regulations. Financial, program, supporting, and other records pertinent to this contract and the grant program shall be maintained for five years after the local government makes final payment and all other pending matters are closed.

Attachment I

FEDERAL LABOR STANDARDS PROVISIONS | **U.S. Department of Housing And Urban Development** | HUD-4010 (7/03)

Applicability

The project or program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week , and without subsequent deduction or rebate on account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at the time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made part hereof , regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR-5.5(a)(1)(iv); also regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its sub-contractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics employed in the classification (if known, or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent to HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contactor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate). HUD or its

designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee with the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1) (b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federally contract with the same prime contractor, or any other Federally assisted contract subject to Davis Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violation have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payroll and basic records. Payroll and basic records related thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b) (2) (B) of the Davis bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely, all of the information required to be maintained under 29 CFR Part 5.5(a) (3) (i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington D.C. 20402.The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR Part 5.5 (a) (3) (i) and that such information is correct and complete:

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been fully paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than the permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of WH-347 shall satisfy the requirement of submission of the: Statement of Compliance" required by paragraph A.3. (ii)(b) of this section

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph A.3.(i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fail s to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available shall be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, bit who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeyman on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, which is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is

performing construction on a project in a locality other than that in which its program is registered , the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractors registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hurly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the training program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor will all the contract clauses in 29 CFR Part 5.5.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its

subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a) (1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C 1001. Additionally, U.S. Criminal Code, Section 1 01 0,Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of … influencing in any way the action of such Administration….makes, utters or publishes any statement knowing the same to be false ….. shall be fined not more than $5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or related to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanic" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of eight hours in any calendar day or in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basis rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such workweek, whichever is greater.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth on subparagraph (1) of this paragraph, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of eight hours or in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in sub paragraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract, or any other Federal contract with the same prime contract, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontracts to include these clauses in any lower tier subcontracts, The prime contractor shall be responsible for compliance by any

subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions, which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor, by regulation.

(2) The Contractor shall comply with al regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 State 96).

(3) The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

Wage and Hour Division

Instructions For Completing Payroll Form, WH-347

- WH-347 (PDF)
  OMB Control No. 1235-0008, Expires 07/31/2024.

General: Form WH-347has been made available for the convenience of contractors and subcontractors required by their Federal or Federally-aided construction-type contracts and subcontracts to submit weekly payrolls. Properly filled out, this form will satisfy the requirements of Regulations, Parts 3 and 5 (29 C.F.R., Subtitle A), as to payrolls submitted in connection with contracts subject to the Davis-Bacon and related Acts.

While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) requires contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) Regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Under the Davis-Bacon and related Acts, the contractor is required to pay not less than prevailing wage, including fringe benefits, as predetermined by the Department of Labor. The contractor's obligation to pay fringe benefits may be met either by payment of the fringe benefits to bona fide benefit plans, funds or programs or by making payments to the covered workers (laborers and mechanics) as cash in lieu of fringe benefits.

This payroll provides for the contractor to show on the face of the payroll all monies to each worker, whether as basic rates or as cash in lieu of fringe benefits, and provides for the contractor's representation in the statement of compliance on the payroll (as shown on page 2) that he/she is paying for fringe benefits required by the contract and not paid as cash in lieu of fringe benefits. Detailed instructions concerning the preparation of the payroll follow:

Contractor or Subcontractor: Fill in your firm's name and check appropriate box.

Address: Fill in your firm's address.

Payroll No.: Beginning with the number "1", list the payroll number for the submission.

For Week Ending: List the workweek ending date.

Project and Location: Self-explanatory.

Project or Contract No.: Self-explanatory.

Column 1 - Name and Individual Identifying Number of Worker: Enter each worker's full name and an individual identifying number (e.g., last four digits of worker's social security number) on each weekly payroll submitted.

Column 2 - No. of Withholding Exemptions: This column is merely inserted for the employer's convenience and is not a requirement of Regulations, Part 3 and 5.

Column 3 - Work Classifications: List classification descriptive of work actually performed by each laborer or mechanic. Consult classification and minimum wage schedule set forth in contract specifications. If additional classifications are deemed necessary, see Contracting Officer or Agency representative. An individual may be shown as having worked in more than one classification provided an accurate breakdown or hours worked in each classification is maintained and shown on the submitted payroll by use of separate entries.

Column 4 - Hours worked: List the day and date and straight time and overtime hours worked in the applicable boxes. On all contracts subject to the Contract Work Hours Standard Act, enter hours worked in excess of 40 hours a week as "overtime".

Column 5 - Total: Self-explanatory

Column 6 - Rate of Pay (Including Fringe Benefits): In the "straight time" box for each worker, list the actual hourly rate paid for straight time worked, plus cash paid in lieu of fringe benefits paid. When recording the straight time hourly rate, any cash paid in lieu of fringe benefits may be shown separately from the basic rate. For example, "$12.25/.40" would reflect a $12.25 base hourly rate plus $0.40 for fringe benefits. This is of assistance in correctly computing overtime. See "Fringe Benefits" below. When overtime is worked, show the overtime hourly rate paid plus any cash in lieu of fringe benefits paid in the "overtime" box for each worker; otherwise, you may skip this box. See "Fringe Benefits" below. Payment of not less than time and one-half the basic or regular rate paid is required for overtime under the Contract Work Hours Standard Act of 1962 if the prime contract exceeds $100,000. In addition to paying no less than the predetermined rate for the classification which an individual works, the contractor must pay amounts predetermined as fringe benefits in the wage decision made part of the contract to approved fringe benefit plans, funds or programs or shall pay as cash in lieu of fringe benefits. See "FRINGE BENEFITS" below.

Column 7 - Gross Amount Earned: Enter gross amount earned on this project. If part of a worker's weekly wage was earned on projects other than the project described on this payroll, enter in column 7 first the amount earned on the Federal or Federally assisted project and then the gross amount earned during the week on all projects, thus "$163.00/$420.00" would reflect the earnings of a worker who earned $163.00 on a Federally assisted construction project during a week in which $420.00 was earned on all work.

Column 8 - Deductions: Five columns are provided for showing deductions made. If more than five deduction are involved, use the first four columns and show the balance deductions under "Other" column; show actual total under "Total Deductions" column; and in the attachment to the payroll describe the deduction(s) contained in the "Other" column. All deductions must be in accordance with the provisions of the Copeland Act Regulations, 29 C.F.R., Part 3. If an individual worked on other jobs in addition to this project, show actual deductions from his/her weekly gross wage, and indicate that deductions are based on his gross wages.

Column 9 - Net Wages Paid for Week: Self-explanatory.

Totals - Space has been left at the bottom of the columns so that totals may be shown if the contractor so desires.

Statement Required by Regulations, Parts 3 and 5: While the "statement of compliance" need not be notarized, the statement (on page 2 of the payroll form) is subject to the penalties provided by 18 U.S.C. § 1001, namely, a fine, possible imprisonment of not more than 5 years, or both. Accordingly, the party signing this statement should have knowledge of the facts represented as true.

Items 1and 2: Space has been provided between items (1) and (2) of the statement for describing any deductions made. If all deductions made are adequately described in the "Deductions" column above, state "*See* Deductions column in this payroll." *See* "FRINGE BENEFITS" below for instructions concerning filling out paragraph 4 of the statement.

Item 4 FRINGE BENEFITS - Contractors who pay all required fringe benefits: If paying all fringe benefits to approved plans, funds, or programs in amounts not less than were determined in the applicable wage decision of the Secretary of Labor, show the basic cash hourly rate and overtime rate paid to each worker on the face of the payroll and check paragraph 4(a) of the statement on page 2 of the WH-347 payroll form to indicate the payment. Note any exceptions in section 4(c).

Contractors who pay no fringe benefits: If not paying all fringe benefits to approved plans, funds, or programs in amounts of at least those that were determined in the applicable wage decision of the Secretary of Labor, pay any remaining fringe benefit amount to each laborer and mechanic and insert in the "straight time" of the "Rate of Pay" column of the payroll an amount not less than the predetermined rate for each classification plus the amount of fringe benefits determined for each classification in the application wage decision. Inasmuch as it is not necessary to pay time and a half on cash paid in lieu of fringe benefits, the overtime rate shall be not less than the sum of the basic predetermined rate, plus the half time premium on basic or regular rate, plus the required cash in lieu of fringe benefits at the straight time rate. In addition, check paragraph 4(b) of the statement on page 2 the payroll form to indicate the payment of fringe benefits in cash directly to the workers. Note any exceptions in section 4(c).

Use of Section 4(c), Exceptions

Any contractor who is making payment to approved plans, funds, or programs in amounts less than the wage determination requires is obliged to pay the deficiency directly to the covered worker as cash in lieu of fringe benefits. Enter any exceptions to section 4(a) or 4(b) in section 4(c). Enter in the Exception column the craft, and enter in the Explanation column the hourly amount paid each worker as cash in lieu of fringe benefits and the hourly amount paid to plans, funds, or programs as fringe benefits. The contractor must pay an amount not less than the predetermined rate plus cash in lieu of fringe benefits as shown in section 4(c) to

each such individual for all hours worked (unless otherwise provided by applicable wage determination) on the Federal or Federally assisted project. Enter the rate paid and amount of cash paid in lieu of fringe benefits per hour in column 6 on the payroll. See paragraph on "Contractors who pay no fringe benefits" for computation of overtime rate.

Public Burden Statement: We estimate that it will take an average of 55 minutes to complete this collection of information, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection of information, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W.,Washington, D.C. 20210.

Note: In order to view, fill out, and print PDF forms, you need Adobe® Acrobat® Reader® version 5 or later, which you may download for free at www.adobe.com/products/acrobat/readstep2.html.

U.S. Department of Labor
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

U.S. Wage and Hour Division

Rev. Dec. 2008

OMB No.:1235-0008
Expires: 07/31/2024

NAME OF CONTRACTOR ☐ OR SUBCONTRACTOR ☐	ADDRESS	
PAYROLL NO.	FOR WEEK ENDING	PROJECT AND LOCATION / PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT. OR ST.	(4) DAY AND DATE — HOURS WORKED EACH DAY	(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS: FICA	WITH-HOLDING TAX			OTHER	TOTAL DEDUCTIONS	(9) NET WAGES PAID FOR WEEK
			O											
			S											
			O											
			S											
			O											
			S											
			O											
			S											
			O											
			S											
			O											
			S											
			O											
			S											
			O											
			S											

While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that is will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 3729 OF TITLE 31 OF THE UNITED STATES CODE.

County of Volusia
Community Assistance
110 W. Rich Avenue
DeLand, FL 32720

Minority & Women Business Reporting Form (MWBE)
Information and Instructions for Contractors & Subcontractors

Reporting

This report shall be completed by all contractors and subcontractors for reporting contract and subcontract activities for construction projects as required by the County of Volusia Community Assistance Division. Subcontracts of less than $10,000 must be reported individually only if such contracts represent a significant portion of the total contracting activity.

- Section 7a:
  - ✓ **Amount of Contract/Subcontract:** Enter the dollar amount rounded to the nearest dollar. If subcontractor ID number is provided in 7f, the dollar figure would be for the subcontract only and not for the prime contract.

- Section 7b:
  - ✓ **Type of Trade:** Enter the numeric code which best indicates each contractor's/subcontractor's service type. If subcontractor ID number is provided in 7f, the type of trade code would be for the subcontractor only and not for the prime contractor.

    * The "other" category includes supply, professional services, and all other activities except construction and education/training activities

- Section 7c:
  - ✓ **Business Racial/Ethnic/Gender Code:** Enter the numeric code which best indicates the racial/ethnic/gender character of the owner(s) and controller(s) of 51% of the business. When 51% or more is not owned and controlled by any single racial/ethnic/gender category, enter the code which seems most appropriate. If the subcontractor ID number is provided, the code would apply to the subcontractor and not the prime contractor

- Section 7d:
  - ✓ **Women Owned Business:** Enter "yes" or "no" to if each listed agency is women owned

- Section 7e:
  - ✓ **Contractor Identification Number:** Enter the Employer (IRS/FEIN) Number of the Prime Contractor as the unique identifier of the prime recipient of HUD funds. Note that the Employer (IRS) Number must be provided for each contract/subcontract awarded.

- Section 7f:
  - ✓ **Subcontractor Identification Number:** Enter the Employer (IRS/FEIN) Number of the subcontractor as the unique identifier for each subcontract awarded from HUD funds. When the subcontractor ID number is provided, the respective Prime Contractor ID Number must also be provided.

- Section 7g:
  - ✓ **Contractor/Subcontractor Business Name and Address:** Enter this information for each firm receiving contract/subcontract activity only one time on each report for each firm.

County of Volusia Community Assistance Division - Contract and Subcontract - Minority and Women Business Reporting Form

Project Name: _____

Amount of Contract or Subcontract 7a.	Type of Trade Code (See below) 7b.	Contractor or Subcontractor Business Racial/Ethnic (See below) 7c.	Woman Owned Business (Yes or No) 7d.	Prime Contractor Identification Number (IRS/FEIN) 7e.	Subcontractor Identification Number (IRS/FEIN) 7f.	Contractor/Subcontractor Business Name and Address 7g.				
						Business Name	Street	City	State	Zip

Name/Title: _____ Signature: _____ Date: _____

7b: Type of Trade Codes: CPD

1 = New Construction
2 = Education/Training
3 = Other

7c: Racial/ Ethnic Codes

1= White Amercians
2= Black Americans
3= Native Americans
4= Hispanic American
5= Asian/Pacific American

County of Volusia
Community Assistance
110 W. Rich Avenue
DeLand, FL 32720

EQUAL HOUSING OPPORTUNITY

Section 3 Information

What is Section 3?

Section 3 is a provision of the Housing and Urban Development Act of 1968. The purpose of Section 3 is to ensure that employment and other economic opportunities generated by certain HUD financial assistance shall, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations, be directed to low- and very low income persons; particularly those who are recipients of government assistance for housing or residents of the community in which the Federal assistance is provided.

What is a Section 3 Business Concern?

A business concern meeting at least one of the following criteria, documented within the last six-month period:

- Owned and controlled by at least 51% low- or very low-income persons;
- Over 75% of the labor hours performed for the business over the prior three-month period performed by Section 3 workers;
- Owned and controlled by at least 51% current public housing residents or residents currently living in Section-8 assisted housing

What is a Section 3 Worker?

A Section 3 worker is any worker who currently fits, or if hired on or after 11/30/20 fit, one the following categories, as documented:

- A worker whose annual income is at or below the 80% income limit as established by HUD
- A worker employed by a documented Section 3 Business Concern
- A worker that is a YouthBuild participant

What is a Targeted Section 3 Worker?

For Community Development funded projects, a Targeted Section 3 worker is:

- A worker employed by a documented Section 3 Business Concern; or
- A worker who currently fits, or if hired on or after 11/30/20 fit, one the following categories, as documented:
    - A worker living within the service area of the project, as defined at § 75.5; or
    - A worker that is a YouthBuild participant

Are there contract provisions related to Section 3?

Yes; all contracts for Section 3 covered projects must include language applying Section 3 requirements to any subrecipient agreement or contract for a Section 3 project. Sub-recipients, contractors and subcontractors for a Section 3 project must meet the requirements of § 75.19, regardless of whether Section 3 language is included in related agreements or contracts.

What information is required for Section 3 Reporting?

For Community Development funded projects, the following may be required:

- Section 3 Business Concern Certification
- Section 3 Project Workforce form
- Section 3 Certification form, when applicable
- Supporting documents for those claiming status as of Section 3 Business Concerns, Section 3 Worker, and/or Section 3 Targeted Worker
- Any other information requested by Volusia County to ensure Section 3 compliance

County of Volusia
Community Assistance
110 W. Rich Avenue
DeLand, FL 32720

EQUAL HOUSING OPPORTUNITY

Section 3 Business Concern Certification

This document must be completed and returned from the primary bidder with their bid submission. Bids submitted for certain federally assisted projects that do not include this completed document may be considered non-responsive and not be eligible for award.
This document may be required from all sub-contractors prior to project award as well.

Project Name: _____

Agency Name: _____

Contact person: _____ Title: _____

Address of business: _____

Telephone number: _____ Fax number: _____

E-mail address: _____

Federal Employer Identification Number/SSN: _____

1. Type of business:
(Check one) ☐ Corporation ☐ Sole Proprietorship ☐ Partnership ☐ Joint Venture

2. Type of Contractor for project: *(Check one)* ☐ Prime Contractor ☐ Sub-Contractor

3. Check where applicable and provide required documentation*:

☐ The business is **NOT** claiming a Section 3 Business Concern status.

☐ The business **IS** claiming a Section 3 Business Concern status based on the following:

☐ 51% or more of the business is owned and controlled by low- or very low-income persons

2021 AMI →
Maximum annual gross income for very low-income individual: $ 22,900
Maximum annual gross income for low-income individual: $ 36,650

☐ Over 75% of the labor hours performed for the business over the prior three-month period were performed by Section 3 workers

☐ 51% or more of the business is owned and controlled by current public housing residents or residents currently living in Section-8 assisted housing

**To be considered; documentation from within the last six-month period for the criteria selected must be provided.*

I certify to the best of my knowledge that the information contained here within is true and correct.

Print name: _____

Signature: _____ Date: _____

Title: _____

NOTE: Volusia County shall maintain this form and supporting documentation a minimum of five years in the project files for review during monitoring. The contractor must retain a copy of the reports in their files for a minimum of five years after completion of the project.

County of Volusia
Community Assistance
110 W. Rich Avenue
DeLand, FL 32720

Section 3 Project Workforce

Project Name: _____ Agency Name: _____

This document must be completed by the Prime Contractor and all Sub-Contractors. It must be returned to, and approved by, Community Assistance at least 1 week prior to the pre-construction meeting.

The following is a list of employees may perform physical on-site work on this project. All areas should be completed and the Wage Classification **must** include the title(s) from the project wage decision that is/are best suited to the actions the worker will perform on-site for the project.

If a worker is eligible under a Section 3 Worker or Section 3 Targeted Worker status, please have the Section 3 Certification Form completed and return with this Section 3 Project Workforce form.

Employee Name	ID #	Hire Date	Wage Classification	Phone Number	Residential Address	Claiming Section 3 status?

NOTE: Volusia County shall maintain this form and supporting documentation a minimum of five years in the project files for review during monitoring. The contractor must retain a copy of the reports in their files for a minimum of five years after completion of the project.

County of Volusia
Community Assistance
110 W. Rich Avenue
DeLand, FL 32720

EQUAL HOUSING OPPORTUNITY

Section 3 Certification

Employer Name: _____

Employee name: _____ ID #: _____

Status being claimed: ☐ Section 3 Worker ☐ Section 3 Targeted Worker

The Section 3 Worker status is being certified in the following manner:

☐ **Self-Certification by employee**

I am self-certifying as a Section 3 Worker because:

☐ My gross annual income from the last calendar year was: $ _____; my w-2 or paystubs are attached

☐ I am a Public Housing or Section 8 Housing recipient; current documentation showing this is attached

_____ _____
Employee Signature Date

☐ **Certification by employer**

This employee is certified as a Section 3 Worker because:

☐ Their gross annual income from the last calendar year was: $ _____; current documentation showing this is attached

☐ They were hired after 11/30/20 and their gross annual income for the first year was: $ _____; documentation showing this is attached

☐ We are a business concern and they are an employee; see Section 3 Business Concern Certification and supporting documentation

_____ _____
Employer Signature & Title Date

The Section 3 Targeted Worker status is being certified in the following manner:

☐ **Self-Certification by employee**

I am self-certifying as a Section 3 Worker because I am a YouthBuild participant; documentation supporting my current enrollment is attached.

_____ _____
Employee Signature Date

☐ **Certification by employer**

This employee is certified as a Section 3 Targeted Worker because:

☐ Their residence is within the project service area as defined at § 75.5; documentation supporting this is attached

☐ We are a business concern and they are an employee; see Section 3 Business Concern Certification and supporting documentation

_____ _____
Employer Signature & Title Date

NOTE: Volusia County shall maintain this form and supporting documentation a minimum of five years in the project files for review during monitoring. The contractor must retain a copy of the reports in their files for a minimum of five years after completion of the project.

24 CFR PART 85.36 Administrative Requirements for Grants and Cooperative Agreements to State, Local and Federally Recognized Indian Tribal Governments

Compliance with the following bonding requirements is mandatory.

Proof of bonding will be verified prior to issuance of the notice to proceed.

(h) Bonding requirements.

For construction or facility improvement contracts or subcontracts exceeding the simplified acquisition threshold, the awarding agency may accept the bonding policy and requirements of the grantee or sub grantee provided the awarding agency has made a determination that the awarding agency's interest is adequately protected. If such a determination has not been made, the minimum requirements shall be as follows:

(1) A bid guarantee from each bidder equivalent to five percent of the bid price. The bid guarantee shall consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.

(2) A performance bond on the part of the contractor for 100 percent of the contract price. A performance bond is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.

(3) A payment bond on the part of the contractor for 100 percent of the contract price. A payment bond is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

"General Decision Number: FL20230191 01/06/2023

Superseded General Decision Number: FL20220191

State: Florida

Construction Type: Highway

County: Volusia County in Florida.

HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2023

ELEC0915-004 12/05/2022

	Rates	Fringes
ELECTRICIAN	$ 32.56	42%+$0.35

SUFL2013-052 08/19/2013

	Rates	Fringes
CARPENTER	$ 15.68 **	0.00
CEMENT MASON/CONCRETE FINISHER, Includes Form Work	$ 13.97 **	0.00
HIGHWAY/PARKING LOT STRIPING: Operator (Striping Machine)	$ 15.57 **	0.00
HIGHWAY/PARKING LOT STRIPING: Painter	$ 12.13 **	0.00
IRONWORKER, ORNAMENTAL	$ 13.48 **	0.00
IRONWORKER, REINFORCING	$ 15.38 **	0.00
IRONWORKER, STRUCTURAL	$ 16.42	0.00
LABORER (Traffic Control Specialist)	$ 11.36 **	0.00
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor	$ 14.05 **	0.00
LABORER: Common or General	$ 10.55 **	0.00
LABORER: Flagger	$ 13.09 **	0.00
LABORER: Grade Checker	$ 14.66 **	0.00
LABORER: Mason Tender - Cement/Concrete	$ 12.58 **	0.00
LABORER: Pipelayer	$ 13.46 **	0.00
OPERATOR: Backhoe/Excavator/Trackhoe	$ 14.96 **	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 12.88 **	0.00
OPERATOR: Broom/Sweeper	$ 12.91 **	0.00
OPERATOR: Bulldozer	$ 15.23 **	0.00
OPERATOR: Concrete Finishing Machine	$ 15.44 **	0.00
OPERATOR: Crane	$ 22.04	0.00
OPERATOR: Curb Machine	$ 18.45	0.00
OPERATOR: Drill	$ 13.04 **	0.00
OPERATOR: Forklift	$ 10.43 **	0.00

OPERATOR: Gradall.....$ 14.71 ** 0.00

OPERATOR: Grader/Blade.....$ 18.20 0.00

OPERATOR: Loader.....$ 14.01 ** 0.00

OPERATOR: Mechanic.....$ 17.52 0.00

OPERATOR: Milling Machine.....$ 15.63 ** 0.00

OPERATOR: Oiler.....$ 16.67 0.00

OPERATOR: Paver (Asphalt,
Aggregate, and Concrete).....$ 14.88 ** 0.00

OPERATOR: Piledriver.....$ 17.23 0.00

OPERATOR: Post Driver
(Guardrail/Fences).....$ 15.97 ** 0.00

OPERATOR: Roller.....$ 13.01 ** 0.00

OPERATOR: Scraper.....$ 12.21 ** 0.00

OPERATOR: Screed.....$ 14.66 ** 0.00

OPERATOR: Trencher.....$ 14.25 ** 0.00

PAINTER: Spray.....$ 19.57 0.00

TRAFFIC SIGNALIZATION:
Traffic Signal Installation.....$ 14.25 ** 0.00

TRUCK DRIVER: Dump Truck.....$ 12.28 ** 0.00

TRUCK DRIVER: Flatbed Truck.....$ 14.28 ** 0.00

TRUCK DRIVER: Lowboy Truck.....$ 16.25 0.00

TRUCK DRIVER: Slurry Truck.....$ 11.96 ** 0.00

TRUCK DRIVER: Water Truck.....$ 13.57 ** 0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($16.20) or 13658 ($12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other

health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

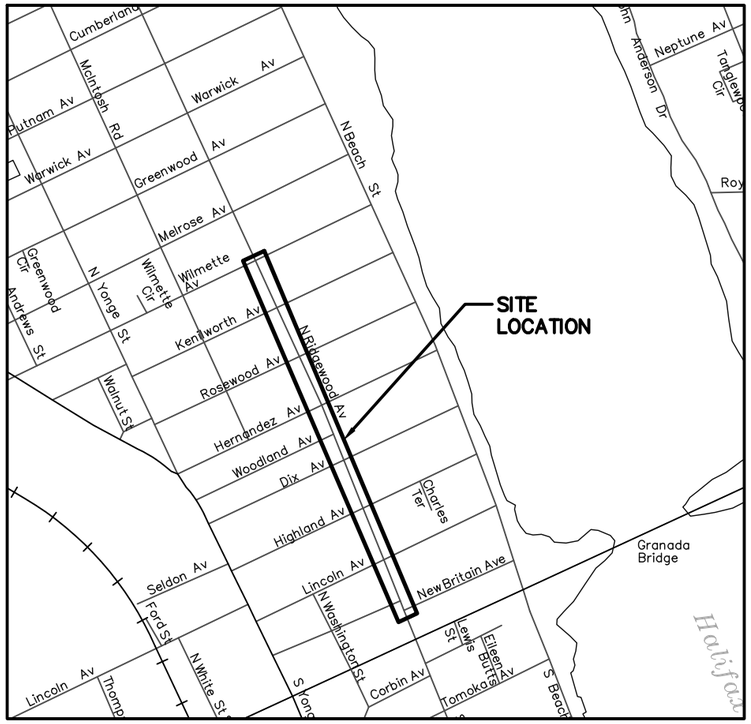
==========

END OF GENERAL DECISIO"

CITY OF ORMOND BEACH

CDBG - NORTH RIDGEWOOD AVE
EAST SIDE SIDEWALK IMPROVEMENTS
BID NO.: 2023-12

▭ = SITE LOCATION



SITE LOCATION MAP

SHEET	DESCRIPTION
1	COVER SHEET & PROJECT LOCATION MAP
2	KEY SHEET
3	QUANTITIES
4	CURBING MODIFICATIONS
5	DEMOLITION PLAN
6	DEMOLITION PLAN
7	DEMOLITION PLAN
8	DEMOLITION PLAN
9	SIDEWALK PLAN
10	SIDEWALK PLAN
11	SIDEWALK PLAN
12	SIDEWALK PLAN
13	CONSTRUCTION DETAILS & NOTES
14	CONSTRUCTION DETAILS & NOTES
15	MOT: SIDEWALK CLOSURE FDOT 102-660
16	MOT: SIDEWALK CLOSURE FDOT 102-660

MAYOR

BILL PARTINGTON

COMMISSIONERS

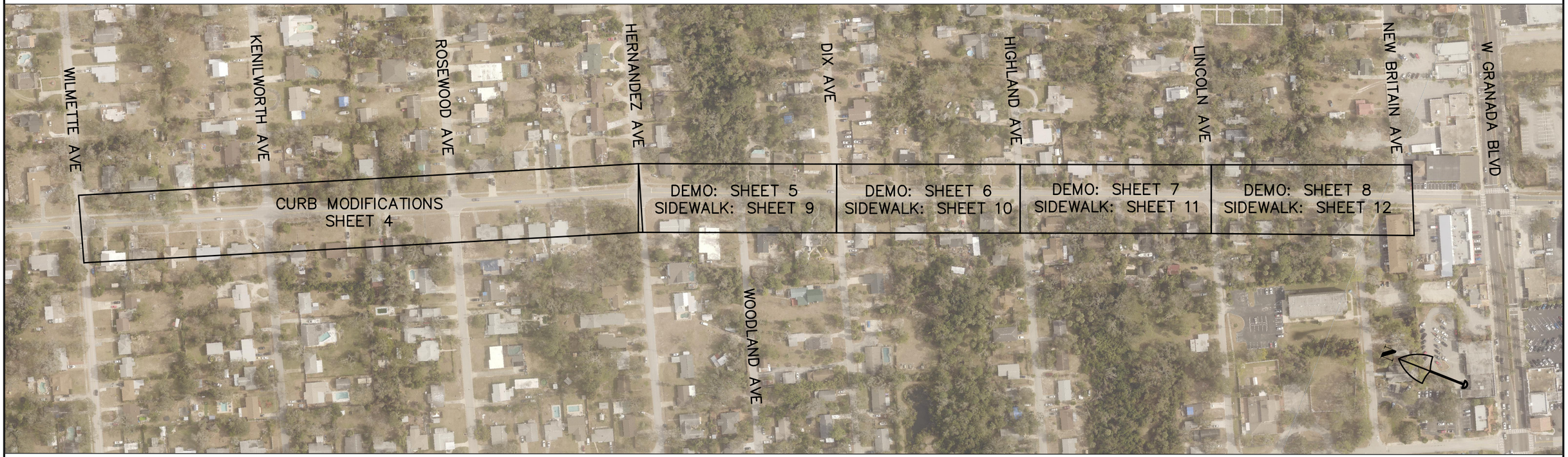
LORI TOLLAND, ZONE 1
TRAVIS SARGENT, ZONE 2
SUSAN PERSIS, ZONE 3
HAROLD BRILEY, ZONE 4

CITY MANAGER

JOYCE SHANAHAN

DRAWINGS ARE TO SCALE AT 11X17

PREPARED BY THE ENGINEERING DIVISION



CRACKED CONCRETE PANELS DEMOLITION & REPLACEMENT:

ROADWAY SECTION:	DEMOLITION:	REPLACEMENT:
S. WILMETTE AVE TO KENILWORTH AVE:	55 SF (11'x5') NEAR LIGHT POLE #37610014500 30 SF (6'x5') SOUTH OF HOUSE #323 DRIVEWAY (2) 50 SF (10'x5') FRONT OF GRAY HOUSE CORNER LOT	55 SF (11'x5') 30 SF (6'x5') 100 SF (2 –10'x5')
KENILWORTH AVE TO ROSEWOOD AVE:	62 SF (12'–4"x5') LEFT OF HOUSE #277 25 SF (5'x5') FRONT OF 277 UTILITY CABINET 50 SF (10'x5') PINK HOUSE #97	62 SF (12'–4"x5') 25 SF (5'x5') 50 SF (10'x5')
ROSEWOOD AVE TO N. HERNANDEZ AVE:	55 SF (11'x5') HOUSE #219 w/STORM INLET IN MIDDLE OF WALKWAY	55 SF (11'x5')
	GRAND TOTAL DEMOLITION: 377 SF	GRAND TOTAL REPLACEMENT: 377 SF

DRAWING STATUS
DRAFT
PERMIT
BID
ADDENDA
CONSTRUCTION
RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER
ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

KEY SHEET

DATE: 12/5/2022	PROJECT NO.: 00–
SCALE: NTS	FILE NAME:
DRAWN BY: MC	SHEET: 2 of 16

QUANTITIES

DEMOLITION	BASE BID
PAY ITEMS	QTY.
DEMO; 4' CONC. SIDEWALK & DRIVEWAY APRONS (SQFT)	7,490 + 200 (DETAIL B) = 7,690
DEMO; ASPHALT (SQFT)	478
DEMO; CONCRETE PAVERS (SQFT)	168 (TO BE APPROVED BY HOMEOWNER)
DEMO; CURBING (LF)	122 LF + 50 (DETAIL B) = 172 LF
DEMO; CRACKED CONCRETE PANELS (SQFT)	377
CONSTRUCTION	**BASE BID**
PAY ITEMS	QTY.
CURBING (LF)	122 LF + 50 (DETAIL B) = 172 LF
SIDEWALK 5', 4" DEPTH (SQFT)	8,162 + 200 (DETAIL B) = 8,362
DRIVEWAY APRONS, 6" DEPTH (SQFT)	1,873
ADA DETECTABLE WARNING SURFACE (FDOT APPROVED) (EA)	11 + 5 (DETAIL B) = 16
REPLACEMENT OF CRACKED CONCRETE PANELS (SQFT)	377
COMPLETE SITE RESTORATION WITH BAHIA SOD (SQFT)	173 + ALL DISTURBED AREAS

– BIDDER IS RESPONSIBLE TO VERIFY ALL TAKEOFFS AS THIS IS A LUMP SUM BID. BID IN ACCORDANCE WITH THE PLANS, SCOPE AND SPECIFICATIONS.

– THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB. ANY SLAB SECTION DAMAGED OR VANDALIZED PRIOR TO ACCEPTANCE OR APPROVAL SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED. REPAIRS ARE NOT ACCEPTABLE.

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

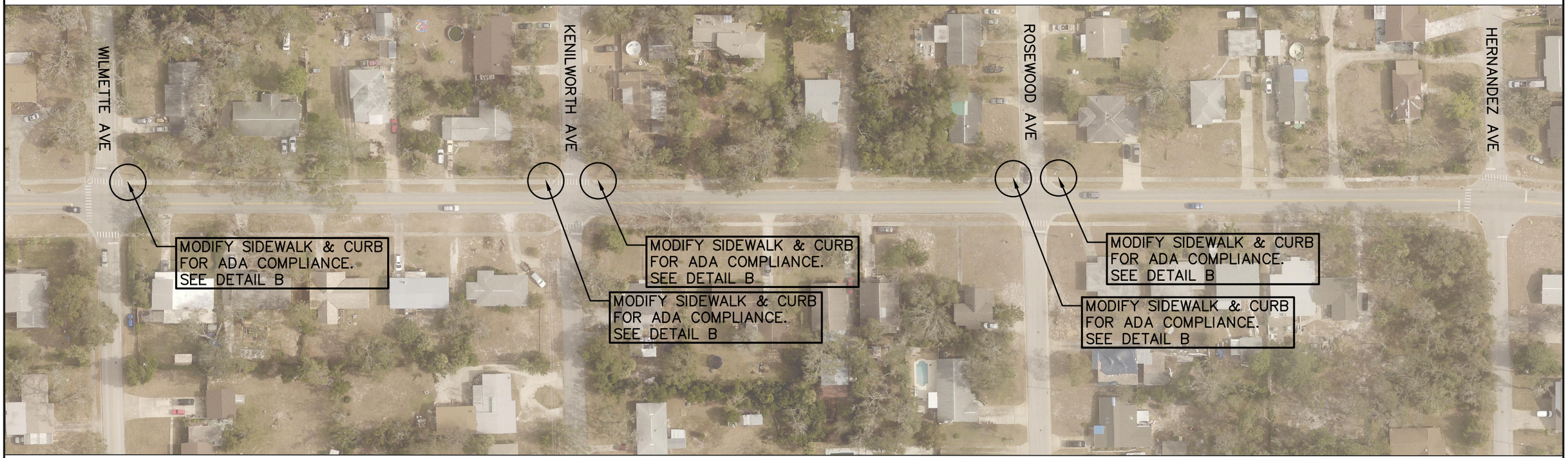
BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER

ALEX SCHUMANN, P.E. CITY ENGINEER

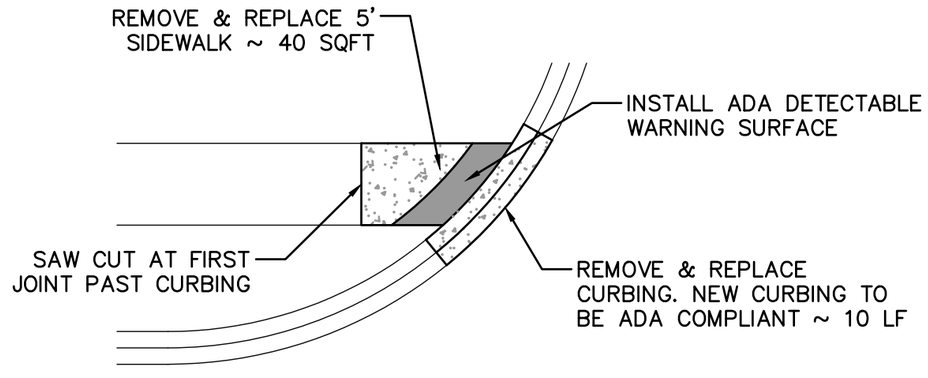
CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

QUANTITIES

DATE: 12/5/22	PROJECT NO.: 00–
SCALE:	FILE NAME:
DRAWN BY: MC	SHEET: 3 of 16



BID ALTERNATE 1 – WILMETTE AVE. TO HERNANDEZ AVE. DETAIL B



DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

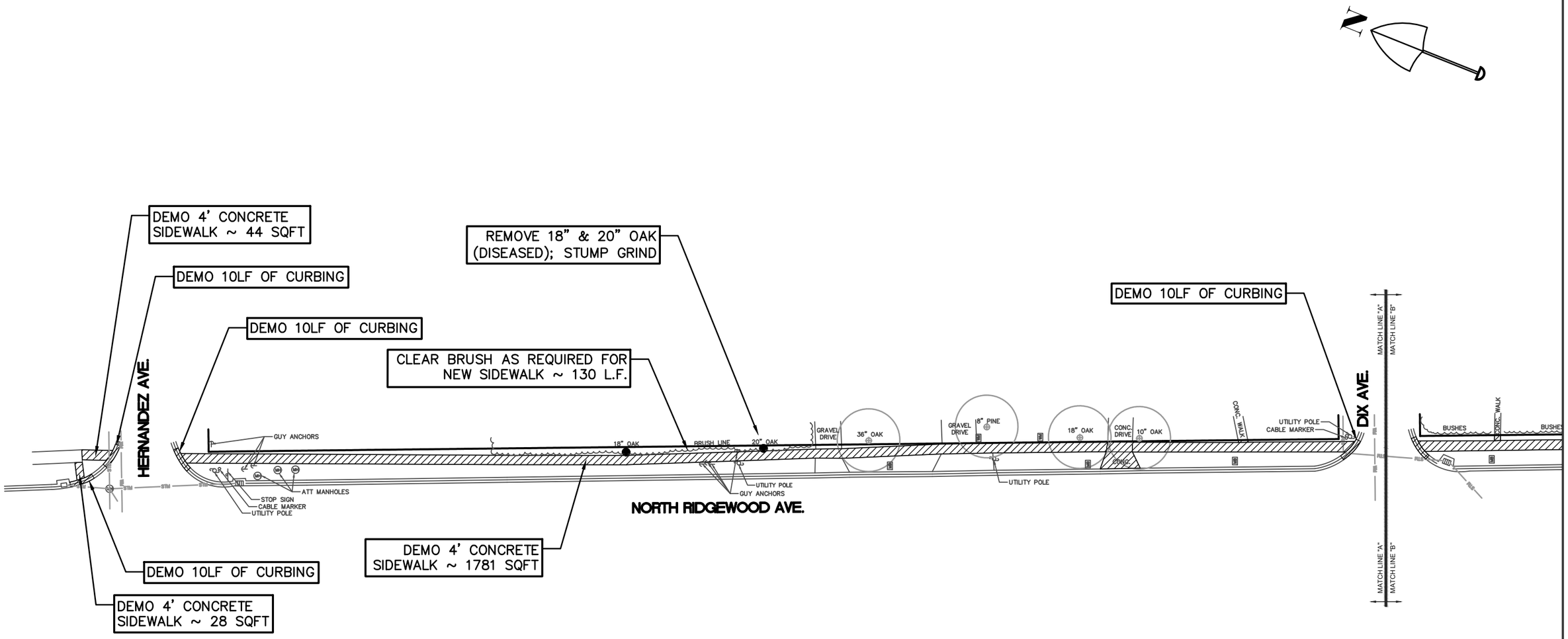
BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER

ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

CURBING MODIFICATIONS WILLMETTE AVE TO HERNANDEZ AVE

DATE: 12/5/22	PROJECT NO.: 00–
SCALE: NTS	FILE NAME:
DRAWN BY: MC	SHEET: 4 of 16



TOTAL DEMO = 1,853 SQFT CONCRETE
40 LF CURBING

0 10 20 40 80

SCALE: 1"=40'

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

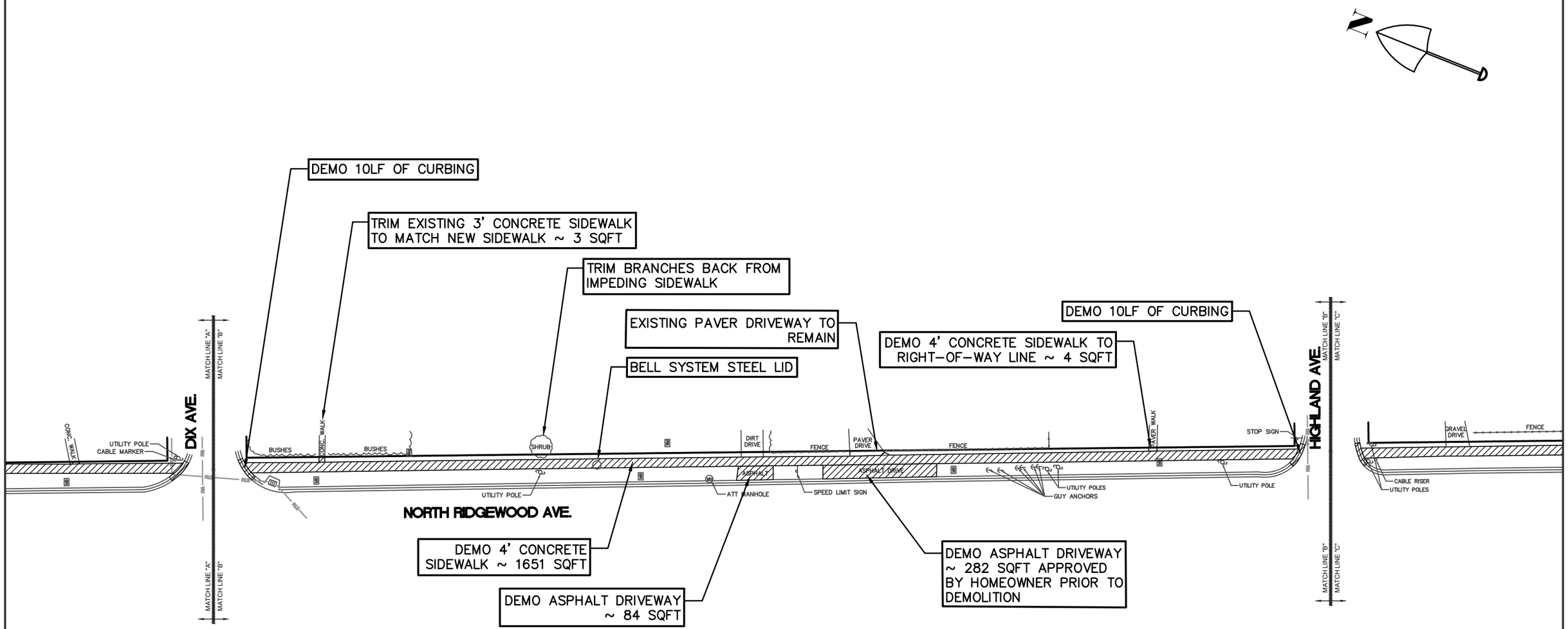
BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER

ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

DEMOLITION PLAN

DATE: 12/5/22	PROJECT NO.: 00–
SCALE: 1" = 40'	FILE NAME:
DRAWN BY: MC	SHEET: 5 of 16



TOTAL DEMO = 1,658 SQFT CONCRETE
366 SQFT ASPHALT
20 LF CURBING

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

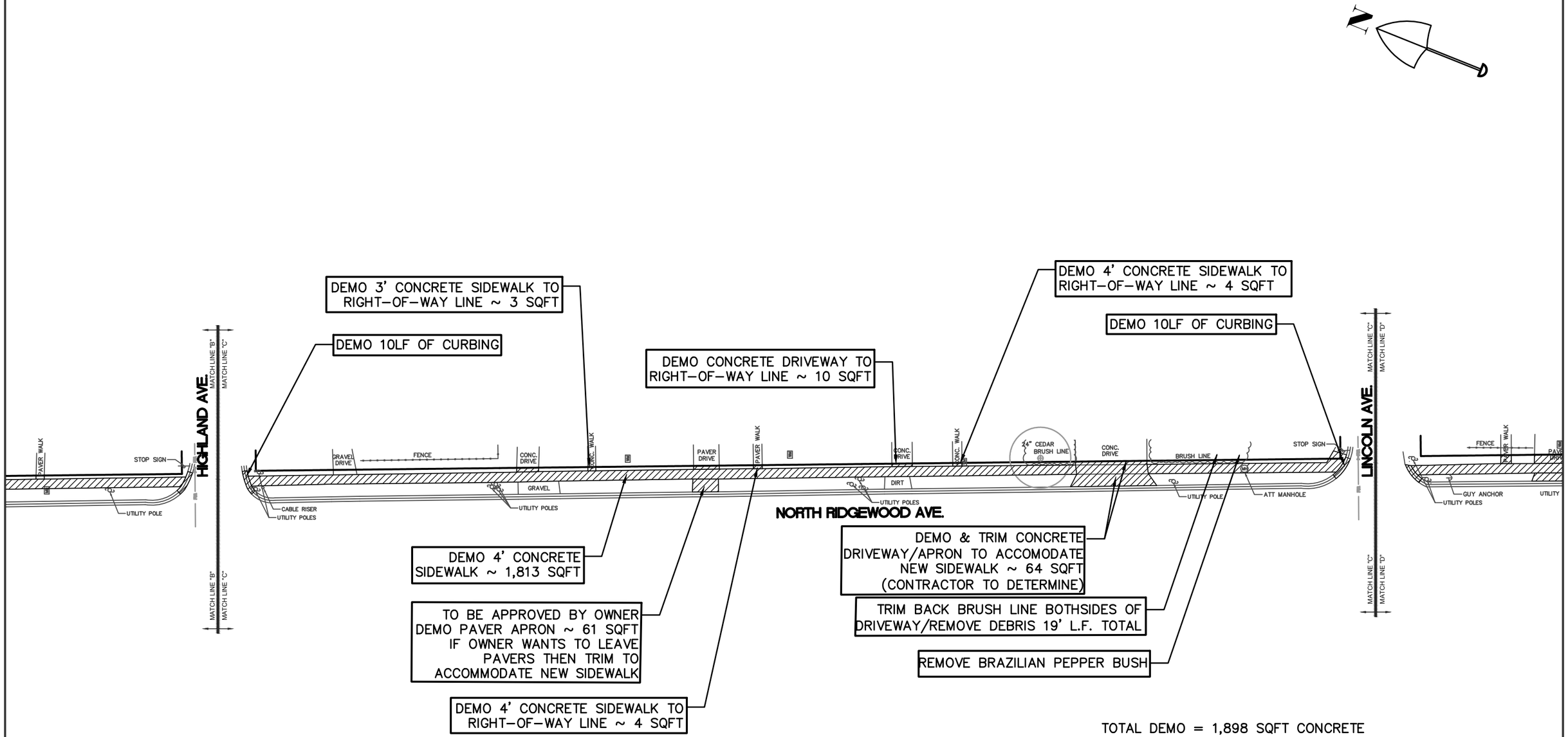
City of Ormond Beach
Engineering Division

BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER
ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

DEMOLITION PLAN

DATE: 12/5/22	PROJECT NO.: 00-
SCALE: 1" = 40'	FILE NAME:
DRAWN BY: MC	SHEET: 6 of 16



TOTAL DEMO = 1,898 SQFT CONCRETE
61 SQFT PAVERS
20 LF CURBING

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

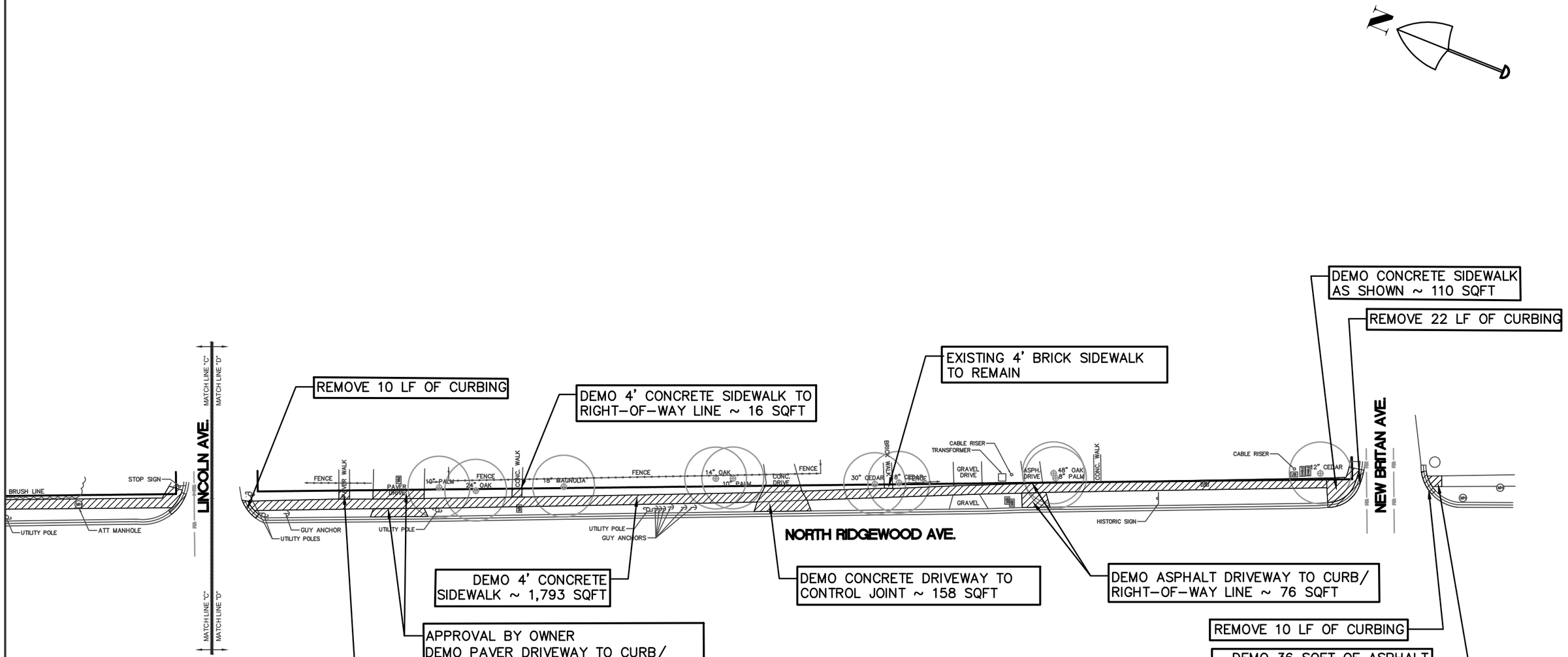
BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER

ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

DEMOLITION PLAN

DATE: 12/5/22	PROJECT NO.: 00-
SCALE: 1" = 40'	FILE NAME:
DRAWN BY: MC	SHEET: 7 of 16



TOTAL DEMO = 2,081 SQFT CONCRETE
107 SQFT PAVERS (APPROVED BY OWNER)
112 SQFT ASPHALT
39 LF CURBING

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

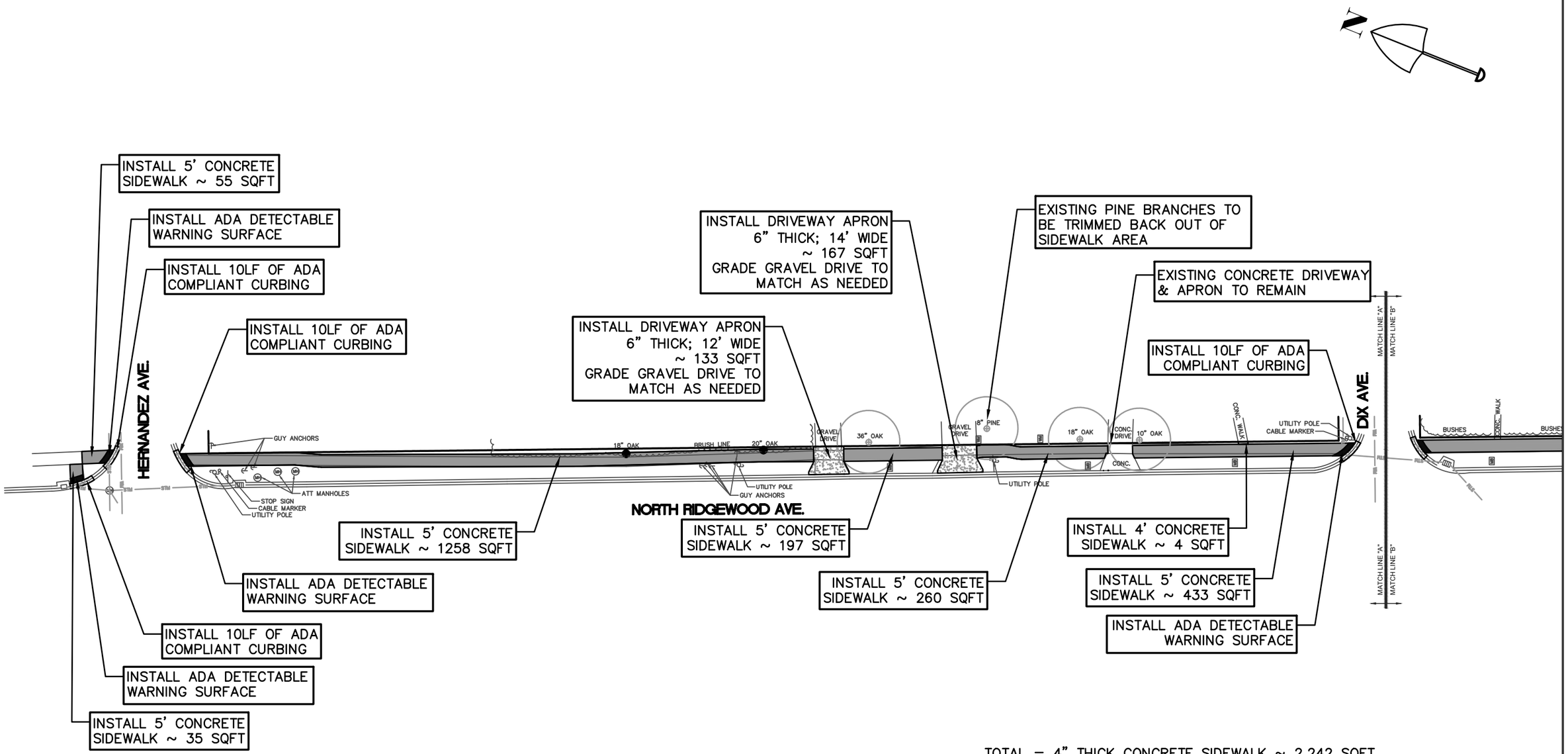
BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER

ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

DEMOLITION PLAN

DATE: 12/5/22	PROJECT NO.: 00-
SCALE: 1" = 40'	FILE NAME:
DRAWN BY: MC	SHEET: 8 of 16



TOTAL = 4" THICK CONCRETE SIDEWALK ~ 2,242 SQFT
6" THICK CONCRETE DRIVEWAY APRON ~ 300 SQFT
CONCRETE CURBING ~ 40 LF

0 10 20 40 80

SCALE: 1"=40'

DRAWING STATUS
DRAFT
PERMIT
BID
ADDENDA
CONSTRUCTION
RECORD

NO.	DATE	REVISIONS	BY

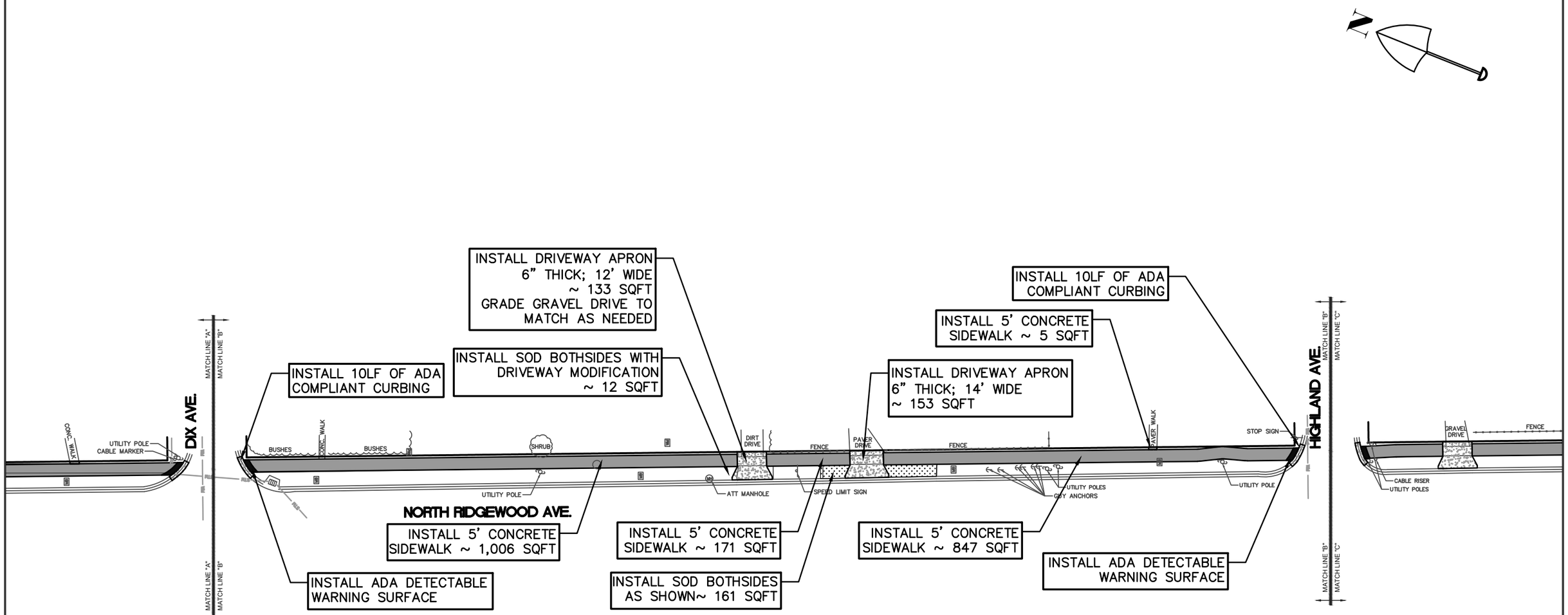
City of Ormond Beach
Engineering Division

BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER
ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

SIDEWALK PLAN

DATE: 12/5/22	PROJECT NO.: 00–
SCALE: 1" = 40'	FILE NAME:
DRAWN BY: MC	SHEET: 9 of 16



TOTAL = 4" THICK CONCRETE SIDEWALK ~ 2,029 SQFT
6" THICK CONCRETE DRIVEWAY APRON ~ 286 SQFT
CONCRETE CURBING ~ 20 LF

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

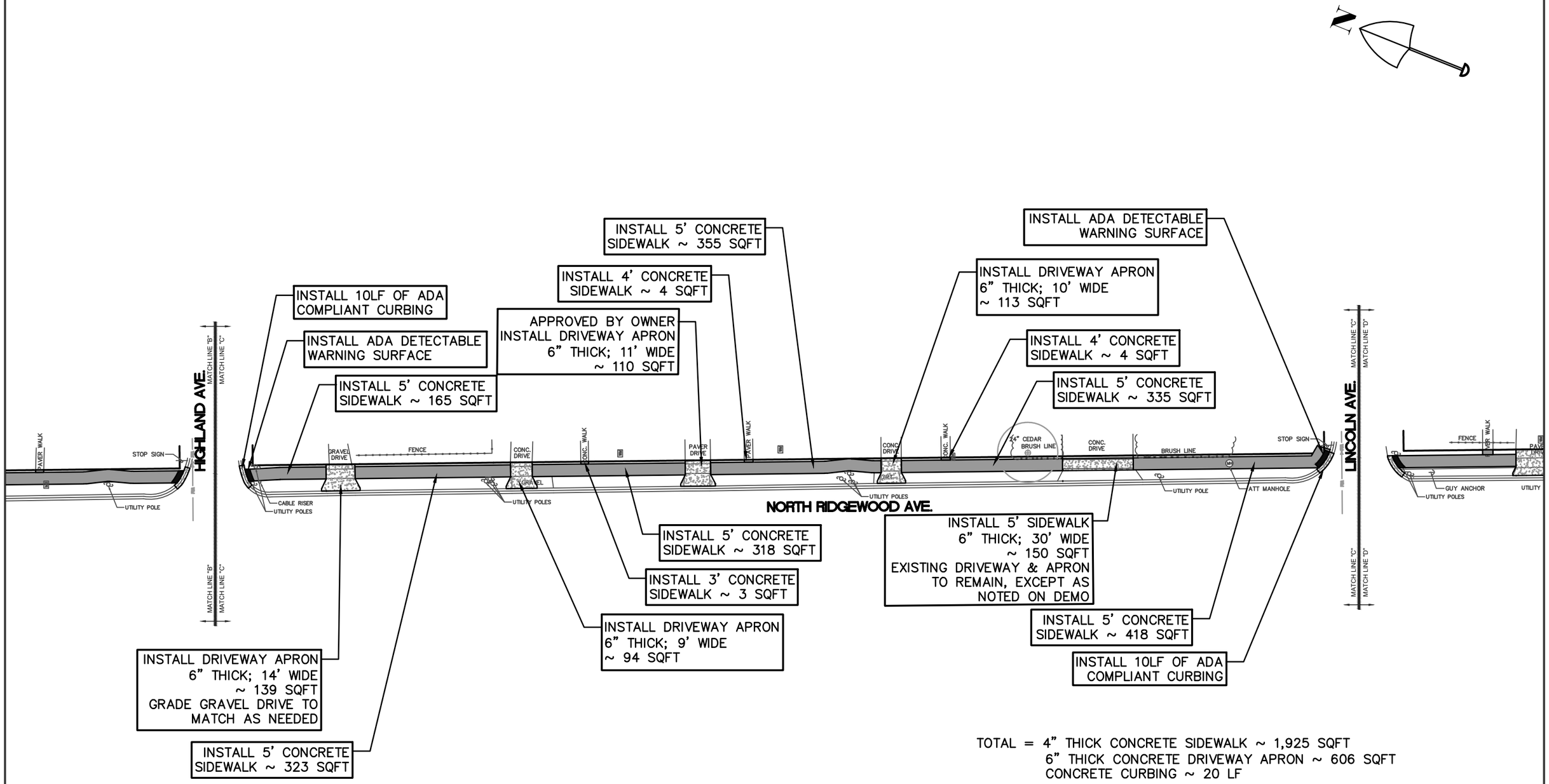
City of Ormond Beach
Engineering Division

BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER
ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

SIDEWALK PLAN

DATE: 12/5/22	PROJECT NO.: 00-
SCALE: 1" = 40'	FILE NAME:
DRAWN BY: MC	SHEET: 10 of 16



TOTAL = 4" THICK CONCRETE SIDEWALK ~ 1,925 SQFT
6" THICK CONCRETE DRIVEWAY APRON ~ 606 SQFT
CONCRETE CURBING ~ 20 LF

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

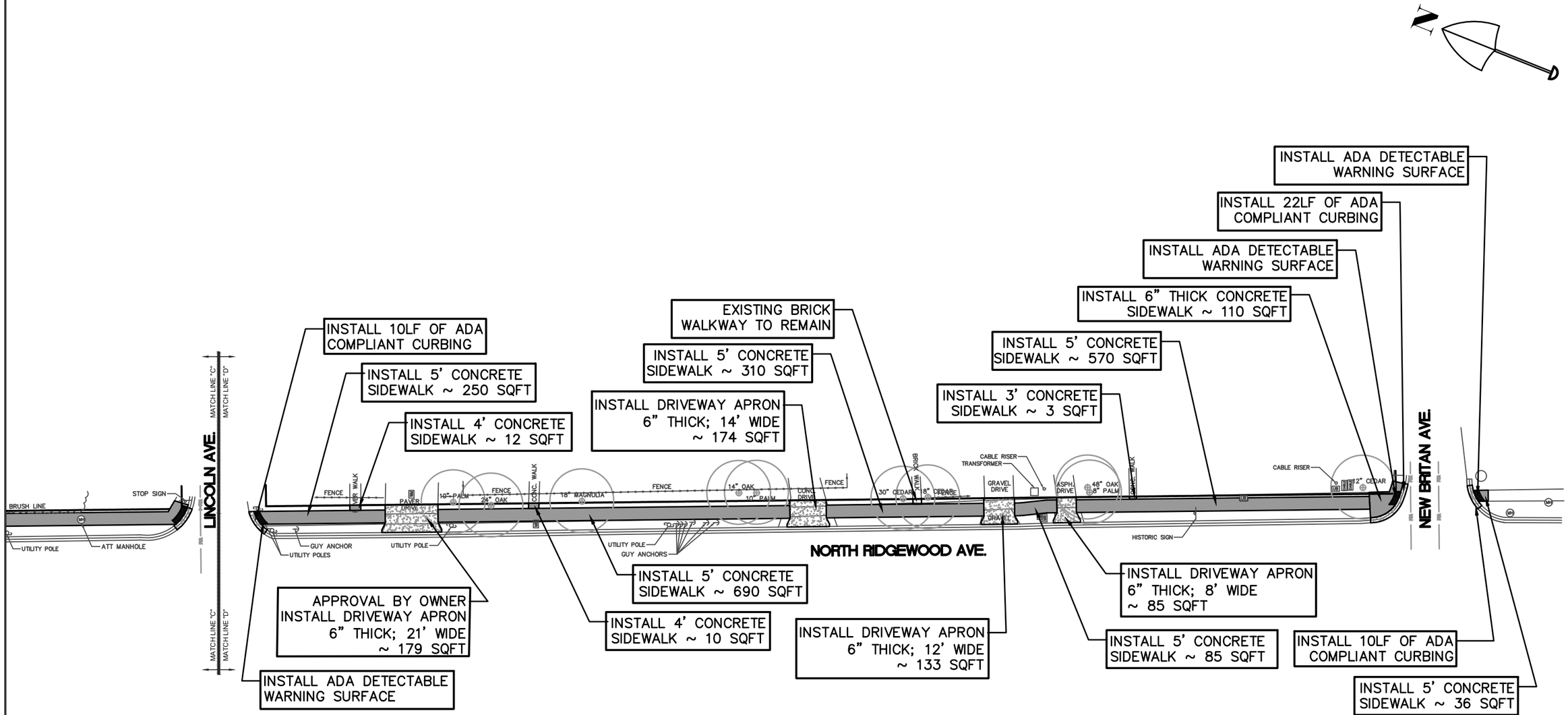
City of Ormond Beach
Engineering Division

BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER
ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

SIDEWALK PLAN

DATE: 12/5/22	PROJECT NO.: 00–
SCALE: 1" = 40'	FILE NAME:
DRAWN BY: MC	SHEET: 11 of 16



TOTAL = 4" THICK CONCRETE SIDEWALK ~ 1,966 SQFT
6" THICK CONCRETE DRIVEWAY APRON ~ 681 SQFT
CONCRETE CURBING ~ 42 LF

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER

ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

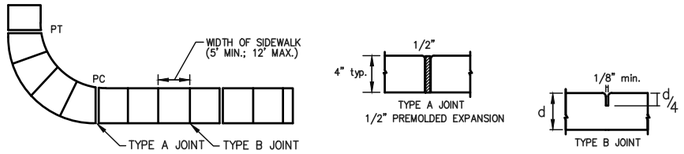
SIDEWALK PLAN

DATE: 12/5/22	PROJECT NO.: 00-
SCALE: 1" = 40'	FILE NAME:
DRAWN BY: MC	SHEET: 12 of 16

GENERAL NOTES:

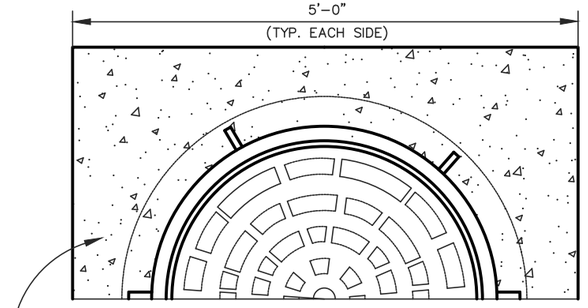
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ORMOND BEACH'S LAND DEVELOPMENT CODE REQUIREMENTS, AND THE STANDARD CONSTRUCTION DETAILS AND CONSTRUCTION SPECIFICATIONS (SCDCS). AN ENGINEERING PERMIT AND TREE REMOVAL PERMIT IS REQUIRED PRIOR TO STARTING CONSTRUCTION.
2. NO LAND SHALL BE CLEARED, EXCAVATED OR FILLED AND NO STRUCTURE SHALL BE ERECTED, REPAIRED OR DEMOLISHED WITHOUT PROPER PERMIT(S) AS REQUIRED BY THE CITY OF ORMOND BEACH.
3. NOTIFY THE CITY OF ORMOND BEACH AT COMDEV@ORMONDBEACH.ORG 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
4. ANY CONSTRUCTION CHANGES TO APPROVED PLANS SHALL BE SUBMITTED TO THE CITY OF ORMOND BEACH FOR APPROVAL PRIOR TO PERFORMING THE WORK.
5. ROAD CONSTRUCTION AND PIPE INSTALLATION COMPACTION AND DENSITY TESTING SHALL CONFORM TO THE CITY OF ORMOND BEACH'S MINIMUM REQUIREMENTS. CERTIFIED COPIES OF TEST REPORTS SHALL BE SUBMITTED TO THE CITY INSPECTOR AND THE CITY'S ENGINEERING DIVISION.
6. A PRE-PAVING UTILITY INSPECTION MUST BE REQUESTED AND COMPLETED PRIOR TO THE PAVING OF ALL ROADS, STREETS, AND PARKING AREAS.
7. A FINAL INSPECTION, TO BE CONDUCTED BY THE CITY OF ORMOND BEACH, SHALL BE PERFORMED ON ALL CONSTRUCTION. THE DESIGN ENGINEER SHALL NOTIFY THE CITY OF ORMOND BEACH AT COMDEV@ORMONDBEACH.ORG WHEN REQUESTING A FINAL INSPECTION.
8. THREE COMPLETE SETS OF AS-BUILT DRAWINGS (5 FOR SUBDIVISIONS) ARE REQUIRED TO BE SUBMITTED TO THE CITY OF ORMOND BEACH PRIOR TO REQUESTING A FINAL INSPECTION. AS-BUILT DRAWINGS MAY BE SUBMITTED IN DIGITAL FORMAT WITH DIGITAL SIGNATURE OF SURVEYOR AND/OR ENGINEER OF RECORD.
9. THE CITY HAS A CONTRACTOR FOR ROLL OFF SERVICE. NO OTHER CONTRACTOR SHALL BE PERMITTED TO PROVIDE THIS SERVICE. VERIFY COMPANY UNDER CONTRACT WITH THE CITY.
10. CONSTRUCTION SITES THAT DISTURB ONE ACRE OR MORE WILL BE REQUIRED TO SEEK COVERAGE UNDER THE GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES. IN ACCORDANCE WITH THIS REQUIREMENT, A STORM WATER POLLUTION PREVENTION PLAN (SWPP) MUST BE SUBMITTED TO THE CITY OF ORMOND BEACH AT COMDEV@ORMONDBEACH.ORG PRIOR TO CONSTRUCTION TO BE IN COMPLIANCE WITH THE PERMIT.
11. CONTRACTOR WILL FOLLOW REQUIRED WASTE MANAGEMENT PRACTICES
12. SEEDING OR SODDING SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED.
13. ANY FIELD MODIFICATIONS OR DEVIATIONS TO THIS CONSTRUCTION PLAN REQUIRES WRITTEN APPROVAL BY BOTH THE ENGINEER OF RECORD AND THE CITY OF ORMOND BEACH.

STANDARD CONSTRUCTION DETAIL GENERAL CONSTRUCTION NOTES	INDEX M-2 MAY 2020

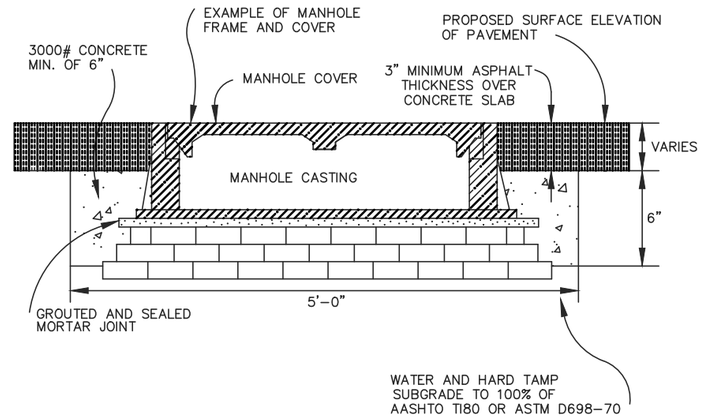


1. SIDEWALKS, BIKEPATHS, RAMPS, AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3 INCHES, A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 3000 P.S.I. IN 28 DAYS, AND A MINIMUM UNIFORM THICKNESS OF 4 INCHES WHERE INTENDED SOLELY FOR PEDESTRIAN TRAFFIC, AND 6 INCHES THICK WHERE MOTOR VEHICLES ARE LIKELY TO CROSS. SIDEWALKS SHALL BE 5 FOOT WIDE UNLESS OTHERWISE SHOWN ON PLANS.
2. SIDEWALKS AND BIKE PATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE RIGHT-OF-WAY LINE EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIMEN TREES PROVIDED THAT THE PAVEMENT REMAINS WITHIN THE RIGHT-OF-WAY, IS NOT DIMINISHED IN WIDTH, AND REMAINS AT LEAST 4 FEET FROM THE EDGE OF THE STREET PAVEMENT, UNLESS OTHERWISE APPROVED BY THE CITY.
3. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6 INCHES ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND.
4. ALL WALKS SHALL HAVE A CROSS SLOPE OF 1/4 INCH PER FOOT AND SHALL NOT EXCEED A LONGITUDINAL SLOPE OF 1:20, EXCEPT AT DESIGNATED RAMPS THAT SHALL NOT EXCEED 1:12. PROVIDE A TACTIBLE WARNING SURFACE AT ALL RAMPS PER A.D.A. THE CONTRACTOR SHALL INSURE THAT ALL PROVISIONS OF A.D.A AND FLORIDA ACCESSIBILITY CODE ARE MET.*
5. ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FRESH CONCRETE, TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICLE TRAFFIC, TO SEPARATE FRESH PLACEMENT FROM CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN 100 FEET IN SIDEWALKS AND BIKEPATHS. JOINT MATERIAL SHALL BE SPECIFIED IN FDOT STANDARDS AND SPECIFICATIONS AND SHALL BE RUBBER, PLASTIC OR OTHER APPROVED NON-BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD IS PROHIBITED.
6. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE TO A DEPTH EQUAL TO 1/4 THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB, AT MINIMUM SPACING OF 5', MAX SPACING OF 12'.
7. THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF THE EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLED TO ELIMINATE SHARP CORNERS.
8. THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATORY OR IMPACT COMPACTION MACHINE IN MAXIMUM 12 INCH LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4 INCH LIFTS. THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT IF THE TOTAL FILLED SECTION IS MORE THAN 12 INCHES DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12 INCHES DEEP. WHERE SUCH TEST IS REQUIRED, THE RESULTS SHALL SHOW A MINIMUM PROCTOR FIELD DENSITY OF 95 PERCENT.
9. ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB, AFTER WHICH TIME THE OWNER OF THE ABUTTING LAND SHALL BE RESPONSIBLE FOR THE SLAB IN ACCORDANCE WITH THE CITY CODE. ANY SLAB SECTION DAMAGED OR VANDALIZED PRIOR TO ACCEPTANCE OR APPROVAL SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED. REPAIRS ARE NOT ACCEPTABLE.
11. SIDEWALKS LOCATED WITHIN THE RIGHT-OF-WAY SHALL NOT BE TINTED, STAINED, COLORED, OR COATED.
12. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACKFILLED, REGRADED, AND SODDED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY **FLUSH WITH THE ADJACENT GRADE.**

STANDARD CONSTRUCTION DETAIL **SIDEWALK, RAMP, AND DRIVEWAY APRON CONSTRUCTION REQUIREMENTS** NTS	INDEX M-3 MAY 2020



HALF SECTION



MANHOLE ADJUSTMENT DETAILS

STANDARD CONSTRUCTION DETAIL **MANHOLE ADJUSTMENT DETAILS** NTS	INDEX S-9C MAY 2020

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

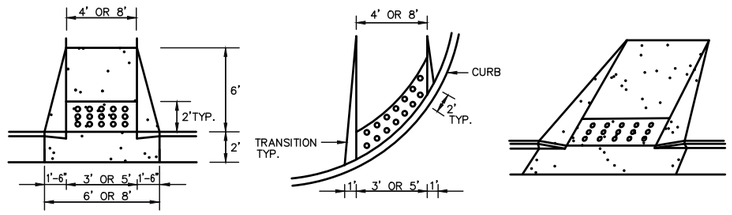
BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER

ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

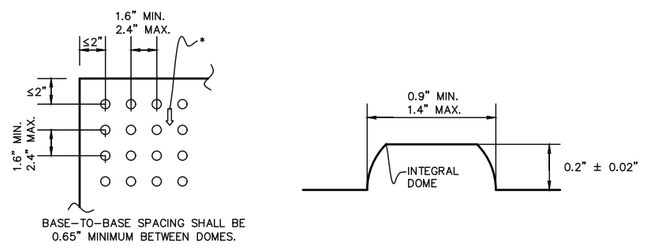
CONSTRUCTION DETAILS & NOTES

DATE: 12/5/22	PROJECT NO.: 00-
SCALE:	FILE NAME:
DRAWN BY: MC	SHEET: 13 of 16



NOTES:

1. RAMP LOCATIONS ARE TO BE COORDINATED WITH AND IN CONFORMANCE WITH CROSSWALK MARKING DETAILS SHOWN IN THE PLANS.
2. CURBED RAMPS SHALL HAVE FLARED SIDES WITH A MAXIMUM SLOPE OF 12:1.
3. RAMPS SHALL HAVE A DETECTABLE WARNING SURFACE AS SHOWN.
4. RAMPS ARE TO BE CONSTRUCTED AT ALL LOCATIONS SHOWN IN THE PLANS EVEN WHEN A SIDEWALK IS NOT CONSTRUCTED CONCURRENTLY.
5. NO CURB TRANSITION IS NEEDED FOR MIAMI CURBS.
6. ALL RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX NO. 304 AND HANDICAPPED ACCESSIBILITY REQUIREMENTS IN ACCORDANCE WITH THE AMERICAN DISABILITIES ACT.

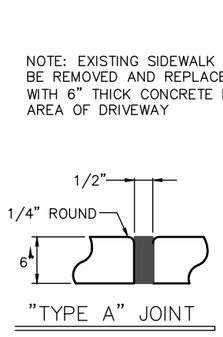


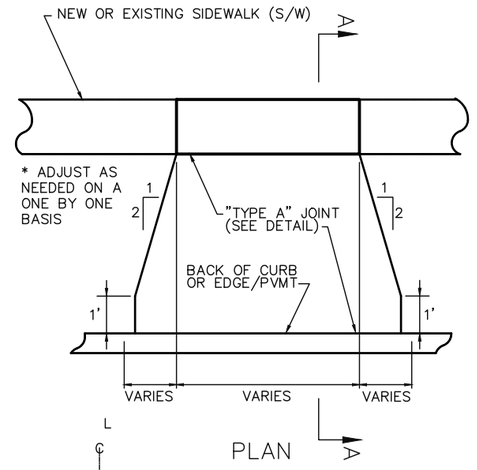
NOTES:

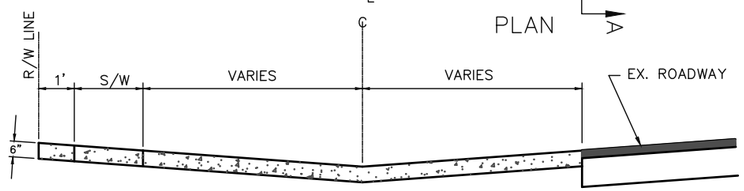
* ON RAMPS THAT ARE PERPENDICULAR WITH THE CURB LINE, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL. ON RAMPS INTERSECTING CURBS ON A RADIUS, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL TO THE EXTENT PRACTICAL.

	STANDARD CONSTRUCTION DETAIL **SIDEWALK AND BIKE PATH RAMP** NTS	INDEX M-4 MAY 2020

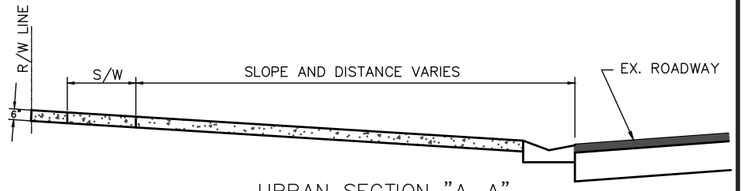
NOTE: EXISTING SIDEWALK TO BE REMOVED AND REPLACED WITH 6" THICK CONCRETE IN AREA OF DRIVEWAY







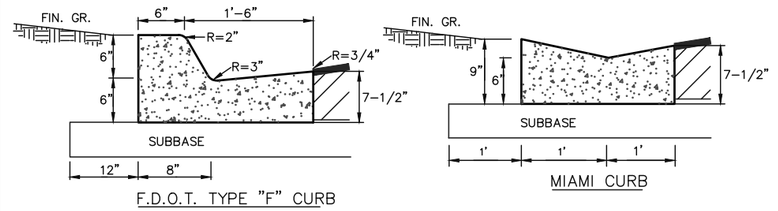
RURAL SECTION "A-A"

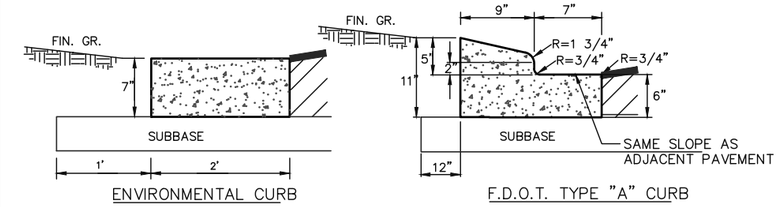


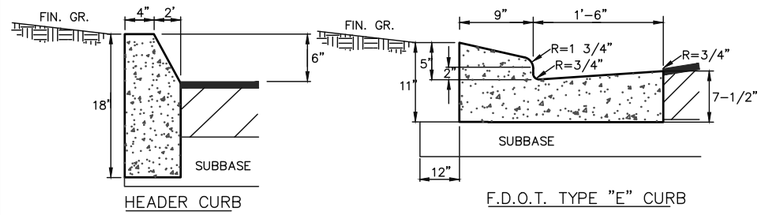
URBAN SECTION "A-A"

DRIVEWAY APRON BASE TO BE COMPACTED AND TESTED TO 95% DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO MODIFIED PROCTOR TEST F.B.V.-75
CONCRETE DRIVEWAY APRON TO BE 28 DAY, 3000 PSI.

	STANDARD CONSTRUCTION DETAIL **RESIDENTIAL DRIVEWAY APRON DRAWINGS** NTS	INDEX M-7 MAY 2020







NOTES:

1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 2500 P.S.I. CONCRETE
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 500', CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
4. 6" SUBBASE TO BE COMPACTED AND TESTED TO 98% DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
5. EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.
6. ALL EXPOSED CORNERS TO BE ROUNDED AT 3/4" MIN. RADIUS.
7. ALL CURB ENDS THAT DO NOT TIE INTO OTHER FACILITIES SHALL TRANSITION DOWN TO PAVEMENT GRADE IN 24 INCHES.

	STANDARD CONSTRUCTION DETAIL **STANDARD CURB CONSTRUCTION** NTS	INDEX R-4 MAY 2020

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER

ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

CONSTRUCTION DETAILS & NOTES

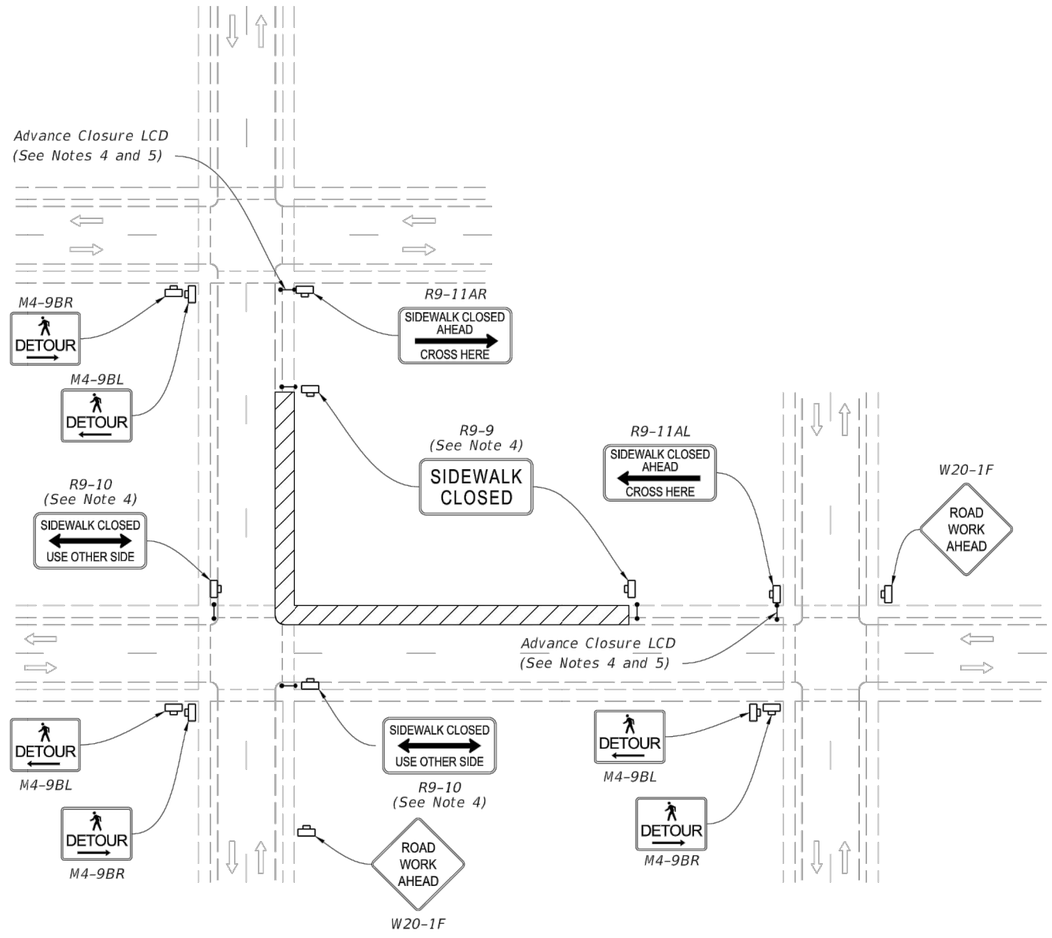
DATE: 12/5/22	PROJECT NO.: 00-
SCALE:	FILE NAME:
DRAWN BY: MC	SHEET: 14 of 16

NOTES:

1. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.
2. Place pedestrian LCDs across the full width of the closed sidewalk.
3. For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7' clearance from the bottom of the sign panel to the surface of the sidewalk.
4. "Sidewalk Closed" signs (R9-XX) may be mounted on pedestrian LCDs in accordance with the manufacturer's instructions.
5. Omit the Advance Closure LCD if it blocks access to other pedestrian facilities (e,g,, transit stops, residences, or business entrances).

SYMBOLS:

- Work Area
- Work Zone Sign
- Pedestrian Longitudinal Channelizing Device (LCD)
- Lane Identification and Direction of Traffic



PEDESTRIAN DETOUR

9/21/2021 12:26:54 PM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	SIDEWALK CLOSURE	INDEX	SHEET
11/01/20						102-660	1 of 2

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER

ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

MOT

DATE: 11/8/22	PROJECT NO.: 00-
SCALE:	FILE NAME:
DRAWN BY: MC	SHEET: 15 of 16

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Distance
   See Index 102-600 for "L", "B", "X", channelizing device spacing values.

2. Provide a 5' wide temporary pedestrian way with a maximum cross-slope of 0.02, except where space restrictions warrant a minimum width of 4'. Provide a 5' x 5' passing space for temporary pedestrian ways less than 5' in width at intervals not to exceed 200'.

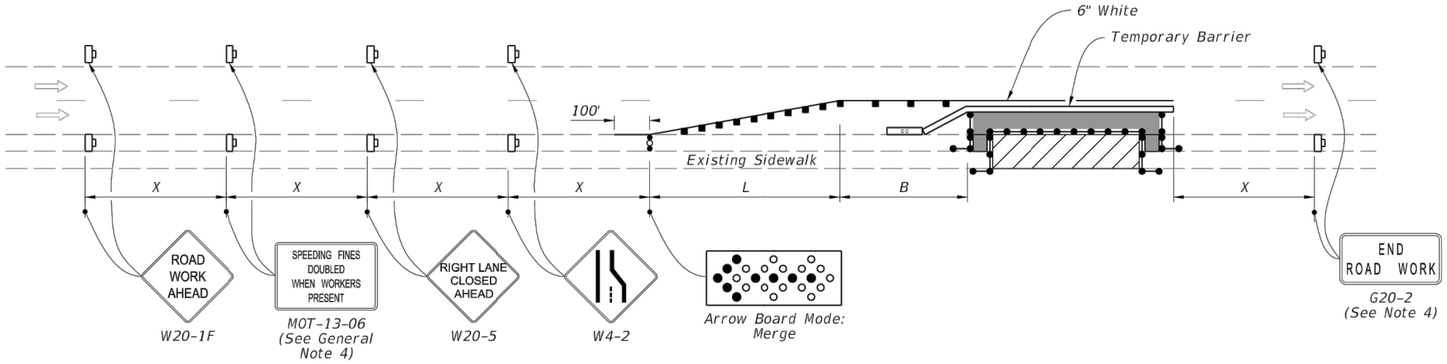
3. When temporary pedestrian ways require curb ramps, meet the requirements of Index 522-002. Detectable warnings are not required for curb ramps diverting pedestrian traffic into a closed lane.

4. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less.

5. Pedestrian Diversion Option 2 may only be used when called for in the Plans or as approved by an Engineer.

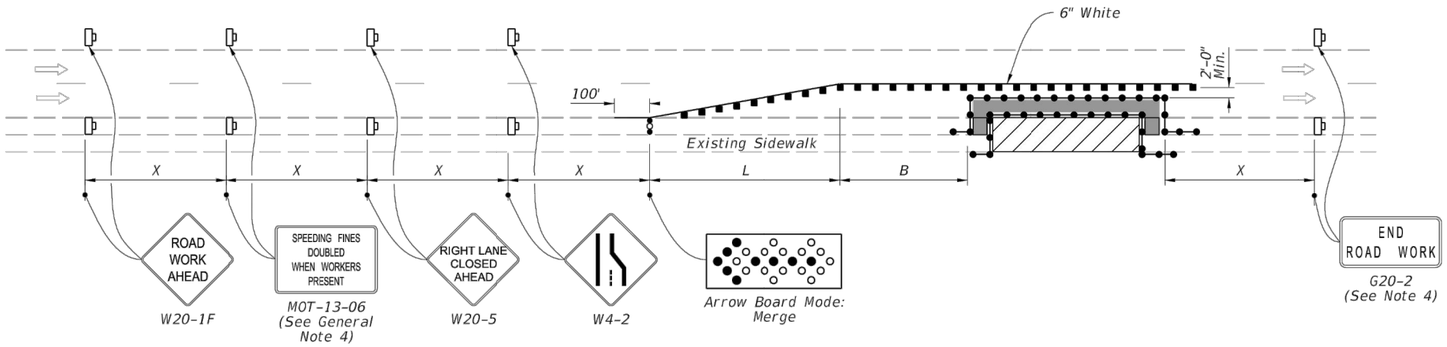
SYMBOLS:

- Work Area
- Temporary Pedestrian Way
- Channelizing Device (See Index 102-600)
- Pedestrian Longitudinal Channelizing Device (LCD)
- Work Zone Sign
- Arrow Board
- Crash Cushion
- Lane Identification and Direction of Traffic



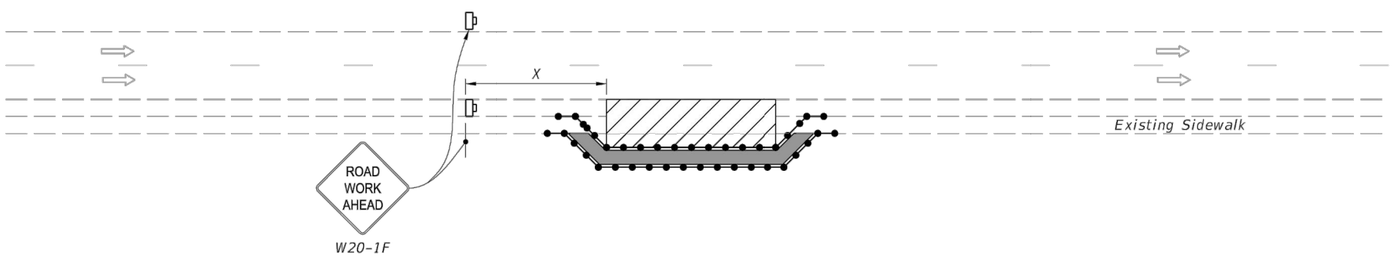
PEDESTRIAN DIVERSION - OPTION 1

(Temporary Barrier Shown, Low Profile Barrier Similar)



PEDESTRIAN DIVERSION - OPTION 2

(Work Zone Speed 35 mph or Less)



PEDESTRIAN SPECIAL DETOUR

9/21/2021 12:26:55 PM

LAST REVISION	REVISION	DESCRIPTION:
11/01/21		

FDOT FY 2022-23 STANDARD PLANS

SIDEWALK CLOSURE

INDEX 102-660

SHEET 2 of 2

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

BILL PARTINGTON, MAYOR
JOYCE SHANAHAN, CITY MANAGER
ALEX SCHUMANN, P.E. CITY ENGINEER

CDBG NORTH RIDGEWOOD AVE SIDEWALK IMPROVEMENTS

MOT

DATE: 12/5/22	PROJECT NO.: 00-
SCALE:	FILE NAME:
DRAWN BY: MC	SHEET: 16 of 16

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.K
Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Water Quality & Environment – Other		
Department :	Public Works		
Subject:	Request for Proposals Utility Rate and Impact Fee Update		
Budget Impact:	Consultant fees associated with the Utility Rate and Impact fee update are estimated to be $50,000. These funds will be paid from Funds 434 & 435 Water & Wastewater Impact Fees.		
Summary:	This project provides for a review and update of the City's utility rate and impact fees providing for fees that address the current expenses to operate the utility and make the necessary improvements to address the growing needs of the users on the City's Utility.		
Recommended Action:	City staff intends to advertise for consultants to provide proposals to complete a utility rate and impact fee study update, unless otherwise directed by the City Commission. The City Commission would review and act upon any acceptance of a proposal prior to its implementation.		
Staff Contact:	Shawn Finley, Public Works Director, (386) 676-3292		

Approval:

Kelly McGuire, Finance Director	3/9/2023	
Claire Whitley, Assistant City Manager	3/15/2023	
Joyce Shanahan, City Manager	3/16/2023	

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Shawn Finley, Public Works Director

Date: March 21, 2023

Subject: Request for Proposals Utility Rate and Impact Fee Update

Commission Goal: Water Quality & Environment – Other

Introduction

This disposition item provides notice of the City's intent to issue a request for proposals to update usage rates and the impact fee schedule for utilities including water, sewer, and reclaimed water for customers of the City.

Background

A critical component of an impact fee structure is that the rate paid by new development represents the proportionate share of the cost of new facilities (the rational nexus test). Impact fees are prohibited from being used to pay for existing service deficiencies or for maintenance and operational costs of existing facilities. Funds collected are earmarked for the benefit of the facilities identified as necessary to support new development. Impact fees are tied to a capital improvements plan, master facility plan, or capital projects list.

Impact fees are collected from new construction at the time a building permit is issued and used to construct system improvements needed to accommodate new development. Impact fees are an important component of the City's comprehensive planning process and a necessary tool to ensure that new growth pays its fair share of capital improvement costs. The Comprehensive Plan identifies the future growth that is projected to occur, the capital facilities required to serve that growth, and a minimum level-of-service (LOS) standard that will be provided for new development. The City has adopted LOS standards for potable water, sanitary sewer, solid waste, drainage, parks, roads, and firefighting, but only collects impact fees for some of these services. The City of Ormond Beach has assessed impact fees for water and sewer since 1974.

Impact fees are a key component of the city's capital infrastructure that is budgeted within the Capital Improvement Program. Capital projects are reflected in the Comprehensive Plan in the Capital Improvement Elements. Impact fees assist the city in maintaining adopted level of services as established in the Comprehensive Plan.

Impact fees are assessed on new development to fund capital projects needed based on the additional demands from new development. Impact fees are not used for operating expenses or recurring maintenance.

The City has experienced a steady residential growth rate around 1.25% and commercial development along major roadways. Future growth is expected within the Plantation Oaks development, the north U.S.1 corridor, and Ormond Crossings. In addition to in-city growth, the city collects water and sewer impact fees within the Flagler County portion of the Hunter's Ridge Development of Regional Impact, and will collect impact fees from any growth that may occur from properties located within its service area that are part of the City of Daytona Beach.

The further establishment of utility usage rates provides funding for the operation, maintenance, and administration of the City's Utility and its infrastructure. It is critical that the rates charged to the users provides for the costs associated with the operation of the City and distributes those costs to the users in a fair and equitable manner.

City of Ormond Beach Ordinance #89-43 established the West Ormond Utilities District which established certain lands generally west of I-95 and north of the Daytona-Ormond Service Area line to be within the West Ormond Utilities District for purposes of providing water and sewer services, establishment of a line extension development policy, and an impact fee schedule to aid in the development of these lands in the western portion of the City.

Discussion

The scope of services for the update of impact fees is provided in section three (3) of the request for proposals. The request for proposals is divided into the following tasks:

- **Task 1:** Review of existing documentation. This task requires a consultant to review the existing impact fee documents and rate schedule.
- **Task 2:** Develop land use assumptions and development projections. Analyze current demographics, vacant land areas, and trends related to growth and development and seek to determine the likely future development for Ormond Beach in terms of new population, housing units, and non-residential building area over the next twenty (20) years**.**
- **Task 3:** Qualitative analysis of impact fees - determination of capital facility needs and service levels. This task shall include an evaluation of the impact of development on the need for additional facilities and the costs eligible for impact fee funding. The consultant would review existing utility impact fees (water, sewer, reclaimed water) and appropriate amendments. Additionally, the consultant would review any potential new impact fees and provide recommendations.
- **Task 4:** Analysis and recommendation of Utility usage rates and fees. This task shall include a review of current utility usage rates and recommendations for modification and establishment of future rates for residential, multi-family, and commercial bases.
- **Task 5:** Required meetings. This task includes a meeting with the building

community to review the findings of the study and a workshop with the City Commission.

- **Task 6:** Completion. Within this task, the consultant will prepare a final report submitted to the City containing background information, methodology, findings, supporting justification and recommendations. It is expected that the Ordinance for City Commission review will occur in Fall 2023.

Budget Impact

Consultant fees associated with the Utility Rate and Impact fee update are estimated to be $50,000. These funds will be paid from Funds 434 & 435 Water & Wastewater Impact Fees.

Citizen Impact

There is an expectation that new construction should pay for the costs associated with its infrastructure impact. The study would provide an update to establish impact fees based on the infrastructure impacts of new development. This study will also provide the basis to ensure that utility rates are equitably distributed amongst all customers throughout the City's Utility Service Area.

Recommendation

City staff intends to advertise for consultants to provide proposals to complete a utility rate and impact fee study update, unless otherwise directed by the City Commission. The City Commission would review and act upon any acceptance of a proposal prior to its implementation.

Attachments:

1. RFP 2023-26 Utility Rate and Impact Fee Study

Approvals:

Kelly A. McGuire

Kelly McGuire, Finance Director — Date: March 09, 2023

Claire Whitley, Assistant City Manager — Date: March 15, 2023



Date: March 16, 2023

Joyce Shanahan, City Manager

City of Ormond Beach

22 South Beach Street
Ormond Beach, Florida 32174
Telephone (386) 676-3223
Fax (386) 676-3374

REQUEST FOR PROPOSALS

PROPOSER ACKNOWLEDGEMENT FORM

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

RFP TITLE: **Utility Rate and Impact Fee Update**

RFP NUMBER: **2023-26**

RFP OPENING DATE & TIME: **April 27, 2023 at 2:30 PM**

RFP OPENING LOCATION: **Training Room at Ormond Beach City Hall (breezeway)**

PRE-PROPOSAL MEETING DATE & TIME: **April 6, 2023 at 2:00 PM, Room 103 at Ormond Beach City Hall**

SUBMITTALS RECEIVED AFTER THE ABOVE DATE AND TIME WILL NOT BE ACCEPTED.

PROPOSER'S NAME: _____

PROPOSER'S MAILING ADDRESS: _____

CITY-STATE-ZIP: _____

F.E.I.N.: _____
PHONE NUMBER: _____

EMAIL: _____
If returning as a "No Submittal", please state reason (s): _____

I certify that this Proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Proposal for the same materials, services, supplies, or equipment, and is in all respects fair and made without collusion or fraud. I agree to abide by all conditions of this RFP and certify that I am authorized to sign this RFP for the Proposer. In submitting a RFP to the City of Ormond Beach, the Proposer offers and agrees that if the Proposal is accepted, the Proposer will convey, assign or transfer to the City of Ormond Beach all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Ormond Beach. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Proposer.

X _____
AUTHORIZED SIGNATURE (MANUAL)

_____
NAME (TYPED)

_____
TITLE

_____
DATED

GENERAL CONDITIONS

PUBLIC ENTITY CRIMES: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a proposal on a contract to provide any goods or services to a public entity, may not submit a proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit Proposals on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

DISCRIMINATION: Pursuant to Section 287.134(2)(a), Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid or proposal on a contract to provide any goods or services to a public entity, may not submit a bid or proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit bid or proposal on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

PUBLIC RECORDS/NON-CONFIDENTIALITY OF BIDS AND/OR PROPOSALS. The City of Ormond Beach cannot and does not warrant the confidentiality of any information submitted in response to this solicitation. Florida law provides that municipal records shall at all times be open for personal inspection by any person, Section 119.01, F.S., The Public Records Law. Information and materials received by the City of Ormond Beach in connection with all Proposers' response shall be deemed to be public records subject to public inspection upon award, recommendation for award, or 30 days after bid opening, whichever occurs first. Section 119.071, F.S.

DISTRIBUTION OF BIDS AND RFP'S: The City uses the services of DemandStar (www.demandstar.com) to distribute its bids and RFP's on-line on the Internet. If you have received a copy of this RFP from any source other than DemandStar, please be aware that you may not have received the latest version of the RFP or any related addendums.

SUBMISSION OF RESPONSES: All Submittals shall be delivered in a sealed envelope. The Request for Proposals (RFP) number, title, and opening date shall be clearly displayed on the outside of the sealed envelope (and on the outside of any express shipping package). The delivery of said submittal to the Purchasing Office on or before the specified opening date and time is solely and strictly the responsibility of the Submitter. Any submittal received by the Purchasing Office after the specified date and time will not be accepted. Submittals must be presented on forms provided by the City. No other forms will be accepted. Telephone, telefax and telegraph Submittals will not be considered. No Submittal may be modified after opening. No Submittal may be withdrawn after opening for a period of ninety (90) days unless otherwise specified.

EXECUTION OF SUBMITTAL: Submittals must contain a manual signature of authorized representative in the space(s) provided. Submittals must be typed or printed in ink. Use of erasable ink is not permitted. All corrections made by Submitter to any Submittal entry must be initialed.

The company name and Federal Employer Identification Number (F.E.I.N.) number shall appear in the space(s) provided.

RFP OPENING: Submittals shall be opened and the name of the submitters shall be read publicly. No discussion of the Submittals will occur at this time.

SUBMITTAL TABULATION: Any submitter wishing to receive a copy of the tabulation is required to enclose a stamped, self-addressed envelope with their Submittal response.

CLARIFICATION/CORRECTION OF RFP ENTRY: The City of Ormond Beach reserves the right to allow for the clarification of questionable entries and for the correction of obvious mistakes.

INTERPRETATION: Any questions concerning conditions and specifications shall be directed to the Purchasing Coordinator. Those interpretations which may affect the eventual outcome of this Submittal will be furnished in writing to all prospective Submitters. No interpretation shall be considered binding unless provided in writing by the City of Ormond Beach.

MINORITY POLICIES: The City of Ormond Beach, Florida, encourages the full participation of Disadvantaged and Women Business Enterprises (D&WBE) in the provision of goods and services.

LICENSES AND PERMITS: The Vendor/Contractor is responsible for obtaining all necessary permits and licenses to comply with all Federal, State, local laws, rules and regulations required to perform work in accordance with the specifications.

ADDITIONAL TERMS AND CONDITIONS: The City of Ormond Beach reserves the right to reject Submittals containing any additional terms or conditions not specifically requested in the original conditions and specifications.

TAXES: The City of Ormond Beach is exempt from Federal Excise Taxes and all sales taxes.

SILENCE OF SPECIFICATIONS: The apparent silence of any specification and any supplemental specifications as to any details or the omission from same of any detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and that only materials of first quality and correct type, size, and design are to be used. All workmanship is to be first quality. All interpretations of the specifications shall be made upon the basis of this statement.

ASSIGNMENT: Any purchase order or contract issued pursuant to a Submittal and the monies which may become due hereunder are not assignable except with the prior written approval of the City Manager or City Commissioner, whichever authorized the purchase or Agreement.

LIABILITY: The Contractor shall hold and save the City of Ormond Beach, its officers, agents, and employees harmless against claims by third parties resulting from the Contractor's or supplier's breach of contract or negligence, including all attorney's fees and costs, and shall pay any and all damages, fees, and costs assessed on behalf of the City. The City expressly reserves all rights, privileges and benefits of sovereign immunity.

PATENTS AND ROYALTIES: The Contractor, without exception, shall indemnify and save harmless the City of Ormond Beach and its employees from liability of any kind, including cost and expenses for or on account of any copyrighted, patented, or unpatented invention, process, or article manufactured or used in the performance of the contract, including its use by the City of Ormond Beach. If the Contractor uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the Submittal prices shall include all royalties or cost arising from the use of such design, device, or materials in any way involved in the work.

NON-APPROPRIATION OF FUNDS: In the event sufficient budget funds are not available for a new fiscal period, the CITY shall notify the VENDOR/CONTRACTOR of such occurrence and the contract shall terminate on the last day of the current fiscal period, without any penalty or expense to the CITY of any kind whatsoever.

AWARDS: The CITY reserves the right, in its sole discretion, as the best interest of the CITY may require, to make award(s) by individual item, group of items, all or none, or a combination thereof; on a geographical basis and/or with one or more vendors, contractors, consultants or specialists; or to reject any and all Submittals or waive any minor irregularity or technicality in the Submittals received.

OTHER AGENCIES: All Bidder(s) awarded contracts from this bid or proposal may, permit any municipality or other government agency to participate in the contract under the same prices, terms, and conditions, if agreed to by both parties.

It is understood that at no time will any city, municipality, or other agency be obligated for placing an order for any other city, municipality, or agency: nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further, it is understood that each agency will issue its own purchase orders to the awarded bidder(s).

COMPLIANCE WITH FLORIDA PUBLIC RECORDS LAW:

Contractor expressly agrees that it shall comply with the public records law provided in Florida Statutes, Chapter 119, and specifically to:

(a) Keep and maintain public records required by the City to perform the contracted service.
(b) Upon request from the City Clerk, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
(d) Upon completion of the contract, transfer at no cost, to the City all public records in possession of the contractor or keep and maintain public records required by the City to perform the service. If the contractor transfers all public records to the City upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon the completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to

the City, upon request from the City Clerk, in a format that is compatible with the information technology systems of the City.
(e) Failure of the Contractor to comply with Public Records Law as provided by Florida Statutes, Chapter 119, shall subject the Contractor to penalties under Chapter 119.10 and subject this Agreement to termination for cause by the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
22 SOUTH BEACH STREET
ORMOND BEACH, FLORIDA 32174
(386)677-0311
CITYCLERK@ORMONDBEACH.ORG
or online at
https://www.ormondbeach.org/prr

Ref: Fla. Stat. §119.0701(2016)

THE CITY OF ORMOND BEACH RESERVES THE RIGHT TO REJECT ANY OR ALL PROPOSALS, AND TO WAIVE INFORMALITIES AS MAY BE DEEMED TO BE IN THE BEST INTEREST OF THE CITY.

TERMS AND CONDITIONS

I. The City of Ormond Beach reserves the right without prejudice to reject any or all proposals, to request clarification of information submitted, and to request additional information of one or more proposers.

II. The City reserves the right to award the contract to the next most qualified firm if the successful firm fails to execute a contract within two weeks after the award of the contract by the City Commission.

III. In accordance with federal, State, and local regulations, the firm shall not discriminate under the contract against any person.

IV. The firm shall not assign or transfer any interest in the contract without prior approval of the City Commission.

V. The City reserves the right to terminate the contract at any time due to the vendor's default under terms of agreement.

VI. Submission of a proposal indicates acceptance by the firm of the conditions contained in this Request for Proposals unless clearly and specifically noted in the proposal submitted and confirmed in the contract between the City of Ormond Beach and the firm selected.

VII. Submittals should include a copy of firm's insurance certificate, Conflict, Non-Conflict of Interest Statement/Litigation Statement, Drug Free Workplace Certificate and E-Verify Statement.

I. BACKGROUND

Ormond Beach is a coastal community within Volusia County with an estimated population of approximately 42,000. As a Utility, The City currently charges usage rates and impact fees for water, sewer, and reclaimed wastewater. Per Chapter 22, Article VI of the Code of Ordinances of the City of Ormond Beach, a Western Ormond Utilities District has been established. Utility rates and impact fees for those developments within this Utilities District are defined separately from those elsewhere within the City's Utility Service Area.

Impact fees are collected from new construction at the time a building permit is issued and used to construct system improvements needed to accommodate new development. Impact fees are an important component of the City's comprehensive planning process and a necessary tool to ensure that new growth pays its fair share of capital improvement costs. The Comprehensive Plan identifies the future growth that is projected to occur, the capital facilities required to serve that growth, and a minimum Level-of-Service (LOS) standard that will be provided for new development. The City has adopted LOS standards for potable water, sanitary sewer, solid waste, drainage, parks, roads/mobility, and fire services, but does not collect impact fees for all of these services.

A Utilities District was established by Ormond beach Ordinance #89-43 which which established certain lands generally west of I-95 and north of the Daytona-Ormond Service Area line to be within the West Ormond Utilities District for purposes of providing water and sewer services, establishment of a line extension development policy, and an impact fee schedule to aid in the development of these lands in the western portion of the City.

II. OBJECTIVE OF THE REQUEST FOR PROPOSALS

The City of Ormond Beach, Florida, is soliciting proposals from qualified individuals or firms to study water, sewer, and reclaimed wastewater rates and impact fees. The purpose of the Rate study and Impact Fee Update is to provide expert review and recommendations relating to the City's usage rates for utilities and impact fees for these utilities.

The selected consultant shall prepare a water and sewer rates and impact fee report which recommends an economically and legally supportable set of water, sewer and reclaimed water usage rates, as well as impact fees for water, sewer, and reclaimed water to offset the costs for development and connection to the Citywide utility. The Consultant is further requested to provide usage rates and an impact fee analysis for the City's Western Utility District and provide sufficient supporting calculations and information to ensure the rational nexus between capital improvements and impact fees.

III. SCOPE OF SERVICES

The Contractor shall prepare a water and sewer rates and impact fee report which recommends an economically and legally supportable set of water, sewer and impact fees to offset the costs of water and sewer demands related to development. The below scope of services is for proposal development and evaluation. The Proposer shall expand on this scope in their proposal.

Task 1: Review of Existing Documentation:

a. Consultant shall review the following existing impact fee ordinances:

   1. Ordinance No. 89-43, which establishes and describes the West Ormond Utilities District.

2. Ordinance No. 96-63, which provided a mechanism for financing impact fees on single-family owner-occupied affordable housing within the Community Development Block Grant Program "Priority Area".
3. Ordinance No. 96-65, which established collection of fees for local roads, water and sewer, reclaimed water (west Ormond service area only), parks and recreation, and stormwater.
4. Ordinance No. 2015-44, which amended the impact fee credit provisions.

b. Consultant shall review and become knowledgeable of the policies and implementation strategies contained in the city's Comprehensive Plan, Land Development Code (LDC), Code of Ordinances, and 5-Year Capital Improvement Program.

c. Consultant shall review and become knowledgeable of State and County plans and fee schedules that may impact the City of Ormond Beach.

d. Review the existing Equivalent Living Units formulas for water and sewer impact fees for non-residential development.

e. Consultant shall review the current Five-Year Capital Improvement Plan specific to utility projects and related to improvement production and delivery/collection of water, wastewater, and reclaimed water.

f. Consultant shall review the Utility Master Plan Update (2015) prepared by Quentin L. Hampton & Associates.

g. Consultant shall review the Western Service Area Update prepared by Mead Hunt, Inc.

Task 2: Develop land use assumptions and development projections

Review, along with City Staff, current demographics, vacant land areas, and trends related to growth and development and seek to determine the likely development future for Ormond Beach in terms of new population, housing units, and non-residential building area over the next twenty (20) years. In this task, current development estimates and projections of future development shall be updates based on the Census and other applicable sources, such as the University of Florida Bureau of Economic and Business Research (BEBR).

Task 3: Qualitative analysis of impact fees – determination of capital facility needs and service levels

This task shall include an evaluation of the impact of development on the need for additional facilities and the costs eligible for impact fee funding. Items to be included in the evaluation include:

a. Review of existing utility impact fees and appropriate amendments.

b. Review of any potential new impact fees and provide recommendations.

c. Review, in consultation with City, existing Level-of-Service standards within the Comprehensive Plan.

d. Consultant shall identify any legal considerations for the current and recommended impact fee schedule including the minimum requirements for a legally defensible impact fee system.

e. Consultant shall prepare a fee comparison report between the recommended fees, and fees of surrounding Municipal and County governments to ensure reasonableness, consistency, and feasibility.

f. The Consultant may include any other analysis that may have been omitted in the determination of capital facility funding and Level of Services. A statement of need should be provided for any additional analysis.

g. Development of a draft report and PowerPoint for the required meetings.

Task 4: Analysis and recommendation of Utility Usage Rates and Fees.

This task shall include an evaluation of the operation, maintenance, and administration of the City's water, sewer, and reclaimed water utilities. This analysis shall consider the costs to operate this system and provide for the ongoing maintenance of the treatment facilities, distribution and collection systems, and all other facilities comprising the Utility. Items to be included in the evaluation include:

a. Review of existing utility rates.

b. Review, in consultation with the City, all facilities and operational elements of the City's Utility.

c. Review, in consultation with City of operational and maintenance budgets for the Utility.

e. Review, in consultation with City, the current Capital Improvement Plan and objectives of this plan with regards to Utility System maintenance and upgrades.

f. Consultant shall prepare a rate comparison report between the recommended rates, and rates of surrounding Municipal and County governments to ensure reasonableness, consistency, and feasibility.

g. Development of a draft report and PowerPoint for the required meetings.

Task 5: Required Meetings:

a. The Consultant shall conduct meetings with City Staff, in person or virtual, as needed to complete the Impact Fee Update including review of objectives, methodology, exchange of information, timing and scheduling of tasks. The following public meetings shall be required:

Meeting purpose:	**Organization**
Draft report reviews to include impact fees and prosed impact fee amounts	Building community
Presentation of Draft Report. Key tasks: 1. Summary of findings. 2. Discuss Level of Services. 3. Draft recommendations and report. 4. Summary of building community meeting 5. City Commission review and comments.	City Commission Workshop. Goal date November 28, 2023
Presentation of Final Report at a public hearing for adoption of impact fee amendments	City Commission (1st reading)
Presentation of Final Report at a public hearing for adoption of impact fee amendments and Ordinance.	City Commission (2nd reading)

b. The Consultant will be responsible for preparation of materials used in the presentation to the City Commission. Materials/information to be presented at the meeting shall be provided to the City, in final format, at least ten (10) days prior to the meeting. City Staff shall provide the meeting locations and any required meeting advertising.

Task 5: Completion: Consultant will prepare a final report submitted to the City with background information, methodology, findings, supporting justification and recommendations. More specifically, the Consultant shall prepare a report containing, but not limited to, the following:

a. Background information.

b. Recommended utility usage rates for water, wastewater, and reclaimed water for those users Citywide outside the boundaries of the Western Ormond Utility District service area, as well as recommended utility rates for those users within the Western Ormond Utility District service area.

c. Recommended utility impact fee rates for water, wastewater, and reclaimed water for those users Citywide outside the boundaries of the Western Ormond Utility District service area, as well as recommended impact fee rates for those users within the Western Ormond Utility District service area.

d. Recommended modifications to the boundary of the Western Ormond Utility District service area.

e. Rate and Impact Fee Update study per the tasks 1 through 4.

f. Calculations that demonstrate the legal nexus between recommended fees and the impact created by new development. Relationship between the fee's use and the type of project on which it would be imposed.

g. Ordinance to amend the City impact fees.

h. Any recommendations to Level of Service standards. City Staff shall perform any necessary Level of Service amendments.

IV. TERM OF AGREEMENT:

The contract will be for the duration of this project.

V. DEADLINE AND DELIVERABLES:

The Consultant shall complete the impact fee study within 270 days of Notice to Proceed based on the following proposed calendar. The Consultant will be responsible for providing one (1) electronic copy to Project Manager of the Impact Fee Update study, Ordinance, and any recommendations to Level of Service standards. All reports shall be delivered to the Engineering Division. The Consultant shall use software authorized by the City for development of the final report, tables, graphs and maps.

Task	Expected Completion Time
Task 1: Review of Existing Documentation.	Within 45-days of Notice to Proceed
Task 2: Develop land use assumptions and development projections	Within 90-days of Notice to Proceed
Task 3: Qualitative analysis of impact fees.	Within 120-days of Notice to Proceed
Task 4: Required Public Meetings Building community and City Commission workshop	Within 150-days of Notice to Proceed.
Task 4: Required Public Meetings City Commission adoption of Ordinance	Within 210-days of Notice to Proceed.
Task 5: Completion of Impact Fee Study	Within 270-days of Notice to Proceed.

VI. PROPOSAL PROCESS

The firm or individual(s) interested in this contract should include a response to each of the following items in their written proposal:

Professional Qualifications: Any firm or individual with proven professional experience in impact fee studies, and having interest in providing these services to the City of Ormond Beach, is invited to submit a Letter of Interest and Proposal.

Information to be Submitted: The proposal package shall consist of the following:

Section 1	
Introduction	1. One (1) original letter of interest
Section 2	
	1. Philosophy and general project approach of the firm or individual.
Company Background	2. Proposed organizational chart. Include sub consultants, if appropriate.
Section 3	
Key Personnel Introduction	1. Detailed resumes of key person(s) to be assigned to the project, including but not limited to:
	a. Name and title
	b. Job assignments for other projects
	c. Percentage of time to be assigned to this project
	d. Current and projected workload of key individuals
	e. Number of years with this firm
	f. Number of years with other firms
	g. Experience (type of projects, size of projects, specific project involvement)
	h. Education and active registration(s)
	i. Additional experience/qualifications that is relevant to this project.

Section 4	
Past Performance Experience	1. The proposer should have proven professional experience in preparation of impact fee studies. **No less than three (3) studies within the state of Florida** are to be detailed identifying specific measures taken to accomplish each of the tasks identified (if applicable), and identifying specific deliverables and measures taken to implement the plan recommendations.
	2. For each of the three (3) projects demonstrating past performance experience, please provide the following details:
	a. Name and location of the completed master plan, the year of commencement and of completion, and the name and telephone number for the client's contract manager.
	b. The names of your firm's staff which were directly responsible for the impact fee study, specifically, those working directly with the local government representatives.
	c. The names and telephone numbers of the persons representing the individual agencies which the identified key staff worked with to complete the impact fee study.
	d. The name and telephone number of the contracting agency and local government official responsible for oversight of the impact fee study.

Section 5	
References	1. List five (5) references that can comment on your firm's ability to complete an impact fee study. The references shall be contacted as part of the committee's decision-making process. Include
	a. Name and Title,
	b. Firm Name and Address
	b. Telephone number
	c. E-mail address

Section 6

Methodology and Technical Approach	1. Specify the firms approach to completing the tasks specified in the proposed RFP. 2. Include an implementation schedule with a final delivery date and note key project milestones and timelines for deliverables. Identify any assumptions used in developing the schedule. 3. Current and projected workload of the company 4. Fee Proposal - The Consultant shall provide the City with a detailed fee proposal that provides a lump sum price for the outlined scope of services and includes the fee rate for staff for additional services if requested by City staff.

Section 7	
Required Forms	1. Conflict, Non-Conflict of Interest Statement and Litigation Statement
	2. Drug Free Workplace Certificate
	3. Addendum Acknowledgement, if applicable

VII. PROPOSAL SUBMITTAL

Please check the contents of your RFP package carefully to ensure that you have in your possession all the necessary documents, as referenced within this RFP, including any addenda. If you are missing any items, please contact the City's Purchasing Coordinator at 386-676-3223, or by e-mail at: Rob.Hart@ormondbeach.org.

Submission of a proposal pursuant to this RFP shall constitute acknowledgement and acceptance of the terms and conditions set forth herein. Portions of this RFP and the contents of the proposal submitted by the successful proposer may become contractual obligations if an Agreement is awarded. Failure of the successful proposer to accept these obligations may result in cancellation of the award of contract.

The City reserves the right to withdraw this RFP at any time without prior notice. All proposals submitted in response to this RFP become the property of the City of Ormond Beach.

Deadline for Submission: To be considered, proposals must be received no later than **2:00 p.m., April 27, 2023.**

Inquiries: Technical questions may arise as firms are preparing their proposals. The City will accept written inquiries regarding this RFP until seven (7) working days prior to the RFP due date. Questions received after that time will not be responded to. Answers to questions that warrant attention of all the potential proposers will be distributed in the form of an addendum. Please direct written inquiries to:

Rob Hart
Purchasing Coordinator
22 South Beach Street
Ormond Beach, Florida 32174
Telephone: (386) 676-3223
Email: Rob.Hart@ormondbeach.org

The deadline to submit questions is April 18, 2023 at 5:00pm.

Signature Requirements: Proposals must be signed by a duly authorized official(s) of the proposing firm. Consortiums, joint ventures, or teams submitting proposals, although permitted and encouraged, will not be considered responsive unless it is established that all contractual responsibility rests solely with one firm or legal entity which shall not be a subsidiary or affiliate with limited resources. Each proposal shall indicate the entity responsible for execution on behalf of the proposal team.

Proposal Delivery: The City of Ormond Beach must receive one (1) unbound original plus one

(1) electronic copy on compact disk (CD) or flash drive of the proposal no later than the date and time specified above. Submit proposals to: Rob Hart, Purchasing Coordinator, at City Hall down stairs in Room 101, 22 South Beach Street, Ormond Beach, FL 32174. The RFP title and number shall be plainly marked on the outside of the delivery envelope or package. It is solely the responsibility of the submitter to ensure that the Proposal is delivered on or before the specified date and time. Late proposals will not be accepted.

Addenda and Supplements to the Request for Proposals (RFP): In the event that it becomes necessary to revise any part of this RFP, or if additional information is necessary to enable the proposing firm to make an adequate interpretation of the provisions of this RFP, an addendum to the RFP will be provided to each firm that has requested a copy of this document.

Rejection Rights: The City of Ormond Beach reserves the right, at any time, to modify, waive or otherwise vary the terms and conditions of this RFP including, but not limited to, the deadlines for submission and submission requirements. The City further reserves the right to reject any or all submittals, to cancel or withdraw this RFP at any time and to negotiate with any party prior to or after submittal of proposals. Selection is also dependent upon the negotiation of a mutually acceptable contract with the successful proposers.

Cost of Proposal Preparation: No reimbursement will be made by the City of Ormond Beach for any costs incurred in the preparation of the proposal or presentation.

Proposals to be in Effect: Each proposal shall state that it is valid for a period of not less than 90 days from date of receipt.

VIII. EVALUATION PROCESS AND CRITERIA

The City of Ormond Beach will conduct an evaluation of all proposals, submitted by the deadline, to determine compliance with proposal requirements and mandatory document submissions. The committee will consist of members of the Public Works and Finance Departments. The committee will evaluate proposals and select the Proposer that meets the best interests of the City, and will make a recommendation of Award of Contract to the City Commission.

The City reserves the following rights:

- Modify, extend, or cancel this RFP at any time to obtain additional proposals or for any other reason the City determines to be in its best interest;

- Issue a new RFP with terms and conditions that are the same, similar or substantially different as those set forth in this or a previous RFP in order to obtain additional proposals or for any other reason the City determines to be in its best interest;

- Conduct pre-award discussion and/or pre-award negotiations with any or all responsive and responsible proposer(s) who submit proposals determined to be reasonably acceptable of being selected for award; and, conduct personal interviews or require presentations of any or all proposer(s) prior to selection.

- Request that proposer(s) furnish additional information as the City may reasonably require.

- Accept or reject qualifications or proposals in part or whole, and/or waive any defect or deficiency in any proposal, if in the City's sole judgment, the defect or deficiency is not material in response to this RFP;

- Limit and/or determine the actual services to be included in a contract.

- Engage outside experts to assist staff in evaluating the merits and viability of each proposer.

- Obtain information for use in evaluating submittals from any source.

- Verify the information received in the proposal. If a proposer knowingly and willfully submits false information or data, the City of Ormond Beach reserves the right to reject that proposal. If it is determined that an Agreement was awarded as a result of false statements or other data submitted in response to this RFP, the City of Ormond Beach reserves the right to terminate the agreement without prejudice.

The City shall be the sole judge of the proposer's qualifications.

Evaluation Criteria: The most important evaluation emphasis will be placed upon the experience and past performance of the firm. The evaluation criteria are as follows:

	Evaluation Criteria	Potential Points
1.	Qualifications of staff	15
2.	Similar/Past Projects	25
3.	Project Approach	20
4.	Current Workload	10
5.	References	20
6.	Fee Proposal	10

Responsive proposals will be ranked in each of the criteria

IX. SCHEDULE OF PROPOSAL

March 26, 2023	Legal Advertisement
April 6, 2023 2:00 PM	Non-mandatory pre-submittal meeting.
April 18, 2023 5:00 PM	Last day for questions
April 27, 2023 2:30 PM	Proposals Due - one (1) original of the complete proposal packet along with one (1) fully complete electronic file in pdf format on either a CD or thumb drive. Both versions must be in a single sealed envelope. Submit proposals to the Purchasing Coordinator, City Hall Room 101, 22 South Beach Street, Ormond Beach, FL 32174.
May 10, 2023 10:00 AM	Proposal Review and Rankings
May 17, 2023 2:00 PM	Pre-award meeting with selected consultant
June 6, 2023	City Commission Award
June 20, 2023	Notice to Proceed and Kick off Meeting

City of Ormond Beach
Request for Proposals (RFP)
UTILITY RATE AND IMPACT FEE STUDY
(RFP No. 2023-26)

RFP RESPONSE FORM

THIS RESPONSE IS SUBMITTED TO:

Purchasing Coordinator
City of Ormond Beach
22 S. Beach Street
Ormond Beach, Florida 32174

The undersigned SUBMITTER proposes and agrees, if this Submittal is accepted, to enter into a Contract with the CITY that reflects the items of this Request for Proposal (RFP) and to provide all services, as specified or indicated in the RFP Documents, in full accordance with the terms and conditions set forth in therein.

SUBMITTER accepts all of the terms and conditions of the General Conditions. SUBMITTER will sign the Contract) and submit the Contract security (when applicable) and other documents required by the Contract Documents within ten (10) days after the date of CITY's Notice of Award.

In submitting this information, SUBMITTER represents, as more fully set forth in the Agreement, that:

SUBMITTER has examined copies of all the RFP Documents and of the following Addenda:

Addendum Date	Addendum Number
_____	_____
_____	_____
_____	_____

Receipt of all of which is hereby acknowledged.

This Submittal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; SUBMITTER has not directly or indirectly induced or solicited any other Submitter to submit a false or sham Submittal; SUBMITTER has not solicited or induced any person, firm or a corporation to refrain from bidding; and SUBMITTER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the CITY.

THIS RESPONSE IS SUBMITTED BY:

COMPANY NAME: _____

VENDOR/CONSULTANT LICENSE NUMBER _____

ADDRESS: _____

_____

_____

PHONE NO.: _____

SUBMITTER'S NAME: _____
(Typed or Printed in Ink)

TITLE: _____

AUTHORIZED SIGNATURE: I, _____ hereby
(Original signature required in each document)

declare that I have read and fully understand the entire RFP Documents, and that I am duly authorized to sign and submit this Proposal.

The CITY reserves the right to reject any and all Submittals, to waive informalities, and to accept any Submittal or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.

PROPOSER: PLEASE ENSURE THAT YOU HAVE SIGNED THIS RFP RESPONSE FORM. OMISSION OF A SIGNATURE ON THIS PAGE MAY RESULT IN REJECTION OF YOUR PROPOSAL.

City of Ormond Beach
Request for Proposals (RFP)
UTILITY RATE AND IMPACT FEE STUDY
(RFP No. 2023-26)

DRUG-FREE WORKPLACE CERTIFICATION

IDENTICAL OR "TIE" SUBMITTALS: Preference shall be given to businesses with drug- free workplace programs. Whenever two or more proposals which are equal in respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violation.

3) Give each employee that engages in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) calendar days after such conviction.

5) Impose sanctions on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

_____
Company Name

_____
Authorized Signature

_____
Print Name

_____
Title

City of Ormond Beach
Request for Proposals (RFP)
UTILITY RATE AND IMPACT FEE STUDY
(RFP No. 2023-26)

CONFLICT, NON-CONFLICT OF INTEREST STATEMENT
LITIGATION STATEMENT

1.

[ ] To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients or contracts for this project.

[ ] The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients or contracts for this project.

2.

[ ] The undersigned firm has had no litigation on any project in the last five (5) years.

[ ] The undersigned firm, by attachment to this form, submits a summary and disposition of individual cases of litigation during the past five (5) years.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME (PRINT OR TYPE)

_____
TITLE

_____
DATE

City of Ormond Beach
Request for Proposals (RFP)
UTILITY RATE AND IMPACT FEE STUDY
(RFP No. 2023-26)

VERIFICATION OF EMPLOYMENT STATUS USING E-VERIFY SYSTEM

1. Undersigned firm warrants it **IS** currently registered with the U.S. Department of Homeland Security's E-Verify system, **and** is compliant with the requirements of Sections 448.09 and 448.095, *Florida Statutes*.

2. Undersigned firm warrants it **has not** had any contracts terminated as a result of violations of Sections 448.09 or 448.095, *Florida Statutes*, that prohibit it from contracting with a public agency.

3. Undersigned firm warrants that if it enters into an agreement with a subcontractor, an express provision shall be included in all of its subcontracts requiring subcontractors, who perform work or provide services pursuant to the contract, to use the E-Verify system to verify employment eligibility of all new employees hired by the subcontractor during the contract term.

4. Undersigned firm understands that any subcontractor must provide the contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and the contractor understands it shall maintain any such affidavits for the duration of the contract, and the contract with the subcontractor must be immediately terminated if the City has a good faith belief that the subcontractor knowingly violated Section 448.09 (1), *Florida Statutes*.

5. Undersigned firm understands that in the event the City has a good faith belief that the contractor has knowingly violated Section 448.09 (1), *Florida Statutes*, the City shall terminate the contract, and the contractor may not be awarded a public contract for a period of at least one (1) year after the date of termination. The contractor may be held liable for any additional costs incurred by the City as a result of termination of the contract.

_____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____
NAME

_____
TITLE

_____
DATE

EVALUATION FORM
UTILITY RATE AND IMPACT FEE STUDY
RFP No. 2023-26

Name of Firm: _____

Reviewer: _____

Date: _____

	Points
Qualifications of Staff (15 pts max.)	_____
Similar/Pasts Projects (25 pts max.)	_____
Project Approach (20 pts max.)	_____
Current Workload (10 pts max.)	_____
References (20 pts. max.)	_____
Fee Proposal (10 pts. max.)	_____
TOTAL POINTS:	_____

Scoring Criteria:

Each reviewer will score each firm and scores for that firm will be added together. The firm with the highest score may be awarded with Commission approval for this project.

CITY OF ORMOND BEACH
RISK MANAGEMENT AND INSURANCE REQUIREMENTS

A. Payment and Performance Bonds

1. Except as otherwise provided herein, the Contractor shall, prior to beginning performance, deliver to the City, and the City shall record in the public records of Volusia County, Florida, the Contractor's Payment and Performance Bond in an amount equal to the full amount of the Contract.

2. **(a)** Payment and Performance Bonds shall not be required for any contract except those which are for the construction of a public building, for the prosecution and completion of a public work (as described in Section 180.06, **Florida Statutes,** as amended from time to time) or for repairs upon a public building or public work (as described in Section 180.06, **Florida Statutes**, as amended from time to time).

(b) With respect to those Contracts for which Payment and Performance Bonds are otherwise required:

i. Unless the City Manager, or designee, determines such Bond to be necessary to protect the interests of the City, no Contractor shall be required to provide a Payment and Performance Bond for any Contract which is for $25,000.00 or less.

ii. Upon the request of the contractor, good cause shown by the Contractor, and a determination that the public health, safety and welfare will be sufficiently protected, the City Commission may exempt the contractor from the requirement of providing a Payment and Performance Bond for any Contract which is for more than $25,000.00 but is less than $200,000.00.

3. The Payment and Performance Bond shall list the Contractor as Principal and be issued by a surety insurer authorized to do business in Florida as a surety and listed as an acceptable surety in the Federal Register.

4. The Payment and Performance Bond shall be executed pursuant to Section 255.05, **Florida Statutes**, and be in a form substantially similar to the form set forth in Section 255.05(3), **Florida Statutes**.

5. The Payment and Performance Bond shall specifically provide coverage for delay damages due to a default by the Contractor.

6. The Payment and Performance Bond shall not make the Contract part of the Bond agreement.

7. In lieu of the Payment and Performance Bond, the Contractor may file with the Finance Director of the City, in an amount equal to the full amount of the Contract, cash, a money order, a certified check, a cashier's check, an irrevocable letter of credit, or a security of a type listed in Part II, Chapter 625, **Florida Statutes**.

8. In the event the surety on any Payment and Performance Bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business in the State of Florida is terminated, the Contractor shall, within five (5) working days thereafter, substitute another Payment and Performance Bond and surety acceptable to the City.

9. The Contractor is totally and solely responsible for keeping its surety informed as to the Base Contract Price as bid, significant changes in the Project Scope, and the overall progress and completion of the Project for the entire life of the Contract.

10. The payment and performance bond requirements stated herein above shall not be applicable to service-related contracts unless otherwise determined by the City Manager in order to protect the health, safety and welfare of the general public.

B. Contractual Provisions Relative to Risk Management

All contracts for any public works to be performed, and service-related contracts, for or on behalf of the City shall include at a minimum, the following, or substantially similar, provisions:

1. Hold Harmless and Indemnity

The Contractor agrees to assume liability for and indemnify, hold harmless, and defend the City, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney’s fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor, its agents, officers, contractors, subcontractors, employees, or anyone else employed or utilized by the Contractor in the performance of this Contract. The Contractor’s liability hereunder shall include all attorney’s fees and costs incurred by the City in the enforcement of this provision.

2. Payment on Behalf of City

The Contractor shall pay all costs of the City's legal defense, as may be selected by the City, for all claims described in the Hold Harmless paragraph.

Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

3. Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees and property. The Contractor shall comply with all applicable laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action when loss control/safety measures are reasonably necessary.

The City may order work to be stopped if conditions exist that present an immediate danger to persons or property. The Contractor acknowledges that such work stoppage will not shift responsibility for any damages from the Contractor to the City.

4. Service Bond

For Service-related contracts only, the City may require the Contractor to secure a service bond with a minimum $25,000 coverage limit for the period of the service agreement. The service bond covers dishonest acts of the contractor’s employees against the City. A copy of the bond shall be provided to the City when the agreement commences.

Service-related contracts include and are not limited to businesses providing janitorial, pest control, general repair, security, carpet cleaning, locksmith, temporary employment, painting, moving services or other contracts as determined in the discretion of the Risk Manager as necessary to minimize loss.

C. Contractor's Insurance

1. General

The Contractor, including service-related contractors, shall purchase and maintain for the entire life of the Project, including any and all approved time extensions, until its final acceptance by the City, such insurance as will protect the Contractor from claims under Workers' Compensation, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor’s employees; from claims insured by usual or unusual injury liability coverage; from claims or injury to or destruction of tangible property and from claims insured by usual Commercial General Liability coverage. This includes loss of use resulting therefrom, any or all of which may arise out of the Contractor's operations under the Contract Documents, whether such operations be by the Contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or for whose acts any

of them may be legally liable. The Contractor's deductibles/self-insured retentions shall be disclosed to the City and may be disapproved by the City, and may be reduced or eliminated at the sole discretion of the City. The Contractor is responsible for the amount of any deductible or self-insured retention.

2. Types of Insurance and Limits of Liability

The insurance required herein shall be written for not less than any limits of liability specified and incorporated as part of the Contract Documents or as required by law, whichever is greater, and shall include and not limited to the following:

(a) Workers' Compensation Insurance in statutory limits for the State of Florida with Coverage B - Employer's Liability limits of not less than:

$100,000 Each Accident Bodily Injury by Accident
$100,000 Each Employee Bodily Injury by Disease
$500,000 Policy Limit Bodily Injury by Disease

Certificate of Exemptions. If the contractor has a State-issued Certificate of Exemption, the contractor may provide a copy in place of the requirement for coverage. However, if the contractor subcontracts or retains any other person or entity to perform under the contract, that person or entity must provide proof of workers' compensation insurance as required by law or provide a Certificate of Exemption.

It is the intent of the City that any individual who either contracts directly with the city or performs any work on behalf of any such contractor be covered by workers' compensation insurance or have a valid exemption from said coverage.

(If applicable to the Project, the policy must include benefits under the United States Longshoremen's and Harbor Workers' Act and the Jones Act coverage--all maritime coverage.)

(b) Commercial General Liability Insurance shall be written on a coverage form as broad as Insurance Services Office (ISO) Form CG 00 01 11 85, or its successor form, including but not limited to the following coverage (any deviation shall be noted on the Certificates of Insurance):

a. Premises, Operations, Products and Completed Operations
b. Owners' & Contractors' Protective
c. Products & Completed Operation
d. Explosion, Collapse & Underground Conditions
e. Blanket Contractual Liability
f. Personal Injury Liability

g. Broad Form Property Damage Endorsement, including Completed Operations
h. Independent Contractors
i. Watercraft--Owned and Non-Owned (if applicable, endorsement must be included in General Liability policy or a separate Protection & Indemnity Policy must be written)
j. Pollution Liability (if applicable)
k. Asbestos Abatement (if applicable)
l. Fire Damage Liability

Certain coverage outlined above may not be required if they do not relate to the Project, as may be determined at the sole discretion of the City.

Commercial General Liability Coverage shall be written on an occurrence basis and the limits shall be no less and not limited to the following amounts:

Limits (not less than)

$1 Million Each Occurrence
$2 Million General Aggregate
$1 Million Aggregate Products & Completed Operations

NOTE: Commercial General Liability Coverage must be purchased on either a project basis (separate policy per contract) or an endorsement allocating an aggregate limit per location or specified project.

(c) Automobile Liability Insurance is required if an Automobile(s) is used in the performance of the contract.

ISO Symbol 1 (Any Auto), or alternatively a combination of Symbol 2 (Owned Autos), Symbol 8 (Hired Autos), and Symbol 9 (Non-Owned Autos), and limits shall be no less than:

$1 Million	Combined Single Limit for Bodily Injury and Property Damage

(d) Excess Liability

For contracts $250,000 or greater an Excess Liability Policy of at least but not limited to $1,000,000 in addition to the scheduled underlying policies for Commercial General Liability, Automobile Liability and Employers' Liability, the Contractor shall also provide an Excess Liability Policy with a maximum self-insured retention not to exceed $25,0000 per occurrence.

(e) Builder's Risk

Contractor shall purchase Builder's Risk Insurance for any contracts that are deemed to be vertical construction on an All-Risk policy, and shall also include coverage for wind, hail, and named storm. Limits of coverage shall be at least and not limited to the value of the project.

(f) Professional Liability, Malpractice and/or Errors and Omissions

The Contractor shall purchase and maintain professional liability, malpractice, or errors or omissions insurance with minimum limits of $1,000,000 per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great a duration as is available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provides a retroactive date no later than the inception date of claims made coverage.

D. Requirements for Certificates of Insurance

1. With the execution of the Contract Documents, the Contractor, including service-related contractors, shall provide certificates of such insurance acceptable to the City. These certificates and insurance policies shall contain an endorsement that the coverage under the policies will not be canceled, non-renewed or materially changed until at least thirty (30) days' prior written notice of such cancellation, non-renewal or change (except for nonpayment of premium, which shall be ten (10) days) and a copy of the cancellation endorsement signed by an authorized representative of the insurer, be given to the City. The contractor shall be required to replace any expired or canceled policies in like amount and coverage to the satisfaction of the City. The Certificate of Insurance shall be the ACORD FORM 25-S (7/90), or its successor form, and shall be made a part of the Contract Documents.

2. New certificates of insurance shall be provided to the City at least fifteen (15) days prior to coverage renewals.

3. If requested by the City, the contractor shall immediately furnish complete copies of the Contractor's insurance policies, forms and endorsements.

4. For Commercial General Liability coverage the Contractor shall, at the option of the City, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage. If the Commercial General Liability form of coverage includes an annual aggregate limitation on the

amount of insurance provided, a separate project aggregate limit may be required by the City for the given contract.

5. If the Contractor fails to obtain and maintain for the life of the Project the insurance required hereby or to replace any such expired or canceled policy, the City may obtain and maintain such insurance with such company as it deems satisfactory. Any amounts expended by the City in payment of premiums for such insurance shall be deducted by the City form the amount due the Contractor for the work covered by the Contract.

E. Policies of Insurance

1. Except as otherwise provided in this Exhibit, all insurance policies shall be issued by insurers licensed to do business in the State of Florida on an admitted basis or which is an eligible surplus lines insurer in the State of Florida, and any such insuring company is required to have a minimum financial rating of (A-), in the latest edition of "Best's Key Rating Guide", published by A. M. Best Co., Inc., or some similarly nationally recognized rating authority, including Standard and Poors and Demotech.

2. For Workers' Compensation coverage only, self-insurance programs are acceptable with a minimum A- rated reinsurance carrier; written confirmation is required.

3. All policies of insurance or certificates thereof referred to in this Exhibit shall be deposited with the City Clerk.

4. The City shall be named an Additional Insured on General Liability including products and completed operations and Automobile Liability policies of insurance and certificates thereof.

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.L
Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Governance – Other		
Department :	City Manager		
Subject:	Approval of Travel by the City Commission		
Budget Impact:	Funding for travel expenses is available in the Fiscal Year 2022-2023 Fund 001 - General Fund Budget.		
Summary:	This item is regarding Commission travel for the Police Unity Tour. The City's Travel Policy requires approval of the Commission for the City Attorney, City Manager, and City Commission. The requested travel is to support Chief Godfrey, Corporal Rhett Summerlot and Officer Rafael Medina.		
Recommended Action:	It is respectfully requested the City Commission approve the additional request for travel for the Police Unity Tour 2023 in Washington, D.C.		
Staff Contact:	Joyce Shanahan, City Manager, (386) 676-3200		

Approval:

Kelly McGuire, Finance Director	3/8/2023	Kelly A. McGuire
Claire Whitley, Assistant City Manager	3/8/2023	
Joyce Shanahan, City Manager	3/14/2023	Joyce Shanahan

CITY OF ORMOND BEACH

22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Joyce Shanahan, City Manager

Date: March 21, 2023

Subject: Approval of Travel by the City Commission

Commission Goal: Governance – Other

Introduction

The City's travel policy requires prior approval by the City Commission for travel by the City Commission, the City Attorney, or the City Manager where lodging or travel by air are necessary.

Background

At the December 6, 2022 meeting, the City Commission approved the travel request of the City Commission, the City Manager, and the City Attorney for attending various conferences and events during the year. This is an additional travel request for the Police Unity Tour 2023 in Washington, D.C., to support Police Chief Godfrey who is participating in the tour as a cyclist.

Discussion

The Police Unity Tour is held annually to raise awareness about law enforcement officers who have died in the line of duty. Participants are from law enforcement agencies across the country who cycle or ride motorcycles during the tour. Police Chief Jesse Godfrey will again be participating in the Unity Tour.

The Police Unity Tour is a three-day ride and participants will start riding on Wednesday, May 10 in Norfolk, Virginia. Participants are scheduled to arrive on Friday, May 12 between 2:00-4:00 p.m. at the National Law Enforcement Memorial in Washington, D.C. A candlelight vigil will be held on the National Mall on Saturday, May 13, at 8:00 p.m.

Approval will add this event to the list of authorized travel should there be interest in attending the ceremony welcoming the cyclists to Washington D.C. and participating in the candlelight vigil to honor fallen police officers.

Budget Impact

Funding for travel expenses is available in the Fiscal Year 2022-2023 Fund 001 - General Fund Budget.

Citizen Impact

There will be no citizen impact.

Recommendation

It is respectfully requested the City Commission approve the additional request for travel for the Police Unity Tour 2023 in Washington, D.C.

Attachments:

Approvals:

Kelly A. McGuire

Kelly McGuire, Finance Director — Date: March 08, 2023

Claire Whitley, Assistant City Manager — Date: March 08, 2023

Joyce Shanahan

Joyce Shanahan, City Manager — Date: March 14, 2023

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 7.M
Section:	CONSENT AGENDA		
Item Category:	Consent - Disposition Item	**Res./Ord. No:**	
Strategic Goal:	Governance - Other		
Department :	City Manager		
Subject:	City Manager Status Report, March 2023		
Budget Impact:	None		
Summary:	This item provides the City Commission monthly information regarding City activities.		
Recommended Action:	This report is for informational purposes and acceptance is recommended. Any additional information or clarification will be provided upon request, and staff will plan to proceed as directed.		
Staff Contact:	Joyce Shanahan, City Manager, (386) 676-3200		

Approval:

Kelly McGuire, Finance Director	3/8/2023	
Claire Whitley, Assistant City Manager	3/9/2023	
Joyce Shanahan, City Manager	3/14/2023	

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

From: Joyce Shanahan, City Manager

Date: March 21, 2023

Subject: City Manager Status Report, March 2023

Commission Goal: Governance - Other

Introduction

This item provides the City Commission monthly information regarding City activities.

Background

In order to keep the City Commission informed on a variety of issues in a comprehensive and timely manner, staff provides this report regarding the status of citywide activities. The purpose of the report is to highlight general information in the various areas of business such as financial, economic development, capital projects, planning and building activities.

Discussion

Reports
Please see the following reports attached to this staff report:

1. Building Permit Activity - February 2023
2. Capital Improvements Program (CIP) Status Report - February 2023
3. Planning Memorandum - February 28, 2023
4. Development Activity Report - February 2023
5. Financial Status Report - January 2023
6. Economic Development Report - February 2023

CIP Projects
PD HVAC Upgrades
- Contractor is replacing Variable Air Valve Boxes and thermostats.

Facility Hardening
- The construction is complete. Staff is working with the contractor to finalize documentation/paperwork.

Downtown: Sidewalk Renovations/Banding
- Staff held a coordination meeting with the Contractor and members of the downtown business community.

WRF Clarifier Improvements
- Concrete work is complete, the clarifier covers are to be delivered by the end of March.

Future Workshops
All dates and topics are tentative and subject to change. Some items might be presented as discussion items on the regular Commission agenda.

Date	Topic
June 6	Capital Improvements Program and Draft Budget
July 18	Operating Budget Workshop

Recommendation

This report is for informational purposes and acceptance is recommended. Any additional information or clarification will be provided upon request, and staff will plan to proceed as directed.

Attachments:

1. Building Permit Activity February 2023
2. Capital Improvements Program (CIP) Status Report February 2023
3. Planning Memorandum February 28, 2023
4. Development Activity Report February 2023
5. Financial Status Report January 2023
6. Economic Development Report February 2023

Approvals:

Kelly A. McGuire

Date: March 08, 2023

Kelly McGuire, Finance Director

Date: March 09, 2023

Claire Whitley, Assistant City Manager

Joyce Shanahan

Date: March 14, 2023

Joyce Shanahan, City Manager

Monthly Building Permit Summary

February 1 to February 28, 2023 versus February 1 to February 28, 2022 and year to date:

Total Building Permits Issued, including	**2/1 to 2/28/2023**	**2/1 to 2/28/2022**	**FY2022-23 year to date (2/28/23)**	**FY2021-22 year to date 2/28/22**
Business Fire Inspection	1	5	24	23
Business Tax Receipt	5	10	52	34
Clearing, Tree Removal, Vegetation	23	24	72	80
Commercial Alterations	3	7	20	30
Commercial Buildings	1	0	4	2
Commercial Re-roof	5	2	29	13
Demolition	0	4	5	15
Dock	0	4	7	9
Door	19	26	109	120
Electrical (residential & commercial)	22	18	107	99
Fire Protection Systems	4	4	12	15
Garage or Carport	3	3	20	16
Garage sale	35	55	230	255
Gas	3	5	18	19
Generator	3	3	19	17
LDC (Driveways/Fences)	57	52	255	235
Mechanical (residential & commercial)	71	77	313	339
Mobile home set-up	3	1	23	5
Multi-Family Homes	0	18	0	36
Other categories (all other permits not listed)	13	23	105	137
Plumbing (residential & commercial)	12	18	72	53
Residential Remodel/Additions	9	3	40	46
Residential re-roof	144	127	699	563
Screen room/hard roof	0	2	2	13
Screen enclosure only	6	3	32	21
Shed	1	2	1	8
Signs	2	30	36	56
Single Family Homes	1	6	12	45
Site permit	3	1	11	4
Solar	12	8	63	49
Special Events	14	7	33	37
Swimming pool	7	7	33	38
Utility connection only	1	7	16	34
Windows	52	43	227	204
Total permits	535	605	2,701	2,670
Total Valuation	$15,063,392	$13,621,142	$96,504,193	$84,479,529
Total fees	$53,248	$81,633	$376,033	$414,624

CAPITAL IMPROVEMENT STATUS - as of March 1, 2023

Project	Status	Project Manager	Engineer/ Architect	Contractor	CIP Budget	Const Contract $	Design Start	Bid Award	Const NTP	% Complete
Construction										
Facility Hardening	Project is complete.	Cole Buck	DJDesign	Paul Culver Construction	$ 1,000,000	$ 999,000		1/4/22	6/8/22	100%
SONC Gym	Construction Contractor's work is complete. Basketball backboards are on order with delivery and installation expected in April	Alex Schumann	Zev Cohen	Saboungi Construction	$ 1,100,000	$ 1,079,880		8/4/21	1/3/22	99.0%
PD HVAC Upgrades	Contractor has begun removing/replacing VAV boxes and thermostats	George Lavatelli	SGM Engineering	General Mechanical Corporation	$ 225,000	$ 598,596		7/19/22	1/16/23	26%
WRF Clarifier Improvements	Concrete work is complete, delivery of covers has been moved out to mid-March.	Mike Stephenson	Mead Hunt	SGS Contracting Services	$ 550,000	$ 546,700		8/16/22	10/3/22	11%
2022 Roadway Resurfacing	Project is complete.	Cole Buck	In-House	Masci General Contractor	$ 750,000	$ 662,964		10/5/22	10/31/22	100%
Downtown: Sidewalk Renovations/Banding	A logistics meeting was held on January 5. Construction anticipated to commence after Bike Week.	Cara Culliver	In-House	P&S Paving	$ 2,000,000	$ 2,818,050		12/6/22		0%
EDC Feature Display Improvements	A pre-construction meeting was held on February 1. Fish tanks are being built, installation anticipated early April.	Alex Schumann	In-House	Hall Construction		$ 88,732		1/24/23	1/26/23	0%
Hurricane Ian - Tennis Center Fence Replacement	Materials are on order, anticipated delivery mid to late March.	Dan D'Amato	In-House	Fence Services, Inc. d/b/a AAA Fence		$ 68,350		1/24/23	1/27/23	0%
Bidding										
WTP Aeration, Clearwell & Splitter Box	Project was advertised February 26, pre-bid meeting is March 15, bids are due on March 30.	Mike Stephenson	McKim/Creed		$ 2,220,000					
2023 Storm & Sewer Lining	Bid award is scheduled for the March 21 City Commission meeting.	Dan D'Amato	In-House		$ 950,000					
SONC Rental Pavilion Replacement	Project was advertised February 26, pre-bid meeting is March 15, bids are due on March 30.	Dan D'Amato	In-House		$ 65,000					
PAC Renovations	Bid award is scheduled for the March 7 City Commission meeting.	Alex Schumann	RLF/Bomar Construction		$ 1,630,000					
Neighborhood Traffic Calming	A sole-source procurement of speed tables is scheduled for approval at the March 21 City Commission meeting.	Alex Schumann	In-House		$ 50,000					
Shell Parking Lot Restoration	Approval to bid is scheduled for the March 7 City Commission meeting.	Mark Carrick	In-House		$ 51,000					
Outdoor Fitness Station-Nova Community Park	Approval to issue a Request for Proposals is scheduled for the March 7 City Commission meeting.	Cara Culliver	In-House		$ 97,000					

Project	Status	Project Manager	Engineer/ Architect	Contractor	CIP Budget	Const Contract $	Design Start	Bid Award	Const NTP	% Complete
Downtown - East Granada Utility Undergrounding	Approval to bid is scheduled for the March 21 City Commission meeting.	George Lavatelli	John Searcy		$ 120,000					
CDBG North Ridgewood Sidewalk Improvements - East Side	Approval to bid is scheduled for the March 21 City Commission meeting.	Cara Culliver	In-House		$ 151,165					
Design										
Cassen Park Improvements	Preliminary design has been received and is under review.	Alex Schumann	Zev Cohen				1/23			0%
Doug Thomas Way Extension	Permitting issues are resolved, Consultant anticipates submitting plans and specification mid-March.	Alex Schumann	Upham		$ 90,000		6/21			72%
WRF Upgrades	Awaiting design revisions from the Consultant.	Mike Stephenson	Mead Hunt		$ 1,150,000		7/21			94%
Hurricane Ian-Roof Replacements	A bid package for hurricane damaged roof repairs/replacements is being updated to include all facilities and roof types.	George Lavatelli	In-House				9/22			85%
2023 Lift Station 4P Rehabilitation	Site surveys are being scheduled.	George Lavatelli	McKim/Creed		$ 335,000		2/23			0%
Hudson Wellfield Expansion	A design kick-off meeting was held on February 23. Field surveys are being scheduled.	George Lavatelli	Mead Hunt		$ 300,000		2/23			0%
Septic to Sewer - Oak, Magnolia & Bonita	Determining resident notification process.	Alex Schumann	Upham		$ 1,600,000		1/23			0%
2023 Lift Stations 11M & OBSC3 Rehabilitation	Staff is obtaining proposals from Underground Utility Continuing Contractor.	George Lavatelli	McKim/Creed		$ 150,000					0%
Shadow Crossings Reuse Pump Facility Upgrades	Electrical survey is scheduled for March 1.	George Lavatelli	Parker Mynchenberg		$ 240,000		2/23			0%
Airport Road Reclaimed Water Main PH 2	A Work Authorization for a topographic route survey is scheduled for approval at the April 18 City Commission meeting.	Alex Schumann	Atlantic Drafting & Surveying		$ 150,000					0%
Stormwater Construction - Arbors Drive South	Meeting scheduled with SJRWMD to determine project permitting requirements.	Dan D'Amato	In-House		$ 250,000		1/23			5%
Downtown Upgrades/Improvements - City Hall Landscaping	Preliminary design is in process.	Cara Culliver	In-House		$ 60,000		1/23			10%
WRF Ultraviolet Disinfection Conversion	A Work Authorization for design services is scheduled for approval at the March 21 City Commission meeting.	Mike Stephenson	Mead Hunt		$ 270,000					0%
Airport Business Park Drive Ph II	Permitting issues are resolved, Consultant anticipates submitting plans and specification mid-March.	Alex Schumann	Zev Cohen		$ 195,000		7/20			93%

CITY OF ORMOND BEACH
FLORIDA
P L A N N I N G M E M O R A N D U M

TO: City Commission
Joyce A. Shanahan, City Manager
Randy Hayes, City Attorney
Claire Whitley, Assistant City Manager
Susan Dauderis, City Clerk
Steve Johnson, GIS
Taylor Lochert, City Clerk office
Nicki Harres, Support Services Administrator
Cassidi Ritz, Paralegal
Cindy Pinizzotto, Senior Paralegal

FROM: Steven Spraker, AICP, Planning Director

DATE: February 28, 2023

SUBJECT: Agendas for Upcoming Meetings

Listed below are the preliminary agenda items for upcoming meetings. This list is to help prepare you in advance to meet advertising, notice and report writing deadlines. Please let me know at your earliest convenience if there are any problems with these items.

<table>
<tr><th>MTG. DATE</th><th>MTG.</th><th>SUBMIT DEADLINE</th><th>ITEM</th></tr>
<tr><td>3/1</td><td>BOAA</td><td>2/1</td><td>Cancelled</td></tr>
<tr><td>3/7</td><td>CC</td><td></td><td>
<table>
<tr><th colspan="5">2nd Reading</th></tr>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>101 Fiesta Drive, Zoning Map Amendment</td><td>Done 2/7</td><td>Done</td><td>Done</td><td>NA</td></tr>
</table>
<table>
<tr><th colspan="5">1st reading</th></tr>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Fence setback to ROW – LDC Amendment</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr>
<tr><td>Meter fees – LDC Amendment</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr>
<tr><td>Neighborhood meetings – LDC Amendment</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr>
</table>
</td></tr>
<tr><td>3/9</td><td>PB</td><td></td><td>
<table>
<tr><th colspan="5">Planning Board</th></tr>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>475 N. Tymber Creek, Zoning Map Amendment PRD to SR</td><td>Sent 2/20/23</td><td>Done</td><td>Done (2/24)</td><td>NA</td></tr>
<tr><td>Ormond Gateway, Preliminary Plat</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr>
<tr><td>Land Development Code amendment: Section 1-27, Impact fee credits</td><td>NA</td><td>Done</td><td>Done (2/24)</td><td>NA</td></tr>
<tr><td>Impact Fees – Discussion item</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr>
</table>
</td></tr>
<tr><td>3/13</td><td></td><td></td><td>Ormond MainStreet Design Committee</td></tr>
<tr><td>3/14</td><td></td><td></td><td>Neighborhood Meeting – 121 East - Tuesday, March 14, 2023 at 6:00 p.m. in the auditorium of the Ormond Beach Regional Library, 30 South Beach Street, Ormond Beach, FL 32174</td></tr>
</table>

<table>
<tr><th>MTG. DATE</th><th>MTG.</th><th>SUBMIT DEADLINE</th><th>ITEM</th></tr>
<tr><td>3/20</td><td></td><td></td><td>Ormond MainStreet Board</td></tr>
<tr><td>3/20</td><td>HLPB</td><td></td><td></td></tr>
<tr><td>3/21</td><td>CC</td><td>2/22</td><td>
2nd reading
<table>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Fence setback to ROW – LDC Amendment</td><td>NA</td><td>3/6</td><td>3/10</td><td>NA</td></tr>
<tr><td>Meter fees – LDC Amendment</td><td>NA</td><td>3/6</td><td>3/10</td><td>NA</td></tr>
<tr><td>Neighborhood meetings – LDC Amendment</td><td>NA</td><td>3/6</td><td>3/10</td><td>NA</td></tr>
</table>
Resolution
<table>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Ormond Art Museum – Shed Special Exception</td><td>On/before 3/7</td><td>3/6</td><td>3/10</td><td>NA</td></tr>
</table>
1st reading
<table>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Tymber Creek Apartments Zoning & DO (Tentative)</td><td colspan="4">Need to submit by March 6th at noon</td></tr>
</table>
</td></tr>
<tr><td>3/22</td><td>Impact Fee</td><td>5:30pm</td><td>Public meeting – Impact Fee Update</td></tr>
<tr><td>3/27</td><td>Impact Fee</td><td>10:00am</td><td>Public meeting – Impact Fee Update</td></tr>
<tr><td>4/4</td><td>CC</td><td></td><td>Cancelled</td></tr>
<tr><td>4/5</td><td>BOAA</td><td></td><td>Riverside Drive – tentative – needs application</td></tr>
<tr><td>4/11</td><td>BFAB</td><td></td><td></td></tr>
<tr><td>4/13</td><td>PB</td><td></td><td>
Planning Board
<table>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Impact Fees – Ordinance</td><td>NA</td><td>3/27</td><td>3/31</td><td>NA</td></tr>
<tr><td>RidgeHaven, Zoning Map Amendment</td><td>3/30</td><td>3/27</td><td>3/31</td><td>NA</td></tr>
<tr><td>RidgeHaven, Issuance of Development Order</td><td>3/30</td><td>3/27</td><td>3/31</td><td>3/30</td></tr>
<tr><td>RidgeHaven, Preliminary Plat</td><td>NA</td><td>3/27</td><td>3/31</td><td>NA</td></tr>
<tr><td>1755 North US Highway 1, Land Use</td><td>3/30</td><td>3/27</td><td>3/31</td><td>NA</td></tr>
<tr><td>1755 North US Highway 1, Zoning</td><td>3/30</td><td>3/27</td><td>3/31</td><td>NA</td></tr>
<tr><td>204 Magnolia Drive, Land Use Map Amendment</td><td>3/30</td><td>3/27</td><td>3/31</td><td>NA</td></tr>
<tr><td>LDC Amendment, T-2 standards</td><td>NA</td><td>3/27</td><td>3/31</td><td>NA</td></tr>
</table>
[T] 901 Airport Road, Land Use and Zoning Amendments
[T] Ormond Enclave (Courtyards)
[T] Certificate of Use – LDC Amendment
</td></tr>
</table>

<table>
<tr><th>MTG. DATE</th><th>MTG.</th><th>SUBMIT DEADLINE</th><th>ITEM</th></tr>
<tr><td>4/17</td><td>HLPB</td><td></td><td></td></tr>
<tr><td>4/18</td><td>CC</td><td>3/22</td><td>
1st reading
<table>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Annexation, 1755 North US Highway 1</td><td>To VC</td><td>4/3</td><td>4/7</td><td>NA</td></tr>
<tr><td>475 N. Tymber Creek, Zoning Map Amendment PRD to SR</td><td>4/4</td><td>4/3</td><td>4/7</td><td>NA</td></tr>
<tr><td>Land Development Code amendment: Section 1-27, Impact fee credits</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Resolution
<table>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Ormond Gateway, Preliminary Plat</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr>
</table>
</td></tr>
<tr><td>5/2</td><td>CC</td><td></td><td>
2nd reading
<table>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Annexation, 1755 North US Highway 1</td><td>To VC</td><td>4/17</td><td>4/21</td><td>NA</td></tr>
<tr><td>475 N. Tymber Creek, Zoning Map Amendment PRD to SR</td><td>4/4</td><td>4/17</td><td>4/21</td><td>NA</td></tr>
<tr><td>Land Development Code amendment: Section 1-27, Impact fee credits</td><td>NA</td><td>4/17</td><td>4/21</td><td>NA</td></tr>
</table>
</td></tr>
<tr><td>5/11</td><td>PB</td><td></td><td></td></tr>
<tr><td>5/15</td><td>HLPB</td><td></td><td></td></tr>
<tr><td>5/16</td><td>CC</td><td></td><td>
1st Reading
<table>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Impact Fee Amendments</td><td>NA</td><td>5/1</td><td>5/5</td><td>NA</td></tr>
</table>
</td></tr>
<tr><td>6/6</td><td>CC</td><td></td><td>
2nd Reading
<table>
<tr><th>Item</th><th>Letter</th><th>To NJ</th><th>NJ Ad run</th><th>Post</th></tr>
<tr><td>Impact Fee Amendments</td><td>NA</td><td>5/22</td><td>5/26</td><td>NA</td></tr>
</table>
</td></tr>
<tr><td>6/8</td><td>PB</td><td></td><td></td></tr>
<tr><td>6/19</td><td>HLPB</td><td></td><td></td></tr>
<tr><td>7/13</td><td>PB</td><td></td><td></td></tr>
<tr><td>7/17</td><td>HLPB</td><td></td><td></td></tr>
<tr><td>8/10</td><td>PB</td><td></td><td></td></tr>
</table>

MTG. DATE	MTG.	SUBMIT DEADLINE	ITEM
8/21	HLPB		
9/14	PB		
9/18	HLPB		
10/12	PB		
10/16	HLPB		
11/09	PB		
11/20	HLPB		
12/07	PB		
12/18	HLPB		

Planning related City Commission items to be advertised by City Clerk's office

March 7, 2023

#	Item	Ad to be sent	Type	Run Date
1.	101 Fiesta Drive, Zoning Map Amendment	2/17	Legal	2/24

March 21, 2023

#	Item	Ad to be sent	Type	Run Date
1.	Tymber Creek Apartments Zoning & DO (Tentative)	3/3	Display	3/10
2.	Ormond Art Museum – Shed Special Exception	3/3	Legal	3/10
3.	LDC Amendment, Section 1-28, Utility Installation Fees (Meters)	3/3	Legal	3/10
4.	Land Development Code (LDC) Amendment: Section 2-50(n) Fences and Walls	3/3	Legal	3/10
5.	Land Development Code Amendment: Section 4-03, Site Plan Review Committee (SPRC) Established	3/3	Legal	3/10

Planning projects

	Activity in last 14 days		Item completed

#	Project	Status	Staff Contact
Studies			
1.	FDEP Resiliency Grant	Grant awarded. Present to CC for acceptance and approved on 10/18/22. Kickoff meeting occurred with ECFRPC and staff on Monday, 2/06/23.	BW
2.	Impact Fee Update	1. Discussion item occurred on 9/07/22. 2. Work Authorization for Police/Fire Impact Fees approved on 10/05/22. 3. Workshop/Discussion item tentatively scheduled for 2/21/23 City Commission meeting. 4. PB discussion: 03/09/23	SSS/BW
3.	Stormwater (Engineering lead)	Workshop occurred on 02/07/23.	Engineering
4.	Former Riverbend Golf Course (Economic Development lead)	Provided comments on scope of services to Economic Development Director. Approved on 10/05/21 City Commission agenda.	ED/SSS
5.	Water Supply Work Program	Required by the state. Due August 2023.	Utilities/SSS
Downtown			
6.	Sidewalk banding	Approved at 12/06/22 City Commission meeting.	Engineering
7.	Cabinet Wraps	Awaiting on artist agreements.	BW
8.	Cassen Park (Engineering lead - design)	Engineering lead. Approved at 12/06/22 City Commission meeting.	Engineering
9.	Annual Floodplain Management Progress Report	Complete and provide as disposition item on 4/18/23 CC agenda.	BW
Development projects			
10.	RidgeHaven	ISBA – complete Annexation – completed 3/1/22 & 3/22/22 – CC Land Use – completed PRD – submitted. Awaiting on site plan resubmittal. https://www.ormondbeach.org/1019/RidgeHaven Site plan reviewed and comments issued. Neighborhood meeting completed on 07/26/22. Awaiting a re-submittal. Targeting 4/13/23 Planning Board	SSS/SPRC
11.	101 Fiesta Drive	Land Use Amendment: Recommended approval with conditions at 12/08/22 Planning Board. **Land use approved 02/07/23.** Zoning Amendment: Recommended approval with conditions at 12/8/22 Planning Board. Approved on 02/21/23. **2nd reading on 03/07/23 for City Commission.** https://www.ormondbeach.org/1032/101-Fiesta-Drive	SSS
12.	Former Tomoka Golf course	Traffic study comments issued. Neighborhood meeting occurred on 02/08/2023. 2nd SPRC review comments issued. Awaiting SPRC resubmittal. https://www.ormondbeach.org/1013/Tomoka-Reserve	SSS/SPRC
13.	Ormond Enclave (former Courtyards at Ormond Beach)	2nd Submittal – SPRC comments provided. Neighborhood meeting held on 01/17/23. Awaiting a re-submittal. https://www.ormondbeach.org/1029/Ormond-Enclave	SSS/SPRC

#	Project	Status	Staff Contact
14.	Tymber Creek Apartments	300 Apartment units. Neighborhood meeting occurred. Awaiting SPRC resubmittal. Traffic update submitted and reviewed. Planning Board: 12/08/22 (recommended denial) **City Commission: Deadline is 3/6 for 3/21/23 City Commission meeting.** https://www.ormondbeach.org/1015/Tymber-Creek-Apartments	SSS/SPRC
15.	475 North Tymber Creek Road, The Enclave, Rezoning	Zoning Map Amendment from PRD to SR. Planning Board: 03/09/23 City Commission: 04/18/23 and 05/02/23	SSS
16.	Ormond Gateway Preliminary Plat	Revision to approved plat for an 8-lot commercial subdivision. Planning Board: 03/09/23 City Commission: 04/18/23 and 05/02/23	SSS
17.	1755 North U.S. Highway 1	Annexation, Land Use (LIC to LI/U), Zoning (B-7 to I-1). Annexation: 4/18/23 and 5/2/23 Land Use, Planning Board: 04/13/23	SSS
Permitting software			
18.	Tyler/Energov Upgrade	Go live 10/01/23 (tentatively). Creation of processes. Conversion of existing permitting software. Working on validation testing of applications and conversion of Naviline data.	CB/LM/RG/ SSS
Land Development Code/Zoning amendments			
19.	Business Tax Receipt process	Amend BTR process, create certificate of use.	RG
20.	Creation of I-2 zoning district	Would apply to existing Volusia County land area north of Hull Road. Not needed at this time.	SSS
21.	Meter fee update	Planning Board: 02/09/23 City Commission: 03/07/23 City Commission: 03/21/23	SSS
22.	Fence setback next to ROW	Planning Board: 02/09/23 City Commission: 03/07/23 City Commission: 03/21/23	SSS
23.	Neighborhood meeting update	Planning Board: 02/09/23 City Commission: 03/07/23 City Commission: 03/21/23	SSS
24.	Setbacks for existing mobile homes in the T-2 Zoning district	Planning Board: 04/13/23 City Commission: 05/16/23 City Commission: 06/06/23	
Other jurisdictions			
25.	Daytona Beach western development	1. Avalon Park preliminary plat approved. 2. No submittal for Avalon Park final plat. 3. Meetings occurring between Avalon Park, Daytona Beach and Ormond Beach. All traffic study comments were provided to Lassiter Transportation Group. 4. OB Life participation. 5. Received Avalon Park TIA resubmittal.	SSS
Miscellaneous			

#	Project	Status	Staff Contact
26.	State law changes	Implement changes based upon recent legislation. Include HB1059 and condo maintenance for multi-story buildings.	SSS/TG
27.	MacDonald House renaming recommendation of HLPB	Discussion item prepared. No City Commission date determined.	BW
28.	901 Airport Road	Amend land use and zoning to reflect city/county/SJRWMD purchase of property for preservation/park land.	
29.	204 Magnolia Avenue	Amend land use from "Public Institutional".	
Plats			
30.	Plantation Oaks, Unit 1A (Tiger Oaks)	Preliminary plat approved. Project under construction. Final plat comments provided. Approved on 06/07/22 & 07/19/22 City Commission meetings.	SSS
31.	Cupola Final Plat	City Commission review of Preliminary Plat on 01/18/22. Project under construction. Final plat approved on 01/24/23.	SSS/SPRC

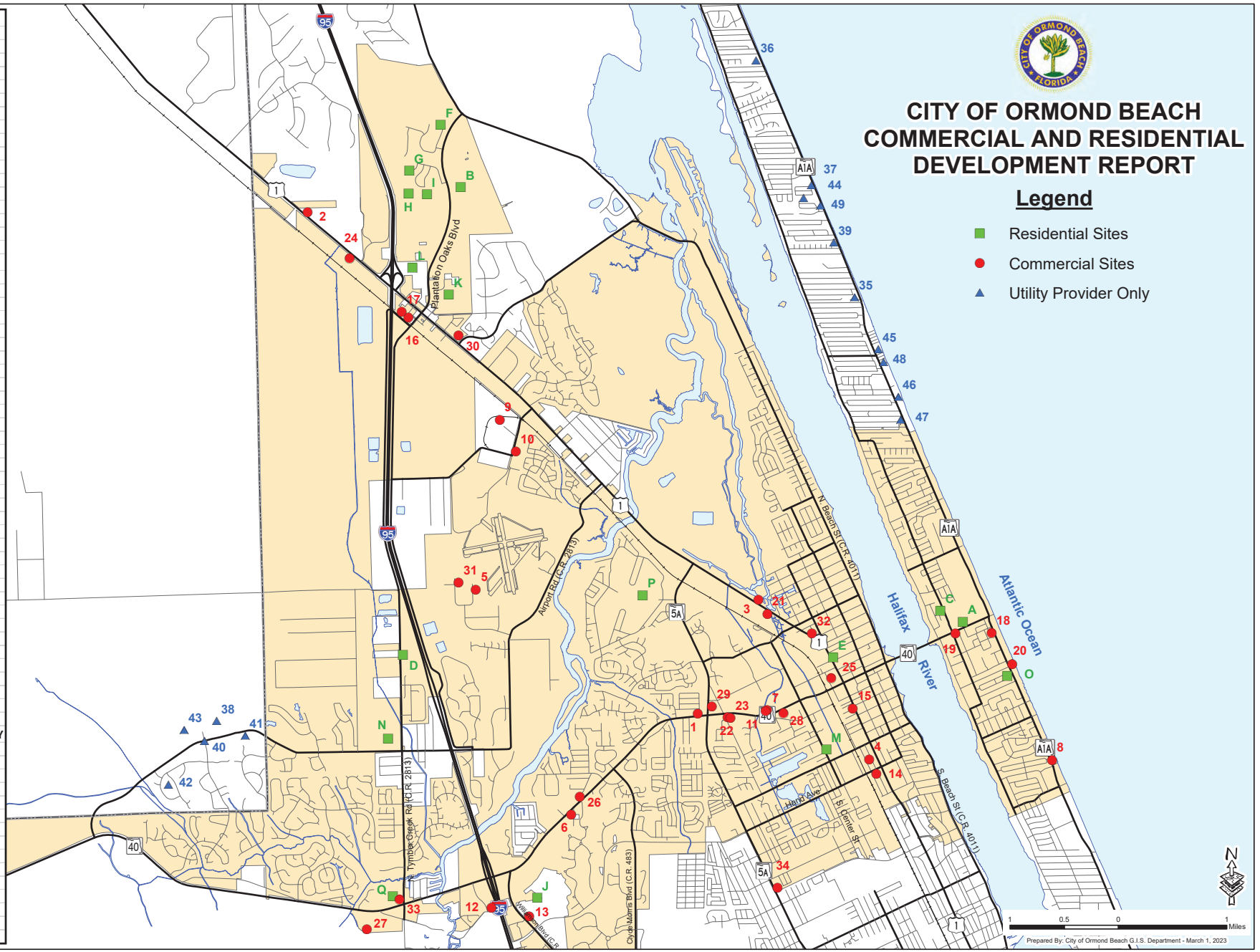
Completed

#	Project	Status	Staff Contact
1.	1405 North US Highway 1	5.26 parcel annexation, approved at 9/21/22 and 10/05/22 City Commission meetings.	SSS
2.	Joint purchase of the Penland property – Volusia Forever	Joint purchase of a 19-acre parcel with St. Johns River Water Management District and Volusia County. Property would be under a conservation easement and would allow passive recreation for bike and walking trails. Discussion item occurred August 16, 2022. Joint Participation Agreement approved at 9/21/22 City Commission meeting. Closing date is January 2023.	SSS/BW
3.	North Interchange storage/warehouse	1. Approved by Planning Board (5-0) with some conditions. 2. Approved 10/18/22 & 11/01/22 CC. 3. https://www.ormondbeach.org/1021/North-Interchange	SSS/SPRC
4.	Non-RidgeHaven parcels	1. Zoning amendments for properties in 2nd ISBA amendment not owned by RidgeHaven. 2. Approved by Planning Board (5-0) on 09/08/22. 3. Approved 10/18/22 & scheduled for 11/01/22 CC.	BW
5.	Volusia County parkland	1. Amend land use and zoning to Special Environmental. 2. Approved by PB on 08/11/22. 3. Land use scheduled for 09/21/22 & 10/05/22 City Commission meetings. 4. Zoning - Approved 10/18/22 & 11/01/22 CC.	SSS
6.	NFIP Community Assistance Visit (Audit)	Florida Department of Emergency Management Office of Floodplain Management (OFM) found the City of Ormond Beach compliant with the floodplain management program and deemed eligible to continue participating in the National Flood Insurance Program (NFIP).	BW

#	Project	Status	Staff Contact
7.	Tattersall at Tymber Creek	1. 129-unit subdivision and associated site improvements. 2. Neighborhood meeting on 08/23/22. 3. Planning Board approved 4-1 on 09/08/22. 4. Approved 10/18/22 & 11/01/22 CC. https://www.ormondbeach.org/1024/Tattersall-at-Tymber-Creek	SSS/SPRC
8.	CRS 5-year Cycle Visit (Audit)	Completed-City will improve CRS rating to a "5" effective October 1, 2023.	BW
9.	Paradise Pointe Wall Waiver	Denied at Planning Board (6-1). Approved at City Commission on 12/06/22.	SSS
10.	Expiration of variance	Allow 1-year extension. Approved at 10/13/22 at Planning Board. City Commission: 12/06/22 – Approved City Commission: 01/10/23 – Approved	SSS
11.	ISBA update	Approved at 10/13/22 at Planning Board. City Commission: 12/06/22 – Approved City Commission: 01/10/23 – Approved	SSS
12.	Pool screen enclosure setback	Review pool screen enclosure setbacks. Approved at 10/13/22 at Planning Board. City Commission: 12/06/22 – Approved City Commission: 01/10/23 – Approved	SSS
13.	Townhomes	Review existing standards. Approved at 10/13/22 at Planning Board. City Commission: 12/06/22 – Approved City Commission: 01/10/23 – Approved	SSS
14.	Easements, Flagler County	Celedine	SSS
15.	Archer's Mill Preliminary Plat	94 units. Recommended for approval at 12/05/22 Planning Board. Scheduled for 01/10/23 CC.	SSS
16.	251 South Atlantic Avenue, vacant lot – Ormond Holdings LLC	Neighborhood meeting held on 09/14/22. Recommended for approval at 12/5/22 Planning Board. Approved at 01/10/23 CC meeting & second reading on 01/24/23 CC. https://www.ormondbeach.org/1018/Ormond-Beach-Holdings-LLC	SSS/SPRC
17.	West Street partial ROW Vacation	Notice of Intent: City Commission: 12/06/22 – Approved Vacation Ordinance: Approved by City Commission: 01/10/23 & 01/24/23	
18.	Tides Edge Preliminary Plat	15 units. Preliminary Plat approved at 01/24/23 CC.	SSS
19.	Ormond Central Self-Storage	Three story climate controlled self-storage facility that is a total of 106,140 square feet. Recommended for approval at 12/08/22 Planning Board. Approved on 02/07/23 by City Commission. https://www.ormondbeach.org/1025/Ormond-Central-Self-Storage	SSS/SPRC
20.	Stor-It, North Ormond	Self-storage facility. Neighborhood meeting: 11/17/22 Planning Board: 12/08/22 (recommended approval) City Commission Approved**:** 01/24/23 & 02/07/23 https://www.ormondbeach.org/1026/Stor-It	

#	Project	Status	Staff Contact
21.	RidgeHaven West	Land Use Amendment: Recommended for approval at 12/05/22 Planning Board. Land use amendment approved on 01/10/23 CC meeting & 01/24/23 CC meeting. Zoning Amendment: Recommended for approval at 12/05/22 Planning Board. Approved by City Commission on 02/07/23 and 02/21/23. https://www.ormondbeach.org/1033/RidgeHaven-West	SSS

CITY OF ORMOND BEACH COMMERCIAL AND RESIDENTIAL DEVELOPMENT REPORT



RESIDENTIAL PROJECTS	
A	121 East
B	Archers Mill - Phase 3A
C	Cupola at Oceanside
D	Enclave - Zoning Map Amendment
E	Ormond Enclave (FKA Courtyards)
F	Plantation Oaks - 1A (Tiger Oaks)
G	Plantation Oaks - 2B
H	Plantation Oaks - 2C
I	Plantation Oaks - 2D
J	Regal Multifamily
K	Ridgehaven
L	Ridgehaven West
M	Stanton Grove
N	Tattersall at Tymber Creek
O	Tides Edge
P	Tomoka Reserve
Q	Tymber Creek Apartments
COMMERCIAL PROJECTS	
1	101 Fiesta Drive
2	1755 North U.S. Highway 1
3	783 North US Hwy 1 - Campana
4	Air One
5	Beach House Graphics
6	Complete Cardiology Expansion
7	Culvers Restaurant
8	Georgian Inn Recreation
9	Halifax Paving Office
10	Hull Road RV and Boat Storage
11	IHOP
12	Interchange Depot
13	Love Whole Food Expansion
14	McNamara Warehouse
15	MetroNet
16	North Interchange Industrial Flex Space
17	North Interchange Self Storage
18	Ocean Club Ormond Beach
19	Ormond Art Musuem - Cottage Shed
20	Ormond Beach Holdings LLC
21	Ormond Beach Self Storage
22	Ormond Central
23	Ormond Central Self Storage
24	Ormond Gateway
25	Perrott Depot
26	Revella at Ormond Beach ALF
27	Riverbend Church School Expansion
28	Shoppes at Granada Pointe
29	Splash Car Wash
30	Stor - It
31	Valiant Diners Expansion - Phase 3
32	VROOM Vechile Display
33	Walgreens/Commerical Area Improvements
34	Winkler Cabinetry
ORMOND BEACH - UTILITY PROVIDER ONLY	
35	101 Town and Country Lane
36	Beachview Cove
37	2284 Ocean Shore Boulevard
38	Celedine Subdivision (Flagler)
39	Corinthian Villas
40	Force Main Extension (Flagler)
41	Hunters Ridge Storage Site
42	Huntington Forcemain Extension (Flagler)
43	Iris Subdivision (Flagler)
44	Ocean Village Townhomes
45	Regency Plaza Condominium
46	Sands Point Condominium
47	Surf Style
48	Traders Inn Beach Club
49	Verona Oceanside

City of Ormond Beach Commercial Development Report, as of March 1, 2023

Applications, site plans, and public hearing documents may be viewed at the Planning Department website: http://fl-ormondbeach.civicplus.com/index.aspx?NID=247

Change in project status | Project nearing completion | Projects reviewed this month

#	Project	Description	Application Date	1st Review	2nd Review	3rd Review	4th Review	Neigh-borhood meeting	Advisory Board	City Commis-sion	Final Approval	DO Expiration	LDC Extension Expiration	Building Permit Info	Building Permit Value	Eng. Permit	Eng. Permit Constr. Value	Under Construc tion	CO Issued	E or Arc = Project Engineer or Architect O = Owner A = Applicant
1	**101 FIESTA DRIVE** 101 Fiesta Dive PZ# 2023-003 & 004	Land use change from "Low Density Residential" to "Residential, Office, Retail" and zoning change from R-3, Single-Family Medium Density to B-1, Professional Office/Hospital	10.25.22	NA				Not applicable	12.05.22 (4-1 approval with conditions)	Land Use Approved &Zoning 2nd 03.07.23				Not applied	Not applied	Not applied	Not applied			O = Murphy Dugan LLC
2	**1755 NORTH U.S. HIGHWAY 1** 1755 North U.S. Highway 1 PZ#2023-032	Annexation, land use and zoning map amendments. From "Low Intensity Commercial" land use to "Light Industrial/Utilities". From B-7 zonign designation to I-1.	Pending						Required	Required				Not applied	Not applied	Not applied	Not applied			O = Waynes Solar APP = The Hardy Group, Inc.
3	**783 N US HWY 1, CAMPANA** 783 North U.S. Highway 1 PZ# 2016-010	Construction of a 1,216 SF building for kayak rental & repair and associated site improvements on a 1.03 acre site.	11.06.15	11.20.15	02.03.16	03.11.16	05.20.16	Not applicable	Not applicable	Not applicable	05.24.16	Under Constr.		Issued 09.25.17	$80,000	Issued 05.27.16	$35,000	55%		E = Alann Engineering Group ARC/E: W.A. Cross O = Steven Campana
4	**AIR ONE** 390 Andalusia Avenue PZ# 2021-048	Construction of a 2,500 square foot storage/warehouse building on a 1.1 acre property.	04.07.21	04.28.21	06.15.21	07.07.21	08.19.21	Not applicable	Not applicable	Not applicable	09.15.21	09.15.23		Not applied	Not applied	Not applied	Not applied			E = Newkirk Engineering, Inc. O = Francis Family LLC
5	**BEACH HOUSE GRAPHICS** 9 East tower Circle PZ#23-027	Expansion on an existing site of 11,500 square feet and associated site improvements	02.15.23	DUE 03.01.23				Not applicable	Not applicable	Not applicable				Not applied	Not applied	Not applied	Not applied			
6	**COMPLETE CARDIOLOGY EXPANSION** 1240 West Granada Boulevard PZ#2022-090	Enclosing of the former bank drive through with new building square footage totaling 4,326 square feet and associated site improvements. Total building square footage = 12,714.	07.29.22	08.14.22	11.21.22			Not applicable	Not applicable	Not applicable	12.13.23	12.13.25		Not applied	Not applied	Not applied	Not applied			E = Zev Cohen & Associates, Inc. O = Complete Cardiology, LLC ARC = BFP Design Inc
7	**CULVER'S RESTAURANT** 655 West Granada Boulevard PZ#2-23-008	Construction of a 4,460 square foot drive-thru restaurant on a vacant 3.04 acre parcel. Part of Granada Pointe PBD.	11.04.22	11.20.22	12.23.22	02.01.23	02.21.23	Not applicable	Not applicable	Not applicable				Not applied	Not applied	Not applied	Not applied			E = Newkirk Engineering, Inc. O = Granada Pointe Investors, LLC APP = Jemini Investments, LLC
8	**GEORGIAN INN RECREATION** 749 South Atlantic Avenue PZ#2022-067	Construction of a 1,212 square foot recreation building and amenities for the Georgian Inn on a 0.72 acre parcel.	06.14.22	06.26.22	10.06.22			Not applicable	Not applicable	Not applicable				Not applied	Not applied	Not applied	Not applied			E = Parker Mynchenberg & Associates, Inc. O = Georgian Inn Beach Club Association, Inc.
9	**HALIFAX PAVING OFFICE** 860 Hull Road PZ#2023-013	Construct a new 8,800 square foot office. Property currently in unincorporated Volusia County.	12.20.22	01.17.23				Not applicable	Not applicable	Not applicable				Not applied	Not applied	Not applied	Not applied			E = Parker Mynchenberg & Associates, Inc. O = Halifax Paving
10	**HULL ROAD RV & BOAT STORAGE** 835 Hull Road PZ# 2021-006	Proposed RV & Boat storage of 20 spaces and associated site improvements on a 0.78 acre parcel.	11.18.20	12.01.20				Not applicable	Not applicable	Not applicable	04.16.21	04.16.23		Not applicable	Not applicable	Not applied	Not applied			E = Newkirk Engineering, Inc. O = BMill Inc.
11	**IHOP** 675 West Granada Boulevard PZ#23-023	IHOP restaurant consisting of 3,550 square feet on 1.52 acres.	02.05.23	02.17.23				Not applicable	Not applicable	Not applicable				Not applicable	Not applicable	Not applied	Not applied			
12	**INTERCHANGE DEPOT** 295 Interchange Boulevard PZ# 2021-072	Three story storage facility of 111,825 square feet on a 2.94 acre parcel and associated site improvements	06.11.21	06.25.21	09.16.21			08.05.21	10.14.21 (Approved 7-0)	11.16.21 (Approved 5-0) & 12.07.21 (Approved 5-0)	12.08.21	Under Constr.		Issued 05.10.22	$12,619,451	Issued 03.02.22	$711,015	90%		E = Newkirk Engineering, Inc. O = Southwest I-95, LLC APP = 295 Interchange LLC
13	**LOVE WHOLE FOOD EXPANSION** 275 Williamson Boulevard PZ# 2021-096	Addition of a 4,765 square foot building at the existing Love Whole property and associated site improvements.	10.06.21	10.24.21	04.19.22	04.26.22		Not applicable	Not applicable	Not applicable	06.10.22; 12.19.22	Under Constr.		Issued 11.14.23	$985,000	Issued 11.14.23	$151,149	20%		E = Zev Cohen & Associates, Inc. O = Love Whole Foods
14	**McNAMARA WAREHOUSE** 460 Andalusia Avenue PZ# 2021-030	Construction of an 840 square foot warehouse and associated site improvements on a 0.10 acre property.	01.12.21	01.28.21	03.16.21			Not applicable	Not applicable	Not applicable	04.27.21	Under Constr.		Issued 09.01.21	$66,177	Issued	$2,000	85%		E = Parker Mynchenberg & Associates, Inc. O =McNamara Construction
15	**METRONET** 124 South Yonge Street PZ# 2023-002	Proposed 344 square foot concrete unmanned fiberoptic communication hut.	10.28.22	11.15.22	01.17.23			01.23.23	Not applicable	Not applicable	1.27.23			In Review	$180,000	Issued 02.02.23	$180,000	15%		E = Metro Fibernet LLC O = Coast to Coast Construction

* Highlighted projects indicate change in status (such as SPRC approval, CC approval, building permits issued, or CO issued).

Applications, site plans, and public hearing documents may be viewed at the Planning Department website: http://fl-ormondbeach.civicplus.com/index.aspx?NID=247

Change in project status | Project nearing completion | Projects reviewed this month

#	Project	Description	Application Date	1st Review	2nd Review	3rd Review	4th Review	Neighborhood meeting	Advisory Board	City Commission	Final Approval	DO Expiration	LDC Extension Expiration	Building Permit Info	Building Permit Value	Eng. Permit	Eng. Permit Constr. Value	Under Construction	CO Issued	E or Arc = Project Engineer or Architect O = Owner A = Applicant
16	NORTH INTERCHANGE INDUSTRIAL FLEX SPACE 520 Flagler Road PZ# 2022-076	Proposed two 11,999 square foot industrial flex space buildings on 2.34 acres and associated site improvements.	06.29.22	07.18.22	08.16.22	09.01.22		Not applicable	09.08.22, Recommended for Approval (5-0)	10.18.22 (Approved) & 11.01.22	11.17.22	11.17.24		Not applied	Not applied	Not applied	Not applied			E = Newkirk Engineering, Inc. O = BHT Holdings, LLC
17	NORTH INTERCHANGE SELF STORAGE 540 Flagler Road PZ# 2022-075	Proposed 4-story self storage facility (110,900 square feet) with 28 RV and boat parking spaces on 3.40 acres and associated site improvements.	06.30.22	07.18.22	08.17.22	09.01.22		Not applicable	09.08.22, Recommended for Approval (5-0)	10.18.22 (Approved) & 11.01.22	11.22.22	11.22.24		Submitted	$10,000,000	Approved 01.27.23	$714,572	0%		E = Newkirk Engineering, Inc. O = BHT Holdings, LLC
18	OCEAN CLUB ORMOND BEACH 88 South Atlantic Avenue PZ# 2019-026	Demolition of existing building (10,866 SF) and construction of a new retail shop (8,596 SF)and related site improvements.	01.15.19	01.31.19	06.06.19	06.03.21		06.19.19	07.11.19	08.20.19 & 11.05.19 - Approved	08.08.21	Under Constr.		Issued 11.03.22	$1,800,000	Issued 12.07.22	$549,000	20%		E = The Performance Group O = 88 South Atlantic, LLC
19	ORMOND ART MUSUEM-COTTAGE SHED 78 East Granada Boulevard PZ#2023-20	Special Exception to allow the conversion of two parking spaces into a cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and	01.23.23	NA				Not applicable	02.09.23	03.21.23				Not applied	Not applied	Not applied	Not applied			O = City of Ormond Beach APP = Ormond Memorial Art Museum, Inc.
20	ORMOND BEACH HOLDINGS LLC 251 South Atlantic Avenue PZ #22-018(b)	Proposed five story, 95,700 square foot hotel with 137 rooms, associated driveways, parking (108 spaces east of SRA1A and 62 spaces west of SRA1A) stormwater, utilities, signage, lighting, landscaping, public sidewalk and ADA beach access, and hotel related beach access	03.09.22	04.04.22	06.13.22	08.24.22	09.07.22; 01.31.23	09.14.22	12.05.22 Approved 5-0	01.10.23 & 01.24.23 Approved				Not applied	Not applied	Not applied	Not applied			E = Parker Mynchenberg & Associates, Inc. O = Memorial Health Systems, Inc. APP/O = Ormond Beach Holdings, LLC
21	ORMOND BEACH SELF STORAGE 490 N. U.S. Highway 1 PZ #2023-021	Proposed 166,423 of storage square footage on 24.28 acres and associated site improvements.	01.27.23	DUE 02.10.23				Not applicable	Not applicable	Not applicable				Not applied	Not applied	Not applied	Not applied			E = Mark Dowst & Associates, Inc. O = TSO Ormond Beach, LP ARC = Smith Boland Architects, LLC
22	ORMOND CENTRAL 1 South Old Kings Road PZ# 2015-072	Proposed 4 unit, 8.73 acre commercial development. Project proposes site improvements to develop 4 pad ready sites.	04.09.16	04.26.16	11.16.16	02.01.17	08.02.17	08.30.17	10.12.17 Recommended Approval	11.21.17 & 12.05.17 Approved	12.08.17	Under Constr.		Not Applicable	Not Applicable	Issued 11.01.22	$907,057	15%		O = Ormond Central Investors, LLC E = Newkirk Engineering, Inc.
23	ORMOND CENTRAL SELF STORAGE 1 South Old Kings Road PZ# 2022-092	Proposed three story building for a 106,140 square foot climate controlled self-storage facility. Overall building square footage allowed of 131,140 on 8.73 acres.	08.07.22	08.25.22	11.20.22	12.17.22		09.13.22 and 10.20.22	12.08.22 - Approved 5-0	01.24.23 (Approved) & 02.07.23	02.10.23	02.10.25		Not applied	Not applied	Not applied	Not applied			E = Newkirk Engineering, Inc. APP = Ormond Beach Dunamis Storage, LLC O = Ormond Central Investors, LLC
24	ORMOND GATEWAY 1670 North U.S. Highway 1 PZ# 2020-091	Development of a three lot commercial subdivision and associated site improvements.	09.11.20	10.06.20	12.16.20	02.01.20		Not applicable	01.14.21 Approved	2.16.21 Approved	03.01.21	03.01.23		Not applied	Not applied	Not applied	Not applied			E = Zev Cohen & Associates, Inc. O = Destination Interchange, LLC
24	ORMOND GATEWAY REVISION 1670 North U.S. Highway 1 PZ# 2023-025	Development of an eight lot commercial subdivision and associated site improvements.	02.07.23	02.20.23				Not applicable	03.09.23	04.18.23				Not applied	Not applied	Not applied	Not applied			E = Zev Cohen & Associates, Inc. O = Destination Interchange, LLC
25	PERROTT DEPOT 29 North Perrott Drive PZ #2021-029	Redevelopment of 1.86-acre site that has an existing 4,834 distribution/warehouse use to include a total of 16,147 square feet of self-storage buildings.	01.12.21	02.02.21	03.19.21	05.24.21		02.17.21	Not applicable	Not applicable	06.08.21 Revision 11.09.21	Under Constr.		Issued 02.17.22	$410,000	Issued 12.03.21	$250,000	Phase 1 complete		E = Newkirk Engineering, Inc. O = Hand & Yonge, LLC ARC = BPF Design, Inc.
25	PERROTT DEPOT REVISION 29 North Perrott Drive PZ #2021-029	Add additional storage building of 4,972 square feet	01.18.23	02.07.23				02.17.21	Not applicable	Not applicable										E = Newkirk Engineering, Inc. O = Hand & Yonge, LLC ARC = BPF Design, Inc.
26	REVELLA AT ORMOND BEACH ALF 1211 West Granada Boulevard PZ# 2021-073	150 resident Assisted Living Facility, 120,501 SF on 5.54 acres and associated site improvements	05.29.21	06.27.21	08.31.21			06.28.21	Not applicable	Not applicable	09.28.21	Under Constr.		Issued 11.08.22	$29,723,266	Issued 04.26.22	$2,184,284	45%		E = Mark Dowst & Associates, Inc. O = 1245 Blvd. Investors, LLC APP = Ormond Beach Investments, LLC
27	RIVERBEND CHURCH SCHOOL EXPANSION 2080 West Granada Boulevard PZ# 2022-036	Special Exception amendment to increase number of allowed students from 200 to 600, including the construction of new classrooms totaling 13,327 square feet.	03.11.22	03.27.22	07.20.22			07.25.22	08.11.22 Approved	09.21.22	09.22.22	Under Constr.		Issued 07.22.222	$1,145,192	Issued 01.5.23	$115,000	35%		E = Mark Dowst & Associates, Inc. O = Riverbend Community Church, Inc.
28	SHOPPES AT GRANADA POINTE 550 West Granada Boulevard PZ# 2019-120	Construction of a 21,114 square foot building on 2.52 acres within the Granada Pointe development and associated site work.	10.17.19	11.04.19	12.02.19			Not applicable	Not applicable	Not applicable	12.14.19	Under Constr.	12.14.22	Not applied	Not applied	Issued 03.11.22	$486,082	0%		E = Newkirk Engineering, Inc. O = Granada Pointe Investors, LLC ARC = BPF Design, Inc.

* Highlighted projects indicate change in status (such as SPRC approval, CC approval, building permits issued, or CO issued).

Applications, site plans, and public hearing documents may be viewed at the Planning Department website: http://fl-ormondbeach.civicplus.com/index.aspx?NID=247

Change in project status | Project nearing completion | Projects reviewed this month

#	Project	Description	Application Date	1st Review	2nd Review	3rd Review	4th Review	Neigh-borhood meeting	Advisory Board	City Commis-sion	Final Approval	DO Expiration	LDC Extension Expiration	Building Permit Info	Building Permit Value	Eng. Permit	Eng. Permit Constr. Value	Under Construc tion	CO Issued	E or Arc = Project Engineer or Architect O = Owner A = Applicant
29	**SPLASH CAR WASH** 55 North Nova Road PZ# 2022-041	Redevelopment of a 2.53 acre parcel of a vacant church for a full service car wash with a 9,956 square foot building.	04.27.22	05.11.22	06.06.22	07.29.22	08.10.22	Not applicable	06.09.22 Approved	07.19.22 & 08.03.22 Approved	09.21.22; 01.14.23	09.22.24		Early Review	Not applied	Not applied	Not applied			E = Upham Engineering O = Port Orange Investors, LLC APP = Ormond Car Wash Investments, LLC
30	**STOR-IT** 1405 North US Highway 1 PZ# 2022-096	Proposed indoor self-storage facility of 123,534 square feet (three stories) on 5.26 acres and associated site improvements.	08.11.22	08.29.22	11.09.22			11.17.22	12.08.22 Approve 5-0	01.24.23 (Approved) & 02.07.23				Not applied	Not applied	Not applied	Not applied			E = Parker Mynchenberg & Associates, Inc. O = Vanacore Commercial Property, Inc.
31	**VALIANT DINERS EXPASNION, PHASE 3** 15 West Tower Circle PZ# 2022-027	Expansion of existing facility with a 11,250 square foot building and associated site improvements	02.21.22	03.09.22	08.09.22	09.16.22	10.22.22	Not applicable	Not applicable	Not applicable	11.14.22	Under Constr.		Issued 11.16.22	$1,258,313	Issued 12.07.22	$240,000	20%		E = Zev Cohen & Associates O = Padwell Holdings, LLC
32	**VROOM VECHILE DISPLAY** 305 North Yonge Street PZ# 2023-001	Site improvements for vehicle display associated with vehicle sales including landscaping.	10.18.22	10.24.22				Not applicable	Not applicable	Not applicable	11.07.22	11/07.24		Not Applicable	Not Applicable	Issued 02.14.23	$4,100	0%		E = Upham, Inc. O = Jaidy Franco
33	**WALGREENS/COMMERCIAL AREA IMPROVEMENTS** 2001 West Granada Boulevard PZ# 2022-038	Modifications to the access to West Granada Boulevard and stormwater improvements to Walgreens site	03.21.22	04.05.22	04.22.22	06.03.22	06.28.22	Not applicable	Not applicable	Not applicable	07.14.22	07.14.24		Not applied	Not applied	Not applied	Not applied			E = Newkirk Engineering, Inc.
34	**WINKLER CABINETRY** 1035 South Nova Road PZ#23-027	Site improvements (parking and landscaping) associated with a change of use.	02.16.23	02.23.23				Not applicable	Not applicable	Not applicable				Not applied	Not applied	Not applied	Not applied			E = Mark Dowst & Associates, Inc. O = Ormond Properties LLC

* Highlighted projects indicate change in status (such as SPRC approval, CC approval, building permits issued, or CO issued).

Applications, site plans, and public hearing documents may be viewed at the Planning Department website: http://fl-ormondbeach.civicplus.com/index.aspx?NID=247

Change in project status | Project nearing completion | Projects reviewed this month

#	Project	Description	Application Date	1st Review	2nd Review	3rd Review	4th Review	Neigh-borhood meeting	Advisory Board	City Commis-sion	Final Approval	DO Expiration	LDC Extension Expiration	Building Permit Info	Building Permit Value	Eng. Permit	Eng. Permit Constr. Value	Under Construc tion	CO Issued	E or Arc = Project Engineer or Architect O = Owner A = Applicant
Ormond Beach is Utility Provider Only																				
35	**101 TOWN & COUNTRY LANE** 101 Town & Country Lane PZ #2019-078	Utility connection for existing multi-family development.	05.07.19	06.10.19	07.07.19			Outside City	Outside City	Outside City	07.18.19	Under constr.	NA	Not applicable	Not applicable	Utilities only Issued 09.11.2019	$126,650	40%		E = Ultra Design Consultant, Inc.
36	**BEACHVIEW COVE** 2960 Oceanshore Boulevard PZ#21-045	28 lot subdivision in Volusia County. Utility connection only	08.24.21	09.06.21	10.01.21	10.29.21		Outside City	Outside City	Outside City	11.11.21	06.15.23		Not applicable	Not applicable	Not applied	Not applied			E = Alliant O = Lake Pointe Villas LLC
37	**2284 OCEAN SHORE BOULEVARD** 2284 Ocean Shore Boulevard PZ-2021-045	Septic to sewer connection	03.21.21	04.05.21	05.25.21			Outside City	Outside City	Outside City	06.15.21	06.15.23		Not applicable	Not applicable	Not applied	Not applied			E = Alann Engineering Group O = Steven Sahai
38	**CELEDINE SUBDIVISION (FLAGLER)** PZ# 2021-069 Flagler County	Utility connection for 99 single-family homes. Flagler County (Hunter's Ridge).	05.12.21	06.07.21	08.30.21	10.19.21		Outside City	Outside City	Outside City	11.22.21	Under Constr.		Not applicable	Not applicable	Issued 06.24.22	$1,073,894 utilities only	60%		E = Alann Engineering Group O = U.S. Capital Alliance, LLC
39	**CORINTHIAN VILLAS** PZ# 2023-011 1926 Ocean Shore Boulevard	Utility connection for existing multi-family development.	11.29.22	12.06.22				Outside City	Outside City	Outside City				Not applicable	Not applicable	Not applied	Not applied			E = Clearwater Solutions, LLC O = Corinthian Villas
40	**FORCE MAIN EXTENSION (FLAGLER)** PZ# 2021-070 Airport Road right-of-way	Force main extension in Flagler County (Hunter's Ridge DRI) along Airport Road	05.12.21	06.07.21	08.30.21			Outside City	Outside City	Outside City	08.31.21	Under Constr.		Not applicable	Not applicable	Issued 06.20.22	$834,160 utilities only	98%		E = Alann Engineering Group O = U.S. Capital Alliance, LLC
41	**HUNTER'S RIDGE STORAGE SITE** 2730 Airport Road PZ# 2022-100	Flagler County utility connection for self-storage facility. Building square footage = 102,214 on 10.44 acres	09.19.22	09.27.22				Outside City	Outside City	Outside City	12.20.22			Not applicable	Not applicable	Not applied	Not applied			E = Alann Engineering Group O = Preston Court II, LLC
42	**HUNTINGTON FORCE MAIN EXTENSION** Huntington subdivision PZ #-19-024(A)	Force main extension within the Huntington subdivision	08.19.19	09.10.19				Outside City	Outside City	Outside City	04.29.20	Under Constr.		Not applicable	Not applicable	Approved (21-7125) 09.27.21	$117,025	98%		E = Zev Cohen and Associates, Inc.
43	**IRIS SUBDIVISION (FLAGLER)** PZ# 2021-071 Flagler County	Utility connection for 76 single-family homes. Flagler County (Hunter's Ridge)	05.12.21	06.07.21	10.29.21			Outside City	Outside City	Outside City	01.10.22	01.10.24		Not applicable	Not applicable	Not applied	Not applied	10%		E = Alann Engineering Group O = U.S. Capital Alliance, LLC
44	**OCEAN VILLAGE TOWNHOMES** 90 Verona Vista Ct. PZ# 2020-056	19 unit townhome development on 3.75 in Volusia County.	05.21.20	06.03.20				Outside City	Outside City	Outside City	07.17.20	Under Constr.	NA	Not applicable	Not applicable	Issued 11.02.21	$139,028	95%		E = Alann Engineering Group, Inc. O = Cornelius Prior APP = John Wine
45	**REGENCY PLAZA CONDOMINIUM** 1415 Ocean Shore Boulevard PZ# 2022-104	Sewer connection for a 133 multi-family condominium.	09.13.22	09.27.22				Outside City	Outside City	Outside City	11.07.22	11.07.24		Not applicable	Not applicable	Not applied	Not applied			E = Saltus Engineering, Inc. O = Regency Plaza Condominium
46	**SANDS POINT CONDOMINIUM** 1167 Ocean Shore Boulevard PZ# 2022-103	Sewer connection for a 20 multi-family condominium.	10.03.22	10.22.22				Outside City	Outside City	Outside City	11.14.22	11.14.24		Not applicable	Not applicable	Not applied	Not applied			E = Robert Marshall. P.E. O = Sands Point Condominium
47	**SURF STYLE** 1054 Ocean Shore Boulevard PZ# 2022-006	Volusia County project. Development of a 10,890 building. SPRC review is for the utility connection.	11.16.21	11.29.21				Outside City	Outside City	Outside City	01.10.22	01.10.24		Not applicable	Not applicable	Not applied	Not applied			E = Zev Cohen and Associates, Inc. O = 1054 Ocean Shores Blvd, LLC
48	**TRADERS INN BEACH CLUB** 1355 Ocean Shore Boulevard PZ #2022-031	Connection to city sewer services, including lift station.	03.10.22	03.16.22				Outside City	Outside City	Outside City	04.08.22	Under Constr.		Not applicable	Not applicable	Issued 11.17.22	$145,475			E - Mark Dowst & Associates O = Traders Inn Beach Club Association, Inc.
49	**VERONA OCEANSIDE** PZ #2020-011 2162 Ocean Shore Boulevard	Volusia County project. Replat of 3.50 acres into 5 single-family lots and 18 multi-family townhome lots.	12.08.19	12.27.19	06.08.20			Outside City	Outside City	Outside City	06.18.20	Under Constr.	NA	Not applicable	Not applicable	Utilities only Issued 05.19.21	$117,270	95%		O = MHK Of Volusia County E = Parker Mynchenberg & Associates

* Highlighted projects indicate change in status (such as SPRC approval, CC approval, building permits issued, or CO issued).

City of Ormond Beach Residential Development Report, as of March 1, 2023

#	Project	Description	Application Date	1st Review	2nd Review	3rd Review	4th Review	Neigh-borhood meeting	Advisory Board	City Commis-sion	Final Approval	DO Expiration	LDC Extension Expiration	Eng. Permit	Eng. Permit Constr. Value	Under construc-tion	E or Arc = Project Engineer or Architect O = Owner A = Applicant
A	**121 EAST** 121 East Granada Boulevard PZ #2022-098	. Proposed multi-story multi-family development of 24 units	08.12.22	09.01.22				03.14.23	Required	Required				Not applied	Not applied		E = Zev Cohen & Associates, Inc. O = Dime Rock Properties, LLC
B	**ARCHER'S MILL, PHASE 3A** Plantation Oaks Boulevard PZ #2022-091	94 single-family lots on 42.38 acres	08.01.22	08.22.22	10.18.22	01.10.23		Not Required	12,05.22 Approved	01.10.23 Approved	02.22.23	Under construction		Approved	$4,920,754.00	0%	E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
C	**CUPOLA AT OCEANSIDE** 100 North Halifax Drive PZ# 2021-068	12 two story townhomes - previously Halifax 100- and associated site improvements.	05.17.21	06.22.21				Completed	Approved	Approved	08.25.21	Under construction	Under construction	Issued 09.03.21	$548,099	90%	E - Newkirk Engineering O = Halifax Enterprises LLC APP = Halifax Enterprises LLC
D	**ENCLAVE, ZONING MAP AMENDMENT** 475 North Tymber Creek Road PZ#2023-019	Zoning map amendment for 26 acres from PRD, Planned Residential Development to SR, Suburban Residential	01.24.23	02.03.23				Not Required	03.09.23	04.18.23 & 05.02.23				Not applicable	Not applicable		E = Zev Cohen & Associates, Inc. APP = Paylin Tymber 1 & 2 LLC
E	**ORMOND ENCLAVE (FKA COURTYARDS)** 135 North Yonge Street PZ# 2021-079	Construct 64 unit multi family apartment complex.	06.17.21	07.09.21	10.19.22			08.15.21; 01.17.23	Required	Required				Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = CST Holdings, LLC ARC = BPF Design
F	**PLANTATION OAKS, 1A (TIGER OAKS)** 1395 Fountain View Street PZ# 2020-029	Development of 121 lots on 100.91 acres. Preliminary plat. Single family homes.	02.06.20	03.01.20	04.09.21			Not Required	PB 05.13.21 Approved	CC 06.01.21 Approved	08.27.21	Under construction	Under construction	Issued 09.17.21	$3,400,200	90%	E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
G	**PLANTATION OAKS, 2B** 2389 Destrenan Drive PZ# 2020-024	Development of 125 lots on 89.16 acres. Manufactured home phase.	12.14.17	01.24.18	07.17.18			Volusia County approval	Volusia County approval	Volusia County approval	09.20.18	Under construction	Under construction	Issued 03.29.2021	$2,390,520	75%	E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
H	**PLANTATION OAKS, 2C** 2124 Esplanada Drive PZ# 2020-025	Development of 121 lots on 63.12 acres. Manufactured home phase.	12.14.17	2.07.18	07.17.18			Volusia County approval	Volusia County approval	Volusia County approval	09.20.18	Under construction	Under construction	Issued 09.17.21	$3,044,572	20%	E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
I	**PLANTATION OAKS, 2D** 2258 Chretien Drive PZ# 2020-026	Development of 84 units on 27.32 acres. Manufactured home phase.	12.14.17	02.12.18	08.24.18			Volusia County approval	Volusia County approval	Volusia County approval	09.20.18	Under construction	Under construction	Issued 09.17.21	$1,784,746	20%	E = Parker Mynchenberg & Associates, Inc. O = Plantation Oaks of Ormond Beach, LLC
J	**REGAL MULTIFAMILY** 215 Williamson Boulevard PZ-22-047	Redevelopment of 310 multi-family units on 12 acres	04.22.22	05.11.22	07.20.22	09.21.22	10.19.22 11.20.22 12.11.22 02.02.23	Not Required	06.09.22 Approved	07.19.22 & 08.03.22 Approved		Submitted	Not issued	Not applied	Not applied		O = Southwest I-95, LLC E = Newkirk Engineering APP = LIV Development
K	**RIDGEHAVEN** Plantation Oaks Boulevard & Addison Drive PZ-22-061	96 duplex units and 202 single-family lots within a Planned Residential Development on 103.45 acres	05.23.22	06.13.22	10.14.22	12.20.22	02.03.23	07.26.22	[T] 04.13.23	Required				Not applied	Not applied		O = Snilloc Family Limited Partnership E = Parker Mynchenberg & Associates, Inc. APP = RidgeHaven LLC

* Highlighted projects indicate change in status (such as SPRC approval, CC approval, building permits issued, or CO issued).

City of Ormond Beach Residential Development Report, as of March 1, 2023

L	**RIDGEHAVEN WEST** 3136-01-08-0010 and 3136-01-09-0001 PZ-23-005 & 006	Land use from "Low Intensity Commercial" to "Medium Density Residential". Zoning from B-7, Highway Tourist Commercial to R-4, Single-Family Cluster and Townhouse	10.31.22 & 11.15.22	NA				NA	12.05.22 Approval (5-0)	Land Use 01.10.23 & 01.24.23 Approved				Not applied	Not applied		O = RCM Properties, LLC
M	**STANTON GROVE** 183 South Orchard PZ-22-062	21 unit rental townhome project consisting of three buildings on 3.92 acres.	05.27.22	06.13.22	8.25.22	09.07.22	09.23.22	Not required	Not required	Not required	10.29.22	10.29.24	Not applied	Not applied	Not applied		E = Newkirk Engineering O = Stanton Grove, LLC
N	**TATTERSALL AT TYMBER CREEK** Tymber Creek Road and Airport Road PZ# 2022-082	Construction of 129 lot subdivision and associated site improvements.	07.12.22	08.12.22	08.30.22			08.23.22	09.08.22 Approval (4-1)	10.18.22 Approved (3-2) & 11.01.22				Not applied	Not applied		E = Zev Cohen & Associates, Inc. O = Tymber Sky, LLC & Enclave of Tymber Creek LLC APP = Paylin Tymber 1 and 2, LLC
O	**TIDES EDGE** 264 South Atlantic Avenue PZ# 2022-018	Preliminary plat for 15 single-family lots.	05.31.22	06.13.22	09.07.22	11.20.22		09.14.22	12,05.22	01.10.23 & 01.24.23				Not applied	Not applied		E = Parker Mynchenberg & Associates, Inc. O = Memorial Health Systems, Inc. APP = Contender Development, Inc.
P	**TOMOKA RESERVE** 20 Tomoka Oaks Boulevard PZ#-2022-043	Establishment of a Development Order for the former Tomoka Oaks Golf Course property of 147.94 acres. The application seeks 300 residential units or 2.03 units per acre	04.20.22	05.03.22	02.21.23			02.08.23	Required	Required				Not applied	Not applied		O = Triumph Oaks of Ormond Beach I, LLC E - Zev Cohen & Associates, Inc. APP = Cobb Cole
Q	**TYMBER CREEK APARTMENTS** 2011 West Granada Boulevard PZ#2022-008	300 multi-family units and associated site improvements on a vacant 19.62 acre parcel.	12.07.21	12.27.21	04.28.22	06.23.22	7th - 12.09.22	06.08.22	12.08.22 Denial (5-0)	To be determined				Not applied	Not applied		E - Newkirk Engineering O = VCP Ormond Beach, LLC ARC = English Associates, Inc.

* Highlighted projects indicate change in status (such as SPRC approval, CC approval, building permits issued, or CO issued).

Planning public hearing items

City Commission items					
File Number	**Item**	**Description**	**Planning Board**	**City Commission**	**City Commission**
PBD 2022-008(A)	Zoning Map Amendment, Tymber Creek Apartments	This is an application submitted by Nika K. Hosseini, Esquire, Cobb Cole, on behalf of the property owner, VCP Ormond Beach II, LLC, for a (1) zoning map amendment from Volusia County RC, Resource Corridor, Volusia County A-2, Agriculture, and Ormond Beach B-8, Commercial to PBD, Planned Business Development and (2) the issuance of a development order. The Tymber Creek Apartments Planned Business Development seeks to allow the construction of 300 multi-family residential units and associated site improvements on 19.62 acres. The subject property is located at 36 North Tymber Creek Road and 2011 West Granada Boulevard. This staff report, item A, is for the zoning map amendment and the next agenda item, item B, is for the issuance of the development order.	Denial, 5-0	**To be determined**	**To be determined**
PBD 2022-008(B)	Issuance of a Development Order, Tymber Creek Apartments, Planned Business Development	This is a request from Nika K. Hosseini, Esquire, Cobb Cole, on behalf of the property owner, VCP Ormond Beach II, LLC, for the issuance of a development order. The Tymber Creek Apartments Planned Business Development seeks to allow the construction of 300 multi-family residential units and associated site improvements on 19.62 acres. The subject property is located at 36 North Tymber Creek Road and 2011 West Granada Boulevard.	Denial, 5-0	**To be determined**	**To be determined**
RZ 2023-004	101 Fiesta Drive, Zoning Map Amendment	This is a request for a zoning map amendment submitted by the property owner, Murphy Dugan, LLC, for an approximately 0.30 acres located at 101 Fiesta Drive from R-3, Single-Family Medium Density to B-1, Professional Office/Hospital. The subject property is located at 101 Fiesta Drive.	Approval, 5-0	Approved 02.21.2023	**03.07.2023**
LDC 2023-16	Land Development Code amendment: Section 1-28, Utility installation fees	This is an administrative amendment to the Land Development Code (LDC), Chapter 1, General Administration, Article IV, Schedule of Development Review and Impact Fees, Section 1-28, Utility installation fees, to update the fee schedule for meter costs.	Approval, 7-0	**03.07.2023**	**03.21.2023**
LDC 2023-17	Land Development Code amendment: Section 2-50(n) Fences and walls	This is an administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article III, General Regulations, Section 2-50(n)(2) In general, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the Site Plan Review Committee (SPRC).	Approval, 7-0	**03.07.2023**	**03.21.2023**
LDC 2023-18	Land Development Code amendment: Section 4-03, Site Plan Review Committee (SPRC) established	This is an administrative amendment to the Land Development Code (LDC), Chapter 4, Plan Review and Subdivision, Article I, Site Plan Review Procedures, Section 4-03), Site Plan Review Committee (SPRC) established, amending the SPRC coordinating liaison and updating the process for neighborhood meetings.	Approval, 7-0	**03.07.2023**	**03.21.2023**
SE 2023-20	78 East Granada Boulevard, Ormond Memorial Art Museum & Gardens, Cottage Style Garden Shed	This is a request submitted from Stephanie Mason-Teague, Executive Director, Ormond Memorial Art Museum & Gardens, Inc., for a Special Exception to allow the conversion of two parking spaces into a cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line. The subject property is located at 78 East Granada Boulevard and is zoned as B-4 (Central Business) within the Downtown Overlay District.	Approval, 7-0	**03.21.2023**	**NA**

Note: City Commission items are based upon the best information available asof the publishing of this report. City Commission agendas are available at: https://ormondbeach.iqm2.com/citizens/default.aspx?. For additional information, please contact the Planning Department via e-mail at comdev@ormondbeach.org or by telephone at (386) 676-3238.

Board of Adjustment and Appeals - March 1, 2023

Canceled

The Board of Adjustment and Appeals agenda is available at: https://www.ormondbeach.org/218/Board-of-Adjustment-Appeals. For additional information, please contact the Planning Department via e-mail at comdev@ormondbeach.org or by telephone at (386) 676-3238.

Planning public hearing items

Planning Board - March 9, 2023		
ZMA-2023-019	475 North Tymber Creek Road, The Enclave, Zoning Map Amendment	This is a request from Paylin Tymber 1 & 2, LLC, with authorization from the property owner, Enclave of Timber Creek, LLC, for a Zoning Map Amendment for a 26+ acre parcel from expired PRD, Planned Residential Development to SR, Suburban Residential. The property is located at 475 North Tymber Creek Road.
PP-2023-025	Ormond Gateway Preliminary Plat	This is a request from Luke Kilic, P.E. of Zev Cohen and Associates, on behalf of the property owner, Destination Interchange, LLC., for a preliminary plat for an 18.17 acre property located at 1670 North U.S. Highway 1 (Volusia County parcel number: 3126-00-00-0170), 1662 North U.S. Highway 1 (Volusia County parcel number: 3136-01-65-0010), and no address (Volusia County parcel number: 3136-01-66-0070) for an eight (8)-lot commercial subdivision with associated site improvements.
LDC-2021-019	Land Development Code amendment: Section 1-27, Impact fees	This is an administrative amendment to the Land Development Code (LDC), Chapter 1, General Administration, Article IV, Schedule of Development Review and Impact Fees, Section 1-27, Impact Fees, to update impact fee credits, including the deletion of the existing 10% annual reduction of impact fee credits.
2021-019	Impact Fee Study Update, discussion item	City staff have been preforming an impact fee update since 2021 and are at a point where amendments to the Land Development Code and Code of Ordinances will be presented. The purpose of this discussion item is to detail the study history, City Commission direction, answer any questions, and provide next steps in the study implementation.
The Planning Board agenda is available at: https://www.ormondbeach.org/224/Planning-Board. For additional information, please contact the Planning Department via e-mail at comdev@ormondbeach.org or by telephone at (386) 676-3238.		

Neighborhood meeting - 121 East, March 14, 2023

Cobb Cole shall conduct a neighborhood meeting on Tuesday, March 14, 2023 at 6:00 p.m. in the auditorium of the Ormond Beach Regional Library, 30 South Beach Street, Ormond Beach, FL 32174 regarding the development of a maximum of 24 residential units at 121 East Granada Boulevard. The neighborhood meeting is required based on the Ormond Beach land Development Code. The project site is located at 121 East Granada Boulevard, Ormond Beach, FL 32174.
All interested parties are invited to participate in the neighborhood meeting. Additional information can be obtained by contacting Debi LaCroix, CLA, Cobb Cole by telephone at (386) 323-9263, by email to Debi.LaCroix@CobbCole.com, or the City of Ormond Beach Planning Department at (386) 676-3238.

Public Meeting - Impact Fee Study Update, March 22, 2023 - 5:30pm - Room 103

Public meeting to discuss the impact fee study update. Please see webpage: https://www.ormondbeach.org/1028/Impact-Fees. Meeting is at 5:30pm in Room 103 of the Ormond Beach City Hall building at 22 South Beach Street. For additional information, please contact the Planning Department via e-mail at comdev@ormondbeach.org or by telephone at (386) 676-3238.

Public Meeting - Impact Fee Study Update, March 27, 2023 - 10:00am - Room 103

Public meeting to discuss the impact fee study update. Please see webpage: https://www.ormondbeach.org/1028/Impact-Fees. Meeting is at 10:00am in Room 103 of the Ormond Beach City Hall building at 22 South Beach Street. For additional information, please contact the Planning Department via e-mail at comdev@ormondbeach.org or by telephone at (386) 676-3238.

Monthly Financial Status Report
January 2023

This report provides the City Commission with an update of the financial status of the City's operating funds. The purpose of the report is to identify any significant variances from the adopted budget and to identify any adverse trends and their implications for the current and future years' budgets. Revenues at or above 33% benchmark is favorable, while expenses at or below the 33% benchmark is also favorable. The first table below provides a summary of the revenues and expenditures to date by fund. Additional detail by fund type is provided in subsequent tables.

Fund	Final Budget	YTD Actual Revenues	YTD %	YTD Actual Expenses	YTD %
001 - General Fund	41,522,489	18,574,757	45%	12,430,261.65	30%
104 - Community Redevelopment	1,437,353	997,577	69%	104,296.00	7%
106 - Ormond Crossing	296,171	192,922	65%	0.00	0%
107 - Stormwater	2,525,500	862,276	34%	518,744.09	21%
108 - Airport	288,998	1,952,301	676%	663,157.47	229%
109 - Local Law Enforcement Trust Fund	-	22,485	0%	11,850.00	0%
110 - Economic Development Fund	1,112,000	100,000	0%	1,033.05	0%
113 - Pension Contribution Pass Through	800,000	-	0%	0.00	0%
115 - Recreation Facility Fee	50,275	40,986	82%	0.00	0%
116 - Grant Fund	-	-	0%	130,020.00	0%
205 - Financing Debt Service	651,688	216,000	33%	200,176.27	0%
210 - Debt Service GOB 2003	118,674	19,195	16%	1,499.85	0%
211 - Debt Service 2005 CIP Note	162,202	52,332	32%	5,643.93	3%
220 - Debt Service GOB 2010	352,327	307,049	87%	43,239.38	12%
301 - General Capital Improvement	2,190,745	556,935	25%	517,550.33	24%
302 - General Equipment & Vehicle	347,000	184,985	53%	236,801.00	68%
305 - Public Safety Vehicle & Equip	934,000	552,687	59%	125,616.94	13%
308 - Transportation	2,262,489	646,450	29%	886,465.23	39%
310 - Recreation Impact Fee	215,000	14,686	7%	0.00	0%
316 - Local Roads Impact Fee	89,000	16,036	18%	0.00	0%
317 - Facilities Renewal & Replacement	506,470	441,380	87%	144,731.41	29%
318 - Stormwater Impact Fee	50,000	20,417	41%	0.00	0%
401 - Water/Wastewater Operating Fund	24,001,431	7,151,627	30%	7,393,528.45	31%
408 - Water/Wastewater E&V Fund	368,000	50,000	14%	0.00	0%
409 - Water/Wastewater Capital	9,494,412	1,248,746	13%	453,755.45	5%
414 - Water/Wastewater Consolidated Debt	4,753,500	1,581,168	33%	195,757.74	4%
433 - Reuse Impact Fee Fund	850,000	-	0%	0.00	0%
434 - Water Impact Fee	725,000	215,841	30%	0.00	0%
435 - Wastewater Impact Fee	4,300,000	264,870	6%	0.00	0%
460 - Solid Waste	9,827,200	3,416,993	35%	5,004,049.68	51%
502 - Workers Compensation	801,612	261,750	33%	320,736.11	40%
504 - General Liability	1,460,253	498,375	34%	1,215,646.11	83%
Total	**$ 112,493,789**	**$ 40,460,824**	**36%**	**$ 30,604,560**	**27%**

The airport fund has revenue and expense impacts from FAA grants.

General Fund Revenues

Ad valorem Taxes- Annual revenue is estimated at $14.5 million and is based on the taxable value ($4.6 billion) and the General Fund operating millage (3.761). Actuals to date are $12.5 or 86% of the budgeted amount.

Utility Taxes- The City levies a utility tax of 10% on electric and gas sales. To date, the City has collected $1.2 million.

Communication Taxes – Communication service taxes received to date are $290,389.

Business Tax –Business tax collections amounted to $44,448. The majority of business taxes are collected in the last quarter of the fiscal year.

Licenses, Permits and Franchise Fees – This revenue source includes building permits, plan review and franchise fees. The City has franchise fee agreements which require electric and natural gas providers to remit 6% of gross sales to the City. Payments made to the City for franchise fees often occur several months after they are collected by FPL and other providers. Collections through January 2023 are $768,479.

Intergovernmental – This revenue source includes municipal revenue sharing and sales tax both of which were expected to be negatively impact by the COVID pandemic. Through January 2023, the City received a total of $1.3 million in this category.

Charges for Services – This category includes the County library lease and Leisure Services user charges. Additional revenue from contracts for right of way mowing, traffic signal maintenance, and street lighting are included in this category. The City received a total of $217,181 in this category through January.

Fines and Forfeitures – Traffic, code enforcement, and court fines make up this revenue category. Revenues were $16,531.

Miscellaneous Revenue – Interest and internal service charges for Fleet and Engineering are included in this revenue category. Revenues collected were $710,419.

Transfers In –Transfers have been recorded in the amount of $2.1 million.

General Fund Revenues - January 2023

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
Property Tax	$ 14,504,485	$ 12,466,045	$ 2,038,440	85.9%	$ 11,321,094	$ 1,144,952	10.11%
Utility Taxes	4,260,000	1,189,736	3,070,264	27.9%	1,075,662	114,074	10.60%
Communication Tax Receipts	1,590,000	290,389	1,299,611	18.3%	280,029	10,361	3.70%
Business Tax	283,500	44,448	239,052	15.7%	47,243	(2,795)	-5.92%
Licenses, Permits & Fees	4,654,350	768,479	3,885,871	16.5%	787,743	(19,264)	-2.45%
Intergovernmental	4,890,300	1,278,489	3,611,811	26.1%	1,143,622	134,867	11.79%
Charges for Services	968,000	217,181	750,819	22.4%	249,657	(32,476)	-13.01%
Fines & Forfeitures	73,000	16,531	56,469	22.6%	11,869	4,662	39.28%
Miscellaneous Revenues	3,434,319	710,419	2,723,900	20.7%	611,353	99,066	16.20%
Transfers In	4,779,108	1,593,036	3,186,072	33.3%	1,556,564	36,472	2.34%
Use of Fund Balance	2,085,427	-	2,085,427	0.0%	-	-	0.00%
	$ 41,522,489	$ 18,574,754	$ 22,947,735	44.7%	$ 17,084,835	$ 1,489,918	8.72%

General Fund Reserve – This category includes commitments made by the City Commission by resolution or Commission comments at the City Commission meeting.

Purpose	Amount	CC Meeting Date	Approval Process
JPA Conversaton Land	$158,000.00	8/16/2022	Discussion Item-Tentaively Approved
Fire Station 91 Generator	$80,942.00	1/24/2023	2023-39
SONC Backboards	$90,000.00	1/10/2023	2023-21
Police and Fire Impact Study	$31,500.00	10/5/2022	Resolution 2022-121

General Fund Expenditures

Personnel Services - This category includes wages and benefits paid by the City. Personnel services account for $26.5 million of the General Fund gross budget. Expenditures through January 2023 were $8.1 million or 30.4% of the budget amount.

Operating Expenditures - This category includes $12 million for maintenance contracts, utilities, tools, fuel, insurance, supplies and contracts for service with community agencies. Through January 2023, $3.5 has been spent.

Grants and Aids - This category includes contributions made to not for profit organizations which were budgeted at $208,414. $90,223 has been expended year to date.

Transfers Out – The budget for transfers from the General Fund to other funds is $2.2 million with $748,776 made during January 2023.

Financial Status Report:
January 2023

General Fund Expenditures - January 2023

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
City Commission	$ 393,342	$ 135,746	$ 257,596	34.5%	$ 117,359	$ 18,386	15.67%
City Administration	750,099	216,315	533,784	28.8%	218,420	(2,105)	-0.96%
Support Services	458,818	149,321	309,497	32.5%	146,026	3,295	2.26%
City Attorney	861,962	248,412	613,550	28.8%	278,583	(30,171)	-10.83%
Legislation & Policy	2,464,221	749,794	1,714,427	30.4%	760,389	(10,595)	-1.39%
Finance	1,081,904	309,940	771,964	28.6%	332,586	(22,646)	-6.81%
Information Technology	1,140,518	354,760	785,758	31.1%	294,200	60,560	20.58%
Human Resources	505,117	211,791	293,326	41.9%	146,554	65,237	44.51%
Planning	711,727	216,687	495,040	30.4%	220,164	(3,477)	-1.58%
Building Inspections	1,163,670	321,055	842,615	27.6%	339,043	(17,988)	-5.31%
Police Administration	1,098,183	289,272	808,911	26.3%	252,275	36,997	14.67%
Police Operations	6,871,060	2,173,541	4,697,519	31.6%	1,954,732	218,810	11.19%
Community Outreach	587,579	157,762	429,817	26.8%	165,314	(7,552)	-4.57%
Criminal Investigations	1,491,988	406,010	1,085,978	27.2%	389,411	16,598	4.26%
Community Services	438,297	139,794	298,503	31.9%	121,626	18,168	14.94%
Records	194,023	47,703	146,320	24.6%	55,722	(8,018)	-14.39%
Neighborhood Impr.	460,629	115,943	344,686	25.2%	138,649	(22,706)	-16.38%
Police	11,141,759	3,330,026	7,811,733	29.9%	3,077,729	252,298	8.20%
Fire	6,731,586	2,252,630	4,478,956	33.5%	2,267,836	(15,205)	-0.67%
Streets	2,525,485	665,303	1,860,182	26.3%	669,004	(3,701)	-0.55%
Engineering	1,201,983	358,210	843,773	29.8%	345,522	12,688	3.67%
Fleet	1,908,683	534,812	1,373,871	28.0%	539,812	(5,000)	-0.93%
Public Works	5,636,151	1,558,325	4,077,826	27.6%	1,554,338	3,987	0.26%
Economic Development	400,799	163,816	236,983	40.9%	130,141	33,676	25.88%
Building Maintenance	928,047	325,289	602,758	35.1%	270,954	54,335	20.05%
Administration	795,835	218,841	576,994	27.5%	254,036	(35,195)	-13.85%
Nova Recreation	350,757	95,507	255,250	27.2%	90,430	5,076	5.61%
S. Ormond Neigh. Center	369,318	91,873	277,445	24.9%	63,652	28,221	44.34%
Athletic Fields Mnt.	1,586,785	443,882	1,142,903	28.0%	391,783	52,099	13.30%
Parks	2,445,146	670,028	1,775,118	27.4%	604,803	65,225	10.78%
Environmental Learning	176,349	50,107	126,242	28.4%	39,199	10,908	27.83%
The Casements	357,694	102,666	255,028	28.7%	89,131	13,535	15.19%
Performing Arts Center	301,196	86,151	215,045	28.6%	90,778	(4,627)	-5.10%
Senior Center	99,637	27,237	72,400	27.3%	19,216	8,021	41.74%
Community Events	252,034	52,856	199,178	21.0%	56,497	(3,641)	-6.44%
Leisure Services	7,662,798	2,164,437	5,498,361	28.2%	1,970,479	193,959	9.84%
Grants & Aid*	91,528	48,224	43,305	52.7%	47,832	392	0.82%
Transfers	2,246,345	748,776	1,497,569	33.3%	953,780	(205,004)	-21.49%
Contingency	544,366	-	544,366	0.0%	-	-	0.00%
	$ 41,522,489	$ 12,430,262	$ 29,092,227	29.9%	$ 12,095,069	$ 335,193	2.77%

Downtown Redevelopment Trust

Revenues – Budgeted revenues are comprised of City, County, Hospital, and special district property taxes levied on property within the Downtown Redevelopment boundaries and amount to $911,308 with $822,397 collected year to date. The City's budgeted contribution is $525,545.

Expenditures – A total of $55,680 has been expended for capital projects and service contracts (Ormond Main Street and property improvement grants).

Downtown Redevelopment Fund Revenues - January 2023

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
Grant	$ -	$ -	$ -	0.0%	$ -	$ -	0.0%
Local Units	911,308	822,397	88,911	90.2%	810,205	12,192	1.5%
Miscellaneous	500	-	500	0.0%	30	(30)	-100.0%
Transfers In	525,545	175,180	350,365	33.3%	174,748	432	0.2%
Use of Fund Balance		-	-	0.0%	-	-	0.0%
	$ 1,437,353	$ 997,577	$ 439,776	69.4%	$ 984,983	$ 12,594	1.28%

Downtown Redevelopment Fund Expenditures

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
Planning	$ 66,050	$ 35,350	$ 30,700	53.5%	$ 16,600	$ 18,750	113.0%
Public Works	148,961	22,821	126,140	15.3%	182	22,639	12428.0%
Grants	200,000	-	200,000	0.0%	-	-	0.0%
Leisure Services	184,500	46,125	138,375	25.0%	45,775	350	0.8%
Contingency	837,842	-	837,842	0.0%	-	-	0.0%
	$ 1,437,353	$ 104,296	$ 1,333,057	7.3%	$ 62,557	$ 41,739	66.72%

Stormwater Fund

Revenues – The primary revenue source is stormwater user fees. User fees were budgeted at $2.525 million with $862,276 million received through January 2023.

Expenditures – The budget for stormwater maintenance is $2.5 million with $444,864 spent to date. Transfers of $73,880 have also been made year to date.

Stormwater Fund Revenues - January 2023

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
Grants	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
Stormwater Fees	2,525,000	862,276	1,662,724	34.1%	852,952	9,325	1.09%
Miscellaneous	500	-	500	0.0%	89	(89)	-100.00%
Intergovernmental	-	-	-	0.0%	-	-	0.00%
Use of Fund Balance	-	-	-	0.0%	-	-	0.00%
	$ 2,525,500	$ 862,276	$ 1,663,224	34.1%	$ 853,041	$ 9,236	1.08%

Stormwater Fund Expenditures

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
Maintenance	2,208,419	444,864	1,763,555	20.1%	387,686	57,178	14.75%
Engineering Support	$ 74,939	$ -	$ 74,939	0.0%	$ -	$ -	0.00%
Transfers Out	221,640	73,880	147,760	33.3%	65,768	8,112	12.33%
Contingency	20,502	-	20,502	0.0%	-	-	0.00%
	$ 2,525,500	$ 518,744	$ 2,006,756	20.5%	$ 453,454	$ 65,290	14.40%

Water and Wastewater Fund

Revenues – The primary revenue sources are water and sewer user fees. User fees were budgeted at $20.9 million with $7 million collected year to date. The budget also includes $425,887 in transfers.

Expenditures – Operating expenses for utility billing and water/wastewater public works services is budgeted in the amount of $12.6 million with $3.6 million expended to date. The budget also includes $11.4 million in transfers of which $3.8 million has been made through January 2023.

Water/Wastewater Fund Revenues - January 2023

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
Water/Sewer Charges	$ 20,930,000	$ 7,009,663	$ 13,920,337	33.5%	$ 6,645,605	$ 364,059	5.48%
Miscellaneous	15,000	-	15,000	0.0%	655	(655)	-100.00%
Transfers In	425,887	141,964	283,923	33.3%	116,684	25,280	21.67%
Intergovernmental	-	-	-	0.0%	-	-	0.00%
Use of Fund Balance	2,630,544	-	2,630,544	0.0%	-	-	0.00%
	$ 24,001,431	$ 7,151,627	$ 16,849,804	29.8%	$ 6,762,944	$ 388,684	5.75%

Water/Wastewater Fund Expenditures

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
Utility Billing	$ 2,467,103	$ 541,912	$ 1,925,191	22.0%	$ 432,514	$ 109,398	25.29%
Water Production	3,803,802	1,123,486	2,680,316	29.5%	878,249	245,237	27.92%
Water Distribution	1,431,645	468,424	963,221	32.7%	434,475	33,949	7.81%
Wastwater Treatment	3,352,389	994,146	2,358,243	29.7%	843,813	150,333	17.82%
Wastewater Collection	1,591,328	480,504	1,110,824	30.2%	442,948	37,556	8.48%
Transfers Out	11,355,164	3,785,056	7,570,108	33.3%	3,530,256	254,800	7.22%
Contingency	-	-	-	#DIV/0!	-	-	0.00%
	$ 24,001,431	$ 7,393,528	$ 16,607,903	30.8%	$ 6,562,256	$ 831,273	12.67%

Solid Waste Fund

Revenues – The primary revenue source is solid waste franchise and user fees. To date $526,375 in franchise fees and $2,889,148 in user fees have been collected.

Expenditures – Personnel, operating, capital expenses and transfers expended to date are $5 million. This has seen a tremendous increase over this time in prior year due to hurricane Ian. Hurricane Ian has accounted for $1.7 million within this fund thus far.

Solid Waste Fund Revenues - January 2023

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
Franchise Fees	$ 1,648,000	$ 526,375	$ 1,121,625	31.9%	$ 520,007	$ 6,368	1.22%
User Fees	8,178,200	2,889,148	$ 5,289,052	35.3%	2,753,099	136,048	4.94%
Miscellaneous	1,000	1,471	$ (471)	147.1%	38	1,433	3770.42%
Intergovernmental	-	-	$ -	0.0%	-		0.00%
Use of Fund Balance	-	-	$ -	0.0%	-	-	0.00%
	$ 9,827,200	$ 3,416,993	$ 6,410,207	34.8%	$ 3,273,144	$ 143,849	4.39%

Solid Waste Fund Expenditures

	Final Budget	YTD FY 2022-23	$ Variance	% of Budget	YTD FY 2021-22	$ Variance	% Variance
Collection & Disposal	$ 7,306,235	$ 4,188,175	$ 3,118,060	57.3%	$ 2,496,110	$ 1,692,065	67.79%
Recycling	1,133,960	367,887	766,073	32.4%	366,583	1,304	0.36%
Engineering		-	-	0.0%	-	-	0.00%
Transfers Out	1,343,962	447,988	895,974	33.3%	426,248	21,740	5.10%
Contingency	43,043	-	43,043	0.0%	-	-	0.00%
	$ 9,827,200	$ 5,004,050	$ 4,823,150	50.9%	$ 3,288,941	$ 1,715,109	52.15%

Economic Development Monthly Report

February, 2023

Ormond Beach December Employment

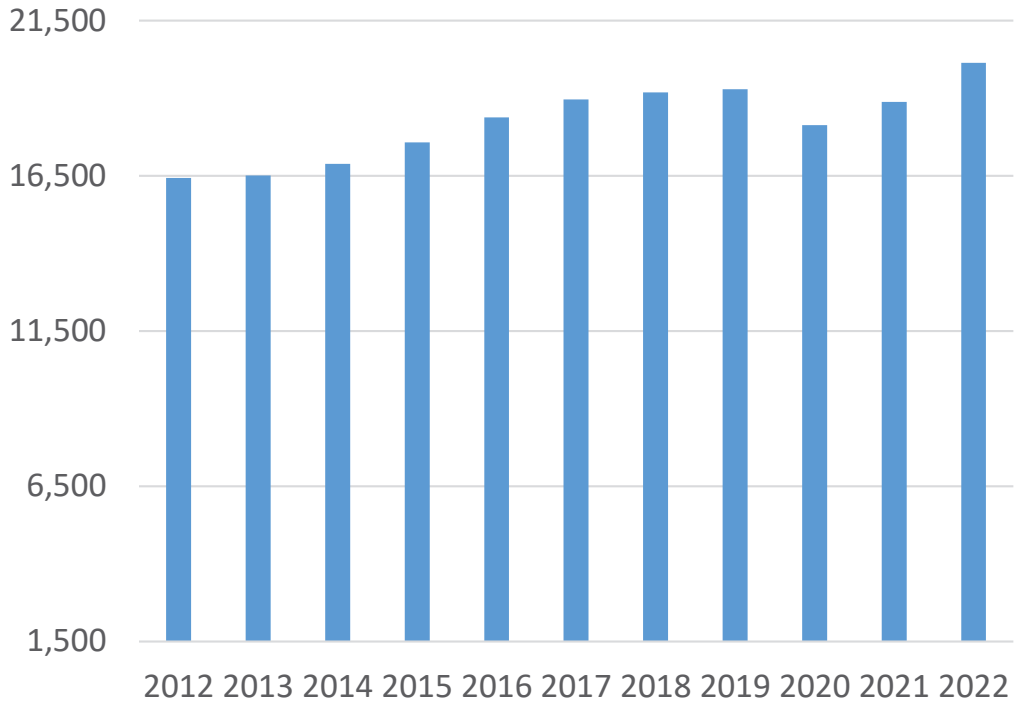
20,137

This is up 3.9% from last year

Ormond Beach Unemployment Rate

2.2%

Ormond Beach Employment Trend



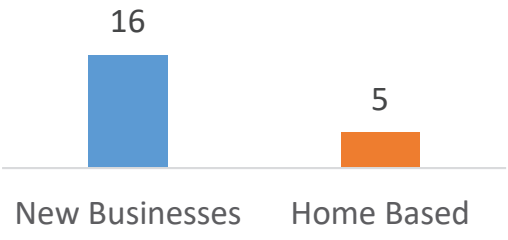
Total Permits Issued February

424

Permit Valuation for February

$8.8m

Total OB Business Tax Receipts in February



Commercial Real Estate Key Indicators

Current Quarter	RBA	Vacancy Rate	Market Rent	Availability Rate
Office	1,609,712	6.1%	$20.48	7.1%
Industrial	2,934,591	1.5%	$10.41	1.0%
Retail	4,114,636	3.2%	$17.14	3.4%

*RBA = Rentable Building Area The number shown is the total RBA for all buildings in that asset class in Ormond Beach.

This Month's Takeaways

February, 2023

Notes and Updates:

- **Employment for November** was 20,137 up 3.9% from the same month last year. The unemployment rate is 2.2% which is down from 2.8% this time last year. Through year end December 2022 employment was up 4.5% (860) since January of 2022. There was a slight decline in overall employment in October and November.

- **Permits and Business Tax Receipt** data for February. Total Permits issued since January is 909 with an associated construction value of $20 million. Business Tax Receipts to new commercial businesses in Ormond Beach since January is 41 for bricks and mortar locations and 18 for Home Based Businesses.

- **The commercial real estate market** remains competitive regionally. Vacancy is low among all the asset classes especially within industrial and retail. Vacancy rates continue to tighten as inventory among industrial space is harder to find. Rental rates continue to have year-over-year increases as supply is tighter demand increases. There has been high activity generally across the Volusia County area within commercial real estate.

- **The latest Florida & Metro Forecast** suggests the US economy is either in or on the brink of a recession but further suggests the recession in Florida will be mild with an extended period of slower economic growth. The report goes on to suggest the growth in the economic indicators is expected to be about average for the Deltona-Daytona-Ormond MSA. The labor market will experience an about-average level of annual employment growth in the state at -0.1 percent leading to an unemployment rate of 5.5%. For the region the 'Other Services' sector will experience the fastest growth (3.8%) followed by the 'Information' sector (3.1%) while the largest contraction in growth will be in Construction and Mining and Manufacturing sector (-2.9% and -2.4% respectively). The full report can be accessed at the following link: **https://tinyurl.com/5xca8637**

- **Considering any economic forecasts, SizeUp Ormond Beach** is a free tool available to Ormond Beach businesses that allows small businesses access to data and market research to rank their business performance to industry competitors. The tool can also be used to identify suppliers and Business to Business customers. It can be accessed at the following link: **https://sizeup.info/ormondbeach**

Thank you,
Brian Rademacher
Economic Development Director

Data Sources: Employment Data from FL DEO LAUS; Permit and BTR data from Dept. of Building 02/01-02/24 Real Estate data from CoStar provided by Adams Cameron Realtors.

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 8.A
Section:	PUBLIC HEARINGS		
Item Category:	Public Hearing - Ordinances	**Res./Ord. No:**	2023-16
Strategic Goal:	Community Development - Other		
Department :	Planning & Building		
Subject:	LDC Amendment: Section 1-28, Utility Installation Fees (SECOND READING)		
Budget Impact:	The LDC amendment seeks to assess the actual costs of meter installation and the budget impact should be neutral.		
Summary:	This is an administrative amendment to the LDC Utility installation fees, to update the fee schedule for meter costs.		
Recommended Action:	It is recommended the City Commission approve the administrative amendment to the Land Development Code (LDC), Chapter 1, General Administration, Article IV, Schedule of Development Review and Impact Fees, Section 1-28, Utility installation fees, to update the fee schedule for meter costs, as shown in the attached Ordinance. The Planning Board recommended approval of the Land Development Code amendment by a 7-0 vote.		
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341		

Approval:

Kelly McGuire, Finance Director	3/8/2023	
Claire Whitley, Assistant City Manager	3/8/2023	
Joyce Shanahan, City Manager	3/14/2023	

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Steven Spraker, Planning Director

Date: March 21, 2023

Subject: LDC Amendment: Section 1-28, Utility Installation Fees (SECOND READING)

Commission Goal: Community Development - Other

Introduction

This is an administrative amendment to the Land Development Code (LDC), Chapter 1, General Administration, Article IV, Schedule of Development Review and Impact Fees, Section 1-28, Utility installation fees, to update the fee schedule for meter costs.

Background

Section 1-28, Utility installation fees, of the LDC contains the required fees for meter installation. The purpose of this amendment is to update the meter installation fee schedule consistent with current costs provided by Utilities Department staff for the meter and installation.

Discussion

The proposed amendment seeks to update the LDC to assess the meter costs to construction projects in need of a utility meter. The amendment seeks to assess the costs of the meter to the construction project.

PLANNING BOARD REVIEW
The Planning Board reviewed the LDC amendment at the February 9, 2023 meeting and recommended approval by a 7-0 vote. There were no individuals who spoke for or against the amendment. The Planning Board minutes are attached to this item.

Budget Impact

The LDC amendment seeks to assess the actual costs of meter installation and the budget impact should be neutral.

Citizen Impact

There is no citizen impact anticipated with this LDC amendment.

Recommendation

It is recommended the City Commission approve the administrative amendment to the Land Development Code (LDC), Chapter 1, General Administration, Article IV, Schedule of Development Review and Impact Fees, Section 1-28, Utility installation fees, to update the fee schedule for meter costs, as shown in the attached Ordinance. The Planning Board recommended approval of the Land Development Code amendment by a 7-0 vote.

Attachments:

1. 23-16 LDC Amendment, Utility Installation Fees, Section 1-28 (P23-0035G)
2. 02.09.2023, LDC Amendment, Section 1-28, Utility installation fees (meters)
3. Draft PB Minutes, Utility Installation Fees

Approvals:

Kelly A. McGuire

Kelly McGuire, Finance Director — Date: March 08, 2023

Claire Whitley, Assistant City Manager — Date: March 08, 2023

Joyce Shanahan

Joyce Shanahan, City Manager — Date: March 14, 2023

ORDINANCE NO. 2023-16

AN ORDINANCE AMENDING CHAPTER 1, GENERAL ADMINISTRATION, ARTICLE IV, SCHEDULE OF DEVELOPMENT REVIEW AND IMPACT FEES, SECTION 1-28, UTILITY INSTALLATION FEES, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY UPDATING THE FEE SCHEDULE FOR METER COSTS; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, this is a request to amend Chapter 1, General Administration, Article IV, Schedule of Development Review and Impact Fees, Section 1-28, Utility installation fees, of the City of Ormond Beach *Land Development Code*, to update the fee schedule for meter costs, and

WHEREAS, the local planning agency, being the Planning Board of the City of Ormond Beach, has conducted a public hearing on February 9, 2023, on the requested amendments and has made recommendations thereon to the City Commission, and

WHEREAS, all applicable notice requirements of Section 166.041(3)(a), *Florida Statutes*, have been complied with, and

WHEREAS, the City Commission finds the amendment to be consistent with the provisions of the *Comprehensive Plan* of the City of Ormond Beach, and in the overall best interest of the public health, safety and welfare, now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. Section 1-28, Utility installation fees, of Article IV, Schedule of Development Review and Impact Fees, of Chapter 1, General Administration, of the City of Ormond Beach *Land Development Code*, is hereby amended as follows:

Sec. 1-28. Utility installation fees.

(a) *Potable water.* Meter installation fees for connection to the potable water system shall be paid prior to the issuance of a building permit or the provision of such service in accordance with the following schedule:

~~Connection Meter Size~~	~~Visual Read~~	~~Charges Touch Read~~	~~Radio Read~~
~~¾ inch~~	~~$200.00~~	~~$250.00~~	~~$360.00~~
~~1-inch~~	~~$270.00~~	~~$310.00~~	~~$420.00~~
~~1½ inches~~	~~N/A~~	~~N/A~~	~~$550.00~~
~~2 inches~~	~~N/A~~	~~N/A~~	~~$680.00~~
~~3 inches~~	~~N/A~~	~~N/A~~	~~$2,300.00~~
~~4 inches and over~~	~~N/A~~	~~N/A~~	~~Actual material and labor cost~~

Connection Meter Size	Meter Costs
¾-inch	$425.00
1-inch	$575.00
1½ inches	$950.00
2 inches	$1,275.00
3 inches	$3,650.00
4 inches and over	Actual material and labor cost

The actual connection charge may be greater than said minimum charge, if the actual cost to the city is greater than the minimum charges set forth in the schedule in this subsection.

(b) *Sanitary sewer. ***No change to existing text****

(c) *Reclaimed water. ***No change to existing text****

SECTION TWO. All Ordinances or parts of Ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION THREE. In the event any word, phrase, clause, sentence, paragraph, term, or provision of this Ordinance shall be held to be invalid by a court of competent jurisdiction, such judicial determination shall not affect any other word, phrase, clause, sentence, paragraph, term or provision, of this Ordinance, and the remainder of this Ordinance shall remain in full force and effect.

SECTION FOUR. This Ordinance shall take effect immediately upon its adoption.

PASSED UPON at the first reading of the City Commission, this 7th day of March, 2023.

PASSED UPON at the second and final reading of the City Commission, this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

STAFF REPORT

City of Ormond Beach
Department of Planning

MEETING DATE: February 9, 2023

SUBJECT: LDC amendment: Section 1-28, Utility installation fees (meters)

APPLICANT: Administrative

NUMBER: LDC 2023-016

PROJECT PLANNER: Steven Spraker, AICP, Planning Director

INTRODUCTION: This is an administrative amendment to the Land Development Code (LDC), Chapter 1, General Administration, Article IV, Schedule of Development Review and Impact Fees, Section 1-28, Utility installation fees, to update the fee schedule for meter costs.

BACKGROUND: Section 1-28, Utility installation fees, of the Land Development Code contains the required fees for meter installation. The purpose of this amendment is to update the meter installation fee schedule consistent with current costs provided by Utilities Department staff for the meter and installation.

ANALYSIS: The proposed Land Development Code amendment is shown below. The underlined text are additions to the original text and ~~strike through~~ are the deleted text of the amendment.

Section 1-28 of the Land Development Code:

Sec. 1-28. Utility installation fees.

(a) *Potable water.* Meter installation fees for connection to the potable water system shall be paid prior to the issuance of a building permit or the provision of such service in accordance with the following schedule:

~~Connection Meter Size~~	~~Visual Read~~	~~Charges Touch Read~~	~~Radio Read~~
~~¾ inch~~	~~$200.00~~	~~$250.00~~	~~$360.00~~
~~1 inch~~	~~$270.00~~	~~$310.00~~	~~$420.00~~
~~1½ inches~~	~~N/A~~	~~N/A~~	~~$550.00~~
~~2 inches~~	~~N/A~~	~~N/A~~	~~$680.00~~
~~3 inches~~	~~N/A~~	~~N/A~~	~~$2,300.00~~
~~4 inches and over~~	~~N/A~~	~~N/A~~	~~Actual material and labor cost~~

Connection Meter Size	Meter Costs
¾-inch	$425.00
1-inch	$575.00
1½ inches	$950.00
2 inches	$1,275.00
3 inches	$3,650.00
4 inches and over	N/A

The actual connection charge may be greater than said minimum charge, if the actual cost to the city is greater than the minimum charges set forth in the schedule in this subsection.

(b) *Sanitary sewer. ***No change to existing text****

(c) *Reclaimed water. ***No change to existing text****

CONCLUSION: Section 1-15(d)(3) of the Land Development Code requires certain criteria must be evaluated before adoption of a Land Development Code amendment when making their recommendation, as follows:

1. **The proposed development conforms to the standards and requirements of this Code and will not create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.**

   The proposed amendment seeks to update the Land Development Code to assess the meter costs to construction projects in need of a utility meter. The amendment seeks to assess the costs of the meter to the construction project. It is not expected that the proposed Land Development Code amendment would create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.

2. **The proposed development is consistent with the Comprehensive Plan.**

   The proposed Land Development Code amendment is consistent with the Comprehensive Plan. Objective 2.1 of the Future Land Use Element of the Comprehensive Plan discussed the need to update Land Development Code regulations.

3. **The proposed development will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells.**

   The proposed Land Development Code amendment does not approve any site-specific development and will not have an adverse impact on environmentally sensitive lands.

4. **The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties**.

   The proposed Land Development Code amendment does not approve any site-specific development and will not have any impacts on surrounding properties.

5. **There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds.**

   The proposed Land Development Code amendment seeks to modify to expiration timeframe for variance approvals. The amendment would not have a negative impact to public facilities.

6. **Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

7. **The proposed development is functional in the use of space and aesthetically acceptable.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

8. **The proposed development provides for the safety of occupants and visitors.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

9. **The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

10. **The testimony provided at public hearings**.

    There has not been a public hearing at this time. The comments from the Planning Board meeting will be incorporated into the City Commission packet.

RECOMMENDATION:

It is recommended that the Planning Board **APPROVE** the administrative amendment to the Land Development Code (LDC), Chapter 1, General Administration, Article IV,

Schedule of Development Review and Impact Fees, Section 1-28, Utility installation fees, to update the fee schedule for meter costs, as shown in Attachment 1.

Attachments:

Attachment 1: Proposed Land Development Code amendment

Chapter 1 – General Administration, Article IV. – Schedule of Development Review and Impact Fees

Sec. 1-28. Utility installation fees.

(a) *Potable water.* Meter installation fees for connection to the potable water system shall be paid prior to the issuance of a building permit or the provision of such service in accordance with the following schedule:

~~Connection Meter Size~~	~~Visual Read~~	~~Charges Touch Read~~	~~Radio Read~~
~~¾-inch~~	~~$200.00~~	~~$250.00~~	~~$360.00~~
~~1-inch~~	~~$270.00~~	~~$310.00~~	~~$420.00~~
~~1½ inches~~	~~N/A~~	~~N/A~~	~~$550.00~~
~~2 inches~~	~~N/A~~	~~N/A~~	~~$680.00~~
~~3 inches~~	~~N/A~~	~~N/A~~	~~$2,300.00~~
~~4 inches and over~~	~~N/A~~	~~N/A~~	~~Actual material and labor cost~~

Connection Meter Size	Meter Costs
¾-inch	$425.00
1-inch	$575.00
1½ inches	$950.00
2 inches	$1,275.00
3 inches	$3,650.00
4 inches and over	N/A

The actual connection charge may be greater than said minimum charge, if the actual cost to the city is greater than the minimum charges set forth in the schedule in this subsection.

(b) *Sanitary sewer. ***No change to existing text****

(c) *Reclaimed water. ***No change to existing text****

DRAFT

Planning Board minutes from February 9, 2023

ITEM:

SE 2023-016

LDC amendment: Section 1-28, Utility installation fees (meters)

Florida Building Code will be submitted. Ms. Mason-Teague went on to explain that alternative locations were considered but there were many different elevations through the gardens, a large turtle pond and locating closer to the building would be disruptive to the gardens in terms of paths that would have to altered and possibly trees and shrubbery removed. Also, she explained that the Community does not want to see a change in the gardens.

Mr. du Moulin inquired how long the pod has been leased. Ms. Mason-Teague explained two years with no complaints.

Ms. Shull asked what type of equipment will be stored. Ms. Mason-Teague explained no gas equipment will be stored. Yellowstone provides the landscaping with gas powered equipment.

Chairman Thomas asked if the shed could have been moved on the other side where the stone is. Ms. Mason-Teague explained that there is one entryway in front of the cottage and a second entryway adjacent where the handicapped parking is and it would be like locating the building in the middle of the parking lot.

Mr. Railsback asked about consideration in locating it opposite the driveway in the natural area. Ms. Mason-Teague stated there were setback issues with that location.

Mr. Scudiero asked why the storage was not planned to be in the new building. Ms. Mason-Teague explained that where the storage was, it is an all new structure with the expansion of the gallery space.

Mr. Galloway motioned to approve SE 2023-20, 78 East Granada Boulevard, Ormond Memorial Art Museum & Gardens, Cottage Style Garden Shed. Mr. Jorczak seconded it. Vote was called, and the motion was approved (7-0).

B. <u>LDC 2023-016, Land Development Code amendment: Section 1-28, Utility installation fees</u>

Mr. Spraker, Planning Director, stated that this is a Land Development Code amendment to update the fee schedule for meter costs. He continued that Planning staff worked with Utility staff and noted utility costs have increased over the years. He explained that the slide displayed is the actual costs for installing meters for new residential and commercial development.

Mr. Scudiero asked why the Ordinance language could not be worded to allow an increase in costs instead of having to bring it back to the Board for review each time. Mr. Spraker explained that there would be too much uncertainty for anyone building. Whereas now, they can check the Ordinance and know the cost.

DRAFT

Mr. Jorczak motioned to approve LDC 2023-017, Land Development Code amendment: Section 1-28, Utility installation fees. Ms. Shull seconded it. Vote was called, and the motion was approved (7-0).

C. LDC 2023-017, Land Development Code amendment: Section 2-50(n) Fences and walls

Mr. Spraker, Planning Director, stated that this is an administrative amendment to the Land Development Code, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the Site Plan Review Committee (SPRC).

Mr. du Moulin asked if this is to provide more flexibility in the fence location similar to what was done for his HOA so that it looks good. Mr. Spraker responded that it would but only through a multi-departmental review such as utilities, landscaping, site visibility, etc.

Planning Board members discussed the fence requirements along the side, side corner, and waterfront yards.

Mr. Railsback inquired if the amendment language will prevent going beyond what is conforming. Mr. Spraker confirmed that the maximum relief would be to the property line and the amendment does not allow any fences in any right-of-way.

Mr. Galloway motioned to approve LDC 2023-017, Land Development Code amendment: Section 2-50(n) Fences and Walls. Ms. Shull seconded it. Vote was called, and the motion was approved (7-0).

D. LDC 2023-018, Land Development Code amendment: Section 4-03, Site Plan Review Committee (SPRC) established

Mr. Spraker, Planning Director, stated that this is an administrative amendment to the Land Development Code Site Plan Review Committee section, amending the SPRC coordinating liaison and updating the process for neighborhood meetings.

Mr. Spraker continued that there are two parts to the proposed amendment: 1) Change the existing language designating a city SPRC coordinating liaison to assign the Planning Director (or designee) instead, and 2) Changes regarding Neighborhood meetings by a) amending the meeting name to "neighborhood" for consistency b) requiring a meeting pre-approval with written approval from city staff at least five business days before the applicant mails meeting notice; c) requiring meetings to be held Monday through Thursday between 5 p.m. – 8 p.m.; d) requiring site postings, one for each frontage with 2' by 3' signs; and e) requiring a written summary of the meeting to be provided to city staff.

There was discussion regarding frequency, notice, and posting of neighborhood meetings among the Board members. Mr. Spraker clarified that this amendment is to require the one minimum meeting and the 2' x 3' sign posting (same as the variance sign).

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 8.B
Section:	PUBLIC HEARINGS		
Item Category:	Public Hearing - Ordinances	**Res./Ord. No:**	2023-17
Strategic Goal:	Community Development - Other		
Department :	Planning & Building		
Subject:	LDC Amendment: Section 2-50(n) Fences and Walls (SECOND READING)		
Budget Impact:	No budget impacts as the result of the proposed LDC amendment.		
Summary:	This is an administrative amendment to the LDC, Chapter 2, District and General Regulations, Article III, General Regulations, Section 2-50(n)(2), In general, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the SPRC.		
Recommended Action:	It is recommended the City Commission approve the administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article III, General Regulations, Section 2-50(n)(2), In general, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the Site Plan Review Committee (SPRC). The Planning Board recommended approval of the Land Development Code amendment by a 7-0 vote.		
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341		

Approval:

Kelly McGuire, Finance Director	3/8/2023	
Claire Whitley, Assistant City Manager	3/8/2023	
Joyce Shanahan, City Manager	3/14/2023	

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Steven Spraker, Planning Director

Date: March 21, 2023

Subject: LDC Amendment: Section 2-50(n) Fences and Walls (SECOND READING)

Commission Goal: Community Development - Other

Introduction

This is an administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article III, General Regulations, Section 2-50(n)(2), In general, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the Site Plan Review Committee (SPRC).

Background

Section 2-50 (n) of the LDC contains the regulations for the installation of fences and walls. Section 2-50(n)(2)(f) of the LDC states, "No fence or wall shall be any closer than three feet (3') to any right-of-way line." The purpose of the regulation is to provide a setback from the fence to the right-of-way. Staff has noted that there are a wide range of wall and fence applications with a variety of existing conditions. Site conditions have included properties abutting platted rights-of-way that are not constructed, through lots, and wide rights-of-way with no sidewalks. The proposed LDC amendment does not allow fences or walls in the right-of-way under any condition or apply to side interior or rear yards that do not abut a right-of-way.

Other LDC sections have the ability to reduce or eliminate setbacks after review of city staff. One example is the site signage section that allows the Planning Director to reduce or waive the required five (5') foot sign setback based on site-specific conditions. There is belief that the purpose of the three (3') foot fence setback is valid, but there are site-specific conditions that may penalize the property owner. Planning staff is seeking an amendment to allow a setback reduction for fences with review and action by the Site Plan Review Committee. Planning staff believe the multi-department review would consider items such as landscaping, utilities, site design, and site visibility.

Discussion

The proposed amendment seeks to allow a process to seek a reduction for fence setbacks. Ormond Beach is a developed community and there are a variety of lots with site-specific conditions. Planning staff believe that the regulation for fence setbacks is valid and protects public sidewalks, utilities and site visibility. There are applications with unique conditions, such as un-open rights-of-way, through lots, and wide rights-of-way with no sidewalk, that penalize property owners with an additional setback that is not needed.

PLANNING BOARD REVIEW
The Planning Board reviewed the LDC amendment at the February 9, 2023 meeting and recommended approval by a 7-0 vote. There were no individuals who spoke for or against the amendment. The Planning Board minutes are attached to this item.

Budget Impact

No budget impacts as the result of the proposed LDC amendment.

Citizen Impact

Residents have expressed frustration with a three (3') setback under certain conditions. The proposed LDC amendment would provide an option other than a variance and provides a multidepartment review of the fence setback.

Recommendation

It is recommended the City Commission approve the administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article III, General Regulations, Section 2-50(n)(2), In general, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the Site Plan Review Committee (SPRC). The Planning Board recommended approval of the Land Development Code amendment by a 7-0 vote.

Attachments:

1. 23-17 LDC Amendment, Fences and Walls, Section2-50(n) (P23-0034G)
2. 02.09.2023, LDC Amendment, Section 2-50, Fences and walls
3. Draft PB Minutes, Fences & Walls setback

Approvals:

Kelly A. McGuire

Date: March 08, 2023

Kelly McGuire, Finance Director



Claire Whitley, Assistant City Manager

Date: March 08, 2023



Joyce Shanahan, City Manager

Date: March 14, 2023

ORDINANCE NO. 2023-17

AN ORDINANCE AMENDING CHAPTER 2, DISTRICT AND GENERAL REGULATIONS, ARTICLE III, GENERAL REGULATIONS, SECTION 2-50, ACCESSORY USES, SUBSECTION (N), FENCES AND WALLS, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, TO ALLOW A FENCE OR WALL SETBACK LESS THAN THREE FEET (3') TO A RIGHT-OF-WAY WITH REVIEW AND APPROVAL OF THE SITE PLAN REVIEW COMMITTEE; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, this is a request to amend Chapter 2, District and General Regulations, Article III, General Regulations, Section 2-50, Accessory uses, Subsection (n) Fences and Walls, of the City of Ormond Beach *Land Development Code*, to allow a fence setback less than three feet (3') to a right-of-way with review and approval of the Site Plan Review Committee (SPRC), and

WHEREAS, the local planning agency, being the Planning Board of the City of Ormond Beach, has conducted a public hearing on February 9, 2023, on the requested amendments and has made recommendations thereon to the City Commission, and

WHEREAS, all applicable notice requirements of Section 166.041(3)(a), *Florida Statutes*, have been complied with, and

WHEREAS, the City Commission finds the amendment to be consistent with the provisions of the *Comprehensive Plan* of the City of Ormond Beach, and in the overall best interest of the public health, safety and welfare, now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. Subsection (n), Fences and Walls, of Section 2-50, Accessory uses, of Article III, General Regulations, of Chapter 2, District and General Regulations, of the City of Ormond Beach *Land Development Code* is hereby amended as follows:

Sec. 2-50. Accessory uses.

(n) *Fences and walls.* Fences and walls are intended to promote privacy, screening, separation, security, erosion control, or to serve other necessary and reasonable functions.

(1) *Building permit required. ***No change in existing text****

(2) *In general.*

a. Other than for retaining walls deemed necessary by the city engineer, all height, location and design restrictions are addressed pursuant to this Land Development Code.

b. No fence or wall shall be erected, altered, or located in any way that violates the clear sight triangle. (See definition and illustration 1 in subsection (n)(17)a of this section.)

c. Fences and walls are not permitted in the conservation easement.

d. Fences and walls may be permitted in the drainage easement provided approval is granted by the engineering and utilities division of the city.

e. Fences and walls may be placed within the utility easement provided such fencing can be removed, if necessary, by the requesting utility agency and shall conform to the provisions in this Land Development Code. Replacing the fence shall be the property owner's responsibility and shall also conform to the provisions in this Land Development Code.

f. No fence or wall shall be any closer than three feet (3') to any right-of-way line~~.~~ unless approved by the Site Plan Review Committee for a lesser setback based on site specific conditions. In reviewing requests for a reduced setback to a right-of-way, the Site Plan Review Committee shall consider the existence of sidewalks, site visibility, utilities, and any other condition that would impact a fence or wall setback.

(3) *Permitted fence and wall maximum heights. ***No change in existing text****

(4) *Chainlink fences. ***No change to existing text****

(5) *Commercial/multifamily fence and wall height exceptions. ***No change to existing text****

(6) *Vacant and undeveloped lots. ***No change to existing text****

(7) *Temporary construction fencing. ***No change to existing text****

(8) *Noise attenuation barriers. ***No change to existing text****

(9) *Wall columns. ***No change to existing text****

(10) *Orientation. ***No change to existing text****

(11) *Materials. ***No change to existing text****

(12) *Entrance gates. ***No change to existing text****

(13) *Entrance walls. ***No change to existing text****

(14) *Buffer walls required. ***No change to existing text****

(15) *Double frontage walls. ***No change to existing text****

(16) *Maintenance. ***No change to existing text****

(17) *Clear sight triangle. ***No change to existing text****

SECTION TWO. All Ordinances or parts of Ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION THREE. In the event any word, phrase, clause, sentence, paragraph, term, or provision of this Ordinance shall be held to be invalid by a court of competent jurisdiction, such judicial determination shall not affect any other word, phrase, clause, sentence, paragraph, term or provision, of this Ordinance, and the remainder of this Ordinance shall remain in full force and effect.

SECTION FOUR. This Ordinance shall take effect immediately upon its adoption.

PASSED UPON at the first reading of the City Commission, this 7th day of March, 2023.

PASSED UPON at the second and final reading of the City Commission, this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

STAFF REPORT

City of Ormond Beach
Department of Planning

MEETING DATE: February 9, 2023

SUBJECT: Land Development Code (LDC) amendment: Section 2-50(n) Fences and walls

APPLICANT: Administrative

NUMBER: LDC 2023-017

PROJECT PLANNER: Steven Spraker, AICP, Planning Director

INTRODUCTION: This is an administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article III, General Regulations, Section 2-50(n)(2), In general, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the Site Plan Review Committee (SPRC).

BACKGROUND: Section 2-50 (n) of the Land Development Code contains the regulations for the installation of fences and walls. Section 2-50(n)(2)(f) of the Land Development Code states, "No fence or wall shall be any closer than three feet (3') to any right-of-way line." The purpose of the regulation is to provide a setback from the fence to the right-of-way. Staff has noted that there are a wide range of wall and fence applications with a variety of existing conditions. Site conditions have included properties abutting platted rights-of-way that are not constructed, through lots, and wide rights-of-way with no sidewalks.

Other Land Development Code sections have the ability to reduce or eliminate setbacks after review of city staff. One example is the site signage section that allows the Planning Director to reduce or waive the required five (5') foot sign setback based on site specific conditions. Planning staff believes the purpose for the three (3') fence setback is valid, but there are site specific conditions that may penalize the property owner. Planning staff is seeking an amendment to allow a setback reduction for fences with review and action by the Site Plan Review Committee. Planning staff believes the multi-department review would consider items such as landscaping, utilities, site design, and site visibility.

ANALYSIS: The proposed Land Development Code amendment is shown below. The underlined text are additions to the original text and ~~strike through~~ are the deleted text of the amendment.

Section 2-50(n)(2)(f) of the Land Development Code

f. No fence or wall shall be any closer than three feet (3') to any right-of-way line unless approved by the Site Plan Review Committee for a lesser setback based on site specific conditions. In reviewing requests for a reduced setback to a right-of-way, the Site Plan Review Committee shall consider the existence of sidewalks, site visibility, and utilities.

CONCLUSION: Section 1-15(d)(3) of the Land Development Code requires certain criteria to be evaluated before adoption of a Land Development Code amendment when making their recommendation, as follows:

1. **The proposed development conforms to the standards and requirements of this Code and will not create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.**

   The proposed amendment seeks to allow a process to seek a reduction for fence setbacks. Ormond Beach is a developed community and there are a variety of lots with site specific conditions. Planning staff believes that the regulation for fence setbacks is valid and protects public sidewalks, utilities and site visibility. There are applications with unique conditions, such as un-open rights-of-way, through lots, and wide rights-of-way with no sidewalk, that penalize property owners with an additional setback that is not needed. It is not expected that the proposed Land Development Code amendment would create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life. The Site Plan Review Committee would be tasked with reviewing requests for reduced setbacks. Appeals of the Site Plan Review Committee would go to the City Commission.

2. **The proposed development is consistent with the Comprehensive Plan.**

   The proposed Land Development Code amendment is consistent with the Comprehensive Plan. Objective 2.1 of the Future Land Use Element of the Comprehensive Plan discussed the need to update Land Development Code regulations.

3. **The proposed development will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells.**

   The proposed Land Development Code amendment does not approve any site-specific development and will not have an adverse impact on environmentally sensitive lands.

4. **The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties**.

   The proposed Land Development Code amendment does not approve any site-specific development and will not have any impacts on surrounding properties.

5. **There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment,**

drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds.

The proposed Land Development Code amendment seeks to allow a process for fence setback modifications. The amendment would not have a negative impact to public facilities.

6. **Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

7. **The proposed development is functional in the use of space and aesthetically acceptable.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

8. **The proposed development provides for the safety of occupants and visitors.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

9. **The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

10. **The testimony provided at public hearings**.

    There has not been a public hearing at this time. The comments from the Planning Board meeting will be incorporated into the City Commission packet.

RECOMMENDATION:

It is recommended that the Planning Board **APPROVE** the administrative amendment to the Land Development Code (LDC), Chapter 2, District and General Regulations, Article III, General Regulations, Section 2-50(n)(2), In general, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the Site Plan Review Committee (SPRC), as shown in Attachment 1.

Attachments:

Attachment 1: Proposed Land Development Code amendment

Chapter 2 – District and General Regulations, Article III. – General Regulations

Sec. 2-50. Accessory uses.

(n) *Fences and walls.* Fences and walls are intended to promote privacy, screening, separation, security, erosion control, or to serve other necessary and reasonable functions.

(1) *Building permit required.*

a. All fences shall require a permit prior to installation or erection. It shall be unlawful for any person to erect, alter or locate a fence within the city without first having made application for and having been issued a permit. A building permit is required for fence replacement or any repair of existing fences exceeding fifty percent (50%) of more of the linear frontage. Repair of existing fencing shall be required to be the same material as currently exists. An application for a fence permit shall include a full site plan showing:

1. All structures on the site;
2. All easements, rights-of-way and dedications;
3. Location of the fence in relationship to the property boundary lines and all building and structures on the lot;
4. Height and material of the fence;
5. Scaled drawing of a fence section, if the fence must comply with openness requirements;
6. Any other information requested by the city manager or designee which is necessary to make a compliance determination.

(2) *In general.*

a. Other than for retaining walls deemed necessary by the city engineer, all height, location and design restrictions are addressed pursuant to this Land Development Code.

b. No fence or wall shall be erected, altered, or located in any way that violates the clear sight triangle. (See definition and illustration 1 in subsection (n)(17)a of this section.)

c. Fences and walls are not permitted in the conservation easement.

d. Fences and walls may be permitted in the drainage easement provided approval is granted by the engineering and utilities division of the city.

e. Fences and walls may be placed within the utility easement provided such fencing can be removed, if necessary, by the requesting utility agency and shall conform to the provisions in this Land Development Code. Replacing the fence shall be the

property owner's responsibility and shall also conform to the provisions in this Land Development Code.

f. No fence or wall shall be any closer than three feet (3') to any right-of-way line unless approved by the Site Plan Review Committee for a lesser setback based on site specific conditions. In reviewing requests for a reduced setback to a right-of-way, the Site Plan Review Committee shall consider the existence of sidewalks, site visibility, utilities, and any other condition that would impact a fence or wall setback.

(3) *Permitted fence and wall maximum heights. ***No change in existing text****

(4) *Chainlink fences. ***No change to existing text****

(5) *Commercial/multifamily fence and wall height exceptions. ***No change to existing text****

(6) *Vacant and undeveloped lots. ***No change to existing text****

(7) *Temporary construction fencing. ***No change to existing text****

(8) *Noise attenuation barriers. ***No change to existing text****

(9) *Wall columns. ***No change to existing text****

(10) *Orientation. ***No change to existing text****

(11) *Materials. ***No change to existing text****

(12) *Entrance gates. ***No change to existing text****

(13) *Entrance walls. ***No change to existing text****

(14) *Buffer walls required. ***No change to existing text****

(15) *Double frontage walls. ***No change to existing text****

(16) *Maintenance. ***No change to existing text****

(17) *Clear sight triangle. ***No change to existing text****

DRAFT

Planning Board minutes from February 9, 2023

ITEM:

SE 2023-017

Land Development Code (LDC) amendment: Section 2-50(n) Fences and walls

Mr. Jorczak motioned to approve LDC 2023-017, Land Development Code amendment: Section 1-28, Utility installation fees. Ms. Shull seconded it. Vote was called, and the motion was approved (7-0).

C. LDC 2023-017, Land Development Code amendment: Section 2-50(n) Fences and walls

Mr. Spraker, Planning Director, stated that this is an administrative amendment to the Land Development Code, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the Site Plan Review Committee (SPRC).

Mr. du Moulin asked if this is to provide more flexibility in the fence location similar to what was done for his HOA so that it looks good. Mr. Spraker responded that it would but only through a multi-departmental review such as utilities, landscaping, site visibility, etc.

Planning Board members discussed the fence requirements along the side, side corner, and waterfront yards.

Mr. Railsback inquired if the amendment language will prevent going beyond what is conforming. Mr. Spraker confirmed that the maximum relief would be to the property line and the amendment does not allow any fences in any right-of-way.

Mr. Galloway motioned to approve LDC 2023-017, Land Development Code amendment: Section 2-50(n) Fences and Walls. Ms. Shull seconded it. Vote was called, and the motion was approved (7-0).

D. LDC 2023-018, Land Development Code amendment: Section 4-03, Site Plan Review Committee (SPRC) established

Mr. Spraker, Planning Director, stated that this is an administrative amendment to the Land Development Code Site Plan Review Committee section, amending the SPRC coordinating liaison and updating the process for neighborhood meetings.

Mr. Spraker continued that there are two parts to the proposed amendment: 1) Change the existing language designating a city SPRC coordinating liaison to assign the Planning Director (or designee) instead, and 2) Changes regarding Neighborhood meetings by a) amending the meeting name to "neighborhood" for consistency b) requiring a meeting pre-approval with written approval from city staff at least five business days before the applicant mails meeting notice; c) requiring meetings to be held Monday through Thursday between 5 p.m. – 8 p.m.; d) requiring site postings, one for each frontage with 2' by 3' signs; and e) requiring a written summary of the meeting to be provided to city staff.

There was discussion regarding frequency, notice, and posting of neighborhood meetings among the Board members. Mr. Spraker clarified that this amendment is to require the one minimum meeting and the 2' x 3' sign posting (same as the variance sign).

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 8.C
Section:	PUBLIC HEARINGS		
Item Category:	Public Hearing - Ordinances	**Res./Ord. No:**	2023-18
Strategic Goal:	Community Development - Other		
Department :	Planning & Building		
Subject:	LDC Amendment: Section 4-03, SPRC Established (SECOND READING)		
Budget Impact:	There is no additional cost to the city. Applicants that require neighborhood meetings would have an additional cost of the larger public hearing signage and installation.		
Summary:	This is an administrative amendment to the LDC, Chapter 4, Plan Review and Subdivision, Article I, Site Plan Review Procedures, Section 4-03, SPRC (SPRC) established, amending the SPRC coordinating liaison and updating the process for neighborhood meetings.		
Recommended Action:	It is recommended the City Commission approve the administrative amendment to the Land Development Code (LDC), Chapter 4, Plan Review and Subdivision, Article I, Site Plan Review Procedures, Section 4-03, Site Plan Review Committee (SPRC) established, amending the SPRC coordinating liaison and updating the process for neighborhood meetings, as shown in the attached Ordinance. The Planning Board recommended approval of the Land Development Code amendment by a 7-0 vote.		
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341		

Approval:

Kelly McGuire, Finance Director	3/8/2023	
Claire Whitley, Assistant City Manager	3/8/2023	

Joyce Shanahan, City Manager	3/14/2023	

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Steven Spraker, Planning Director

Date: March 21, 2023

Subject: LDC Amendment: Section 4-03, SPRC Established (SECOND READING)

Commission Goal: Community Development - Other

Introduction

This is an administrative amendment to the Land Development Code (LDC), Chapter 4, Plan Review and Subdivision, Article I, Site Plan Review Procedures, Section 4-03, Site Plan Review Committee (SPRC) established, amending the SPRC coordinating liaison and updating the process for neighborhood meetings.

Background

Section 4-03 of the LDC establishes the Site Plan Review Committee (SPRC). The SPRC is comprised of representatives from different city departments and reviews site plan applications. The proposed amendment has two parts:

1. Section (b) Designated city SPRC coordinating liaison. The proposed amendment assigns the Planning Director (or designee) as the coordinating liaison. The existing LDC states that one member of the SPRC would be designated as a liaison per application. The liaison could be different for different projects under the existing language.
2. Section (d)(6) Neighborhood compatibility meetings. Staff has proposed the following updates:
    a. Amend the meeting name to “neighborhood.” The existing text uses community and neighborhood interchangeably.
    b. Require a meeting pre-approval. This requires written approval from city staff five business days before the applicant's meeting notice is mailed.
    c. Date and time of neighborhood meeting. Require meetings to be held Monday through Thursday between 5:00 p.m. and 8:00 p.m.
    d. Site posting. Require site posting, one for each street frontage. There is currently not a posting requirement for neighborhood meetings.
    e. Record of the meeting. Requires a written summary be provided to city staff.

Discussion

The proposed amendment seeks to amend: (1) the SPRC coordinating liaison and (2) update the process for neighborhood meetings. The intent of the amendments to the process of the neighborhood meeting is to require coordination of the proposed meeting, provide perimeters of dates and times, require public notice and require a summary from the applicant.

PLANNING BOARD REVIEW
The Planning Board reviewed the LDC amendment at the February 9, 2023 meeting and recommended approval by a 7-0 vote. The Planning Board recommended that the posting signage be the same size (4' by 4') as the Planning Board posting signage. There were no individuals who spoke for or against the amendment.

Budget Impact

There is no additional cost to the city. Applicants that require neighborhood meetings would have an additional cost of the larger public hearing signage and installation.

Citizen Impact

There is no citizen impact anticipated with this LDC amendment.

Recommendation

It is recommended the City Commission approve the administrative amendment to the Land Development Code (LDC), Chapter 4, Plan Review and Subdivision, Article I, Site Plan Review Procedures, Section 4-03, Site Plan Review Committee (SPRC) established, amending the SPRC coordinating liaison and updating the process for neighborhood meetings, as shown in the attached Ordinance. The Planning Board recommended approval of the Land Development Code amendment by a 7-0 vote.

Attachments:

1. 23-18 LDC Amendment, SPRC Established, Section 4-03 (P23-0033G)
2. 02.09.2023 LDC Amendment Section 4-03 SPRC established
3. Draft PB Minutes, SPRC amendments

Approvals:

Kelly A. McGuire

Date: March 08, 2023

Kelly McGuire, Finance Director



Claire Whitley, Assistant City Manager

Date: March 08, 2023



Joyce Shanahan, City Manager

Date: March 14, 2023

ORDINANCE NO. 2023-18

AN ORDINANCE AMENDING CHAPTER 4, PLAN REVIEW AND SUBDIVISION, ARTICLE I, SITE PLAN REVIEW PROCEDURES, SECTION 4-03, SITE PLAN REVIEW COMMITTEE (SPRC) ESTABLISHED, OF THE CITY OF ORMOND BEACH LAND DEVELOPMENT CODE, BY AMENDING THE SPRC COORDINATING LIAISON AND UPDATING THE PROCESS FOR NEIGHBORHOOD MEETINGS; REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING FOR SEVERABILITY; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, this is a request to amend Chapter 4, Plan Review and Subdivision, Article I, Site Plan Review Procedures, Section 4-03, Site Plan Review Committee (SPRC) established, of the City of Ormond Beach *Land Development Code*, by amending the SPRC coordinating liaison and updating the process for neighborhood meetings, and

WHEREAS, the local planning agency, being the Planning Board of the City of Ormond Beach, has conducted a public hearing on February 9, 2023, on the requested amendments and has made recommendations thereon to the City Commission, and

WHEREAS, all applicable notice requirements of Section 166.041(3)(a), *Florida Statutes*, have been complied with, and

WHEREAS, the City Commission finds the amendment to be consistent with the provisions of the *Comprehensive Plan* of the City of Ormond Beach, and in the overall best interest of the public health, safety and welfare, now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. Section 4-03, Site Plan Review Committee (SPRC) established, of Article I, Site Plan Review Procedures, of Chapter 4, Plan Review and Subdivision, of the City of Ormond Beach *Land Development Code*, is hereby amended as follows:

Sec. 4-03. Site Plan Review Committee (SPRC) established.

(a) *Membership. ***No change in existing text****

(b) *Designated city SPRC coordinating liaison.* ~~For each project reviewed, one (1) member of the SPRC shall be assigned as the~~ The planning director shall serve as the project coordinating liaison. The project liaison shall provide the applicant a single city contact responsible for coordinating the work of other city staff involved in the site plan review process. ~~The SPRC shall meet to review city staff comments and resolve any conflicts prior to presenting SPRC comments to the applicant. Issues requiring Land Development Code interpretation should be resolved between the planning director and the city engineer prior to meeting with the applicant. The same SPRC shall follow a single project from initial submittal to final approval. The assigned planner, development services engineer and landscape architect that comprise each respective SPRC shall be~~ After all SPRC members have approved a site plan, the planning director shall be responsible for final approval and signoff of site plans on behalf of the SPRC.

(c) *Meetings of the SPRC. ***No change in existing text****

(d) *Scope of powers.*

(1) *Function.* The SPRC shall review all site plans, subdivisions, planned developments, conditional uses, and special exceptions as required and make a determination of the plan's acceptability and consistency with this Land Development Code and other applicable laws and ordinances.

(2) *Review powers.* The SPRC shall be responsible for conducting the review of development applications to ensure that the applications and related documentation comply with the technical standards established in the comprehensive plan, this Land Development Code and other relevant city ordinances. If an application is for a use that is allowed by right in a particular zoning district or otherwise not subject to a special exception or

rezoning to planned development (PBD, PRD, PID or PMHC), then the SPRC shall approve the application if it is consistent with the technical standards of the comprehensive plan and applicable regulations contained in this Land Development Code and the Code of Ordinances. For applications that require approval of a special exception or for a rezoning to planned development, the SPRC shall review and provide technical comments to the appropriate advisory boards and the city commission, subject to the procedures established in chapter 1, article II of this Land Development Code. If the SPRC determines that an application does not comply with the technical standards contained in the comprehensive plan, this Land Development Code or other relevant city ordinances, then the applicant shall be informed of the inconsistencies and the applications shall follow the procedures established in section 4-05.

(3) *Alternative standard.* The planning director may accept an alternative standard to a prescribed standard provided a written request by the applicant has been received. The written request shall detail how the prescribed standard fails to address the purpose for which it was developed and how an alternative standard accomplishes the stated purpose. The granting of administrative relief from the standards of this Land Development Code requires the following:

a. Administrative relief may not exceed ten percent (10%) of a yard or area standard and shall be reviewed by the planning director in accordance with the criteria established for a variance under this Land Development Code. All other relief requests must comply with all the variance procedures of this Land Development Code.

b. If the request is approved by the planning director, such administrative relief shall be added to the site plan as a certificate with a signature block for the planning director.

c. Quarterly, the planning director shall provide to the planning board and city commission a report identifying all alternative standards and administrative relief granted.

d. Any party may appeal the alternative standard determination of the planning director pursuant to section 1-19.

(4) *Advisory comments.* The SPRC may also make recommendations to the applicant, to the planning board and to the city commission on discretionary matters. The committee may also make advisory comments on site layout and design features.

(5) *Publish rules of procedure.* The SPRC shall adopt and publish rules of procedure in order to expedite the orderly processing and review of proposed land uses, site plans, subdivision plans, planned developments and other matters assigned to the SPRC by this Land Development Code.

(6) *Neighborhood compatibility meetings.*

a. *Applicability.* An informal ~~community~~ neighborhood meeting shall be held after the initial submittal of an application and prior to ~~the second review by the SPRC~~ the planning board public hearing, if required, or final action by the SPRC when it has been determined by the planning director or designee that such a meeting could contribute to the community's understanding and knowledge of a proposed development in their neighborhood. ~~Community~~ Neighborhood meetings are required at a minimum when a nonresidential development is abutting residential areas. Industrial is specifically excluded from this requirement.

b. *Purposes.* The purposes of ~~community~~ neighborhood meetings are as follows:

1. Provide an opportunity where an applicant and the community can meet and discuss the merits of a development in an informal environment;

2. Educate and inform residents of how new development can co-exist with existing development in the community;

3. Obtain input from residents to revise the site plan prior to administrative approval by the city.

c. *Structure of a ~~community~~ neighborhood meeting.* ~~Any meeting held as a result of this section shall be conducted at or in a close proximity of the proposed project location. The time of the meeting shall be convenient to the surrounding property owners to maximize attendance. A record of the meeting and those in attendance shall be provided to the planning department. The planner attending the meeting shall only act as an observer of the proceedings. It is the responsibility of the applicant to notify, in writing, all affected parties, including the homeowners' association, if one exists, all tenants of property, the appropriate city staff person and members of the planning board and city commission, regardless of the project's location, of the meeting's date time and place. No neighborhood meeting shall be on the night of planning board or city commission meetings.~~ The following sequence of activities is required:

1. ~~*Notification.* Two (2) weeks prior to the meeting date, the applicant shall mail notices of the meeting date, time and place to all property~~

~~owners inside a radius of six hundred feet (600') from the boundary of the proposed development. Documentation of the mailed notice in the form of a stamped mailing list by the local postal office signifying the notice was sent shall be provided to staff for verification. For purposes of F.S. ch. 286, city staff shall ensure these meetings are included in a public notice published in a newspaper of general circulation.~~

~~2. *Development presentation*. The applicant should explain the proposed use of the subject property and make a copy of the proposed site plan available for review by attendees. The applicant should also discuss the project's development objectives, fit and design philosophy.~~

~~3. *Question and answer period*. Upon completion of the presentation, time should be reserved for questions and answers. The applicant should be prepared to discuss how potential conflicts could be mitigated. Any representations made by the applicant to the attendees in order to gain support for the proposal shall be considered as a voluntary proffered condition. The use being presented is a permitted use; consequently, citizen questions should be concentrated on how the development affects their property and possible solutions for mitigating such impacts. A question of whether a permitted use should be developed is not a subject of the meeting.~~

1. *Neighborhood meeting pre-approval.* At least five (5) business days prior to the publication of the neighborhood meeting, the applicant shall provide the planning director a draft of the proposed neighborhood meeting. The draft publication shall include the date, time, and location of the proposed meeting. Within three (3) business days of receipt of the draft publication, the planning director shall issue a written approval of the draft publication or required changes. No neighborhood meeting shall be conducted without the required pre-approval process.

2. *Location of neighborhood meeting.* The meeting location shall be conducted in a close proximity of the proposed project location.

3. *Date and time of neighborhood meeting.* Neighborhood meetings shall be held between 5:00 p.m. and 8:00 p.m., Monday through Thursday. No neighborhood meeting shall be on Friday, Saturday, Sunday, or the night of planning board or city commission meetings.

4. *Notification.* Notification of the neighborhood meeting shall occur as follows:

   A. Mail notice (by applicant): At least fourteen days (two (2) weeks) prior to the meeting date, the applicant shall mail notices via U.S. mail of the meeting date, time and place to all property owners inside a radius of six hundred feet (600') from the boundary of the proposed development. The mail notice shall include a site or development plan of the project. The property owners mailing addresses shall be obtained from the Volusia County Property Appraiser Office records. The applicant shall complete and provide to city staff an affidavit stating the date of the mailing of the notice, a copy of the mailed notice, and a copy of the mailing list of property owners.

   B. Site posting (by applicant): At least fourteen days (two (2) weeks) prior to the meeting date, the applicant shall post one (1) sign, four (4') feet by four (4') in size, for each street frontage. The signage shall contain the meeting date, time and place. The applicant shall provide to city staff an affidavit certifying that the posting has been completed and a picture of the posting.

   C. Newspaper advertisement: Planning staff shall publish a public notice of the neighborhood meeting, published in a newspaper of general circulation.

5. *Record of the meeting.* The applicant shall offer a sign-in sheet that includes an area for e-mail addresses of attendees. The applicant shall take notes of the meeting and provide the planning director the written notes of the meeting and sign-in sheet within seven (7) business days after the meeting.

6. *City staff attendance of the neighborhood meeting.* Any city staff attending the meeting shall only act as an observer of the proceedings.

7. *Development presentation.* The applicant should explain the proposed use of the subject property and make a copy of the proposed site plan available for review by attendees. The applicant should also discuss the project's development objectives, fit and design philosophy.

8. *Question and answer period.* Upon completion of the presentation, time should be reserved for questions and answers. The applicant should be prepared to discuss how potential conflicts could be

mitigated. Any representations made by the applicant to the attendees in order to gain support for the proposal shall be considered as a voluntary proffered condition. The use being presented is a permitted use; consequently, citizen questions should be concentrated on how the development affects their property and possible solutions for mitigating such impacts. A question of whether a permitted use should be developed is not a subject of the meeting.

d. *Determination of compatibility.* In preparation of a ~~community~~ neighborhood meeting, compatibility of proposed projects shall be assessed by the applicant based on the ability of a development to fit in the area by resolving differences and averting negative impacts created upon surrounding properties. This determination shall include assessing impacts upon community character and the local roadway network, while identifying potential land use conflicts.

e. *Discretionary review.* Site plans shall be administratively reviewed and approved when it has been determined based upon neighborhood meetings that the project's impacts upon the adjacent property have been adequately addressed such that minimal or no effect occurs. To accomplish this, the applicant should recognize that a minimum standard may need to be increased in order to address the negative effect. The planning director shall have the authority to change the review process of an application from administrative to a special exception involving a formal public hearing approval process when it has been determined that the minimal standard fails to satisfy the compatibility test, thus not adequately protecting the public interest.

f. *Planning director determination.* Within five (5) business days of the neighborhood meeting, the planning director shall issue a letter of determination informing the applicant of the review path of the application.

g. *Appeal.* Any property owner within six hundred feet (600') of the site may appeal the planning director's determination to the city commission in accordance with section 1-19. Fees for an appeal shall be in accordance with section 1-26.

(e) *Application processing/subdivisions; planned developments. ***No change to existing text****

SECTION TWO. All Ordinances or parts of Ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION THREE. In the event any word, phrase, clause, sentence, paragraph, term, or provision of this Ordinance shall be held to be invalid by a court of competent jurisdiction, such judicial determination shall not affect any other word, phrase, clause, sentence, paragraph, term or provision, of this Ordinance, and the remainder of this Ordinance shall remain in full force and effect.

SECTION FOUR. This Ordinance shall take effect immediately upon its adoption.

PASSED UPON at the first reading of the City Commission, this 7th day of March, 2023.

PASSED UPON at the second and final reading of the City Commission, this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

STAFF REPORT

City of Ormond Beach
Department of Planning

MEETING DATE: February 9, 2023

SUBJECT: Land Development Code amendment: Section 4-03, Site Plan Review Committee (SPRC) established

APPLICANT: Administrative

NUMBER: LDC 2023-018

PROJECT PLANNER: Steven Spraker, AICP, Planning Director

INTRODUCTION: This is an administrative amendment to the Land Development Code (LDC), Chapter 4, Plan Review and Subdivision, Article I, Site Plan Review Procedures, Section 4-03), Site Plan Review Committee (SPRC) established, amending the SPRC coordinating liaison and updating the process for neighborhood meetings.

BACKGROUND: Section 4-03 of the Land Development Code establishes the Site Plan Review Committee (SPRC). The Site Plan Review Committee is comprised of representatives from different city departments and reviews site plan applications. The proposed amendment has two parts:

1. Section (b) Designated city SPRC coordinating liaison. The proposed amendment assigns the Planning Director (or designee) as the coordinating liaison. The existing Land Development Code states that one member of the Site Plan Review Committee would be designated as a liaison per application. The liaison could be different for different projects under the existing language.
2. Section (d)(6) Neighborhood compatibility meetings. Staff has proposed the following updates:
   (a) Amend the meeting name to “neighborhood”. The existing text uses community and neighborhood interchangeably.
   (b) Require a meeting pre-approval. This requires written approval from city staff five business days before the applicant meeting notice is mailed.
   (c) Date and time of neighborhood meeting. Require meetings to be held Monday through Thursday between 5:00 p.m. and 8:00 p.m.
   (d) Site posting. Require site posting, one for each street frontage with 2’ by 3’ signs. There is currently not a posting requirement for neighborhood meetings.
   (e) Record of the meeting. Requires a written summary be provided to city staff.

ANALYSIS: The proposed Land Development Code amendment is shown below. The underlined text are additions to the original text and ~~strike through~~ are the deleted text of the amendment.

Section 4-03 of the Land Development Code, Section (b) Designated city SPRC coordinating liaison.

(b) *Designated city SPRC coordinating liaison.* ~~For each project reviewed, one (1) member of the SPRC shall be assigned as the~~ The planning director shall serve as the project coordinating liaison. The project liaison shall provide the applicant a single city contact responsible for coordinating the work of other city staff involved in the site plan review process. ~~The SPRC shall meet to review city staff comments and resolve any conflicts prior to presenting SPRC comments to the applicant. Issues requiring Land Development Code interpretation should be resolved between the planning director and the city engineer prior to meeting with the applicant. The same SPRC shall follow a single project from initial submittal to final approval. The assigned planner, development services engineer and landscape architect that comprise each respective SPRC shall be~~ After all SPRC members have approved a site plan, the planning director shall be responsible for final approval and signoff of site plans on behalf of the SPRC.

Section 4-03 of the Land Development Code, Section (d)(6) Neighborhood compatibility meetings.

(6) *Neighborhood compatibility meetings.*

a. *Applicability.* An informal ~~community~~ neighborhood meeting shall be held after the initial submittal of an application and prior to ~~the second review by the SPRC~~ the Planning Board public hearing, if required, or final action by the SPRC when it has been determined by the planning director or designee that such a meeting could contribute to the community's understanding and knowledge of a proposed development in their neighborhood. ~~Community~~ Neighborhood meetings are required at a minimum when a nonresidential development is abutting residential areas. Industrial is specifically excluded from this requirement.

b. *Purposes.* The purposes of ~~community~~ neighborhood meetings are as follows:

1. Provide an opportunity where an applicant and the community can meet and discuss the merits of a development in an informal environment;

2. Educate and inform residents of how new development can co-exist with existing development in the community;

3. Obtain input from residents to revise site plans prior to administrative approval by the city.

c. *Structure of a ~~community~~ neighborhood meeting.* ~~Any meeting held as a result of this section shall be conducted at or in a close proximity of the proposed project location. The time of the meeting shall be convenient to the surrounding property owners to maximize attendance. A record of the meeting and those in attendance shall be provided to the planning department. The planner attending the meeting shall only act as an observer of the proceedings. It is the responsibility of the~~

~~applicant to notify, in writing, all affected parties, including the homeowners' association, if one exists, all tenants of property, the appropriate city staff person and members of the planning board and city commission, regardless of the project's location, of the meeting's date time and place. No neighborhood meeting shall be on the night of planning board or city commission meetings.~~ The following sequence of activities is required:

~~1. *Notification.* Two (2) weeks prior to the meeting date, the applicant shall mail notices of the meeting date, time and place to all property owners inside a radius of six hundred feet (600') from the boundary of the proposed development. Documentation of the mailed notice in the form of a stamped mailing list by the local postal office signifying the notice was sent shall be provided to staff for verification. For purposes of F.S. ch. 286, city staff shall ensure these meetings are included in a public notice published in a newspaper of general circulation.~~

~~2. *Development presentation.* The applicant should explain the proposed use of the subject property and make a copy of the proposed site plan available for review by attendees. The applicant should also discuss the project's development objectives, fit and design philosophy.~~

~~3. *Question and answer period.* Upon completion of the presentation, time should be reserved for questions and answers. The applicant should be prepared to discuss how potential conflicts could be mitigated. Any representations made by the applicant to the attendees in order to gain support for the proposal shall be considered as a voluntary proffered condition. The use being presented is a permitted use; consequently, citizen questions should be concentrated on how the development affects their property and possible solutions for mitigating such impacts. A question of whether a permitted use should be developed is not a subject of the meeting.~~

1. *Neighborhood meeting pre-approval.* At least five (5) business days to the publication of a neighborhood meeting, the applicant shall provide the planning director a draft of the proposed neighborhood meeting. The draft publication shall include the date, time, and location of the proposed meeting. Within three (3) business days of receipt of the draft publication, the planning director shall issue a written approval of the draft publication or required changes. No neighborhood meeting shall be conducted without the required pre-approval process.

2. *Location of neighborhood meeting.* The meeting location shall be conducted in a close proximity of the proposed project location.

3. *Date and time of neighborhood meeting.* Neighborhood meetings shall be held between 5:00 p.m. and 8:00 p.m., Monday through Thursday. No neighborhood meeting shall be on Friday, Saturday, Sunday, or the night of planning board or city commission meetings.

4. *Notification.* Notification of the neighborhood meeting shall occur as follows:

A. Mail notice (by applicant): At least fourteen days (two (2) weeks) prior to the meeting date, the applicant shall mail notices via U.S. mail of the meeting

date, time and place to all property owners inside a radius of six hundred feet (600') from the boundary of the proposed development. The mail notice shall include a site or development plan of the project. The property owners mailing addresses shall be obtained from the Volusia County Property Appraiser Office records. The applicant shall complete and provide to city staff an affidavit stating the date of the mailing of the notice, a copy of the mailed notice, and a copy of the mailing list of property owners.

B. Site posting (by applicant): At least fourteen days (two (2) weeks) prior to the meeting date, the applicant shall post one (1) sign, two (2') feet by three (3') in size, for each street frontage at least fourteen days (two (2) weeks) prior to the meeting date. For sites larger than three (3) acres, the planning director may require a maximum of three (3) additional signs. The signage shall contain the meeting date, time and place. The applicant shall provide to city staff an affidavit certifying that the posting has been completed and a picture of the posting.

C. Newspaper advertisement: Planning staff shall publish a public notice of the neighborhood meeting, published in a newspaper of general circulation.

5. *Record of the meeting.* The applicant shall offer a sign-in sheet that includes an area for e-mail addresses of attendees. The applicant shall take notes of the meeting and provide the planning director the written notes of the meeting and sign-in sheet within seven (7) business days after the meeting.

6. *City staff attendance of the neighborhood meeting.* Any city staff attending the meeting shall only act as an observer of the proceedings.

7. *Development presentation.* The applicant should explain the proposed use of the subject property and make a copy of the proposed site plan available for review by attendees. The applicant should also discuss the project's development objectives, fit and design philosophy.

8. *Question and answer period.* Upon completion of the presentation, time should be reserved for questions and answers. The applicant should be prepared to discuss how potential conflicts could be mitigated. Any representations made by the applicant to the attendees in order to gain support for the proposal shall be considered as a voluntary proffered condition. The use being presented is a permitted use; consequently, citizen questions should be concentrated on how the development affects their property and possible solutions for mitigating such impacts. A question of whether a permitted use should be developed is not a subject of the meeting.

d. *Determination of compatibility.* In preparation of a ~~community~~ neighborhood meeting, compatibility of proposed projects shall be assessed by the applicant based on the ability of a development to fit in the area by resolving differences and averting negative impacts created upon surrounding properties. This determination shall include assessing impacts upon community character and the local roadway network, while identifying potential land use conflicts.

e. *Discretionary review.* Site plans shall be administratively reviewed and approved when it has been determined based upon neighborhood meetings that the project's

impacts upon adjacent property have been adequately addressed such that minimal or no effect occurs. To accomplish this, the applicant should recognize that a minimum standard may need to be increased in order to address the negative effect. The planning director shall have the authority to change the review process of an application from administrative to a special exception involving a formal public hearing approval process when it has been determined that the minimal standard fails to satisfy the compatibility test, thus not adequately protecting the public interest.

f. *Planning director determination.* Within five (5) business days of the neighborhood meeting, the planning director shall issue a letter of determination informing the applicant of the review path of the application.

g. *Appeal.* Any property owner within six hundred feet (600') of the site may appeal the planning director's determination to the city commission in accordance with section 1-19. Fees for an appeal shall be in accordance with section 1-26.

CONCLUSION: Section 1-15(e) of the Land Development Code requires certain criteria must be evaluated before adoption of a Land Development Code amendment when making their recommendation, as follows:

1. **The proposed development conforms to the standards and requirements of this Code and will not create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.**

   The proposed amendment seeks to amend: (1) the SPRC coordinating liaison and (2) update the process for neighborhood meetings. The intent of the amendments to the process of the neighborhood meeting is to require coordination of the proposed meeting, provide perimeters of dates and times, require public notice, and require a summary from the applicant. It is not expected that the proposed Land Development Code amendment would create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.

2. **The proposed development is consistent with the Comprehensive Plan.**

   The proposed Land Development Code amendment is consistent with the Comprehensive Plan. Objective 2.1 of the Future Land Use Element of the Comprehensive Plan discussed the need to update Land Development Code regulations.

3. **The proposed development will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells.**

   The proposed Land Development Code amendment does not approve any site-specific development and will not have an adverse impact on environmentally sensitive lands.

4. **The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties**.

   The proposed Land Development Code amendment does not approve any site-specific development and will not have any impacts on surrounding properties.

5. **There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds.**

   The proposed Land Development Code amendment seeks to modify process of the neighborhood meeting is to require coordination of the proposed meeting, provide perimeters of dates and times, require public notice, and require a summary from the applicant. The amendment would not have a negative impact to public facilities.

6. **Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

7. **The proposed development is functional in the use of space and aesthetically acceptable.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

8. **The proposed development provides for the safety of occupants and visitors.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

9. **The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.**

   There is no development proposed as part of the proposed amendment. The application pertains to a Land Development Code amendment.

10. **The testimony provided at public hearings**.

    There has not been a public hearing at this time. The comments from the Planning Board meeting will be incorporated into the City Commission packet.

RECOMMENDATION:

It is recommended that the Planning Board **APPROVE** the administrative amendment to the Land Development Code (LDC), Chapter 4, Plan Review and Subdivision, Article I, Site Plan Review Procedures, Section 4-03, Site Plan Review Committee (SPRC) established, amending the SPRC coordinating liaison and updating the process for neighborhood meetings, as shown in Attachment 1.

Attachments:

Attachment 1: Proposed Land Development Code amendment

Chapter 4 – Plan Review and Subdivision, Article I. – Site Plan Review Procedures

Sec. 4-03. Site Plan Review Committee (SPRC) established.

(a) *Membership.* The Site Plan Review Committee (SPRC) is hereby established. The SPRC shall be chaired by the planning director or the director's designee, who shall be responsible for coordinating and managing the affairs of the committee. In addition to the planning director, members of the SPRC shall include the city engineer, and the city landscape architect or designee of such persons as appropriate. The SPRC shall also consult with, receive input from, and send site plans as well as meeting agendas to the city attorney, chief building official, utilities manager, police chief, fire chief, public works director or their respective designees as appropriate.

(b) *Designated city SPRC coordinating liaison.* ~~For each project reviewed, one (1) member of the SPRC shall be assigned as the~~ The planning director shall serve as the project coordinating liaison. The project liaison shall provide the applicant a single city contact responsible for coordinating the work of other city staff involved in the site plan review process. ~~The SPRC shall meet to review city staff comments and resolve any conflicts prior to presenting SPRC comments to the applicant. Issues requiring Land Development Code interpretation should be resolved between the planning director and the city engineer prior to meeting with the applicant. The same SPRC shall follow a single project from initial submittal to final approval. The assigned planner, development services engineer and landscape architect that comprise each respective SPRC shall be~~ After all SPRC members have approved a site plan, the planning director shall be responsible for final approval and signoff of site plans on behalf of the SPRC.

(c) *Meetings of the SPRC.* The planning department shall annually establish a schedule for application submittal and review. This shall be approved by the planning board at their January meeting.

(d) *Scope of powers.*

(1) *Function.* The SPRC shall review all site plans, subdivisions, planned developments, conditional uses, and special exceptions as required and make a determination of the plan's acceptability and consistency with this Land Development Code and other applicable laws and ordinances.

(2) *Review powers.* The SPRC shall be responsible for conducting the review of development applications to ensure that the applications and related documentation comply with the technical standards established in the comprehensive plan, this Land Development Code and other relevant city ordinances. If an application is for a use that is allowed by right in a particular zoning district or otherwise not subject to a special exception or rezoning to planned development (PBD, PRD, PID or PMHC), then the SPRC shall approve the application if it is consistent with the technical standards of the comprehensive plan and applicable regulations contained in this Land Development Code and the Code of Ordinances. For applications that require approval of a special exception or for a rezoning to planned development, the SPRC shall review and provide technical comments to the appropriate advisory boards and the city commission, subject

to the procedures established in chapter 1, article II of this Land Development Code. If the SPRC determines that an application does not comply with the technical standards contained in the comprehensive plan, this Land Development Code or other relevant city ordinances, then the applicant shall be informed of the inconsistencies and the applications shall follow the procedures established in section 4-05.

(3) *Alternative standard.* The planning director may accept an alternative standard to a prescribed standard provided a written request by the applicant has been received. The written request shall detail how the prescribed standard fails to address the purpose for which it was developed and how an alternative standard accomplishes the stated purpose. The granting of administrative relief from the standards of this Land Development Code requires the following:

a. Administrative relief may not exceed ten percent (10%) of a yard or area standard and shall be reviewed by the planning director in accordance with the criteria established for a variance under this Land Development Code. All other relief requests must comply with all the variance procedures of this Land Development Code.

b. If the request is approved by the planning director, such administrative relief shall be added to the site plan as a certificate with a signature block for the planning director.

c. Quarterly, the planning director shall provide to the planning board and city commission a report identifying all alternative standards and administrative relief granted.

d. Any party may appeal the alternative standard determination of the planning director pursuant to section 1-19.

(4) *Advisory comments.* The SPRC may also make recommendations to the applicant, to the planning board and to the city commission on discretionary matters. The committee may also make advisory comments on site layout and design features.

(5) *Publish rules of procedure.* The SPRC shall adopt and publish rules of procedure in order to expedite the orderly processing and review of proposed land uses, site plans, subdivision plans, planned developments and other matters assigned to the SPRC by this Land Development Code.

(6) *Neighborhood compatibility meetings.*

a. *Applicability.* An informal ~~community~~ neighborhood meeting shall be held after the initial submittal of an application and prior to ~~the second review by the SPRC~~ the planning board public hearing, if required, or final action by the SPRC when it has been determined by the planning director or designee that such a meeting could contribute to the community's understanding and knowledge of a proposed development in their neighborhood. ~~Community~~ Neighborhood meetings are required at a minimum when a nonresidential development is abutting residential areas. Industrial is specifically excluded from this requirement.

b. *Purposes.* The purposes of ~~community~~ neighborhood meetings are as follows:

1. Provide an opportunity where an applicant and the community can meet and discuss the merits of a development in an informal environment;
2. Educate and inform residents of how new development can co-exist with existing development in the community;
3. Obtain input from residents to revise the site plan prior to administrative approval by the city.

c. *Structure of a ~~community~~ neighborhood meeting.* ~~Any meeting held as a result of this section shall be conducted at or in a close proximity of the proposed project location. The time of the meeting shall be convenient to the surrounding property owners to maximize attendance. A record of the meeting and those in attendance shall be provided to the planning department. The planner attending the meeting shall only act as an observer of the proceedings. It is the responsibility of the applicant to notify, in writing, all affected parties, including the homeowners' association, if one exists, all tenants of property, the appropriate city staff person and members of the planning board and city commission, regardless of the project's location, of the meeting's date time and place. No neighborhood meeting shall be on the night of planning board or city commission meetings.~~ The following sequence of activities is required:

1. ~~*Notification.* Two (2) weeks prior to the meeting date, the applicant shall mail notices of the meeting date, time and place to all property owners inside a radius of six hundred feet (600') from the boundary of the proposed development. Documentation of the mailed notice in the form of a stamped mailing list by the local postal office signifying the notice was sent shall be provided to staff for verification. For purposes of F.S. ch. 286, city staff shall ensure these meetings are included in a public notice published in a newspaper of general circulation.~~
2. ~~*Development presentation.* The applicant should explain the proposed use of the subject property and make a copy of the proposed site plan available for review by attendees. The applicant should also discuss the project's development objectives, fit and design philosophy.~~
3. ~~*Question and answer period.* Upon completion of the presentation, time should be reserved for questions and answers. The applicant should be prepared to discuss how potential conflicts could be mitigated. Any representations made by the applicant to the attendees in order to gain support for the proposal shall be considered as a voluntary proffered condition. The use being presented is a permitted use; consequently, citizen questions should be concentrated on how the development affects their property and possible solutions for mitigating such impacts. A question of whether a permitted use should be developed is not a subject of the meeting.~~

1. *Neighborhood meeting pre-approval.* At least five (5) business days to the publication of the neighborhood meeting, the applicant shall provide the planning director a draft of the proposed neighborhood meeting. The draft publication shall include the date, time, and location of the proposed meeting. Within three (3) business days of receipt of the draft publication, the planning director shall issue a written approval of the draft publication or required changes. No neighborhood meeting shall be conducted without the required pre-approval process.

2. *Location of neighborhood meeting.* The meeting location shall be conducted in a close proximity of the proposed project location.

3. *Date and time of neighborhood meeting.* Neighborhood meetings shall be held between 5:00 p.m. and 8:00 p.m., Monday through Thursday. No neighborhood meeting shall be on Friday, Saturday, Sunday, or the night of planning board or city commission meetings.

4. *Notification.* Notification of the neighborhood meeting shall occur as follows:

   A. Mail notice (by applicant): At least fourteen days (two (2) weeks) prior to the meeting date, the applicant shall mail notices via U.S. mail of the meeting date, time and place to all property owners inside a radius of six hundred feet (600') from the boundary of the proposed development. The mail notice shall include a site or development plan of the project. The property owners mailing addresses shall be obtained from the Volusia County Property Appraiser Office records. The applicant shall complete and provide to city staff an affidavit stating the date of the mailing of the notice, a copy of the mailed notice, and a copy of the mailing list of property owners.

   B. Site posting (by applicant): At least fourteen days (two (2) weeks) prior to the meeting date, the applicant shall post one (1) sign, two (2') feet by three (3') in size, for each street frontage at least fourteen days (two (2) weeks) prior to the meeting date. For sites larger than three (3) acres, the planning director may require a maximum of three (3) additional signs. The signage shall contain the meeting date, time and place. The applicant shall provide to city staff an affidavit certifying that the posting has been completed and a picture of the posting.

   C. Newspaper advertisement: Planning staff shall publish a public notice of the neighborhood meeting, published in a newspaper of general circulation.

5. *Record of the meeting.* The applicant shall offer a sign-in sheet that includes an area for e-mail addresses of attendees. The applicant shall take notes of the meeting and provide the planning director the written notes of the meeting and sign-in sheet within seven (7) business days after the meeting.

6. *City staff attendance of the neighborhood meeting.* Any city staff attending the meeting shall only act as an observer of the proceedings.

7. *Development presentation.* The applicant should explain the proposed use of the subject property and make a copy of the proposed site plan available for review by attendees. The applicant should also discuss the project's development objectives, fit and design philosophy.

8. *Question and answer period.* Upon completion of the presentation, time should be reserved for questions and answers. The applicant should be prepared to discuss how potential conflicts could be mitigated. Any representations made by the applicant to the attendees in order to gain support for the proposal shall be considered as a voluntary proffered condition. The use being presented is a permitted use; consequently, citizen questions should be concentrated on how the development affects their property and possible solutions for mitigating such impacts. A question of whether a permitted use should be developed is not a subject of the meeting.

d. *Determination of compatibility.* In preparation of a ~~community~~ neighborhood meeting, compatibility of proposed projects shall be assessed by the applicant based on the ability of a development to fit in the area by resolving differences and averting negative impacts created upon surrounding properties. This determination shall include assessing impacts upon community character and the local roadway network, while identifying potential land use conflicts.

e. *Discretionary review.* Site plans shall be administratively reviewed and approved when it has been determined based upon neighborhood meetings that the project's impacts upon the adjacent property have been adequately addressed such that minimal or no effect occurs. To accomplish this, the applicant should recognize that a minimum standard may need to be increased in order to address the negative effect. The planning director shall have the authority to change the review process of an application from administrative to a special exception involving a formal public hearing approval process when it has been determined that the minimal standard fails to satisfy the compatibility test, thus not adequately protecting the public interest.

f. *Planning director determination.* Within five (5) business days of the neighborhood meeting, the planning director shall issue a letter of determination informing the applicant of the review path of the application.

g. *Appeal.* Any property owner within six hundred feet (600') of the site may appeal the planning director's determination to the city commission in accordance with section 1-19. Fees for an appeal shall be in accordance with section 1-26.

(e) *Application processing/subdivisions; planned developments. ***No change to existing text****

DRAFT

Planning Board minutes from February 9, 2023

ITEM:

SE 2023-018

Land Development Code amendment: Section 4-03, Site Plan Review Committee (SPRC) established

Mr. Jorczak motioned to approve LDC 2023-017, Land Development Code amendment: Section 1-28, Utility installation fees. Ms. Shull seconded it. Vote was called, and the motion was approved (7-0).

C. LDC 2023-017, Land Development Code amendment: Section 2-50(n) Fences and walls

Mr. Spraker, Planning Director, stated that this is an administrative amendment to the Land Development Code, to allow a fence setback less than three (3') feet to a right-of-way with review and approval of the Site Plan Review Committee (SPRC).

Mr. du Moulin asked if this is to provide more flexibility in the fence location similar to what was done for his HOA so that it looks good. Mr. Spraker responded that it would but only through a multi-departmental review such as utilities, landscaping, site visibility, etc.

Planning Board members discussed the fence requirements along the side, side corner, and waterfront yards.

Mr. Railsback inquired if the amendment language will prevent going beyond what is conforming. Mr. Spraker confirmed that the maximum relief would be to the property line and the amendment does not allow any fences in any right-of-way.

Mr. Galloway motioned to approve LDC 2023-017, Land Development Code amendment: Section 2-50(n) Fences and Walls. Ms. Shull seconded it. Vote was called, and the motion was approved (7-0).

D. LDC 2023-018, Land Development Code amendment: Section 4-03, Site Plan Review Committee (SPRC) established

Mr. Spraker, Planning Director, stated that this is an administrative amendment to the Land Development Code Site Plan Review Committee section, amending the SPRC coordinating liaison and updating the process for neighborhood meetings.

Mr. Spraker continued that there are two parts to the proposed amendment: 1) Change the existing language designating a city SPRC coordinating liaison to assign the Planning Director (or designee) instead, and 2) Changes regarding Neighborhood meetings by a) amending the meeting name to "neighborhood" for consistency b) requiring a meeting pre-approval with written approval from city staff at least five business days before the applicant mails meeting notice; c) requiring meetings to be held Monday through Thursday between 5 p.m. – 8 p.m.; d) requiring site postings, one for each frontage with 2' by 3' signs; and e) requiring a written summary of the meeting to be provided to city staff.

There was discussion regarding frequency, notice, and posting of neighborhood meetings among the Board members. Mr. Spraker clarified that this amendment is to require the one minimum meeting and the 2' x 3' sign posting (same as the variance sign).

Ms. Shull inquired about the site posting. Mr. Spraker explained that no neighborhood meeting posting has been required. Ms. Shull suggested that the signs be larger so they are more noticeable.

Mr. Scudiero asked since a 4' x 4' sign is required for the public hearing notice can the same sign be used. Mr. Spraker responded that it might be difficult since there will be different names of the meeting, date, and location.

Mr. Scudiero motioned to approve LDC 2023-018: Land Development Code amendment: Section 4-03, Site Plan Review Committee (SPRC) established with the exception of Item "D" the size of the sign to be 4' by 4' not 2' x 3'. Each roadway frontage would require its own sign. Mr. Railsback seconded it. Vote was called, and the motion was approved (7-0).

VIII. OTHER BUSINESS

A. **Public comments regarding items not on the agenda**. Chairman Thomas explained this is a carryover from the City Commission meetings. The Board discussed when public comments for items not on the agenda should be.

Mr. Jorczak motioned to approve public comment for items not on the agenda at the end of the meeting. Ms. Shull seconded it. Vote was called, and the motion was approved (7-0).

B. **Site Plan Review Committee (SPRC) calendar**. Mr. Spraker explained the SPRC calendar is required to come before the Planning Board for approval.

Mr. Scudiero motioned to approve the SPRC calendar. Mr. Railsback seconded it. Vote was called, and the motion was approved (7-0).

XI. MEMBER COMMENTS

Planning Board members praised the Planning Staff for all of the hard work especially with the Neighborhood meetings and packets of information. Chairman Thomas emphasized the desire to give all citizens in attendance the opportunity to speak.

XII. ADJOURNMENT

The meeting was adjourned at 7:10 p.m.

Respectfully submitted,

_____

Steven Spraker, Planning Director

DRAFT

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 8.D
Section:	PUBLIC HEARINGS		
Item Category:	Public Hearing - Resolution	**Res./Ord. No:**	2023-68
Strategic Goal:	Community Development - Other		
Department :	Planning & Building		
Subject:	78 East Granada Boulevard, Ormond Memorial Art Museum & Gardens: Special Exception for Cottage Style Garden Shed		
Budget Impact:	There is no budget impact as the result of this Special Exception.		
Summary:	The Ormond Memorial Art Museum & Gardens, Inc., seeks a Special Exception to (1) provide city authorization, per the 2019 Ormond Memorial Art Museum, Inc. lease agreement, to allow the conversion of two parking spaces into a cottage style garden shed, and (2) allow cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line.		
Recommended Action:	It is recommended the City Commission approve the attached Ordinance to: 1. Provide city authorization, per the 2019 Ormond Memorial Art Museum, Inc. lease agreement, to allow the conversion of two parking spaces into a cottage style garden shed; and 2. Allow a cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line. The Planning Board reviewed the Special Exception request at the February 9, 2023 meeting and recommended approval by a 7-0 vote.		
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341		

Approval:

Kelly McGuire, Finance Director 3/8/2023



Claire Whitley, Assistant City Manager	3/8/2023	
Joyce Shanahan, City Manager	3/14/2023	

CITY OF ORMOND BEACH
22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Steven Spraker, Planning Director

Date: March 21, 2023

Subject: 78 East Granada Boulevard, Ormond Memorial Art Museum & Gardens: Special Exception for Cottage Style Garden Shed

Commission Goal: Community Development - Other

Introduction

This is a request submitted from Stephanie Mason-Teague, Executive Director, Ormond Memorial Art Museum & Gardens, Inc., for a Special Exception to allow the conversion of two parking spaces into a cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line. The subject property is located at 78 East Granada Boulevard and is zoned as B-4 (Central Business) within the Downtown Overlay District.

Background

The Ormond Memorial Art Museum & Gardens recently completed a major renovation that included:

- Interior renovations that maintained the original cottage and galleries and reconfigured the space for a more contiguous exhibit layout;
- Exterior renovations along the west side of the building, including a pedestrian-friendly garden pavilion, a sitting wall, new shade features and outdoor art displays to generate more visibility and impact along the Granada Corridor; and
- Removing the existing southern addition built in 1988 to construct a new two-story structure with a rooftop terrace overlooking the gardens in its place.

The following Resolutions have been approved for the property since 2019:

- September 18, 2019: Resolution 2019-169, approved a lease agreement between the City of Ormond Beach and the Ormond Memorial Art Museum, Inc.
- September 23, 2020: Resolution 2020-137, approved five (5) wall signs for a total of 206± square feet of building signage to recognize the unique use and sponsors of the renovation.

- July 19, 2022: Resolution 2022-92, approved live outdoor music as part of reserved events on the rooftop terrace of the museum between the hours of 11:00 a.m. to 10:00 p.m., Sunday through Saturday.
- July 19, 2022: Resolution 2022- 93, approved one (1) 24+ square foot wall sign, in addition to the previously approved five (5) wall signs of 206+ square feet for a total of six (6) wall signs of 230+ square feet of building signage.
- July 19, 2022: Resolution 2022-94, approved a public art project of an existing butterfly wall sculpture on the south facing wall and the installation of the butterfly wall sculpture on the west facing wall.
- September 7, 2022: Resolution 2022-105, approved the execution of a service agreement between the city and the Ormond Memorial Art Museum, Inc.

Discussion

The specific approval sought is as follows:

1. Provide city authorization, per the 2019 Ormond Memorial Art Museum, Inc. lease agreement, to allow the conversion of two parking spaces into a cottage style garden shed; and
2. Allow a cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line.

The applicant's letter states "The shed is necessary to store equipment needed to properly care for the gardens. When the museum building was renovated, the space previously used for storage was demolished. Since that time, a POD storage container has stored the equipment." The applicant has reviewed multiple alternative locations for a cottage shed. The alternative locations would have either impacted the garden areas or replaced parking spaces closer to the gardens and museum building. The applicant has provided a no objection letter from the abutting residential property owner to the cottage style garden shed location.

PLANNING BOARD REVIEW

The Planning Board reviewed the request at the February 9, 2023 meeting and recommended approval by a 7-0 vote. There were no individuals who spoke for or against the amendment. The Planning Board minutes are attached to this item.

Budget Impact

There is no budget impact as the result of this Special Exception.

Citizen Impact

Staff received an e-mail from an Ormond Heritage resident expressing concern regarding the removal of two parking spaces. Staff also received correspondence from St. James Church regarding an existing parking agreement. The Special Exception

does not propose to amend the existing parking agreement with St. James Church. The location of the cottage style garden shed is not expected to have a negative citizen impact. The Ormond Memorial Art Museum has considered several alternative locations and the selected location is the least impactful to the gardens and parking lot.

Recommendation

It is recommended the City Commission approve the attached Ordinance to:

1. Provide city authorization, per the 2019 Ormond Memorial Art Museum, Inc. lease agreement, to allow the conversion of two parking spaces into a cottage style garden shed; and
2. Allow a cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line.

The Planning Board reviewed the Special Exception request at the February 9, 2023 meeting and recommended approval by a 7-0 vote.

Attachments:

1. 23-68 OAM&G, Cottage Shed (P23-0036G)
2. Planning, DO - OAM&G, Cottage Shed
3. Exhibit A, legal description
4. Exhibit B, Cottage Shed Details
5. 02.09.2023, 78 EGB, SE Cottage Style Garden Shed
6. Draft PB Minutes, 78 EGB, Cottage Shed Special Exception

Approvals:

Kelly A. McGuire

Kelly McGuire, Finance Director — Date: March 08, 2023

Claire Whitley, Assistant City Manager — Date: March 08, 2023

Joyce Shanahan

Joyce Shanahan, City Manager — Date: March 14, 2023

RESOLUTION NO. 2023-68

A RESOLUTION APPROVING A SPECIAL EXCEPTION DEVELOPMENT ORDER AUTHORIZING TWO PARKING SPACES IN THE SOUTHEAST CORNER OF THE PARKING LOT OF THE ORMOND MEMORIAL ART MUSEUM AND GARDENS AT 78 EAST GRANADA BOULEVARD TO BE USED FOR THE PLACEMENT OF A COTTAGE STYLE GARDEN SHED; AUTHORIZING THE EXECUTION AND ISSUANCE OF A DEVELOPMENT ORDER; ESTABLISHING CONDITIONS AND EXPIRATION DATE OF APPROVAL; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, Ormond Memorial Art Museum, Inc., has applied for the issuance of a Special Exception Development Order authorizing two parking spaces in the southeast corner of the parking lot of the Ormond Memorial Art Museum and Gardens at 78 east Granada Boulevard to be used for the placement of a cottage style garden shed measuring approximately eighteen feet (18') by twenty-four feet (24'), to be situated approximately five feet (5') from the rear property line, and

WHEREAS, the City Commission approved Resolution 2019-169 (September 18, 2019) approving a lease agreement between the City of Ormond Beach and Ormond Memorial Art Museum, Inc., and

WHEREAS, the City Commission approved Resolution 2020-137 (September 23, 2020) approving a Special Exception authorizing five wall signs to recognize sponsors of the renovation which is recorded in Official Records Book 7918, Pages 810 through 827 of the Public Records of Volusia County, Florida, and

WHEREAS, the City Commission approved Resolution 2021-125 (August 4, 2021) approving a corrective legal description for the subject property, which is recorded in Official Records Book 8101, Pages 2395 through 2400 of the Public Records of Volusia County, Florida, and

WHEREAS, the City Commission approved Resolution 2022-92 (July 19, 2022) approving a Special Exception Development Order authorizing live outdoor music at the property, which is recorded in Official Records Book 8288, Pages 32 through 42 of the Public Records of Volusia County, Florida, and

WHEREAS, the City Commission approved Resolution 2022-93 (July 19, 2022) approving a Special Exception Development Order authorizing a 24± square foot wall sign, which is recorded in Official Records Book 8288, Pages 1 through 10 of the Public Records of Volusia County, Florida, and

WHEREAS, the City Commission approved Resolution 2022-94 (July 19, 2022) approving a Special Exception Development Order authorizing a public art project for the display of a butterfly wall sculpture, which is recorded in Official Records Book 8288, Pages 1978 through 1985 of the Public Records of Volusia County, Florida, and

WHEREAS, the City Commission approved Resolution 2022-105 (September 7, 2022) approving a service agreement between the city and the Ormond Memorial Art Museum, Inc.

WHEREAS the said application complies with all applicable provisions of the City of Ormond Beach *Land Development Code* and the general laws of Florida; and

WHEREAS the Planning Board held a public hearing on February 9, 2023, regarding this matter as required by Chapter 1, Article II, Section 1-15(d)(2), of the *Land Development Code*, and

WHEREAS, the City Commission has duly held a public hearing on the application and has considered the testimony and evidence presented, and

WHEREAS, the City Commission has considered the following:

(1) The report and recommendations of the Planning Board; and

(2) The comments of governmental agencies, utility corporations and individuals, as received, and

WHEREAS, based upon all of the foregoing and in consideration thereof, the City Commission finds that:

(1) The proposed use conforms to the standards and requirements of the *Land Development Code* and will not create undue crowding beyond the conditions normally permitted in the B-4 (Central Business) zoning district, or adversely affect the public health, safety, welfare or quality of life;

(2) The proposed use is consistent with the *Comprehensive Plan*;

(3) The proposed use will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells;

(4) The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties;

(5) There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds, as proposed;

(6) Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe, as proposed;

(7) The proposed use is functional in the use of space and aesthetically acceptable;

(8) The proposed use provides for the safety of occupants and visitors; and

(9) The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area;

now therefore,

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The above recitals are true and correct and are incorporated by reference.

SECTION TWO. The application for a Special Exception Development Order to allow two parking spaces in the southeast corner of the parking lot of the Ormond Memorial Art Museum and Gardens at 78 east Granada Boulevard to be used for the placement of a cottage style garden shed measuring approximately eighteen feet (18') by twenty-four feet (24'), to be situated approximately five feet (5') from the rear property line is hereby approved; and the Mayor and the

City Manager are hereby authorized and directed to execute and issue a Development Order for such purpose, a copy of which is attached hereto and incorporated by reference.

SECTION THREE. A certified copy of this Resolution and the executed original Special Exception Development Order shall be recorded in the public records of Volusia County, Florida.

SECTION FOUR. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 21st day of March, 2023.

_____

BILL PARTINGTON
Mayor

ATTEST:

_____

SUSAN CARROLL DAUDERIS
City Clerk

BEFORE THE
CITY COMMISSION
OF THE
CITY OF ORMOND BEACH

IN RE:	**Applicant:**	Ormond Memorial Art Museum, Inc., a Florida not-for-profit corporation ("Applicant")
	Application No.:	SE 2023-020
	Project Name:	Ormond Memorial Art Museum & Gardens
	Property Address:	78 East Granada Boulevard
	Parcel ID No.:	4214-11-00-0240

SPECIAL EXCEPTION
DEVELOPMENT ORDER

This matter having come on for public hearing before the City Commission of the City of Ormond Beach, Florida, on March 21, 2023, and the City Commission having considered those items as required by Section 1-18 of the *Land Development Code*, and having heard testimony and evidence from all affected persons, the City Commission hereby finds that:

1. The proposed use conforms to the standards and requirements of the *Land Development Code* and will not create undue crowding beyond the conditions normally permitted in the B-4, Central Business, zoning district, or adversely affect the public health, safety, welfare or quality of life;

2. The proposed use is consistent with the *Comprehensive Plan*;

3. The proposed use will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells;

4. The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties;

5. There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds;

6. Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe;

7. The proposed use is functional in the use of space and aesthetically acceptable;

8. The proposed use provides for the safety of occupants and visitors; and

9. The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.

Thereupon and in consideration thereof, the City Commission hereby orders that:

A. The application of Ormond Memorial Art Museum, Inc., for a Special Exception Development Order authorizing two parking spaces in the southeast corner of the parking lot of the Ormond Memorial Art Museum and Gardens at 78 East Granada Boulevard to be used for the placement of a cottage style garden shed measuring approximately eighteen feet (18') by twenty-four feet (24'), to be situated approximately five feet (5') from the rear property line as described and depicted on Exhibit "A" attached hereto and incorporated, is hereby granted subject to the following conditions:

1. All applicable provisions of the *Land Development Code* shall be complied with at all times, such provisions being incorporated herein by reference and hereby specifically made a part of this Special Exception;

2. There are no outstanding Site Plan Review Committee comments;

3. Full and complete compliance with the Applicant's Site Plan attached as Exhibit "B".

B. No material change shall be made to the final plans attached as Exhibit "B" and incorporated herein by reference for this Special Exception without further review by the

Planning Board and approval by the City Commission in accordance with the procedures for the approval of this Special Exception Development Order.

C. In the event a Neighborhood Improvement Officer subsequently determines there to be any violation of this Special Exception, such Officer shall promptly present such determination to Special Magistrate for hearing.

D. If this Special Exception is abandoned for a period of six (6) months, a zoning approval for a new use, subject to Special Exception requirements, shall not be issued until the Site Plan review Committee determines that all of the conditions of Chapter I, Article II, Section 1-14(3) of the *Land Development Code* have been meet.

E. This Special Exception Development Order shall be recorded in the public records of Volusia County, Florida, at the expense of Applicant, and shall be binding upon the Applicant, and its successors and assigns, and shall run with the real property described in Exhibit "A" attached hereto and incorporated herein by reference. (Parcel ID No.: 4214-11-00-0240)

ORDERED this 21st day of March, 2023.

By: _____
BILL PARTINGTON
Mayor

(CITY SEAL)

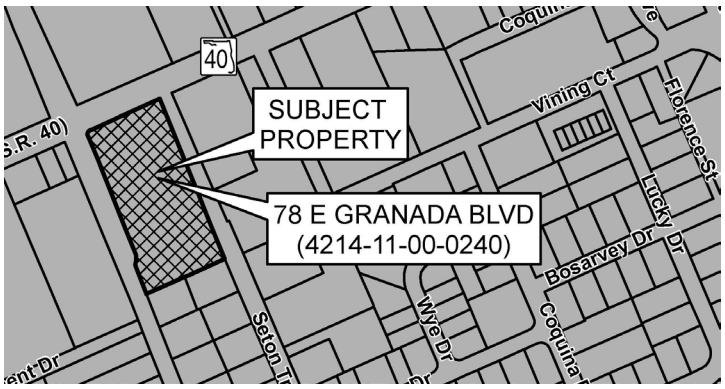
Attest: _____
JOYCE A. SHANAHAN
City Manager

EXHIBIT "A"

LEGAL DESCRIPTION
(from Sliger & Associates, Inc. survey – survey date July 1, 2019)

LEGAL DESCRIPTION:
LOTS 22, 24, 26, 28, 30, 31, 33, 35, 37, 39 EXCEPT RIGHTS OF WAY ALONG THE WEST BOUNDARY OF SAID LOTS, OF WORTHY AND HUBBARDS ADDITION TO ORMOND, MAP BOOK 1, PAGE 121

LOCATION MAP



PARCEL ID: 4214-11-00-0240

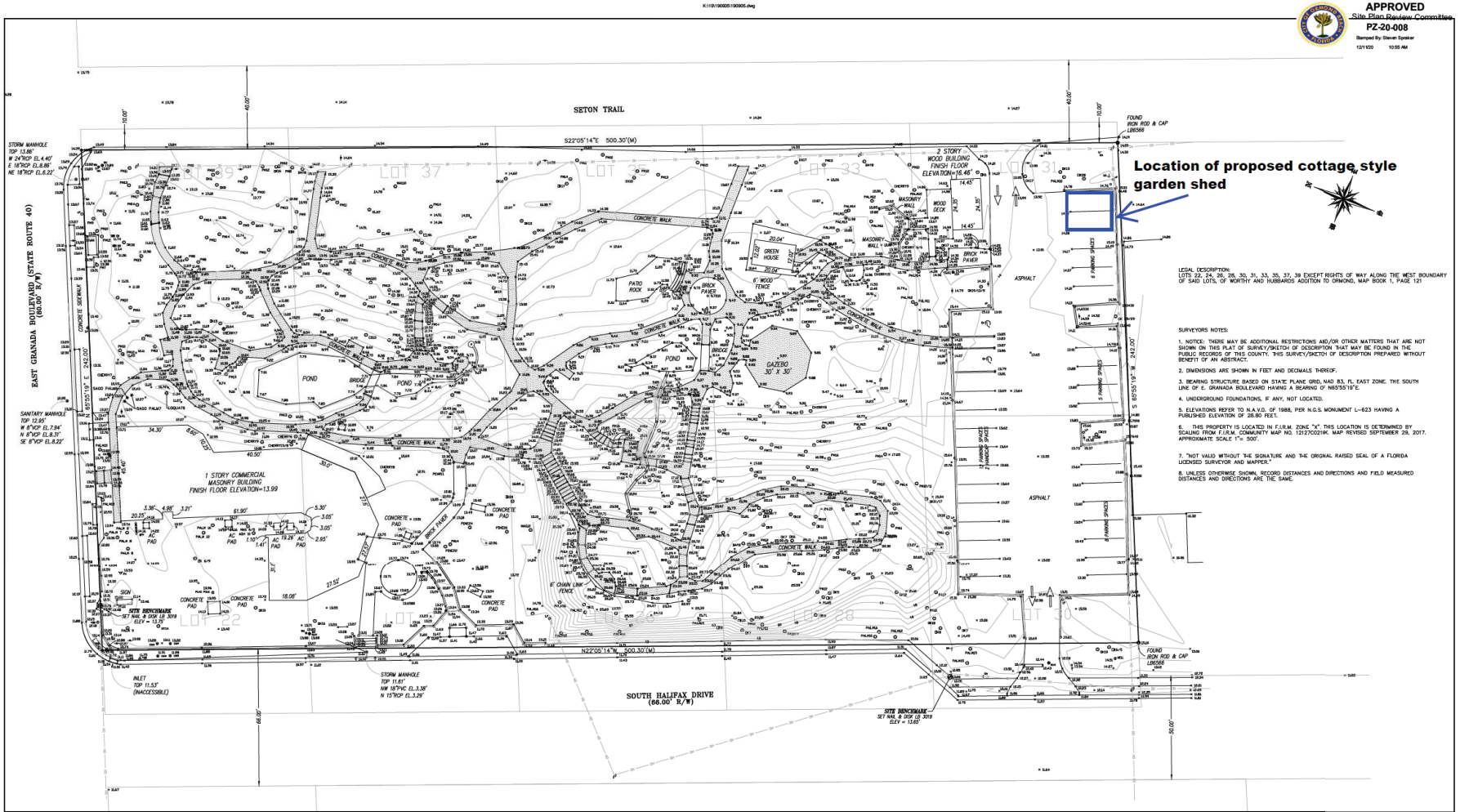
OWNER: CITY OF ORMOND BEACH

APPLICANT: ORMOND MEMORIAL ART MUSEUM & GARDENS

SPECIAL EXCEPTION ADDRESS: 78 EAST GRANADA BOULEVARD, ORMOND BEACH, FL 32176

EXHIBIT "B"
Page 1 of 4

APPROVED
Site Plan Review Committee
PZ-20-008
Stamped By Steven Spraker
12/1/20 10:55 AM



LEGAL DESCRIPTION:
LOTS 22, 24, 26, 28, 30, 31, 33, 35, 37, 39 EXCEPT RIGHTS OF WAY ALONG THE WEST BOUNDARY OF SAID LOTS, OF WORTHY AND HUBBARDS ADDITION TO ORMOND, MAP BOOK 1, PAGE 121

SURVEYORS NOTES:

1. NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY/SKETCH OF DESCRIPTION THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. THIS SURVEY/SKETCH OF DESCRIPTION PREPARED WITHOUT BENEFIT OF AN ABSTRACT.
2. DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.
3. BEARING STRUCTURE BASED ON STATE PLANE GRID, NAD 83, FL, EAST ZONE. THE SOUTH LINE OF E. GRANADA BOULEVARD HAVING A BEARING OF N65°55'19"E.
4. UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.
5. ELEVATIONS REFER TO N.A.V.D. OF 1988, PER N.G.S. MONUMENT L-623 HAVING A PUBLISHED ELEVATION OF 28.90 FEET.
6. THIS PROPERTY IS LOCATED IN F.I.R.M. ZONE "X". THIS LOCATION IS DETERMINED BY SCALING FROM F.I.R.M. COMMUNITY MAP NO. 12127C0219K, MAP REVISED SEPTEMBER 29, 2017. APPROXIMATE SCALE 1"= 500'.
7. "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."
8. UNLESS OTHERWISE SHOWN, RECORD DISTANCES AND DIRECTIONS AND FIELD MEASURED DISTANCES AND DIRECTIONS ARE THE SAME.

LEGEND

● IRON ROD WITH CAP	⊗ GV GAS VALVE	⊠ FOCB FIBER OPTIC CABLE BOX	Ⓢ SSMH SANITARY SEWER MANHOLE
○ IRON ROD	⊗ RUV RISER VALVE	⊠ FOCV FIBER OPTIC CABLE VAULT	Ⓢ SDMH STORM DRAIN MANHOLE
◉ IRON PIPE WITH CAP	⊗ SSV SANITARY SEWER VALVE	ELP ELECTRIC PANEL	Ⓖ GTMH GREASE TRAP MANHOLE
○ IRON PIPE	⊗ HHE HAND HOLE (ELECTRIC)	FOCM FIBER OPTIC CABLE MARKER	Ⓔ EMH ELECTRIC MANHOLE
⊙ FD "X"/DOT IN CONCRETE	⊠ WM WATER METER	TPM TELEPHONE CABLE MARKER	Ⓤ UMH UTILITY MANHOLE
□ CONCRETE MONUMENT	⊠ GM GAS METER	SIGN	Ⓒ CO CLEAN OUT
■ DENOTES PC / PT	Ø TB TELEPHONE BOX	☼ LP LIGHT POLE	FOC FIBER OPTIC CABLE MANHOLE
△ PERMANENT CONTROL POINT	MB MAIL BOX	YL YARD LIGHT	RBO REUSE BLOWOFF ASSEMBLY
SITE BENCHMARK	TV CABLE TELEVISION BOX	UTILITY POLE	WETLANDS LOCATION
FH FIRE HYDRANT	TSB TRAFFIC SIGNAL BOX	GA GUY ANCHOR	EXISTING CONCRETE
WV WATER VALVE	EB ELECTRIC SERVICE BOX	UTILITY VALVE	0.00+ EXISTING ELEVATION

ABBREVIATIONS

W/ WITH	ILLUM ILLUMINATE	GAS GAS LINE MARKER		DIP DUCTILE IRON PIPE	PP POWER POLE	-FO- BURIED FIBER OPTIC CABLE
IRC IRON ROD & CAP	MB MAP BOOK	D CENTRAL ANGLE		PVC POLYVINYL CHLORIDE	GA GUY ANCHOR	-T- BURIED TELEPHONE CABLE
IR IRON ROD (NO CAP)	PG PAGE	R RADIUS		CMP CORRUGATED METAL PIPE	WM WATER METER	-W- BURIED WATER LINE
PC IRON PIPE & CAP	ORB OFFICIAL RECORDS BOOK	L ARC LENGTH		CONC CONCRETE	TSB TRAFFIC SIGNAL BOX	-E- BURIED ELECTRIC LINE
P IRON PIPE (NO CAP)	(P) PLATTED DIMENSION	CB CHORD BEARING		RCP REINFORCED CONCRETE PIPE	R/W RIGHT OF WAY	-G- BURIED GAS LINE
CM CONCRETE MONUMENT	(D) DEED DIMENSION	CH CHORD DISTANCE		CO CLEANOUT	DW DRIVEWAY	-TV- BURIED TELEVISION LINE
NAIL NAIL & DISK	(M) MEASURED DIMENSION	SAN SANITARY		ES ELECTRIC SERVICE	TOB TOP OF BANK	-FO- BURIED FIBERCABLE
FND FOUND	(C) CALCULATED DIMENSION	MH MANHOLE		CV CHECK VALVE	TOE TOE OF SLOPE	-OH- AERIAL UTILITY LINE
MW MONITORING WELL	(R) RADIAL	MES MITERED END SECTION		IV IRRIGATION VALVE	CLS CENTERLINE OF SWALE	-SW- STORM WATER LINE
ID IDENTIFICATION	(NR) NON RADIAL	HDPE HIGH DENSITY POLYETHYLENE PIPE		WV WATER VALVE	A/C AIR CONDITIONER	FPL ID FLORIDA POWER & LIGHT COMPANY
(TYP) TYPICAL	STA STATION	RCP REINFORCED CONCRETE PIPE		RUM REUSE METER	PAC FENCE	NGVD NATIONAL GEODETIC VERTICAL DATUM
SEC SECTION	EL ELEVATION	CMP CORRUGATED METAL PIPE		WM WATER METER	EOW EDGE OF WATER	NAVD NORTH AMERICAN VERTICAL DATUM
TWP TOWNSHIP	INV INVERT	CPP CORRUGATED PLASTIC PIPE		FH FIRE HYDRANT	U/E UTILITY EASEMENT	FDOT FLORIDA DEPARTMENT OF TRANSPORTATION
RGE RANGE	℄ CENTERLINE	VCP VITREOUS CLAY PIPE		TC TOP COVER	A/E ACCESS EASEMENT	TR TRIMMED TREE

UTILITY STATEMENT:

THE INACCESSIBLE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY HAVE BEEN LOCATED FROM ABOVE GROUND FIELD UTILITY LOCATIONS AND/OR EXISTING AS-BUILTS DRAWINGS PROVIDED BY THE CLIENT. SLIGER AND ASSOCIATES, INC. (S&A) MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. LIKEWISE S&A DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ONLY THAT S&A HAS LOCATED THE UTILITIES AS ACCURATELY AS POSSIBLE FROM SAID FIELD LOCATIONS AND/OR AS-BUILTS PROVIDED BY OTHERS. S&A HAS NOT PHYSICALLY LOCATED THE ACTUAL INACCESSIBLE UNDERGROUND UTILITIES, EXCEPT AS SPECIFICALLY NOTED AND DEPICTED ON THIS DRAWING.

ADDITIONAL ABBREVIATIONS-TREE LEGEND

CP	CAMPHOR TREE	SB	SUGARBERRY TREE	TREE TYPE	
MP	MAPLE TREE	CD	CEDAR TREE		TREE SIZE (INCHES) DIAMETER AT BREAST HEIGHT
SYC	SYCAMORE TREE	EM	ELM TREE	OK24.8	
OK	OAK TREE	CIT	CITRUS TREE		MULTIPLE TRUNKS
SG	SWEET GUM TREE	PN	PINE TREE		
HK	HICKORY TREE	PM	PALM TREE		TREE SYMBOL
CB	CHINABERRY TREE	HY	HOLLY		

FOR: ORMOND MEMORIAL ART MUSEUM INC
SCALE: 1"=20'
FIELD BOOK: 1412 PAGE(S): 65
HELD BOOK: 1417 PAGE(S): 52-59
SHEET 1 OF 1

TYPE OF SURVEY	SURVEY DATE	JOB NUMBER	PARTY CHIEF	DRAWN BY	CHECKED BY
SPECIFIC PURPOSE	:	–	–	–	–
BOUNDARY SURVEY	: 7-1-2019	– 19-0905	– KH	– TJ	– JZ
TOPOGRAPHIC SURVEY	: 7-1-2019	– 19-0905	– KH	– TJ	– JZ
FOUNDATION LOCATION	:	–	–	–	–
FINAL IMPROVEMENTS	:	–	–	–	–
RECERTIFICATION	:	–	–	–	–

SLIGER & ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
3921 NOVA ROAD
PORT ORANGE, FL. 32127
(386) 761-5355
LICENSED BUSINESS CERTIFICATION NUMBER 3019
www.sligerassociates.com
Copyright © 2019 Sliger & Associates, Inc.

ORMOND MEMORIAL ART MUSEUM

FOR: ORMOND MEMORIAL ART MUSEUM INC

JOB NO. 19-0905

PLAT PREPARED FOR THE FOLLOWING: (ONLY THE LAST DATE IS CERTIFIED ON SEALED COPY)

THIS PLAT OF SURVEY IS CERTIFIED TO AND PREPARED FOR THE SOLE AND EXCLUSIVE BENEFIT OF THE ENTITIES AND/OR INDIVIDUALS LISTED BELOW, ON THE MOST CURRENT DATE, AND SHALL NOT BE RELIED UPON BY ANY OTHER ENTITY OR INDIVIDUAL WHATSOEVER.

TYPE OF SURVEY	CERTIFIED TO	SURVEY DATE	JOB NUMBER
BOUNDARY	ORMOND MEMORIAL ART MUSEUM INC	7-1-2019	19-0905
TOPOGRAPHIC	CITY OF ORMOND BEACH, FLORIDA		

NOT CERTIFIED TO ANY ENTITIES AND/OR INDIVIDUALS OTHER THAN THOSE LISTED ABOVE.

BOUNDARY TOPOGRAPHIC SURVEY & TREE LOCATION

SHEET 1 OF 1

I HEREBY CERTIFY THAT THIS PLAT MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17.05, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

Joseph E Zapert Digitally signed by Joseph E Zapert Date: 2020.09.03 10:56:36 -04'00'

JE. ZAPERT, P.L.S. NO. 4046
JEFF. BELL, P.S.M. NO. 5578
C.O. VAN KLEECK, JR., P.S.M. NO. 6149
MICHAEL L. MURPHY, P.S.M. NO. 6208

D Hitchcock | Sliger & Assoc. Inc. | 9/2/2020

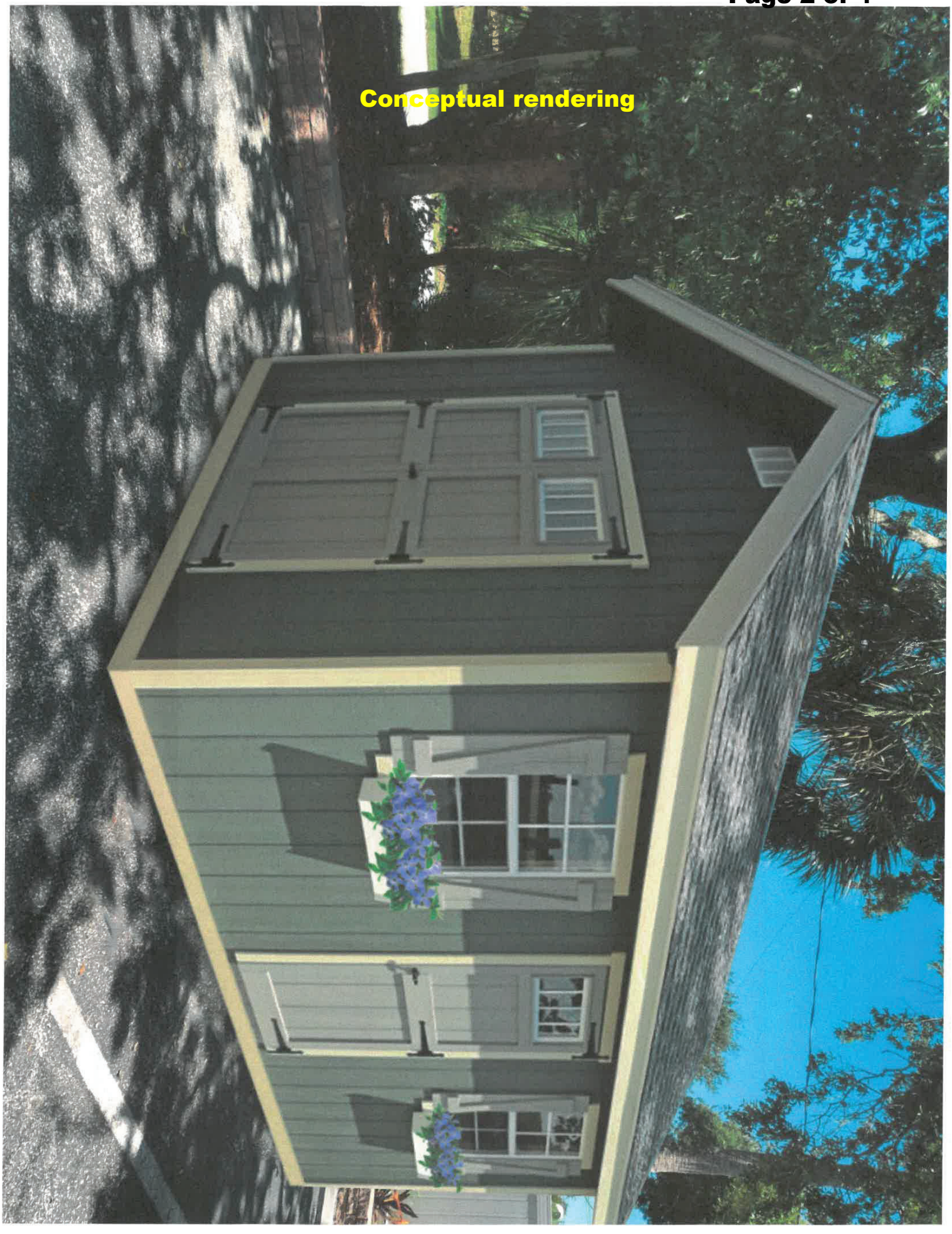
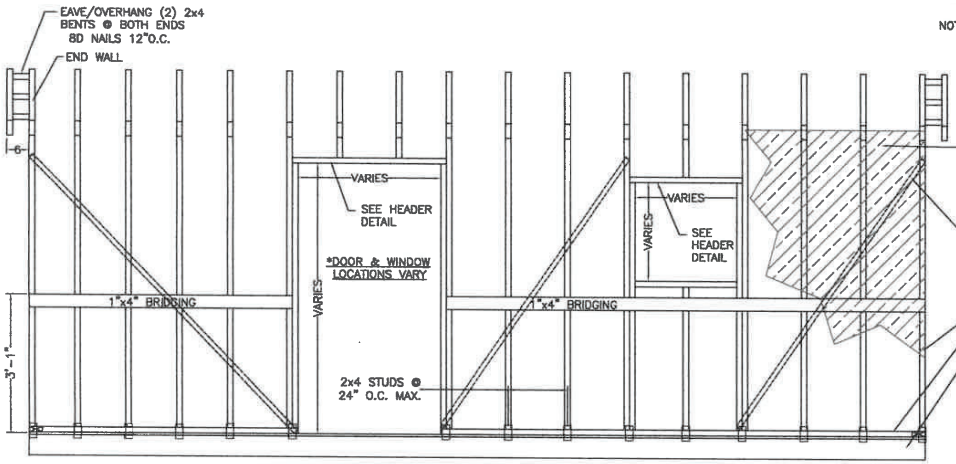

Conceptual rendering

EXHIBIT "B"
Page 3 of 4



NOTE: WALL FRAMING MEMBERS ARE CONTINUOUS FROM FOUNDATION SILL TO ROOF AND SECURED TO ENSURE A CONTINUOUS LOAD PATH. WHERE WALL MEMBERS ARE NOT CONTINUOUS, SHEET METAL CLAMPS, TIES, OR CLIPS SHALL BE FORMED OF GALVANIZED STEEL OF NOT LESS THAN 0.040" NOMINAL THICKNESS.

PLANS ARE APPROVED FOR THE HEIGHTS OF ALL COMBINATIONS OF WALL HEIGHTS AND WIDTHS LISTED.

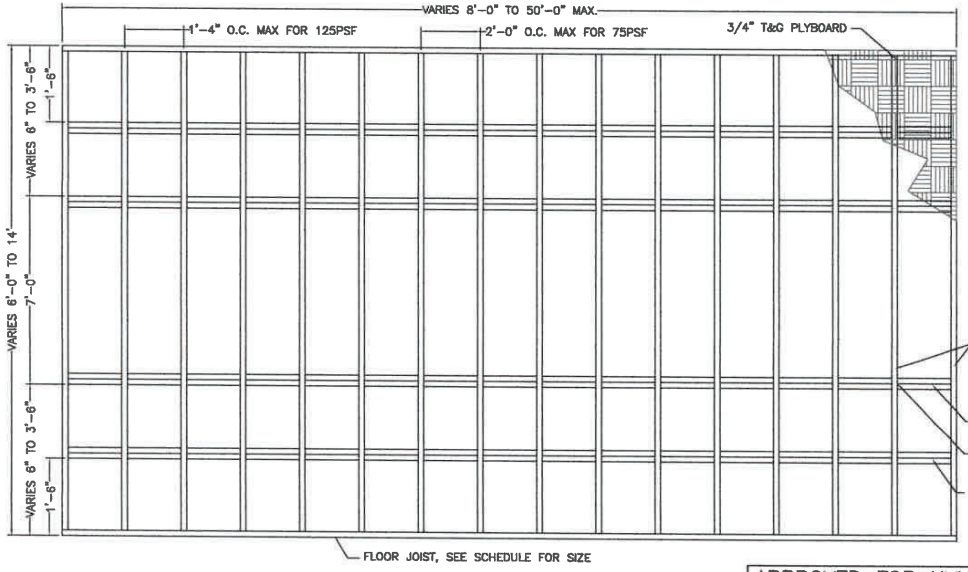
D4 LAP ALUMINUM WALL SHEATHING
–(OPTIONAL) ⅜" CDX PLYWOOD WITH D4 LAP ALUMINUM SIDING
–(OPTIONAL) JAMES HARDEE HORIZ. SIDING LAP OR EQUIV.
–(OPTIONAL) VINYL SIDING
–(OPTIONAL) ½" CDX PLYWOOD OR ½" GYPSUM ON INTERIOR

20GA. 1.25" BRACING STRAPS ON INTERIOR OR EXTERIOR OF WALL REQUIRED ON WALLS GREATER THAN 24' LONG AND/OR WHEN SIDEWALL OPENINGS ARE >= 50%. FASTEN WITH (2)–0.131"x2.25" GUN NAILS OR #8x2.25" SCREWS AT EACH STUD.

END WALL
2"x4" SOLE PLATE
FLOOR FRAMING

STANDARD WALL DETAIL
WITH DOOR & WINDOW OPTIONS

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES



FLOOR FRAMING PLAN

GENERAL NOTES

1. FOUNDATION PLANS ARE NOT PART OF THIS PLAN SET AND ARE GOVERNED BY LOCAL JURISDICTION.
2. BUILDINGS ARE APPROVED FOR RESIDENTIAL LAWN STORAGE ONLY
3. THIS BUILDING IS EXEMPT FROM THE FECC PER SECTIONS R101.4.2.4, R402.1.
4. REFER TO TIE DOWN DETAILS FOR PROPER INSTALLATION REQUIREMENTS TO MEET CODE.
5. ALL LUMBER FOR CONSTRUCTION WILL BE #2 SYP EXCEPT AS NOTED.
6. GUTTERS SHALL BE SITE INSTALLED PER THE LOCAL AUTHORITY HAVING JURISDICTION AND PERMITTING REQUIREMENTS.
7. ALL WINDOWS AND DOORS TO MEET THE MINIMUM SPECIFICATIONS PER THE APPROVED PLANS AND THE FLORIDA BUILDING CODE.
8. IN ACCORDANCE WITH FBC 1609.1.2, "STORAGE SHEDS THAT ARE NOT DESIGNED FOR HUMAN HABITATION AND THAT HAVE A FLOOR AREA OF 720 SQUARE FEET OR LESS ARE NOT REQUIRED TO COMPLY WITH THE MANDATORY WINDBORNE DEBRIS IMPACT STANDARDS OF THIS CODE".
9. IN ACCORDANCE WITH FBC 1010.1.1, EXCEPTION (10.) BUILDINGS THAT ARE 400 SQ–FT OR LESS AND THAT ARE INTENDED FOR USE IN CONJUNCTION WITH ONE– AND TWO–FAMILY RESIDENCES ARE NOT SUBJECT TO THE DOOR HEIGHT AND WIDTH REQUIREMENTS OF THIS CODE. STRUCTURES 400 SQ–FT OR MORE SHALL HAVE AN 80" MINIMUM DOOR.
10. IN ACCORDANCE WITH FLORIDA STATUTE 553.80 (1)D, LAWN STORAGE BUILDINGS AND STORAGE SHEDS BEARING THE INSIGNIA OF APPROVAL OF THE DEPARTMENT ARE NOT SUBJECT TO 553.842 (FLORIDA PRODUCT APPROVALS) BUT SHALL MEET THE DESIGN WIND LOAD REQUIREMENTS OF THE 2020 FBC 7TH EDITION.
11. FLAT METAL STRAPS CAN BE BENT AROUND STRUCTURAL MEMBERS OF WALL STUDS, TRUSSES, CHORDS, ETC. TO HELP SECURE THESE MEMBERS, PROVIDED THAT THE ADDED BEND DOES NOT INTERFERE WITH ANY OF THE EXISTING BREAKS/BENDS IN THE STRAP.
12. AS PER FBC SECTION 1626.1 EXCEPTION (F): STORAGE SHEDS THAT ARE NOT DESIGNED FOR HUMAN HABITATION AND THAT HAVE A FLOOR AREA OF LESS THAN 720 SQUARE FEET OR LESS ARE NOT REQUIRED TO COMPLY WITH THE MANDATORY WINDBORNE DEBRIS IMPACT STANDARDS OF THIS CODE.
13. COMPONENTS/CLADDING ARE IN COMPLIANCE WITH THE 2020 FBC 7TH EDITION.
14. SHEDS LOCATED IN FLOOD HAZARD AREAS MUST COMPLY WITH THE LOCAL FLOOD ZONE REGULATIONS.
15. IF A WALL IS FRAMED FOR FUTURE HVAC UNITS THAT WILL BE APPROVED BY THE AHJ AND LOCAL REQUIREMENTS FOR PERMITTING.
16. WINDOWS AND DOORS INSTALLED BY THE CUSTOMER ARE REQUIRED TO HAVE APPROVAL OF THE LOCAL AHJ AND LOCAL PERMITTING REQUIREMENTS.
17. HVHZ COMPONENTS FOR SHEDS REQUIRE THAT INSTALLATION PER MANUFACTURERS INSTRUCTIONS.

MATTHEW T. BALDWIN LICENSE NO. 64608 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Matthew Baldwin
Date: 2021.01.07 15:47:50 -05'00'

APPROVED FOR HVHZ USE

FBC 1626.1 EXCEPTION: F. STORAGE SHEDS THAT ARE NOT DESIGNED FOR HUMAN HABITATION AND THAT HAVE A FLOOR AREA OF 720 SQUARE FEET (67 M2) OR LESS ARE NOT REQUIRED TO COMPLY WITH THE MANDATORY WINDBORNE DEBRIS IMPACT STANDARDS OF THIS CODE.

SMITHBILT INDUSTRIES, INC.
1061 U.S. 92
ABURNDALE, FL 33823
PHONE NUMBER: (863) 665–3767
FAX NUMBER: (863) 665–0159

CODE INFORMATION	
CODE VERSION	FBC, 2020 7th Edition, ASCE-7-16, 2017 NEC
MANUFACTURER	SMITHBILT SHEDS
BUILDING TYPE	MANUFACTURED BUILDING RESIDENTIAL LAWN STORAGE
CONSTRUCTION TYPE	V–B
FIRE PROTECTION	NONE
FIRE SUPPRESSION SYSTEM	NONE
OCCUPANCY	UTILITY
ALLOWABLE NUMBER OF STORIES	1
BASIC WIND SPEED	Vas–170mph
EXPOSURE	D
ENCLOSURE	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/– 0.18
IMPORTANCE FACTOR	1.0
ROOF DEAD LOAD	10PSF
ROOF LIVE LOAD	30PSF OR 300lb POINT LOAD
FLOOR DEAD LOAD	10PSF
FLOOR LIVE LOAD	75/125PSF
"R" RATING OF WALLS, FLOOR, ROOF	N/A
MODULES PER BUILDING	1
HURRICANE PROTECTION USAGE	NO
HURRICANE SHELTER USAGE	NO
SQUARE FOOTAGE	710 SQ.FT. OR LESS

REVISIONS

REV	DESCRIPTON	DATE	BY

Drawn By:	MTB
Date:	11–15–20
Scale:	NTS
Model#:	SBS–E–170D

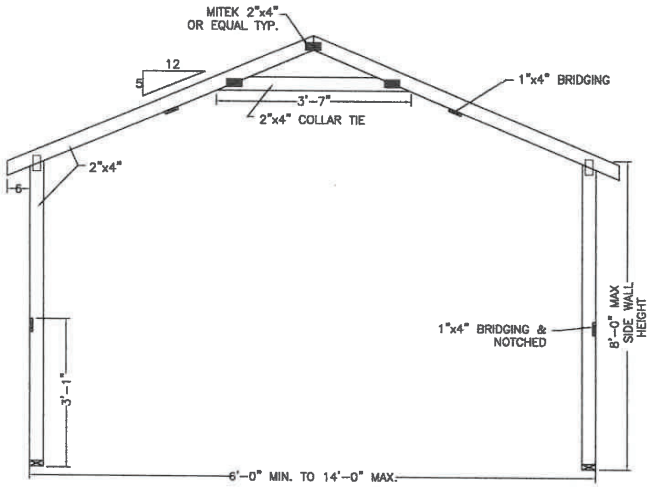
MATTHEW T. BALDWIN LICENSE NO. 64608 STATE OF FLORIDA PROFESSIONAL ENGINEER

Matthew T. Baldwin P.E.
Florida License #64608

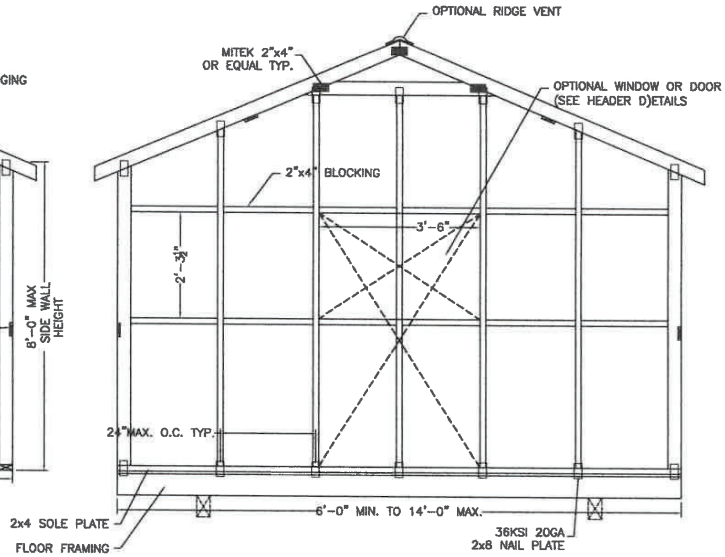
TITLE: WALL & FLOOR LAYOUT – EAVE STYLE

Sheet: FBPR–1 OF 7

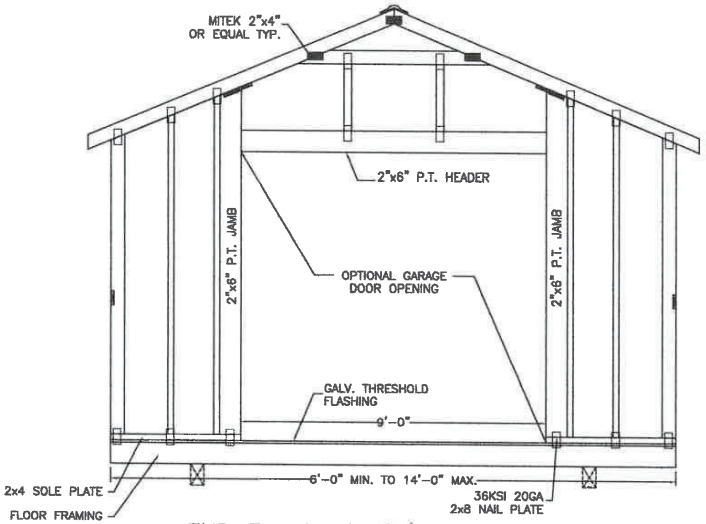
EXHIBIT "B"
Page 4 of 4



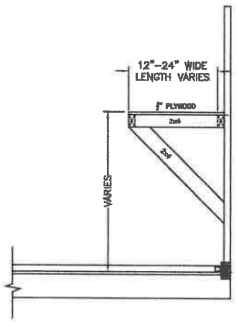
BARN STYLE TYPICAL TRUSS



END ELEVATION



END ELEVATION W/GARAGE DOOR



OPTIONAL WALL SHELVING

LOCATION, WIDTH AND LENGTH VARY

SMITHBILT
INDUSTRIES, INC.
1061 U.S. 92
ABURNDALE, FL 33823
PHONE NUMBER: (863) 665-3767
FAX NUMBER: (863) 665-0159

CODE INFORMATION	
CODE VERSION	FBC 2020 7th Edition, ASCE-7-16, 2017 NDS
MANUFACTURER	SMITHBILT SHEDS
BUILDING TYPE	MANUFACTURED BUILDING RESIDENTIAL LAWN STORAGE
CONSTRUCTION TYPE	V-B
FIRE PROTECTION	NONE
FIRE SUPPRESSION SYSTEM	NONE
OCCUPANCY	UTILITY
ALLOWABLE NUMBER OF STORIES	1
BASIC WIND SPEED	Vult-170mph
EXPOSURE	D
ENCLOSURE	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/- 0.18
IMPORTANCE FACTOR	1.0
ROOF DEAD LOAD	10PSF
ROOF LIVE LOAD	30PSF OR 300lb POINT LOAD
FLOOR DEAD LOAD	10PSF
FLOOR LIVE LOAD	75/125PSF
"N" RATING OF WALLS, FLOOR, ROOF	N/A
MODULES PER BUILDING	1
HURRICANE PROTECTION USAGE	NO
HURRICANE SHELTER USAGE	NO
SQUARE FOOTAGE	719 SQ.FT. OR LESS

REVISIONS

REV	DESCRIPTION	DATE	BY

Drawn By:	MTB
Date:	11-16-20
Scale:	NTS
Model#:	SBS-E-170D

LICENSE NO. 64608 STATE OF FLORIDA
MATTHEW T. BALDWIN
PROFESSIONAL ENGINEER

Matthew T. Baldwin P.E.
Florida License #64608

TITLE: END WALL LAYOUT -- EAVE STYLE

Sheet: FBPR-2 OF 7

STAFF REPORT
City of Ormond Beach
Department of Planning

MEETING DATE: February 9, 2023

SUBJECT: Ormond Memorial Art Museum & Gardens: Special Exception for Cottage Style Garden Shed

APPLICANT: Stephanie Mason-Teague, Executive Director, Ormond Memorial Art Museum & Gardens, Inc.

NUMBER: SE 2023-020

PROJECT PLANNER: Steven Spraker, AICP, Planning Director

INTRODUCTION: This is a request submitted from Stephanie Mason-Teague, Executive Director, Ormond Memorial Art Museum & Gardens, Inc., for a Special Exception to allow the conversion of two parking spaces into a cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line. The subject property is located at 78 East Granada Boulevard and is zoned as B-4 (Central Business) within the Downtown Overlay District.

The specific approval sought is as follows:

1. Provide city authorization, per the 2019 Ormond Memorial Art Museum, Inc. lease agreement, to allow the conversion of two parking spaces into a cottage style garden shed; and
2. Allow cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line.

The property is shown below:

Exhibit 1: 78 East Granada Boulevard site aerial:



BACKGROUND:

The subject property is currently designated as "Public Institutional" on the City's Future Land Use Map (FLUM), and is classified as B-4 (Central Business) on the City's Official Zoning Map. The property is within the Downtown Overlay District. The surrounding uses on Exhibit 2.

Exhibit 2: Surrounding Uses with Land Use and Zoning Designations:

	Land Uses	Land Use Designation	Zoning Classification
North	Commercial/retail	"General Commercial"	B-4 (Central Business)
South	Residential	"Low Density Residential"	R-2 (Single-Family Low Density Residential)
East	Mixed use/office, retail	"General Commercial"	B-4 (Central Business)
West	Commercial/Institution	"General Commercial and Public Institutional"	B-4 (Central Business)

The original structure at 78 East Granada Boulevard was constructed around 1915 and was used as an office building until it was donated by the City of Ormond Beach to start the museum that opened its doors in 1946. Many local veterans participated in building the museum galleries and land clearing for the surrounding gardens. Dedicated volunteers and donors have kept the museum thriving ever since.

The Ormond Memorial Art Museum & Gardens recently completed a major renovation that included:

- Interior renovations that maintained the original cottage and galleries and reconfigured the space for a more contiguous exhibit layout;
- Exterior renovations along the west side of the building, that included a pedestrian friendly garden pavilion, sitting wall, new shade features and outdoor art displays to generate more visibility and impact along the Granada Corridor; and
- Removing the existing southern addition built in 1988 to construct a new two-story structure with a rooftop terrace overlooking the gardens in its place.

The following Resolutions have been approved for the property since 2019:

- ❖ September 18, 2019: Resolution 2019-169, approved a lease agreement between the City of Ormond Beach and the Ormond Memorial Art Museum, Inc.
- ❖ September 23, 2020: Resolution 2020-137, approved five (5) wall signs for a total of 206± square feet of building signage to recognize the unique use and sponsors of the renovation.
- ❖ July 19, 2022: Resolution 2022-92, approved live outdoor music as part of reserved events on the rooftop terrace of the museum between the hours of 11:00 a.m. to 10:00 p.m., Sunday through Saturday.

- July 19, 2022: Resolution 2022- 93, approved one (1) 24± square foot wall sign, in additional to the previously approved five (5) wall signs of 206+ square feet for a total of six (6) wall signs of 230+ square feet of building signage.
- July 19, 2022: Resolution 2022-94, approved a public art project of an existing butterfly wall sculpture on the south facing wall and the installation of the butterfly wall sculpture on the west facing wall.
- September 7, 2022: Resolution 2022-105, approved the execution of a service agreement between the city and the Ormond Memorial Art Museum, Inc.

PROJECT DESCRIPTION: The Special Exception seeks to allow the conversion of two parking spaces into a cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line. The applicant's letter (ATTACHMENT 2) states, "The shed is necessary to store equipment needed to properly care for the gardens. When the Museum building was renovated, the space previously used for the storage was demolished. Since that time, a POD storage container has stored the equipment." The applicant has reviewed multiple alternative locations for a cottage shed. The alternative locations would have either impacted the garden areas or replaced parking spaces closer to the gardens and museum building. The applicant has provided a no objection letter from the abutting residential property owner to the cottage style garden shed location.

Below is an exhibit of the desired area of the cottage style garden shed:

Exhibit 3: Location of cottage style garden shed:

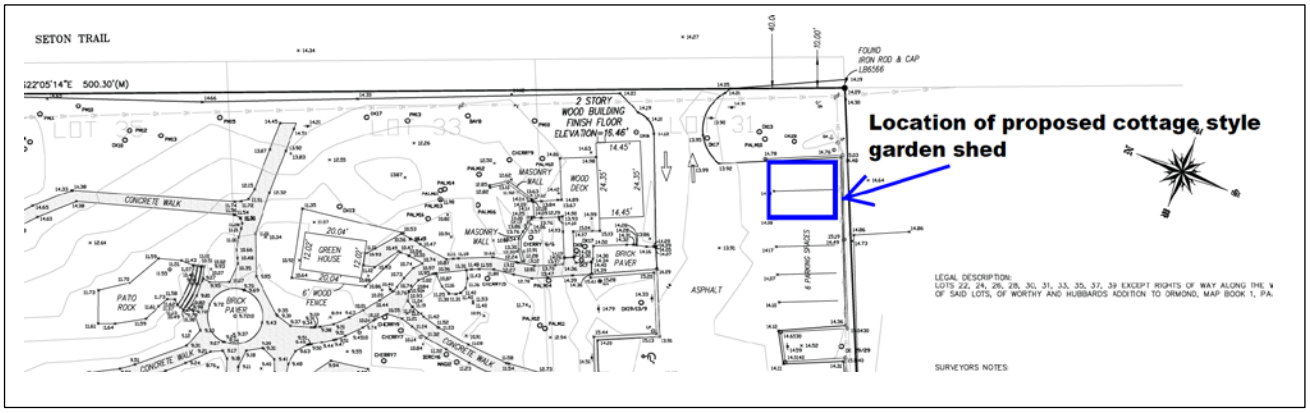


Exhibit 4: Rendering of cottage style garden shed:



ANALYSIS: Section 2-70(m) of the Land Development Code states,

> "Redevelopment Plan: Where a project within a non-residential zoning district in the Downtown Overlay District cannot meet the standards of this section or the Land Development Code based on prevalence of nonconforming lots or at an applicant's option, these requirements may be waived through a city commission monitored process as a Special Exception or Planned Development aimed at producing development having design compatibility, meeting required parking to the maximum extent feasible, and achieving a high level of aesthetic appeal through a combination of innovative architecture, landscaping and hardscape materials. The Redevelopment Plan shall demonstrate compliance with the 2019 Downtown Master Plan update."

The purpose of the application is to allow the conversion of two parking spaces into a cottage style garden shed, approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line. One key item for review was the rear yard setback of five (5') feet. Section 2-70(c)(4) of the Land Development Code allows a rear yard setback of zero to five percent (0% to 5%) of lot depth depending on specific site plan conditions. The reduced setback has been typically applied to new or redevelopment of principal structures, not accessory structures. The Special Exception development plan seeks to a cottage style garden shed of five (5') feet to the rear property line.

Another aspect of the cottage style garden shed is the 2019 lease for the Ormond Memorial Art Museum, Inc. Section 7 of the lease agreements, improvements, states “Any material improvement or alteration of the property must have prior consent by the City.” Part of the Special Exception approval is authorization by the City Commission for the cottage style garden shed to be placed on two (2) parking spaces.

Planning staff did receive an e-mail with the advertisement that objected to the garden shed removing the two parking spaces. The resident stated that the garden shed should be placed within the park.

Section 2-56: Special Exception Criteria:

Section 2-56 of the Land Development Code outlines the general criteria for all Special Exception approvals and staff’s review of this criteria is listed below:

1. ***Off-street parking, loading and service areas shall be provided and located such that there is no adverse impact on adjoining properties, beyond that generally experienced in the district.***

   The cottage style garden shed is proposed in two (2) parking spaces for the Ormond Memorial Art Museum. The Ormond Memorial Art Museum meets the parking requirements without the two parking spaces proposed to be used with the on-street parking and the off-street parking lot. The 2022 service agreement states the city shall allow the Ormond Memorial Art Museum non-exclusive use of the grassy area located behind St. James church as overflow parking for events with coordination of city staff.

   The cottage style garden shed is a low intensity use that is not expected to have any negative impacts. The Ormond Memorial Art Museum has coordinated with the abutting property owner and obtained a no objection letter.

2. ***Required yards, screening or buffering, and landscaping shall be consistent with the district in general, the specific needs of the abutting land uses, Chapter 3, Article 1, and other applicable provisions of this Code.***

   The requested Special Exception seeks a five (5’) foot rear yard setback which is consistent with the Downtown Overlay District allowances for the rear yard setback. No landscaping is proposed to be impacted. The selected cottage style garden shed location is designed to not impact the gardens and its vegetation.

3. ***Size, location, or number of conditional or Special Exceptions in an area shall be limited so as to maintain the overall character of the district in which said conditional or Special Exceptions are located.***

   The Ormond Memorial Art Museum is a unique use encouraged by the Downtown Master Plan update. The property has been awarded several Special Exceptions for signage, public art and outdoor music. The Special Exceptions are needed to acknowledge and permit the unique use within the Downtown.

4. ***Hours of operation may be limited and the city may require additional information on structural design and site arrangement, to assure the compatibility of the development with existing and proposed uses in the surrounding area.***

   The cottage style garden shed is needed to maintain the existing gardens and would be used in the daytime hours. No hours of operation restrictions are needed for the application.

5. ***The Special Exception shall not generate hazardous waste or require use of hazardous materials in its operation without use of City-approved mitigative techniques.***

   This Special Exception request for the cottage style garden shed will not generate hazardous waste.

6. ***All development proposed as a Special Exception within or adjacent to a historic district shall be reviewed based on applicable criteria stated herein for residential, commercial or mixed-use development and shall also comply with appearance and design guidelines for historic structures.***

   The proposed Special Exception for the cottage style garden shed does not propose any new building construction for the principal building and will not impact the appearance or design of buildings as it relates to historic structures.

7. ***Outdoor lighting shall have no spillover onto adjacent property or rights-of-way beyond the building site property line and the lumens shall not exceed two (2) foot-candles at the property line.***

   The site lighting plan is not proposed for amendment and the application is solely for the cottage style garden shed.

Section 1-15. (e): Planning Board Criteria and Section 1-18. (e)(2): City Section 1-15 (e): Planning Board Criteria and Section 1-18 (e)(2): City Commission Criteria:

Sections 1-15, paragraph (e)., and 1-18 (e)(2) of the Land Development Code, establish the Planning Board and City Commission Development Order criteria. The Land Development Code states that the following criteria shall be considered:

1. **The proposed development conforms to the standards and requirements of this Code and will not create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.**

   The cottage style garden shed is needed for the maintenance and upkeep for the existing gardens and vegetation. Other potential locations would have either impacted the gardens or more desired parking spaces. Staff did receive correspondence stating that the two parking spaces should be saved and the cottage style garden shed be located in the park. Planning staff concludes that the cottage style garden shed conforms to the standards and requirements of this Code and will not create undue crowding beyond the conditions normally permitted in the zoning district, or adversely affect the public health, safety, welfare or quality of life.

2. **The proposed development is consistent with the Comprehensive Plan.**

   The site has a Future Land Use designation of “General Commercial”, which is consistent with the proposed use. The Future Land Use Element states that the “Commercial” land use category is designed, “To provide for the sales of retail goods and services, high density multi-family, professional offices and services, and restaurants, depending on the range of population to be served and the availability of transit.” Goal 7 of the Future Land Use Element of the Comprehensive Plan links the 2007 Downtown Master Plan with the Comprehensive Plan. The Downtown Master Plan envisions an active Downtown area with Museum Row specifically identified. The cottage style garden shed is needed to maintain the gardens.

3. **The proposed development will not adversely impact environmentally sensitive lands or natural resources, including but not limited to waterbodies, wetlands, xeric communities, wildlife habitats, endangered or threatened plants and animal species or species of special concern, wellfields, and individual wells.**

   The proposed application for the cottage style garden shed will not adversely impact environmentally sensitive lands or natural resources and is an existing developed site. The site location was specially selected not to impact the existing gardens.

4. **The proposed use will not substantially or permanently depreciate the value of surrounding property; create a nuisance; or deprive adjoining properties of adequate light and air; create excessive noise, odor, glare, or visual impacts on the neighborhood and adjoining properties.**

   The proposed application for the cottage style garden shed will not depreciate the value of surrounding property.

5. **There are adequate public facilities to serve the development, including but not limited to roads, sidewalks, bike paths, potable water, wastewater treatment, drainage, fire and police safety, parks and recreation facilities, schools, and playgrounds.**

   Public facilities currently serve the site and there would be no impact to the existing infrastructure.

6. **Ingress and egress to the property and traffic patterns are designed to protect and promote motorized vehicle and pedestrian/bicycle safety and convenience, allow for desirable traffic flow and control, and provide adequate access in case of fire or catastrophe. This finding shall be based on a traffic report where available, prepared by a qualified traffic consultant, engineer or planner which details the anticipated or projected effect of the project on adjacent roads and the impact on public safety.**

The request for cottage style garden shed will not impact ingress or egress or any aspect of site access. The cottage style garden shed does not create any new project trips. The Ormond Memorial Art Museum has on-street parking along Halifax Drive and in the off-street parking lot to the south of the gardens. Planning staff did receive an e-mail with the advertisement that objected to the garden shed removing the two parking spaces. The resident stated that garden shed should be placed within the park.

7. **The proposed development is functional in the use of space and aesthetically acceptable.**

   The cottage style garden shed is functional in the use of space and aesthetically acceptable.

8. **The proposed development provides for the safety of occupants and visitors.**

   The requested application for a cottage style garden shed will not impact the safety of occupants and visitors.

9. **The proposed use of materials and architectural features will not adversely impact the neighborhood and aesthetics of the area.**

   The use of materials and architectural features for the cottage style garden shed will not adversely impact the neighborhood and aesthetics of the area.

10. **The testimony provided at public hearings.**

    This application has not been reviewed in a public forum and no testimony has been provided.

RECOMMENDATION:

It is expected that the application will be reviewed by the City Commission on March 21, 2023. It is recommended that the Planning Board **APPROVE** the application to:

1. Provide city authorization per the lease agreement to allow the conversion of two parking spaces into a cottage style garden shed.
2. Allow cottage style garden shed, approximately 18’ by 24’, to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5’) feet to the rear property line.

Attachments:
Attachment 1: Site map and pictures
Attachment 2: Applicant provided information and site plan
Attachment 3: Correspondence received

Attachment 1:

Site Maps and pictures

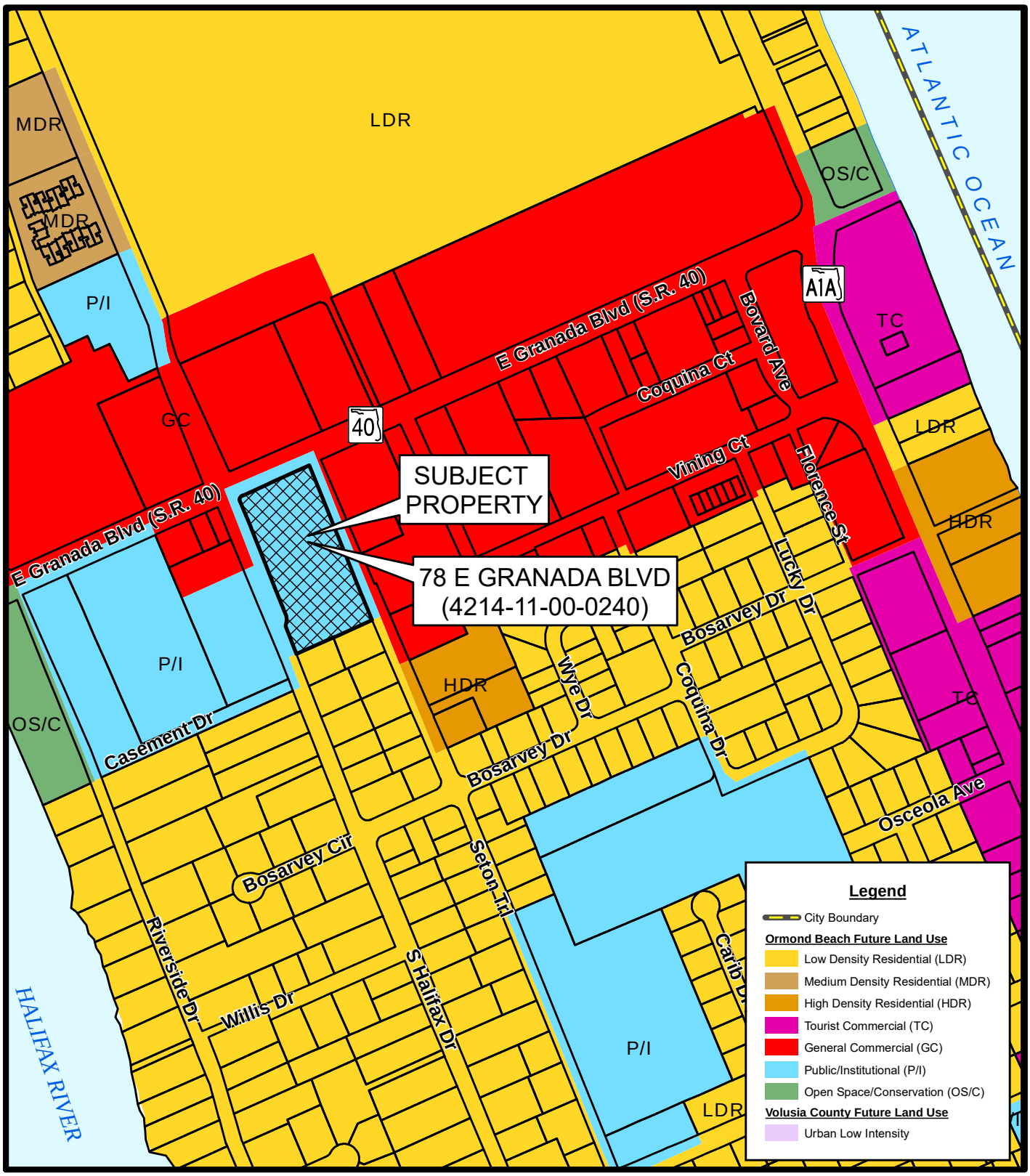


78 EAST GRANADA BLVD
(4214-11-00-0240)

AERIAL MAP

Prepared By: The City of Ormond Beach
G.I.S. Department - June 9, 2020

N
W E
S
N.T.S.

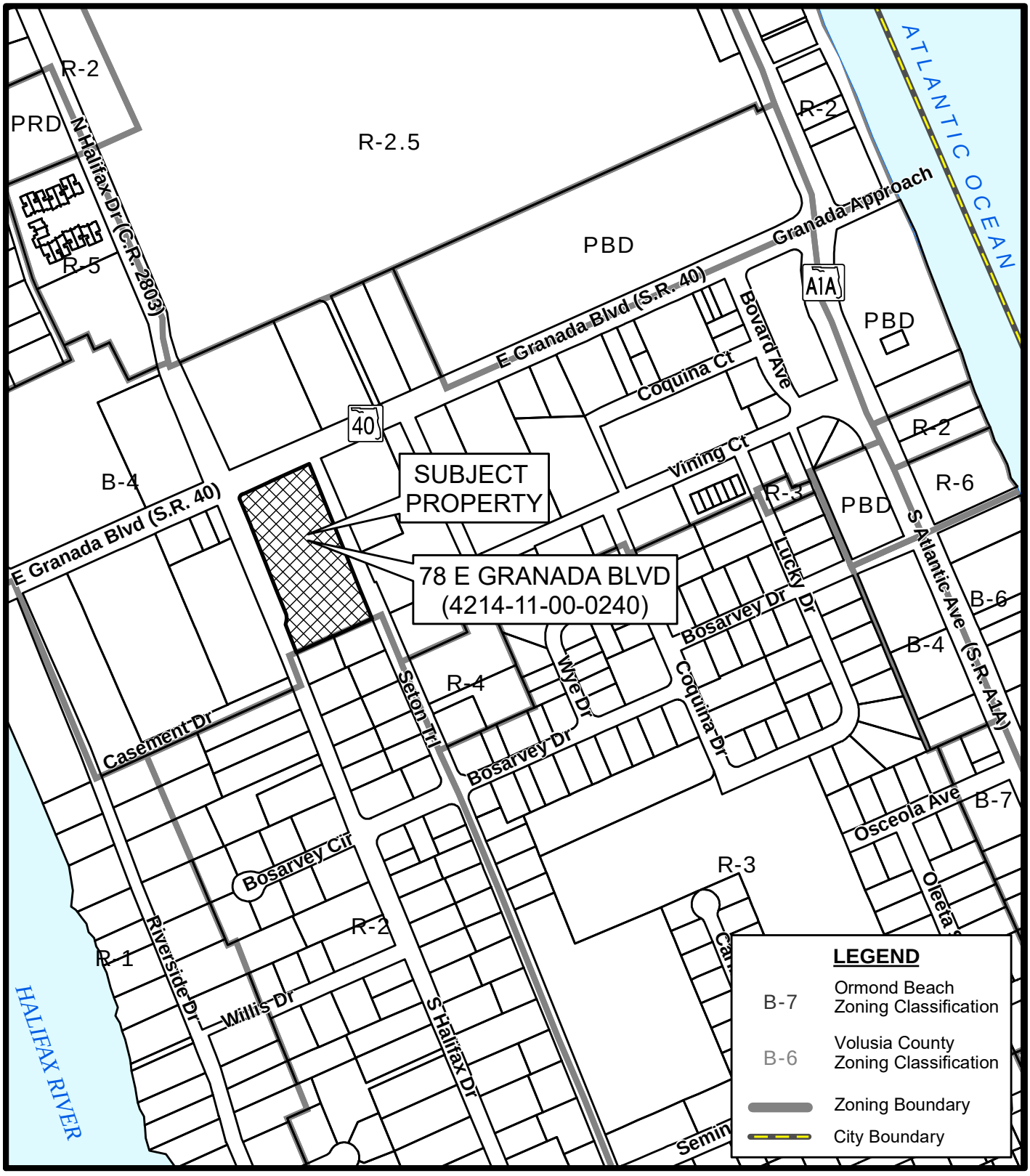


78 EAST GRANADA BLVD
(4214-11-00-0240)

FUTURE LAND USE MAP

Prepared By: The City of Ormond Beach
G.I.S. Department - June 9, 2020

N
W E
S
N.T.S.



78 EAST GRANADA BLVD
(4214-11-00-0240)

ZONING MAP

Prepared By: The City of Ormond Beach
G.I.S. Department - June 9, 2020

N
W E
S
N.T.S.



Existing POD to be replaced with garden style cottage shed


PODS
PODS.com
800-776-PODS
Moving & Storage
Looking east, rear property line



Parking lot, looking west towards North Halifax Avenue



Looking west from Seton Trail



Existing POD to be replaced with garden style cottage shed

Attachment 2:

Applicant provided information

Ormond Memorial
Art Museum
& Gardens

78 East Granada Blvd.
Ormond Beach, FL 32176

386.676.3347 tel
386.676.3244 fax
www.ormondartmuseum.org

Sherry Gailey
President

Kathy Crotty
Vice President

Jessica Sznapstajler
Treasurer

Alicia Scott
Secretary

Lisa Perry
Imm Past President

Bridget Bergens
Tom Brown, MD
Audrey Butler, Ph.D.
Siobhan Daly
Sejal DeSai
Melissa DeVriese
Lauren Dye
Carol Farmer
Melissa Frankel
Roosevelt Harris
Joni Hunt
Cheree Mahoney
Allison Miller
Laura Ortiz
Julie Rand
Dr. Philip Shapiro

Stephanie Mason-Teague
Executive Director

OMAM funded in part by:
The City of Ormond Beach
The County of Volusia
The State of Florida

ACCESSIBLE

January 23, 2023

City of Ormond Beach
Planning Department
Steven Spraker, Planning Director
22 S. Beach Street
Ormond Beach, FL 32176

Dear Mr. Spraker,

The Ormond Memorial Art Museum & Gardens is requesting a special exception to place a cottage style garden shed in the Southeast corner of the Museum and Gardens parking lot.

The shed is necessary to store the equipment needed to properly care for the gardens. When the Museum building was renovated, the space previously used for storage was demolished. Since that time a POD storage container has stored the equipment.

When an investigation of the best site to locate the shed was conducted, the Southeast corner of the parking lot (the current location of the POD) was determined to be the most favorable. Locating the storage shed within the Gardens would require the demolition of many plants and considerable effort to level the ground and add a slab. The Southeast corner is easily accessible by our master gardener, yet the most discrete corner of the parking area. Visitors will not be offended by the location, nor will the beauty of the Garden entrance be disrupted.

We value our partnership with the city very much and take our responsibility for caring for the Gardens very seriously. The cottage style garden shed will allow us to properly store the equipment and provide a beautiful garden for the community to enjoy.

Thank you for your time and attention.

Stephanie Mason-Teague
Museum Executive Director

Stroll. Discover. Create. Remember.

Updated October 1, 2021

City of Ormond Beach
Public Hearing Application

Planning Department
22 South Beach Street, Room 104, Ormond Beach, FL 32174
(386) 676-3238 www.ormondbeach.org comdev@ormondbeach.org

INSTRUCTIONS

Public hearing applications require City Commission action with many types being reviewed by the Planning Board to provide a recommendation. Some public hearing items require site plan review. Please complete the application and fee worksheet. Assistance is available by e-mailing comdev@ormondbeach.org or calling (386) 676-3238.

PROJECT INFORMATION

Project Type:*	Special Exception *Complete fee sheet (page 3)		
Project Name:	Ormond Art Museum Garden Storage Cottage		
Project Address:	78 E. Granada Blvd. Ormond Beach, FL 32176		
Volusia County parcel number(s):			
Description:	Placement of a cottage style storage shed in the South East corner of the Museum & Gardens parking lot.		
Pre-application date:		Pre-application waiver granted:	

PROJECT COORDINATOR

Name:	Stephanie Mason-Teague
Address:	78 East Granada Blvd
City, State, Zip code:	Ormond Beach, FL 32176
Telephone:	386-871-7873
E-mail:	smt@ormondartmuseum.org

APPLICANT INFORMATION

Same as project coordinator	✓	**Same as property owner**	☐
Name:			
Address:			
City, State, Zip code:			
Telephone:			
E-mail:			

PROPERTY OWNER			
Same as project coordinator	☐	**Same as property owner**	☐
Name:	City of Ormond Beach		
Address:	22 South Beach Street		
City, State, Zip code:	Ormond Beach, FL 32176		
Telephone:	386-677-0311		
E-mail:			

VIEW ONLY ACCESS TO PROJECT DOX (Provides viewing access to project)

Name:		E-mail:	
Name:		E-mail:	
Name:		E-mail:	
Name:		E-mail:	

CERTIFICATION

By submitting this application, I hereby certify that the information provided is true and correct to the best of my knowledge and that I am aware of the application submittal requirements and the review process for this application. I authorize Ormond Beach staff to access the subject property during typical business hours to review the public hearing application.

Signature: Stephanie Mason Teague

STATE OF FLORIDA

COUNTY OF Volusia

The forgoing instrument was acknowledged before me this 23rd day of January, 2023, by Stephanie Mason-Teague as _____(title*) for _____ (name of corporation*), who (✓) provided driver license as identification, or ( ) who is personally known to me.

LIA MISURALE
Notary Public - State of Florida
Commission # HH 225386
My Comm. Expires Feb 7, 2026
Bonded through National Notary Assn.

Lia Misurale
Notary Public, State of Florida
My Commission Expires:

* If you are executing this document on behalf of a corporation please complete the spaces with your title and the name of your company as indicated.

Updated October 1, 2021

City of Ormond Beach
Public Hearing Application Fees

Planning Department
22 South Beach Street, Room 104, Ormond Beach, FL 32174
(386) 676-3238 www.ormondbeach.org comdev@ormondbeach.org

INSTRUCTIONS

Site plan submittals require the submittal of applications per Ordinance 2021-30, codified in Section 8-10, Application processing fees, of the Code of Ordinances. All applications shall calculate the fees which shall be verified by city staff. **Assistance is available by e-mailing comdev@ormondbeach.org or calling (386) 676-3238.**

PUBLIC HEARING FEES (Ordinance 2021-30 - Section 8-10 of Code of Ordinances)

Check all that apply	SPRC reviews	Fee	Advertising	Total fee
☐	Annexation	No fee	No fee	No fee
☐	Annexation Agreement	No fee	No fee	No fee
☐	Comprehensive Plan, small area amendment	$2,000	$1,025	$3,025
☐	Comprehensive Plan, large-scale amendment	$2,000	$2,250	$4,250
☐	Concurrency, traffic impact analysis	$3,000 (deposit)	NA	$3,000
☐	Development of Regional Impact amendment	$600	$2,250	$2,850
☐	Planned Development	$2,500	$2,400	$4,900
☐	Planned Development, major amendment	$1,000	$2,400	$3,400
☐	Regulatory amendment, zoning map, under 10 acres	$1,500	$850	$2,350
☐	Regulatory amendment, zoning map, over 10 acres	$1,500	$1,650	$3,150
☐	Regulatory amendment, LDC amendment	$1,000	$700	$1,700
☐	Regulatory amendment, LDC amendment (zoning districts)	$1,000	$1,500	$2,500
☑	Special Exception	$850	$850	$1,700
☐	Special Exception, CRA	$400	$850	$1,250
☐	Street vacation	$500	$1,925	$2,425
☐	Subdivision, Preliminary plat	$1,500 plus $25 per lot	NA	$1,500 plus $25 per lot
☐	Subdivision, Final plat	$1,000 plus $25 per lot	$350	$1,350 plus $25 per lot
☐	Subdivision, city surveyor review	Actual costs	NA	Actual costs
☐	Subdivision, Recording of plat	Actual costs	NA	Actual costs
☐	Other:			
		TOTALS:		$1,700.00

January 20, 2023

Edward Parker

54 Seton Trail

Ormond Beach, Fl 32176

City of Ormond Beach
22 South Beach Street
Ormond Beach, FL 32174

Dear City of Ormond Beach Commissioners and Planning Department,

The Ormond Memorial Art Museum and Gardens has communicated with us their interest in placing a Garden storage cottage at the rear of their parking lot, abutting our property, and replacing the POD storage unit that is currently in place.

We have no objection to this and are in favor of a storage solution that is more attractive and useful.

Thank you,

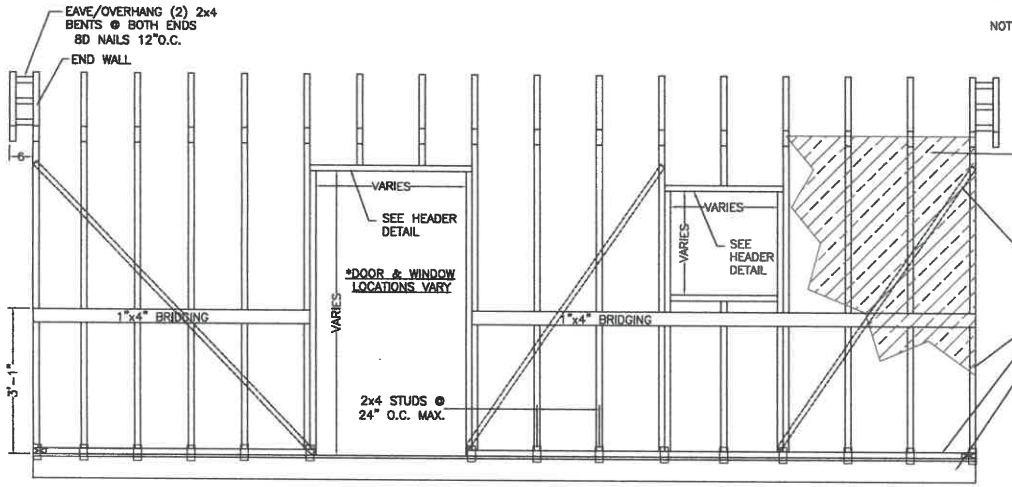
Edward "Buck" Parker


APPROVED
Site Plan Review Committee
PZ-20-008
Stamped By: Steven Spraker
12/1/20 10:56 AM
Location of proposed cottage style garden shed
SETON TRAIL
S22°05'14"E 500.30'(M)
N22°05'14"W 500.30'(M)
EAST GRANADA BOULEVARD (STATE ROUTE 40) (66.00' R/W)
SOUTH HALIFAX DRIVE (66.00' R/W)
S65°55'15"E 242.00'
N65°55'15"W 242.00'
S 65°55'19" W 242.00'
FOUND IRON ROD & CAP LB6566
SITE BENCHMARK SET NAIL & DISK LB 3019 ELEV = 13.65'
STORM MANHOLE TOP 13.86' W 24"RCP EL.4.40' E 18"RCP EL.6.86' NE 18"RCP EL.6.22'
SANITARY MANHOLE TOP 13.85' W 8"VCP EL.7.94' N 6"VCP EL.8.31' SE 8"VCP EL.8.22'
STORM MANHOLE TOP 11.61' NW 18"RCP EL.3.38' N 15"RCP EL.3.29'
INLET TOP 11.53' (INACCESSIBLE)
2 STORY WOOD BUILDING FINISH FLOOR ELEVATION=16.46'
1 STORY COMMERCIAL MASONRY BUILDING FINISH FLOOR ELEVATION=13.99
GAZEBO 30' x 30'
POND
CONCRETE WALK
ASPHALT
BRICK PAVER
6' WOOD FENCE
6' CHAIN LINK FENCE
LOT 39
LOT 37
LOT 35
LOT 33
LOT 31
LOT 22
LOT 24
LOT 26
LOT 28
LOT 30
LEGAL DESCRIPTION:
LOTS 22, 24, 26, 28, 30, 31, 33, 35, 37, 39 EXCEPT RIGHTS OF WAY ALONG THE WEST BOUNDARY OF SAID LOTS, OF WORTHY AND HUBBARDS ADDITION TO ORMOND, MAP BOOK 1, PAGE 121
SURVEYORS NOTES:
1. NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY/SKETCH OF DESCRIPTION THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. THIS SURVEY/SKETCH OF DESCRIPTION PREPARED WITHOUT BENEFIT OF AN ABSTRACT.
2. DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.
3. BEARING STRUCTURE BASED ON STATE PLANE GRID, NAD 83, FL EAST ZONE. THE SOUTH LINE OF E. GRANADA BOULEVARD HAVING A BEARING OF N65°55'15"E.
4. UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.
5. ELEVATIONS REFER TO N.A.V.D. OF 1988, PER N.G.S. MONUMENT L-623 HAVING A PUBLISHED ELEVATION OF 28.80 FEET.
6. THIS PROPERTY IS LOCATED IN F.I.R.M. ZONE "X". THIS LOCATION IS DETERMINED BY SCALING FROM F.I.R.M. COMMUNITY MAP NO. 12127C0218K. MAP REVISED SEPTEMBER 29, 2017. APPROXIMATE SCALE 1"= 500'.
7. "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."
8. UNLESS OTHERWISE SHOWN, RECORD DISTANCES AND DIRECTIONS AND FIELD MEASURED DISTANCES AND DIRECTIONS ARE THE SAME.
LEGEND
ABBREVIATIONS
UTILITY STATEMENT:
THE INACCESSIBLE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY HAVE BEEN LOCATED FROM ABOVE GROUND FIELD UTILITY LOCATIONS AND/OR EXISTING AS-BUILTS DRAWINGS PROVIDED BY THE CLIENT. SLIGER AND ASSOCIATES, INC. (S&A) MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. LIKEWISE S&A DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ONLY THAT S&A HAS LOCATED THE UTILITIES AS ACCURATELY AS POSSIBLE FROM SAID FIELD LOCATIONS AND/OR AS-BUILTS PROVIDED BY OTHERS. S&A HAS NOT PHYSICALLY LOCATED THE ACTUAL INACCESSIBLE UNDERGROUND UTILITIES, EXCEPT AS SPECIFICALLY NOTED AND DEPICTED ON THIS DRAWING.
ADDITIONAL ABBREVIATIONS-TREE LEGEND
CP CAMPHOR TREE
MP MAPLE TREE
SYC SYCAMORE TREE
OK OAK TREE
SG SWEET GUM TREE
HK HICKORY TREE
CB CHINABERRY TREE
SB SUGARBERRY TREE
CD CEDAR TREE
EM ELM TREE
CIT CITRUS TREE
PN PINE TREE
PM PALM TREE
HY HOLLY
TREE TYPE
TREE SIZE (INCHES) DIAMETER AT BREAST HEIGHT
MULTIPLE TRUNKS
TREE SYMBOL
SLIGER & ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
3621 NOVA ROAD
PORT ORANGE, FL. 32127
(386) 761-5365
LICENSED BUSINESS CERTIFICATION NUMBER 3019
www.sligerassociates.com
Copyright © 2019 Sliger & Associates, Inc.
ORMOND MEMORIAL ART MUSEUM
FOR: ORMOND MEMORIAL ART MUSEUM INC
JOB NO. 19-0905
BOUNDARY TOPOGRAPHIC SURVEY & TREE LOCATION
SHEET 1 OF 1
FOR: ORMOND MEMORIAL ART MUSEUM INC
SCALE: 1"=20'
RED BOOK: 1412 PAGE(S): 63
BLUE BOOK: 1417 PAGE(S): 02-09
SHEET 1 OF 1
SURVEY DATE / JOB NUMBER / PARTY CHIEF / DRAWN BY / CHECKED BY
TYPE OF SURVEY
SPECIFIC PURPOSE
BOUNDARY SURVEY : 7-1-2019 19-0905 KH TJ JZ
TOPOGRAPHIC SURVEY : 7-1-2019 19-0905 KH TJ JZ
FOUNDATION LOCATION
FINAL IMPROVEMENTS
RECERTIFICATION
PLAT PREPARED FOR THE FOLLOWING: (ONLY THE LAST DATE IS CERTIFIED ON SEALED COPY)
THIS PLAT OF SURVEY IS CERTIFIED TO AND PREPARED FOR THE SOLE AND EXCLUSIVE BENEFIT OF THE ENTITIES AND/OR INDIVIDUALS LISTED BELOW, ON THE MOST CURRENT DATE, AND SHALL NOT BE RELIED UPON BY ANY OTHER ENTITY OR INDIVIDUAL WHATSOEVER.
TYPE OF SURVEY / CERTIFIED TO / SURVEY DATE / JOB NUMBER
BOUNDARY / TOPOGRAPHIC: ORMOND MEMORIAL ART MUSEUM INC / CITY OF ORMOND BEACH, FLORIDA: 7-1-2019 / 19-0905
NOT CERTIFIED TO ANY ENTITIES AND/OR INDIVIDUALS OTHER THAN THOSE LISTED ABOVE
I HEREBY CERTIFY THAT THIS PLAT MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17.05, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.
Digitally signed by Joseph E Zapert
Date: 2020.09.02 10:34:24 -04'00'
JOSEPH E. ZAPERT, P.L.S. NO. 4046
JEFF W. BARNES, P.S.M. NO. 5576
C.O. VAN KLEECK JR., P.S.M. NO. 6149
MICHAEL S. MURPHY, P.S.M. NO. 6208


MONACO
Garden Cottage
EST. 2022





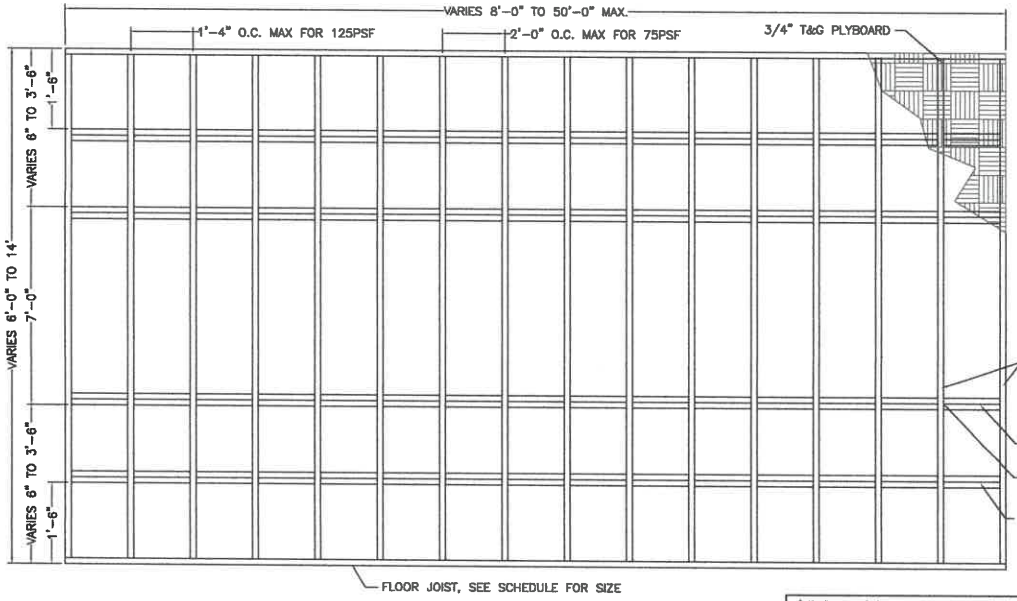


NOTE: WALL FRAMING MEMBERS ARE CONTINUOUS FROM FOUNDATION SILL TO ROOF AND SECURED TO ENSURE A CONTINUOUS LOAD PATH. WHERE WALL MEMBERS ARE NOT CONTINUOUS, SHEET METAL CLAMPS, TIES, OR CLIPS SHALL BE FORMED OF GALVANIZED STEEL OF NOT LESS THAN 0.040" NOMINAL THICKNESS.

PLANS ARE APPROVED FOR THE HEIGHTS OF ALL COMBINATIONS OF WALL HEIGHTS AND WIDTHS LISTED.

STANDARD WALL DETAIL
WITH DOOR & WINDOW OPTIONS

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES



FLOOR FRAMING PLAN

GENERAL NOTES
1. FOUNDATION PLANS ARE NOT PART OF THIS PLAN SET AND ARE GOVERNED BY LOCAL JURISDICTION.
2. BUILDINGS ARE APPROVED FOR RESIDENTIAL LAWN STORAGE ONLY
3. THIS BUILDING IS EXEMPT FROM THE FECC PER SECTIONS R101.4.2.4, R402.1.
4. REFER TO TIE DOWN DETAILS FOR PROPER INSTALLATION REQUIREMENTS TO MEET CODE.
5. ALL LUMBER FOR CONSTRUCTION WILL BE #2 SYP EXCEPT AS NOTED.
6. GUTTERS SHALL BE SITE INSTALLED PER THE LOCAL AUTHORITY HAVING JURISDICTION AND PERMITTING REQUIREMENTS.
7. ALL WINDOWS AND DOORS TO MEET THE MINIMUM SPECIFICATIONS PER THE APPROVED PLANS AND THE FLORIDA BUILDING CODE.
8. IN ACCORDANCE WITH FBC 1609.1.2, "STORAGE SHEDS THAT ARE NOT DESIGNED FOR HUMAN HABITATION AND THAT HAVE A FLOOR AREA OF 720 SQUARE FEET OR LESS ARE NOT REQUIRED TO COMPLY WITH THE MANDATORY WINDBORNE DEBRIS IMPACT STANDARDS OF THIS CODE".
9. IN ACCORDANCE WITH FBC 1010.1.1, EXCEPTION (10.) BUILDINGS THAT ARE 400 SQ-FT OR LESS AND THAT ARE INTENDED FOR USE IN CONJUNCTION WITH ONE- AND TWO-FAMILY RESIDENCES ARE NOT SUBJECT TO THE DOOR HEIGHT AND WIDTH REQUIREMENTS OF THIS CODE. STRUCTURES 400 SQ-FT OR MORE SHALL HAVE AN 80" MINIMUM DOOR.
10. IN ACCORDANCE WITH FLORIDA STATUTE 553.80 (1)D, LAWN STORAGE BUILDINGS AND STORAGE SHEDS BEARING THE INSIGNIA OF APPROVAL OF THE DEPARTMENT ARE NOT SUBJECT TO 553.842 (FLORIDA PRODUCT APPROVALS) BUT SHALL MEET THE DESIGN WIND LOAD REQUIREMENTS OF THE 2020 FBC 7TH EDITION.
11. FLAT METAL STRAPS CAN BE BENT AROUND STRUCTURAL MEMBERS OF WALL STUDS, TRUSSES, CHORDS, ETC. TO HELP SECURE THESE MEMBERS, PROVIDED THAT THE ADDED BEND DOES NOT INTERFERE WITH ANY OF THE EXISTING BREAKS/BENDS IN THE STRAP.
12. AS PER FBC SECTION 1626.1 EXCEPTION (F): STORAGE SHEDS THAT ARE NOT DESIGNED FOR HUMAN HABITATION AND THAT HAVE A FLOOR AREA OF LESS THAN 720 SQUARE FEET OR LESS ARE NOT REQUIRED TO COMPLY WITH THE MANDATORY WINDBORNE DEBRIS IMPACT STANDARDS OF THIS CODE.
13. COMPONENTS/CLADDING ARE IN COMPLIANCE WITH THE 2020 FBC 7TH EDITION.
14. SHEDS LOCATED IN FLOOD HAZARD AREAS MUST COMPLY WITH THE LOCAL FLOOD ZONE REGULATIONS.
15. IF A WALL IS FRAMED FOR FUTURE HVAC UNITS THAT WILL BE APPROVED BY THE AHJ AND LOCAL REQUIREMENTS FOR PERMITTING.
16. WINDOWS AND DOORS INSTALLED BY THE CUSTOMER ARE REQUIRED TO HAVE APPROVAL OF THE LOCAL AHJ AND LOCAL PERMITTING REQUIREMENTS.
17. HVHZ COMPONENTS FOR SHEDS REQUIRE THAT INSTALLATION PER MANUFACTURERS INSTRUCTIONS.

MATTHEW T. BALDWIN LICENSE NO. 64608 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Matthew Baldwin
Date: 2021.01.07 15:47:50 -05'00'

APPROVED FOR HVHZ USE
FBC 1626.1 EXCEPTION: F. STORAGE SHEDS THAT ARE NOT DESIGNED FOR HUMAN HABITATION AND THAT HAVE A FLOOR AREA OF 720 SQUARE FEET (67 M2) OR LESS ARE NOT REQUIRED TO COMPLY WITH THE MANDATORY WINDBORNE DEBRIS IMPACT STANDARDS OF THIS CODE.

SMITHBILT INDUSTRIES, INC.
1061 U.S. 92
ABURNDALE, FL 33823
PHONE NUMBER: (863) 665-3767
FAX NUMBER: (863) 665-0159

CODE INFORMATION	
CODE VERSION	FBC 2020 7th Edition, ASCE-7-16, 2017 NDS
MANUFACTURER	SMITHBILT SHEDS
BUILDING TYPE	MANUFACTURED BUILDING RESIDENTIAL LAWN STORAGE
CONSTRUCTION TYPE	V-B
FIRE PROTECTION	NONE
FIRE SUPPRESSION SYSTEM	NONE
OCCUPANCY	UTILITY
ALLOWABLE NUMBER OF STORIES	1
BASIC WIND SPEED	Vas-170mph
EXPOSURE	D
ENCLOSURE	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/- 0.18
IMPORTANCE FACTOR	1.0
ROOF DEAD LOAD	10PSF
ROOF LIVE LOAD	30PSF OR 300lb POINT LOAD
FLOOR DEAD LOAD	10PSF
FLOOR LIVE LOAD	75/125PSF
"R" RATING OF WALLS, FLOOR, ROOF	N/A
MODULES PER BUILDING	1
HURRICANE PROTECTION USAGE	NO
HURRICANE SHELTER USAGE	NO
SQUARE FOOTAGE	719 SQ.FT. OR LESS

REVISIONS

REV	DESCRIPTION	DATE	BY

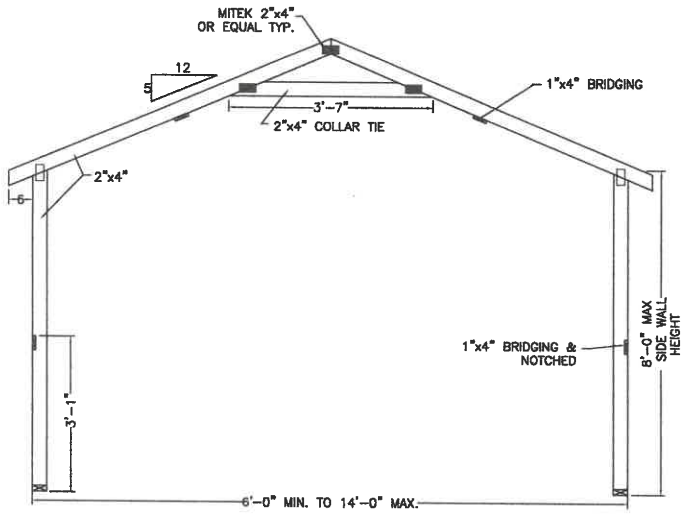
Drawn By:	MTB
Date:	11-15-20
Scale:	NTS
Model#:	SBS-E-170D

MATTHEW T. BALDWIN LICENSE NO. 64608 STATE OF FLORIDA PROFESSIONAL ENGINEER

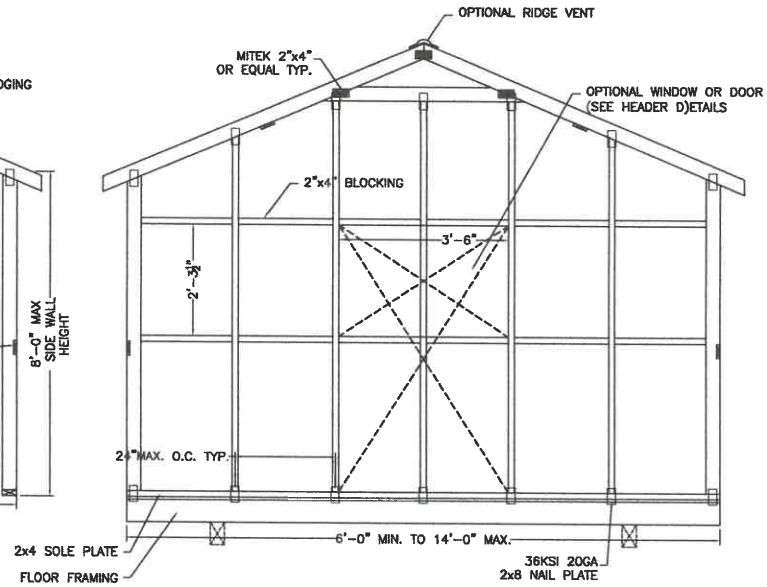
Matthew T. Baldwin P.E.
Florida License #64608

TITLE: WALL & FLOOR LAYOUT - EAVE STYLE

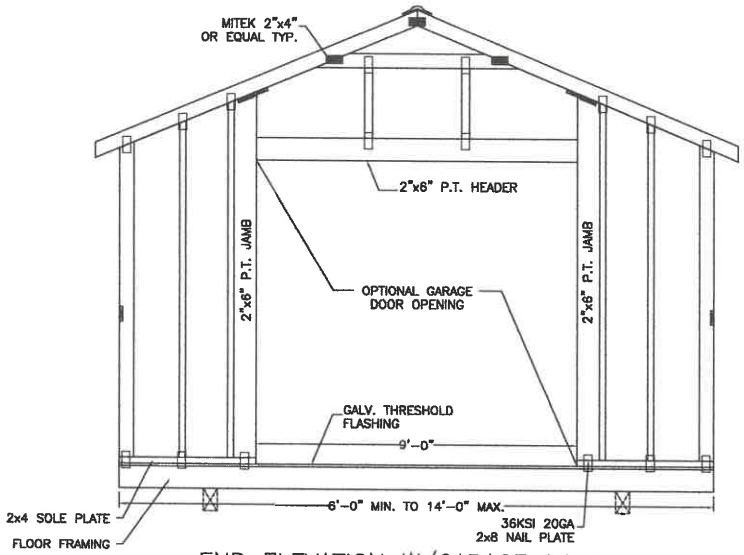
Sheet: FBPR-1 OF 7



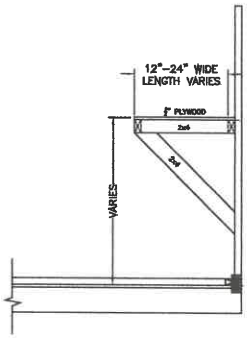
BARN STYLE TYPICAL TRUSS



END ELEVATION



END ELEVATION W/GARAGE DOOR



OPTIONAL WALL SHELVING

LOCATION, WIDTH AND LENGTH VARY

SMITHBILT
INDUSTRIES, INC.
1061 U.S. 92
ABURNDALE, FL 33823
PHONE NUMBER: (863) 665-3767
FAX NUMBER: (863) 665-0159

CODE INFORMATION

CODE VERSION	FBC, 2020 7th Edition, ASCE-7-16, 2017 NDS
MANUFACTURER	SMITHBILT SHEDS
BUILDING TYPE	MANUFACTURED BUILDING RESIDENTIAL LAWN STORAGE
CONSTRUCTION TYPE	V-B
FIRE PROTECTION	NONE
FIRE SUPPRESSION SYSTEM	NONE
OCCUPANCY	UTILITY
ALLOWABLE NUMBER OF STORIES	1
BASIC WIND SPEED	Vult=170mph
EXPOSURE	D
ENCLOSURE	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/- 0.18
IMPORTANCE FACTOR	1.0
ROOF DEAD LOAD	10PSF
ROOF LIVE LOAD	30PSF OR 300lb POINT LOAD
FLOOR DEAD LOAD	10PSF
FLOOR LIVE LOAD	75/125PSF
"R" RATING OF WALLS, FLOOR, ROOF	N/A
MODULES PER BUILDING	1
HURRICANE PROTECTION USAGE	NO
HURRICANE SHELTER USAGE	NO
SQUARE FOOTAGE	719 SQ.FT. OR LESS

REVISIONS

REV	DESCRIPTON	DATE	BY

Drawn By:	MTB
Date:	11-15-20
Scale:	NTS
Model#:	SBS-E-170D

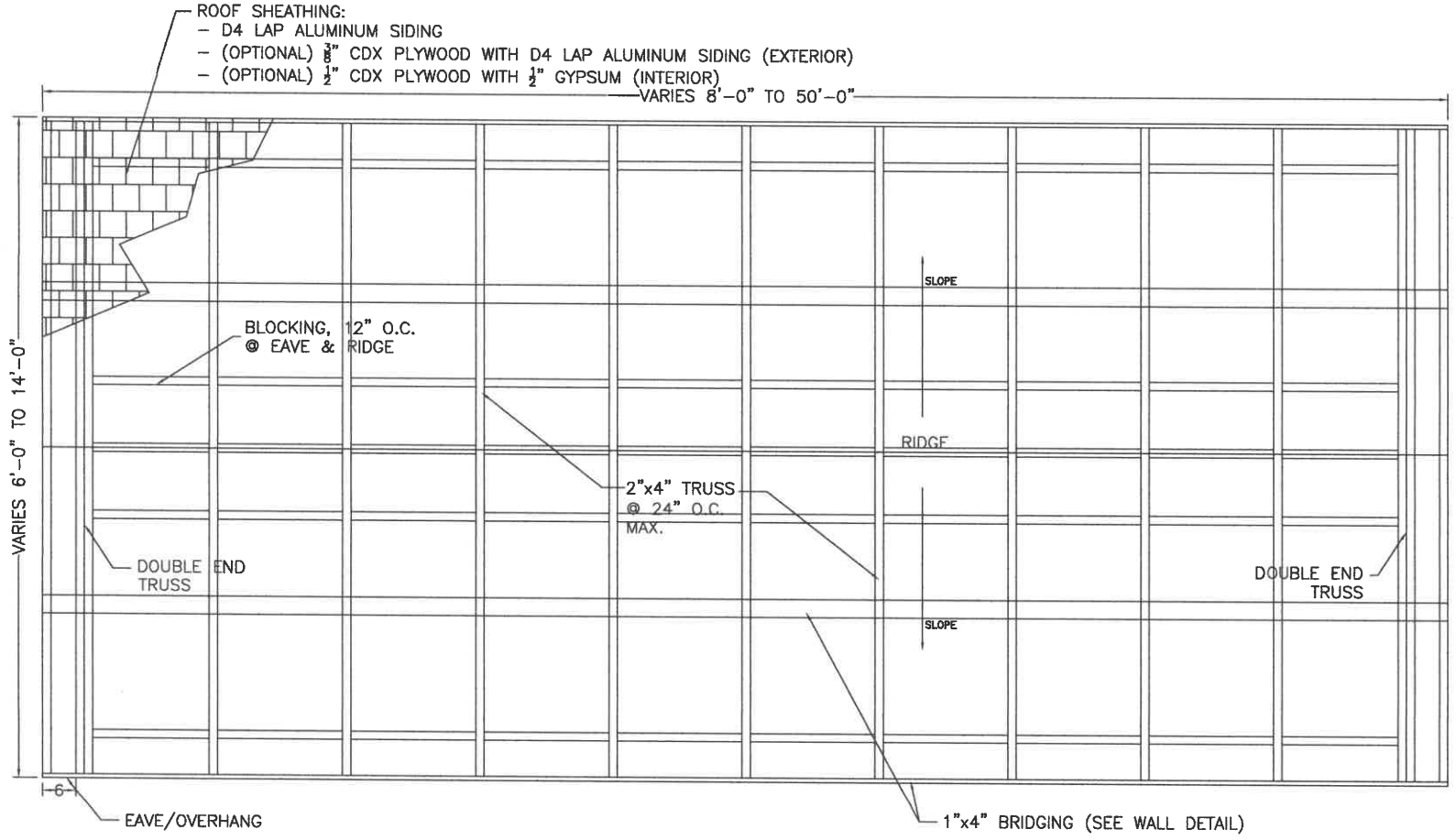
TITLE: END WALL LAYOUT - EAVE STYLE

MATTHEW T. BALDWIN
LICENSE
NO.
64608
STATE
OF
FLORIDA
PROFESSIONAL ENGINEER

Matthew T. Baldwin P.E.
Florida License #64608

Sheet: FBPR-2 OF 7

MAXIMUM DESIGN PRESSURES 170mph BASIC WIND SPEED								
ZONE	1	2n	2r	2e	3r	3e	4	5
	+21.8 −48.2	+31.9 −115.2	+17.4 −62.6	+17.4 −24.7	+31.9 −136.9	+31.9 −115.2	+31.9 −35.5	+38.2 −48.4



ROOF FRAMING PLAN

SMITHBILT INDUSTRIES, INC.
1061 U.S. 92
ABURNDALE, FL 33823
PHONE NUMBER: (863) 665-3767
FAX NUMBER: (863) 665-0159

CODE INFORMATION	
CODE VERSION	FBC 2020 7th Edition, ASCE-7-16, 2017 NEC
MANUFACTURER	SMITHBILT SHEDS
BUILDING TYPE	MANUFACTURED BUILDING RESIDENTIAL LAWN STORAGE
CONSTRUCTION TYPE	V-B
FIRE PROTECTION	NONE
FIRE SUPPRESSION SYSTEM	NONE
OCCUPANCY	UTILITY
ALLOWABLE NUMBER OF STORIES	1
BASIC WIND SPEED	Vult-170mph
EXPOSURE	D
ENCLOSURE	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/- 0.18
IMPORTANCE FACTOR	1.0
ROOF DEAD LOAD	10PSF
ROOF LIVE LOAD	30PSF OR 300lb POINT LOAD
FLOOR DEAD LOAD	10PSF
FLOOR LIVE LOAD	75/125PSF
"R" RATING OF WALLS, FLOOR, ROOF	N/A
MODULES PER BUILDING	1
HURRICANE PROTECTION USAGE	NO
HURRICANE SHELTER USAGE	NO
SQUARE FOOTAGE	719 SQ.FT. OR LESS

REVISIONS

REV	DESCRIPTON	DATE	BY

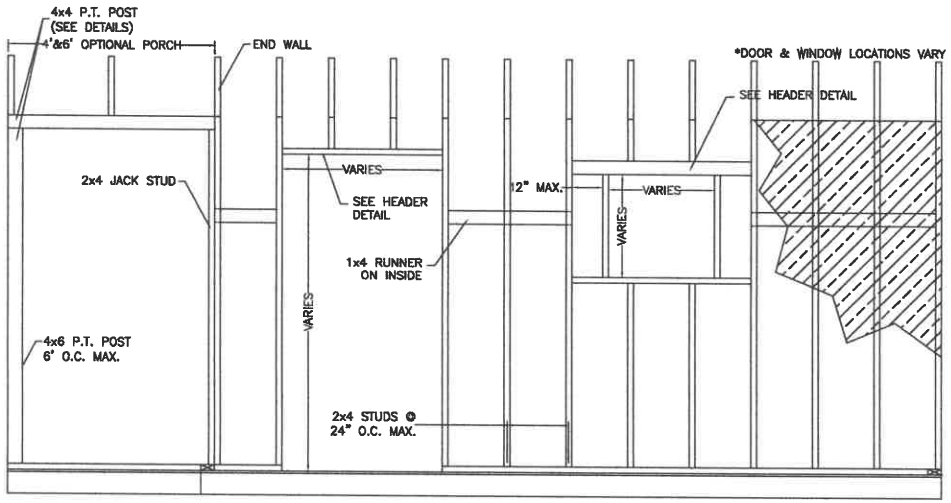
Drawn By:	MTB
Date:	11-15-20
Scale:	NTS
Model#:	SBS-E-170D

MATTHEW T. BALDWIN LICENSE NO. 64608 STATE OF FLORIDA PROFESSIONAL ENGINEER

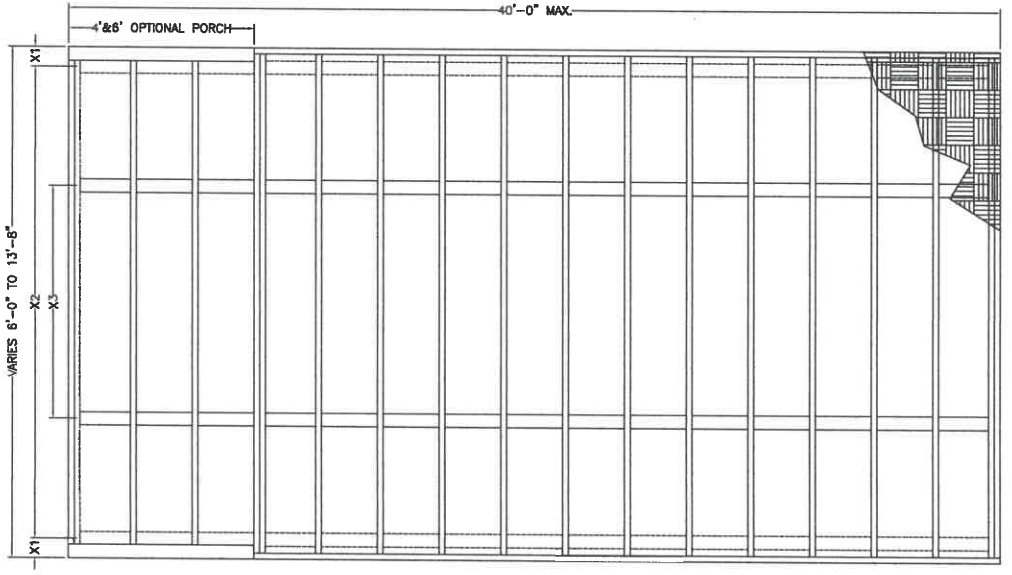
Matthew T. Baldwin P.E.
Florida License #64608

TITLE: ROOF LAYOUT - EAVE STYLE

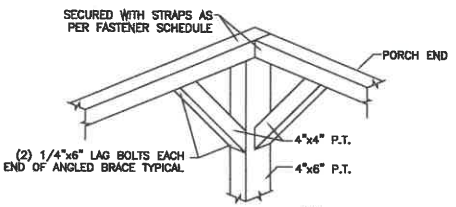
Sheet: FBPR-3 OF 7



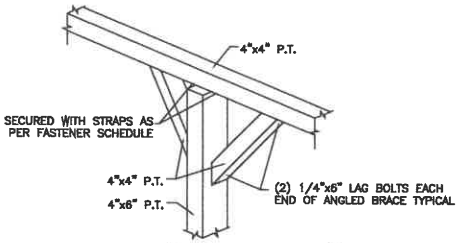
OPTIONAL PORCH TO WALL CONNECTION



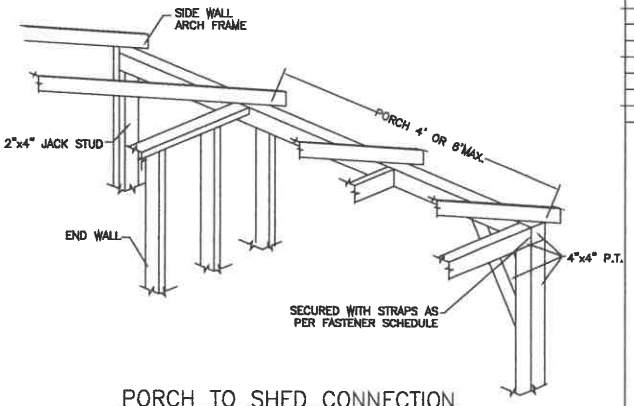
OPTIONAL PORCH TO FLOOR FRAMING



PORCH CORNER



PORCH INTERIOR COLUMN



PORCH TO SHED CONNECTION

SMITHBILT INDUSTRIES, INC.

1061 U.S. 92
ABURNDALE, FL 33823
PHONE NUMBER: (863) 665-3767
FAX NUMBER: (863) 665-0159

CODE INFORMATION	
CODE VERSION	FBC, Res. 7th Edition, ASCE-7-16, 2017 NEC
MANUFACTURER	SMITHBILT SHEDS
BUILDING TYPE	MANUFACTURED BUILDING RESIDENTIAL LAWN STORAGE
CONSTRUCTION TYPE	V-B
FIRE PROTECTION	NONE
FIRE SUPPRESSION SYSTEM	NONE
OCCUPANCY	UTILITY
ALLOWABLE NUMBER OF STORIES	1
BASIC WIND SPEED	Vu=170mph
EXPOSURE	D
ENCLOSURE	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/- 0.18
IMPORTANCE FACTOR	1.0
ROOF DEAD LOAD	10PSF
ROOF LIVE LOAD	30PSF OR 300lb POINT LOAD
FLOOR DEAD LOAD	10PSF
FLOOR LIVE LOAD	75/125PSF
"R" RATING OF WALLS, FLOOR, ROOF	N/A
MODULES PER BUILDING	1
HURRICANE PROTECTION USAGE	NO
HURRICANE SHELTER USAGE	NO
SQUARE FOOTAGE	718 SQ.FT. OR LESS

REVISIONS

REV	DESCRIPTON	DATE	BY

TITLE: OPTIONAL PORCH LAYOUT - EAVE STYLE

Drawn By:	MTB
Date:	11-15-20
Scale:	NTS
Model#:	SBS-E-170D

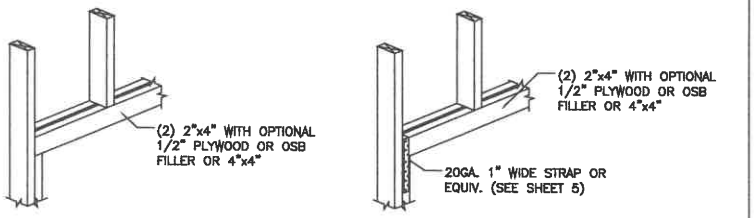
MATTHEW T. BALDWIN LICENSE NO. 64608 STATE OF FLORIDA PROFESSIONAL ENGINEER

Matthew T. Baldwin P.E.
Florida License #64608

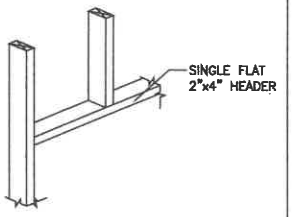
Sheet: FBPR-4 OF 7

HEADER DETAILS, EQUIVALENT SIZES & MISCELLANEOUS DETAILS

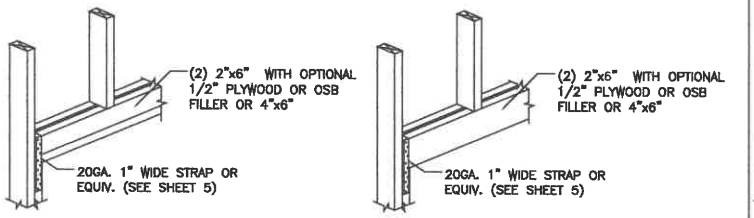
*NOTES
1. THE OPTIONAL 1/2" PLYWOOD OR OSB FILLER CAN BE BETWEEN BOARDS OR ON INSIDE OF STRUCTURE.
2. SEE FASTENER SCHEDULE FOR HARDWARE REQUIREMENTS.
3. SEE HEADER SCHEDULE FOR ADDITIONAL INFORMATION.
4. WINDOW HEADERS HAVE COMBINED 50% OR MORE WALL FRAMING ABOVE AND BELOW, OTHERWISE REFER TO DOOR HEADERS.
5. THESE ARE DESIGN MINIMUMS AND LARGER STUDS CAN BE SUBSTITUTED



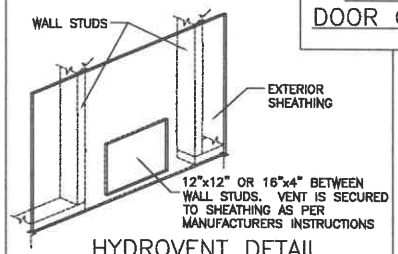
(2)2"x4" OR 4"x4"



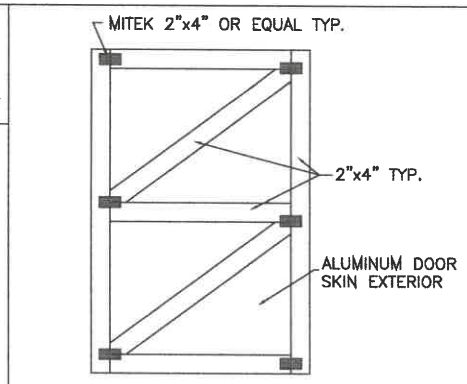
WINDOWS* 3' WIDE OR LESS



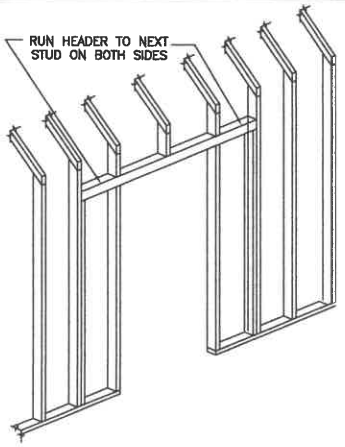
(2)2"x4"w/2"x4", (2)2"x6" OR 4"x6"



HYDROVENT DETAIL (OPTIONAL)



OPTIONAL WOOD FRAME DOOR CONSTRUCTION DETAIL



'NO-STRAP' HEADER DETAIL
MAX. 8' SPAN

SIDE WALL HEADER SCHEDULE (170D)[e]

SIZE[d,g]	BUILDING WIDTH UP TO 14' WIDE		FASTENERS W/O STRAP (EACH END)[c]
	MAX. SPAN	NJ[b]	
1-2"x4"[f]	3'-0"	0	3-3"x0.131" NAILS
2-2"x4"	6'-0"	1	8-3"x0.131" NAILS

A. TABULATED VALUES ARE FOR NO.2 GRADE SPRUCE PINE FIR LUMBER.
B. NJ = NUMBER OF JACK STUDS REQUIRED TO SUPPORT EACH END.
C. IF OVER 3' SPAN AND NO STRAPS ARE USED HEADER MUST RUN TO NEXT STUD
D. THE OPTIONAL 2" PLYWOOD OR OSB FILLER IS NOT STRUCTURAL AND ONLY FOR AESTHETICS
E. SEE HEADER DETAILS FOR ALTERNATE LAYOUTS, i.e. 2-2"x4" OR 4"x4"
F. WINDOW HEADR FOR WINDOW OPENINGS THAT HAVE MORE THAN 50% COMBINES STUD WALL ABOVE AND BELOW. OTHERWISE DOOR HEADER SCHEDULE.
G. THE HEADER CAN BE ATTACHED TO THE TOP PLATE AND THUSLY HAVE COMBINED STRENGTH EQUIVALENT AND USE THE MAXIMUM SPAN STATED. SEE HEADER DETAILS FRO EQUIVALENT SIZES.

END WALL HEADER SCHEDULE (170D)[e]

SIZE[d]	MAX. SPAN	NJ[b]	FASTENERS W/O STRAP (EACH END)[c]
1-2"X4"	6'-0"	0	3-3"x0.131" NAILS
2-2"x6"	9'-0"	0	6-3"x0.131" NAILS

A. TABULATED VALUES ARE FOR NO.2 GRADE SPRUCE PINE FIR LUMBER.
B. NJ = NUMBER OF JACK STUDS REQUIRED TO SUPPORT EACH END.
C. IF OVER 3' SPAN AND NO STRAPS ARE USED HEADER MUST RUN TO NEXT STUD
D. THE OPTIONAL 2" PLYWOOD OR OSB FILLER IS NOT STRUCTURAL AND ONLY FOR AESTHETICS
E. SEE HEADER DETAILS FOR ALTERNATE LAYOUTS, i.e. 2-2"x4" OR 4"x4"
F. WINDOW HEADR FOR WINDOW OPENINGS THAT HAVE MORE THAN 50% COMBINES STUD WALL ABOVE AND BELOW. OTHERWISE DOOR HEADER SCHEDULE.
G. THE HEADER CAN BE ATTACHED TO THE TOP PLATE AND THUSLY HAVE COMBINED STRENGTH EQUIVALENT AND USE THE MAXIMUM SPAN STATED. SEE HEADER DETAILS FRO EQUIVALENT SIZES.

SMITHBILT INDUSTRIES, INC
1061 U.S. 92
ABURNDALE, FL 33823
PHONE NUMBER: (863) 665-3767
FAX NUMBER: (863) 665-0159

CODE INFORMATION	
CODE VERSION	FBC 2020 7th Edition, ASCE-7-16, 2017 MDC
MANUFACTURER	SMITHBILT SHEDS
BUILDING TYPE	MANUFACTURED BUILDING RESIDENTIAL LAWN STORAGE
CONSTRUCTION TYPE	V-B
FIRE PROTECTION	NONE
FIRE SUPPRESSION SYSTEM	NONE
OCCUPANCY	UTILITY
ALLOWABLE NUMBER OF STORIES	1
BASIC WIND SPEED	Vult-170mph
EXPOSURE	D
ENCLOSURE	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/- 0.18
IMPORTANCE FACTOR	1.0
ROOF DEAD LOAD	10PSF
ROOF LIVE LOAD	30PSF OR 300lb POINT LOAD
FLOOR DEAD LOAD	10PSF
FLOOR LIVE LOAD	70/125PSF
"R" RATING OF WALLS, FLOOR, ROOF	N/A
MODULES PER BUILDING	1
HURRICANE PROTECTION USAGE	NO
HURRICANE SHELTER USAGE	NO
SQUARE FOOTAGE	719 SQ.FT. OR LESS

REVISIONS

REV	DESCRIPTON	DATE	BY

Drawn By: MTB
Date: 11-15-20
Scale: NTS
Model#: SBS-E-170D

TITLE: HEADER DETAILS - EAVE STYLE

MATTHEW T. BALDWIN LICENSE NO. 64608 STATE OF FLORIDA PROFESSIONAL ENGINEER

Matthew T. Baldwin P.E.
Florida License #64608

Sheet: FBPR-5 OF 7

FASTENING SCHEDULE TABLE 2304.10.1

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION	
Roof			
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3-8d common (21/2" × 0.131"); or3-10d box (3" × 0.128"); or3-3" × 0.131" nails; or3-3" 14 gage staples, 7/16" crown	Each end, toenail	
Blocking between rafters or truss not at the wallto plate, to rafter or truss	2-8d common (21/2" × 0.131")2-3" × 0.131" nails2-3" 14 gage staples	Each end, toenail	
	2-16d common (31/2" × 0.162")3-3" × 0.131" nails3-3" 14 gage staples	End nail	
Flat blocking to truss and web filler	16d common (31/2" × 0.162") @ 6" o.c.3" × 0.131" nails @ 6" o.c.3" × 14 gage staples @ 6" o.c	Face nail	
2. Ceiling joists to top plate	3-8d common (21/2" × 0.131"); or3-10d box (3" × 0.128"); or3-3" × 0.131" nails; or3-3" 14 gage staples, 7/16" crown	Each joist, toenail	
3. Ceiling joist not attached to parallel rafter, lapsover partitions (no thrust)(see Section 2301.2)	3-16d common (31/2" × 0.162"); or4-10d box (3" × 0.128"); or4-3" × 0.131" nails; or4-3" 14 gage staples, 7/16" crown	Face nail	
4. Ceiling joist attached to parallel rafter (heel joint) (see Section 2301.2)	Per Section 2301.2	Face nail	
5. Collar tie to rafter	3-10d common (3" × 0.148"); or4-10d box (3" × 0.128"); or4-3" × 0.131" nails; or4-3" 14 gage staples, 7/16" crown	Face nail	
6. Rafter or roof truss to top plate(See Section 2301.2)	3-10 common (3" × 0.148"); or3-16d box (31/2" × 0.135"); or4-10d box (3" × 0.128"); or4-3" × 0.131 nails; or4-3" 14 gage staples, 7/16" crown	Toenailc	
	2-16d common (31/2" × 0.162");or3-10d box (3" × 0.128"); or3-3" × 0.131" nails; or3-3" 14 gage staples, 7/16" crownc or	End nail	
7. Roof rafters to ridge valley or hip rafters; or roofrafter to 2-inch ridge beam	3-10d common (3" × 0.148"); or4-16d box (31/2" × 0.135"); or4-10d box (3" × 0.128"); or4-3" × 0.131" nails; or4-3" 14 gage staples, 7/16" crown	Toenail	
Wall			
8. Stud to stud (not at braced wall panels)	16d common (31/2" × 0.162");	24" o.c. face nail	
	10d box (3" × 0.128"); or3" × 0.131" nails; or3-3" 14 gage staples, 7/16" crown	16" o.c. face nail	
9. Stud to stud and abutting studs at intersecting wallcorners (at braced wall panels)	16d common (31/2" × 0.162"); or	16" o.c. face nail	
	16d box (31/2" × 0.135"); or	12" o.c. face nail	
	3" × 0.131" nails; or3-3" 14 gage staples, 7/16" crown	12" o.c. face nail	
10. Built-up header (2" to 2" header)	16d common (31/2" × 0.162"); or	16" o.c. each edge, face nail	
	16d box (31/2" × 0.135")	12" o.c. each edge, face nail	
11. Continuous header to stud	4-8d common (21/2" × 0.131"); or4-10d box (3" × 0.128")	Toenail	
12. Top plate to top plate	16d common (31/2" × 0.162"); or	16" o.c. face nail	
	10d box (3" × 0.128"); or3" × 0.131" nails; or3" 14 gage staples, 7/16" crown	12" o.c. face nail	
13. Top plate to top plate, at end joints	8-16d common (31/2" × 0.162"); or12-10d box (3" × 0.128"); or12-3" × 0.131" nails; or12-3" 14 gage staples, 7/16" crown	Each side of end joint, face nail(minimum 24" lap splice lengtheach side of end joint)	
14. Bottom plate to joist, rim joist, band joist or blocking(not at braced wall panels)	16d common (31/2" × 0.162"); or	16" o.c. face nail	
	16d box (31/2" × 0.135"); or3" × 0.131" nails; or3" 14 gage staples, 7/16" crown	12" o.c. face nail	
15. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (31/2" × 0.162"); or3-16d box (31/2" × 0.135"); or4-3" × 0.131" nails; or4-3" 14 gage staples, 7/16" crown	16" o.c. face nail	
16. Stud to top or bottom plate	4-8d common (21/2" × 0.131"); or4-10d box (3" × 0.128"); or4-3" × 0.131" nails; or4-3" 14 gage staples, 7/16" crown; or	Toenail	
	2-16d common (31/2" × 0.162"); or3-10d box (3" × 0.128"); or3-3" × 0.131" nails; or3-3" 14 gage staples, 7/16" crown	End nail	
17. Reserved			
18. Top plates, laps at corners and intersections	2-16d common (31/2" × 0.162"); or3-10d box (3" × 0.128"); or3-3" × 0.131" nails; or3-3" 14 gage staples, 7/16" crown	Face nail	
19. 1" brace to each stud and plate	2-8d common (21/2" × 0.131"); or2-10d box (3" × 0.128"); or2-3" × 0.131" nails; or2-3" 14 gage staples, 7/16" crown	Face nail	
20. 1" × 6" sheathing to each bearing	2-8d common (21/2" × 0.131"); or2-10d box (3" × 0.128")	Face nail	
21. 1" × 8" and wider sheathing to each bearing	3-8d common (21/2" × 0.131"); or3-10d box (3" × 0.128")	Face nail	
Floor			
22. Joist to sill, top plate, or girder	3-8d common (21/2" × 0.131"); or floor3-10d box (3" × 0.128"); or3-3" × 0.131" nails; or3-3" 14 gage staples, 7/16" crown	Toenail	
23. Rim joist, band joist, or blocking to top plate, sill or other framing below	8d common (21/2" × 0.131"); or10d box (3" × 0.128"); or3" × 0.131" nails; or3" 14 gage staples, 7/16" crown	6" o.c., toenail	
24. 1" × 6" subfloor or less to each joist	2-8d common (21/2" × 0.131"); or2-10d box (3" × 0.128")	Face nail	
25. 2" subfloor to joist or girder	2-16d common (31/2" × 0.162")	Face nail	
26. 2" planks (plank & beam – floor & roof)	2-16d common (31/2" × 0.162")	Each bearing, face nail	
27. Built-up girders and beams, 2" lumber layers	20d common (4" × 0.192")	32" o.c., face nail at top and bottomstaggered on opposite sides	
	10d box (3" × 0.128"); or3" × 0.131" nails; or3" 14 gage staples, 7/16" crown	24" o.c. face nail at top and bottomstaggered on opposite sides	
	And2-20d common (4" × 0.192"); or3-10d box (3" × 0.128"); or3-3" × 0.131" nails; or3-3" 14 gage staples, 7/16" crown	Ends and at each splice, face nail	
28. Ledger strip supporting joists or rafters	3-16d common (31/2" × 0.162"); or4-10d box (3" × 0.128"); or4-3" × 0.131" nails; or4-3" 14 gage staples, 7/16" crown	Each joist or rafter, face nail	
29. Joist to band joist or rim joist	3-16d common (31/2" × 0.162"); or4-10d box (3" × 0.128"); or4-3" × 0.131" nails; or4-3" 14 gage staples, 7/16" crown	End nail	
30. Bridging or blocking to joist, rafter or truss	2-8d common (21/2" × 0.131"); or2-10d box (3" × 0.128"); or2-3" × 0.131" nails; or2-3" 14 gage staples, 7/16" crown	Each end, toenail	
Wood structural panels (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framings			
		Edges(inches)	Intermediate supports(inches)
31. 3/8" – 1/2"	6d common or deformed (2" × 0.113") (subfloor and wall)	6	12
	8d common or deformed (21/2" × 0.131")(roof) or RSRS-01 (23/8" × 0.113") nail(roof)d	6	12
	23/8" × 0.113" nail (subfloor and wall)	6	12
	13/4" 16 gage staple, 7/16" crown(subfloor and wall)	4	8
	23/8" × 0.113" nail (roof)	4	8
	13/4" 16 gage staple, 7/16" crown (roof)	3	6
32. 19/32" – 3/4"	8d common (21/2" × 0.131"); or6d deformed (2" × 0.113") (subfloor andwall)	6	12
	8d common or deformed (21/2" × 0.131")(roof) or RSRS-01 (23/8" × 0.113") nail(roof)d	6	12
	23/8" × 0.113" nail; or2" 18 gage staple, 7/16" crown	4	8
33. 7/8" – 11/4"	10d common (3" × 0.148"); or8d deformed (21/2" × 0.131")	6	12
Other exterior wall sheathing			
34. 1/2" fiberboard sheathingh	11/2" galvanized roofing nail(7/16" head diameter); or11/4" 16 gage staple with 7/16" or 1" crown	3	6
35. 25/32" fiberboard sheathingb	13/4" galvanized roofing nail(7/16" diameter head); or11/2" 16 gage staple with 7/16" or 1" crown	3	6
Wood structural panels, combination subfloor underlayment to framing			
36. 3/4" and less	8d common (21/2" × 0.131"); or6d deformed (2" × 0.113")	6	12
37. 7/8" – 1"	8d common (21/2" × 0.131"); or8d deformed (21/2" × 0.131")	6	12
38. 11/8" – 11/4"	10d common (3" × 0.148"); or8d deformed (21/2" × 0.131")	6	12
Panel siding to framing			
39. 1/2" or less	6d corrosion-resistant siding(17/8" × 0.106"); or6d corrosion-resistant casing (2" × 0.099")	6	12
40. 5/8"	8d corrosion-resistant siding(23/8" × 0.128"); or8d corrosion-resistant casing(21/2" × 0.113")	6	12
Interior panelling			
41. 1/4"	4d casing (11/2" × 0.080"); or4d finish (11/2" × 0.072")	6	12
42. 3/6"	6d casing (2" × 0.099"); or6d finish (Panel supports at 24 inches)	6	12
For SI: 1 inch = 25.4 mm.			

FOR SI: 1 INCH = 25.4 MM.

A.NAILS SPACED AT 6 INCHES AT INTERMEDIATE SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.

B.SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS. PANEL SUPPORTS AT 16 INCHES (20 INCHES IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED).

C.WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE AND THE CEILING JOIST IS FASTENED TO THE TOP PLATE IN ACCORDANCE WITH THIS SCHEDULE, THE NUMBER OF TOENAILS IN THE RAFTER SHALL BE PERMITTED TO BE REDUCED BY ONE NAIL.

D.RSRS–01 IS A ROOF SHEATHING RING SHANK NAIL MEETING THE SPECIFICATIONS IN ASTM F1667.

ALTERNATE FASTENING SCHEDULE

CONNECTION	FASTENING	
ALT 31–33, WOOD STRUCTURAL PANELS AND PARTICLEBOARD SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING)	1/2" AND LESS	2" X 0.092" RING SHANK NAIL –5" FROM EDGE, 10" O.C.

STRAP & SIMPSON STRONG–DRIVE® SD SCREW SCHEDULE

	PART#/DESC.	UPLIFT	WALL FASTENER	RAFTER FASTENER	PLATE FASTENER
RAFTER	H1	435	–	6–SD9X1.5"	4–SD9X1.5"
	H11Z	750	–	6–SD10X2.5"	8–SD10X2.5"
	H2A	485	5–SD9X1.5"	5–SD9X1.5"	2–SD9X1.5"
	H2.5A	540	–	5–SD9X1.5"	5–SD9X1.5"
	H2.5	410	5–SD9X1.5"	5–SD9X1.5"	–
	H2.5T	545	5–SD9X1.5"	5–SD9X1.5"	–
	H2A	485	7–SD9X1.5"	5–SD9X1.5"	–
	H3	320	4–SD9X1.5"	4–SD9X1.5"	–
	H4	280	4–SD9X1.5"	4–SD9X1.5"	–
	H5	415	4–SD9X1.5"	4–SD9X1.5"	–
	LTS–12	895	8–SD9X1.5"	6–SD9X1.5"	–
	LTS–16	1075	8–SD9X1.5"	6–SD9X1.5"	–
	LTS–18	1235	8–SD9X1.5"	6–SD9X1.5"	–
	LTS–20	1215	6–SD9X1.5"	6–SD9X1.5"	–
	MTS–12	885	7–SD9X1.5"	7–SD9X1.5"	–
	MTS–16	1075	7–SD9X1.5"	7–SD9X1.5"	–
	MTS–18	1255	7–SD9X1.5"	7–SD9X1.5"	–
	MTS–20	1258	7–SD9X1.5"	7–SD9X1.5"	–
	PART#/DESC.	UPLIFT	COLUMN FASTENER	RAFTER FASTENER	
PORCH	A21	–	2–SD9X1.5"	2–SD9X1.5"	
	A23	–	4–SD9X1.5"	4–SD9X1.5"	
	A33	–	4–SD9X1.5"	4–SD9X1.5"	
	PART#/DESC.	UPLIFT	WALL FASTENER	FLOOR FASTENER	
WALL TO FLOOR[A]	LSTA–18	1,235	7–SD9X1.5"	7–SD9X1.5"	
	PART#/DESC.	UPLIFT	WALL FASTENER	FLOOR FASTENER	
TIE–DOWNS	20GA. 1¾" WIDE	4,725	7–SD9X1.5"	–	
	5/8"X 30" ANCHOR	4,300	–	–	

A. ONLY NEEDED ON ALUMINUM SHEATHING WALLS.

B. HEADERS OVER 6' SPAN.

STRAP & FASTENER SCHEDULE [A]

	PART#/DESC.	UPLIFT	WALL FASTENER	RAFTER FASTENER	PLATE FASTENER
RAFTER[B]	H1	400	–	6–8DX1/3"	4–8D
	H11Z	750	–	6–10DX2.5"	6–10DX2.5"
	H2A	495	5–8DX1.5"	5–8DX1.5"	2–8DX1.5"
	H2.5A	535	–	5–8D	5–8D
	H2.5	410	5–8D	5–8D	–
	H2.5T	545	5–8D	5–8D	–
	H2A	495	7–8DX1.5"	5–8DX1.5"	–
	H3	320	4–8D	4–8D	–
	H4	235	4–8D	4–8D	–
	H5	265	4–8D	4–8D	–
	LTS–12	620	6–10DX1.5"	6–10DX1.5"	–
	LTS–16	620	6–10DX1.5"	6–10DX1.5"	–
	LTS–18	620	6–10DX1.5"	6–10DX1.5"	–
	LTS–20	620	6–10DX1.5"	6–10DX1.5"	–
	MTS–12	860	7–10DX1.5"	7–10DX1.5"	–
	MTS–16	860	7–10DX1.5"	7–10DX1.5"	–
	MTS–18	860	7–10DX1.5"	7–10DX1.5"	–
	MTS–20	860	7–10DX1.5"	7–10DX1.5"	–
	PART#/DESC.	UPLIFT	COLUMN FASTENER	RAFTER FASTENER	
PORCH	A21	248	2–10DX1.5"	2–10DX1.5"	
	A23	585	4–10DX1.5"	4–10DX1.5"	
	A33	780	4–10D	4–10D	
	PART#/DESC.	UPLIFT	WALL FASTENER	FLOOR FASTENER	
WALL TO FLOOR[C]	LSTA–18	1,110	7–10D	7–10D	
	PART#/DESC.	UPLIFT	STUD FASTENER	HEADER FASTENER	
HEADER[D]	TP–35	N/R	5–3"X 0.131"	5–3"X 0.131"	
	HP40,41,80,81	4,725	5–3"X 0.131"	5–3"X 0.131"	
	PART#/DESC.	UPLIFT	WALL FASTENER	FLOOR FASTENER	
TIE–DOWNS	20GA. 1¾" WIDE	4,725	7–10DX1.5"	–	
	5/8"X 30" ANCHOR	4,300	–	–	

A. ALL STRAPS CAN BE SUBSTITUTED WITH AN EQUIVALENT BRAND MEETING SAME STRENGTHS.

B. RAFTER TIES TO STUD WALL TO BE AT EVERY CONNECTION FOR 24" O.C. & CAN BE EVERY OTHER FOR 16" O.C. BUT IS REQUIRED ON CORNERS AND STUDS ADJACENT TO CORNERS.

C. ONLY NEEDED ON ALUMINUM & VINYL SHEATHING WALLS.

D. HEADERS OVER 6' SPAN.

SMITHBILT INDUSTRIES, INC

1061 U.S. 92
ABURNDALE, FL 33823

PHONE NUMBER: (863) 665–3767
FAX NUMBER: (863) 665–0159

CODE INFORMATION	
CODE VERSION	FBC 2020 7th Edition, ASCE–7–16, 2017 NDS
MANUFACTURER	SMITHBILT SHEDS
BUILDING TYPE	MANUFACTURED BUILDING RESIDENTIAL LAWN STORAGE
CONSTRUCTION TYPE	V–B
FIRE PROTECTION	NONE
FIRE SUPPRESSION SYSTEM	NONE
OCCUPANCY	UTILITY
ALLOWABLE NUMBER OF STORIES	1
BASIC WIND SPEED	Vu–170mph
EXPOSURE	D
ENCLOSURE	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/– 0.18
IMPORTANCE FACTOR	1.0
ROOF DEAD LOAD	10PSF
ROOF LIVE LOAD	30PSF OR 300lb POINT LOAD
FLOOR DEAD LOAD	10PSF
FLOOR LIVE LOAD	70/125PSF
"R" RATING OF WALLS, FLOOR, ROOF	N/A
MODULES PER BUILDING	1
HURRICANE PROTECTION USAGE	NO
HURRICANE SHELTER USAGE	NO
SQUARE FOOTAGE	719 SQ.FT. OR LESS

REVISIONS

REV	DESCRIPTON	DATE	BY

Drawn By:	MTB
Date:	11–15–20
Scale:	NTS
Model#:	SBS–E–170D

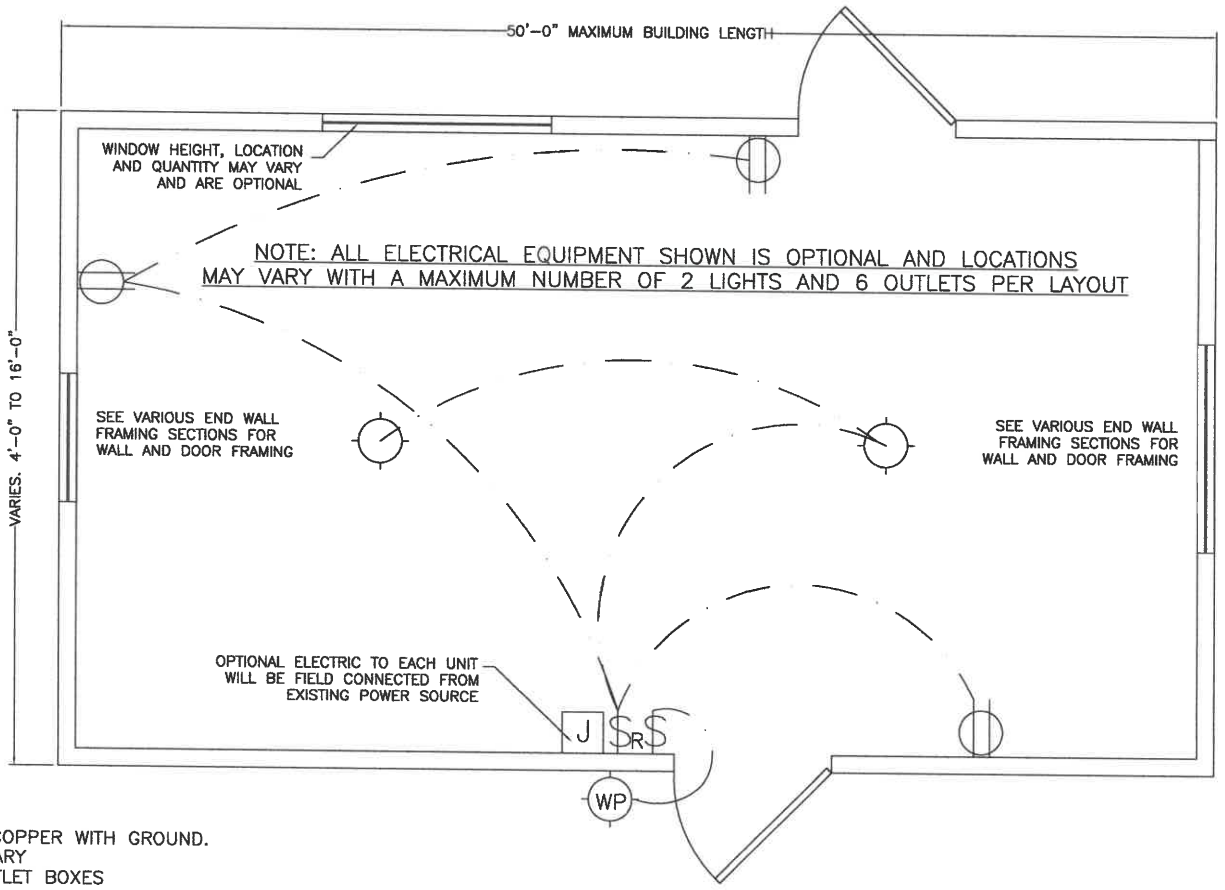
MATTHEW T. BALDWIN LICENSE NO. 64608 STATE OF FLORIDA PROFESSIONAL ENGINEER

Matthew T. Baldwin P.E.
Florida License #64608

TITLE: FASTENING SCHEDULES – EAVE STYLE

Sheet: FBPR–6 OF 7

ELECTRICAL SYMBOL KEY	
	RECEPTACLE
240	240V RECEPTACLE
$	SINGLE POLE SWITCH
$R	THREE WAY SWITCH
	CEILING MOUNT LIGHT FIXTURE
	WALL MOUNT LIGHT FIXTURE
O	FLUORESCENT LIGHT FIXTURE
J	JUNCTION BOX



ELECTRICAL NOTES:

1. ALL WIRE TO BE #12 THHN SOLID COPPER WITH GROUND.
2. FIXTURE LOCATION AND TYPE MAY VARY
3. PLASTIC OR METAL "NEW WORK" OUTLET BOXES
4. 20A GFCI OUTLETS
5. ALL RECEPTACLES TO BE AT 12"–16" A.F.G.; MAXIMUM 8 RECEPTACLES.
6. ALL SWITCHES TO BE AT 48"–52" A.F.G.
7. FLUORESCENT & LED LIGHTS MAY SUBSTITUTE FOR INCANDESCENT LIGHTING
8. ALL OUTLETS TO BE GFCI
9. THE MAIN ELECTRICAL PANEL, FEEDERS, POWER HOOKUP TO UNIT (INCLUDING ALL DISCONNECTS, OVER CURRENT DEVICES, PANELS, GROUNDING, ETC.) IS DESIGNED BY OTHERS, SITE INSTALLED, AND SUBJECT TO LOCAL APPROVAL.

RMT– RIGID METALLIC TUBING
358.30 SECURING AND SUPPORTING. EMT SHALL BE INSTALLED AS A COMPLETE SYSTEM IN ACCORDANCE WITH 300.18 AND SHALL BE SECURELY FASTENED IN PLACE AND SUPPORTED IN ACCORDANCE WITH 358.30 (A) AND (B).
(A) SECURELY FASTENED. EMT SHALL BE SECURELY FASTENED IN PLACE AT LEAST EVERY (10FT). IN ADDITION, EACH EMT RUN BETWEEN TERMINATION POINTS SHALL BE SECURELY FASTENED WITHIN (3 FT) OF EACH OUTLET BOX, JUNCTION BOX, DEVICE BOX, CABINET, CONDUIT BODY, OR OTHER TUBING TERMINATION.
EXCEPTION NO. 1: FASTENING OF UNBROKEN LENGTHS SHALL BE PERMITTED TO BE INCREASED TO A DISTANCE OF (5 FT.) WHERE STRUCTURAL MEMBERS DO NOT READILY PERMIT FASTENING WITHIN (3 FT).

SMITHBILT INDUSTRIES, INC.
1061 U.S. 92
ABURNDALE, FL 33823
PHONE NUMBER: (863) 665-3767
FAX NUMBER: (863) 665-0159

CODE INFORMATION	
CODE VERSION	FBC 2020 7th Edition, ASCE-7-16, 2017 NEC
MANUFACTURER	SMITHBILT SHEDS
BUILDING TYPE	MANUFACTURED BUILDING RESIDENTIAL LAWN STORAGE
CONSTRUCTION TYPE	V-B
FIRE PROTECTION	NONE
FIRE SUPPRESSION SYSTEM	NONE
OCCUPANCY	UTILITY
ALLOWABLE NUMBER OF STORIES	1
BASIC WIND SPEED	Vult=170mph
EXPOSURE	D
ENCLOSURE	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/- 0.18
IMPORTANCE FACTOR	1.0
ROOF DEAD LOAD	10PSF
ROOF LIVE LOAD	30PSF OR 200lb POINT LOAD
FLOOR DEAD LOAD	10PSF
FLOOR LIVE LOAD	75/125PSF
"R" RATING OF WALLS, FLOOR, ROOF	N/A
MODULES PER BUILDING	1
HURRICANE PROTECTION USAGE	NO
HURRICANE SHELTER USAGE	NO
SQUARE FOOTAGE	719 SQ.FT. OR LESS

REVISIONS

REV	DESCRIPTON	DATE	BY

Drwn By:	MTB
Date:	11-15-20
Scale:	NTS
Model#:	SBS-E-170D

MATTHEW T. BALDWIN LICENSE NO. 64608 STATE OF FLORIDA PROFESSIONAL ENGINEER

Matthew T. Baldwin P.E.
Florida License #64608

TITLE: TYP. ELECTRICAL LAYOUT – EAVE STYLE

Sheet: FBPR-7 OF 7

Attachment 3:

Correspondence received

From: psampleone@cfl.rr.com
To: Spraker, Steven
Subject: Garden Shed
Date: Sunday, January 29, 2023 12:30:31 PM

[External Email-Use Caution] - OB/IT Helpdesk

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Steven,
I do not agree that the garden shed should be placed in two parking spots. Finding a place to park is hard enough in the area without losing 2 spots. This shed can easily be placed within the park. You may have to find laborers to dig out a level spot but it can be done.
Sincerely PAT SAMPLE,
1 John Anderson Dr., #521,
Ormond Beach, FL 32176
Phone: 386 441 6083

DRAFT

Planning Board minutes from February 9, 2023

ITEM:

SE 2023-020

Ormond Memorial Art Museum & Gardens: Special Exception for Cottage Style Garden Shed

V. APPROVAL OF MINUTES

January 12, 2023

Mr. Railsback moved to approve the January 12, 2023 minutes with the adjustment that it was Mr. Jorczak who made the motion to appoint Angie Shull as Vice-Chair. Mr. Jorczak seconded the motion. The minutes were unanimously approved.

VI. PLANNING DIRECTOR'S REPORT

No report.

VII. PUBLIC HEARINGS

A. SE 2023-020, 78 East Granada Boulevard, Ormond Memorial Art Museum & Gardens, Cottage Style Garden Shed

Mr. Steven Spraker, Planning Director, explained this is a request for a special exception at 78 East Granada Boulevard for a garden shed at the corner of the property.

Mr. Spraker continued that there are two requests: 1) to allow through the City lease agreement, the conversion of two parking spaces for a cottage style garden shed, and 2) to allow the shed approximately 18' by 24', to be located in the southeast corner of the Museum and Gardens parking lot, approximately five (5') feet to the rear property line.

Mr. Spraker stated that the shed design will match the other historic structure on the property, a letter of no objection was received from the abutting property owner at 54 Seton Trail, and an objection to the two parking spaces being removed was received from a resident at Heritage Condominium Also, Mr. Spraker explained that there is a parking agreement with St. James that will not be impacted by the shed location.

Board Questions

Mr. Jorczak questioned the construction design and anchoring of the shed for hurricane requirements. Mr. Spraker replied that the contractor will submit engineered details to ensure the design meets the Florida Building Code requirements during the building permit review.

Ms. Shull asked if there was a previous shed. Mr. Spraker explained that there was a pod and no shed before the pod.

Mr. Railsback asked if there was an alternative location identified. Mr. Spraker responded that any other location would impact the garden.

Applicant's presentation

Ms. Stephanie Mason-Teague, Executive Director of Ormond Memorial Art Museum & Gardens, 78 East Granada Boulevard, responded regarding whether there was a shed previously, there was a space in the old building which was demolished and not replaced in that location. In regards to the building construction only signed and sealed plans in compliance with the

DRAFT

Florida Building Code will be submitted. Ms. Mason-Teague went on to explain that alternative locations were considered but there were many different elevations through the gardens, a large turtle pond and locating closer to the building would be disruptive to the gardens in terms of paths that would have to altered and possibly trees and shrubbery removed. Also, she explained that the Community does not want to see a change in the gardens.

Mr. du Moulin inquired how long the pod has been leased. Ms. Mason-Teague explained two years with no complaints.

Ms. Shull asked what type of equipment will be stored. Ms. Mason-Teague explained no gas equipment will be stored. Yellowstone provides the landscaping with gas powered equipment.

Chairman Thomas asked if the shed could have been moved on the other side where the stone is. Ms. Mason-Teague explained that there is one entryway in front of the cottage and a second entryway adjacent where the handicapped parking is and it would be like locating the building in the middle of the parking lot.

Mr. Railsback asked about consideration in locating it opposite the driveway in the natural area. Ms. Mason-Teague stated there were setback issues with that location.

Mr. Scudiero asked why the storage was not planned to be in the new building. Ms. Mason-Teague explained that where the storage was, it is an all new structure with the expansion of the gallery space.

Mr. Galloway motioned to approve SE 2023-20, 78 East Granada Boulevard, Ormond Memorial Art Museum & Gardens, Cottage Style Garden Shed. Mr. Jorczak seconded it. Vote was called, and the motion was approved (7-0).

B. <u>LDC 2023-016, Land Development Code amendment: Section 1-28, Utility installation fees</u>

Mr. Spraker, Planning Director, stated that this is a Land Development Code amendment to update the fee schedule for meter costs. He continued that Planning staff worked with Utility staff and noted utility costs have increased over the years. He explained that the slide displayed is the actual costs for installing meters for new residential and commercial development.

Mr. Scudiero asked why the Ordinance language could not be worded to allow an increase in costs instead of having to bring it back to the Board for review each time. Mr. Spraker explained that there would be too much uncertainty for anyone building. Whereas now, they can check the Ordinance and know the cost.

CA file

RESOLUTION NO. 94 - 41

A RESOLUTION AUTHORIZING THE EXECUTION OF A SHARED PARKING AGREEMENT BETWEEN THE CITY AND ST. JAMES EPISCOPAL CHURCH; SETTING FORTH AN EFFECTIVE DATE.

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, FLORIDA:

SECTION ONE. That the Mayor and the City Manager are hereby authorized to execute that Shared Parking Agreement between the City and St. James Episcopal Church of Ormond Beach, Inc., a copy of which Agreement is attached hereto and incorporated herein by reference.

SECTION TWO. That this Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED, this 1st day of February, 1994.

Dave Hood

DAVE HOOD
Mayor

ATTEST:

Marian A. Maxwell

MARIAN A. MAXWELL
City Clerk

1\94-039
AGMNTS8\SPA-2

SHARED PARKING AGREEMENT

BY THIS AGREEMENT dated this the 1st day of February, 1994, by and between the **CITY OF ORMOND BEACH**, a Florida municipal corporation ("the City"), and **ST. JAMES EPISCOPAL CHURCH OF ORMOND BEACH, INC.**, a Florida non-profit corporation ("St. James"),

WITNESSETH:

IN CONSIDERATION OF THE MUTUAL COVENANTS herein contained, and other good and valuable consideration, receipt of which is hereby acknowledged, the parties do hereby mutually covenant and agree as follows:

1. Subject to the notice provisions set forth in Paragraph 3 hereof, St. James hereby authorizes and permits the City to use those portions of St. James' property (as described and illustrated on that Boundary and Topographic Survey dated October 19, 1993, by Sliger & Associates, Inc., a copy being attached hereto and incorporated herein by reference) which are designated for parking, as a parking area for persons attending events being conducted by the City at its property generally known as The Casements, which property lies to the west of the aforedescribed property of St. James, and north of Casements Drive.

2. The City hereby authorizes and permits St. James to use those portions of the City's aforedescribed property which are designated for parking, as a parking area for persons attending Sunday services at St. James and, subject to the notice

provisions set forth in Paragraph 3 hereof, hereby further authorizes and permits St. James to use the said portions of the said property as a parking area for persons attending events being conducted by St. James on its aforedescribed property. Those grass parking areas located north of Casements Drive are hereby specifically included in the portions which St. James is authorized and permitted to use as a parking area. Nothing contained herein shall be deemed to preclude the occasional recreational use of the City's said property by St. James' school during normal school hours. All such use shall be subject to the terms and conditions of all other portions of this Agreement.

3. The parties hereto hereby agree to provide each other with as much advance notice as possible of any event which the party conducting the event reasonably believes will necessitate the use of the other party's property for parking. Such notice will, if possible, be provided in writing to the following persons:

To the City:

Casements Director
25 Riverside Drive
Ormond Beach, FL 32176

To St. James:

Rector
44 South Halifax Drive
Ormond Beach, FL 32176

4. The parties agree that each party hereto shall at all times maintain liability insurance in amounts of no less than $100,000 per injury and $200,000 per accident, or such higher

limits as may be imposed by any future amendments to Section 768.28, Florida Statutes. Such insurance may be provided by a self-insurance reserve program. If such insurance is provided through an insurance policy, the other party shall be named thereon as an additional insured.

5. Nothing in this Agreement shall be deemed as a waiver of the sovereign immunity of the City beyond any statutorily-limited waiver which may have been adopted by the Florida Legislature and nothing in this Agreement shall inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity.

6. The party using the other's property ("the user party") shall assume all risk and liability to itself, its agents, assigns, or employees, and shall be responsible to fully defend, indemnify and hold the other party ("the owner party") harmless from and against any and all claims arising from or related to the use of the property by the user party, and caused by the act or acts, negligence, or failure to exercise proper precautions of and by the user party, its agents, assigns or employees while occupying or using the property of the owner party. The parties hereto agree to provide each other with written notice of any claim subject to this provision within ten (10) working days of its receipt, and to cooperate fully in the defense of any such claim. Notice of claim shall be deemed to be given on the date of mailing thereof by U.S. mail first class delivery.

7. By entering into this Agreement, the user party is not undertaking to hold harmless, indemnify and/or defend the owner party from and against any and all claims for any injury to person or damage to property resulting from the conduct of the owner party, its agents, assigns, or employees or for any loss, damage or expense resulting from any act or acts of negligence, or the failure to exercise proper precautions of and by the owner party, its agents, assigns or employees.

8. The user party shall repair any of the owner party's property which may become damaged as a direct result of use by the user party. The user party shall notify the owner party immediately in the event any damage occurs during use by the user party. The owner party shall notify the user party, in writing, within five (5) days of the discovery of any damage alleged to have been caused by the user party. Upon prior approval of the owner party, repairs shall be made as expeditiously as possible by the user party.

9. St. James hereby acknowledges and agrees that a portion of its parking area, along the westerly property line of its aforedescribed property, encroaches onto the City's aforedescribed property. The parties agree that the use of this area by St. James for parking is with the knowledge and permission of the City and that such use shall provide no basis in law or equity for any claim by St. James to ownership thereof, and St. James hereby specifically waives, releases and relinquishes any and all claim of ownership therein and thereto.

10. This Agreement shall become effective upon execution by both parties and shall remain in full force and effect until terminated as prescribed herein. This Agreement may be terminated by either party, with or without cause, thirty (30) days after a majority vote to so terminate by the governing body or board of either party, and written communication of that vote to the other party.

11. In the event it becomes necessary to institute litigation to enforce any of the terms of this Agreement, the prevailing party shall be entitled to recover all out-of-pocket expenses, and a reasonable attorney's fee, from the date of filing until the termination of the litigation.

IN WITNESS WHEREOF, the parties hereto, by their duly authorized officers, have set their hands and seals the day and year first above written.

Witnesses:

CITY OF ORMOND BEACH

_____ By: _____ (SEAL)
Mayor

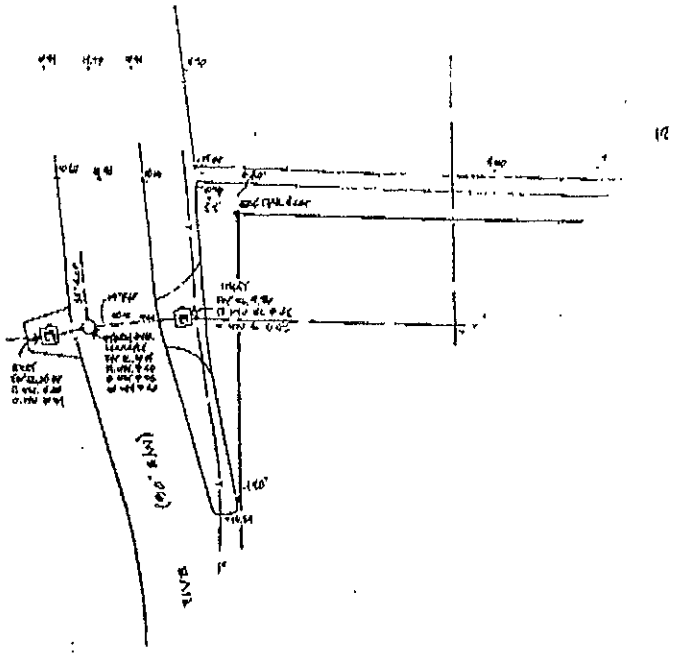
_____ Attest: _____ (SEAL)
City Manager

Witnesses:

ST. JAMES EPISCOPAL CHURCH OF ORMOND BEACH, INC.

_____ By: _____ (SEAL)
Rector

_____ Attest: _____ (SEAL)
Senior Warden



Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 9.A
Section:	FIRST READING OF ORDINANCES		
Item Category:	First Reading of Ordinances	**Res./Ord. No:**	2023-19
Strategic Goal:	Governance – Other		
Department :	Planning & Building		
Subject:	Extension to Ordinance Declaring a State of Emergency Caused by Hurricane Ian (FIRST AND ONLY READING)		
Budget Impact:	The amount of permit revenue which would be waived is unknown at this time.		
Summary:	This item is extending Ormond Beach's Declarations of Local Emergency in response to Hurricane Ian. This authorized temporary emergency procedures to continue, waiving permit fees, consistent with the governor's EO including any extensions.		
Recommended Action:	Staff recommends approval of the ordinance waiving permit fees to be consistent with the governor's Executive Orders, including any extensions. For Hurricane Ian, EO 23-21 was issued on January 19, 2023 and is valid for 60 days. It is due to expire on March 20, 2023, but it is anticipated it will be extended for another 60 days.		
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341		

Approval:

Kelly McGuire, Finance Director	3/9/2023	
Claire Whitley, Assistant City Manager	3/14/2023	
Joyce Shanahan, City Manager	3/14/2023	

CITY OF ORMOND BEACH

22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Steven Spraker, Planning Director

Date: March 21, 2023

Subject: Extension to Ordinance Declaring a State of Emergency Caused by Hurricane Ian (FIRST AND ONLY READING)

Commission Goal: Governance – Other

Introduction

This is to extend the City's Declaration of Local Emergency, authorizing temporary emergency administrative procedures and waiving all tree and building permit fees consistent with the governor's Executive Orders (EO), including any extensions for repairs to damage caused by Hurricane Ian. For Hurricane Ian, EO 23-21 was issued on January 19, 2023 and is valid for 60 days. It is due to expire on March 20, 2023, but it is anticipated it will be extended for another 60 days.

Background

The City of Ormond Beach adopted an emergency ordinance related to Hurricane Ian. Ordinance 2022-30 was approved on October 5, 2022 as a result of storm damage related to Ian. Volusia County continues to extend the declarations of Local Emergency for Hurricanes Ian and Nicole on a 7-day basis, with the most recent extension being March 7, 2023. The State Emergency Management Act, Chapter 252, Florida Statutes (F.S.), provides a municipality with the power and authority to take every prudent action necessary to ensure the health, safety, and welfare of the community in response to a natural disaster. Chapter 166.041, F.S., authorizes the governing body of a municipality to enact an emergency ordinance by a two-thirds vote.

Discussion

The emergency situation created by Hurricane Ian resulted in a situation wherein a Declaration of Local Emergency was issued. The Declaration of Local Emergency enacted emergency administrative procedures for the immediate repair of damage and tree removal in response to the hurricane. These measures were taken to ensure the immediate protection of the health, safety, and welfare of the citizens and businesses of the City of Ormond Beach.

The attached ordinance extends the emergency measures taken, including the waiving of permit fees, to be consistent with the governor's Executive Orders, including any extensions. Permits will still be required in order to ensure those contractors doing work for homeowners and businesses have the proper licenses and Business Tax Receipts or registrations. Property owners are still in the process of repairing damage and there have been delays with materials, design professionals, and contractors leading for a need to extend the permit fee waiver. The ordinance is retroactive to the expiration of Ordinance 2022-30 to ensure property owners are not assessed fees for building permits related to storm damage.

Budget Impact

The amount of permit revenue which would be waived is unknown at this time.

Citizen Impact

While fees are being waived, a permit is still required and contractors must be licensed and/or registered to work. The time given to waive fees is needed to ensure that residents and businesses are able to resolve their claims with their insurance companies and begin work. Staff requests that this ordinance be extended.

Recommendation

Staff recommends approval of the ordinance waiving permit fees to be consistent with the governor's Executive Orders, including any extensions. For Hurricane Ian, EO 23-21 was issued on January 19, 2023 and is valid for 60 days. It is due to expire on March 20, 2023, but it is anticipated it will be extended for another 60 days.

Attachments:

1. 23-19 - HURRICANE IAN EXTEND EMERG PERMIT (P23-0048G)
2. Ord 2022-30 (10A)
3. Item-X-10665

Approvals:

Kelly A. McGuire

Date: March 09, 2023

Kelly McGuire, Finance Director

Date: March 14, 2023

Claire Whitley, Assistant City Manager

Joyce Shanahan

Date: March 14, 2023

Joyce Shanahan, City Manager

ORDINANCE NO. 2023-19

AN ORDINANCE EXTENDING TEMPORARY EMERGENCY ADMINISTRATIVE PROCEDURES TO PROVIDE FOR THE CONTINUED EXPEDITIOUS AND COORDINATED MANAGEMENT OF BUILDING PERMIT APPLICATIONS AND FEES; WAIVING SPECIFIC PERMITS AND FEES ISSUED FOR THE REMOVAL OF CERTAIN TREES; ESTABLISHING A METHOD OF ENFORCEMENT OF THE FLORIDA BUILDING CODE SUCH THAT ON-SITE PERMITS MAY BE ISSUED BY APPROPRIATE CITY STAFF FOR REPAIR OF DAMAGE CAUSED BY HURRICANE IAN; PROVIDING FOR THE REPEAL OF ALL ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY, AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, residents and businesses throughout the City of Ormond Beach sustained severe damage as a result of Hurricane Ian, and

WHEREAS, the Federal and State governments have declared Volusia County, including Ormond Beach, as a national disaster area, and

WHEREAS, the State Emergency Management Act, Chapter 252, *Florida Statutes*, provides a municipality with the power and authority to take every prudent action necessary to ensure the health, safety, and welfare of the community in response to a natural disaster, and

WHEREAS, Chapter 166.041, *Florida Statutes*, authorizes the governing body of a municipality to enact an emergency ordinance by a two-thirds vote, and

WHEREAS, the City of Ormond Beach *Code of Ordinances*, Chapter 8, includes requirements for the appropriate applications, forms and plans for the issuance of building

permits to home owners, acting as owner/contractors, or to appropriately licensed contractors to ensure compliance with the Florida Building Code (FBC), and

WHEREAS, the City of Ormond Beach has included in Chapter 3, Article I, Section 3-03 of the adopted *Land Development Code* (LDC) specific requirements and fees for the review, approval and inspection of all removal of trees in the City, and

WHEREAS, the city commission adopted Ordinance No. 2022-30 on October 5, 2022 for the purpose of waiving certain permit fees in the aftermath of emergency conditions created by Hurricane Ian, and

WHEREAS, Ordinance No. 2022-30 was effective from October 5, 2022 to December 4, 2022, and

WHEREAS, the emergency situation created by Hurricane Ian resulted in a demand for contractors that exceeded availability and there continues to be a demand for contractors to make repairs to residential and business properties that sustained damage by the hurricane, and

WHEREAS, Florida Governor, Ron DeSantis, governor of the state of Florida, issued Executive Order 23-21 on January 19, 2023, extending the state of emergency for 60 days, finding it necessary for continued recovery efforts by those affected by the disaster; and

WHEREAS, the Volusia County Council has also issued weekly extensions declaring a local emergency for ongoing recovery efforts related to Hurricane Ian; and

WHEREAS, the city's planning and building staff recommend that the waiver of permit fees authorized by Ordinance No. 2022-30 be extended, consistent with Florida Governor

Executive Order 23-21, issued on January 19, 2023, for a 60 day term, including any further extensions, and shall be applied retroactively to cover the period from the expiration of Ordinance 2022-30, now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The waiver of permit fees and other authority provided by Ordinance No. 2022-30 is hereby extended retroactively from December 4, 2022 though the term of Florida Governor Executive Order 23-21, including any further extensions.

SECTION TWO. The City's Chief Building Official and Building Inspectors are hereby authorized to issue permits immediately for improvements needed to secure any residential or commercial structure that does not require detailed drawings that are prepared by a licensed architect or engineer. This shall apply to, but not be limited to, roofing repairs for shingles, broken windows and/or doors, fences that fell down or other similar repairs resulting from storm damage. All fees associated with these improvements are hereby waived.

SECTION THREE. The Neighborhood Improvement Manager and Officers are hereby directed to expedite tree removal permits and to waive any permit fees for the removal of trees threatening the life, safety or welfare of the City residents or businesses. The removal of trees must be related to damages resulting from Hurricane Ian.

SECTION FOUR. The City of Ormond Beach City Commission reiterates its desire to protect the public by not allowing unauthorized contractors to carry out various types of construction improvements, and directs the appropriate City staff from the Building and

Neighborhood Improvement Divisions to canvass the City during this time of emergency to ensure that there are not unlicensed contractors performing work within the City.

SECTION FIVE. All Ordinances or parts of Ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION SIX. If any section, paragraph, sentence, clause and phrase of this Ordinance is severable, and if any phrase, clause, sentence, paragraph or section of this Ordinance shall be declared unconstitutional, invalid or unenforceable by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality, invalidity or unenforceability shall not affect any of the remaining phrases, clauses, sentences, paragraphs and sections of this Ordinance.

SECTION SEVEN. This Ordinance shall become effective retroactively from December 4, 2022 and shall remain in full force and effect for the period of time provided herein at which time it shall have no further force or effect. All action taken in furtherance hereof is hereby ratified and affirmed.

PASSED UPON at the first and only reading of the City Commission, this 21st day of March, 2023.

_____

BILL PARTINGTON
Mayor

ATTEST:

_____

SUSAN CARROLL DAUDERIS
City Clerk

ORDINANCE NO. 2022-30

AN ORDINANCE RECOGNIZING DECLARATIONS OF A STATE OF EMERGENCY IN THE STATE OF FLORIDA AND COUNTY OF VOLUSIA, INCLUDING THE CITY OF ORMOND BEACH, AS DECLARED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS; DECLARING A LOCAL STATE OF EMERGENCY IN THE CITY OF ORMOND BEACH; AUTHORIZING TEMPORARY EMERGENCY ADMINISTRATIVE PROCEDURES TO PROVIDE FOR THE EXPEDITIOUS AND COORDINATED MANAGEMENT OF BUILDING PERMIT APPLICATIONS AND FEES; WAIVING SPECIFIC PERMITS AND FEES FOR THE REMOVAL OF CERTAIN TREES; AUTHORIZING THE ISSUANCE OF ON-SITE PERMITS FOR REPAIR OF DAMAGE CAUSED BY HURRICANE IAN; PROVIDING FOR THE REPEAL OF ALL ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY, AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, on September 23, 2022, and in accordance with the powers conferred by the State Emergency Management Act, Chapter 252, Florida Statutes, Governor Ron DeSantis, the governor of the state of Florida, issued Executive Order Number 22-218 declaring a state of emergency for 24 counties as a result of Tropical Depression Nine, and

WHEREAS, on September 24 2022, Governor DeSantis issued Executive Order Number 22-219 amending Executive Order 22-218 to include the entire state of Florida as Tropical Storm Nine strengthened into Tropical Storm Ian and was forecast to become a major hurricane, and

WHEREAS, on September 24, 2022, the federal government issued a declaration of emergency for the state of Florida (FEMA-3584-EM) as a result of Hurricane Ian, and issued an amended declaration of emergency on September 25, 2022 (Amendment No. 1) which included Volusia County and the territories situated therein, and

WHEREAS, Volusia County is a political subdivision of the state of Florida and is the local emergency management agency designated by the State Emergency Management Act, Chapter 252, Florida Statutes, that is empowered to provide emergency management services throughout the entire territory of the county, and

WHEREAS, the State Emergency Management Act, Chapter 252, Florida Statutes, provides a municipality with the power and authority to take every prudent action necessary to ensure the health, safety, and welfare of the community in response to a natural emergency; and

WHEREAS, on September 27, 2022 Volusia County issued a declaration of local emergency throughout the county as a result of Hurricane Ian, and

WHEREAS, on September 27, 2022, Mayor Bill Partington issued a declaration of local emergency throughout the city of Ormond Beach as a result of Hurricane Ian, and

WHEREAS, declarations of emergency having been issued by the federal, state and local governments, and the city commission of the city of Ormond Beach determines it to be prudent and necessary to approve this ordinance officially declaring a local state of emergency throughout the municipal limits of the city of Ormond Beach and to ratify and affirm all action heretofore exercised in furtherance of said declarations; and

WHEREAS, Chapter 166.041, Florida Statutes, authorizes the governing body of a municipality to enact an emergency ordinance by a two-thirds vote; and

WHEREAS, Chapter 8 of the Code of Ordinances, of the City of Ormond Beach provides requirements for the submittal of applications, forms and plans for the issuance of building permits to ensure compliance with the Florida Building Code (FBC); and

WHEREAS, the City of Ormond Beach has included in Chapter 3, Article I, Section 3-03 of the adopted Land Development Code (LDC) specific requirements and fees for the review and approval of applications, and for inspections related thereto, regarding the removal of trees in the City; and

WHEREAS, residents and business owners in the City of Ormond Beach will sustain, or have sustained, severe damage as a result of Hurricane Ian; and

WHEREAS, the emergency situation created by Hurricane Ian has resulted in a unique situation where emergency repairs and tree removal will require immediate response to protect the health, safety and welfare of the citizens and businesses of the City of Ormond Beach; now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The city commission of the city of Ormond Beach hereby declares a local state of emergency in the city as a result of Hurricane Ian and hereby ratifies and affirms all action taken in furtherance of the declarations heretofore made.

SECTION TWO. The city's chief building official and building inspectors are hereby authorized to issue permits that are needed to secure residential and/or commercial or business structures that do not require detailed drawings that are otherwise required to be prepared by a licensed architect or engineer. The authority shall apply, but not be limited, to roofing repairs for shingles, broken windows and/or doors, fences that fell down or other similar repairs resulting from storm damage as a result of Hurricane Ian. All fees associated with these improvements are hereby waived.

SECTION THREE. The neighborhood improvement manager and NID officers are hereby directed to expedite tree removal permits and to waive any permit fees for the removal of trees threatening the life, safety or welfare of the city residents or businesses. The removal of trees must be related to damages resulting from Hurricane Ian.

SECTION FOUR. The city commission further expresses its desire to protect the public by not allowing unauthorized contractors to engage in unlicensed construction activities, and directs the appropriate city staff from the building and neighborhood improvement divisions to take appropriate measures to prevent unlicensed contractors from performing work in the city.

SECTION FIVE. All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION SIX. If any section, paragraph, sentence, clause and phrase of this ordinance is severable, and if any phrase, clause, sentence, paragraph or section of this ordinance shall be declared unconstitutional, invalid or unenforceable by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality, invalidity or unenforceability shall not affect any of the remaining phrases, clauses, sentences, paragraphs and sections of this ordinance.

SECTION SEVEN. This ordinance shall become effective immediately upon adoption and shall remain in full force and effect for a period of sixty (60) days therefrom, after which time it shall be deemed to be automatically null and void and shall have no further legal force or effect.

PASSED UPON by the city commission by at least a two-thirds vote, this 5th day of October, 2022.

BILL PARTINGTON
Mayor

ATTEST:

SUSAN CARROLL DAUDERIS
City Clerk

CITY OF ORMOND BEACH

City Manager • 22 S. Beach Street • Ormond Beach • Florida • 32174 • (386) 676-3200 • Fax (386) 676-3384

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce A. Shanahan, City Manager

From: Susan C. Dauderis, City Clerk

Date: October 5, 2022

Subject: Hurricane Ian Local Emergency Ordinance

Commission Goal: Governance - Other

Introduction

This is a request to ratify the City's Declaration of Local Emergency, authorizing temporary emergency administrative procedures, and waiving all tree and building permit fees for sixty (60) days for repairing damage caused by Hurricane Ian.

Background

Governor Ron DeSantis declared a state of emergency on September 24, 2022 for the state of Florida, and both Volusia County and the City of Ormond Beach issued declarations of local emergency due to Hurricane Ian on September 27, 2022.

The State Emergency Management Act, Chapter 252, *Florida Statutes (F.S.)*, provides a municipality with the power and authority to take every prudent action necessary to ensure the health, safety, and welfare of the community in response to a natural disaster. Chapter 166.041, F.S., authorizes the governing body of a municipality to enact an emergency ordinance by a two-thirds vote.

Discussion

The emergency situation created by Hurricane Ian has resulted in a situation wherein a Declaration of Local Emergency, the enactment of emergency administrative procedures, and the immediate repair of damage and tree removal in response to the hurricane were necessary. These measures were taken to ensure the protection of the health, safety, and welfare of the citizens and businesses of the City of Ormond Beach.

The attached ordinance ratifies the emergency measures taken, including the waiving of permit fees for 60 days following the hurricane. Permits will still be required in order to ensure those contractors doing work for homeowners and businesses have the proper licenses and Business Tax Receipts or registrations.

Budget Impact

The amount of permit revenue which would be waived is unknown at this time.

Citizen Impact

While fees are being waived, a permit is still required and contractors must be licensed and/or registered to work. This will ensure that homeowners and local businesses are protected from “fly-by night” contractors from other parts of the country. The time given to waive fees is needed to ensure that residents and businesses are able to resolve their claims with their insurance companies and begin work. If further extensions are needed, staff will request that the ordinance be extended.

Recommendation

Staff recommends approval of the ordinance which includes the waiving permit fees for 60 days.

Attachments:

- 22-30 Hurricane Ian-Decl Emerg Waive Permits (P22-0170G) (PDF)
- Emergency Declaration - Ian 09-27-2022 (PDF)
- VC Declaration of Local Emergency for Hurricane Ian (09-27-22) (PDF)

REVIEWED BY:

Chris Byle, Assistant Finance Director 9/27/2022

Claire Whitley, Assistant City Manager 9/27/2022

APPROVED BY:

DECLARATION OF LOCAL EMERGENCY FOR HURRICANE IAN

WHEREAS, on September 23, 2022, Governor Ron DeSantis declared a State of Emergency for 24 Florida counties, by Executive Order Number 22-218 due to Tropical Depression Nine; and

WHEREAS, on September 24, 2022, Governor Ron DeSantis issued Executive Order 22-219, amending Executive Order Number 22-218, to include the entire State of Florida, as Tropical Depression Nine had strengthened into Tropical Storm Ian, and was forecast to become a major hurricane making landfall along Florida's West Coast; and

WHEREAS, due to the Governor's Executive Order, and with the expectation Volusia County Chairman Jeff Brower will declare a Local Emergency effective throughout Volusia County; and

WHEREAS, the city of Ormond Beach is a municipality empowered to exercise broad home rule powers in accordance with Section 2, Article VIII of the Florida Constitution; Chapter 166, Florida Statutes and other general laws of the state; and the Charter of the city of Ormond Beach, including sections 1.01, 1.03 and 3.05; and

WHEREAS, section 252.38(2), Florida Statutes, a general law of the state of Florida, authorizes municipalities to exercise emergency management powers consistent with a declaration of emergency issued by the governor, and consistent with the exercise of emergency management powers by a county emergency management program.

NOW THEREFORE, consistent with the foregoing authority and consistent with the declarations of emergency issued by the State of Florida and by Volusia County, and as Mayor of the city of Ormond Beach, Florida, I do hereby declare a local emergency throughout the city of Ormond Beach that shall be effective to, and shall run concurrent with, the period prescribed in the Volusia County declaration of emergency.

ORDERED this 27th day of September, 2022.

Bill Partington, Mayor
CITY OF ORMOND BEACH

ATTEST:

Joyce Shanahan, City Manager
CITY OF ORMOND BEACH

DECLARATION OF LOCAL EMERGENCY
FOR HURRICANE IAN

Consistent with the State of Emergency declared on September 23, 2022, by Governor Ron DeSantis in Executive Order Number 22-219 (Emergency Management-22-218), and pursuant to section 252.38(3)(a)(5), Florida Statutes, and section 46-143, Code of Ordinances, County of Volusia, the county council hereby declares a State of Local Emergency, effective throughout Volusia County as of 8:00 A.m. on this date for a period of seven days.

ORDERED this 27th day of September, 2022.

COUNTY COUNCIL
VOLUSIA COUNTY, FLORIDA

Jeffrey S. Brower
County Chair

ATTEST:

George Recktenwald
County Manager

Date: 03/07/2023	**AGENDA ITEM**		**Item:** X
[] Ordinance	[] Resolution	[] Budget Resolution	[X] Other

County Goals

[]	Thriving Communities	[]	Economic & Financial Vitality	[]	Excellence in Government	[X]	NA

Department: Legal Department
Division: Legal

Subject: Twenty-third Extension of Declaration of Local Emergency for Hurricane Ian and Eighteenth Extension of Declaration of Local Emergency for Hurricane Nicole.

Michael Dyer County Attorney  Department Approval		Legal Thomas Russell Brown Senior Assistant County Attorney  Approved as to Form and Legality	County Manager's Office Ryan Ossowski Chief Financial Officer 
Division Approval			

Council Action:

Modification:

Account Number(s): NA
Total Item Budget: NA

Staff Contact(s):	**Phone:**	**Ext.**
Russ Brown	386 736 5950	12947

Summary/Highlights:
On September 27, and November 7, 2022, respectively, the County declared local emergencies pursuant to the Governor's Executive Orders which declared a state of emergency throughout Florida as a result of Hurricane Ian and Hurricane Nicole. Pursuant to section 252.38(3)(a)(5), Florida Statutes, and section 46-143, Code of Ordinances, County of Volusia, the County may declare a local state of emergency for a 7 day duration, which may be extended as necessary in 7 day increments. The residents of Volusia County continue to suffer from the aftermath of Hurricane Ian and Hurricane Nicole that require emergency assistance and services. The attached Twenty-third and Eighteenth Extensions of Declaration of Local Emergencies extends each local emergency declaration for another 7 days.

Recommended Motion: Approval

TWENTY-THIRD EXTENSION OF DECLARATION OF LOCAL EMERGENCY FOR HURRICANE IAN

WHEREAS, on September 23, 2022, the Governor of the State of Florida issued Executive Order Number 22-219 (Emergency Management-22-218) declaring a state of emergency throughout Florida as a result of Hurricane Ian which threatened life and property; and

WHEREAS, the County Chair pursuant to County ordinance acting on behalf of the Volusia County Council declared a local state of emergency effective September 27, 2022, at 8:00 a.m. which was extended for twenty-two additional 7-day durations on October 4, 11, 18, and 25, November 1, 8, 15, 22 and 29, and December 6,13, 20, and 27, 2022, and January 3, 10, 17, 24, and 31, and February 7, 14, 21, and 28, 2023, for all territories within the legal boundaries of Volusia County, including the unincorporated and incorporated areas; and

WHEREAS, the residents of Volusia County continue to suffer from the aftermath of Hurricane Ian and require emergency assistance and services; and

WHEREAS, section 252.38(3)(a)(5), Florida Statutes, and section 46-143, Code of Ordinances, County of Volusia, provide that the county may declare a local state of emergency for a 7 day duration, which may be extended as necessary in 7 day increments, may waive procedures and formalities otherwise required of the county by law and ordinance, and may take whatever prudent action is necessary to ensure the health, safety, and welfare of the community.

NOW THEREFORE, BE IT RESOLVED that effective March 7, 2023, the Volusia County Council hereby extends the previously the previously declared local state of emergency for all territory within the legal boundaries of Volusia County, including the unincorporated and incorporated areas, for a 7-day duration.

ORDERED this 7th day of March, 2023.

COUNTY COUNCIL
VOLUSIA COUNTY, FLORIDA

_____
Jeffrey S. Brower
County Chair

ATTEST:

_____
George Recktenwald
County Manager

EIGHTEENTH EXTENSION OF DECLARATION OF LOCAL EMERGENCY FOR HURRICANE NICOLE

WHEREAS, on November 7, 2022, the Governor of the State of Florida issued Executive Order Number 22-253 declaring a state of emergency for Volusia County as a result of Hurricane Nicole which threatened life and property; and

WHEREAS, the County Chair pursuant to County ordinance acting on behalf of the Volusia County Council declared a local state of emergency effective November 7, 2022, which was extended for one additional 1-day duration on November 14, 2022, and sixteen additional 7-day durations on November 15, 22, and 29, and December 6, 13, 20, and 27, 2022, and January 3, 10, 17, 24, and 31, and February 7, 14, 21, and 28, 2023, for all territories within the legal boundaries of Volusia County, including the unincorporated and incorporated areas; and

WHEREAS, the residents of Volusia County continue to suffer from the aftermath of Hurricane Nicole and require emergency assistance and services; and

WHEREAS, section 252.38(3)(a)(5), Florida Statutes, and section 46-143, Code of Ordinances, County of Volusia, provide that the county may declare a local state of emergency for a 7 day duration, which may be extended as necessary in 7 day increments, may waive procedures and formalities otherwise required of the county by law and ordinance, and may take whatever prudent action is necessary to ensure the health, safety, and welfare of the community.

NOW THEREFORE, BE IT RESOLVED that effective March 7, 2023, the Volusia County Council hereby extends the previously declared local state of emergency for all territory within the legal boundaries of Volusia County, including the unincorporated and incorporated areas, for a 7-day duration.

ORDERED this 7th day of March 2023.

COUNTY COUNCIL
VOLUSIA COUNTY, FLORIDA

_____
Jeffrey S. Brower
County Chair

ATTEST:

_____
George Recktenwald
County Manager

Meeting Date: 3/21/2023	**AGENDA ITEM**		**Number:** 9.B
Section:	FIRST READING OF ORDINANCES		
Item Category:	First Reading of Ordinances	**Res./Ord. No:**	2023-20
Strategic Goal:	Governance – Other		
Department :	Planning & Building		
Subject:	Extension to Ordinance Declaring State of Emergency Caused by Hurricane Nicole (FIRST AND ONLY READING)		
Budget Impact:	The amount of permit revenue which would be waived is unknown at this time.		
Summary:	This item is extending Ormond Beach's Declarations of Local Emergency in response to Hurricane Nicole. This authorized temporary emergency procedures to continue, waiving permit fees, consistent with the governor's EO including any extensions.		
Recommended Action:	Staff recommends approval of the ordinance waiving permit fees consistent with the governor's EO including any extensions. For Hurricane Nicole, EO 23-48 was issued on March 3, 2023 and is valid for a term of 60 days (May 2), and is to include any further extensions.		
Staff Contact:	Steven Spraker, Planning Director, (386) 676-3341		

Approval:

Kelly McGuire, Finance Director	3/9/2023	
Claire Whitley, Assistant City Manager	3/14/2023	
Joyce Shanahan, City Manager	3/14/2023	

CITY OF ORMOND BEACH

22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Steven Spraker, Planning Director

Date: March 21, 2023

Subject: Extension to Ordinance Declaring State of Emergency Caused by Hurricane Nicole (FIRST AND ONLY READING)

Commission Goal: Governance – Other

Introduction

This is to extend the City's Declaration of Local Emergency, authorizing temporary emergency administrative procedures and waiving all tree and building permit fees until consistent with the governor's Executive Orders (EO) including any extensions for repairs to damage caused by Hurricane Nicole. For Hurricane Nicole, EO 23-48 was issued on March 3, 2023 and is valid for a term of 60 days (May 2), and is to include any further extensions.

Background

The City of Ormond Beach adopted an emergency ordinance related to Hurricane Nicole. Ordinance 2022-42 was approved on December 6, 2022 for damage related to Nicole. Volusia County continues to extend the declarations of Local Emergency for Hurricanes Ian and Nicole on a 7-day basis, with the most recent extension being March 7, 2023.The State Emergency Management Act, Chapter 252, Florida Statutes (F.S.), provides a municipality with the power and authority to take every prudent action necessary to ensure the health, safety, and welfare of the community in response to a natural disaster. Chapter 166.041, F.S., authorizes the governing body of a municipality to enact an emergency ordinance by a two-thirds vote.

Discussion

The emergency situation created by Hurricane Nicole resulted in a situation wherein a Declaration of Local Emergency was issued. The Declarations of Local Emergency enacted emergency administrative procedures for the immediate repair of damage and tree removal in response to the hurricane. These measures were taken to ensure the immediate protection of the health, safety, and welfare of the citizens and businesses of the City of Ormond Beach.

The attached ordinance extends the emergency measures taken, including the waiving of permit fees consistent with the governor's Executive Orders (EO) including any extensions. Permits will still be required in order to ensure those contractors doing work for homeowners and businesses have the proper licenses and Business Tax Receipts or registrations. Property owners are still in the process of repairing damage and there have been delays with materials, design professionals, and contractors leading for a need to extend the permit fee waiver. The ordinance is retroactive to the expiration of Ordinance 2022-42 to ensure property owners are not assessed fees for building permits related to storm damage.

Budget Impact

The amount of permit revenue which would be waived is unknown at this time.

Citizen Impact

While fees are being waived, a permit is still required and contractors must be licensed and/or registered to work. The time given to waive fees is needed to ensure that residents and businesses are able to resolve their claims with their insurance companies and begin work. Staff requests that this ordinance be extended.

Recommendation

Staff recommends approval of the ordinance waiving permit fees consistent with the governor's EO including any extensions. For Hurricane Nicole, EO 23-48 was issued on March 3, 2023 and is valid for a term of 60 days (May 2), and is to include any further extensions.

Attachments:

1. 23-20 HURRICANE NICOLE EXTEND EMERG PERMIT (P23-0049G)
2. Ord 2022-42 (9A)
3. Item-X-10665

Approvals:

Kelly A. McGuire

Date: March 09, 2023

Kelly McGuire, Finance Director

Date: March 14, 2023

Claire Whitley, Assistant City Manager

Joyce Shanahan

Date: March 14, 2023

Joyce Shanahan, City Manager

ORDINANCE NO. 2023-20

AN ORDINANCE EXTENDING TEMPORARY EMERGENCY ADMINISTRATIVE PROCEDURES TO PROVIDE FOR THE CONTINUED EXPEDITIOUS AND COORDINATED MANAGEMENT OF BUILDING PERMIT APPLICATIONS AND FEES; WAIVING SPECIFIC PERMITS AND FEES ISSUED FOR THE REMOVAL OF CERTAIN TREES; ESTABLISHING A METHOD OF ENFORCEMENT OF THE FLORIDA BUILDING CODE SUCH THAT ON-SITE PERMITS MAY BE ISSUED BY APPROPRIATE CITY STAFF FOR REPAIR OF DAMAGE CAUSED BY HURRICANE NICOLE; PROVIDING FOR THE REPEAL OF ALL ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY, AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, residents and businesses throughout the City of Ormond Beach sustained severe damage as a result of Hurricane Nicole, and

WHEREAS, the Federal and State governments have declared Volusia County, including Ormond Beach, as a national disaster area, and

WHEREAS, the State Emergency Management Act, Chapter 252, *Florida Statutes*, provides a municipality with the power and authority to take every prudent action necessary to ensure the health, safety, and welfare of the community in response to a natural disaster, and

WHEREAS, Chapter 166.041, *Florida Statutes*, authorizes the governing body of a municipality to enact an emergency ordinance by a two-thirds vote, and

WHEREAS, the City of Ormond Beach *Code of Ordinances*, Chapter 8, includes requirements for the appropriate applications, forms and plans for the issuance of building

permits to home owners, acting as owner/contractors, or to appropriately licensed contractors to ensure compliance with the Florida Building Code (FBC), and

WHEREAS, the City of Ormond Beach has included in Chapter 3, Article I, Section 3-03 of the adopted *Land Development Code* (LDC) specific requirements and fees for the review, approval and inspection of all removal of trees in the City, and

WHEREAS, the city commission adopted Ordinance No. 2022-42 on December 6, 2022 for the purpose of waiving certain permit fees in the aftermath of emergency conditions created by Hurricane Nicole, and

WHEREAS, Ordinance No. 2022-42 was effective from December 6, 2022 to February 4, 2023, and

WHEREAS, the emergency situation created by Hurricane Nicole resulted in a demand for contractors that exceeded availability and there continues to be a demand for contractors to make repairs to residential and business properties that sustained damage by the hurricane, and

WHEREAS, Florida Governor, Ron DeSantis, governor of the state of Florida, issued Executive Order 23-48 on March 3, 2023, extending the state of emergency for 60 days, finding it necessary for continued recovery efforts by those affected by the disaster; and

WHEREAS, the Volusia County Council has also issued weekly extensions declaring a local emergency for ongoing recovery efforts related to Hurricane Nicole; and

WHEREAS, the city's planning and building staff recommend that the waiver of permit fees authorized by Ordinance No. 2022-42 be extended, consistent with Florida Governor

Executive Order 23-48, issued on March 3, 2023 for a 60 day term, including any further extensions, and shall be applied retroactively to cover the period from the expiration of Ordinance 2022-42, now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The waiver of permit fees and other authority provided by Ordinance No. 2022-42 is hereby extended retroactively from February 4, 2023 though the term of Florida Governor Executive Order 23-48, including any further extensions. All action taken in furtherance hereof is hereby ratified and affirmed.

SECTION TWO. The City's Chief Building Official and Building Inspectors are hereby authorized to issue permits immediately for improvements needed to secure any residential or commercial structure that does not require detailed drawings that are prepared by a licensed architect or engineer. This shall apply to, but not be limited to, roofing repairs for shingles, broken windows and/or doors, fences that fell down or other similar repairs resulting from storm damage. All fees associated with these improvements are hereby waived.

SECTION THREE. The Neighborhood Improvement Manager and Officers are hereby directed to expedite tree removal permits and to waive any permit fees for the removal of trees threatening the life, safety or welfare of the City residents or businesses. The removal of trees must be related to damages resulting from Hurricane Nicole.

SECTION FOUR. The City of Ormond Beach City Commission reiterates its desire to protect the public by not allowing unauthorized contractors to carry out various types of

construction improvements, and directs the appropriate City staff from the Building and Neighborhood Improvement Divisions to canvass the City during this time of emergency to ensure that there are not unlicensed contractors performing work within the City.

SECTION FIVE. All Ordinances or parts of Ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION SIX. If any section, paragraph, sentence, clause and phrase of this Ordinance is severable, and if any phrase, clause, sentence, paragraph or section of this Ordinance shall be declared unconstitutional, invalid or unenforceable by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality, invalidity or unenforceability shall not affect any of the remaining phrases, clauses, sentences, paragraphs and sections of this Ordinance.

SECTION SEVEN. This Ordinance shall become effective retroactively from February 4, 2023 and shall remain in full force and effect for the period of time provided herein at which time it shall have no further force or effect.

PASSED UPON at the first and only reading of the City Commission, this 21st day of March, 2023.

_____

BILL PARTINGTON
Mayor

ATTEST:

_____

SUSAN CARROLL DAUDERIS
City Clerk

ORDINANCE NO. 2022-42

AN ORDINANCE RECOGNIZING DECLARATIONS OF A STATE OF EMERGENCY IN THE STATE OF FLORIDA AND COUNTY OF VOLUSIA, INCLUDING THE CITY OF ORMOND BEACH, AS DECLARED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS; DECLARING A LOCAL STATE OF EMERGENCY IN THE CITY OF ORMOND BEACH; AUTHORIZING TEMPORARY EMERGENCY ADMINISTRATIVE PROCEDURES TO PROVIDE FOR THE EXPEDITIOUS AND COORDINATED MANAGEMENT OF BUILDING PERMIT APPLICATIONS AND FEES; WAIVING SPECIFIC PERMITS AND FEES FOR THE REMOVAL OF CERTAIN TREES; AUTHORIZING THE ISSUANCE OF ON-SITE PERMITS FOR REPAIR OF DAMAGE CAUSED BY HURRICANE NICOLE; PROVIDING FOR THE REPEAL OF ALL ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY, AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, on November 7, 2022, and in accordance with the powers conferred by the State Emergency Management Act, Chapter 252, Florida Statutes, Governor Ron DeSantis, the governor of the state of Florida, issued Executive Order Number 22-253 declaring a state of emergency for 34 Florida counties as a result of Subtropical Storm Nicole; and

WHEREAS, on November 7, 2022, Volusia County Chairman Jeff Brower declared a Local Emergency for Subtropical Storm Nicole; and

WHEREAS, on November 8, 2022, Volusia County Chairman Jeff Brower issued a mandatory evacuation order commencing at 10:00 a.m. on Wednesday, November 9, 2022, of all persons from areas within Volusia County located in any and all areas east of the Intercoastal Waterway; in any and all manufactured and mobile home dwellers east of Interstate 95; all low-lying areas and other areas prone to flooding; and any and all campsites and RV recreational parks; and

WHEREAS, on November 9, 2022, the federal government issued a declaration of emergency for the state of Florida (FEMA-3588-FL) for Tropical Storm Nicole; and

WHEREAS, on November 9, 2022, Mayor Bill Partington issued a declaration of local emergency throughout the city of Ormond Beach for Tropical Storm Nicole; and

WHEREAS, on November 9, 2022, the National Weather Service reported Tropical Storm Nicole strengthened into Hurricane Nicole while over the Bahamas, and was on a forecast track heading for the east coast of Florida; and

WHEREAS, on November 10, 2022, the County of Volusia adopted Emergency Ordinance 2022-39, providing a curfew within incorporated and unincorporated areas of Volusia County east of the Intercoastal Waterway until Friday, November 11, 2022; and

WHEREAS, Volusia County is a political subdivision of the state of Florida and is the local emergency management agency designated by the State Emergency Management Act, Chapter 252, Florida Statutes, that is empowered to provide emergency management services throughout the entire territory of the county; and

WHEREAS, the State Emergency Management Act, Chapter 252, Florida Statutes, provides a municipality with the power and authority to take every prudent action necessary to ensure the health, safety, and welfare of the community in response to a natural emergency; and

WHEREAS, declarations of emergency having been issued by the federal, state and local governments, and the city commission of the city of Ormond Beach determines it to be prudent and necessary to approve this ordinance officially declaring a local state of emergency throughout the municipal limits of the city of Ormond Beach and to ratify and affirm all action heretofore exercised in furtherance of said declarations; and

WHEREAS, Chapter 166.041, Florida Statutes, authorizes the governing body of a municipality to enact an emergency ordinance by a two-thirds vote; and

WHEREAS, Chapter 8 of the Code of Ordinances, of the City of Ormond Beach provides requirements for the submittal of applications, forms and plans for the issuance of building permits to ensure compliance with the Florida Building Code (FBC); and

WHEREAS, the City of Ormond Beach has included in Chapter 3, Article I, Section 3-03 of the adopted Land Development Code (LDC) specific requirements and fees for the review and approval of applications, and for inspections related thereto, regarding the removal of trees in the City; and

WHEREAS, residents and business owners in the City of Ormond Beach will sustain, or have sustained, severe damage as a result of Hurricane Nicole; and

WHEREAS, the emergency situation created by Hurricane Nicole has resulted in a unique situation where emergency repairs and tree removal will require immediate response to protect the health, safety and welfare of the citizens and businesses of the City of Ormond Beach; now therefore,

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. The city commission of the city of Ormond Beach hereby declares a local state of emergency in the city as a result of Hurricane Nicole and hereby ratifies and affirms all action taken in furtherance of the declarations heretofore made.

SECTION TWO. The city's chief building official and building inspectors are hereby authorized to issue permits that are needed to secure residential and/or commercial or

business structures that do not require detailed drawings that are otherwise required to be prepared by a licensed architect or engineer. The authority shall apply, but not be limited, to roofing repairs for shingles, broken windows and/or doors, fences that fell down or other similar repairs resulting from storm damage as a result of Hurricane Nicole. All fees associated with these improvements are hereby waived.

SECTION THREE. The neighborhood improvement manager and NID officers are hereby directed to expedite tree removal permits and to waive any permit fees for the removal of trees threatening the life, safety or welfare of the city residents or businesses. The removal of trees must be related to damages resulting from Hurricane Nicole.

SECTION FOUR. The city commission further expresses its desire to protect the public by not allowing unauthorized contractors to engage in unlicensed construction activities, and directs the appropriate city staff from the building and neighborhood improvement divisions to take appropriate measures to prevent unlicensed contractors from performing work in the city.

SECTION FIVE. All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION SIX. If any section, paragraph, sentence, clause and phrase of this ordinance is severable, and if any phrase, clause, sentence, paragraph or section of this ordinance shall be declared unconstitutional, invalid or unenforceable by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality, invalidity or unenforceability shall not affect any of the remaining phrases, clauses, sentences, paragraphs and sections of this ordinance.

SECTION SEVEN. This ordinance shall become effective immediately upon adoption and shall remain in full force and effect for a period of sixty (60) days therefrom, after which

time it shall be deemed to be automatically null and void and shall have no further legal force or effect.

PASSED UPON by the city commission by at least a two-thirds vote, this 6th day of December, 2022.

BILL PARTINGTON
Mayor

ATTEST:

SUSAN CARROLL DAUDERIS
City Clerk

DECLARATION OF LOCAL EMERGENCY
FOR TROPICAL STORM NICOLE

WHEREAS, on November 7, 2022, Governor Ron DeSantis declared a State of Emergency for 34 Florida counties, by Executive Order Number 22-253, due to Subtropical Storm Nicole; and

WHEREAS, on November 7, 2022, Volusia County Chairman Jeff Brower declared a Local Emergency for Subtropical Storm Nicole; and

WHEREAS, on November 8, 2022, Volusia County Chair Jeff Brower issued a mandatory evacuation order commencing at 10:00 a.m. on Wednesday, November 9, 2022 of all persons from areas within Volusia County located in any and all areas east of the intercoastal waterway; in any and all manufactured and mobile home dwellers east of Interstate 95; all low-lying areas and other areas prone to flooding; and any and all campsites and RV recreational parks; and

WHEREAS, on November 8, 2022, the Volusia County Council enacted Emergency Ordinance 2022-38, in response to a hurricane or weather-related emergency for Tropical Storm Nicole, including the imposition of an emergency curfew to take effect on Wednesday, November 9, 2022, at 7 p.m. and end on Thursday, November, 10, 2022, at 7:00 a.m.; and

WHEREAS, the city of Ormond Beach is a municipality empowered to exercise broad home rule powers in accordance with Section 2, Article VIII of the Florida Constitution; Chapter 166, Florida Statutes and other general laws of the state; and the Charter of the city of Ormond Beach, including sections 1.01, 1.03 and 3.05; and

WHEREAS, section 252.38(2), Florida Statutes, a general law of the State of Florida, authorizes municipalities to exercise emergency management powers consistent with a declaration of emergency issued by the governor, and consistent with the exercise of emergency management powers by a county emergency management program.

NOW THEREFORE, consistent with the foregoing authority and consistent with the declarations of emergency issued by the State of Florida and by Volusia County, and as Mayor of the city of Ormond Beach, Florida, I do hereby declare a local emergency throughout the city of Ormond Beach that shall be effective to, and shall run concurrent with, the period prescribed in the Volusia County declaration of emergency.

ORDERED this 9th day of November, 2022.

Bill Partington

Bill Partington, Mayor
CITY OF ORMOND BEACH

ATTEST:

Joyce Shanahan

Joyce Shanahan, City Manager
CITY OF ORMOND BEACH

DECLARATION OF LOCAL EMERGENCY
FOR SUBTROPICAL STORM NICOLE

Consistent with the State of Emergency declared for Volusia County on November 7, 2022, by Governor Ron DeSantis in Executive Order Number 22-253 and pursuant to section 252.38(3)(a)(5), Florida Statutes, and section 46-143, Code of Ordinances, County of Volusia, the County Council hereby declares a State of Local Emergency, effective throughout Volusia County as of 2:41 p.m. on this date for a period of seven days.

ORDERED this 7th day of November, 2022.

COUNTY COUNCIL
VOLUSIA COUNTY, FLORIDA

Jeffrey S. Brower
County Chair

ATTEST:

George Recktenwald
County Manager

Date: 03/07/2023	**AGENDA ITEM**		**Item:** X
[] Ordinance	[] Resolution	[] Budget Resolution	[X] Other

County Goals

[]	Thriving Communities	[]	Economic & Financial Vitality	[]	Excellence in Government	[X]	NA

Department: Legal Department
Division: Legal

Subject: Twenty-third Extension of Declaration of Local Emergency for Hurricane Ian and Eighteenth Extension of Declaration of Local Emergency for Hurricane Nicole.

Michael Dyer County Attorney  Department Approval		Legal Thomas Russell Brown Senior Assistant County Attorney  Approved as to Form and Legality	County Manager's Office Ryan Ossowski Chief Financial Officer 
Division Approval			

Council Action:

Modification:

Account Number(s): NA
Total Item Budget: NA

Staff Contact(s):	**Phone:**	**Ext.**
Russ Brown	386 736 5950	12947

Summary/Highlights:
On September 27, and November 7, 2022, respectively, the County declared local emergencies pursuant to the Governor's Executive Orders which declared a state of emergency throughout Florida as a result of Hurricane Ian and Hurricane Nicole. Pursuant to section 252.38(3)(a)(5), Florida Statutes, and section 46-143, Code of Ordinances, County of Volusia, the County may declare a local state of emergency for a 7 day duration, which may be extended as necessary in 7 day increments. The residents of Volusia County continue to suffer from the aftermath of Hurricane Ian and Hurricane Nicole that require emergency assistance and services. The attached Twenty-third and Eighteenth Extensions of Declaration of Local Emergencies extends each local emergency declaration for another 7 days.

Recommended Motion: Approval

TWENTY-THIRD EXTENSION OF DECLARATION OF LOCAL EMERGENCY FOR HURRICANE IAN

WHEREAS, on September 23, 2022, the Governor of the State of Florida issued Executive Order Number 22-219 (Emergency Management-22-218) declaring a state of emergency throughout Florida as a result of Hurricane Ian which threatened life and property; and

WHEREAS, the County Chair pursuant to County ordinance acting on behalf of the Volusia County Council declared a local state of emergency effective September 27, 2022, at 8:00 a.m. which was extended for twenty-two additional 7-day durations on October 4, 11, 18, and 25, November 1, 8, 15, 22 and 29, and December 6,13, 20, and 27, 2022, and January 3, 10, 17, 24, and 31, and February 7, 14, 21, and 28, 2023, for all territories within the legal boundaries of Volusia County, including the unincorporated and incorporated areas; and

WHEREAS, the residents of Volusia County continue to suffer from the aftermath of Hurricane Ian and require emergency assistance and services; and

WHEREAS, section 252.38(3)(a)(5), Florida Statutes, and section 46-143, Code of Ordinances, County of Volusia, provide that the county may declare a local state of emergency for a 7 day duration, which may be extended as necessary in 7 day increments, may waive procedures and formalities otherwise required of the county by law and ordinance, and may take whatever prudent action is necessary to ensure the health, safety, and welfare of the community.

NOW THEREFORE, BE IT RESOLVED that effective March 7, 2023, the Volusia County Council hereby extends the previously the previously declared local state of emergency for all territory within the legal boundaries of Volusia County, including the unincorporated and incorporated areas, for a 7-day duration.

ORDERED this 7th day of March, 2023.

COUNTY COUNCIL
VOLUSIA COUNTY, FLORIDA

_____
Jeffrey S. Brower
County Chair

ATTEST:

_____
George Recktenwald
County Manager

EIGHTEENTH EXTENSION OF DECLARATION OF LOCAL EMERGENCY FOR HURRICANE NICOLE

WHEREAS, on November 7, 2022, the Governor of the State of Florida issued Executive Order Number 22-253 declaring a state of emergency for Volusia County as a result of Hurricane Nicole which threatened life and property; and

WHEREAS, the County Chair pursuant to County ordinance acting on behalf of the Volusia County Council declared a local state of emergency effective November 7, 2022, which was extended for one additional 1-day duration on November 14, 2022, and sixteen additional 7-day durations on November 15, 22, and 29, and December 6, 13, 20, and 27, 2022, and January 3, 10, 17, 24, and 31, and February 7, 14, 21, and 28, 2023, for all territories within the legal boundaries of Volusia County, including the unincorporated and incorporated areas; and

WHEREAS, the residents of Volusia County continue to suffer from the aftermath of Hurricane Nicole and require emergency assistance and services; and

WHEREAS, section 252.38(3)(a)(5), Florida Statutes, and section 46-143, Code of Ordinances, County of Volusia, provide that the county may declare a local state of emergency for a 7 day duration, which may be extended as necessary in 7 day increments, may waive procedures and formalities otherwise required of the county by law and ordinance, and may take whatever prudent action is necessary to ensure the health, safety, and welfare of the community.

NOW THEREFORE, BE IT RESOLVED that effective March 7, 2023, the Volusia County Council hereby extends the previously declared local state of emergency for all territory within the legal boundaries of Volusia County, including the unincorporated and incorporated areas, for a 7-day duration.

ORDERED this 7th day of March 2023.

COUNTY COUNCIL
VOLUSIA COUNTY, FLORIDA

_____
Jeffrey S. Brower
County Chair

ATTEST:

_____
George Recktenwald
County Manager

Meeting Date: 3/21/2023	**AGENDA ITEM**	**Number:** 10.A

Section:	SECOND READING OF ORDINANCES		
Item Category:	Second Reading of Ordinances	**Res./Ord. No:**	
Strategic Goal:	Governance – Other		
Department :	Support Services		
Subject:	Amendment to the Composition of the Leisure Services Advisory Board (SECOND READING)		
Budget Impact:	There are no budget impacts associated with this item.		
Summary:	This item is regarding the composition of the LSAB. The City Commission provided staff direction regarding desired changes to the advisory board. These changes require the Code of Ordinances to be amended with two readings.		
Recommended Action:	It is requested that the City Commission approve the ordinance to amend the Code of Ordinances regulating membership of the LSAB.		
Staff Contact:	Susan Dauderis, City Clerk, (386) 676-3340		

Approval:

Kelly McGuire, Finance Director	3/8/2023	Kelly A. McGuire
Claire Whitley, Assistant City Manager	3/8/2023	
Joyce Shanahan, City Manager	3/14/2023	Joyce Shanahan

CITY OF ORMOND BEACH

22 South Beach Street • Ormond Beach, FL 32174 • (386) 677-0311 • Fax (386) 676-3330

CITY MANAGER
MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners

Through: Joyce Shanahan, City Manager

From: Susan Dauderis, City Clerk

Date: March 21, 2023

Subject: Amendment to the Composition of the Leisure Services Advisory Board (SECOND READING)

Commission Goal: Governance – Other

Introduction

Request approval of an ordinance amending the Code of Ordinances regulating membership of the Leisure Services Advisory Board (LSAB).

Background

The City Commission is electing to change the composition of the LSAB.

Discussion

Following discussions by the City Commission at the December 6, 2022 Advisory Board Workshop and the February 7, 2023 City Commission Meeting, the Commission wishes to change the composition and membership of the LSAB. The changes are as follows:

- The LSAB shall consist of 7 regular members and 3 alternate members who shall be appointed by the City Commission.
- The Mayor and each City Commissioner shall nominate a person to serve as regular members of the board; and shall by consensus, nominate 2 people to serve as regular members of the board from the following youth sports organizations: Ormond Beach Youth Baseball & Softball Corp.; Ormond Beach Youth Basketball Association, Inc.; Ormond Beach Soccer Club, Inc.; Ormond Beach Youth Football and Cheerleaders Association, Inc.; and Ormond Beach Pride, Inc.
- The City Commission will nominate one person from each of the 3 remaining sports organizations to serve as alternate board members. Alternate board members shall serve on a rotational basis in the temporary absence or disability of any regular board member. Thereafter, following each regular election of the

city commission, the appointment of 2 regular members from the youth sports organizations shall be made from among the youth sports organizations whose prior membership was on an alternate basis.

Summary of Changes:

- Membership count reduced from 13 members to 7 members.
- Quorum vote requirement reduced from 7 to 4 members.
- Commission At-Large position eliminated.
- Ormond Beach Friends of Recreation, Inc. and Ormond Beach Youth Baseball& Softball (Girls Softball) not included in the youth sports organizations membership rotation.

Next Steps:

- These changes to membership require an amendment to the *Composition* and *Terms* sections of the Code of Ordinances regulating the LSAB. The ordinance amending the code requires two readings.
- The City Commission appointments from the youth sports organizations (2 to serve as regular members and 3 to serve as alternate members) for the remainder of the 2023-2024 term, shall be approved at a future City Commission meeting.

Budget Impact

There are no budget impacts associated with this item.

Citizen Impact

Updating the membership of the LSAB will benefit residents by providing more effective and consistent meetings and representation.

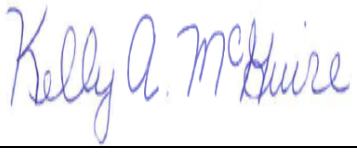
Recommendation

It is requested that the City Commission approve the ordinance to amend the Code of Ordinances regulating membership of the LSAB.

Attachments:

1. 23-14 LSAB amend membership (P22-0216B)
2. CITY OF ORMOND BEACH FLORIDA

Approvals:



Kelly McGuire, Finance Director — Date: March 08, 2023



Claire Whitley, Assistant City Manager — Date: March 08, 2023



Joyce Shanahan, City Manager — Date: March 14, 2023

ORDINANCE NO. 2023-14

AN ORDINANCE AMENDING SECTION 2-221, LEISURE SERVICES ADVISORY BOARD, OF ARTICLE VI, BOARDS, COMMISSIONS, COMMITTEES AND OTHER AGENCIES, OF CHAPTER 2, ADMINISTRATION, OF THE CODE OF ORDINANCES, BY AMENDING COMPOSITION AND TERMS; PROVIDING TERMS AND CONDITIONS; AND SETTING FORTH AN EFFECTIVE DATE.

BE IT ENACTED BY THE PEOPLE OF THE CITY OF ORMOND BEACH, FLORIDA, THAT:

SECTION ONE. Section 2-221, Leisure services advisory board, Division 2, Enumerated, of Article VI, Boards, Commissions, Committees and Other Agencies, of Chapter 2, Administration, of the City of Ormond Beach, Florida, *Code of Ordinances* is hereby amended to read as follows:

Sec. 2-221. Leisure services advisory board.

(a) *Composition.* ~~The leisure services advisory board shall consist of 13 members all of whom shall be residents of the city. Each of the flowing organizations shall nominate one of its members to serve on the board: Youth baseball, Youth basketball, Girls softball, Youth soccer, Commission at-large, Pop Warner Youth football, Ormond beach Pride, Inc. and Ormond beach Friends of Recreation, Inc.; All such nominations must be approved by the city commission. Additionally, the mayor and each city commissioner shall nominate candidates to serve as members of the board from the general population as provided in section 2-206, and all appointments to the board shall be approved by majority vote of the city commission. Each member of the city commission, shall initially, nominate one candidate to be considered for appointment by the city commission. If any candidate is rejected by the city commission, the city commission member who nominated the candidate may nominate additional candidates in like manner; and if said city commission member chooses not to make such additional nomination(s), then one or more of the other city commission members may nominate candidates to fill the position in like manner.~~

The leisure services advisory board shall consist of seven (7) regular members and three (3) alternate members who shall be appointed by the city commission. All members shall be residents of the city and shall serve in accordance with section 2-206 of this *Code* and other applicable requirements.

The mayor and each city commissioner shall nominate a person to serve as regular members of the board; and shall by consensus, nominate two people to serve as regular members of the board from the following youth sports organizations: Ormond Beach Youth Baseball & Softball Corp.; Ormond Beach Youth Basketball Association, Inc.; Ormond Beach Soccer Club, Inc.; Ormond Beach Youth Football and Cheerleaders Association, Inc.; and Ormond Beach Pride, Inc. The city commission shall by consensus nominate one person from each of the three remaining sports organizations to serve as alternate board members. Alternate board members shall serve on a rotational basis in the temporary absence or disability of any regular board member. Thereafter, following each regular election of the city commission, the appointment of two regular members from the youth sports organizations shall be made from among the youth sports organizations whose prior membership was on an alternate basis. All members of the leisure services board shall be approved by majority vote of the city commission. In the event the city commission does not approve a nominee, the city commission member who made such nomination may make such additional nominations as may be necessary to obtain approval. If the said city commission member chooses not to make an additional nomination, then one or more of the other city commission members may offer a nomination.

(b) *Purpose.* (no change in text)

(c) *Meetings.* (no change in text)

(d) *Officers.* (no change in text)

(e) *Terms.* The appointment and terms of office for those leisure service advisory board members that were ~~appointed~~ approved by ~~Resolutions 2008-23, 200-56, 2008-231, and 209-126~~ Sections One through Five of Resolution 2023-30 are hereby ratified and affirmed and shall expire the day prior to the first regularly scheduled city commission meeting in January ~~2011~~ 2025. The appointment and terms of office for those leisure service advisory board members that were approved by Sections Six through Thirteen of Resolution 2023-30 are hereby repealed and vacated. The city commission shall forthwith, in accordance with paragraph (a) of this section, appoint from the youth sports organizations two people to serve as regular members and three people to serve as alternate members of the leisure services advisory board, for terms that shall expire the day prior to the first regularly scheduled city commission meeting in January 2025. Thereafter, members shall be appointed or re-appointed to serve two year terms that shall expire the day prior to the first regularly scheduled city commission meeting in January of each odd-numbered year. Any vacancy in an unexpired term shall be filled in the same manner as the original appointment for the remainder of the

term. A member of the leisure services advisory board may be removed by the city commission ~~only~~ for cause ~~and~~ after being ~~given~~ provided a written statement of the charges ~~against him~~ and a public hearing thereon, if ~~he~~ so ~~requests~~ requested.

(f) *Quorum; vote requirements.* (no change in text)

(g) *Procedures.* (no change in text)

SECTION TWO. This Ordinance shall take effect immediately upon its adoption.

PASSED UPON at the first reading of the City Commission, this 7th day of March, 2023.

PASSED UPON at the second and final reading of the City Commission, this 21st day of March, 2023.

_____
BILL PARTINGTON
Mayor

ATTEST:

_____
SUSAN CARROLL DAUDERIS
City Clerk

CITY OF ORMOND BEACH FLORIDA

TO: Susan Dauderis, City Clerk

FROM: Robert Carolin, Leisure Services Director

DATE: December 14, 2022

SUBJECT: Leisure Services Advisory Board Member Positions

The following details the action by the Leisure Services Advisory Board at its December 14, 2022 meeting:

1. The Leisure Services Advisory Board voted on December 14th, to eliminate the Friends of Recreation position and the Softball Representative position. The Board voted 6-1 to approve the recommendation. Additionally, the new Pride Football Representative position is confirmed to be held by Dennis King.

Email cc: Joyce Shanahan, City Manager

Claire Whitley, Assistant City Manager

Robert Carolin, Director of Leisure Services