



Annual Report Form For Individual NPDES Permits For Municipal Separate Storm Sewer Systems (RULE 62-624.600(2), F.A.C.)

- This Annual Report Form must be completed and submitted to the Department to satisfy the annual reporting requirements established in Rule 62-621.600, F.A.C.
- Submit this fully completed and signed form and any REQUIRED attachments by email to the NPDES Stormwater Program Administrator or to the MS4 coordinator (<http://www.dep.state.fl.us/water/stormwater/npdes/contacts.htm>). Files larger than 10MB may be placed on the FTP site at: ftp://ftp.dep.state.fl.us/pub/NPDES_Stormwater/. After uploading files, email the MS4 coordinator or NPDES Program Administrator to notify them the report is ready for downloading; or by mail to the address in the box at right.
- Refer to the Form Instructions for guidance on completing each section.
- **Please print or type information in the appropriate areas below.**

Submit the form and attachments to:
 Florida Department of Environmental Protection
 Mail Station 3585
 2600 Blair Stone Road
 Tallahassee, Florida 32399-2400

SECTION I. BACKGROUND INFORMATION	
A.	Permittee Name: City of West Palm Beach
B.	Permit Name: Palm Beach County MS4
C.	Permit Number: FLS000018-004
D.	Annual Report Year: <input type="checkbox"/> Year 1 <input checked="" type="checkbox"/> Year 2 <input type="checkbox"/> Year 3 <input type="checkbox"/> Year 4 <input type="checkbox"/> Year 5 <input type="checkbox"/> Other, specify Year:
E.	Reporting Time Period (month/year): 10 / 2017 through 09 / 2018
F.	Name of the Responsible Authority: Poonam Kalkat
	Title: : Director of Public Utilities
	Mailing Address: P.O Box 3368
	City: West Palm Beach Zip Code: 33402 County: Palm Beach
	Telephone Number: 561-822-2200 Fax Number: 561-822-2193
E-mail Address: pkalkat@wpb.org	
G.	Name of the Designated Stormwater Management Program Contact (if different from Section I.F above): Stephon Harris
	Title: Utilities Operations & Maintenance Superintendent
	Department: Public Utilities
	Mailing Address: P.O Box 3368
	City: West Palm Beach Zip Code: 33402 County: Palm Beach
Telephone Number: 561.822.2168 Fax Number: 561-822-2193	
E-mail Address: harrisS@wpb.org	

SECTION II. MS4 MAJOR OUTFALL INVENTORY (Not Applicable in Year 1)	
A.	Number of outfalls ADDED to the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable)
B.	Number of outfalls REMOVED from the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable)
C.	Is the change in the total number of outfalls due to lands annexed or vacated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable

SECTION III. PART V.B. ASSESSMENT PROGRAM

A.	<p>Provide a brief statement as to the status of water quality monitoring plan implementation. Status may include sampling frequency changes, monitoring location changes, or sampling waiver conditions. <i>DEP Note: If permittee participates in a collaborative monitoring plan, permittee may refer to a joint response as defined by the interlocal agreement.</i></p> <p>Name and date of the approved plan: Current approved plan for the Group Monitoring Plan is September 8, 2016 Status: <i>The Group Monitoring Report is included in the Cycle 4, Year 2 Joint Annual Report. The newly-developed, individual Assessment Plan has been approved by FDEP</i></p>
B.	<p>Provide a brief discussion of the monitoring and loading results to date, which includes a summary of the water quality monitoring data and / or stormwater pollutant loading changes from the reporting year. <i>DEP Note: Results must be specific to the permittee's SWMP.</i></p> <p><i>Please refer to the Cycle 4, Year 2 Joint Annual Report for a summary of the Group's water quality monitoring results for the reporting period. Refer to the Cycle 3, Year 6 Joint Annual Report for proposed pollutant loading analysis changes. The best available information on existing pollutant loading estimates is documented in the Cycle 3, Year 3 Joint Annual Report.</i></p> <p><i>The newly-developed, individual Assessment Plan, will be implemented this year, year 3 of the permit cycle. Note that in any future reporting year, the Group's water quality monitoring data for the reporting period may not be available for 4 to 6 months after the reporting period has ended. Consequently, any water quality data from the Group Program that is used as part of an individual permittee's Assessment Plan for the reporting period, will be based on the previous year's data.</i></p>
C.	<p>Attach a monitoring data summary as required by the permit. An analysis of the data discussing changes in water quality and/or stormwater pollutant loading from previous reporting years. <i>DEP Note: Analysis must be specific to the permittee's SWMP.</i></p> <p>See response for Section III B, above</p>

SECTION IV. FISCAL ANALYSIS

A.	Total expenditures for the NPDES stormwater management program for the current reporting year: \$11,362,609
B.	Total budget for the NPDES stormwater management program for the subsequent reporting year: \$12,640,915
C.	<p>Did the current reporting year resources decrease from the previous year? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/></p> <p>If program resources decreased, provide a discussion of the impacts on the implementation of the SWMP.</p> <p>N/A</p>

SECTION V. MATERIALS TO BE SUBMITTED WITH THIS ANNUAL REPORT FORM

Only the following materials are to be submitted to the Department along with this fully completed and signed Annual Report Form (check the appropriate box to indicate whether the item is attached or is not applicable):

Attached	N/A	Required Attachments	Permit Citation	Attachment Number/Title
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Any additional information required to be submitted in this current annual reporting year in accordance with Part III.A of your permit that is not otherwise included in Section VII below.	Part III.A	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	An explanation of why the minimum inspection frequency in Table II.A.1.a. was not met, if applicable.	Part II.A.1	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	A list of the flood control projects that did not include stormwater treatment and an explanation for each of why it did not (if applicable).	Part III.A.4	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	A monitoring data summary as directed in Section III.C above and in accordance with Rule 62-624.600(2)(c), F.A.C.	Part V.B.3	Refer to city's assessment summary
<input type="checkbox"/>	<input checked="" type="checkbox"/>	YEAR 1 ONLY: An inventory of all known major outfalls and a map depicting the location of the major outfalls (hard copy or CD-ROM) in accordance with Rule 62-624.600(2)(a), F.A.C.	Part III.A.1	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	YEAR 2: A summary review of codes and regulations to reduce the stormwater impact from development.	Part III.A.2	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Year 3 ONLY: The estimates of pollutant loadings and event mean concentrations for each major outfall or each major watershed in accordance with Rule 62-624.600(2)(b), F.A.C.	Part V.A	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	YEAR 3: Summary of TMDL Monitoring Results (if applicable).	Part VIII.B.2	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	YEAR 3: Bacteria Pollution Control Plan (if applicable).	Part VIII.B.3	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	YEAR 4: A follow-up report on plan implementation of changes to codes and regulations to reduce the stormwater impact from development.	Part III.A.2	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	YEAR 4: A report on any amendments to the applicable legal authority (if applicable).	Part III.A.7.a	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	YEAR 4: Permit re-application information in accordance with Rule 62-624.420(2), F.A.C. <ul style="list-style-type: none"> • The monitoring plan (with revisions, if applicable). • If the total annual pollutant loadings have not decreased over the past two permit cycles, revisions to the SWMP, as appropriate. 	Part V.B.3 Part V.A.3	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	YEAR 4: TMDL Supplemental SWMP (if applicable).	Part VIII.B.3	

DO NOT SUBMIT ANY OTHER MATERIALS
(such as records and logs of activities, monitoring raw data, public outreach materials, etc.)

SECTION VI. CERTIFICATION STATEMENT AND SIGNATURE

The Responsible Authority listed in Section I.F above must sign the following certification statement, as per Rule 62-620.305, F.A.C.:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Authority (type or print): Poonam Kalkat

Title: Director of Public Utilities

Signature:  Date: 03/29/19

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.		C.		D.	E.	F.
Permit Citation / SWMP Element	Permit Requirement/Quantifiable SWMP Activity		Number of Activities Performed		Documentation / Record	Entity Performing the Activity	Comments
Part III.A.1	Structural Controls and Stormwater Collection Systems Operation						
	<p>Report the current known inventory.</p> <p>Report the number of inspection and maintenance activities conducted for each applicable type of structure included in Table II.A.1.a, and the percentage of the total inventory of each type of structure inspected and maintained.</p> <p><i>Note: Delete structures that are not in your MS4's inventory. The permittee may choose its own unit of measurement for each structural control to be consistent with the unit of measurement in the documentation. Unit options include: miles, linear feet, acres, etc.</i></p>						
	Type of Structure	Number of Structures	Number of Inspections	Percent Inspected	Number of Maintenance Activities	Percent Maintained	
	Dry retention systems	3	3	100	5	100	Hiperweb /workorders Wpb stormwater / total maintenance Grant St Complex Andrews Rd
	Exfiltration trench / French drains (lf)	7325	1	100	1	100	Hiperweb /workorders Wpb stormwater
	Grass treatment s wales (miles)	1	1	100	1	100	Hiperweb /workorder Wpb stormwater
	Dry detention systems	3	3	100	3	100	Hiperweb /workorder Wpb stormwater
	Wet detention systems	4	4	100	4	100	Hiperweb /workorder Wpb stormwater
	Alum Injection systems	1	144	100	30	100	Hiperweb /workorders WTP staff
	Pollution control boxes	13	52.43	100	13	100	Hiperweb /workorders Wpb stormwater
	Pump stations	7	148	100	32	100	Hiperweb /workorders WTP staff
	Major outfalls	47	47	100	47	100	Hiperweb /workorders Wpb stormwater
	Weirs or other control structures	3	3	100	3	100	Control structure inspection sheet / Hiperweb /workorders Wpb stormwater
	pipes / culverts (miles)	160	40	30	40	26	Hiperweb /workorders Wpb stormwater

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Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity		Number of Activities Performed			Documentation / Record		Entity Performing the Activity	Comments
	Canals	7	7	100	7	100	Hiperweb /workorders	Wpb stormwater	Sequoia, Carver, Stubb, Ware, Golf, Gaines & C-17
	Inlets / catch basins / grates	5681	5681	100	26	100	Hiperweb	Wpb stormwater	
	Ditches / conveyance swales (miles)	5	5	100	5	100	Hiperweb /workorders	Wpb stormwater	
	If the minimum inspection frequencies set forth in Table II.A.1.a. were not met, provide as an attachment an explanation of why they were not and a description of the actions that will be taken to ensure that they will be met.	<input type="checkbox"/>							

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Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
Part III.A.1 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Inspections help identify any areas that may be developing a problem with sedimentation or failure of the structure. Maintenance of the system has allowed for the reduction of pollutant loading into the waterways.				
	Limitations: None				
	SWMP revisions implemented to address limitations: None				
Part III.A.2	Areas of New Development and Significant Redevelopment				
	Report the number of significant development projects, including new and redevelopment, reviewed and approved by the permittee for post-development stormwater considerations.				
	Number of significant development projects reviewed	51	PPRC reviews	Engineering Services dept.	
	Number of significant development projects approved	51	PPRC reviews	Engineering Services dept.	
	Provide in the Year 2 Annual Report the summary report of the review activity. Provide in the Year 4 Annual Report the follow-up report on plan implementation.				
	Year 2 ONLY: Attach the summary report of the review activity	<input checked="" type="checkbox"/>	See attached TM-13-Programmatic Administration		
	Year 4 ONLY: Attach the follow-up report on plan implementation	<input type="checkbox"/>	N/A		
Part III.A.2 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: works in conjunction with S. Florida Water Management District requirements. Redevelopment allows for the stormwater system to be upgraded				
	Limitations: none				
	SWMP revisions implemented to address limitations: none				
Part III.A.3	Roadways				
	Report on the litter control program, including the frequency of litter collection, an estimate of the total number of road miles cleaned or amount of area covered by the activities, and an estimate of the quantity of litter collected.				
	<i>Note: If the permittee does not contract activities, delete CONTRACTOR activities.</i>				
	PERMITTEE Litter Control: Frequency of litter collection	weekly	Daily Work Sheets	Parks maintenance	
	PERMITTEE Litter Control: Estimated amount of area maintained (acres)	500	Daily Work Sheets	Parks maintenance	Plus 41 miles of right-of-ways
PERMITTEE Litter Control: Estimated amount of litter	1677	Daily Work Sheets	Parks maintenance		

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Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	collected (tons)				
	CONTRACTOR Litter Control: Frequency of litter collection	3 times weekly		Michael Johns Inc.	contractor
	CONTRACTOR Litter Control: Estimated amount of area maintained (ACRES)	8		Michael Johns Inc	City property (PARKS)
	CONTRACTOR Litter Control: Estimated amount of litter collected (pounds)	1250		Michael Johns Inc	
OPTIONAL: If an Adopt-A-Road or similar program is implemented, report the total number of road miles cleaned and an estimate of the quantity of litter collected. If you do not participate in an Adopt-A-Road program, report "0".					
	Trash Pick-up Events: Total miles cleaned	1	Special events	Sanitation- public works	
	Trash Pick-up Events: Estimated amount of litter collected (cy)	90	Debris special project	Sanitation- public works	
	Adopt-A-Road: Total miles cleaned	0	N/A	Sanitation- public works	
	Adopt-A-Road: Estimated amount of litter collected (cy)	0	N/A	Sanitation- public works	
Report on the street sweeping program, including the frequency of the sweeping, total miles swept, an estimate of the quantity of sweepings collected, and the total nitrogen and total phosphorus loadings that were removed by the collection of sweepings. If no street sweeping program is implemented, provide the explanation of why not in column F.					
	Frequency of street sweeping	weekly	MS4 Load Reduction Tool Spread sheet	Public Works Streets maintenance Sweeper division	
	Total miles swept	30,753	MS4 Load Reduction Tool Spread sheet	Public Works Streets maintenance Sweeper division	
	Estimated quantity of sweeping material collected (pounds)	4,325,000	MS4 Load Reduction Tool Spread sheet	Public Works Streets maintenance Sweeper division	
	Total phosphorous loadings removed (pounds)	1,562	MS4 Load Reduction Tool Spread sheet	Public Works Streets maintenance Sweeper division	
	Total nitrogen loadings removed (pounds)	2,435	MS4 Load Reduction Tool Spread sheet	Public Works Streets maintenance Sweeper division	

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	Report the equipment yards and maintenances shops that support road maintenance activities, and the number of inspections conducted for each facility.				
	Name of Facility	Number of Inspections			
	CWPB Municipal Complex Fleet Management Area	12	Documentation on file at Fleet Management office	ECO Advisors	Inspections performed monthly
Part III.A.3 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: enforcement of illicit discharges and Street sweeping helps with the reduction of pollutants going into the storm drain, canals and lakes				
	Limitations: construction projects cause much of the pollutants. Contractors need to be responsible for BMPs. Maintenance of Street Sweeper trucks are costly. Cars parked on the side of the road and dumpsters leaking make it hard to clean all roadways.				
	SWMP revisions implemented to address limitations:				
Part III.A.4	Flood Control Projects				
	Report the total number of flood control projects that were constructed by the permittee during the reporting period and the number of those projects that did NOT include stormwater treatment. The permittee shall provide a list of the projects where stormwater treatment was not included with an explanation for each of why it was not.				
	Report on any stormwater retrofit planning activities and the associated implementation of retrofitting projects to reduce stormwater pollutant loads from existing drainage systems that do not have treatment BMPs.				
	Flood control projects completed during the reporting period	0	N/A	N/A	
	Flood control projects completed that did not include stormwater treatment	0	N/A	N/A	
	Stormwater retrofit projects planned/under construction	2	SWWMP	Engineering Service dept.	See Exhibit III.A.4
	Stormwater retrofit projects completed	0	N/A	N/A	
If there were projects that did not include stormwater treatment, provide as an attachment a list of the projects and an explanation for each of why it did not.	<input type="checkbox"/>	N/A	N/A		
Part III.A.4 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: maintaining SWWMP. Outfall inventory report helps to identify issues with flooding throughout the city. We have installed exfiltration systems to help capture water during heavy rain events and allow infiltration back to the aquifer.				
	Limitations: None				
	SWMP revisions implemented to address limitations: none				

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Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
Part III.A.5	Municipal Waste Treatment, Storage, and Disposal Facilities Not Covered by an NPDES Stormwater Permit				
	Report the applicable facilities and the number of the inspections conducted for each facility.				
	Name of Facility	Number of Inspections			
	City of West Palm Beach Complex	26	Hiperweb	Storm water	
Part III.A.5 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Waste TSD facility helps control any potential pollution of storm water				
	Limitations: None				
	SWMP revisions implemented to address limitations: none				
Part III.A.6	Pesticides, Herbicides, and Fertilizer Application				
	Report the number of permittee personnel applicators and contracted commercial applicators of pesticides and herbicides who are FDACS certified / licensed.				
	Report the number of permittee personnel who have been trained through the Green Industry BMP Program and the number of contracted commercial applicators of fertilizer who are FDACS certified / licensed.				
	PERSONNEL: FDACS public applicators of pesticides/herbicides	13	State certification Fla dept of Agriculture & Consumer Services	Parks Maintenance(2) Watershed division(11)	
	CONTRACTORS: FDACS commercial applicators of pesticides/ herbicides	6	Fla dept of Agriculture & Consumer Services	Parks	Tru-Green Limited partnership & Gulfstream Termite & Environmental
	PERSONNEL: Green Industry BMP Program training completed	0	0	0	
	CONTRACTORS: FDACS certified / licensed applicators of fertilizer	3		Parks	Tru-Green Limited partnership
	Provide a copy of the adopted ordinance with the Year 2 Annual Report. If this provision is not applicable because the permittee is not within the watershed of a nutrient-impaired water body, indicate that in Column F.				
	Year 2 ONLY: Attach copy of adopted Florida-friendly ordinance	<input type="checkbox"/>			N/A
	Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage citizens to reduce their use of pesticides, herbicides and fertilizers including the type and number of activities conducted, the type and number of materials distributed, and the number of Web site visits (if applicable).				

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Part III.A.6 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.3 of the permit.				
	Strengths: staff trained and certified applicators of pesticide and herbicide from FDAC. Private contractor also FDAC certified				
	Limitations: none				
	SWMP revisions implemented to address limitations: none				
Part III.A.7.a	Illicit Discharges and Improper Disposal — Inspections, Ordinances, and Enforcement Measures				
	Report amendments in Year 4.				
	Year 4 ONLY: Attach a report on amendments to applicable legal authority	<input type="checkbox"/>			
Part III.A.7.c	Illicit Discharges and Improper Disposal — Investigation of Suspected Illicit Discharges and/or Improper Disposal				
	Report on the proactive inspection program, including the number of inspections conducted by the permittee, the number of illicit activities found, and the number and type of enforcement actions taken.				
	Proactive inspections for suspected illicit discharges	943	Inspection sheets and Community plus	Code/ Stormwater Drainage	SW-4 zones are Inspected ~ once a week. X 52
	Illicit discharges found during a proactive inspection	21	Inspection sheets And/or Community plus	Code/ Stormwater Drainage	Mitigated by customer
	NOV/WL/citation/fines issued for illicit discharges found during proactive inspection	4	Inspection sheets and Community plus	Code/ Stormwater Drainage	magistrate
	Report on the reactive investigation program as it relates to responding to reports of suspected illicit discharges, including the number of reports received, the number of investigations conducted, the number of illicit activities found, and the number and type of enforcement actions taken.				
	Reports of suspected illicit discharges received	7	Inspection sheets And/or Community plus	Stormwater Drainage	Magistrate
	Reactive investigations of reports of suspected illicit discharges etc.	420	Inspection sheets and Community plus	Code/ Stormwater Drainage	Some had nothing to do with our MS4 and some were not illicit discharges
	Illicit discharges etc. found during reactive investigation	7	Inspection sheets and Community plus	Stormwater Drainage	
	NOV/WL/citation/fines issued for illicit discharges etc. found during reactive investigation	7	Inspection sheets and Community plus	Stormwater Drainage	
	Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training) within the reporting year.				

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Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record		Entity Performing the Activity	Comments
	Personnel trained	17	Sign in sheet dvd		Code/ Stormwater Drainage	
	Contractors trained	0			N/A	
Part III.A.7.d	Illicit Discharges and Improper Disposal — Spill Prevention and Response					
	Report on the spill prevention and response activities, including the number of spills addressed.					
	Hazardous and non-hazardous material spills responded to	125	Firehouse		WPB Fire Dept.	
	Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training) within the reporting year.					
	Personnel trained	6	Sign in sheets		WPB Fire Dept.	
	Contractors trained	0			Regional Hazmat teams have a list of approved hazardous material clean-up companies	No contractors used
Part III.A.7.e	Illicit Discharges and Improper Disposal — Public Reporting					
	The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.					

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Part III.A.7.f	Illicit Discharges and Improper Disposal — Oils, Toxics, and Household Hazardous Waste Control																																							
	<p>Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the proper use and disposal of oils, toxics, and household hazardous waste, including the type and number of activities conducted, the type and number of materials distributed, the amount of waste collected / recycled / properly disposed, and the number of Web site visits (if applicable).</p> <p>The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.</p>																																							
Part III.A.7.g	Illicit Discharges and Improper Disposal — Limitation of Sanitary Sewer Seepage																																							
	<p>Report on the type and number of activities undertaken to reduce or eliminate SSOs and inflow/ infiltration, the number of SSOs or inflow / infiltration incidents found and the number resolved, and the name of the owner of the sanitary sewer system within the permittee's jurisdiction. Report only the SSOs and inflow / infiltration incidents into the MS4.</p> <table border="1" data-bbox="218 732 2016 1130"> <thead> <tr> <th data-bbox="218 732 852 764">Owner of the sanitary sewer system</th> <th colspan="4" data-bbox="852 732 2016 764">City of West Palm Beach</th> </tr> </thead> <tbody> <tr> <td data-bbox="218 764 852 818">Activity to reduce/eliminate SSOs and I&I: (Repair)</td> <td data-bbox="852 764 1039 818">3,088</td> <td data-bbox="1039 764 1320 818">PO/reacquisition log</td> <td data-bbox="1320 764 1568 818">Contractors</td> <td data-bbox="1568 764 2016 818"></td> </tr> <tr> <td data-bbox="218 818 852 846"></td> <td data-bbox="852 818 1039 846"></td> <td data-bbox="1039 818 1320 846"></td> <td data-bbox="1320 818 1568 846"></td> <td data-bbox="1568 818 2016 846"></td> </tr> <tr> <td data-bbox="218 846 852 873">SSO incidents discovered</td> <td data-bbox="852 846 1039 873">4</td> <td data-bbox="1039 846 1320 873">SSO logbook</td> <td data-bbox="1320 846 1568 873">Sanitary Collection</td> <td data-bbox="1568 846 2016 873"></td> </tr> <tr> <td data-bbox="218 873 852 901">SSO incidents resolved</td> <td data-bbox="852 873 1039 901">4</td> <td data-bbox="1039 873 1320 901">SSO logbook</td> <td data-bbox="1320 873 1568 901">Sanitary Collection</td> <td data-bbox="1568 873 2016 901"></td> </tr> <tr> <td data-bbox="218 901 852 1019">Inflow / infiltration incidents discovered</td> <td data-bbox="852 901 1039 1019">2</td> <td data-bbox="1039 901 1320 1019">Inflow incidents Spreadsheets/ SSO Logbook</td> <td data-bbox="1320 901 1568 1019">Sanitary Collection</td> <td data-bbox="1568 901 2016 1019"></td> </tr> <tr> <td data-bbox="218 1019 852 1130">Inflow / infiltration incidents resolved</td> <td data-bbox="852 1019 1039 1130">2</td> <td data-bbox="1039 1019 1320 1130">Inflow incidents spreadsheets/ SSO Logbook</td> <td data-bbox="1320 1019 1568 1130">Sanitary Collection</td> <td data-bbox="1568 1019 2016 1130"></td> </tr> </tbody> </table>					Owner of the sanitary sewer system	City of West Palm Beach				Activity to reduce/eliminate SSOs and I&I: (Repair)	3,088	PO/reacquisition log	Contractors							SSO incidents discovered	4	SSO logbook	Sanitary Collection		SSO incidents resolved	4	SSO logbook	Sanitary Collection		Inflow / infiltration incidents discovered	2	Inflow incidents Spreadsheets/ SSO Logbook	Sanitary Collection		Inflow / infiltration incidents resolved	2	Inflow incidents spreadsheets/ SSO Logbook	Sanitary Collection	
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Part III.A.7 Summary	<p>For activities required by Part III.A.7: Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.</p> <p>Strengths: We are able to detect various pollutants that might be discharged into drainage system and we are in process of implementing a more stringent program . Educate and enforce compliance</p> <p>Limitations: None</p> <p>SWMP Revisions implemented to address limitations: none</p>																																							
Part III.A.8.a	Industrial and High-Risk Runoff — Identification of Priorities and Procedures for Inspections																																							
	<p>Report on the high-risk facilities inventory, including the type and total number of high risk facilities and the number of facilities newly added each year.</p> <p>Report on the high-risk facilities inspection program, including the number of inspections conducted and the number and type of enforcement actions taken.</p>																																							

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.		C.		D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity		Number of Activities Performed		Documentation / Record	Entity Performing the Activity	Comments
	Type of Facility	Number of Facilities	Number of Inspections	Enforcement Actions			
	Operating municipal landfills	173					Scheduled to be inspected within 2 years
	Hazardous waste treatment, storage, disposal and recovery (HWTSDR) facilities	171	0	0			These facilities were inspected in Cycle 3 permit
	EPCRA Title III, Section 313 facilities (TRI)	2	0	0			Scheduled to be inspected within 2 years
	Facilities determined as high risk by the permittee	0	0	0			
Part III.A.8.b	Industrial and High-Risk Runoff — Monitoring for High Risk Industries						
	Report the number of high risk facilities sampled.						
	High risk facilities sampled	0					
Part III.A.8 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.						
	Strengths: None 173 high risk facilities						
	Limitations: None						
	SWMP revisions implemented to address limitations: None						
Part III.A.9.a	Construction Site Runoff — Site Planning and Non-Structural and Structural Best Management Practices						
	Report the number of permittee and private pre-construction site plans reviewed for stormwater, erosion, and sedimentation controls, and the number approved.						
	PERMITTEE SITES: Construction site plans reviewed	0		Engineering permit	Engineering Service dept		
	PERMITTEE SITES: Construction site plans approved	0		Engineering permit	Engineering Service dept		
	PRIVATE SITES: Construction site plans reviewed	42		Engineering permit	Engineering Service dept		
	PRIVATE SITES: Construction site plans approved	42		Engineering permit	Engineering Service dept		

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	Report the number of development permit applicants notified of the ERP and CGP, and the number of applicants who confirmed ERP and CGP coverage.				
	Notified of ERP stormwater permit requirements	42	Engineering permit application	Engineering Service dept	
	Confirmed ERP coverage	12	SFWMD/FDEP website	Engineering Service dept	
	Notified of CGP stormwater permit requirements	42	Engineering permit application	Engineering Service dept	
	Confirmed CGP coverage	10	FDEP website	Engineering Service dept	
Part III.A.9.b	Construction Site Runoff — Inspection and Enforcement				
	Report on the inspection program for privately-operated and permittee-operated construction sites, including the number of active construction sites during the reporting year, the number of inspections of active construction sites, the percentage of active construction sites inspected, and the number and type of enforcement actions / referrals taken.				
	PERMITTEE SITES: Active construction sites	9	Daily Reports	Engineering Service dept Construction coord.	
	PERMITTEE SITES: Pre-, During, and Post inspections of active construction sites for E&S and waste control BMPs	648	Daily Reports	Engineering Service dept Construction coord.	
	PERMITTEE SITES: Percentage of active construction sites inspected	100	N/A	N/A	
	PRIVATE SITES: Active construction sites	28	Daily Reports	Engineering Service dept Construction coord.	. (Certain City projects did not have soil disturbance nor discharges) projects such as striping and directional drill projects
	PRIVATE SITES: Pre-, During, and Post inspections of active construction sites for E&S and waste control BMPs	1116	Daily Reports	Engineering Service dept Construction coord.	
	PRIVATE SITES: Percentage of active construction sites inspected	47	N/A	N/A	
	Enforcement Action	0	N/A	N/A	

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE						
A.	B.		C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity		Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
Part III.A.9.c	Construction Site Runoff — Site Operator Training					
	Report the type of training activities, the number of inspectors, site plan reviewers and site operators trained (both in-house and outside training).					
		DEP Certification	Annual Training			
	Permittee construction site inspectors	6	3	certificates	FDEP	
	Permittee construction site plan reviewers		1	certificates	FDEP	
	Permittee construction site operators		0			THE CITY DOESN'T HIRE CONSTRUCTION OPERATORS
Part III.A.9 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.					
	Strengths: Training, dvds, and education . We are trying to make employees and contractors more aware of sediment and other pollutants that can be controlled through proper preparation and use of BMPs					
	Limitations: NONE					
	SWMP revisions implemented to address limitations:					

SECTION VIII. CHANGES TO THE STORMWATER MANAGEMENT PROGRAM (SWMP) ACTIVITIES (Not Applicable in Year 4)		
A.	Permit Citation/ SWMP Element	Proposed Changes to the Stormwater Management Program Activities Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change) — REQUIRES DEP APPROVAL PRIOR TO CHANGE IF PROPOSING TO REPLACE OR DELETE AN ACTIVITY.
		N/A
		N/A
		N/A
B.	Permit Citation/ SWMP Element	Changes to the Stormwater Management Program Activities NOT Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change)
		N/A
		N/A
		N/A

SECTION IX. TMDL Status Report

A.	YEAR 1 Provide a table summarizing the status of the TMDL process. Include a list of prioritized TMDLs and their monitoring and implementation schedule; and include the Identification number of the outfall prioritized for TMDL monitoring.								
	WBID Number	Segment/ Waterbody/ Basin	Pollutant of Concern	TMDL DEP / EPA	Percent Reduction (WLA)	Priority Rank	Priority Outfall	Monitoring Summary / BPCP Due Date	Supplemental SWMP Due Date
	N/A			<input type="checkbox"/> / <input type="checkbox"/>		1		(Year 3 AR)	(Year 4 AR; N/A) if BPCP)
	N/A N/A			<input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/>					
B.	YEAR 3 and annually thereafter, provide a summary of the estimated load reductions that have occurred for the pollutant(s) of concern being discharged from the MS4 to the TMDL water body during the reporting period and cumulatively since the date the Supplemental SWMP was implemented. Year 3: Submit a Monitoring data summary or BPCP (if applicable). Year 4: Submit a Supplemental SWMP (if applicable).								
	WBID Number	Pollutant of Concern	Monitoring Summary / BPCP Submitted	Supplemental SWMP Submitted	Projected load reductions OR Actual load reductions to date				
	N/A		(Year 3 AR)	(Year 4 AR; N/A if BPCP)					
	N/A N/A								
C.	Provide a brief statement as to the status of TMDL implementation according to Part VIII.B of the permit (e.g. status of monitoring to validate WLA): No discharge to a TMDL WBID at time of permit								



WEST PALM BEACH

MS4 Assessment Program to Satisfy Part V. – Monitoring Requirements

Submitted by City of West Palm Beach – MS4 Permit No. FLS000018-004

March 28, 2019

Introduction

Part V of the Municipal Separate Storm Sewer System (MS4) permit for Palm Beach County and co-permittees (FLS000018-004) calls for the creation of an assessment program to determine the overall effectiveness of the Stormwater Management Program (SWMP). This Assessment Program shall include the three following components:

- Water Quality Monitoring Plan,
- Pollutant Loading Estimate Plan, and
- Evaluation and Response Plan

The intent of the program is identify where local sources of urban stormwater are adversely affecting surface water resources so that decisions can be made to mitigate these effects accordingly. The City of West Palm Beach has gone to great lengths to protect the potable water supply conveyed via M-Canal from Grassy Waters Preserve (Water Catchment Area) to Lake Mangonia and Clear Lake where the City's water treatment plant is located. These measures include diverting most of the stormwater within the City away from these waterbodies and ultimately to Lake Worth Lagoon via the C-17 and C-51 canals or directly through 48 direct outfalls to the Lake Worth Lagoon. The City has identified four receiving waterbodies to monitor the effects from stormwater contributions from its MS4: Lake Worth Lagoon (divided into two segments, north and central), Grassy Waters Preserve, Lake Mangonia, and Clear Lake (Figure 1).

This report satisfies Part V, Assessment Program (3.) *Reporting of Assessment Results* and includes:

- The status of the Assessment Program
- Summary of results
- Analysis of changes from previous monitoring years

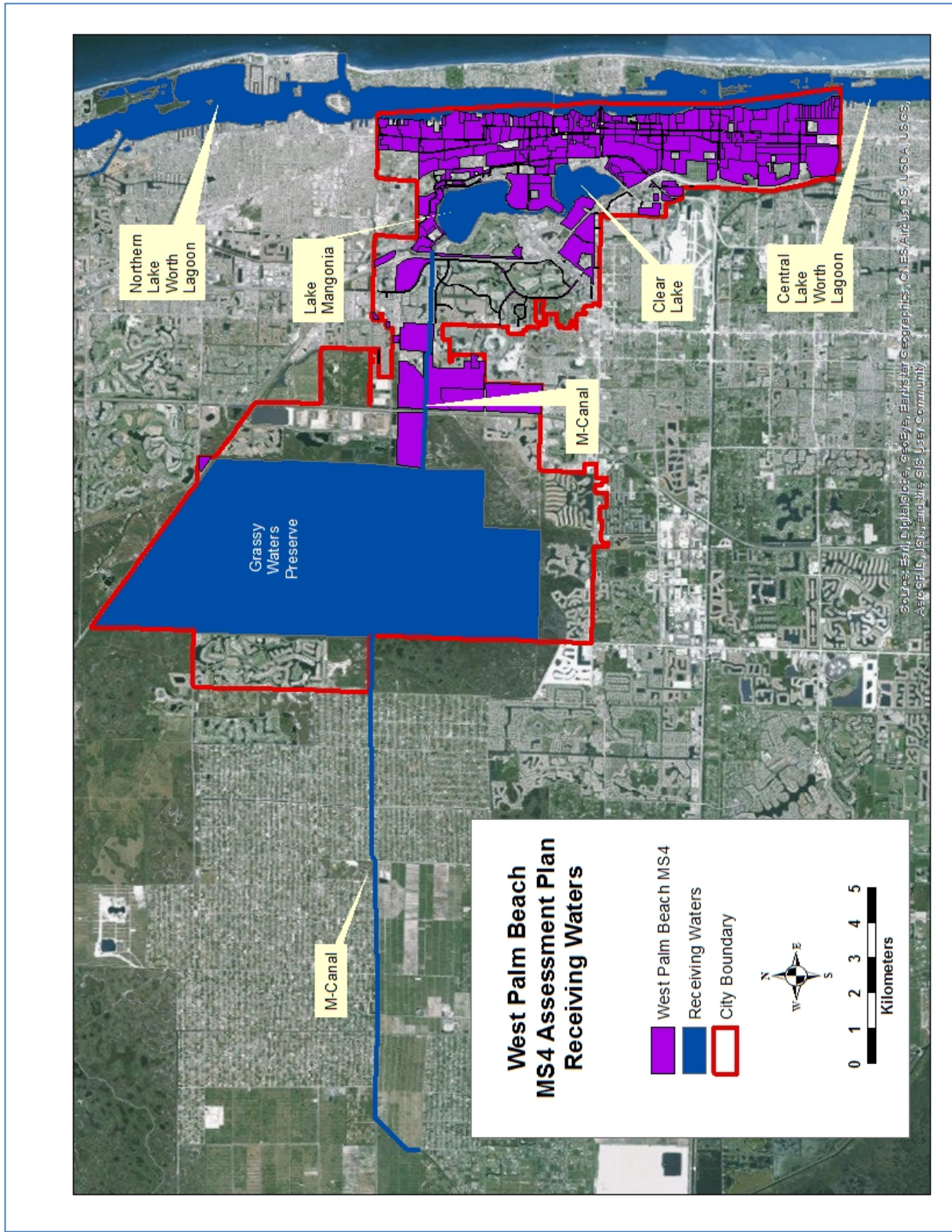


Figure 1. Receiving Waterbodies for City of West Palm Beach.

Status of the Monitoring Program

The City of West Palm Beach’s MS4 Assessment Plan was submitted to the Florida Department of Environmental Protection (FDEP) for approval as part of the Year 1 annual report in March of 2018 and was approved in July 25, 2018. This report covers Year 2 of the Cycle 4 MS4 permit representing the period between October 2017 and September 2018. Since the plan was approved in late July 2018, there were only two months to implement the plan. Fortunately, many of the City’s monitoring locations have been sampled since early as 2011 and the Palm Beach County sites in Lake Worth Lagoon cover the same period.

The City of West Palm Beach maintains a database within the City’s laboratory information management system, also known as a LIMS system, which the data was exported from for these analyses. The Palm Beach County data for Lake Worth Lagoon were extracted from the FDEP IWR database RUN 56, FDEP STORET and WIN databases, and the South Florida Water Management District’s DBHYDRO database. All of the data has undergone thorough inspection and quality assured. Ultimately all of the data will be uploaded and incorporated into the appropriate State Database.

The following sections describe the monitoring programs by receiving waterbodies.

Receiving Waters

Lake Worth Lagoon

Lake Worth Lagoon is currently monitored by Palm Beach County Environmental Resources Management (PBCERM) via an Inter-local agreement between the Palm Beach County MS4 Co-Permittees and the Northern Palm Beach County Improvement District. The City, along with other entities discharges stormwater to both the North and Central Estuarine Nutrients Regions of Lake Worth Lagoon. FDEP refers to these waterbodies as WBIDs 3226E1 and 3226F1 respectively. Both of these segments were listed as impaired for nutrient parameters and copper during the 2016 assessment cycle. The impairment isn’t likely due to a single discharge location as the Lagoon integrates pollutants from numerous sources.

The monitoring locations for Lake Worth Lagoon are listed in Table 1 and shown in Figure 2.

Waterbody	Station ID	Latitude	Longitude	Agency	Frequency
North Lake Worth Lagoon	LWL-1	26.68690	-80.044161	PBCERM	Monthly
North Lake Worth Lagoon	11	26.8313	-80.0602	PBCERM	Monthly
North Lake Worth Lagoon	13	26.8085	-80.0561	PBCERM	Monthly
North Lake Worth Lagoon	LWL-4	26.8004	-80.0443	PBCERM	Monthly
Central Lake Worth	LWL-8	26.6754	-80.0469	PBCERM	Monthly
Central Lake Worth	18C	26.6407	-80.0400	PBCERM	Monthly
Central Lake Worth	18D	26.6293	-80.0457	PBCERM	Monthly
Central Lake Worth	LWL-11	26.6155	-80.0458	PBCERM	Monthly
Central Lake Worth	LWL-13	26.5839	-80.0443	PBCERM	Monthly



Figure 2. Sampling Locations in the Lake Worth Lagoon

For this analysis, data from PBCERM were extracted from FDEP IWR Run 56 database and the SFWMD DBHYDRO database. Through another arrangement, data for stations LWL-1, LWL-4, LWL-8, LWL-11, and LWL-13 are reported by the SFWMD under the “21FLSFWM” organization code while stations 18C, 18D 11 and 13 are reported by PBCERM under the “21FLPBCH” organization code. All data were compiled into a dataset for analysis.

Grassy Water Preserve

Grassy Waters was purchased and protected as the primary potable water supply source for the City of West Palm Beach and other municipalities who receive water from West Palm Beach. Monitoring within Grassy Waters by the City is ongoing to ensure its integrity as one of the last, least impacted parcels of the original Everglades. Recently, developments along the perimeter have been allowed to discharge treated excess stormwater into the preserve. These discharges are monitored as required by the Environmental Resource Permits, 50-03926-P (Baywinds) and 50-02120-S-06 (Ibis).

The City’s monitoring locations are shown in Table 3 and Figure 3.

Waterbody	Station ID	Latitude	Longitude	Agency	Frequency
Grassy Waters	GW1	26.0891	-80.1693	CWPB	Monthly
Grassy Waters	GW3	26.7683	-80.1770	CWPB	Monthly
Grassy Waters	GW5	26.7239	-80.1812	CWPB	Monthly
Grassy Waters	GW7	26.7690	-80.1501	CWPB	Monthly

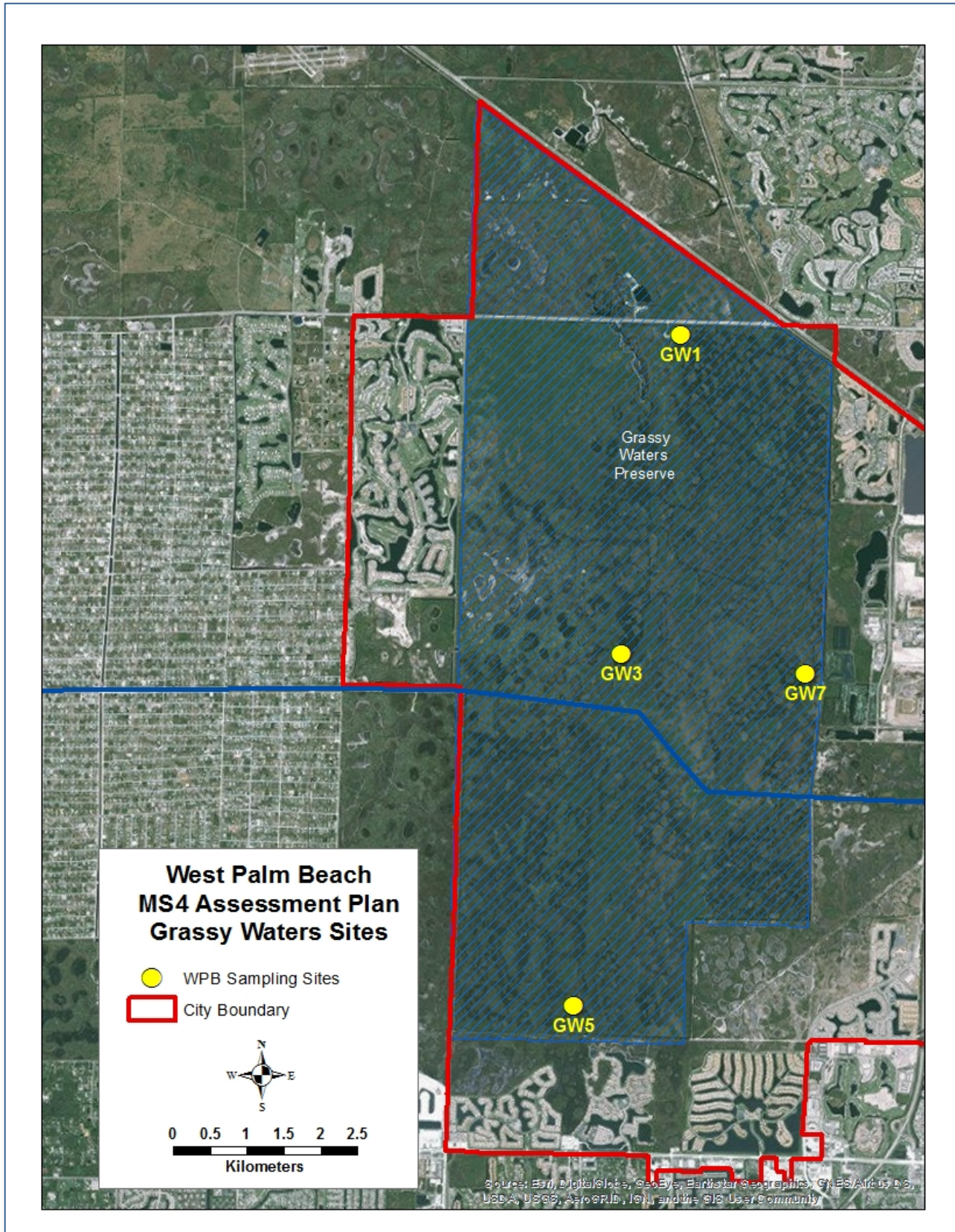


Figure 3. Sampling Locations in Grassy Waters Preserve

Clear Lake and Lake Mangonia

Clear Lake, along with the adjacent Lake Mangonia, are the two storage lakes for the potable water supply with the East Lobe of Clear Lake as the withdrawal point for the City's water treatment plant. There are no direct stormwater inputs to either of the lakes within the City's limits but indirect stormwater may be contributed by the L-8 canal (pumped into M-Canal at Control 2), M-Canal, C-17 Canal, Grassy Waters (as previously mentioned) and the Renaissance Stormwater Project. The C-17 Canal receives stormwater from various areas and the City looks to use it to augment the water supply when necessary. The Renaissance Stormwater Project is an alum-injection stormwater treatment facility for a portion of downtown West Palm Beach whose waters could be used supplement Clear Lake and is monitored as part of its Environmental Resource Permit, 50-04000-P. Lake Mangonia has been listed as impaired for fecal coliform as part of Cycle 3 of FDEP's Assessment Program. Monitoring of the source waters along the system will ensure the integrity of the water supply while enduring the waters meet surface water quality standards. These data will be supplemented with the most recent Impaired Waters Rule database to provide data necessary to assess the status and trends with regards to Clear Lake and Lake Mangonia.

Table 5. Monitoring Locations					
Waterbody	Station ID	Latitude	Longitude	Agency	Frequency
L-8 Tieback	Control 2 (Upstream)	26.7554	-80.3457	CWPB	Monthly
M-Canal	M-Canal	26.7660	-80.2254	CWPB	Monthly
M-Canal	Control 4	26.7510	-80.1192	CWPB	Monthly
C-17 Canal	C17_CANAL_A	26.7356	-80.0902	CWPB	Monthly
C-17 Canal	C17_CANAL_B	26.7657	-80.0911	CWPB	Monthly
Lake Mangonia	Lake Mangonia Middle	26.7399	-80.0756	CWPB	Monthly
Clear Lake	Clear Lake Middle	26.7142	-80.0703	CWPB	Monthly

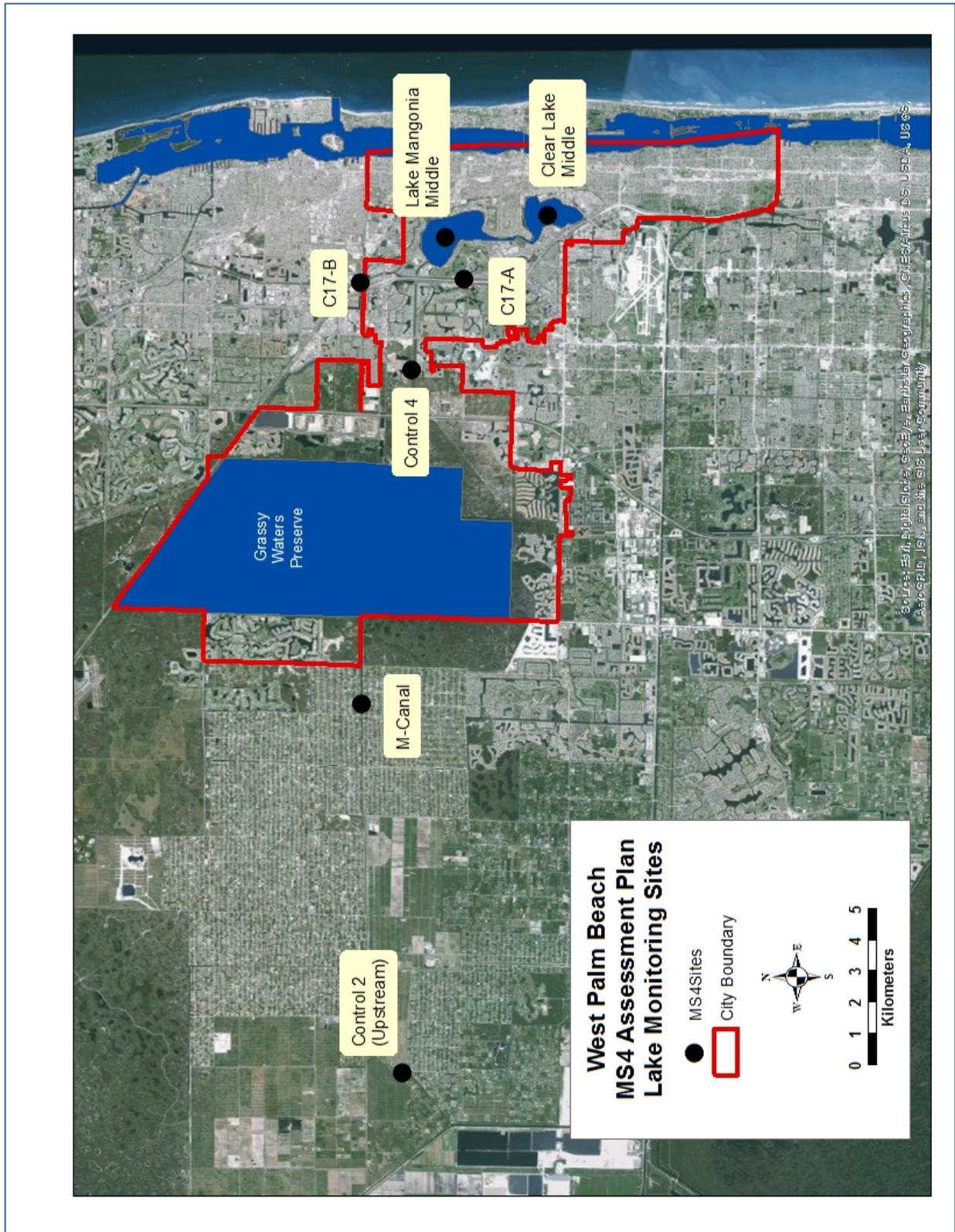


Figure 4. Sampling Locations for Clear Lake and Lake Mangonia

Data Summaries and Time-series Plots

Data summaries and time series plots for each site can be found in Appendix A.

Trend Analysis

The following parameters were selected for this analysis based on the requirements of the permit:

- Biochemical Oxygen Demand (mg/L)
- Total Copper (mg/L)
- Total Nitrogen (as N) (mg/L)
- Total Phosphorus (mg/L)
- Total Suspended Solids (TSS) (mg/L)
- Total Zinc (mg/L)

Trend analyses were performed on monthly mean data using the Season Kendall Tau method for the parameters for which sufficient data were available (Table 6). The entire period of record was included and represents the City specific baseline for which future assessments will be compared. Trends that are identified as “shallow” are defined as statistically significant trends with a rate of change less than 5% of the median value per year, and those identified as “steep” 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 appendices. The terms “steep” and “shallow” do not imply either ecological significance or the lack of ecological significance.

Table 6. – Summary table of the Seasonal Kendal-Tau analysis.							
Station	Parameter	Minimum Year	Maximum Year	Median	Count	Trend Direction	Magnitude
21FLPBCH11	Chlorophyll a	2001	2018	3.06	137	No Trend	
21FLPBCH11	Dissolved Oxygen	1975	2018	6.4	207	Increasing	Shallow
21FLPBCH11	Dissolved Oxygen (%)	1975	2018	80.5	204	No Trend	
21FLPBCH11	Total Nitrogen	1975	2018	0.51	184	Decreasing	Shallow
21FLPBCH11	Total NO ₃ +NO ₂	1980	2018	0.025	80	No Trend	
21FLPBCH11	Total Phosphorus	1975	2018	0.0438	182	No Trend	
21FLPBCH11	Total TKN	1975	2018	0.485	182	Decreasing	Shallow
21FLPBCH13	Chlorophyll a	2001	2018	4	134	No Trend	
21FLPBCH13	Dissolved Oxygen	1975	2018	6.105	206	Increasing	Shallow
21FLPBCH13	Dissolved Oxygen (%)	1975	2018	77.5	205	No Trend	
21FLPBCH13	Total Nitrogen	1975	2018	0.59	189	Decreasing	Shallow
21FLPBCH13	Total NO ₃ +NO ₂	1980	2018	0.0288	82	No Trend	
21FLPBCH13	Total Phosphorus	1975	2018	0.048	179	Decreasing	Shallow
21FLPBCH13	Total TKN	1975	2018	0.5615	184	Decreasing	Shallow
21FLPBCH18C	Chlorophyll a	2004	2018	5.53	126	No Trend	
21FLPBCH18C	Dissolved Oxygen	2004	2018	6.95	132	Increasing	Shallow

Table 6. – Summary table of the Seasonal Kendal-Tau analysis.							
Station	Parameter	Minimum Year	Maximum Year	Median	Count	Trend Direction	Magnitude
21FLPBCH18C	Dissolved Oxygen (%)	2004	2018	88.3	130	Increasing	Shallow
21FLPBCH18C	Total Nitrogen	2004	2018	0.89	117	Decreasing	Steep
21FLPBCH18C	Total Phosphorus	2004	2018	0.072	124	No Trend	
21FLPBCH18C	Total TKN	2004	2018	0.768	120	Decreasing	Steep
21FLPBCH18D	Chlorophyll a	2005	2018	5.7	112	Increasing	Steep
21FLPBCH18D	Dissolved Oxygen	2005	2018	7.48	119	No Trend	
21FLPBCH18D	Dissolved Oxygen (%)	2005	2018	93.5	117	No Trend	
21FLPBCH18D	Total Nitrogen	2005	2018	0.668	111	Decreasing	Steep
21FLPBCH18D	Total Phosphorus	2005	2018	0.0595	108	No Trend	
21FLPBCH18D	Total TKN	2005	2018	0.575	113	Decreasing	Steep
21FLSFWMLWL-1	Dissolved Oxygen	2007	2018	6.675	106	No Trend	
21FLSFWMLWL-1	Total Nitrogen	2007	2018	0.325	107	No Trend	
21FLSFWMLWL-1	Total NO ₃ +NO ₂	2007	2018	0.005	104	No Trend	
21FLSFWMLWL-1	Total Phosphorus	2007	2018	0.032	106	No Trend	
21FLSFWMLWL-1	Total Suspended Solids	2007	2018	4	107	Decreasing	Shallow
21FLSFWMLWL-1	Total TKN	2007	2014	0.31	79	No Trend	
21FLSFWMLWL-11	Dissolved Oxygen	2007	2018	6.33	116	No Trend	
21FLSFWMLWL-11	Total Nitrogen	2007	2018	0.458	117	Increasing	Shallow
21FLSFWMLWL-11	Total NO ₃ +NO ₂	2007	2018	0.0125	116	No Trend	
21FLSFWMLWL-11	Total Phosphorus	2007	2018	0.042	117	Increasing	Shallow
21FLSFWMLWL-11	Total Suspended Solids	2007	2018	8	116	No Trend	
21FLSFWMLWL-11	Total TKN	2007	2014	0.38	77	Increasing	Steep
21FLSFWMLWL-4	Chlorophyll a	2007	2015	2	86	No Trend	
21FLSFWMLWL-4	Dissolved Oxygen	2007	2018	7.11	107	No Trend	
21FLSFWMLWL-4	Dissolved Oxygen (%)	2007	2015	89.8	88	No Trend	
21FLSFWMLWL-4	Total Nitrogen	2007	2018	0.235	108	No Trend	
21FLSFWMLWL-4	Total NO ₃ +NO ₂	2007	2018	0.005	106	No Trend	
21FLSFWMLWL-4	Total Phosphorus	2007	2018	0.019	103	No Trend	
21FLSFWMLWL-4	Total Suspended Solids	2007	2018	6	108	Decreasing	Shallow
21FLSFWMLWL-4	Total TKN	2007	2014	0.23	80	No Trend	
21FLSFWMLWL-8	Chlorophyll a	2007	2015	4.305	94	Increasing	Steep
21FLSFWMLWL-8	Dissolved Oxygen	2007	2018	6.945	118	No Trend	
21FLSFWMLWL-8	Dissolved Oxygen (%)	2007	2015	89.35	94	No Trend	
21FLSFWMLWL-8	Total Nitrogen	2007	2018	0.43	119	Increasing	Steep
21FLSFWMLWL-8	Total NO ₃ +NO ₂	2007	2018	0.024	118	Increasing	Shallow
21FLSFWMLWL-8	Total Phosphorus	2007	2018	0.044	118	Increasing	Shallow
21FLSFWMLWL-8	Total Suspended Solids	2007	2018	8	118	No Trend	
21FLSFWMLWL-8	Total TKN	2007	2014	0.35	80	No Trend	
CONTROL_II	Dissolved Oxygen	2011	2018	5.1325	92	No Trend	
CONTROL_IV	Dissolved Oxygen	2011	2018	4.809	90	Increasing	Shallow

Table 6. – Summary table of the Seasonal Kendal-Tau analysis.							
Station	Parameter	Minimum Year	Maximum Year	Median	Count	Trend Direction	Magnitude
GW_1	Dissolved Oxygen	2011	2018	3.5	88	No Trend	
GW_1	Total Nitrogen	2011	2018	0.97	86	Decreasing	Shallow
GW_1	Total NO ₃ +NO ₂	2012	2018	0.05	60	No Trend	
GW_1	Total Phosphorus	2011	2018	0.013	84	Increasing	Steep
GW_1	Total Suspended Solids	2011	2018	2	88	No Trend	
GW_1	Total TKN	2011	2018	0.92	86	Decreasing	Shallow
GW_3	Dissolved Oxygen	2011	2018	3.5	87	No Trend	
GW_3	Total Nitrogen	2011	2018	1.12	87	No Trend	
GW_3	Total Phosphorus	2011	2018	0.024	85	Increasing	Steep
GW_3	Total Suspended Solids	2011	2018	2	86	Increasing	Steep
GW_3	Total TKN	2011	2018	1.04	87	No Trend	
GW_5	Dissolved Oxygen	2011	2018	2.72	87	Increasing	Steep
GW_5	Total Nitrogen	2011	2018	1.06	87	No Trend	
GW_5	Total Phosphorus	2011	2018	0.012	85	Increasing	Steep
GW_5	Total Suspended Solids	2011	2018	2	87	No Trend	
GW_5	Total TKN	2011	2018	1	87	No Trend	
GW_7	Dissolved Oxygen	2011	2018	2.83	86	No Trend	
GW_7	Total Nitrogen	2011	2018	1.05	85	No Trend	
GW_7	Total NO ₃ +NO ₂	2012	2018	0.05	60	No Trend	
GW_7	Total Phosphorus	2011	2018	0.00925	84	Increasing	Steep
GW_7	Total Suspended Solids	2011	2018	2	85	No Trend	
GW_7	Total TKN	2011	2018	0.99	85	No Trend	

As shown in the table, most of the parameters are showing decreasing or no trends in nutrients. Stations 21FLPBCH11, 21FLPBCH13, 21FLPBCH18C, and 21FLPBCH18D all have seen decreasing trends in total nitrogen concentrations. Increasing trends can be seen in phosphorus concentrations in the Grassy Water Preserve. Increasing trends in nitrogen and phosphorus concentrations can also be seen at stations 21FLSFWMLWL-8 and 21FLSFWMLWL-11. 21FLSFWMLWL-11 also has an increasing trend in chlorophyll *a*. Both of these stations are located in the Central Lake Worth Lagoon Estuarine Region and receive loading from several co-permittees. Increasing trends can also be seen in DO though, unlike the other parameters, increasing values of DO is beneficial. Detailed output from the trend analysis can be found in Appendix B.

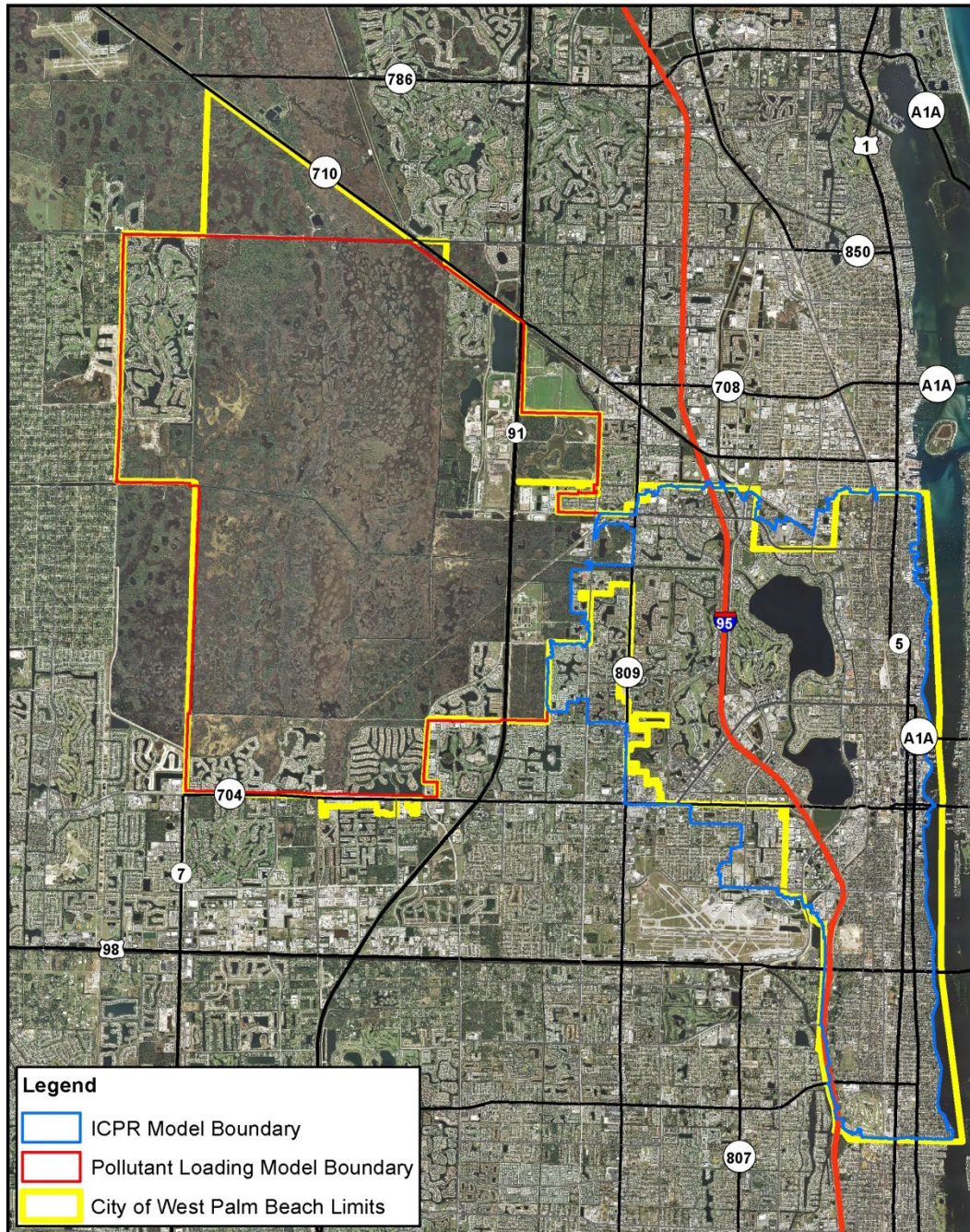
These trends will be updated as part of each annual report with the purpose of identifying areas in need of further review.

Pollutant Loading Estimate Plan

The City recently deployed the Spatially Integrated Model for Pollutant Loading Estimates (SIMPLE) during the development of its Stormwater Master Plan. The model was originally developed for Sarasota County for compliance with MS4 permit with funding from the Southwest Florida Water Management District. The

current version of the model is set to provide pollutant load estimates for the following parameters: biochemical oxygen demand, copper, total nitrogen, total phosphorus, total suspended solids, and zinc.

The SIMPLE model extent is shown in Figure 5 and includes all of the City's incorporated area and not limited to the MS4.



The results of the updated output from the SIMPLE model will be included in the Year 3 annual report.

Evaluation and Response Plan

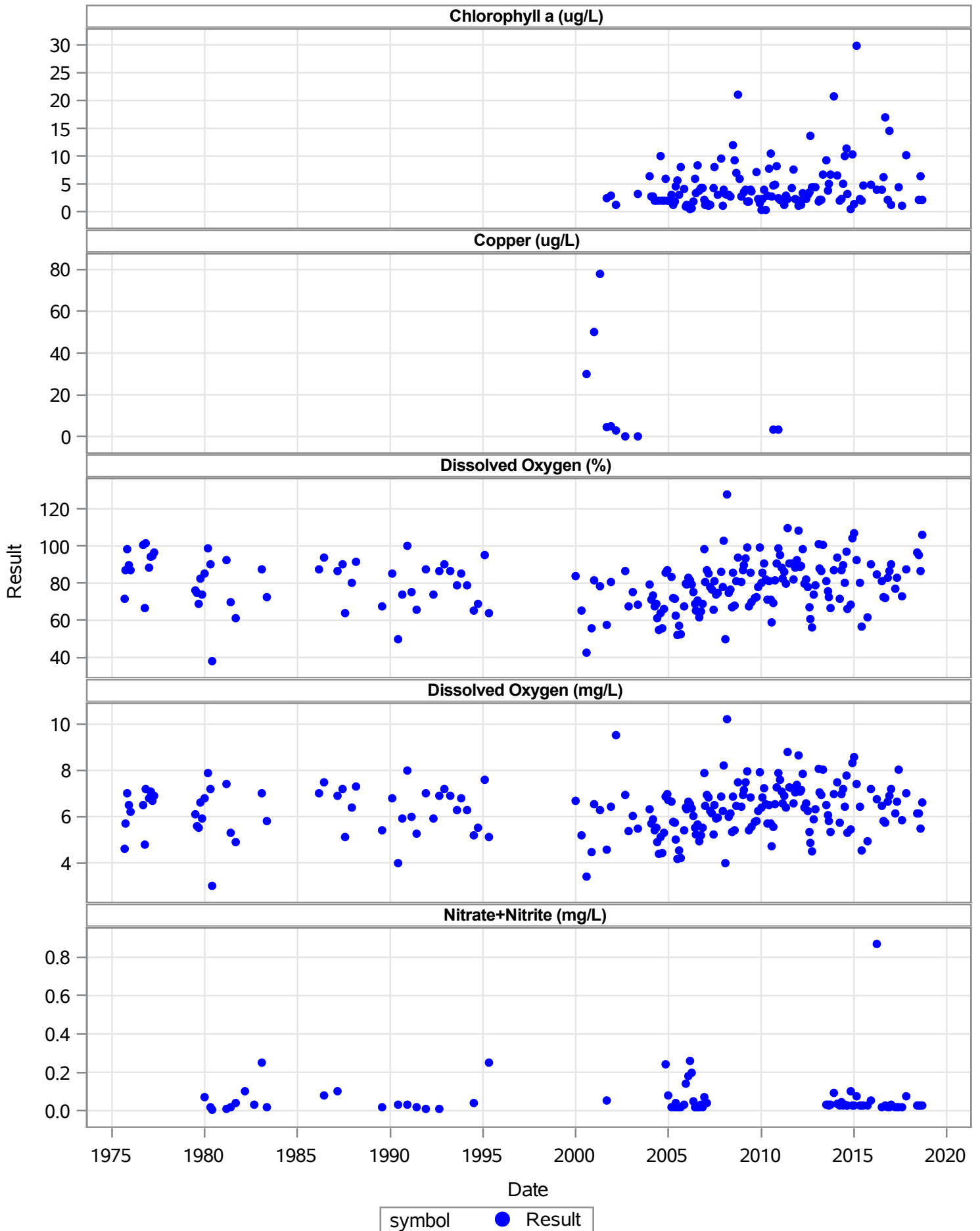
As this is the first year of this monitoring program, an evaluation of the effectiveness of the MS4 activities cannot be completed. The increasing trends some of the waterbodies will need to be investigated. Projects have been proposed as part of the City's Stormwater Master Plan some of the nutrient load to those waterbodies.

Appendix A

21FLPBCH11

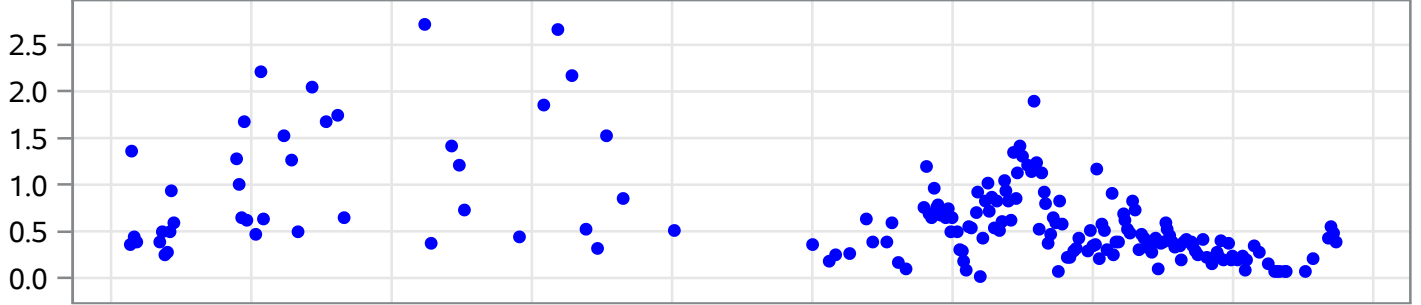
Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
Chlorophyll a (ug/L)	01SEP75	01SEP18	0.25	29.9	4.458	3.06	137
Copper (ug/L)	01SEP75	01SEP18	0.039	78	17.715	3.845	10
Dissolved Oxygen (mg/L)	01SEP75	01SEP18	3	10.22	6.318	6.4	207
Dissolved Oxygen (%)	01SEP75	01SEP18	37.9747	127.8	79.711	80.5	204
Nitrate+Nitrite (mg/L)	01SEP75	01SEP18	0.006	0.87	0.06	0.025	80
Total Kjeldahl Nitrogen (mg/L)	01SEP75	01SEP18	0.02	2.72	0.62	0.485	182
Total Nitrogen (mg/L)	01SEP75	01SEP18	0.02	2.72	0.658	0.51	184
Total Phosphorus (mg/L)	01SEP75	01SEP18	0	0.3	0.059	0.044	182
Total Suspended Solids (mg/L)	01SEP75	01SEP18	13	66	32.275	28.7	16
Zinc (ug/L)	01SEP75	01SEP18	7.6	129	60.14	46.8	5

21FLPBCH11

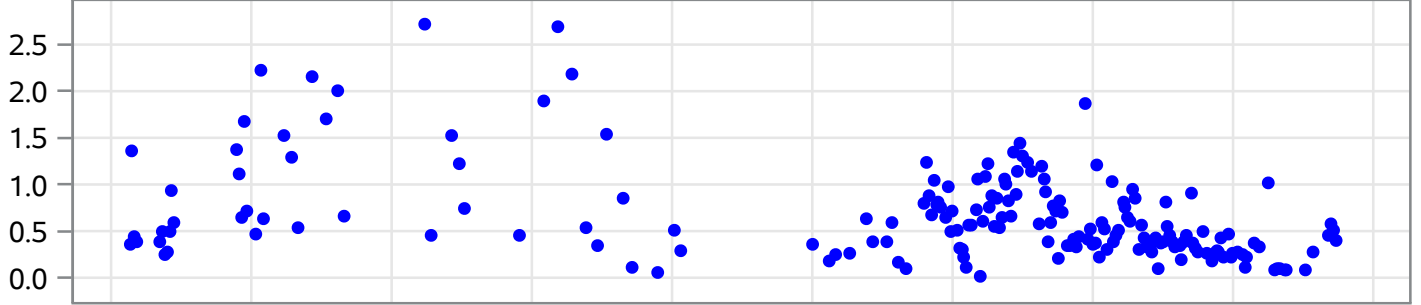


21FLPBCH11

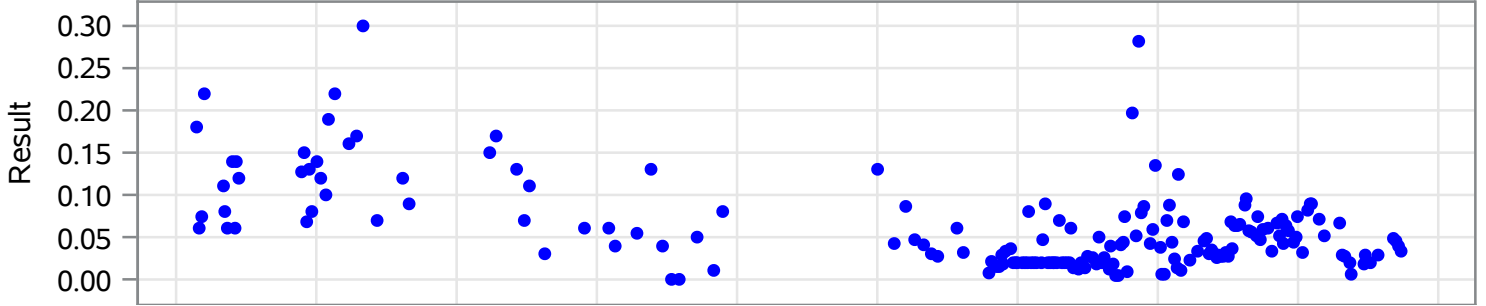
Total Kjeldahl Nitrogen (mg/L)



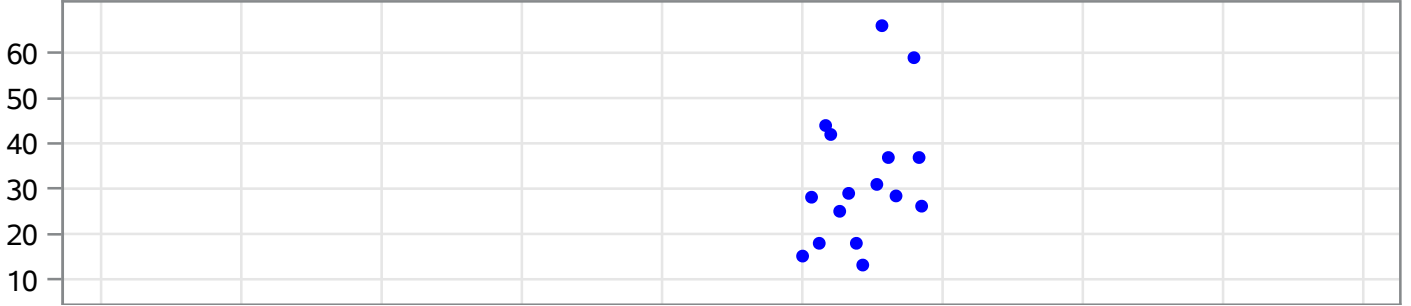
Total Nitrogen (mg/L)



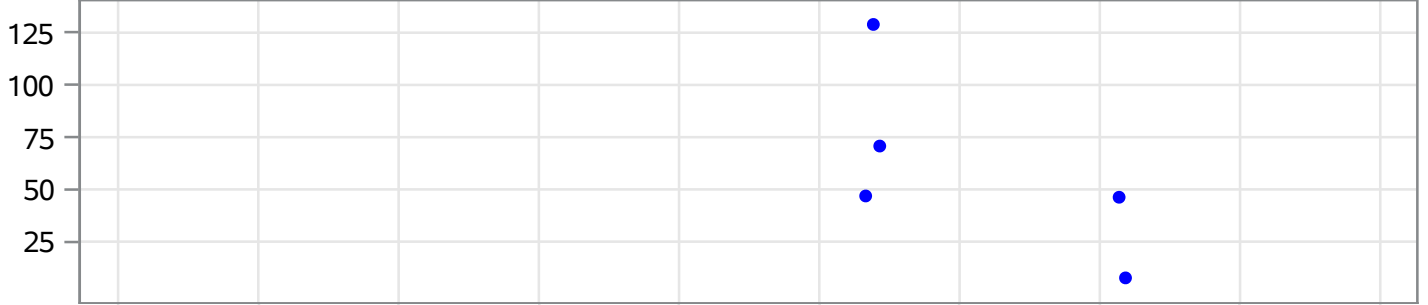
Total Phosphorus (mg/L)



Total Suspended Solids (mg/L)



Zinc (ug/L)



1975 1980 1985 1990 1995 2000 2005 2010 2015 2020

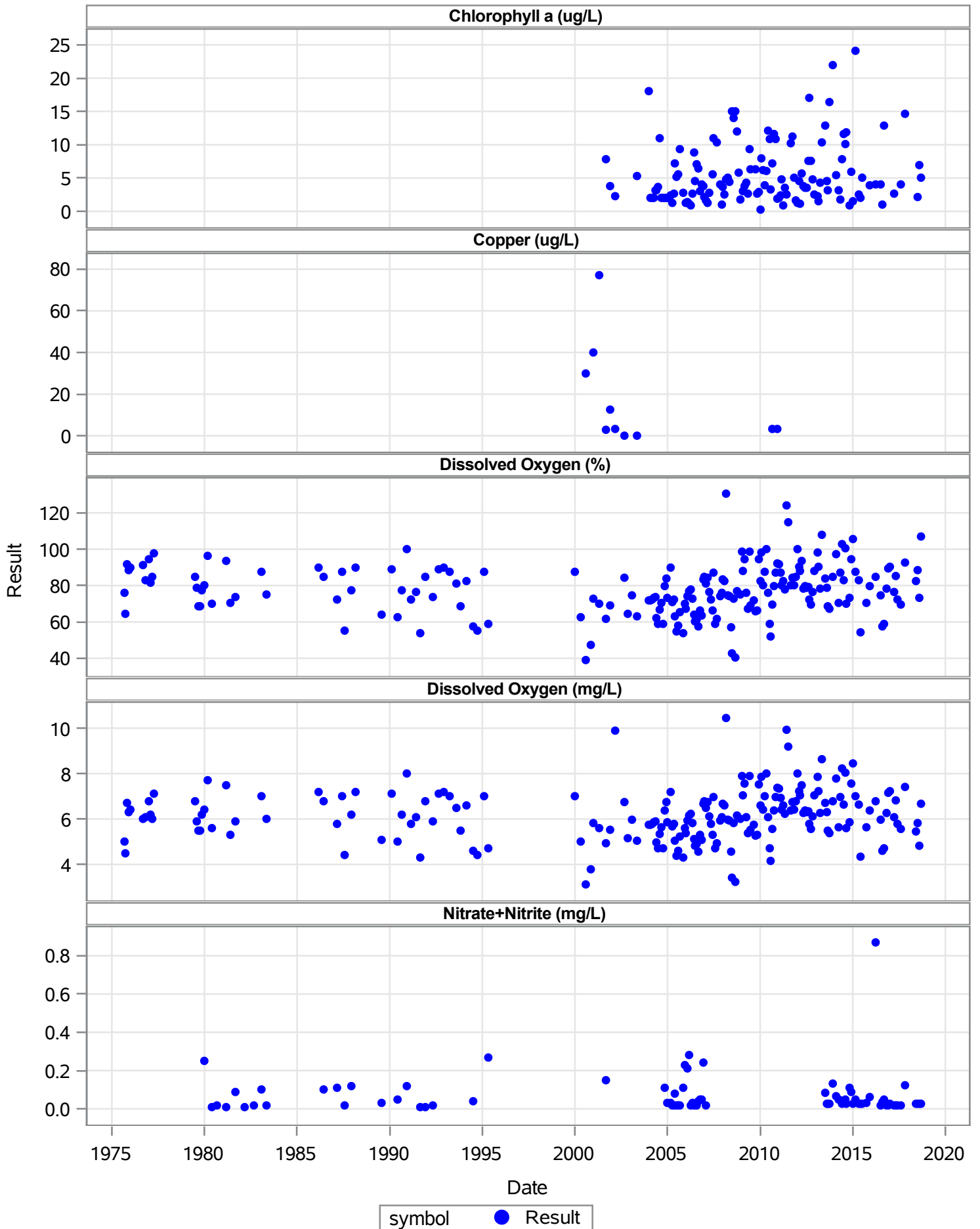
Date

symbol ● Result

21FLPBCH13

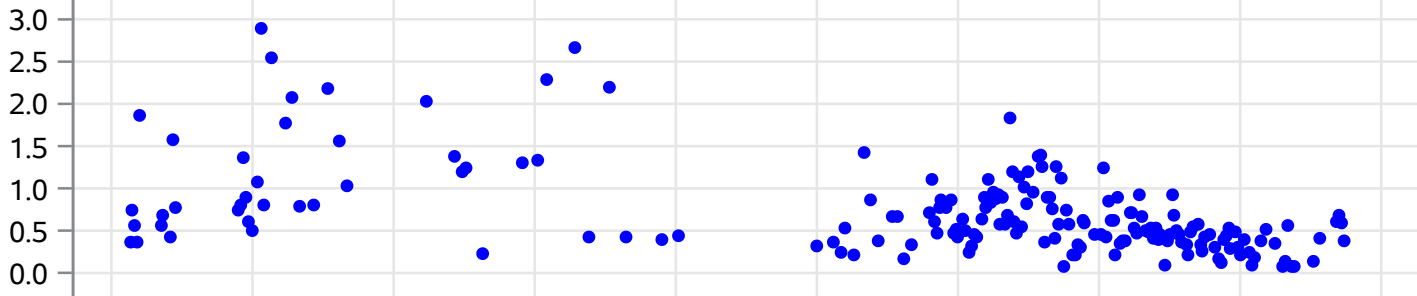
Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
Chlorophyll a (ug/L)	01SEP75	01SEP18	0.25	24.1	5.553	4	134
Copper (ug/L)	01SEP75	01SEP18	0.013	77	17.247	3.4	10
Dissolved Oxygen (mg/L)	01SEP75	01SEP18	3.12	10.45	6.17	6.105	206
Dissolved Oxygen (%)	01SEP75	01SEP18	39	130.6	77.784	77.5	205
Nitrate+Nitrite (mg/L)	01SEP75	01SEP18	0.01	0.87	0.069	0.029	82
Total Kjeldahl Nitrogen (mg/L)	01SEP75	01SEP18	0.07	2.89	0.705	0.562	184
Total Nitrogen (mg/L)	01SEP75	01SEP18	0.08	2.89	0.75	0.59	189
Total Phosphorus (mg/L)	01SEP75	01SEP18	0	0.6	0.07	0.048	179
Total Suspended Solids (mg/L)	01SEP75	01SEP18	4	56	28.25	26.5	16
Zinc (ug/L)	01SEP75	01SEP18	0.01	121	46.159	39.1	7

21FLPBCH13

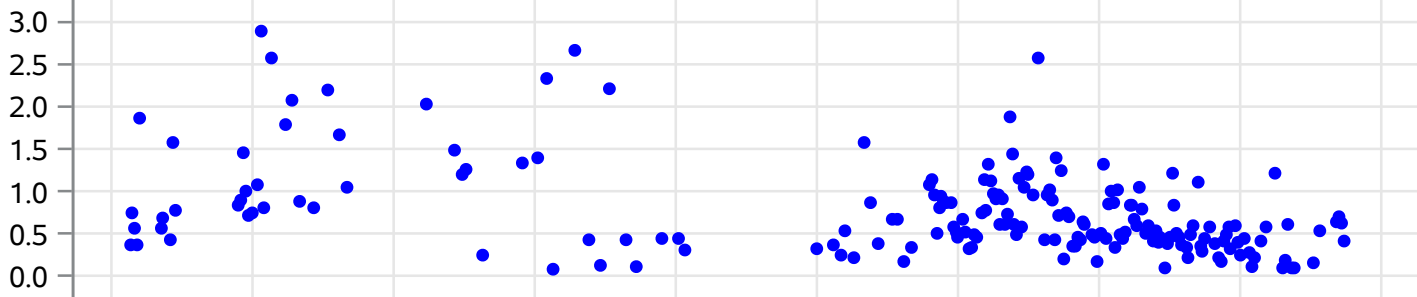


21FLPBCH13

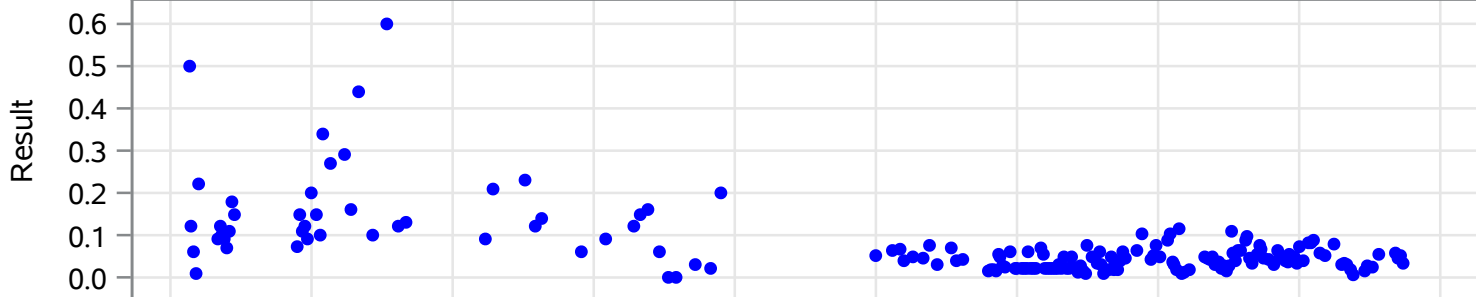
Total Kjeldahl Nitrogen (mg/L)



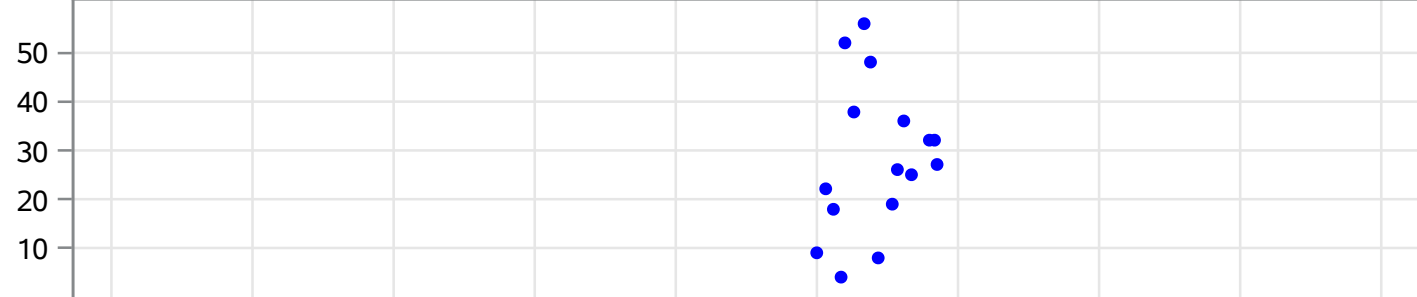
Total Nitrogen (mg/L)



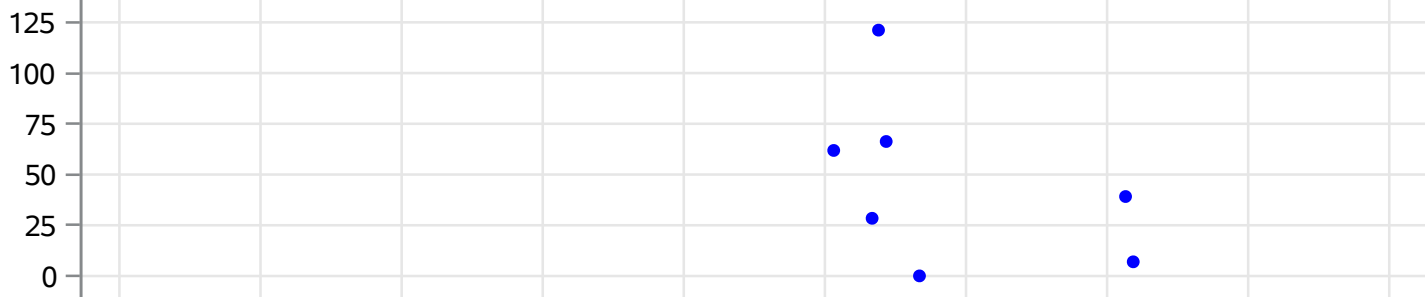
Total Phosphorus (mg/L)



Total Suspended Solids (mg/L)



Zinc (ug/L)



1975 1980 1985 1990 1995 2000 2005 2010 2015 2020

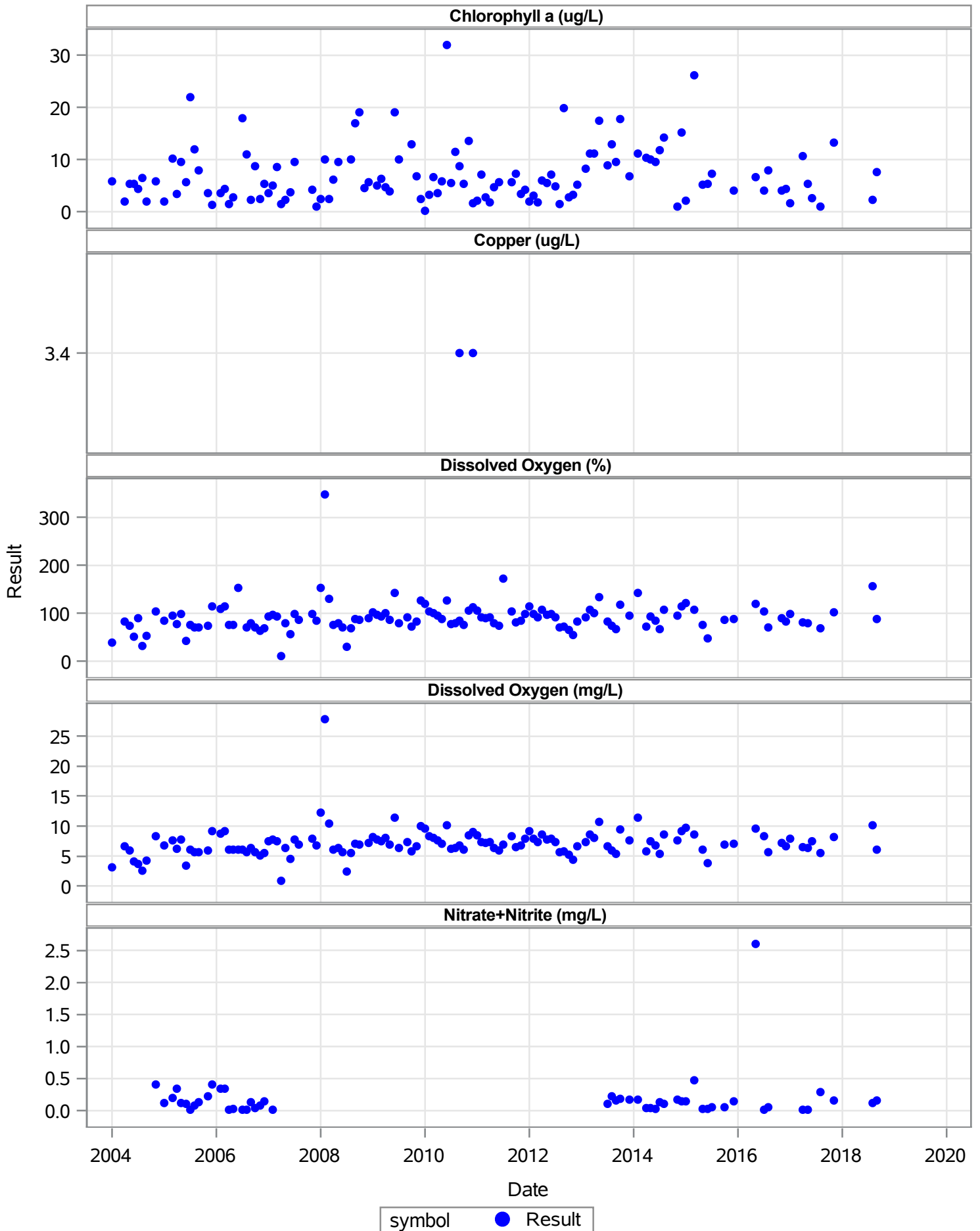
Date

symbol ● Result

21FLPBCH18C

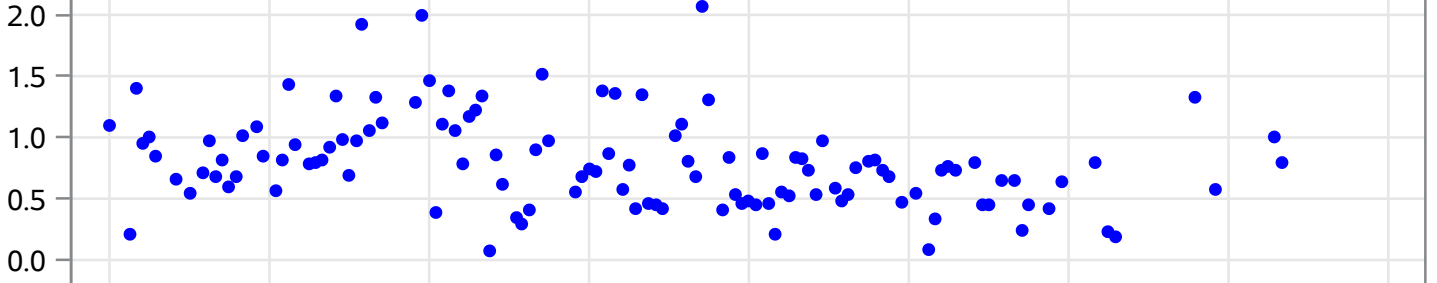
Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
Chlorophyll a (ug/L)	01JAN04	01SEP18	0.25	32	7.03	5.53	126
Copper (ug/L)	01JAN04	01SEP18	3.4	3.4	3.4	3.4	2
Dissolved Oxygen (mg/L)	01JAN04	01SEP18	0.84	27.88	7.169	6.95	132
Dissolved Oxygen (%)	01JAN04	01SEP18	10.5	348.5	91.608	88.3	130
Nitrate+Nitrite (mg/L)	01JAN04	01SEP18	0.0083	2.6	0.184	0.12	51
Total Kjeldahl Nitrogen (mg/L)	01JAN04	01SEP18	0.076	2.07	0.799	0.768	120
Total Nitrogen (mg/L)	01JAN04	01SEP18	0.132	2.323	0.916	0.89	117
Total Phosphorus (mg/L)	01JAN04	01SEP18	0.0055	0.378	0.08	0.072	124
Total Suspended Solids (mg/L)	01JAN04	01SEP18	42	42	42	42	2
Zinc (ug/L)	01JAN04	01SEP18	6.7	45.4	26.05	26.05	2

21FLPBCH18C

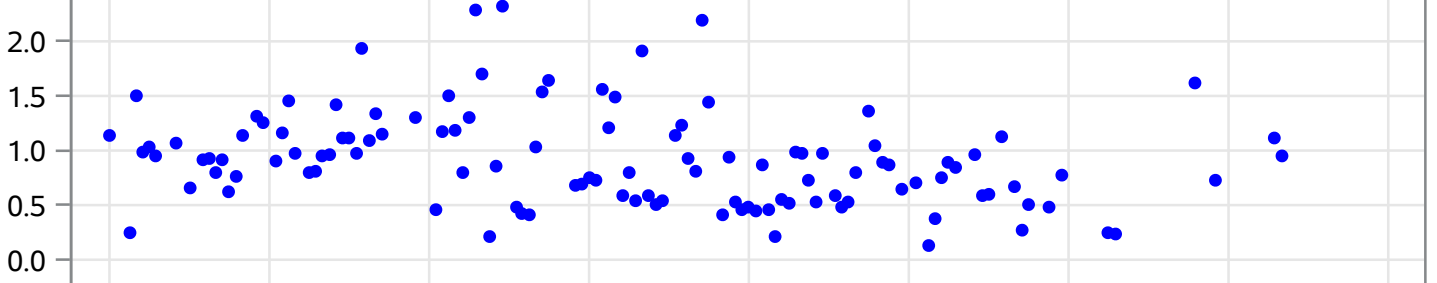


21FLPBCH18C

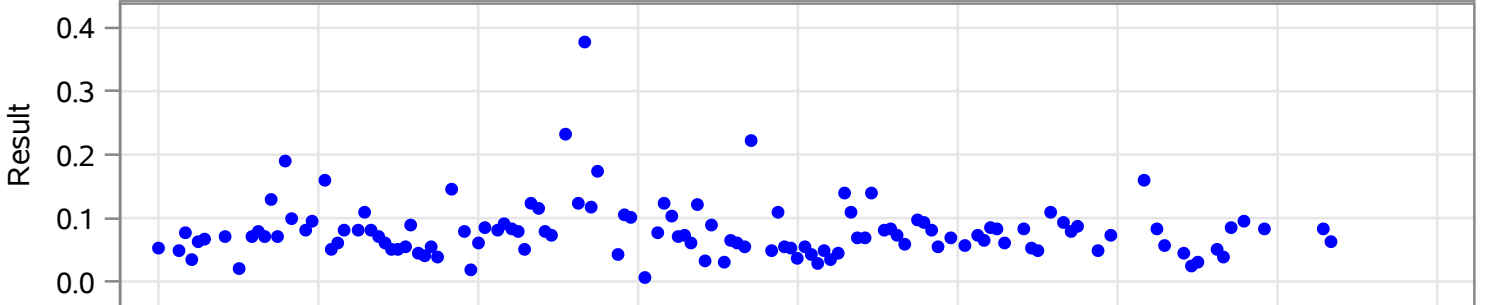
Total Kjeldahl Nitrogen (mg/L)



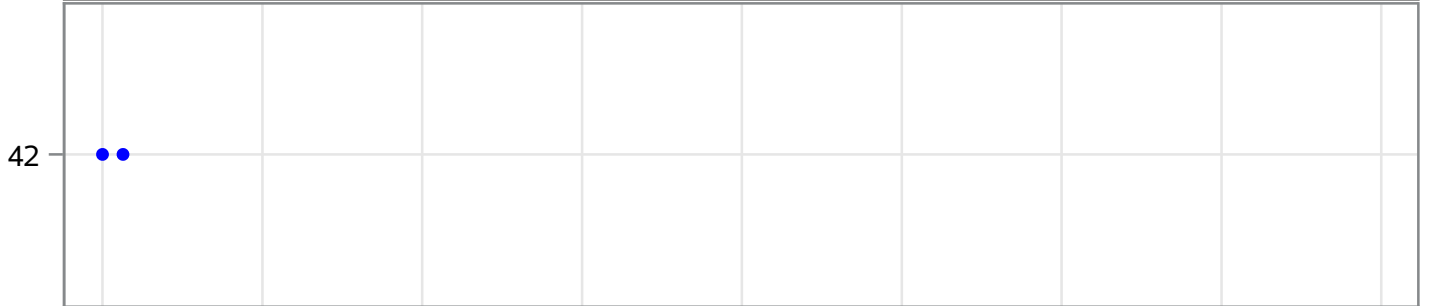
Total Nitrogen (mg/L)



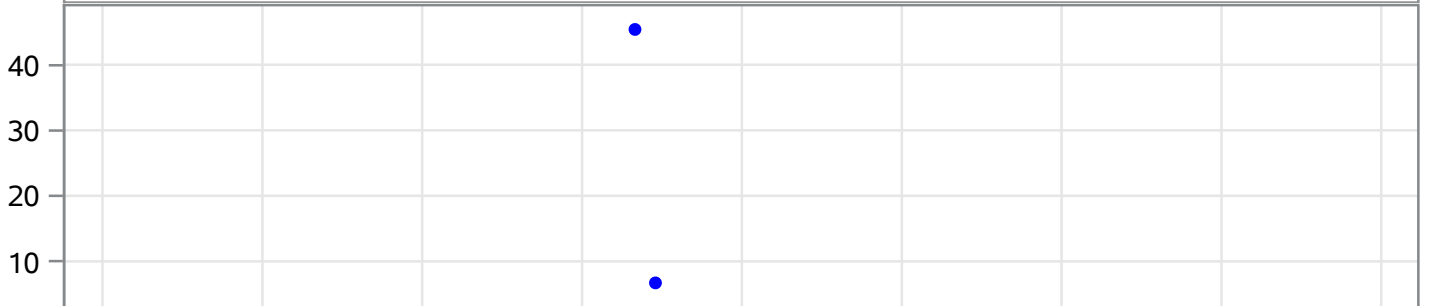
Total Phosphorus (mg/L)



Total Suspended Solids (mg/L)



Zinc (ug/L)



2004 2006 2008 2010 2012 2014 2016 2018 2020

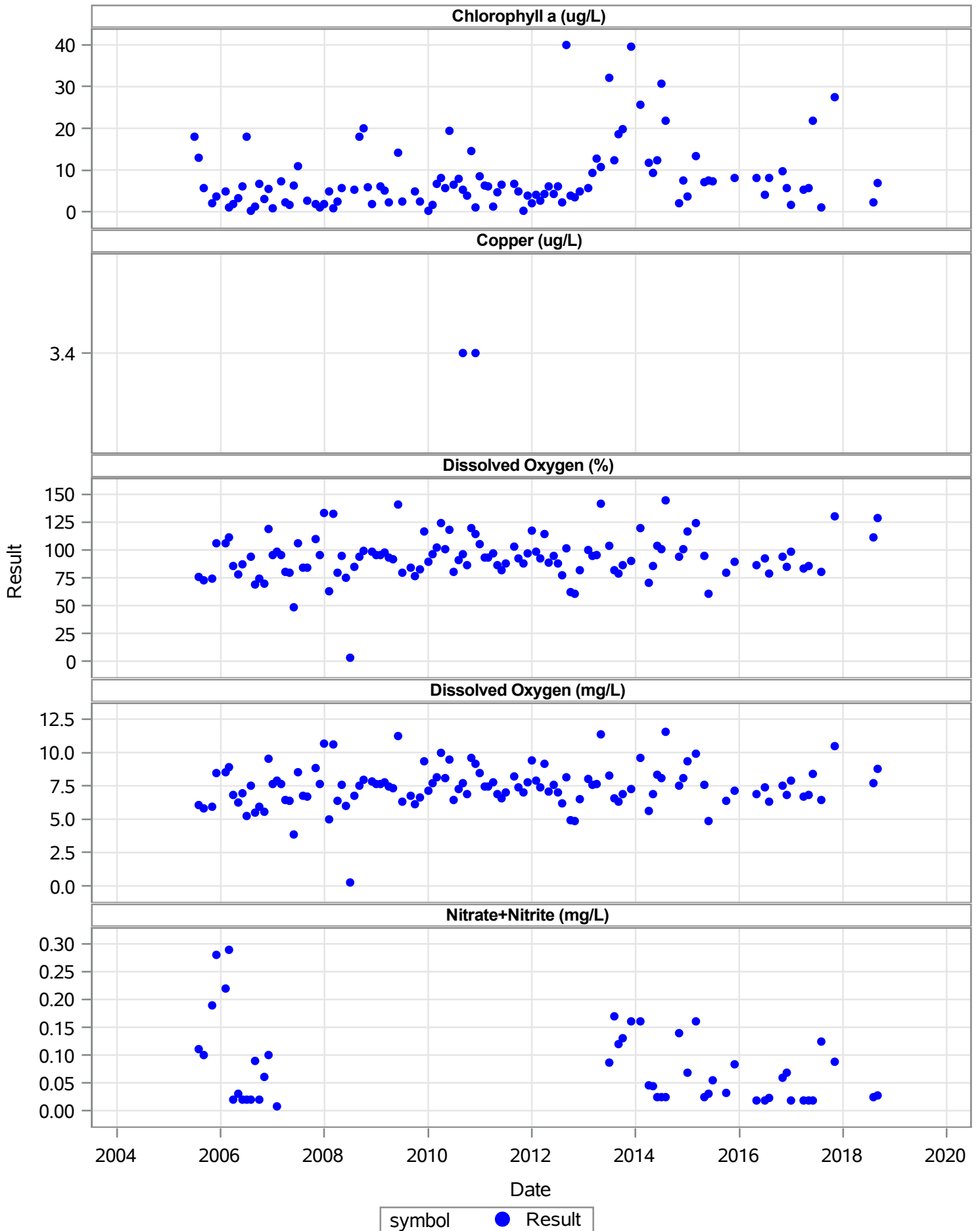
Date

symbol ● Result

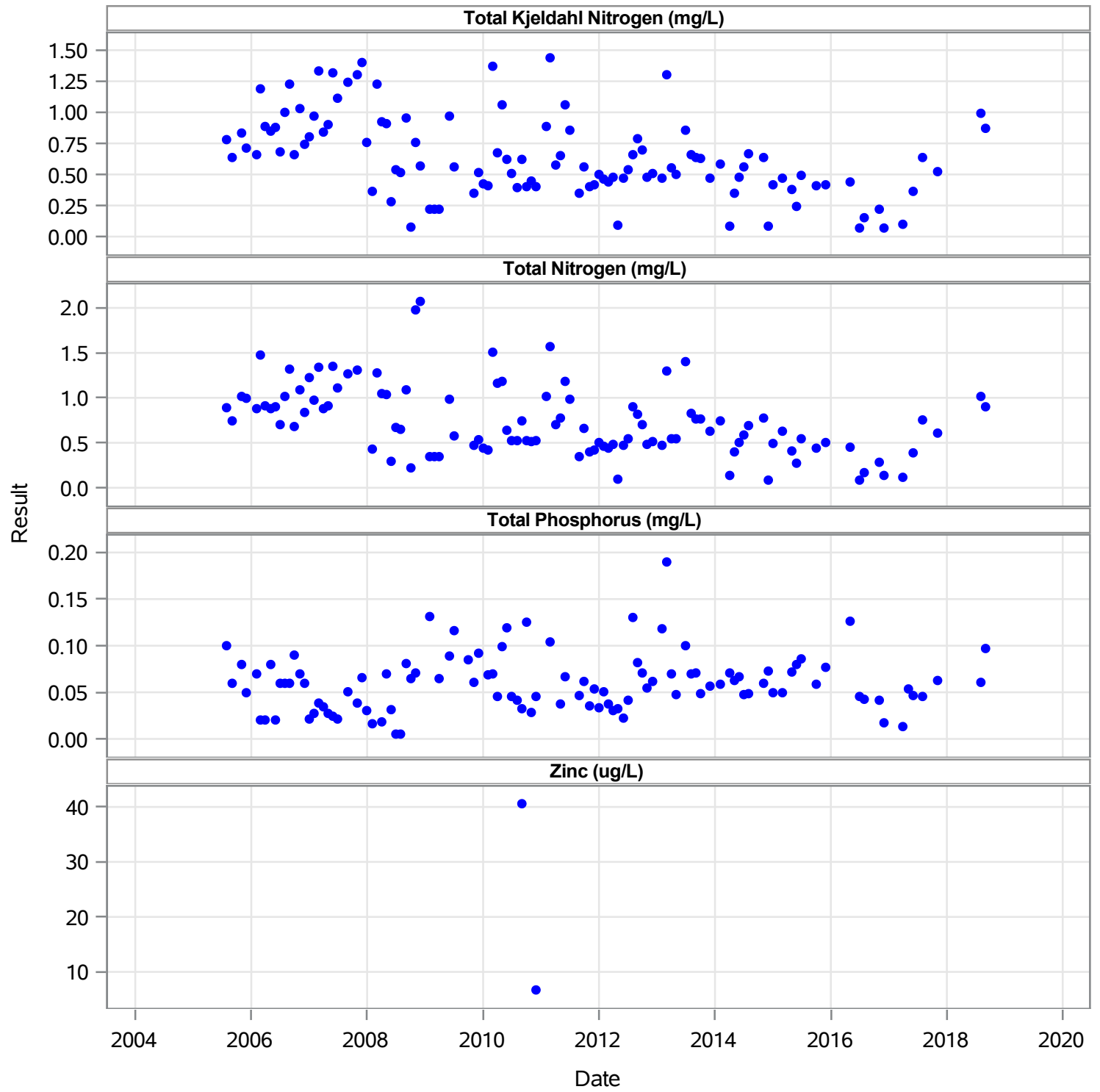
21FLPBCH18D

Analyte	Start Date	End Date	Minimum Value	Maximum Value	Mean	Median	Number of obs
Chlorophyll a (ug/L)	01JUL05	01SEP18	0.25	39.9	7.882	5.7	112
Copper (ug/L)	01JUL05	01SEP18	3.4	3.4	3.4	3.4	2
Dissolved Oxygen (mg/L)	01JUL05	01SEP18	0.25	11.55	7.448	7.48	119
Dissolved Oxygen (%)	01JUL05	01SEP18	3.1	144.4	93.529	93.5	117
Nitrate+Nitrite (mg/L)	01JUL05	01SEP18	0.0083	0.29	0.077	0.051	48
Total Kjeldahl Nitrogen (mg/L)	01JUL05	01SEP18	0.07	1.44	0.64	0.575	113
Total Nitrogen (mg/L)	01JUL05	01SEP18	0.086	2.073	0.735	0.668	111
Total Phosphorus (mg/L)	01JUL05	01SEP18	0.005	0.19	0.06	0.06	108
Zinc (ug/L)	01JUL05	01SEP18	6.7	40.6	23.65	23.65	2

21FLPBCH18D



21FLPBCH18D

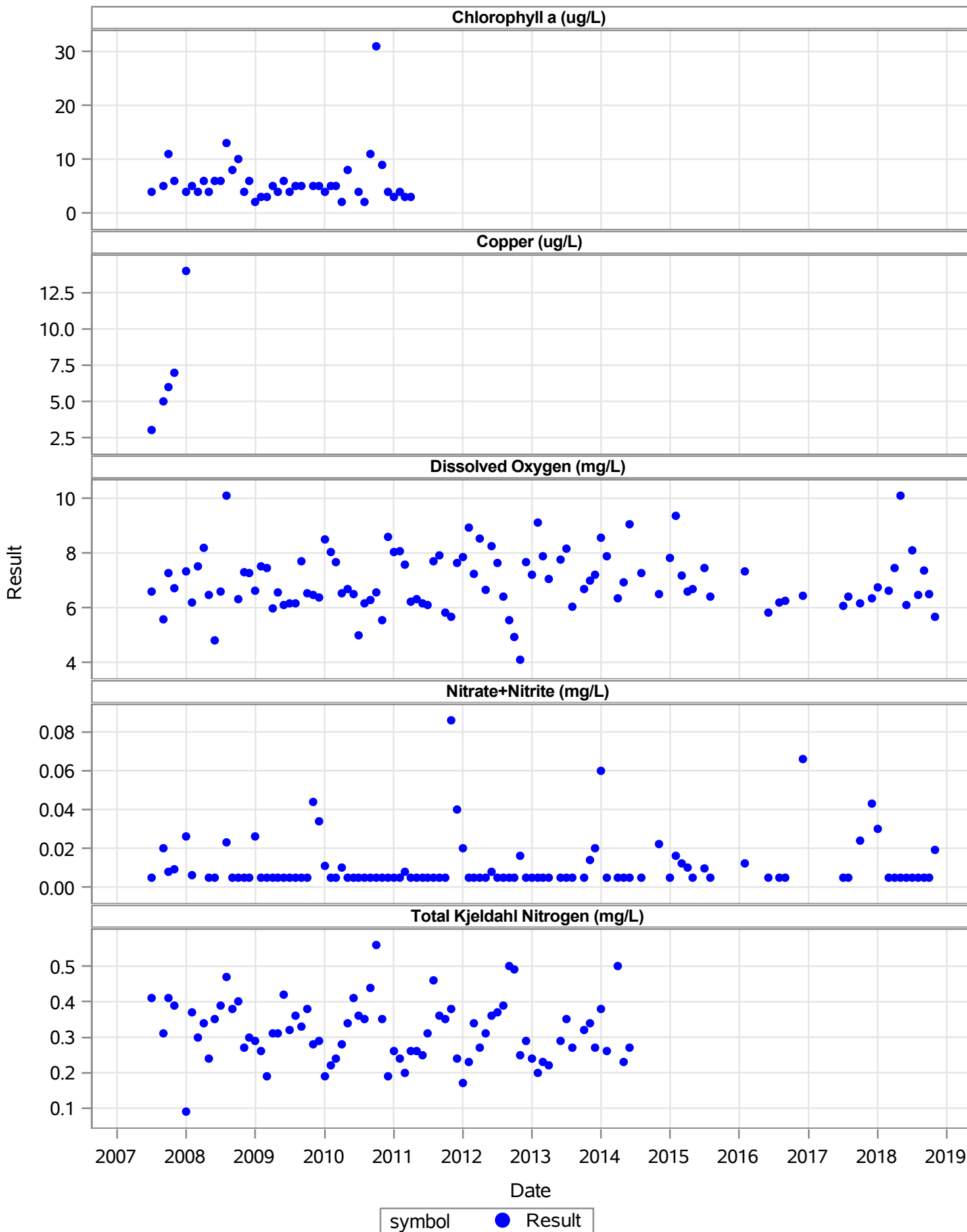


symbol ● Result

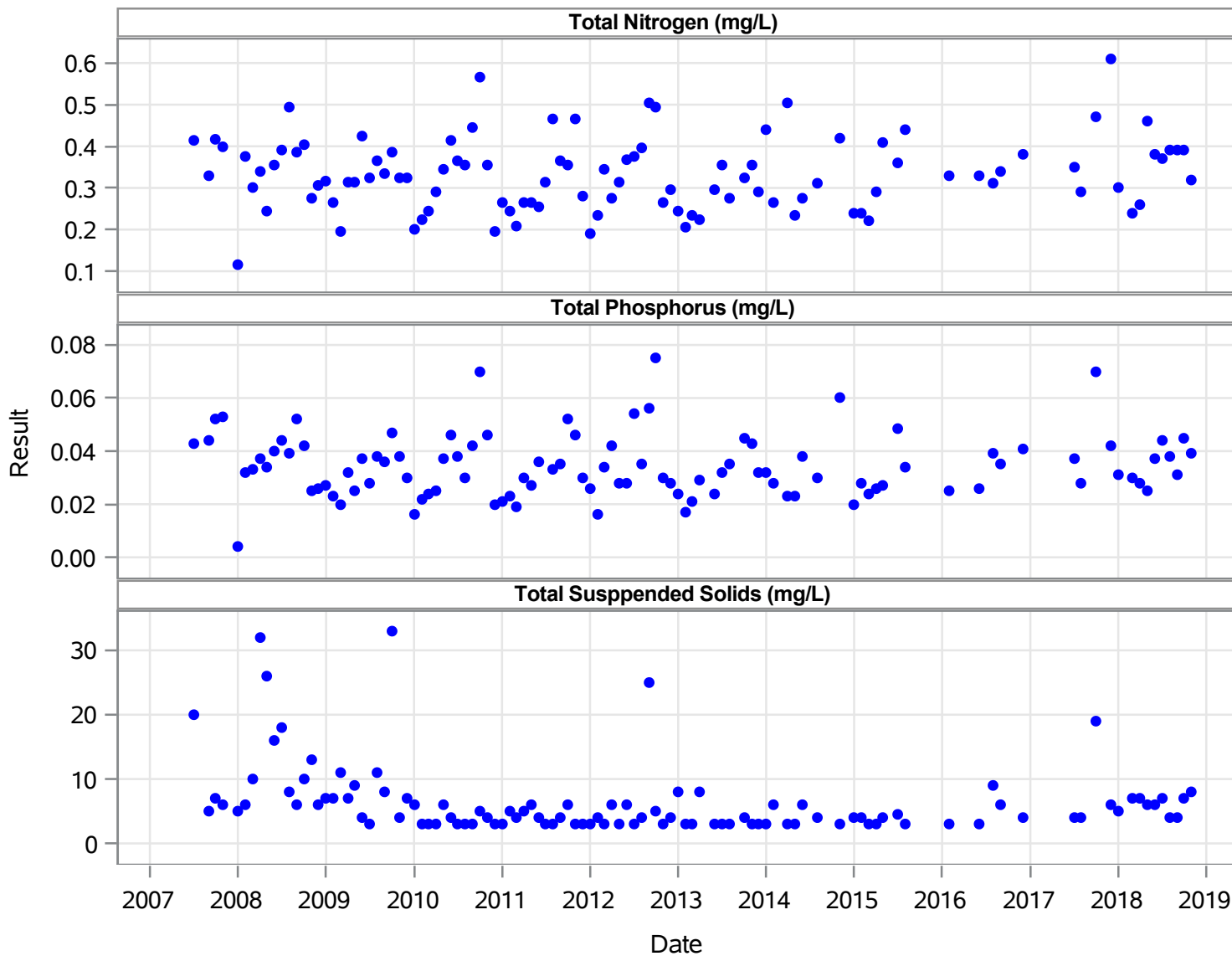
21FLSFWMLWL-1

Analyte	Start Date	End Date	Minimum Value	Maximum Value	Mean	Median	Number of obs
Chlorophyll a (ug/L)	01JUL07	01NOV18	2	31	5.881	5	42
Copper (ug/L)	01JUL07	01NOV18	3	14	7	6	5
Dissolved Oxygen (mg/L)	01JUL07	01NOV18	4.11	10.1	6.972	6.675	106
Nitrate+Nitrite (mg/L)	01JUL07	01NOV18	0.005	0.086	0.011	0.005	104
Total Kjeldahl Nitrogen (mg/L)	01JUL07	01NOV18	0.09	0.56	0.316	0.31	79
Total Nitrogen (mg/L)	01JUL07	01NOV18	0.116	0.61	0.333	0.325	107
Total Phosphorus (mg/L)	01JUL07	01NOV18	0.004	0.075	0.034	0.032	106
Total Suspended Solids (mg/L)	01JUL07	01NOV18	3	33	6.379	4	107

21FLSFWMLWL-1



21FLSFWMLWL-1

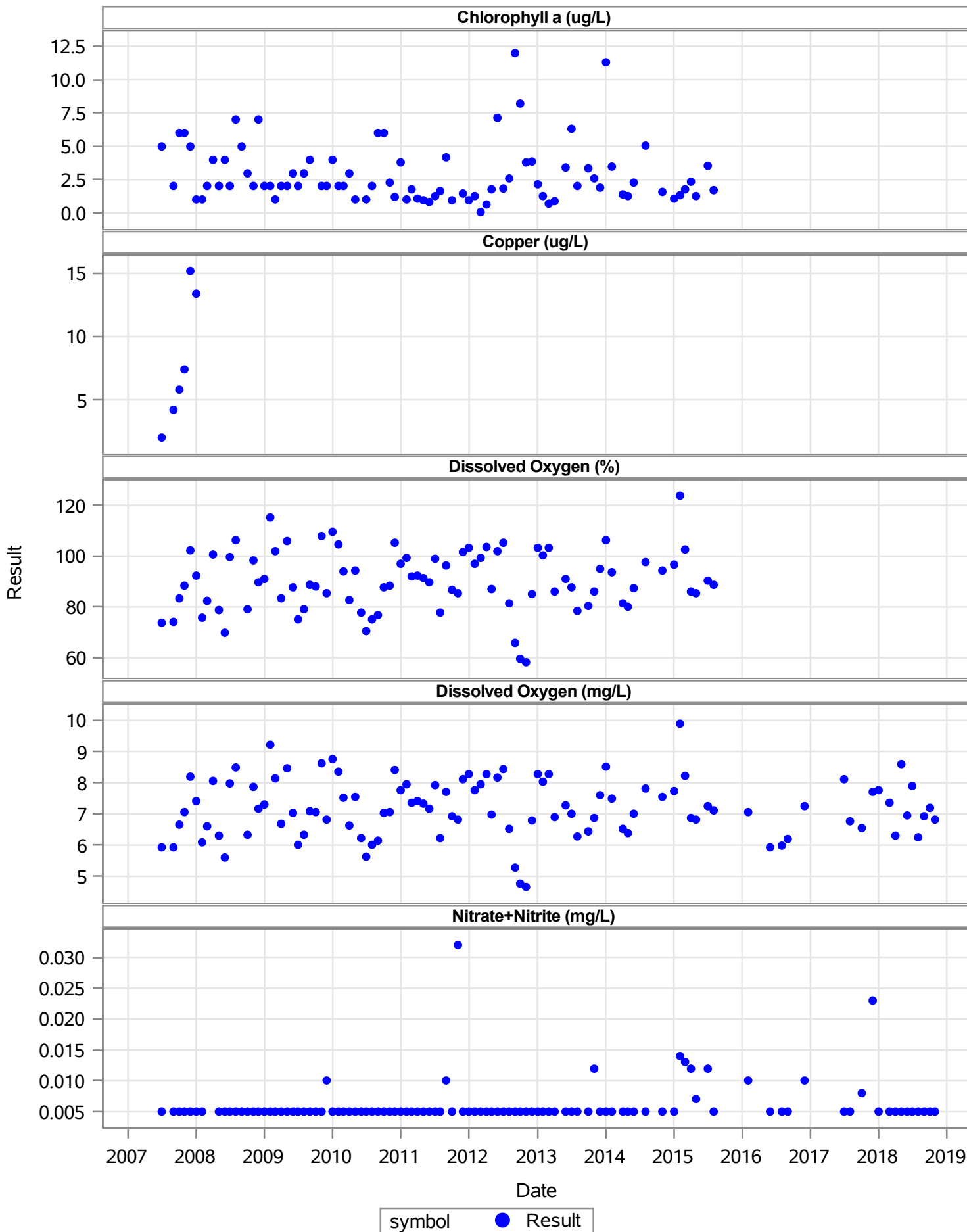


symbol ● Result

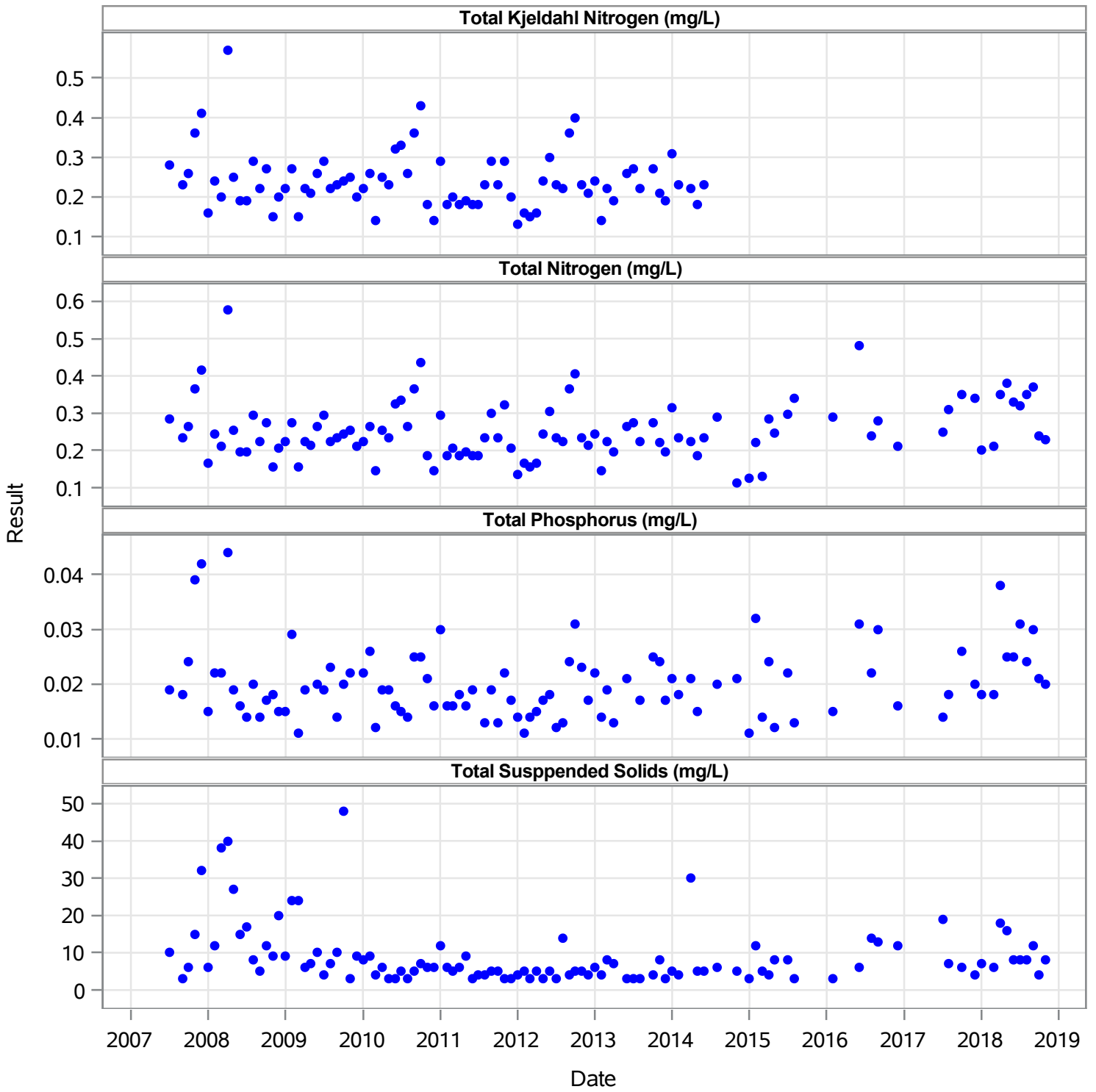
21FLSFWMLWL-4

Analyte	Start Date	End Date	Minimum Value	Maximum Value	Mean	Median	Number of obs
Chlorophyll a (ug/L)	01JUL07	01NOV18	0.053	12	2.867	2	86
Copper (ug/L)	01JUL07	01NOV18	2	15.2	8	6.6	6
Dissolved Oxygen (mg/L)	01JUL07	01NOV18	4.66	9.9	7.197	7.11	107
Dissolved Oxygen (%)	01JUL07	01NOV18	58.3	123.8	90.41	89.8	88
Nitrate+Nitrite (mg/L)	01JUL07	01NOV18	0.005	0.032	0.006	0.005	106
Total Kjeldahl Nitrogen (mg/L)	01JUL07	01NOV18	0.13	0.57	0.24	0.23	80
Total Nitrogen (mg/L)	01JUL07	01NOV18	0.112	0.576	0.254	0.235	108
Total Phosphorus (mg/L)	01JUL07	01NOV18	0.011	0.044	0.02	0.019	103
Total Suspended Solids (mg/L)	01JUL07	01NOV18	3	48	8.861	6	108

21FLSFWMLWL-4



21FLSFWMLWL-4

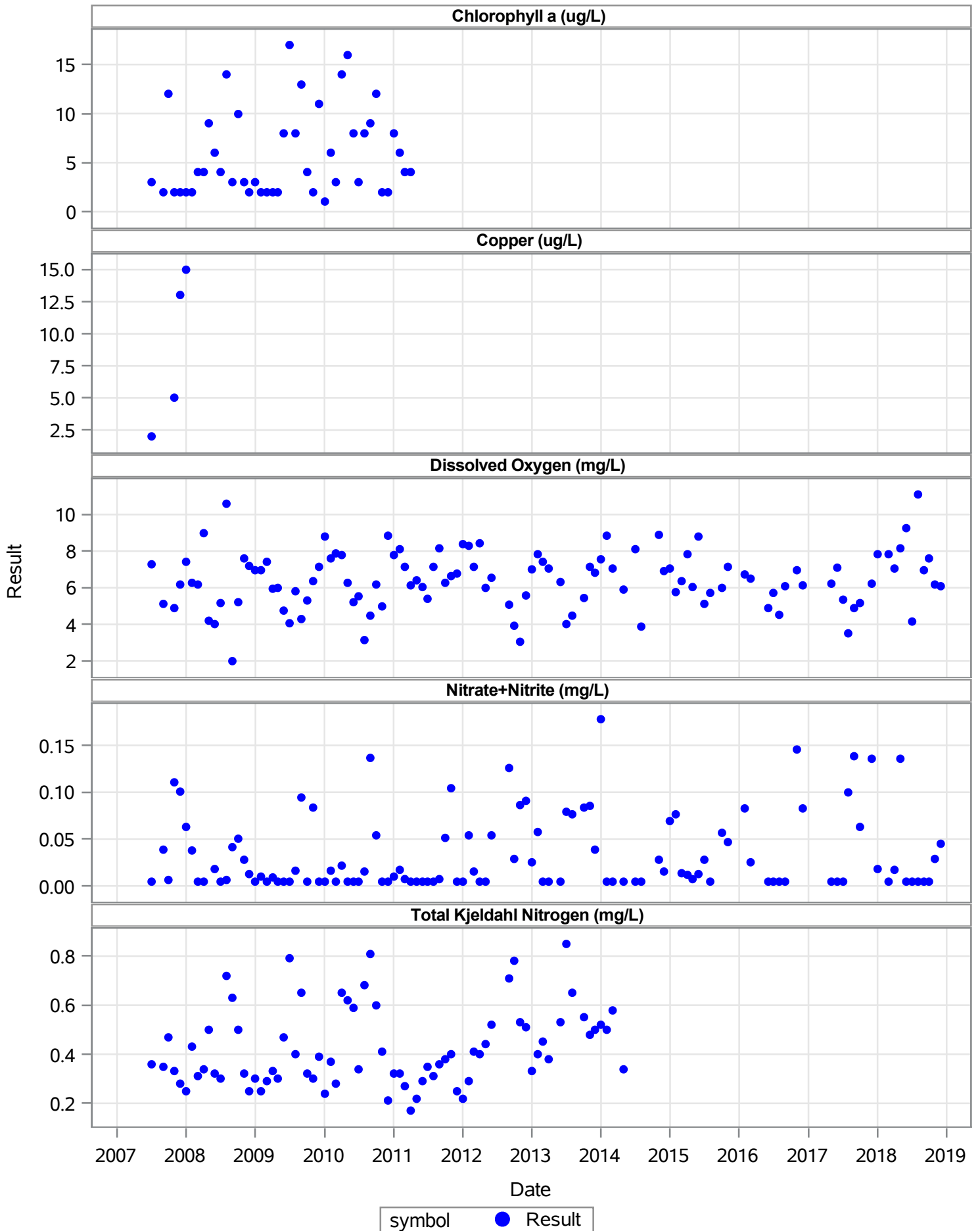


symbol ● Result

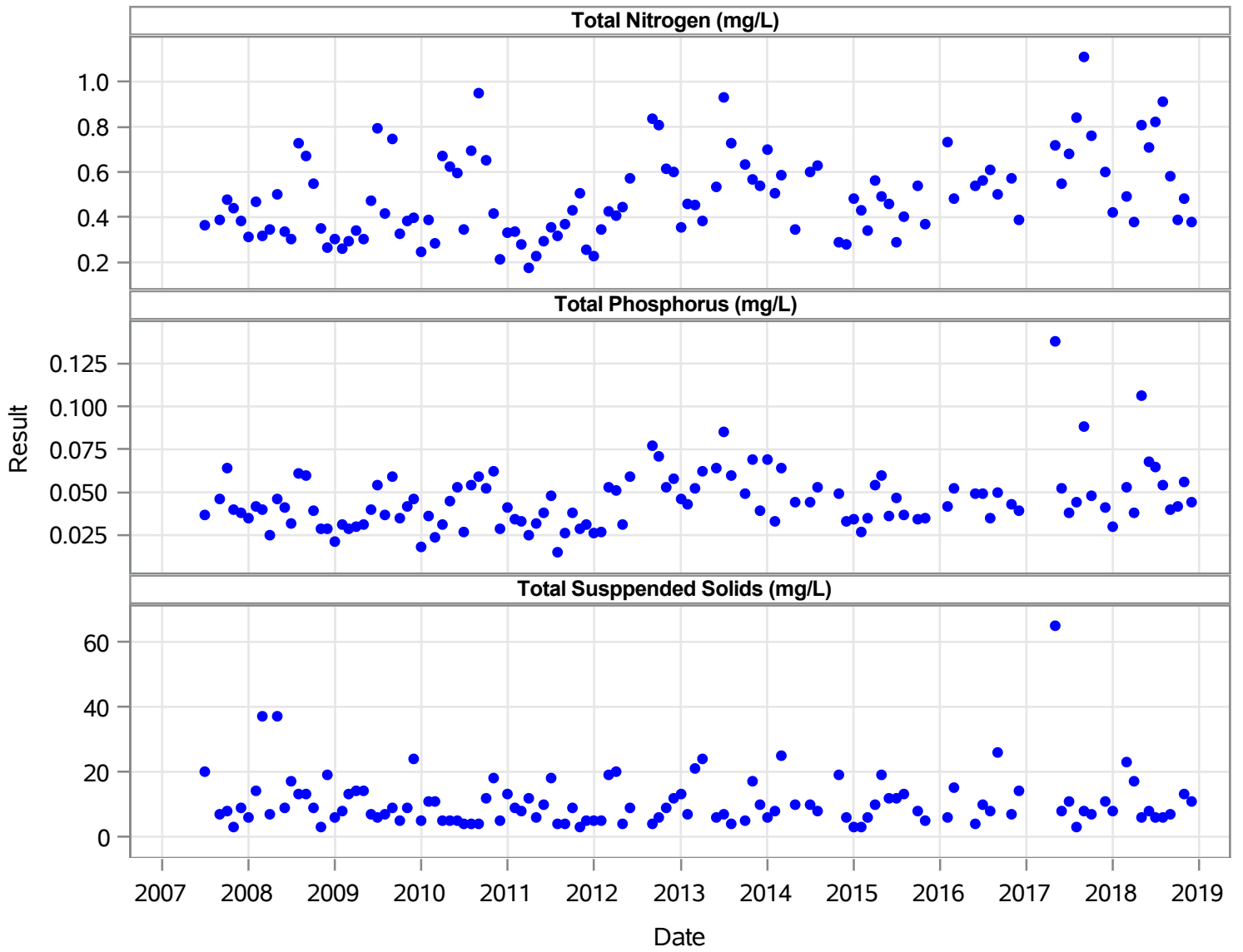
21FLSFWMLWL-11

Analyte	Start Date	End Date	Minimum Value	Maximum Value	Mean	Median	Number of obs
Chlorophyll a (ug/L)	01JUL07	01DEC18	1	17	5.867	4	45
Copper (ug/L)	01JUL07	01DEC18	2	15	8.75	9	4
Dissolved Oxygen (mg/L)	01JUL07	01DEC18	1.99	11.1	6.423	6.33	116
Nitrate+Nitrite (mg/L)	01JUL07	01DEC18	0.005	0.178	0.033	0.013	116
Total Kjeldahl Nitrogen (mg/L)	01JUL07	01DEC18	0.17	0.85	0.425	0.38	77
Total Nitrogen (mg/L)	01JUL07	01DEC18	0.175	1.11	0.49	0.458	117
Total Phosphorus (mg/L)	01JUL07	01DEC18	0.015	0.138	0.045	0.042	117
Total Suspended Solids (mg/L)	01JUL07	01DEC18	3	65	10.698	8	116

21FLSFWMLWL-11



21FLSFWMLWL-11

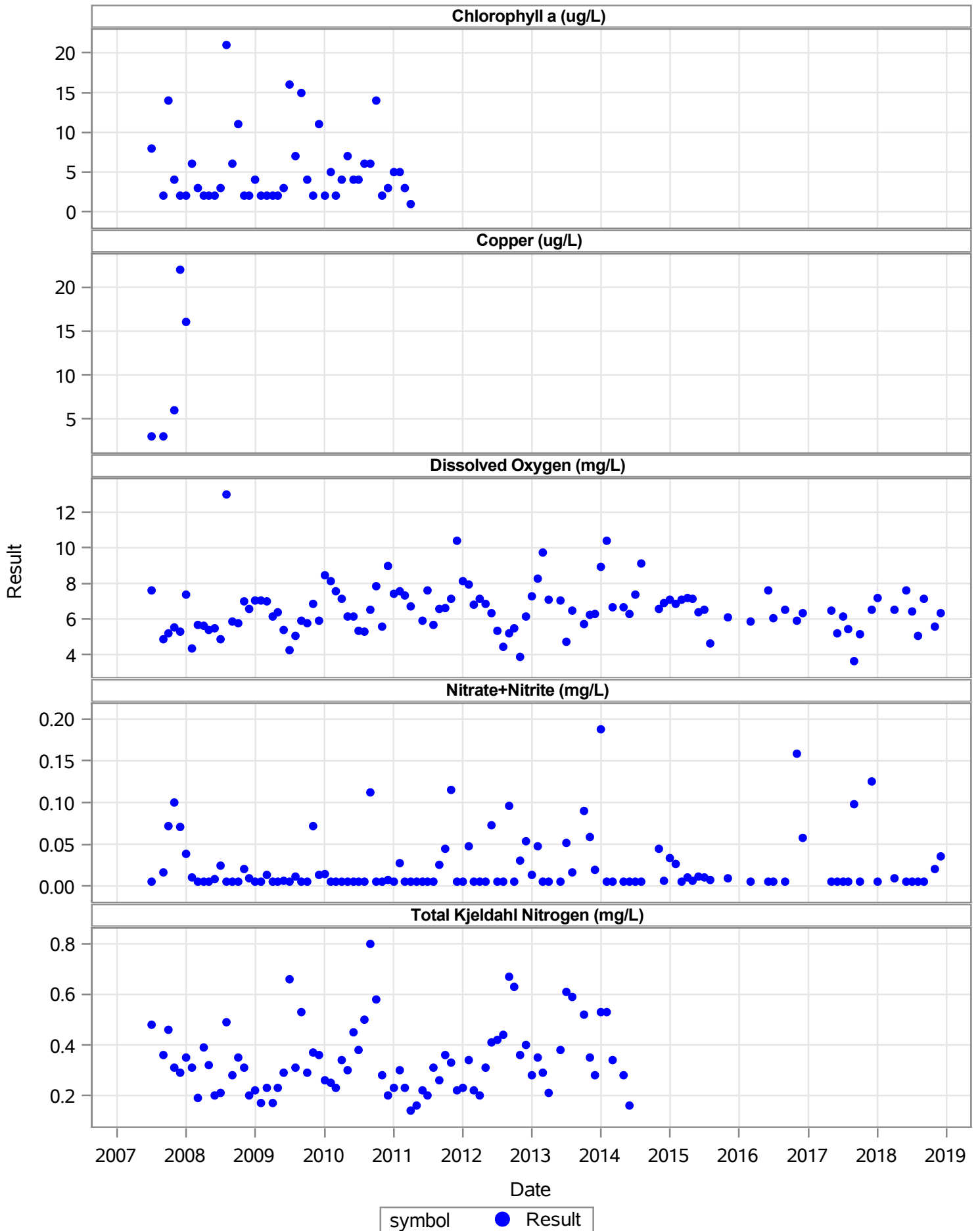


symbol ● Result

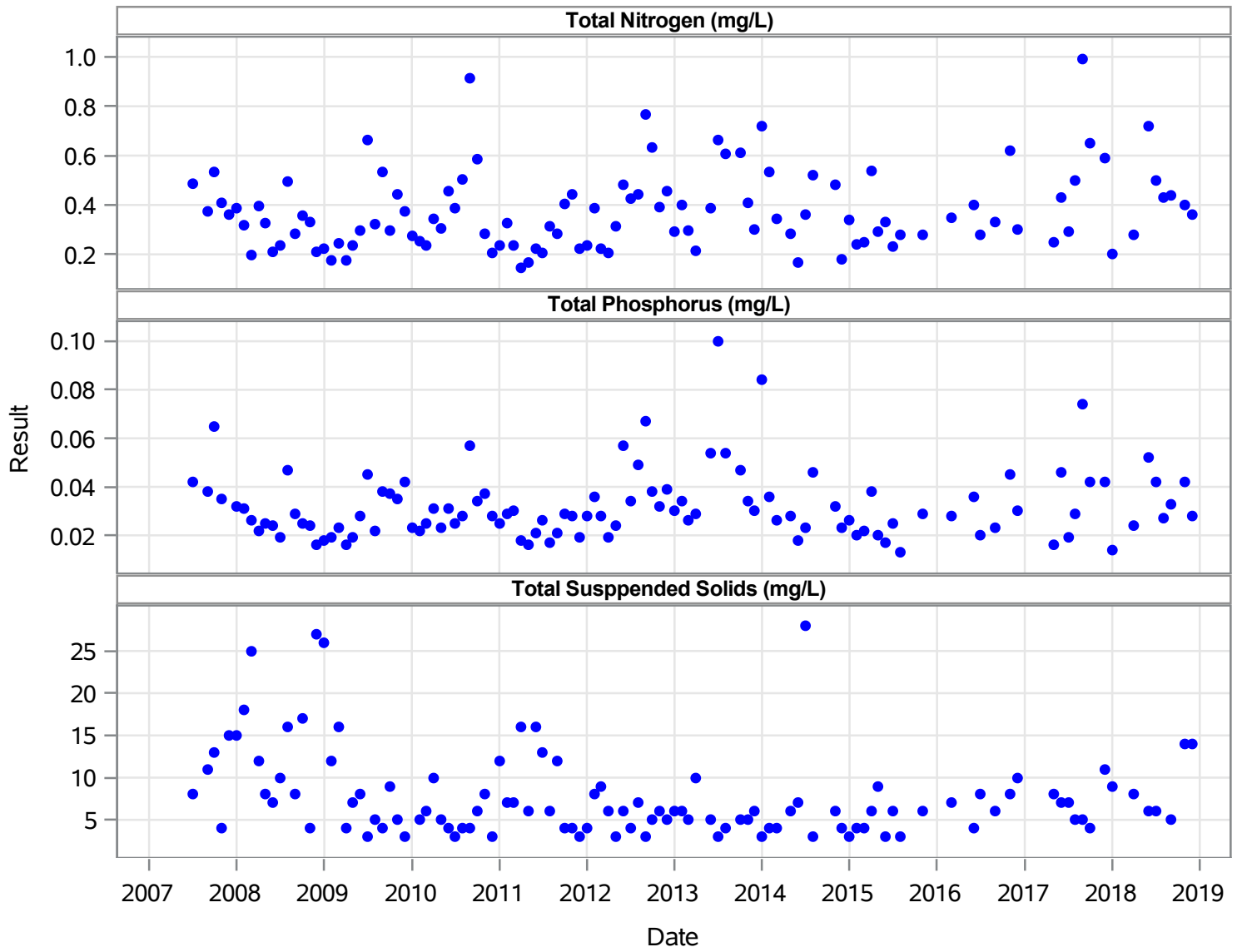
21FLSFWMLWL-13

Analyte	Start Date	End Date	Minimum Value	Maximum Value	Mean	Median	Number of obs
Chlorophyll a (ug/L)	01JUL07	01DEC18	1	21	5.222	4	45
Copper (ug/L)	01JUL07	01DEC18	3	22	10	6	5
Dissolved Oxygen (mg/L)	01JUL07	01DEC18	3.63	13	6.538	6.47	113
Nitrate+Nitrite (mg/L)	01JUL07	01DEC18	0.005	0.188	0.023	0.005	114
Total Kjeldahl Nitrogen (mg/L)	01JUL07	01DEC18	0.14	0.8	0.34	0.31	80
Total Nitrogen (mg/L)	01JUL07	01DEC18	0.145	0.99	0.374	0.335	114
Total Phosphorus (mg/L)	01JUL07	01DEC18	0.013	0.1	0.032	0.028	113
Total Suspended Solids (mg/L)	01JUL07	01DEC18	3	28	7.732	6	112

21FLSFWMLWL-13



21FLSFWMLWL-13

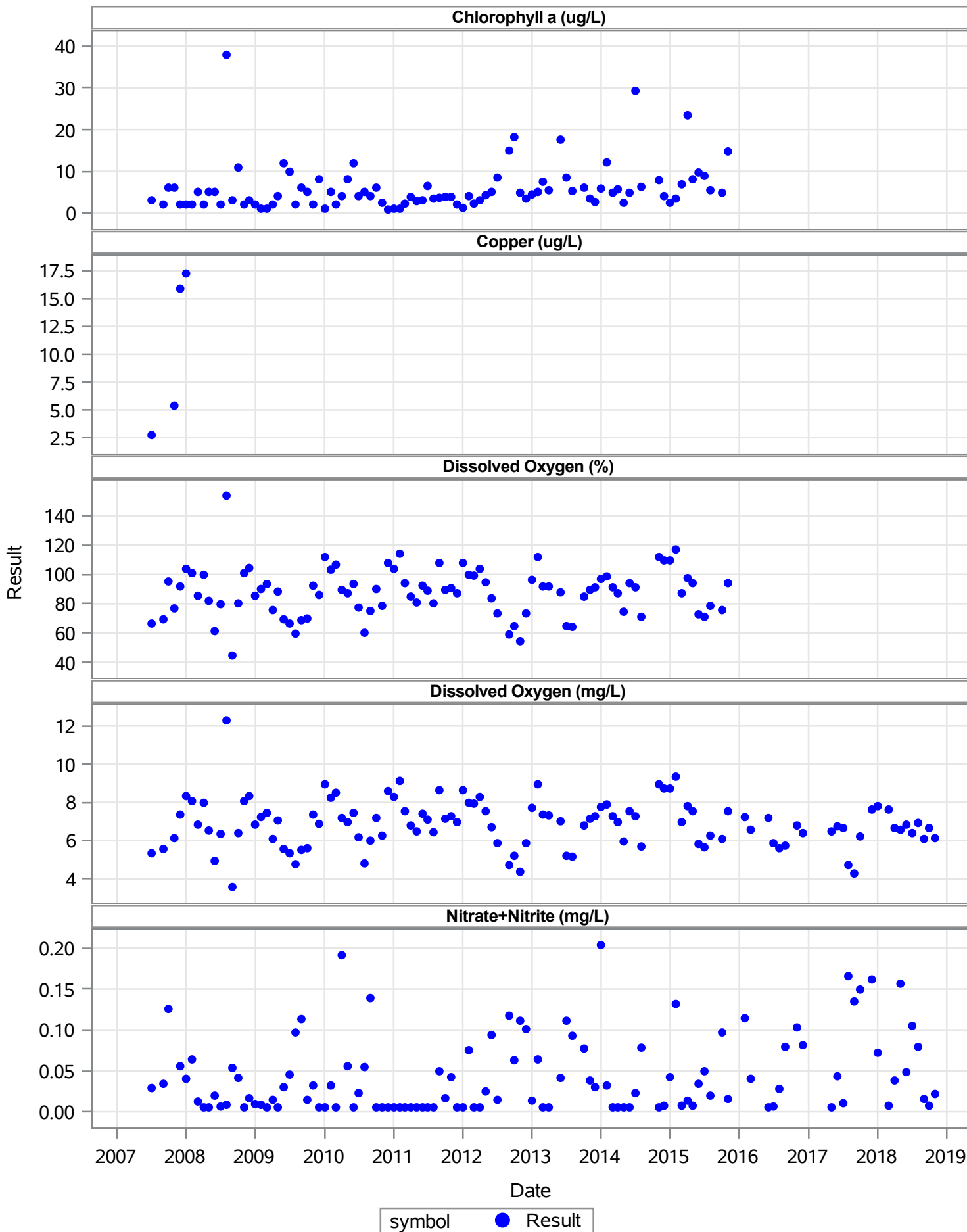


symbol ● Result

21FLSFWMLWL-8

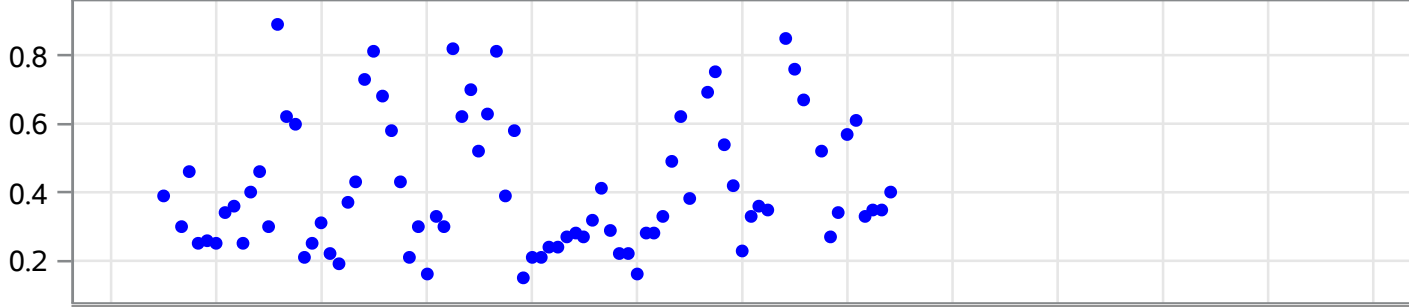
Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
Chlorophyll a (ug/L)	01JUL07	01NOV18	0.9	38	5.878	4.305	94
Copper (ug/L)	01JUL07	01NOV18	2.7	17.3	10.325	10.65	4
Dissolved Oxygen (mg/L)	01JUL07	01NOV18	3.57	12.3	6.896	6.945	118
Dissolved Oxygen (%)	01JUL07	01NOV18	44.6	153.8	87.718	89.35	94
Nitrate+Nitrite (mg/L)	01JUL07	01NOV18	0.005	0.204	0.044	0.024	118
Total Kjeldahl Nitrogen (mg/L)	01JUL07	01NOV18	0.15	0.89	0.416	0.35	80
Total Nitrogen (mg/L)	01JUL07	01NOV18	0.155	1.35	0.504	0.43	119
Total Phosphorus (mg/L)	01JUL07	01NOV18	0.014	0.113	0.048	0.044	118
Total Susppended Solids (mg/L)	01JUL07	01NOV18	3	37	10.568	8	118

21FLSFWMLWL-8

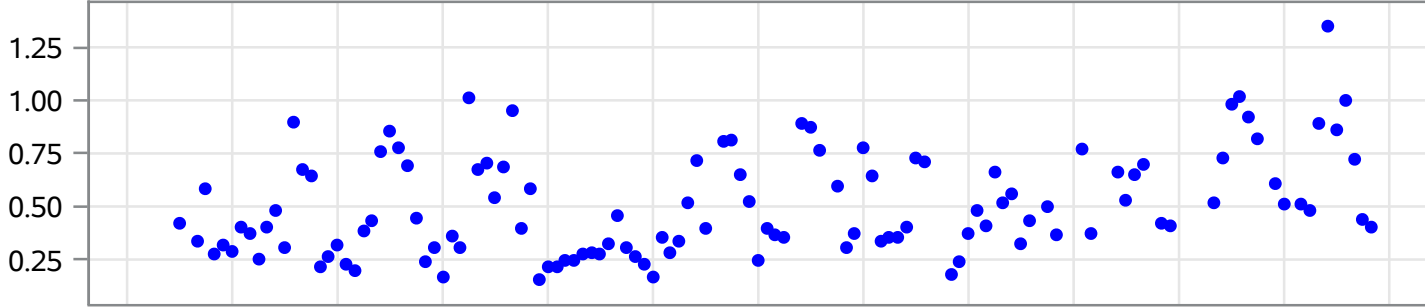


21FLSFWMLWL-8

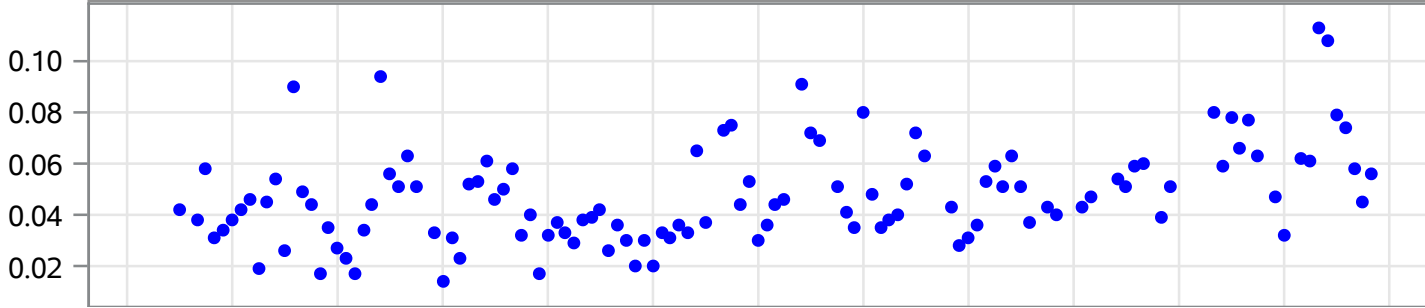
Total Kjeldahl Nitrogen (mg/L)



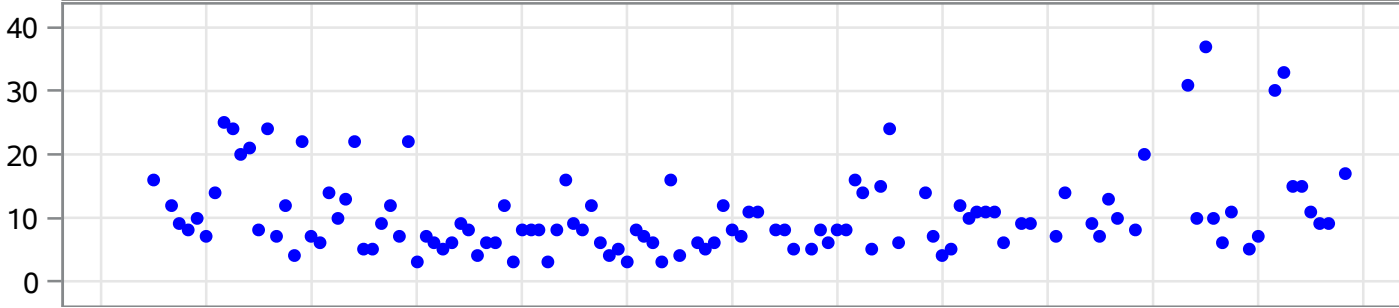
Total Nitrogen (mg/L)



Total Phosphorus (mg/L)



Total Suspended Solids (mg/L)



Result

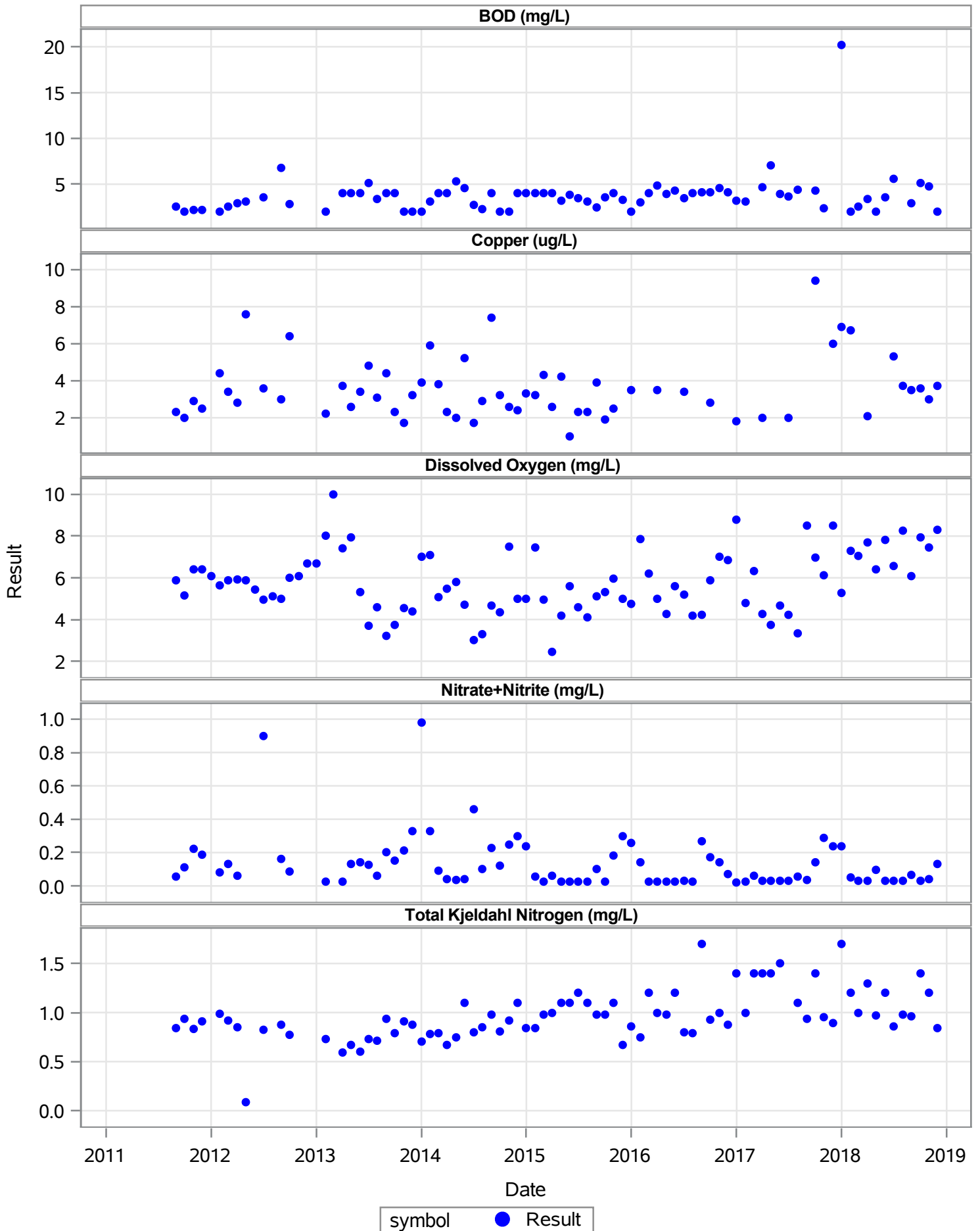
Date

symbol ● Result

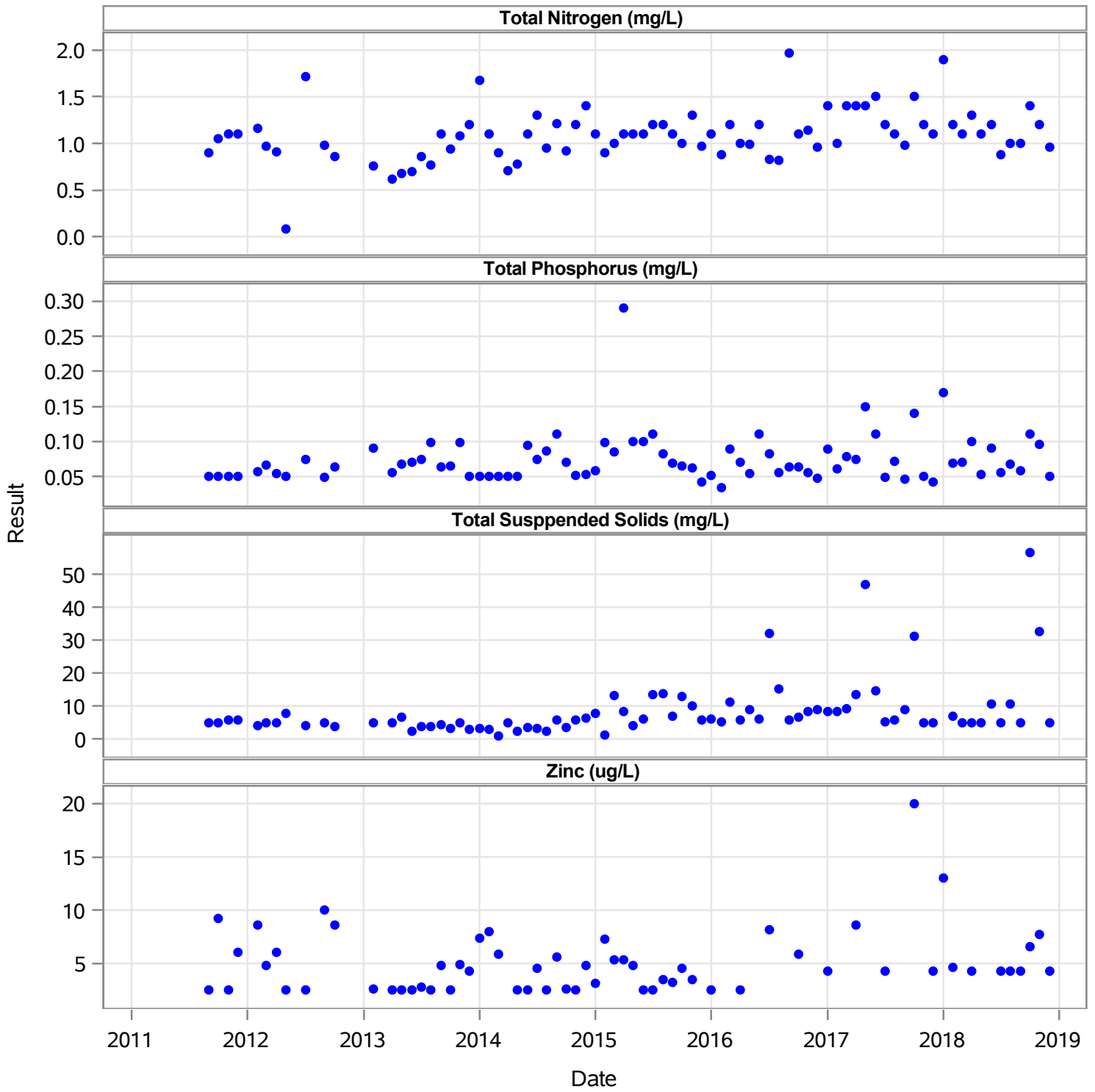
C17_CANAL_A

Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
BOD (mg/L)	01SEP11	01DEC18	2	20.2	3.738	3.6	77
Copper (ug/L)	01SEP11	01DEC18	0.99	9.4	3.548	3.2	62
Dissolved Oxygen (mg/L)	01SEP11	01DEC18	2.46	9.98	5.773	5.618	88
Nitrate+Nitrite (mg/L)	01SEP11	01DEC18	0.02	0.98	0.131	0.071	80
Total Kjeldahl Nitrogen (mg/L)	01SEP11	01DEC18	0.086	1.7	0.97	0.94	80
Total Nitrogen (mg/L)	01SEP11	01DEC18	0.086	1.97	1.092	1.1	81
Total Phosphorus (mg/L)	01SEP11	01DEC18	0.034	0.29	0.074	0.065	81
Total Suspended Solids (mg/L)	01SEP11	01DEC18	1	56.6	8.406	5.6	80
Zinc (ug/L)	01SEP11	01DEC18	2.5	20	4.974	4.3	61

C17_CANAL_A



C17_CANAL_A

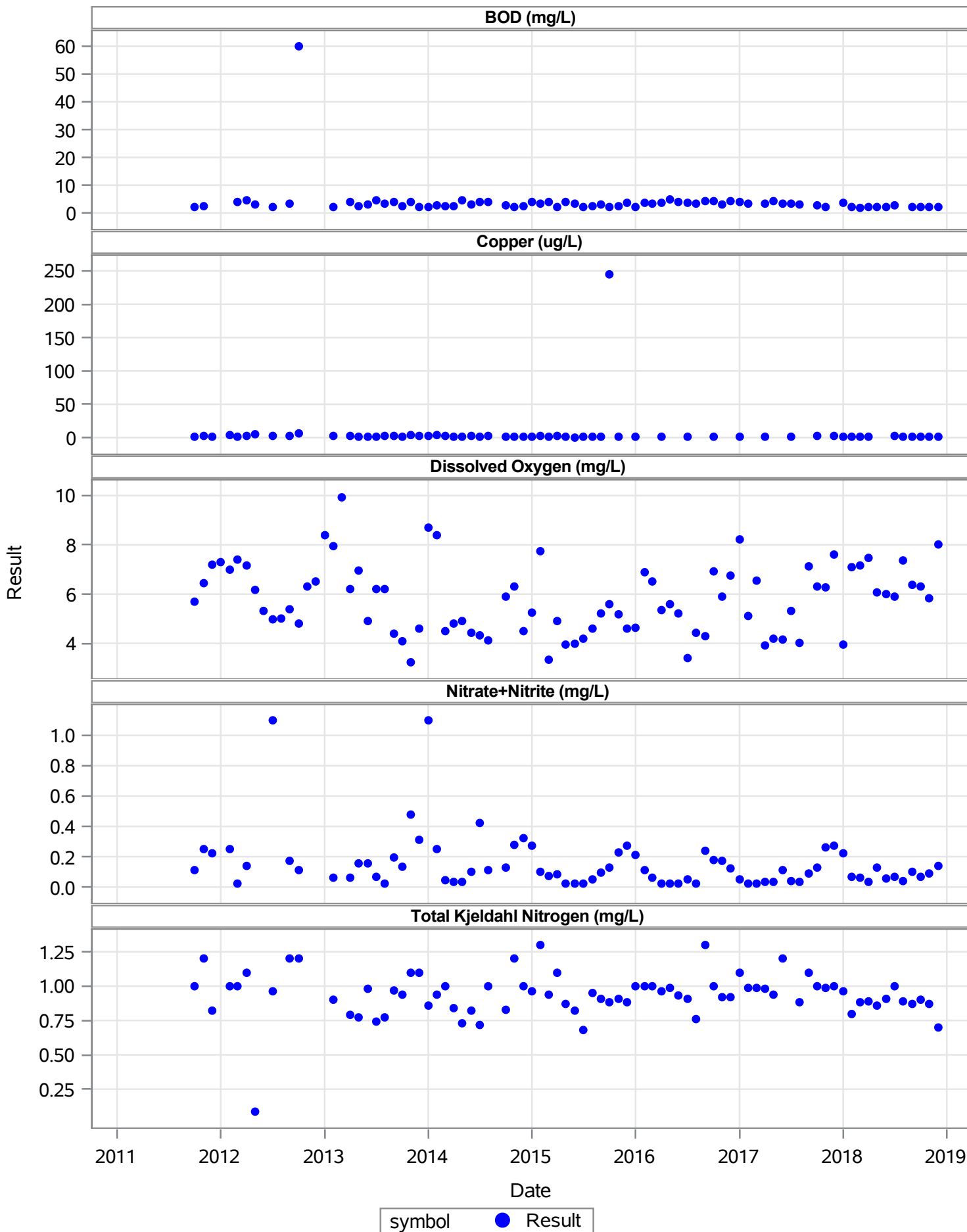


symbol ● Result

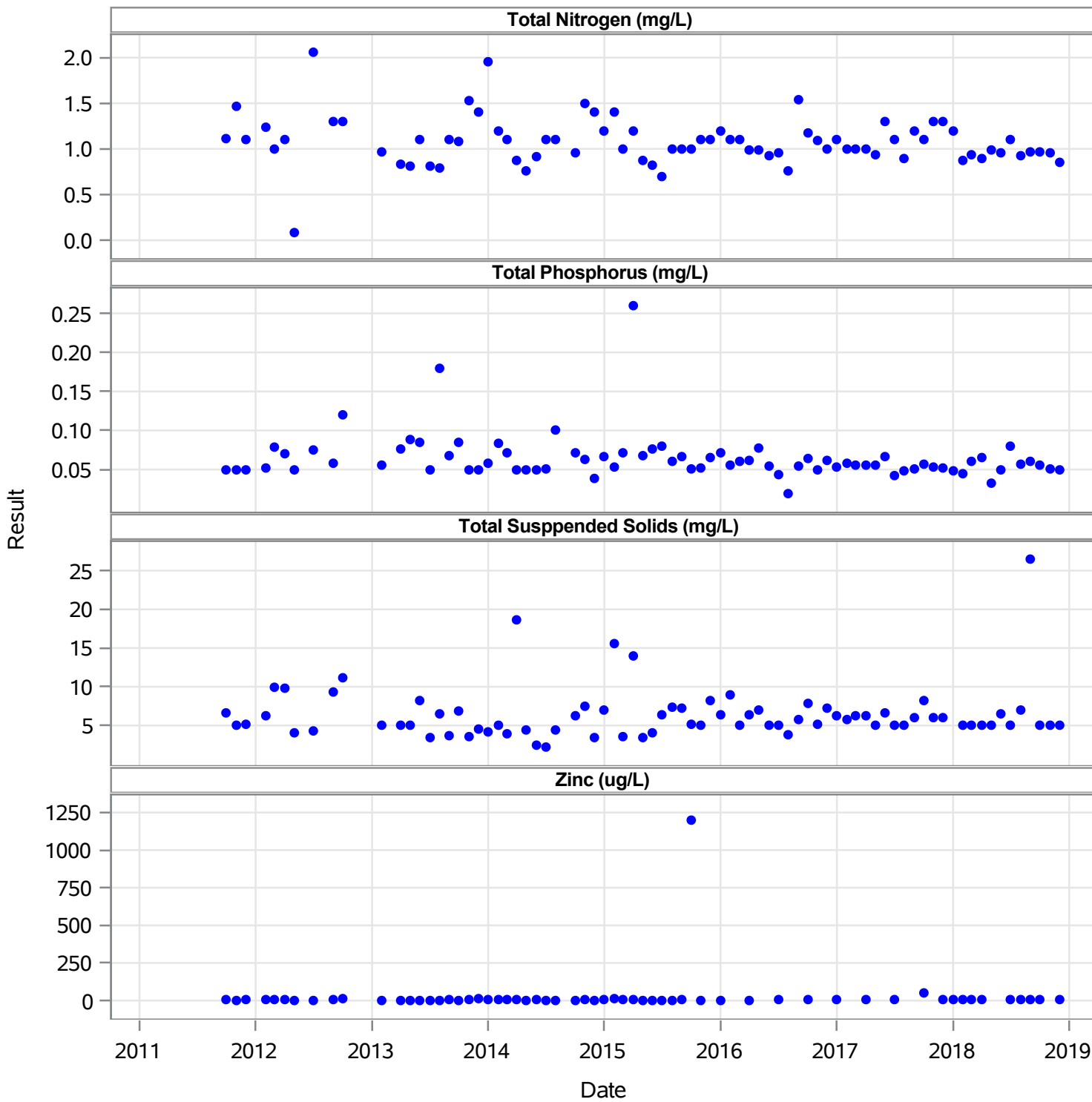
C17_CANAL_B

Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
BOD (mg/L)	01OCT11	01DEC18	1.8	60	3.868	3.2	73
Copper (ug/L)	01OCT11	01DEC18	0.5	245	6.057	1.9	61
Dissolved Oxygen (mg/L)	01OCT11	01DEC18	3.23	9.92	5.783	5.75	86
Nitrate+Nitrite (mg/L)	01OCT11	01DEC18	0.022	1.1	0.149	0.101	78
Total Kjeldahl Nitrogen (mg/L)	01OCT11	01DEC18	0.086	1.3	0.938	0.94	78
Total Nitrogen (mg/L)	01OCT11	01DEC18	0.086	2.06	1.078	1.08	79
Total Phosphorus (mg/L)	01OCT11	01DEC18	0.019	0.26	0.064	0.057	79
Total Suspended Solids (mg/L)	01OCT11	01DEC18	2.2	26.5	6.392	5.2	78
Zinc (ug/L)	01OCT11	01DEC18	2.5	1200	25.692	4.3	60

C17_CANAL_B



C17_CANAL_B

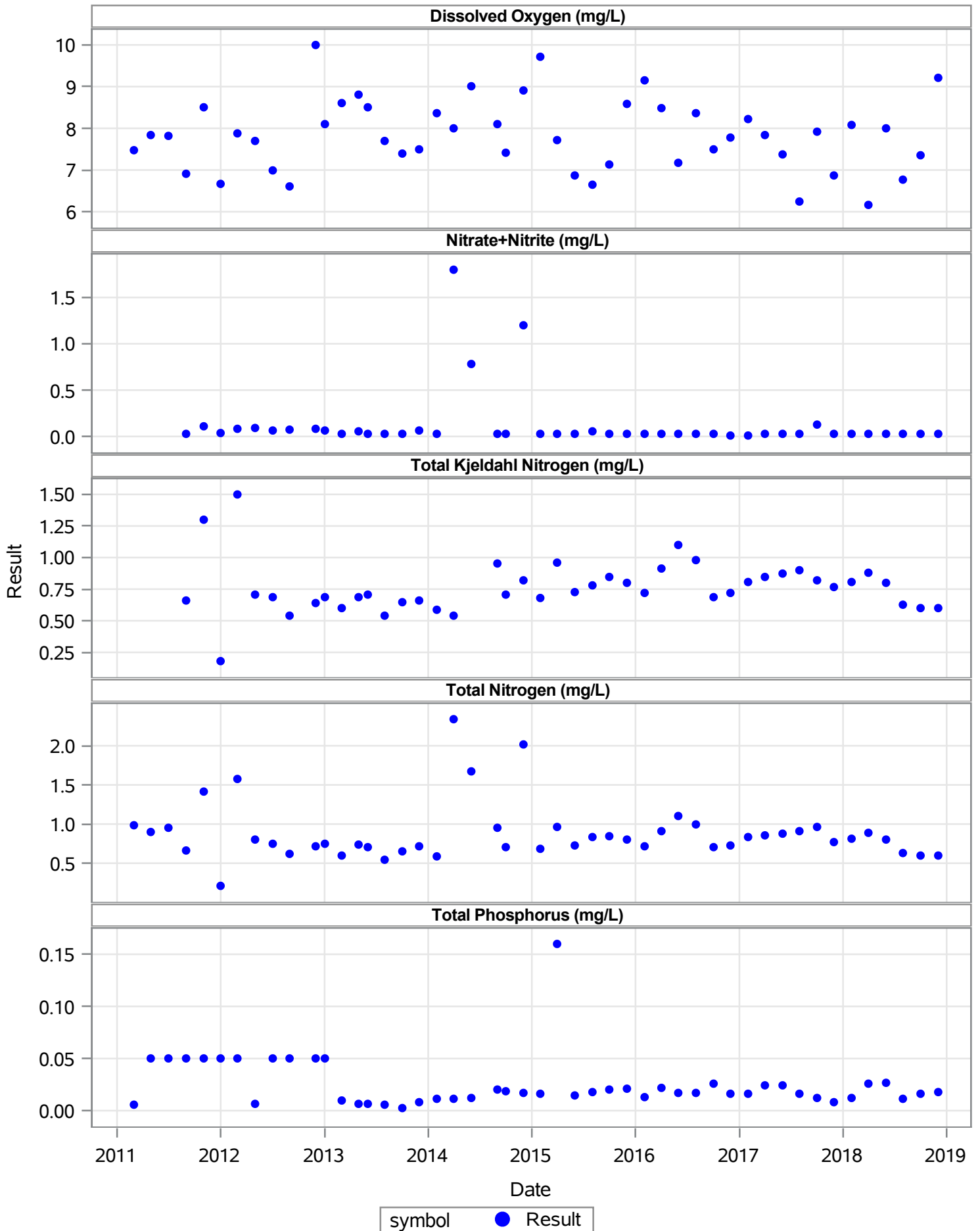


symbol ● Result

CLEAR_LAKE_MIDDLE

Analyte	Start Date	End Date	Minimum Value	Maximum Value	Mean	Median	Number of obs
Dissolved Oxygen (mg/L)	01MAR11	01DEC18	6.17	10	7.833	7.825	48
Nitrate+Nitrite (mg/L)	01MAR11	01DEC18	0.011	1.8	0.12	0.025	45
Total Kjeldahl Nitrogen (mg/L)	01MAR11	01DEC18	0.18	1.5	0.764	0.72	44
Total Nitrogen (mg/L)	01MAR11	01DEC18	0.21	2.34	0.878	0.8	48
Total Phosphorus (mg/L)	01MAR11	01DEC18	0.0028	0.16	0.025	0.017	48

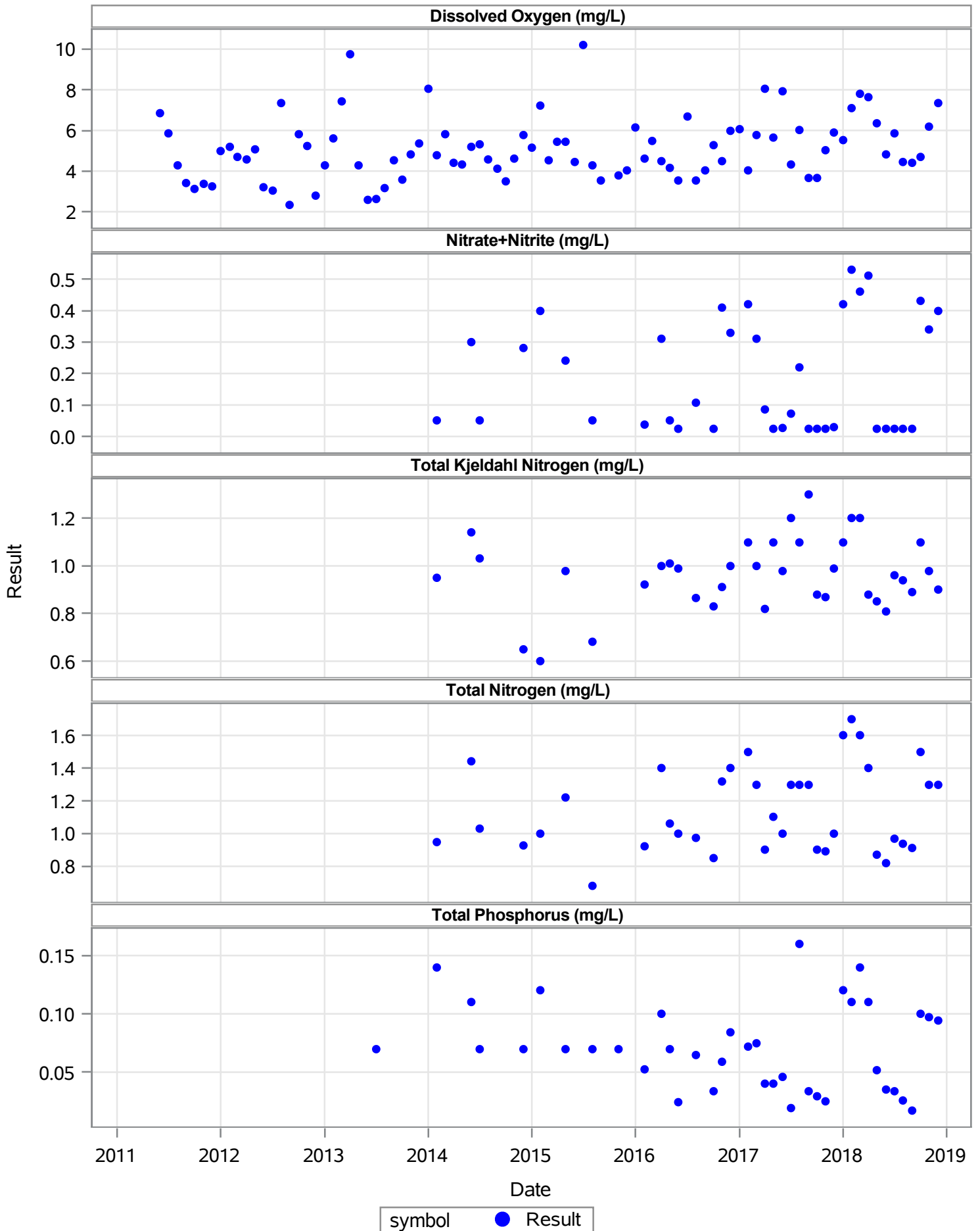
CLEAR_LAKE_MIDDLE



CONTROL_IV

Analyte	Start Date	End Date	Minimum Value	Maximum Value	Mean	Median	Number of obs
Dissolved Oxygen (mg/L)	01MAY11	01DEC18	2.34	10.2075	5.086	4.809	90
Nitrate+Nitrite (mg/L)	01MAY11	01DEC18	0.025	0.53	0.188	0.08	38
Total Kjeldahl Nitrogen (mg/L)	01MAY11	01DEC18	0.6	1.3	0.966	0.98	38
Total Nitrogen (mg/L)	01MAY11	01DEC18	0.68	1.7	1.147	1.045	38
Total Phosphorus (mg/L)	01MAY11	01DEC18	0.017	0.16	0.071	0.07	39

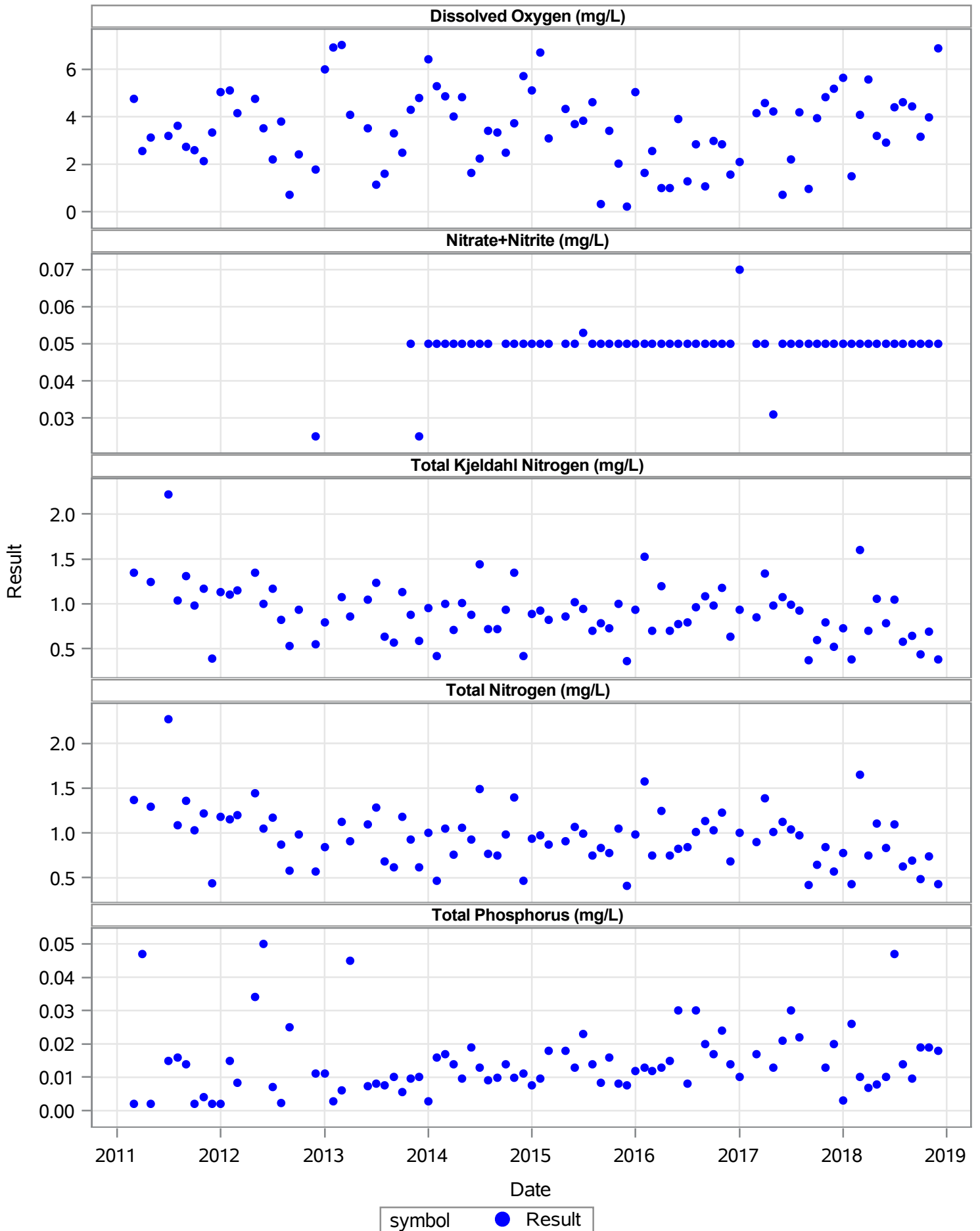
CONTROL_IV



GW_1

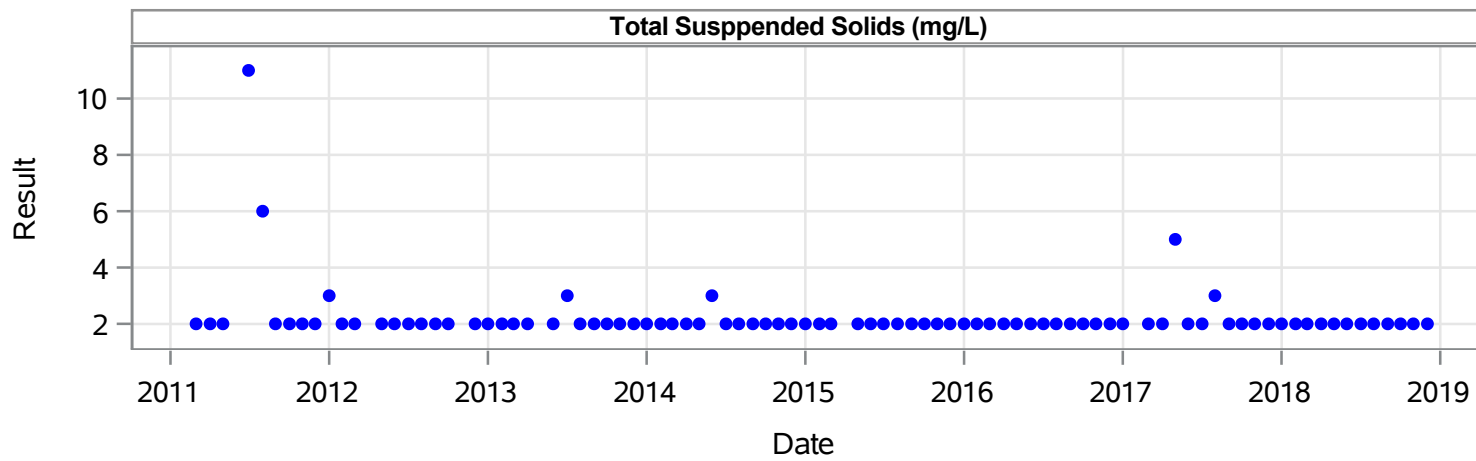
Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
Dissolved Oxygen (mg/L)	01MAR11	01DEC18	0.2	7.02	3.485	3.5	88
Nitrate+Nitrite (mg/L)	01MAR11	01DEC18	0.025	0.07	0.049	0.05	60
Total Kjeldahl Nitrogen (mg/L)	01MAR11	01DEC18	0.36	2.22	0.903	0.92	86
Total Nitrogen (mg/L)	01MAR11	01DEC18	0.41	2.27	0.951	0.97	86
Total Phosphorus (mg/L)	01MAR11	01DEC18	0.002	0.05	0.014	0.013	84
Total Suspended Solids (mg/L)	01MAR11	01DEC18	2	11	2.227	2	88

GW_1



GW_1

Total Suspended Solids (mg/L)

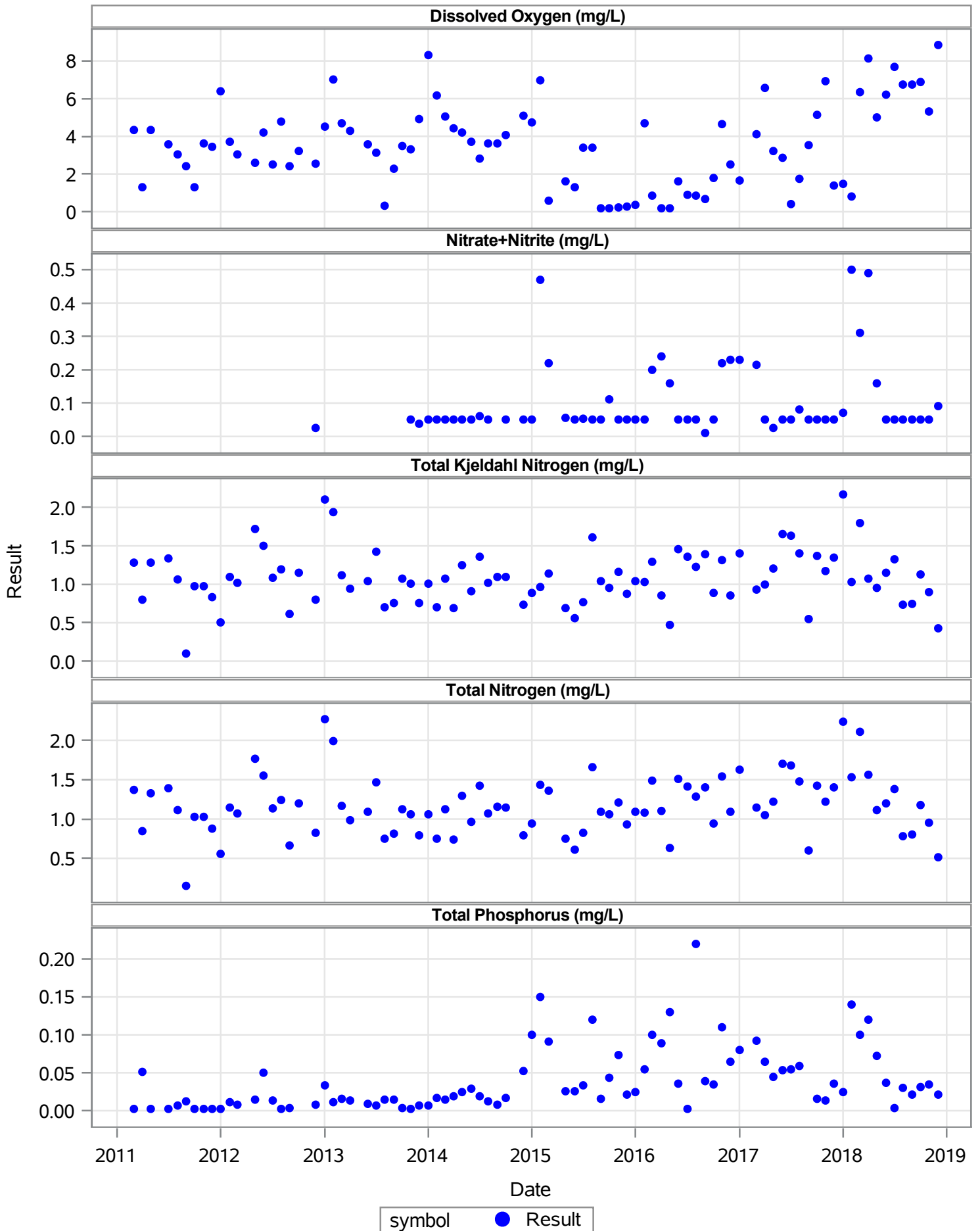


symbol ● Result

GW_3

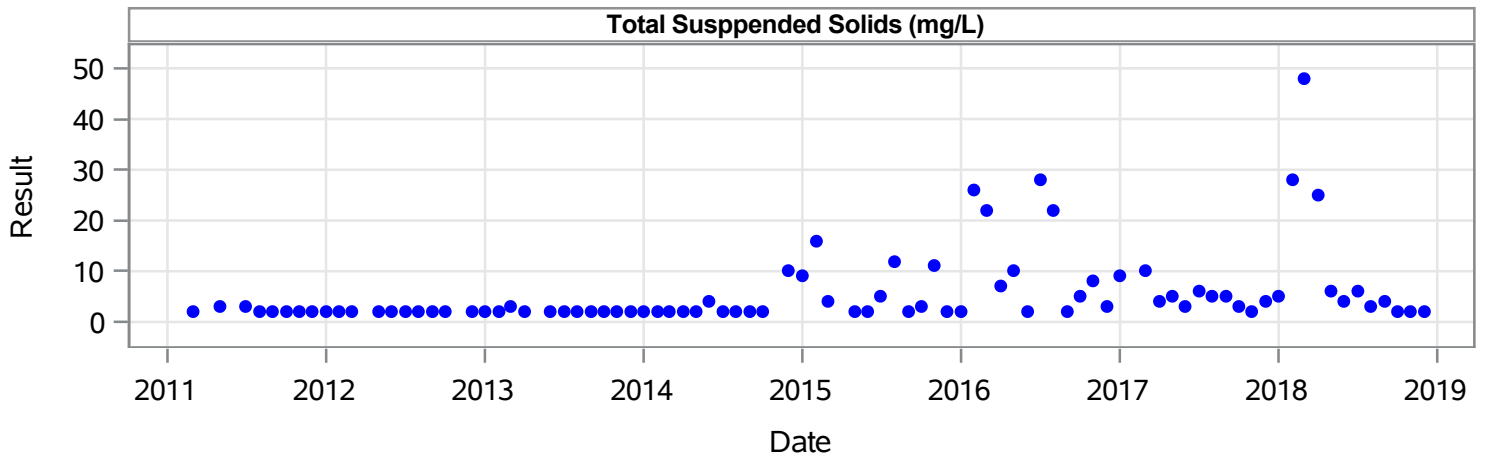
Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
Dissolved Oxygen (mg/L)	01MAR11	01DEC18	0.2	8.85	3.508	3.5	87
Nitrate+Nitrite (mg/L)	01MAR11	01DEC18	0.01	0.5	0.102	0.05	59
Total Kjeldahl Nitrogen (mg/L)	01MAR11	01DEC18	0.1	2.17	1.081	1.04	87
Total Nitrogen (mg/L)	01MAR11	01DEC18	0.15	2.27	1.168	1.12	87
Total Phosphorus (mg/L)	01MAR11	01DEC18	0.002	0.22	0.039	0.024	85
Total Suspended Solids (mg/L)	01MAR11	01DEC18	2	48	5.686	2	86

GW_3



GW_3

Total Suspended Solids (mg/L)

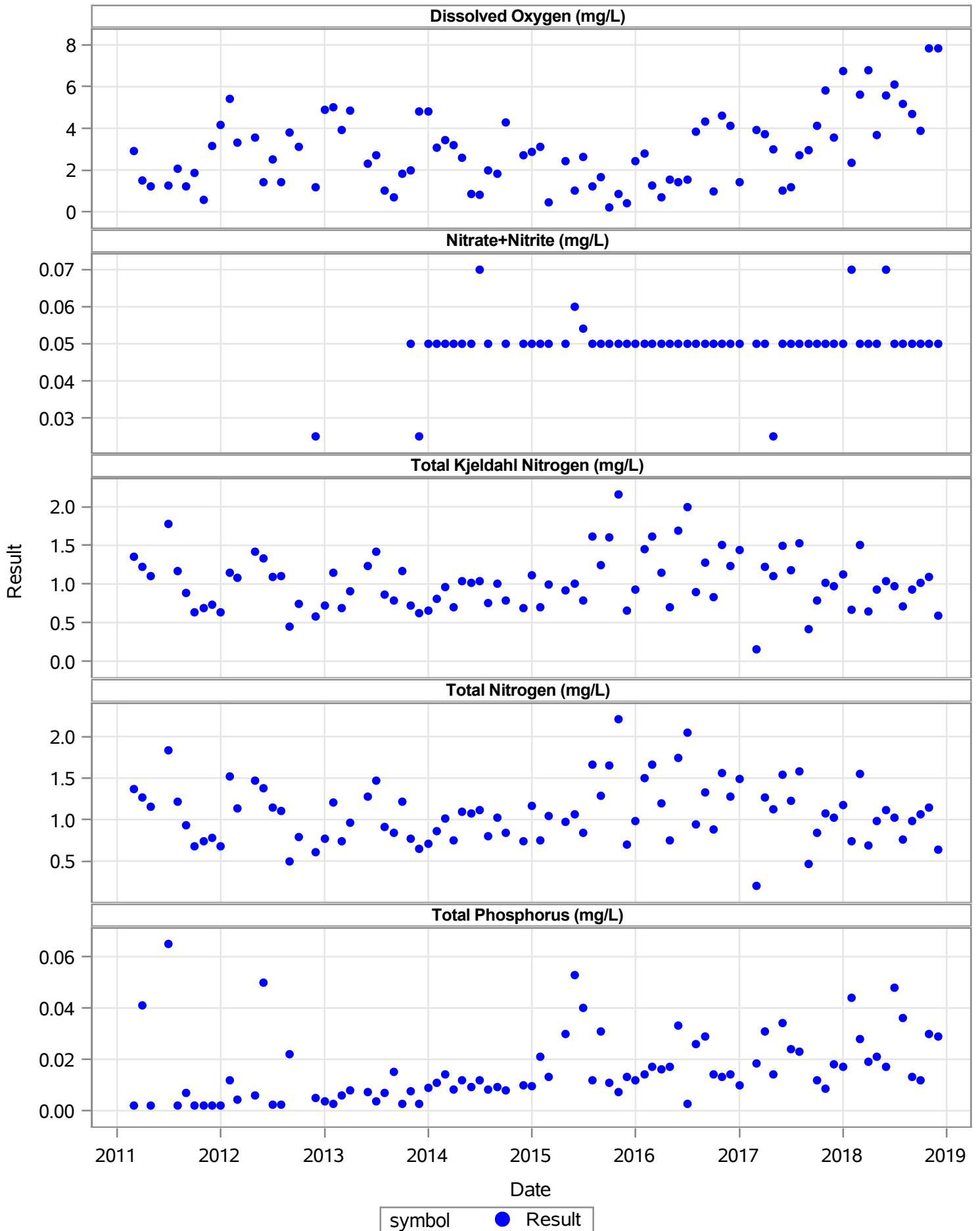


symbol ● Result

GW_5

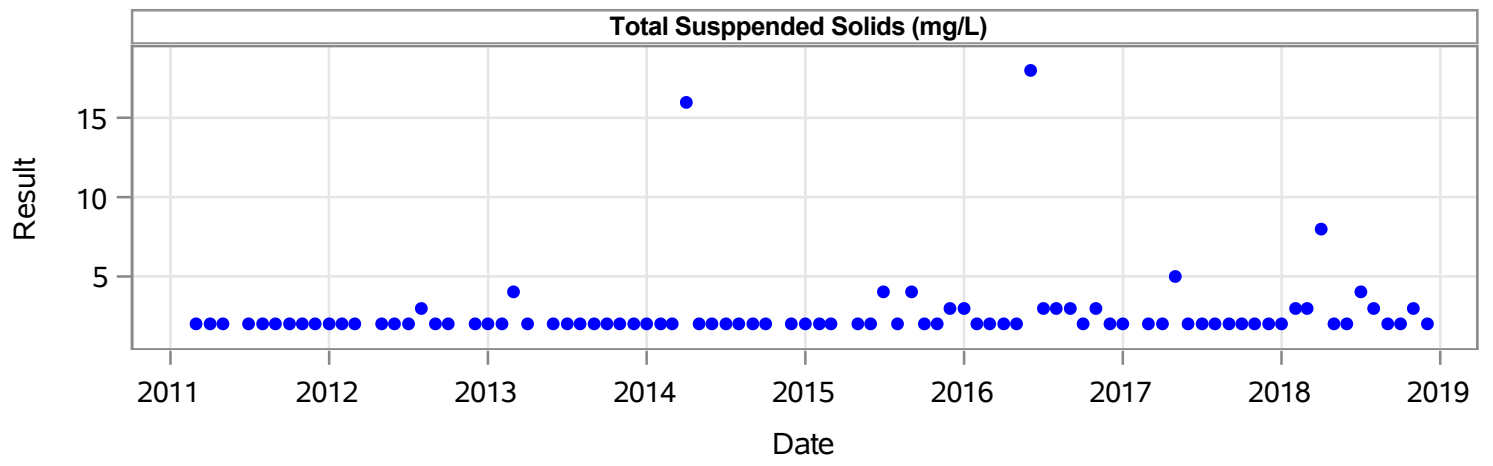
Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
Dissolved Oxygen (mg/L)	01MAR11	01DEC18	0.2	7.85	2.933	2.72	87
Nitrate+Nitrite (mg/L)	01MAR11	01DEC18	0.025	0.07	0.05	0.05	59
Total Kjeldahl Nitrogen (mg/L)	01MAR11	01DEC18	0.15	2.16	1.027	1	87
Total Nitrogen (mg/L)	01MAR11	01DEC18	0.2	2.21	1.08	1.06	87
Total Phosphorus (mg/L)	01MAR11	01DEC18	0.002	0.065	0.016	0.012	85
Total Suspended Solids (mg/L)	01MAR11	01DEC18	2	18	2.667	2	87

GW_5



GW_5

Total Suspended Solids (mg/L)

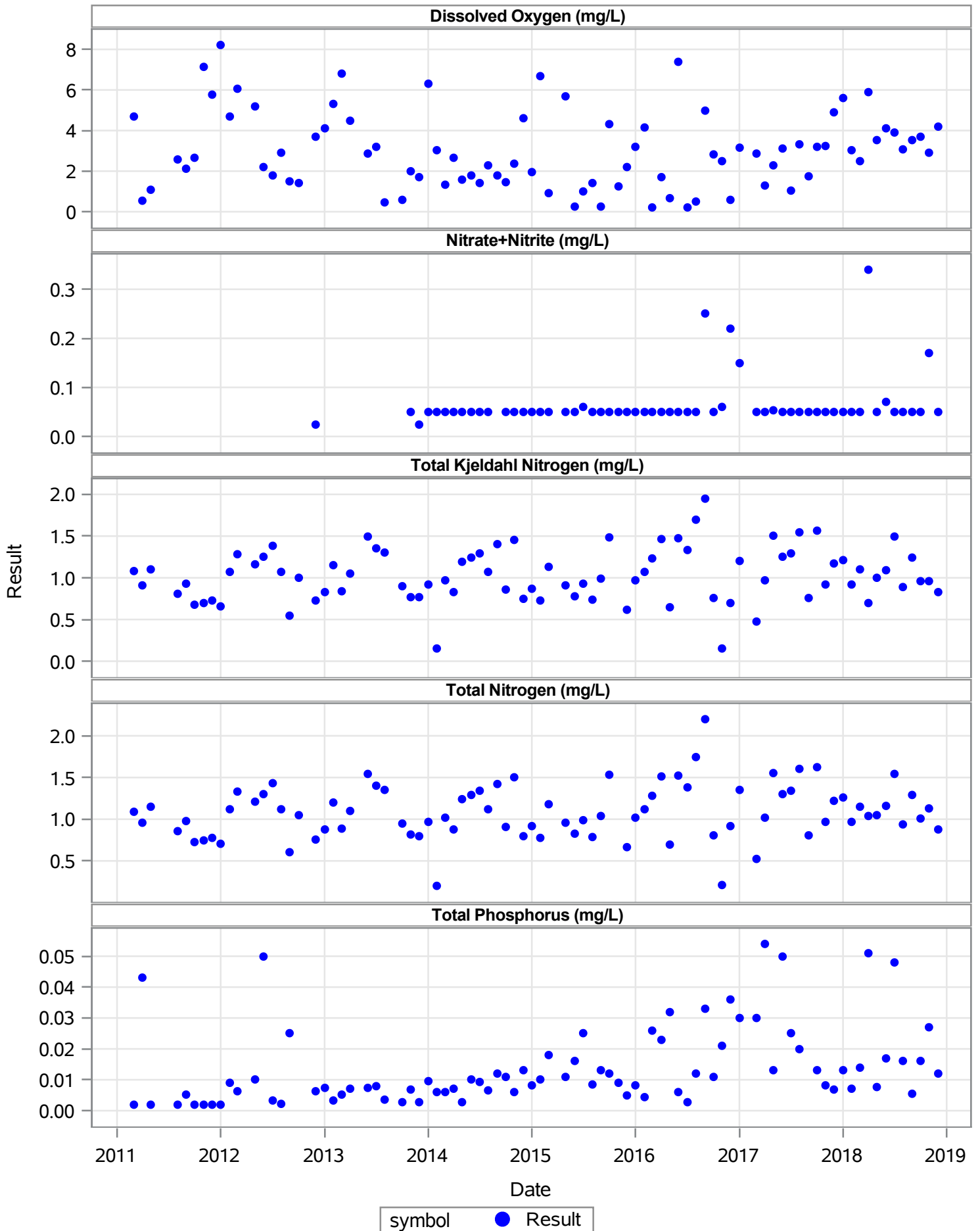


symbol ● Result

GW_7

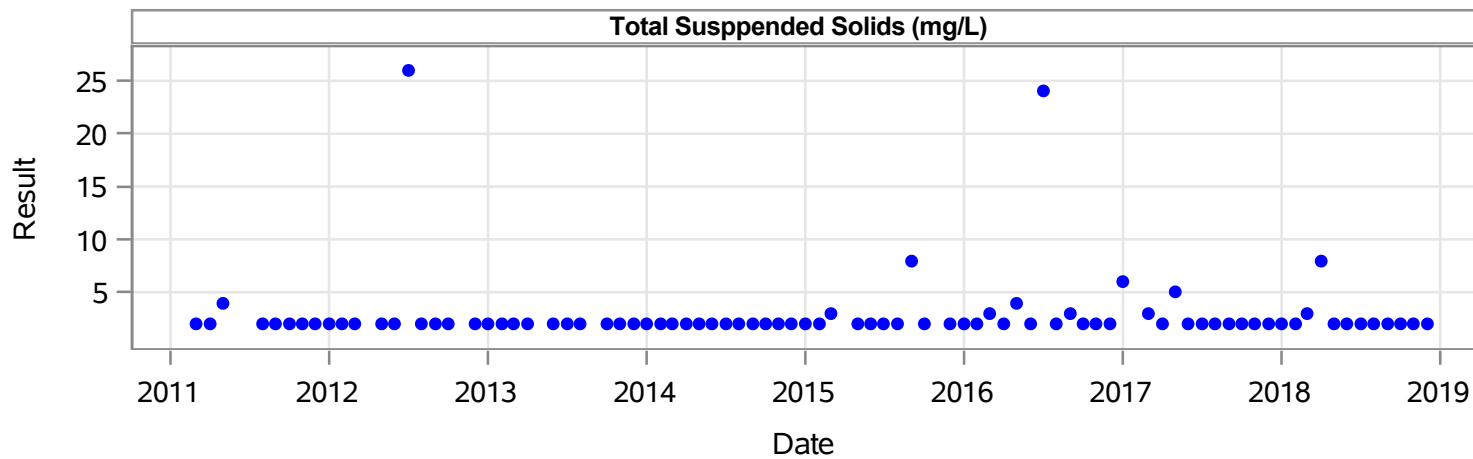
Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
Dissolved Oxygen (mg/L)	01MAR11	01DEC18	0.2	8.22	2.992	2.83	86
Nitrate+Nitrite (mg/L)	01MAR11	01DEC18	0.025	0.34	0.065	0.05	60
Total Kjeldahl Nitrogen (mg/L)	01MAR11	01DEC18	0.15	1.95	1.027	0.99	85
Total Nitrogen (mg/L)	01MAR11	01DEC18	0.2	2.2	1.087	1.05	85
Total Phosphorus (mg/L)	01MAR11	01DEC18	0.002	0.054	0.014	0.009	84
Total Suspended Solids (mg/L)	01MAR11	01DEC18	2	26	2.871	2	85

GW_7



GW_7

Total Suspended Solids (mg/L)

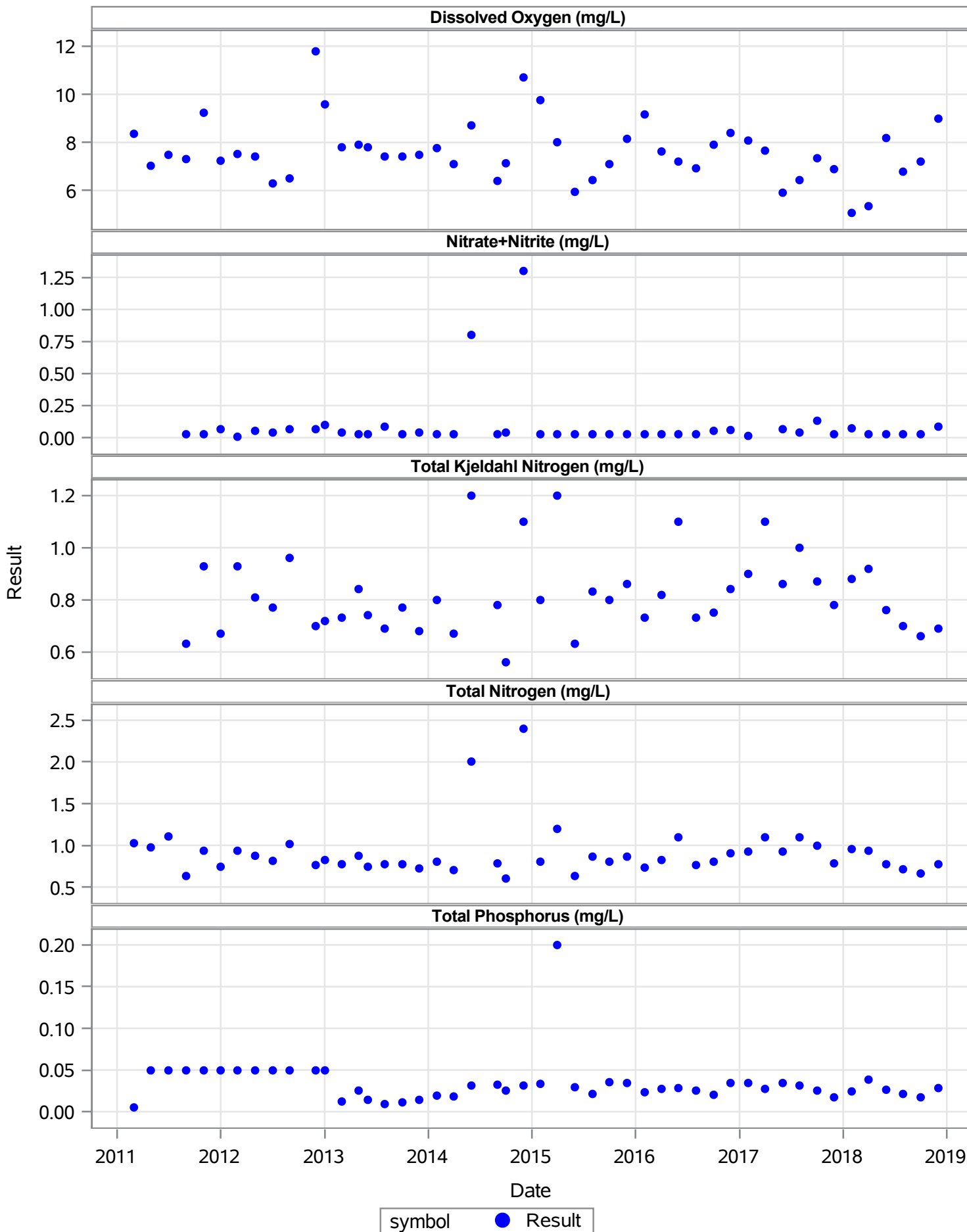


symbol ● Result

LAKE_MANGONIA_MIDDLE

Analyte	Start Date	End Date	Minumum Value	Maximum Value	Mean	Median	Number of obs
Dissolved Oxygen (mg/L)	01MAR11	01DEC18	5.07	11.8	7.624	7.445	48
Nitrate+Nitrite (mg/L)	01MAR11	01DEC18	0.01	1.3	0.086	0.026	44
Total Kjeldahl Nitrogen (mg/L)	01MAR11	01DEC18	0.56	1.2	0.82	0.8	45
Total Nitrogen (mg/L)	01MAR11	01DEC18	0.6	2.4	0.905	0.815	48
Total Phosphorus (mg/L)	01MAR11	01DEC18	0.0055	0.2	0.034	0.029	48

LAKE_MANGONIA_MIDDLE

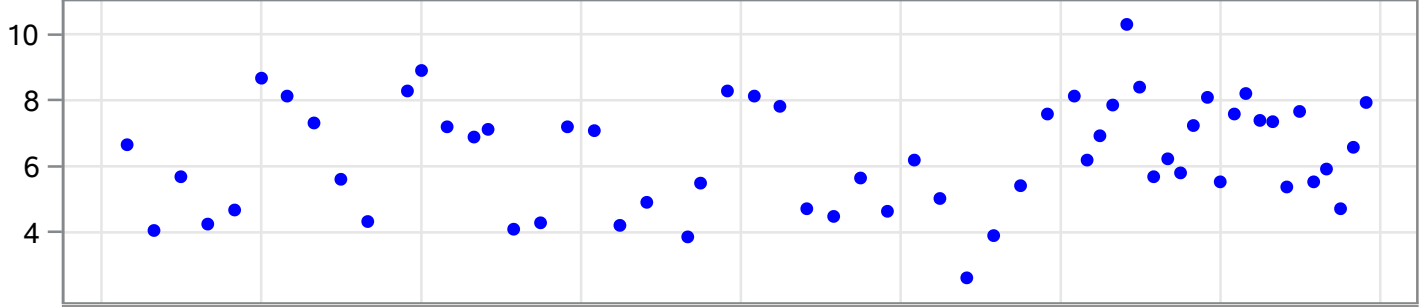


M_CANAL

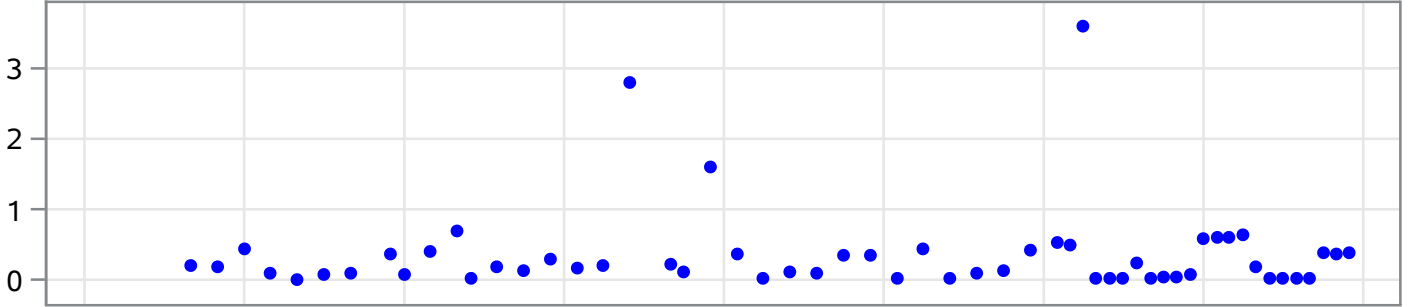
Analyte	Start Date	End Date	Minimum Value	Maximum Value	Mean	Median	Number of obs
Dissolved Oxygen (mg/L)	01MAR11	01DEC18	2.62	10.3	6.338	6.22	59
Nitrate+Nitrite (mg/L)	01MAR11	01DEC18	0.01	3.6	0.352	0.19	56
Total Kjeldahl Nitrogen (mg/L)	01MAR11	01DEC18	0.3	3	1.16	1.05	56
Total Nitrogen (mg/L)	01MAR11	01DEC18	0.66	2.9	1.338	1.2	56
Total Phosphorus (mg/L)	01MAR11	01DEC18	0.018	0.6	0.118	0.093	59

M_CANAL

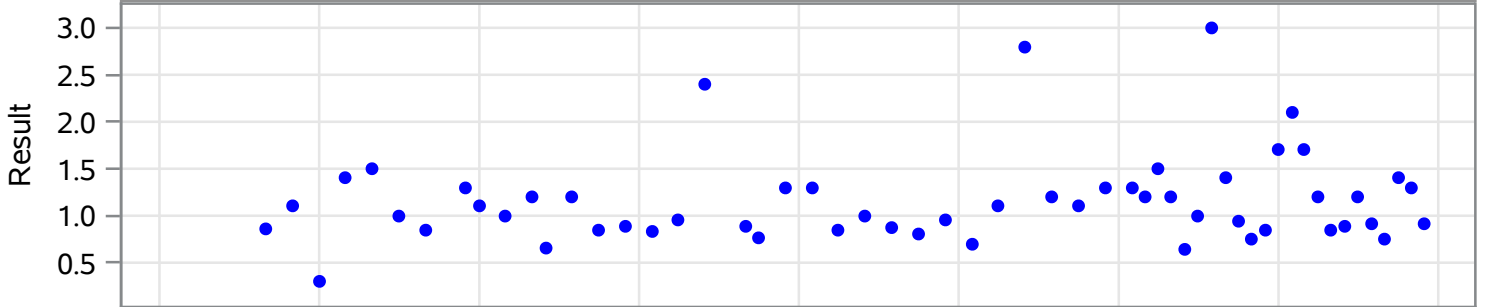
Dissolved Oxygen (mg/L)



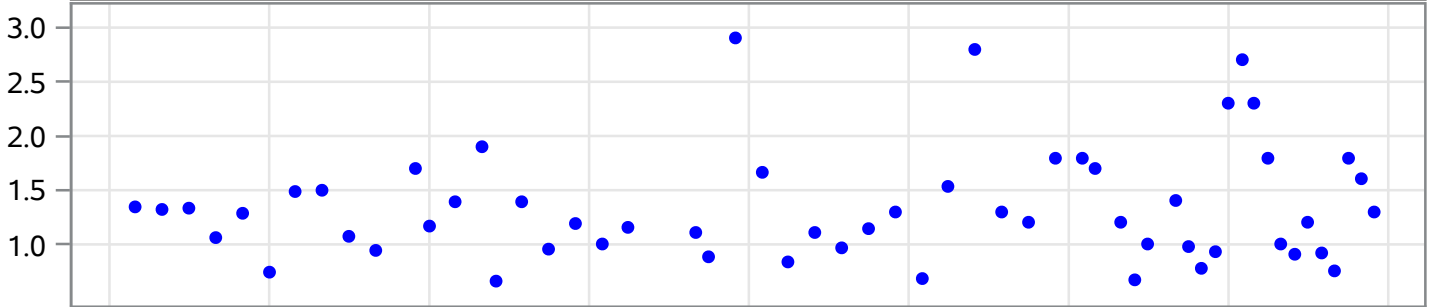
Nitrate+Nitrite (mg/L)



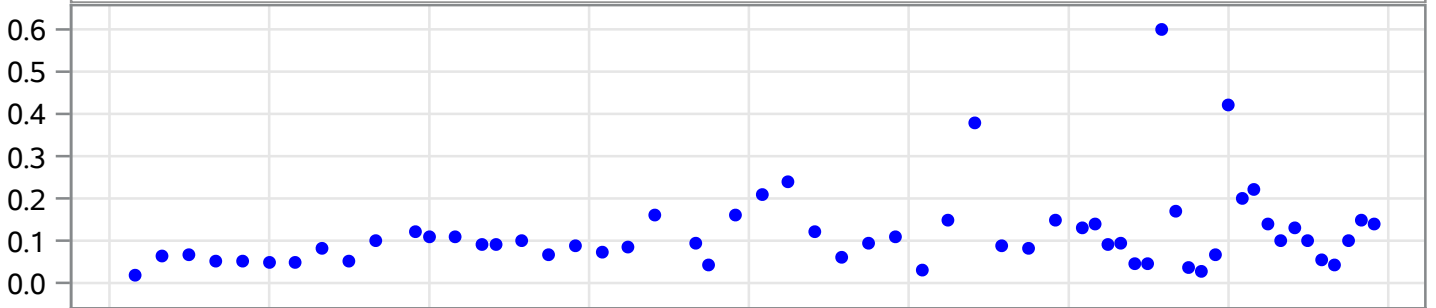
Total Kjeldahl Nitrogen (mg/L)



Total Nitrogen (mg/L)



Total Phosphorus (mg/L)



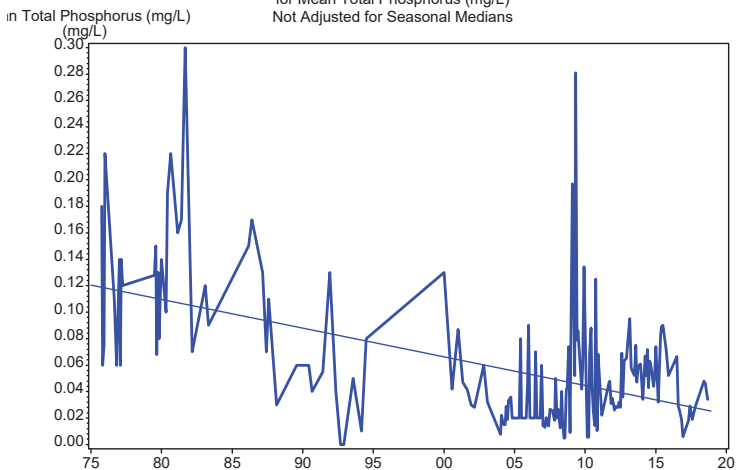
2011 2012 2013 2014 2015 2016 2017 2018 2019

Date

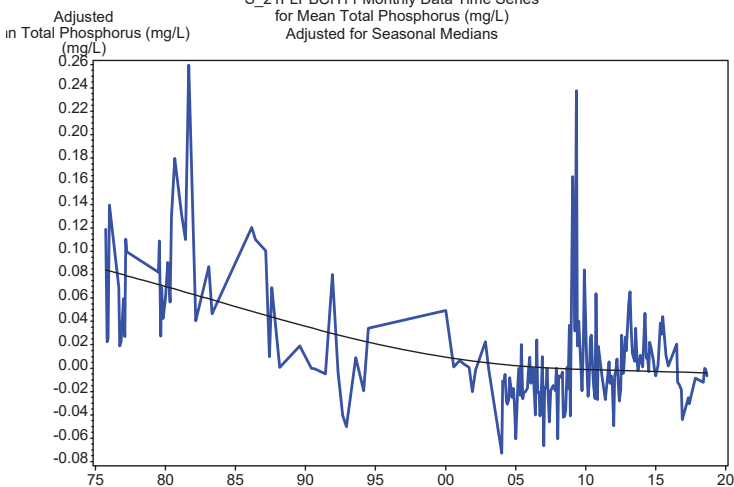
symbol ● Result

Appendix B

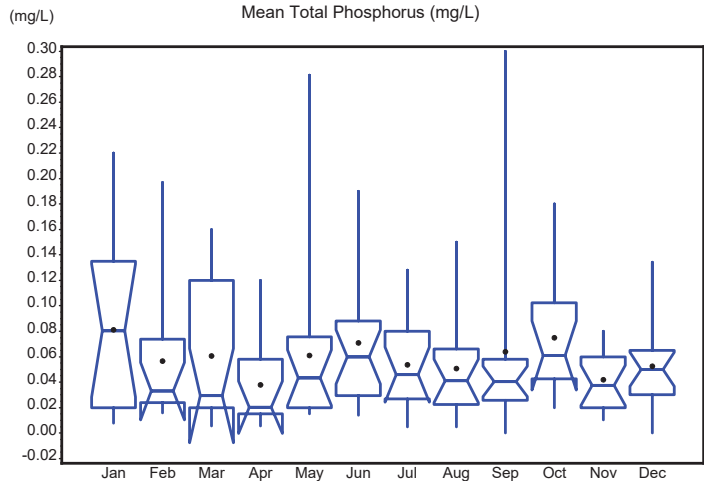
S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Not Adjusted for Seasonal Medians



S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians



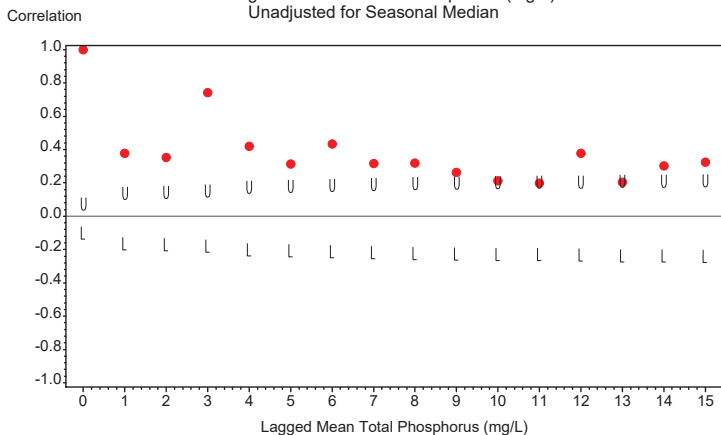
S_21FLPBCH11 Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.378	0.075	0.151	-0.151
2	0.353	0.079	0.158	-0.158
3	0.741	0.082	0.164	-0.164
4	0.420	0.094	0.187	-0.187
5	0.312	0.097	0.194	-0.194
6	0.434	0.099	0.198	-0.198
7	0.316	0.103	0.205	-0.205
8	0.320	0.104	0.209	-0.209
9	0.264	0.106	0.213	-0.213
10	0.212	0.107	0.215	-0.215
11	0.197	0.108	0.217	-0.217
12	0.378	0.109	0.218	-0.218
13	0.204	0.111	0.223	-0.223
14	0.303	0.112	0.224	-0.224
15	0.323	0.114	0.227	-0.227

S_21FLPBCH11 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

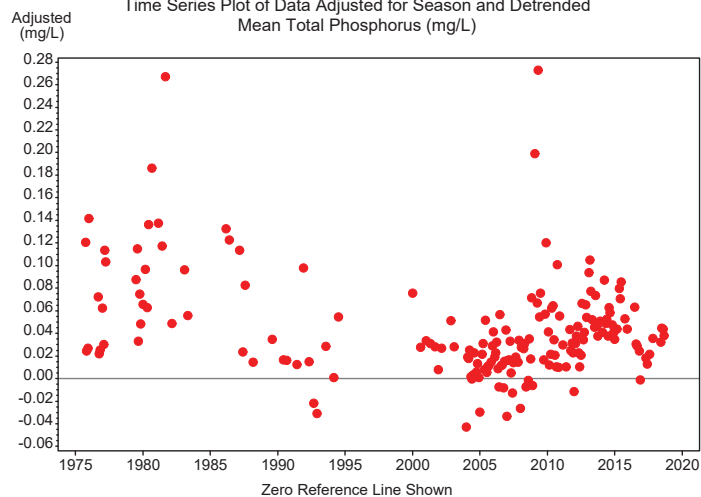
S_21FLPBCH11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.167	.003	0.133	-.001

S_21FLPBCH11 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.16454	.00318506	0.13902	-.001

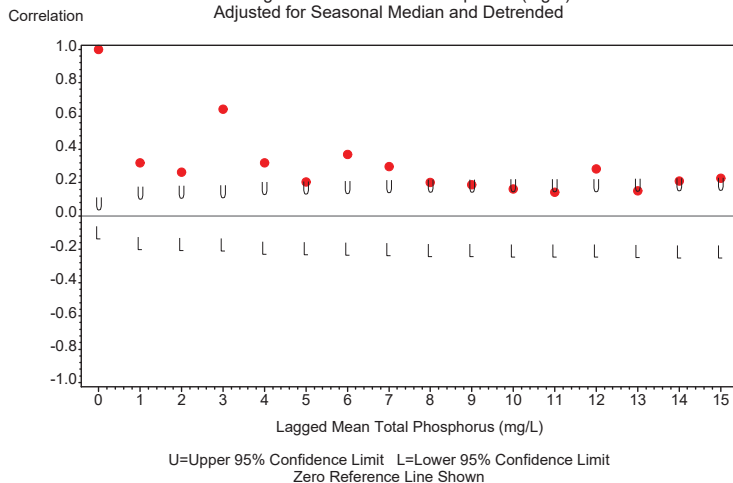
S_21FLPBCH11 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total Phosphorus (mg/L)



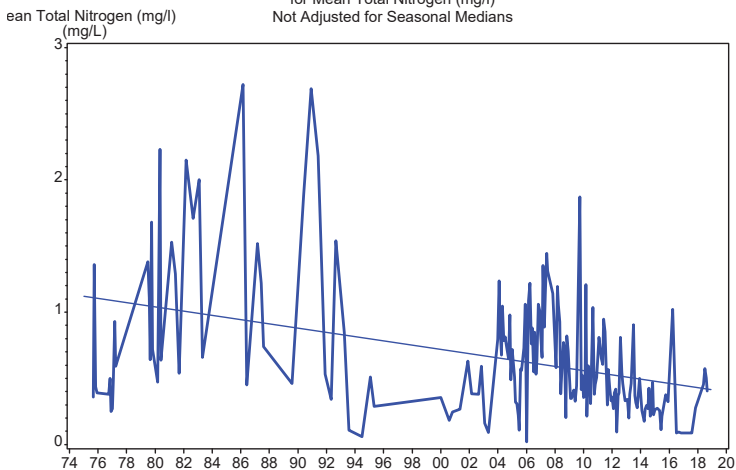
S_21FLPBCH11 Trends Appendix
 Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.318	0.075	0.151	-0.151
2	0.263	0.078	0.156	-0.156
3	0.642	0.080	0.159	-0.159
4	0.319	0.089	0.178	-0.178
5	0.204	0.091	0.182	-0.182
6	0.370	0.092	0.184	-0.184
7	0.295	0.095	0.189	-0.189
8	0.202	0.096	0.193	-0.193
9	0.188	0.097	0.194	-0.194
10	0.161	0.098	0.196	-0.196
11	0.141	0.098	0.197	-0.197
12	0.282	0.099	0.197	-0.197
13	0.151	0.100	0.200	-0.200
14	0.210	0.101	0.201	-0.201
15	0.226	0.101	0.203	-0.203

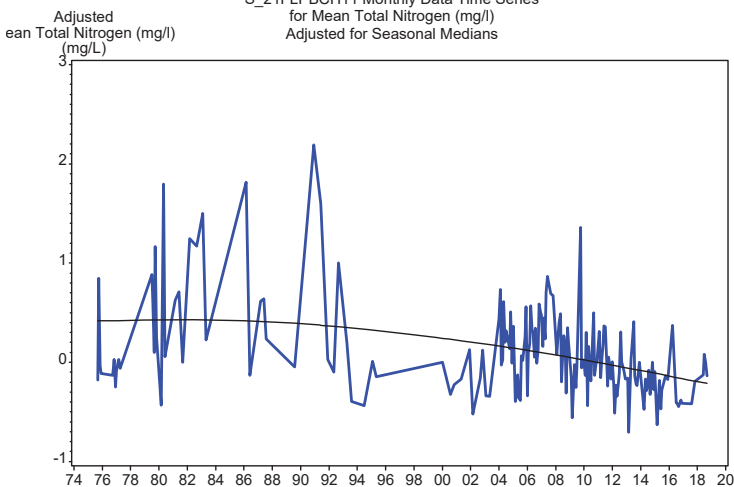
S_21FLPBCH11 Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended



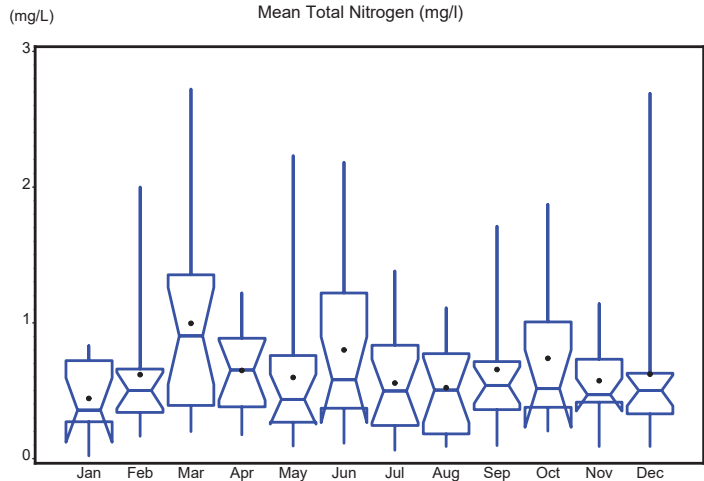
S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Not Adjusted for Seasonal Medians



S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians



S_21FLPBCH11 Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



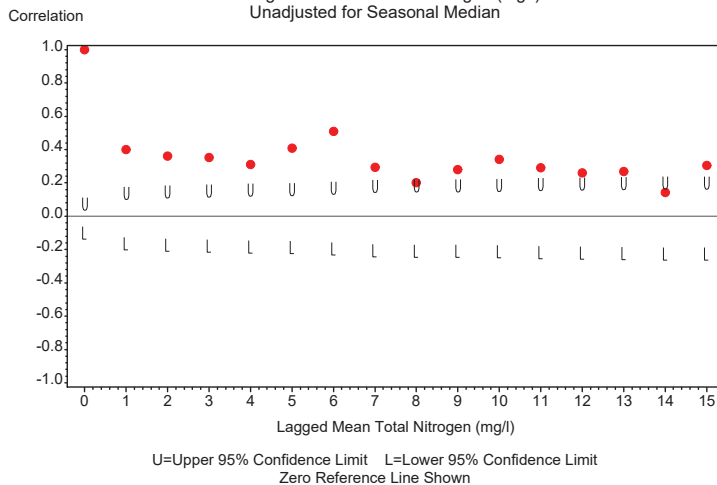
S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.399	0.075	0.151	-0.151
2	0.360	0.079	0.159	-0.159
3	0.351	0.082	0.165	-0.165
4	0.309	0.085	0.170	-0.170
5	0.409	0.087	0.174	-0.174
6	0.510	0.091	0.182	-0.182
7	0.293	0.096	0.192	-0.192
8	0.200	0.098	0.195	-0.195
9	0.279	0.098	0.197	-0.197
10	0.341	0.100	0.200	-0.200
11	0.292	0.102	0.204	-0.204
12	0.259	0.104	0.207	-0.207
13	0.269	0.105	0.210	-0.210

S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.143	0.106	0.213	-0.213
15	0.306	0.107	0.213	-0.213

S_21FLPBCH11 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



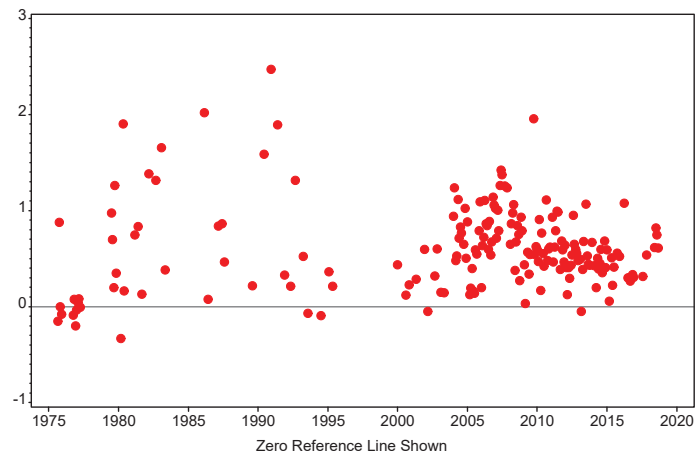
S_21FLPBCH11 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Nitrogen (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.297	0	.003	-0.017

S_21FLPBCH11 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.29714	.000000087	.00322406	-0.01668

S_21FLPBCH11 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total Nitrogen (mg/l)



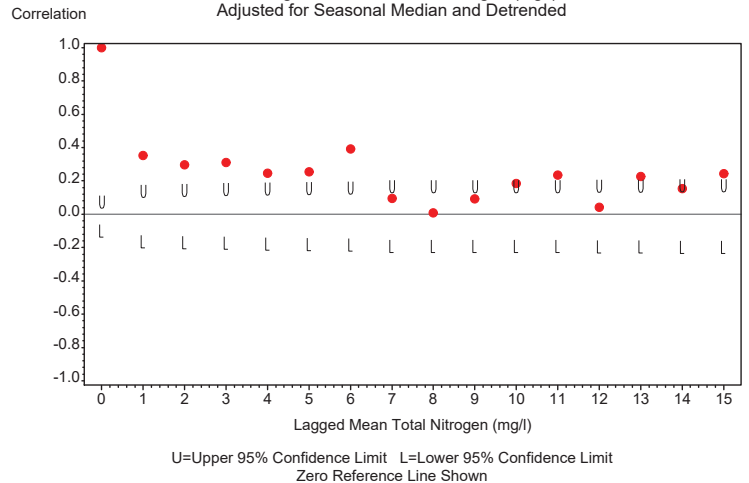
S_21FLPBCH11 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.353	0.075	0.151	-0.151
2	0.297	0.078	0.157	-0.157
3	0.311	0.081	0.161	-0.161
4	0.247	0.083	0.166	-0.166
5	0.255	0.084	0.168	-0.168
6	0.392	0.086	0.171	-0.171
7	0.096	0.089	0.178	-0.178
8	0.007	0.089	0.178	-0.178
9	0.092	0.089	0.178	-0.178
10	0.183	0.089	0.179	-0.179
11	0.235	0.090	0.180	-0.180
12	0.042	0.091	0.182	-0.182
13	0.225	0.091	0.183	-0.183

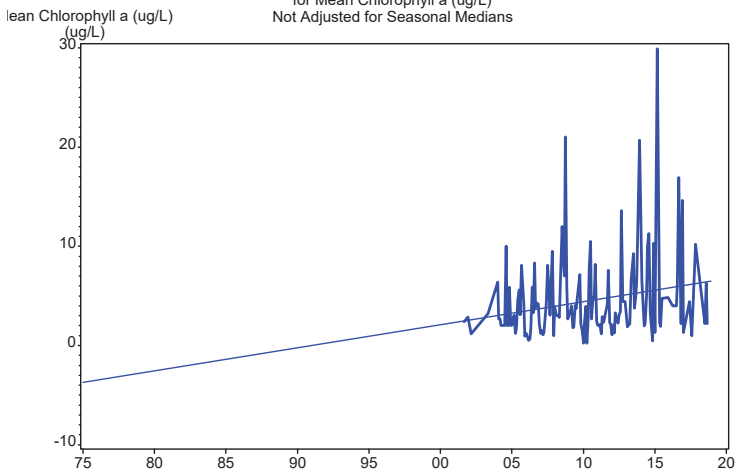
S_21FLPBCH11 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.153	0.092	0.185	-0.185
15	0.244	0.093	0.186	-0.186

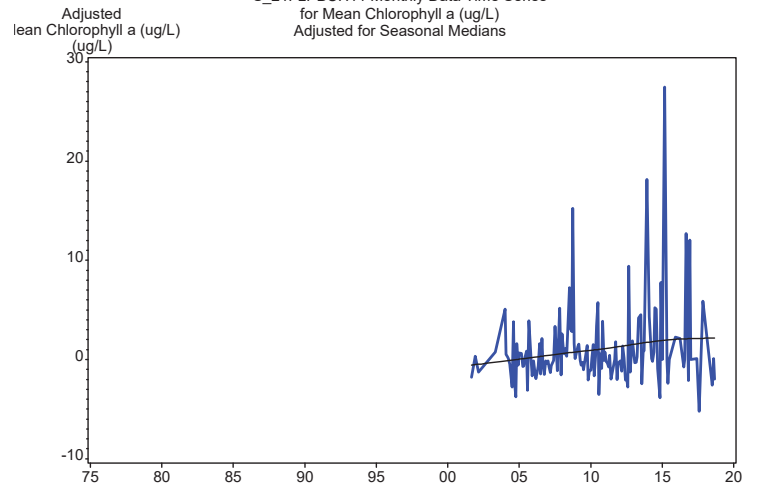
S_21FLPBCH11 Trends Appendix
 Correlogram for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended



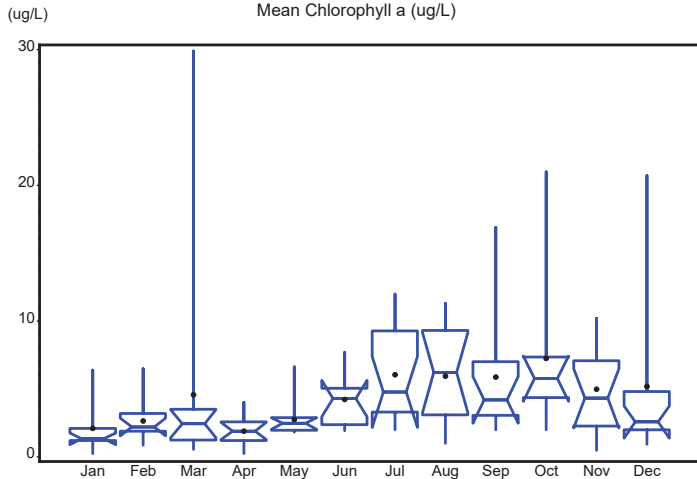
S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Chlorophyll a (ug/L)
Not Adjusted for Seasonal Medians



S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Chlorophyll a (ug/L)
Adjusted for Seasonal Medians



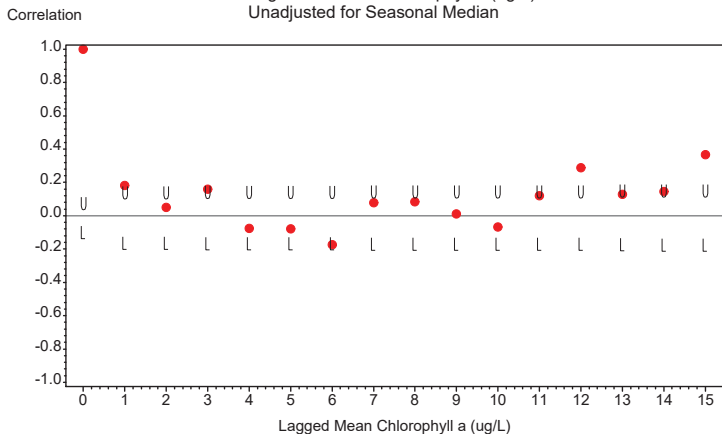
S_21FLPBCH11 Trends Appendix
Seasonal Univariate Statistics
Mean Chlorophyll a (ug/L)



S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.182	0.075	0.151	-0.151
2	0.051	0.076	0.152	-0.152
3	0.159	0.076	0.153	-0.153
4	-0.075	0.077	0.154	-0.154
5	-0.079	0.077	0.154	-0.154
6	-0.175	0.077	0.154	-0.154
7	0.077	0.078	0.156	-0.156
8	0.083	0.078	0.156	-0.156
9	0.012	0.078	0.156	-0.156
10	-0.068	0.078	0.156	-0.156
11	0.119	0.078	0.157	-0.157
12	0.287	0.079	0.157	-0.157
13	0.127	0.081	0.161	-0.161
14	0.146	0.081	0.162	-0.162
15	0.365	0.082	0.163	-0.163

S_21FLPBCH11 Trends Appendix
Correlogram for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

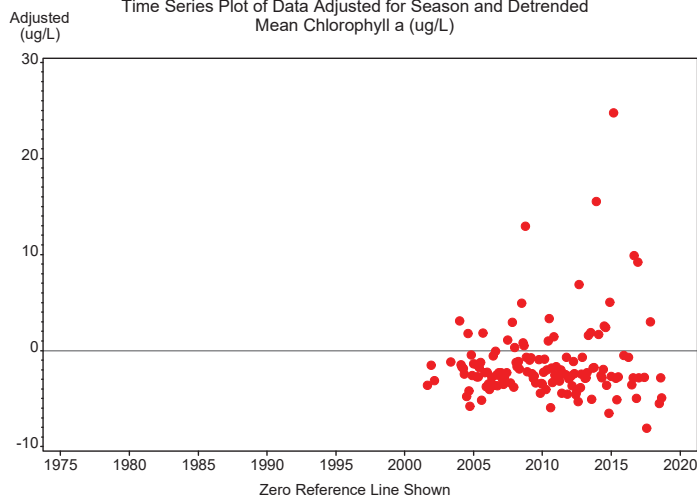
S_21FLPBCH11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.117	0.081	0.178	0.066

S_21FLPBCH11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.11660	0.081495	0.17784	0.066154

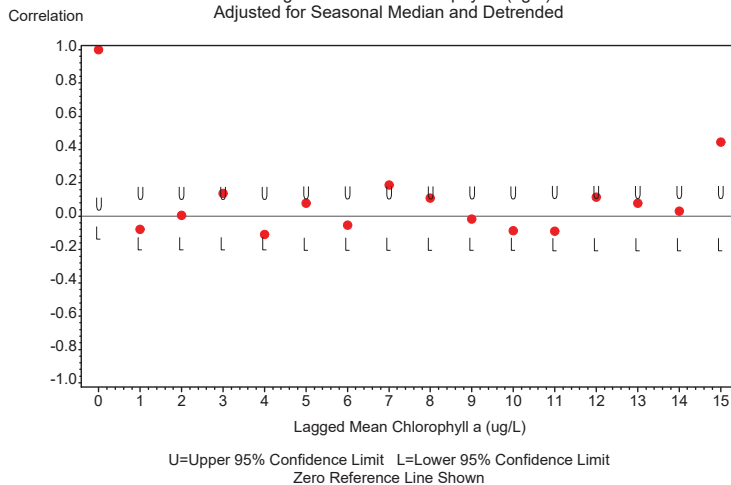
S_21FLPBCH11 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Chlorophyll a (ug/L)



S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
Adjusted for Seasonal Median and Detrended

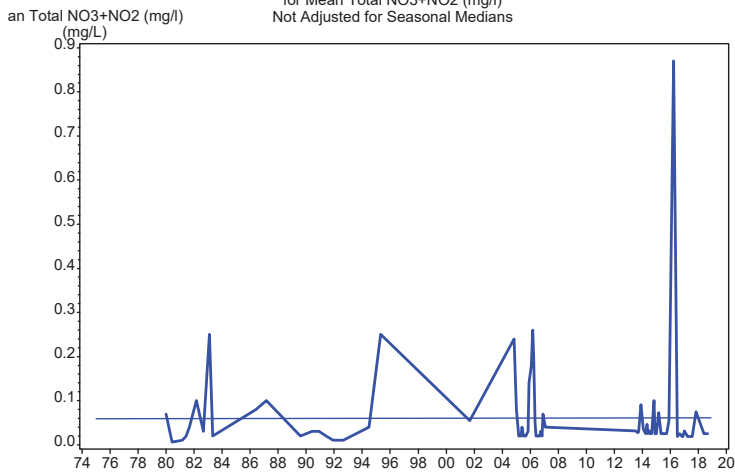
Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	-0.078	0.075	0.151	-0.151
2	0.004	0.076	0.151	-0.151
3	0.137	0.076	0.151	-0.151
4	-0.109	0.076	0.152	-0.152
5	0.079	0.076	0.153	-0.153
6	-0.053	0.076	0.153	-0.153
7	0.186	0.077	0.153	-0.153
8	0.108	0.077	0.155	-0.155
9	-0.016	0.078	0.155	-0.155
10	-0.087	0.078	0.155	-0.155
11	-0.090	0.078	0.156	-0.156
12	0.114	0.078	0.156	-0.156
13	0.077	0.078	0.157	-0.157
14	0.030	0.079	0.157	-0.157
15	0.444	0.079	0.157	-0.157

S_21FLPBCH11 Trends Appendix
Correlogram for Mean Chlorophyll a (ug/L)
Adjusted for Seasonal Median and Detrended

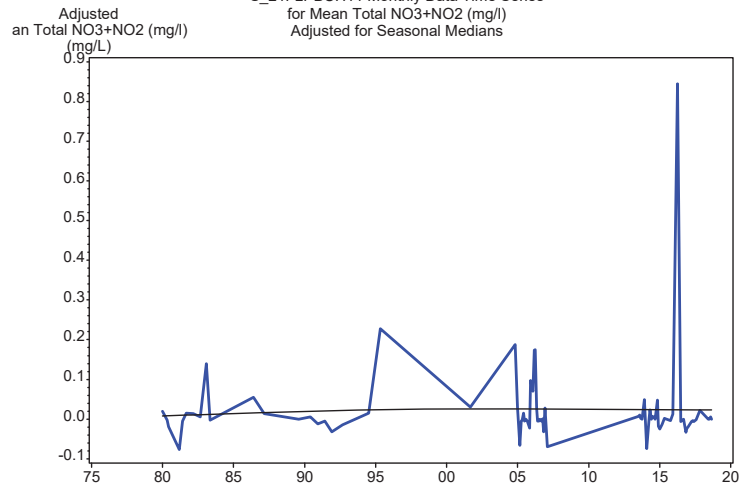


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

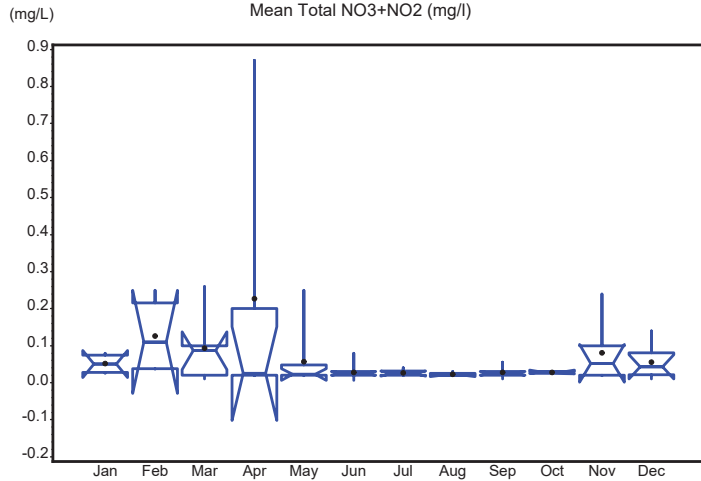
S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Total NO3+NO2 (mg/l)
Not Adjusted for Seasonal Medians



S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Medians



S_21FLPBCH11 Trends Appendix
Seasonal Univariate Statistics
Mean Total NO3+NO2 (mg/l)



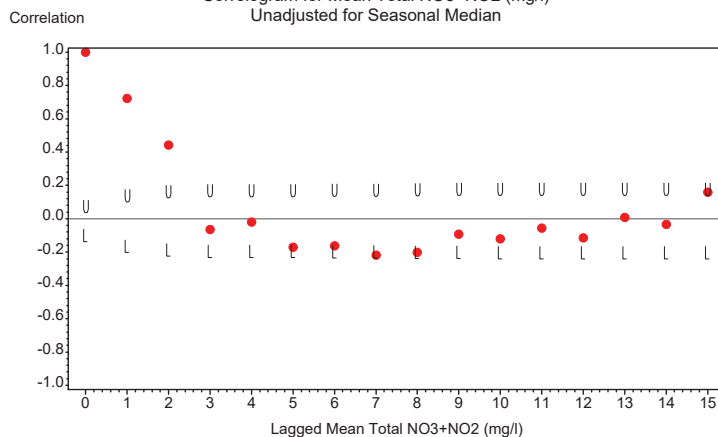
S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.722	0.075	0.151	-0.151
2	0.441	0.088	0.175	-0.175
3	-0.066	0.092	0.183	-0.183
4	-0.020	0.092	0.183	-0.183
5	-0.171	0.092	0.183	-0.183
6	-0.163	0.092	0.185	-0.185
7	-0.219	0.093	0.186	-0.186
8	-0.201	0.094	0.188	-0.188
9	-0.094	0.095	0.189	-0.189
10	-0.122	0.095	0.190	-0.190
11	-0.056	0.095	0.190	-0.190
12	-0.114	0.095	0.190	-0.190
13	0.007	0.095	0.191	-0.191

S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.035	0.095	0.191	-0.191
15	0.159	0.095	0.191	-0.191

S_21FLPBCH11 Trends Appendix
Correlogram for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

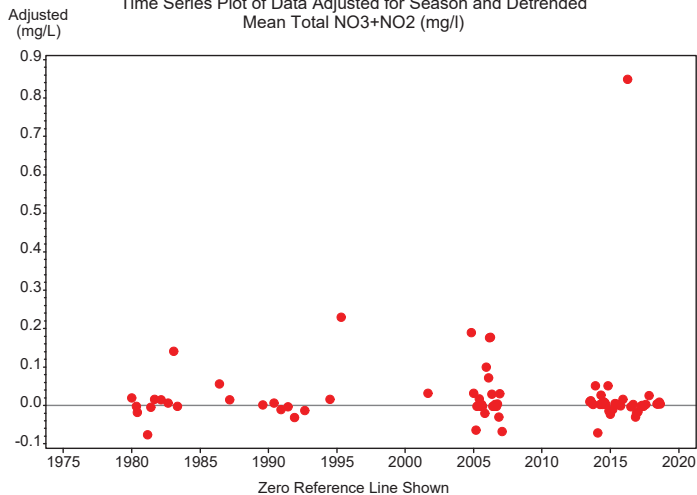
S_21FLPBCH11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.112	0.254	0.305	0

S_21FLPBCH11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.11154	0.25418	0.30518	-0.00071078

S_21FLPBCH11 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total NO3+NO2 (mg/l)



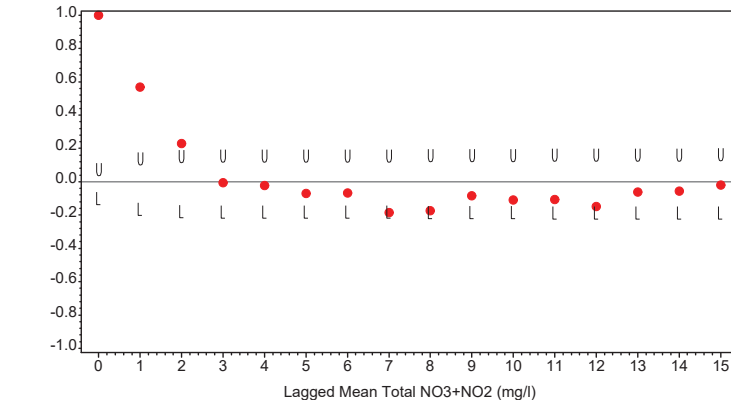
S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.569	0.075	0.151	-0.151
2	0.228	0.083	0.166	-0.166
3	-0.006	0.084	0.169	-0.169
4	-0.023	0.084	0.169	-0.169
5	-0.071	0.084	0.169	-0.169
6	-0.067	0.084	0.169	-0.169
7	-0.184	0.085	0.169	-0.169
8	-0.173	0.085	0.171	-0.171
9	-0.085	0.086	0.172	-0.172
10	-0.111	0.086	0.172	-0.172
11	-0.107	0.086	0.173	-0.173
12	-0.148	0.087	0.173	-0.173
13	-0.063	0.087	0.174	-0.174

S_21FLPBCH11 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

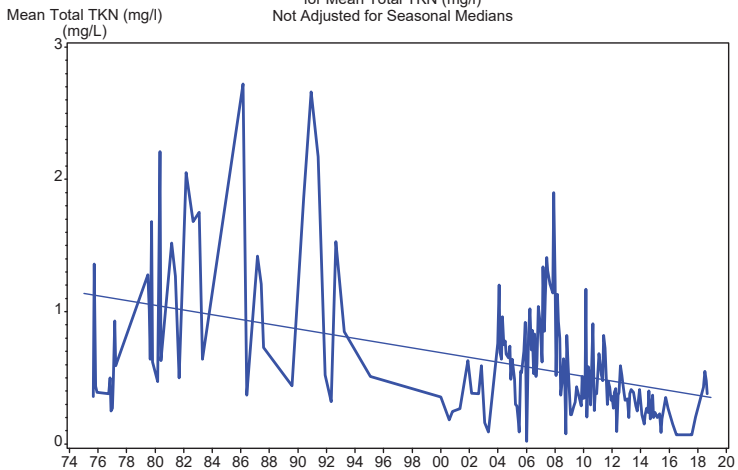
Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.057	0.087	0.174	-0.174
15	-0.019	0.087	0.175	-0.175

S_21FLPBCH11 Trends Appendix
 Correlogram for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

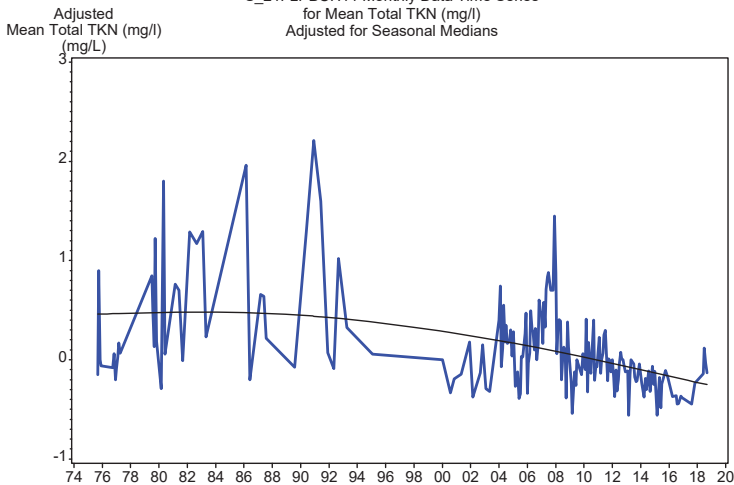


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

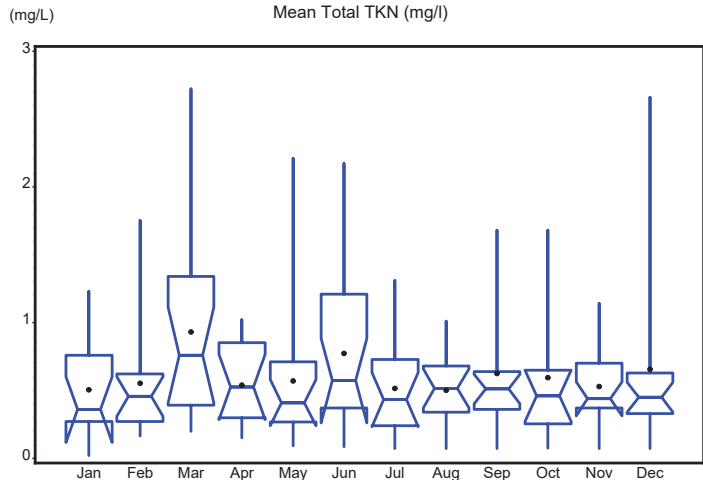
S_21FLPBCH11 Trends
 S_21FLPBCH11 Monthly Data Time Series
 for Mean Total TKN (mg/l)
 Not Adjusted for Seasonal Medians



S_21FLPBCH11 Trends
 S_21FLPBCH11 Monthly Data Time Series
 for Mean Total TKN (mg/l)
 Adjusted for Seasonal Medians



S_21FLPBCH11 Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



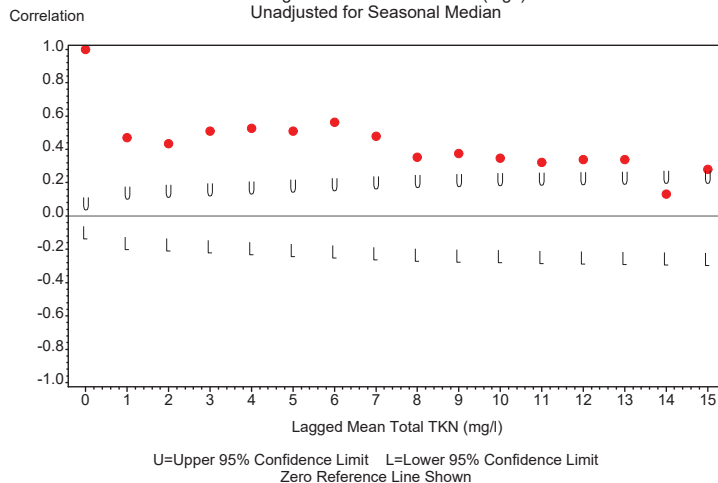
S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.470	0.075	0.151	-0.151
2	0.434	0.081	0.161	-0.161
3	0.509	0.085	0.170	-0.170
4	0.525	0.091	0.181	-0.181
5	0.510	0.096	0.192	-0.192
6	0.563	0.101	0.202	-0.202
7	0.478	0.107	0.214	-0.214
8	0.351	0.111	0.222	-0.222
9	0.375	0.113	0.226	-0.226
10	0.346	0.115	0.231	-0.231
11	0.321	0.117	0.235	-0.235
12	0.339	0.119	0.238	-0.238
13	0.338	0.121	0.242	-0.242

S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.130	0.123	0.245	-0.245
15	0.279	0.123	0.246	-0.246

S_21FLPBCH11 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



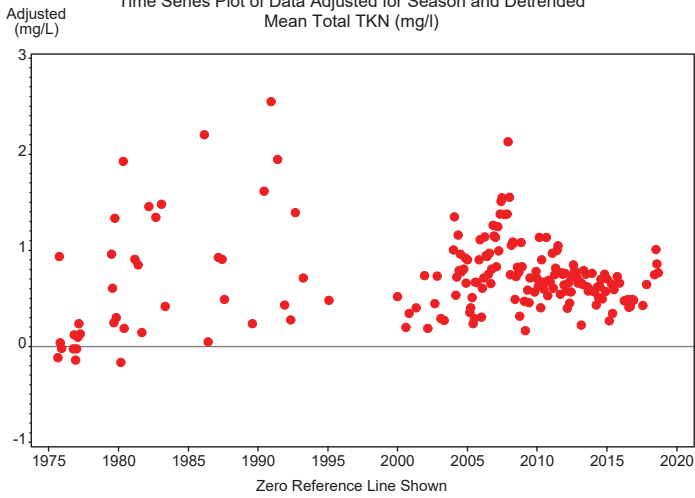
S_21FLPBCH11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.361	0	.002	-0.02

S_21FLPBCH11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.36111	0	.00153348	-0.02

S_21FLPBCH11 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total TKN (mg/l)



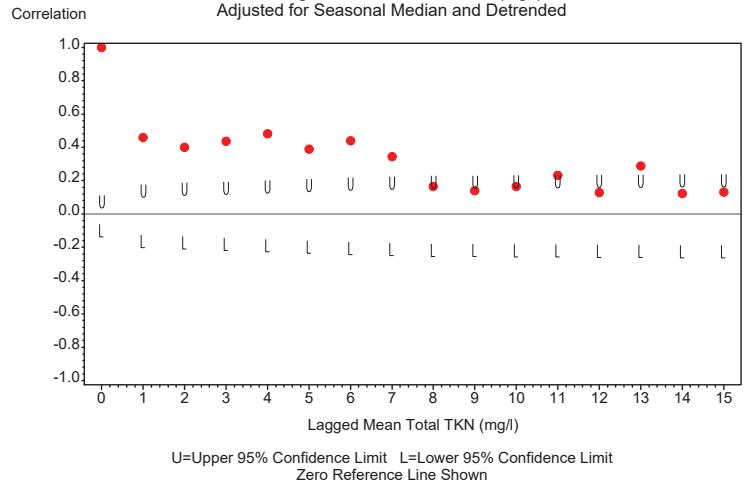
S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.459	0.075	0.151	-0.151
2	0.399	0.080	0.161	-0.161
3	0.436	0.084	0.168	-0.168
4	0.481	0.088	0.177	-0.177
5	0.389	0.093	0.186	-0.186
6	0.438	0.096	0.192	-0.192
7	0.343	0.100	0.200	-0.200
8	0.164	0.102	0.204	-0.204
9	0.140	0.103	0.205	-0.205
10	0.166	0.103	0.206	-0.206
11	0.233	0.103	0.207	-0.207
12	0.129	0.104	0.209	-0.209
13	0.289	0.105	0.210	-0.210

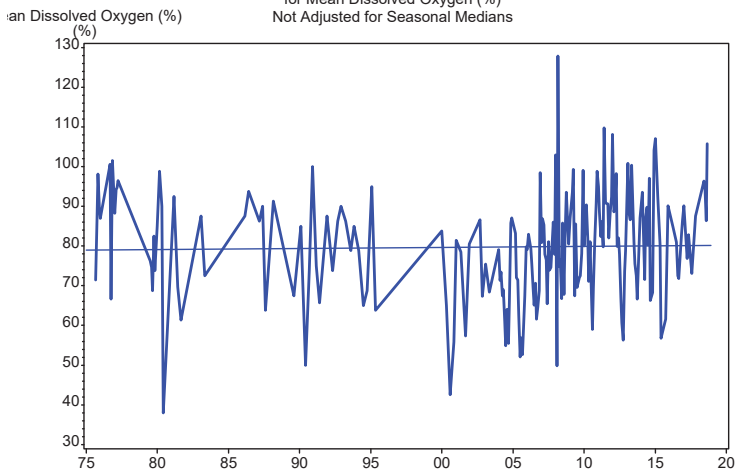
S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.124	0.106	0.213	-0.213
15	0.130	0.107	0.213	-0.213

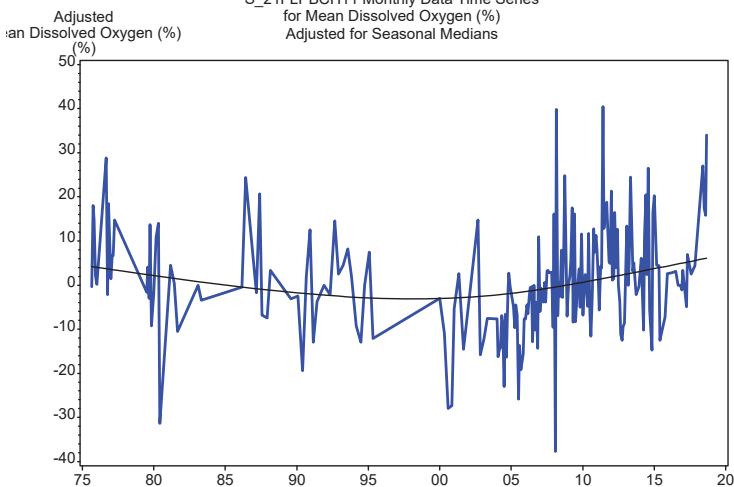
S_21FLPBCH11 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended



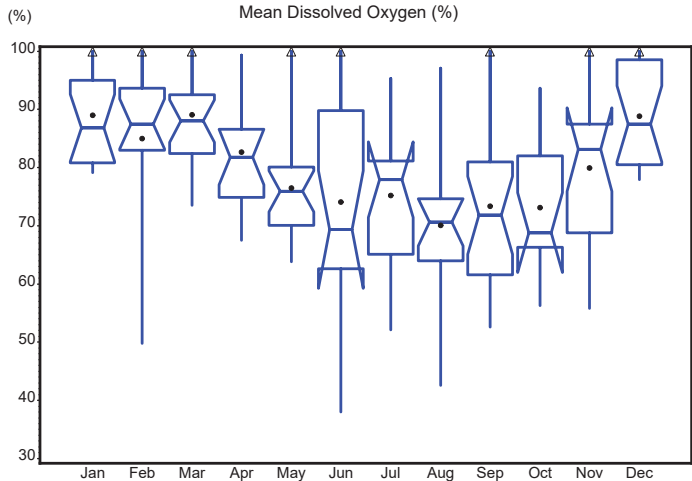
S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Dissolved Oxygen (%)
Not Adjusted for Seasonal Medians



S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Medians



S_21FLPBCH11 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (%)



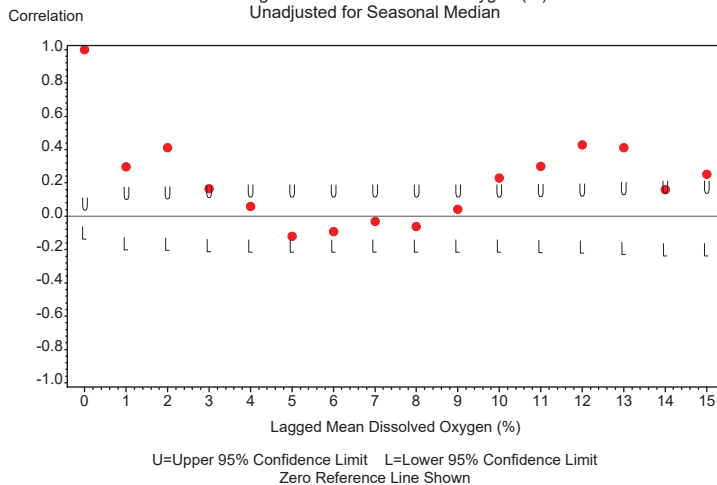
S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.295	0.075	0.151	-0.151
2	0.410	0.078	0.155	-0.155
3	0.165	0.082	0.163	-0.163
4	0.057	0.082	0.164	-0.164
5	-0.122	0.082	0.164	-0.164
6	-0.092	0.083	0.165	-0.165
7	-0.030	0.083	0.166	-0.166
8	-0.062	0.083	0.166	-0.166
9	0.041	0.083	0.166	-0.166
10	0.230	0.083	0.166	-0.166
11	0.298	0.084	0.168	-0.168
12	0.427	0.086	0.172	-0.172
13	0.412	0.090	0.180	-0.180

S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.158	0.094	0.187	-0.187
15	0.252	0.094	0.188	-0.188

S_21FLPBCH11 Trends Appendix
Correlogram for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Median



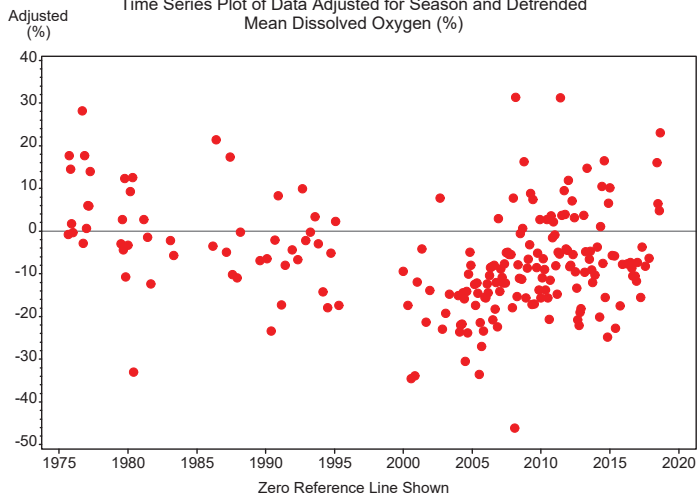
S_21FLPBCH11 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (%)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.148	.005	0.085	0.247

S_21FLPBCH11 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.14775	.00454152	0.084849	0.24667

S_21FLPBCH11 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Dissolved Oxygen (%)



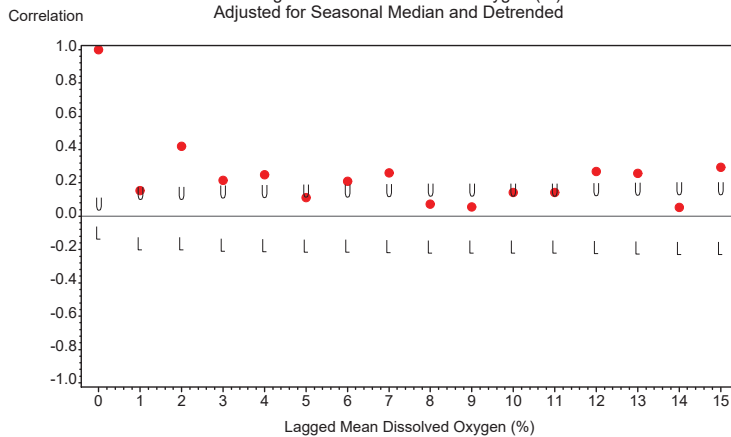
S_21FLPBCH11 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.154	0.075	0.151	-0.151
2	0.419	0.076	0.152	-0.152
3	0.216	0.080	0.160	-0.160
4	0.248	0.081	0.163	-0.163
5	0.111	0.083	0.165	-0.165
6	0.210	0.083	0.166	-0.166
7	0.260	0.084	0.168	-0.168
8	0.071	0.086	0.171	-0.171
9	0.056	0.086	0.171	-0.171
10	0.143	0.086	0.171	-0.171
11	0.143	0.086	0.172	-0.172
12	0.268	0.087	0.173	-0.173
13	0.258	0.088	0.176	-0.176

S_21FLPBCH11 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Median and Detrended

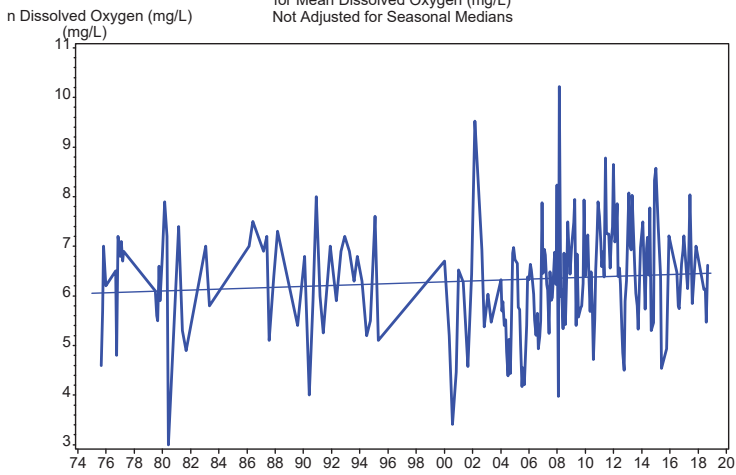
Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.054	0.090	0.179	-0.179
15	0.294	0.090	0.179	-0.179

S_21FLPBCH11 Trends Appendix
 Correlogram for Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Median and Detrended

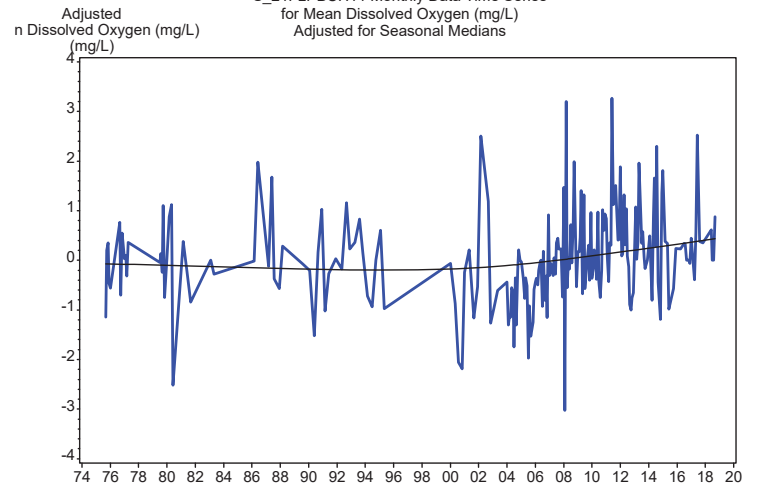


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

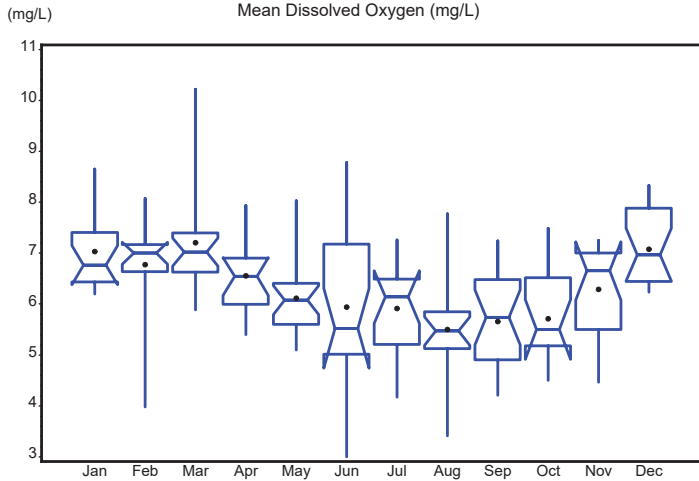
S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Not Adjusted for Seasonal Medians



S_21FLPBCH11 Trends
S_21FLPBCH11 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians



S_21FLPBCH11 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



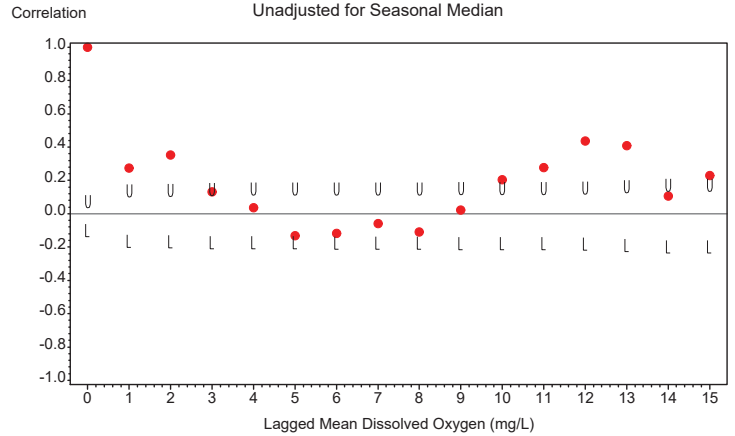
S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.275	0.075	0.151	-0.151
2	0.352	0.077	0.155	-0.155
3	0.131	0.080	0.160	-0.160
4	0.035	0.081	0.161	-0.161
5	-0.133	0.081	0.161	-0.161
6	-0.117	0.081	0.162	-0.162
7	-0.059	0.081	0.163	-0.163
8	-0.111	0.081	0.163	-0.163
9	0.021	0.082	0.164	-0.164
10	0.204	0.082	0.164	-0.164
11	0.276	0.083	0.165	-0.165
12	0.435	0.084	0.169	-0.169
13	0.407	0.089	0.177	-0.177

S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.107	0.092	0.184	-0.184
15	0.229	0.092	0.185	-0.185

S_21FLPBCH11 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

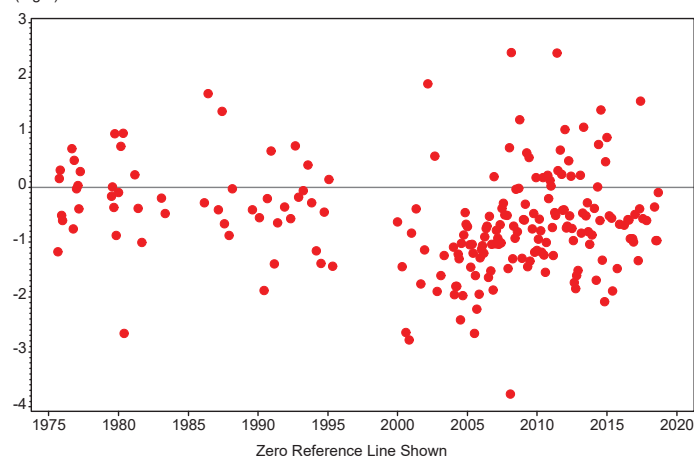
S_21FLPBCH11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.189	0	0.022	0.022

S_21FLPBCH11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.18928	.000241518	0.021826	0.021875

S_21FLPBCH11 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (mg/L)



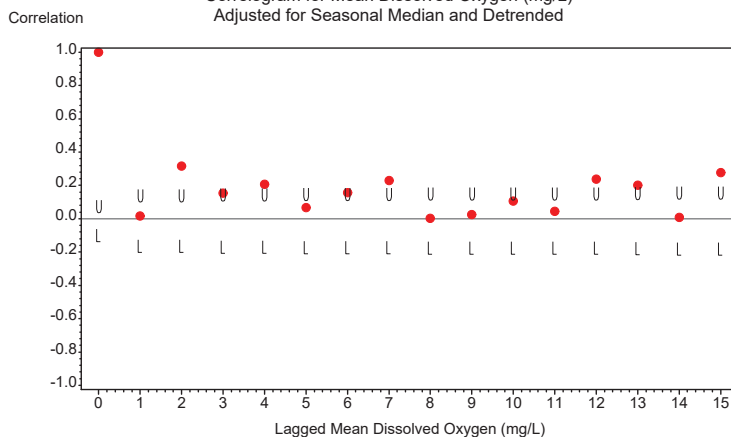
S_21FLPBCH11 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.015	0.075	0.151	-0.151
2	0.316	0.075	0.151	-0.151
3	0.154	0.078	0.156	-0.156
4	0.207	0.078	0.157	-0.157
5	0.068	0.079	0.159	-0.159
6	0.155	0.080	0.159	-0.159
7	0.230	0.080	0.160	-0.160
8	0.002	0.081	0.163	-0.163
9	0.025	0.081	0.163	-0.163
10	0.107	0.081	0.163	-0.163
11	0.045	0.082	0.163	-0.163
12	0.238	0.082	0.163	-0.163
13	0.200	0.083	0.166	-0.166

S_21FLPBCH11 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

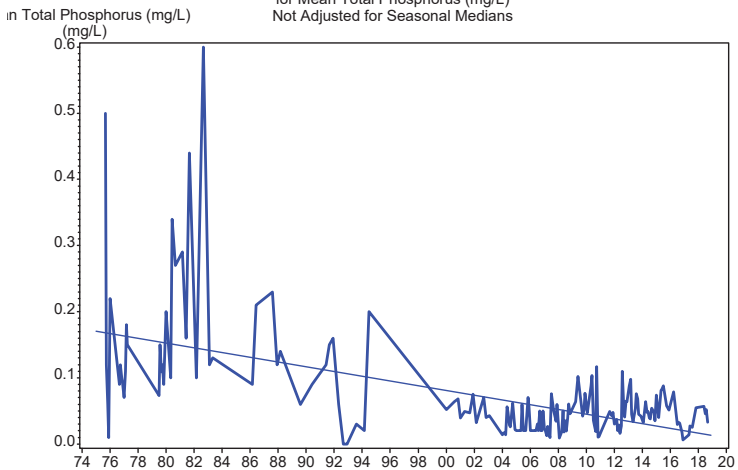
Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.008	0.084	0.168	-0.168
15	0.276	0.084	0.168	-0.168

S_21FLPBCH11 Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

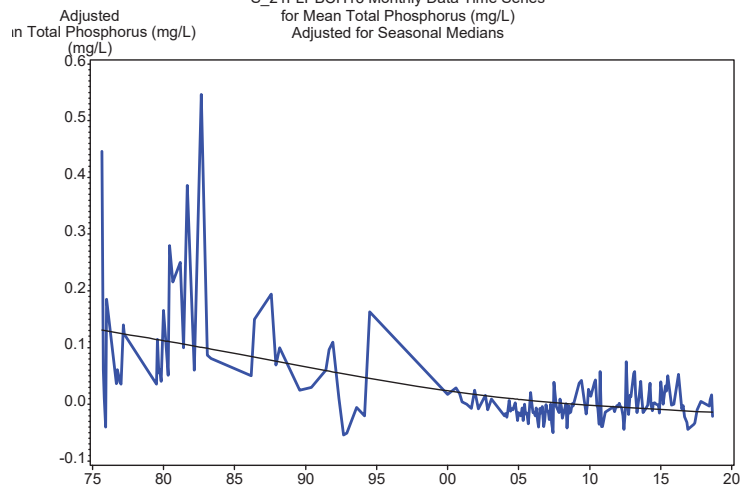


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

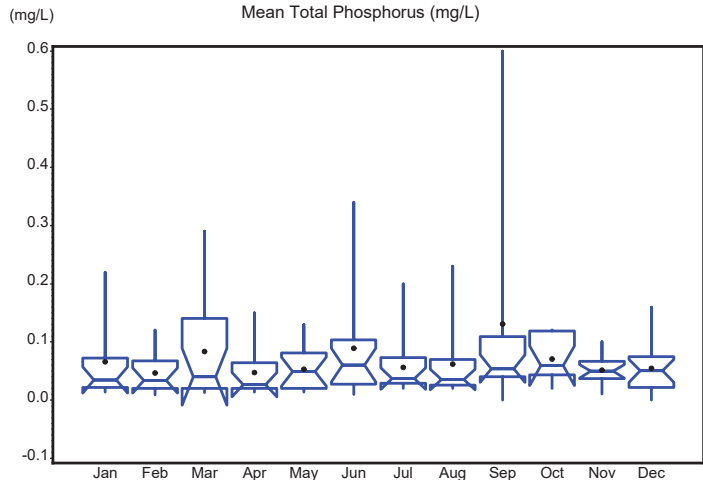
S_21FLPBCH13 Trends
 S_21FLPBCH13 Monthly Data Time Series
 for Mean Total Phosphorus (mg/L)
 Not Adjusted for Seasonal Medians



S_21FLPBCH13 Trends
 S_21FLPBCH13 Monthly Data Time Series
 for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians



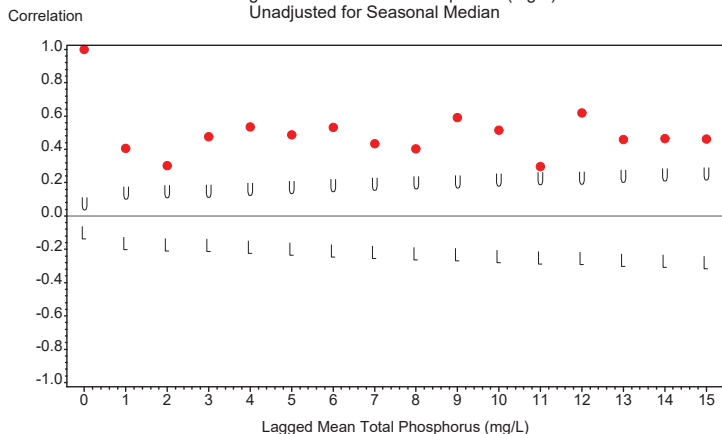
S_21FLPBCH13 Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.406	0.075	0.151	-0.151
2	0.303	0.079	0.159	-0.159
3	0.475	0.082	0.163	-0.163
4	0.534	0.087	0.173	-0.173
5	0.486	0.093	0.185	-0.185
6	0.531	0.097	0.195	-0.195
7	0.434	0.103	0.205	-0.205
8	0.402	0.106	0.212	-0.212
9	0.589	0.109	0.218	-0.218
10	0.515	0.115	0.230	-0.230
11	0.296	0.119	0.238	-0.238
12	0.619	0.121	0.241	-0.241
13	0.460	0.126	0.253	-0.253
14	0.465	0.130	0.259	-0.259
15	0.461	0.133	0.265	-0.265

S_21FLPBCH13 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

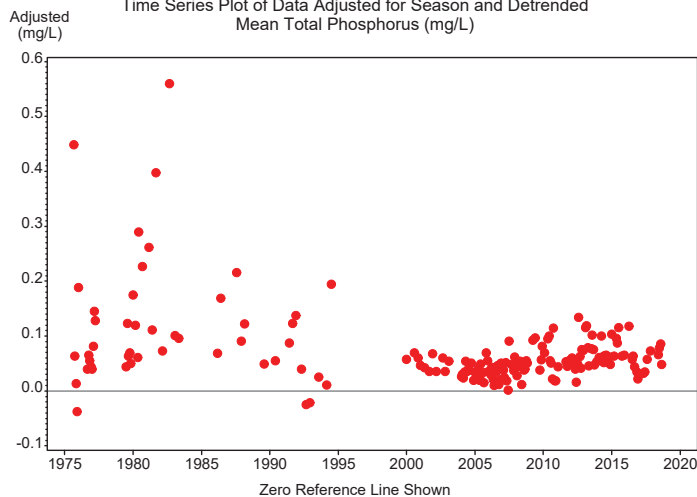
S_21FLPBCH13 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.265	0	.007	-.002

S_21FLPBCH13 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.26528	.000002683	.00646408	-.00155

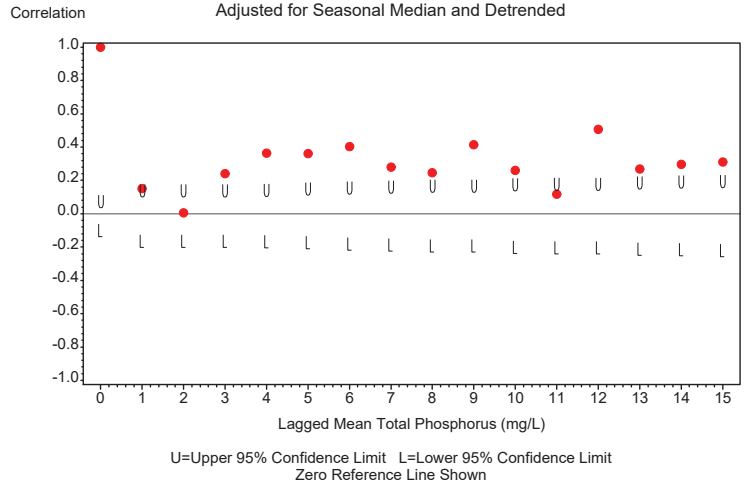
S_21FLPBCH13 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Phosphorus (mg/L)



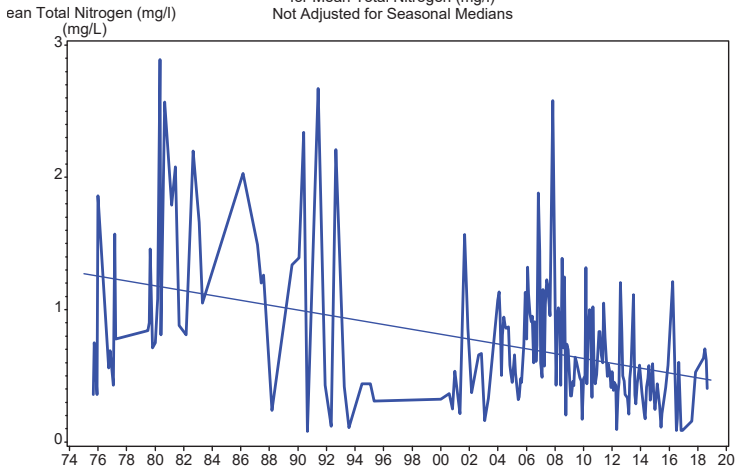
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.151	0.075	0.151	-0.151
2	0.004	0.076	0.152	-0.152
3	0.240	0.076	0.152	-0.152
4	0.363	0.077	0.155	-0.155
5	0.360	0.081	0.161	-0.161
6	0.403	0.084	0.167	-0.167
7	0.280	0.087	0.174	-0.174
8	0.246	0.089	0.178	-0.178
9	0.414	0.090	0.180	-0.180
10	0.260	0.094	0.187	-0.187
11	0.117	0.095	0.190	-0.190
12	0.505	0.095	0.191	-0.191
13	0.269	0.100	0.200	-0.200
14	0.295	0.102	0.203	-0.203
15	0.311	0.103	0.206	-0.206

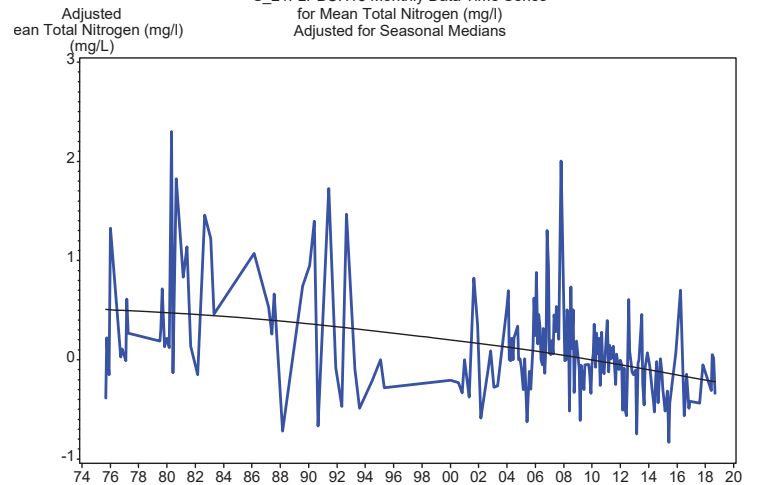
S_21FLPBCH13 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Median and Detrended



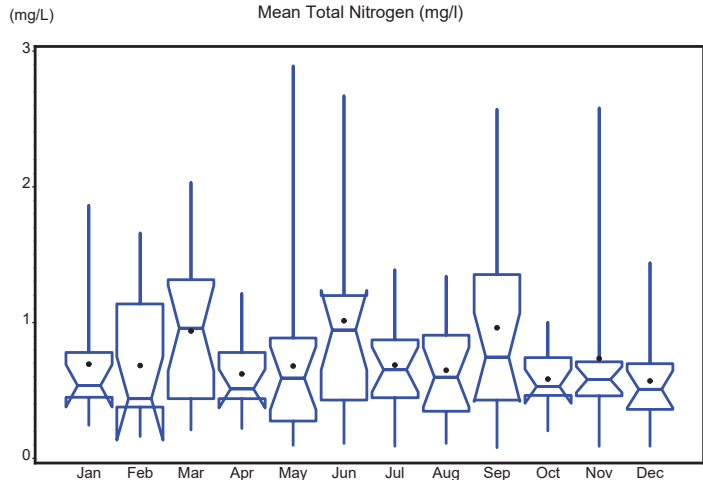
S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Not Adjusted for Seasonal Medians



S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians



S_21FLPBCH13 Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



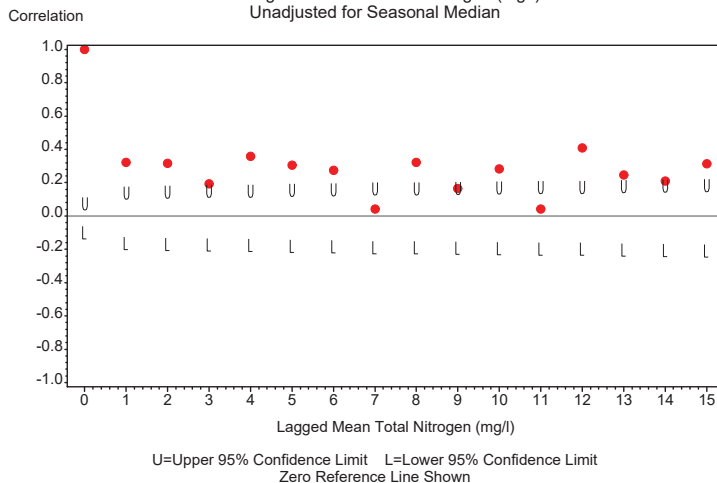
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.321	0.075	0.151	-0.151
2	0.316	0.078	0.156	-0.156
3	0.192	0.080	0.161	-0.161
4	0.358	0.081	0.162	-0.162
5	0.305	0.084	0.168	-0.168
6	0.273	0.086	0.172	-0.172
7	0.042	0.088	0.176	-0.176
8	0.321	0.088	0.176	-0.176
9	0.165	0.090	0.180	-0.180
10	0.281	0.091	0.181	-0.181
11	0.041	0.092	0.185	-0.185
12	0.408	0.092	0.185	-0.185
13	0.245	0.096	0.191	-0.191

S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.210	0.097	0.194	-0.194
15	0.313	0.098	0.195	-0.195

S_21FLPBCH13 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



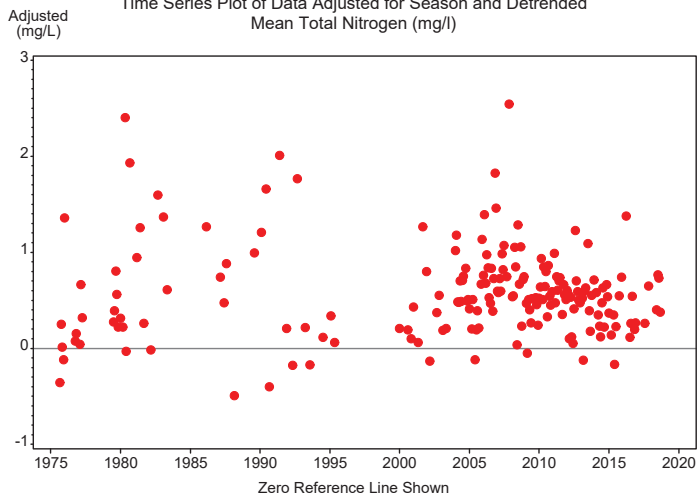
S_21FLPBCH13 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.288	0	.002	-0.016

S_21FLPBCH13 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.28791	.000000136	.00160691	-0.016

S_21FLPBCH13 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Nitrogen (mg/l)



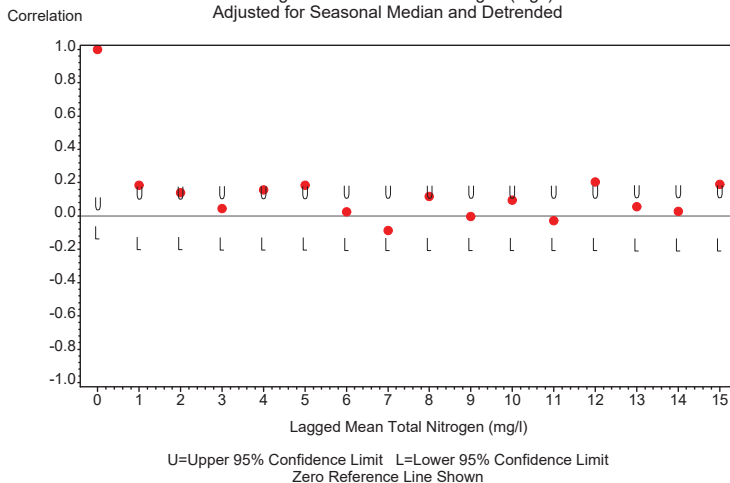
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.184	0.075	0.151	-0.151
2	0.140	0.076	0.152	-0.152
3	0.045	0.077	0.153	-0.153
4	0.157	0.077	0.154	-0.154
5	0.183	0.077	0.155	-0.155
6	0.025	0.078	0.156	-0.156
7	-0.087	0.078	0.156	-0.156
8	0.117	0.078	0.157	-0.157
9	-0.004	0.079	0.157	-0.157
10	0.096	0.079	0.157	-0.157
11	-0.029	0.079	0.158	-0.158
12	0.204	0.079	0.158	-0.158
13	0.056	0.080	0.160	-0.160

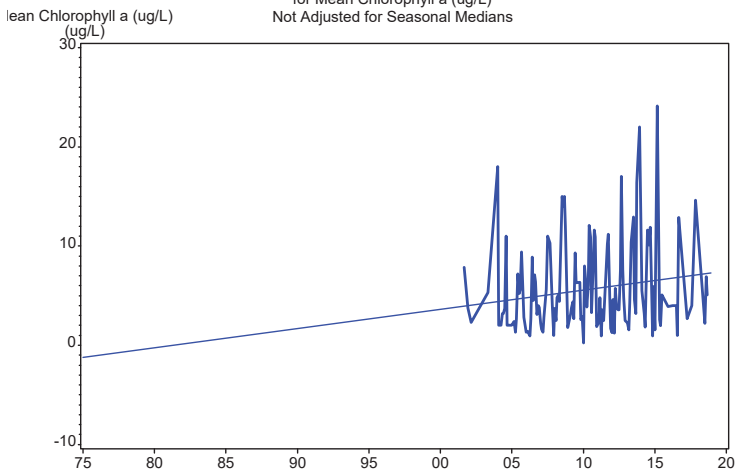
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.027	0.080	0.160	-0.160
15	0.189	0.080	0.160	-0.160

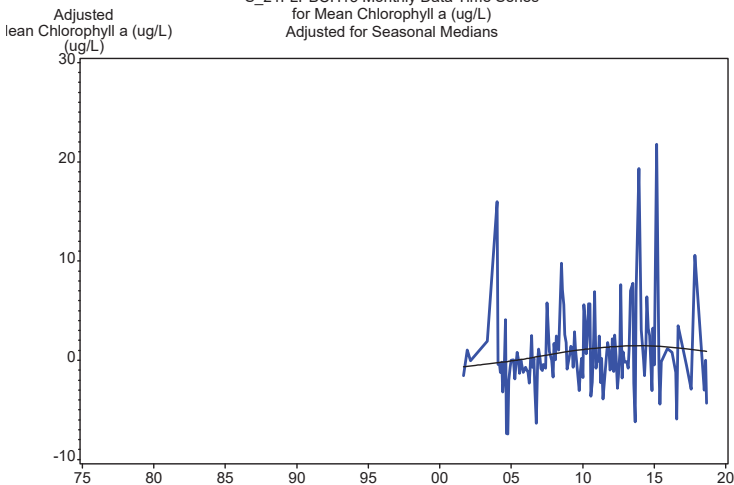
S_21FLPBCH13 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended



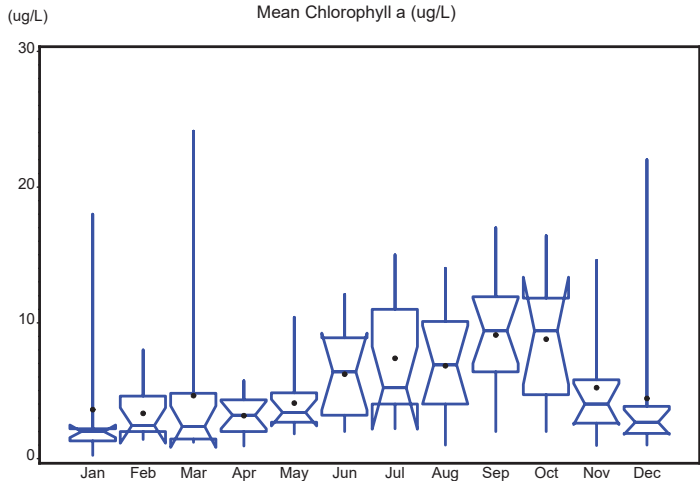
S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Chlorophyll a (ug/L)
Not Adjusted for Seasonal Medians



S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Chlorophyll a (ug/L)
Adjusted for Seasonal Medians



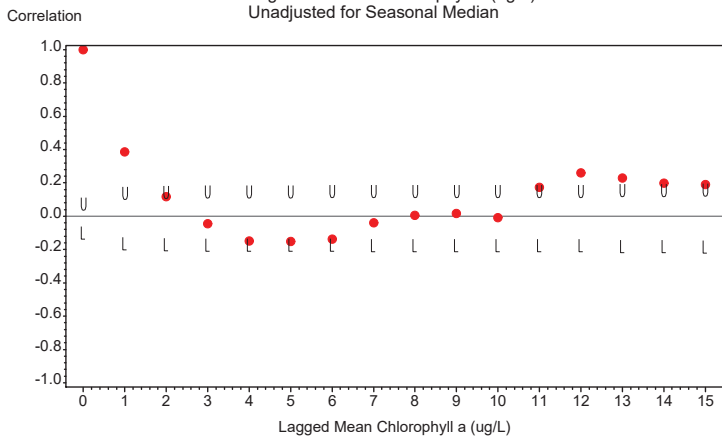
S_21FLPBCH13 Trends Appendix
Seasonal Univariate Statistics
Mean Chlorophyll a (ug/L)



S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.386	0.075	0.151	-0.151
2	0.116	0.079	0.158	-0.158
3	-0.046	0.079	0.159	-0.159
4	-0.149	0.079	0.159	-0.159
5	-0.152	0.080	0.160	-0.160
6	-0.137	0.080	0.161	-0.161
7	-0.041	0.081	0.162	-0.162
8	0.005	0.081	0.162	-0.162
9	0.017	0.081	0.162	-0.162
10	-0.009	0.081	0.162	-0.162
11	0.174	0.081	0.162	-0.162
12	0.261	0.082	0.163	-0.163
13	0.230	0.083	0.167	-0.167
14	0.199	0.084	0.169	-0.169
15	0.191	0.085	0.171	-0.171

S_21FLPBCH13 Trends Appendix
Correlogram for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

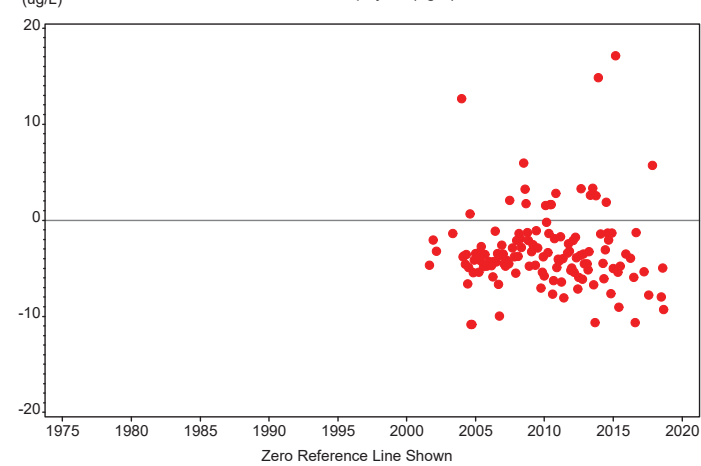
S_21FLPBCH13 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.095	0.164	0.295	0.112

S_21FLPBCH13 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.094828	0.16362	0.29521	0.11208

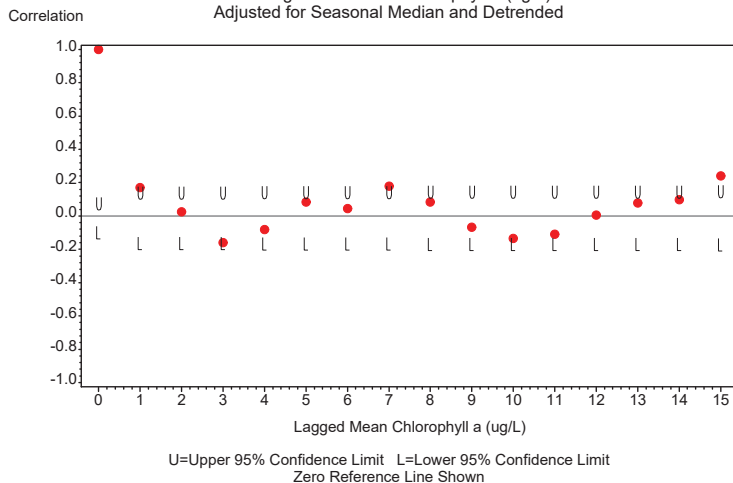
S_21FLPBCH13 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Chlorophyll a (ug/L)



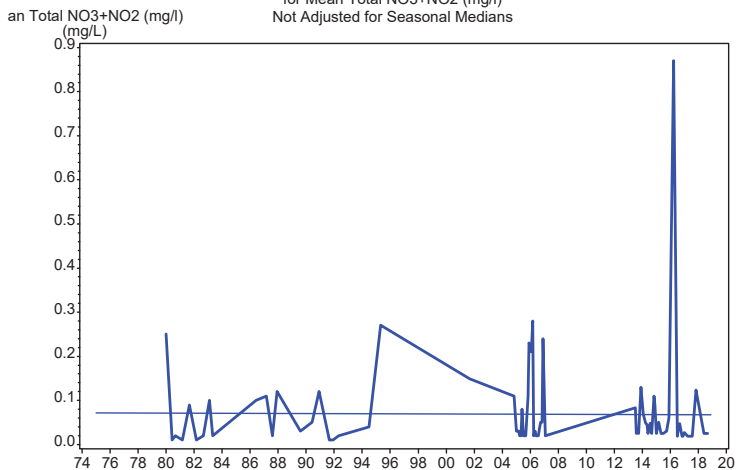
S_21FLPBCH13 Trends Appendix
 Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.171	0.075	0.151	-0.151
2	0.025	0.076	0.152	-0.152
3	-0.159	0.076	0.152	-0.152
4	-0.083	0.077	0.154	-0.154
5	0.083	0.077	0.154	-0.154
6	0.045	0.077	0.154	-0.154
7	0.179	0.077	0.154	-0.154
8	0.084	0.078	0.156	-0.156
9	-0.068	0.078	0.156	-0.156
10	-0.136	0.078	0.156	-0.156
11	-0.109	0.079	0.157	-0.157
12	0.006	0.079	0.158	-0.158
13	0.077	0.079	0.158	-0.158
14	0.098	0.079	0.158	-0.158
15	0.239	0.079	0.159	-0.159

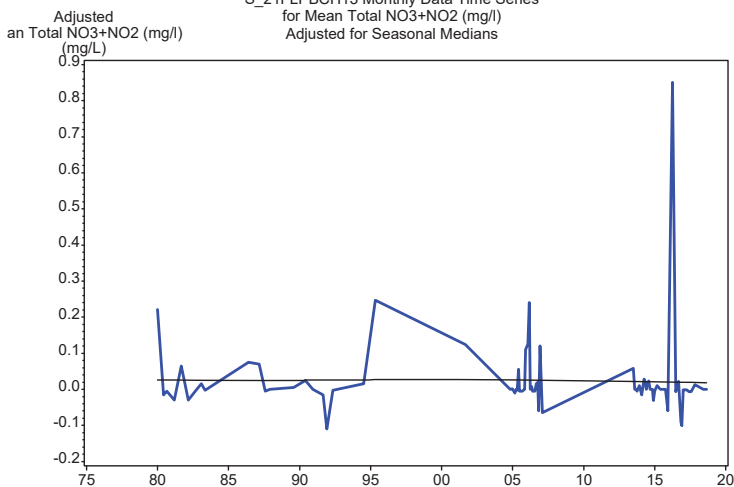
S_21FLPBCH13 Trends Appendix
 Correlogram for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended



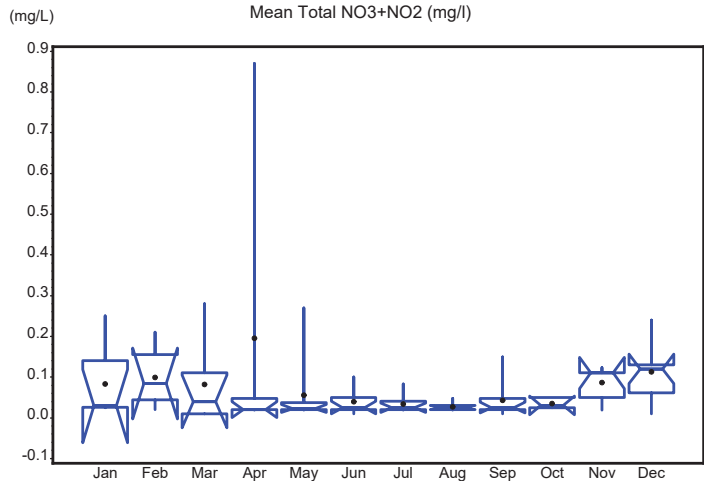
S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Total NO3+NO2 (mg/l)
Not Adjusted for Seasonal Medians



S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Medians



S_21FLPBCH13 Trends Appendix
Seasonal Univariate Statistics
Mean Total NO3+NO2 (mg/l)



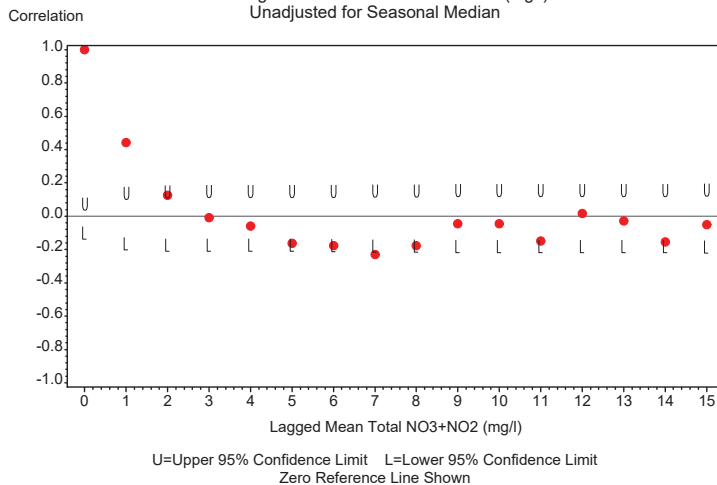
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.442	0.075	0.151	-0.151
2	0.125	0.080	0.160	-0.160
3	-0.008	0.081	0.161	-0.161
4	-0.060	0.081	0.161	-0.161
5	-0.163	0.081	0.161	-0.161
6	-0.177	0.081	0.162	-0.162
7	-0.229	0.082	0.164	-0.164
8	-0.178	0.083	0.166	-0.166
9	-0.046	0.084	0.168	-0.168
10	-0.044	0.084	0.168	-0.168
11	-0.149	0.084	0.168	-0.168
12	0.016	0.084	0.169	-0.169
13	-0.028	0.084	0.169	-0.169

S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.155	0.084	0.169	-0.169
15	-0.052	0.085	0.170	-0.170

S_21FLPBCH13 Trends Appendix
Correlogram for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Median



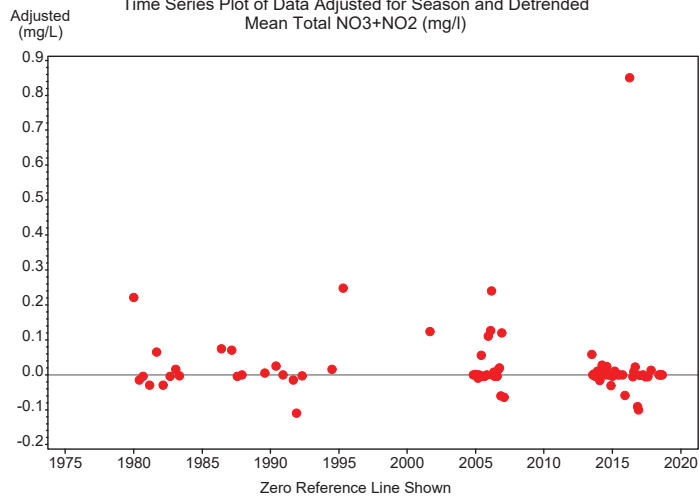
S_21FLPBCH13 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total NO3+NO2 (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.029	0.782	0.792	0

S_21FLPBCH13 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.029197	0.78212	0.79201	0

S_21FLPBCH13 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total NO3+NO2 (mg/l)



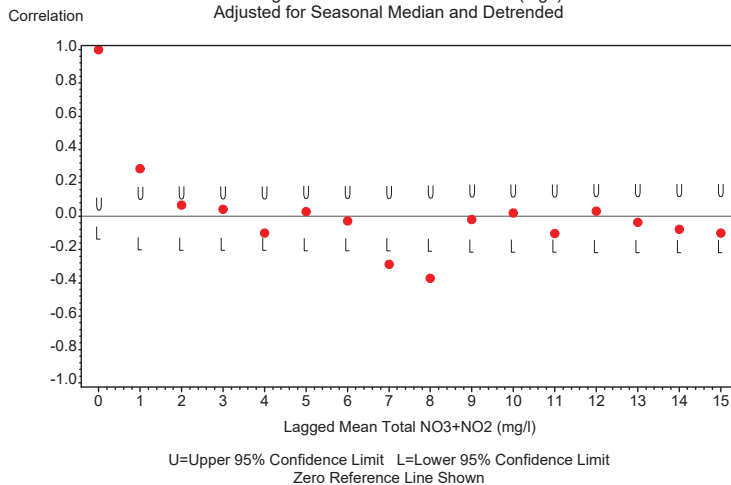
S_21FLPBCH13 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.285	0.075	0.151	-0.151
2	0.066	0.077	0.155	-0.155
3	0.042	0.078	0.155	-0.155
4	-0.100	0.078	0.155	-0.155
5	0.028	0.078	0.156	-0.156
6	-0.029	0.078	0.156	-0.156
7	-0.289	0.078	0.156	-0.156
8	-0.372	0.080	0.160	-0.160
9	-0.021	0.083	0.166	-0.166
10	0.018	0.083	0.166	-0.166
11	-0.105	0.083	0.166	-0.166
12	0.030	0.083	0.167	-0.167
13	-0.037	0.083	0.167	-0.167

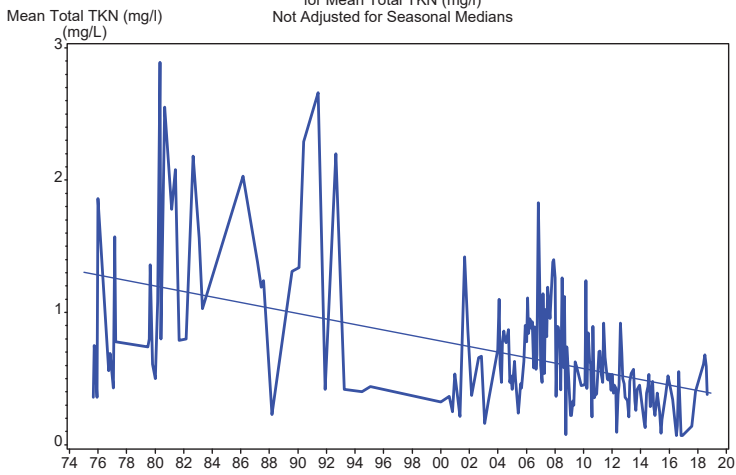
S_21FLPBCH13 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.079	0.083	0.167	-0.167
15	-0.102	0.084	0.167	-0.167

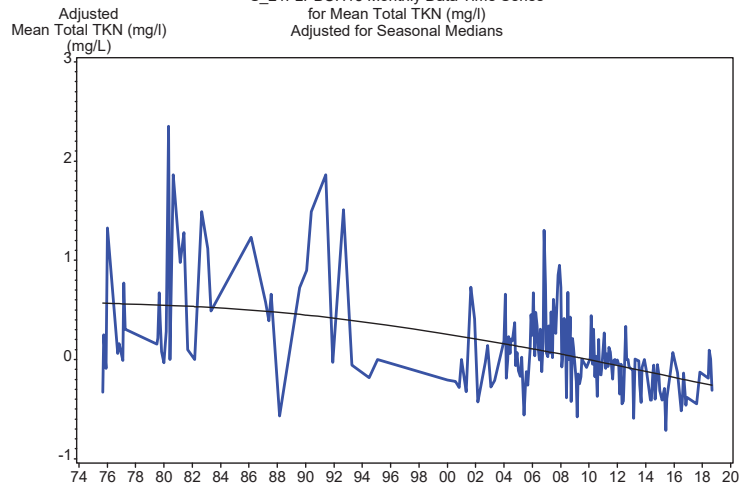
S_21FLPBCH13 Trends Appendix
 Correlogram for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended



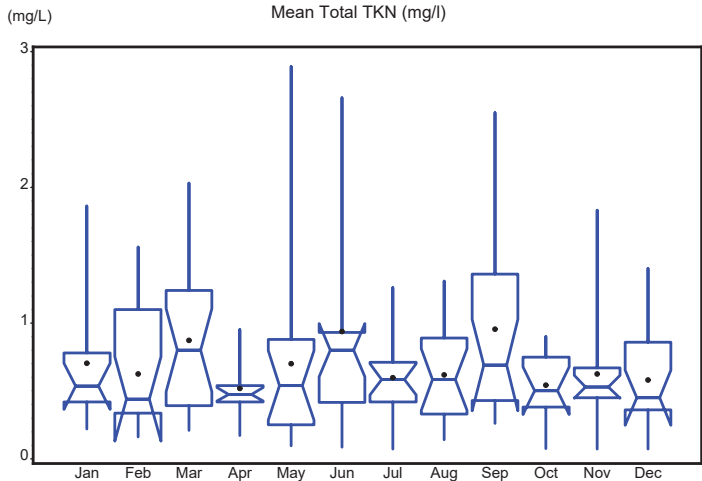
S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Total TKN (mg/l)
Not Adjusted for Seasonal Medians



S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Total TKN (mg/l)
Adjusted for Seasonal Medians



S_21FLPBCH13 Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



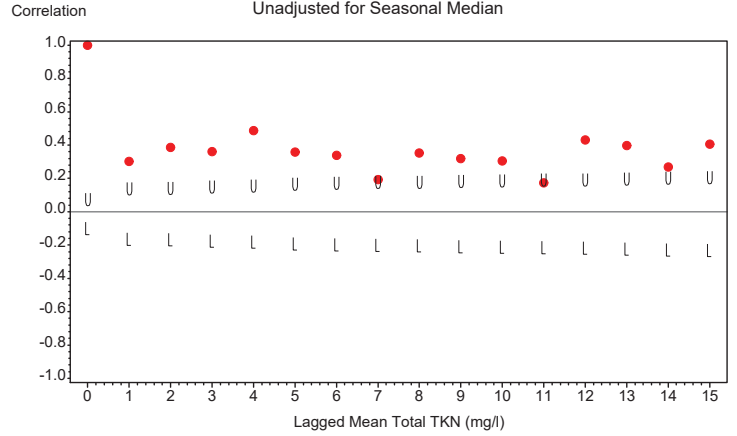
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.302	0.075	0.151	-0.151
2	0.387	0.078	0.155	-0.155
3	0.362	0.081	0.162	-0.162
4	0.486	0.084	0.168	-0.168
5	0.358	0.089	0.179	-0.179
6	0.339	0.092	0.184	-0.184
7	0.192	0.094	0.189	-0.189
8	0.352	0.095	0.190	-0.190
9	0.319	0.098	0.195	-0.195
10	0.306	0.100	0.199	-0.199
11	0.172	0.101	0.203	-0.203
12	0.432	0.102	0.204	-0.204
13	0.397	0.105	0.210	-0.210

S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.268	0.108	0.216	-0.216
15	0.405	0.109	0.219	-0.219

S_21FLPBCH13 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

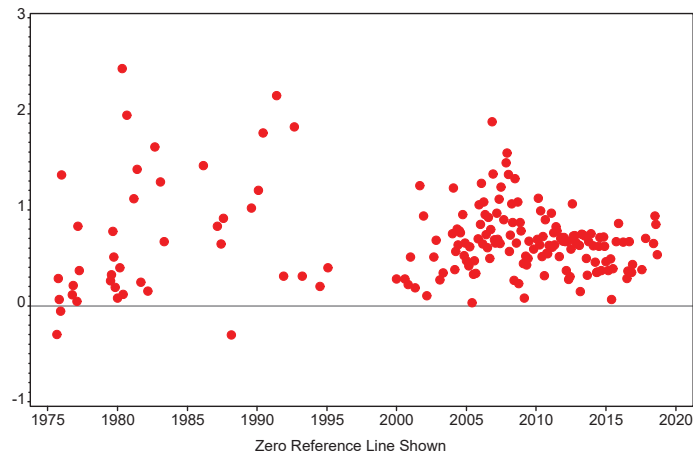
S_21FLPBCH13 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.354	0	0	-0.019

S_21FLPBCH13 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.35351	0	.000478217	-0.018818

S_21FLPBCH13 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total TKN (mg/l)



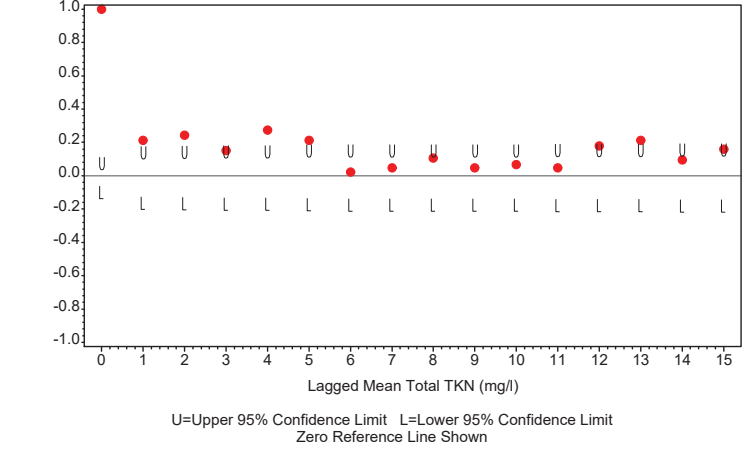
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.211	0.075	0.151	-0.151
2	0.243	0.076	0.153	-0.153
3	0.150	0.078	0.156	-0.156
4	0.273	0.078	0.157	-0.157
5	0.211	0.080	0.161	-0.161
6	0.023	0.081	0.163	-0.163
7	0.046	0.081	0.163	-0.163
8	0.107	0.081	0.163	-0.163
9	0.046	0.082	0.163	-0.163
10	0.068	0.082	0.163	-0.163
11	0.046	0.082	0.164	-0.164
12	0.178	0.082	0.164	-0.164
13	0.211	0.083	0.165	-0.165

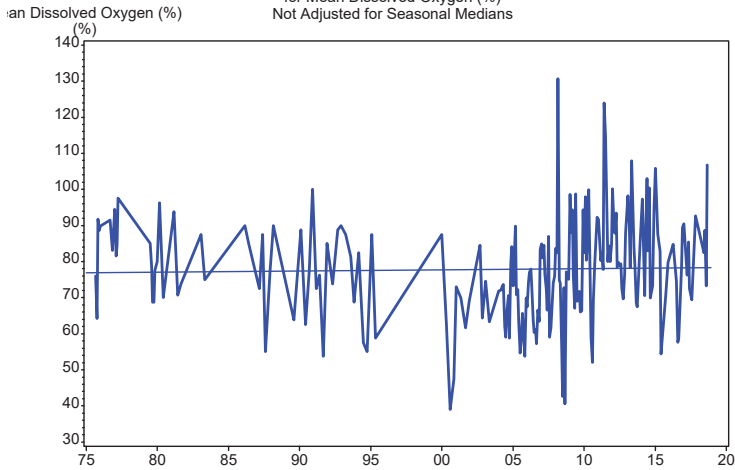
S_21FLPBCH13 Trends Appendix
 Autocorrelation Statistics for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.094	0.084	0.167	-0.167
15	0.159	0.084	0.168	-0.168

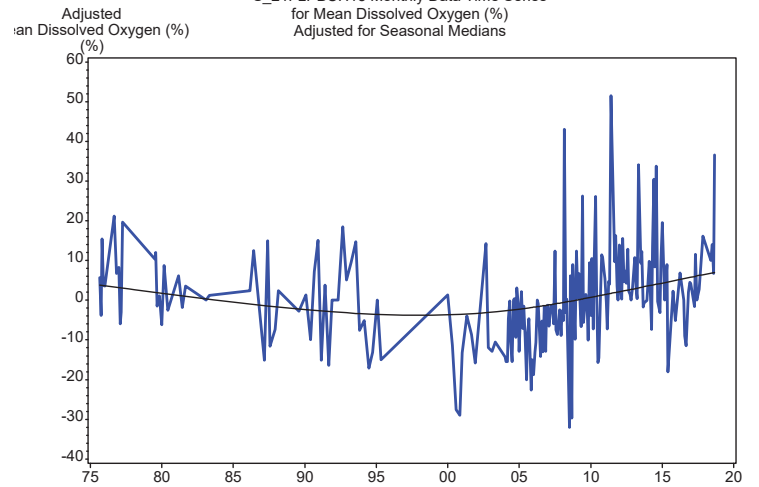
S_21FLPBCH13 Trends Appendix
 Correlogram for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended



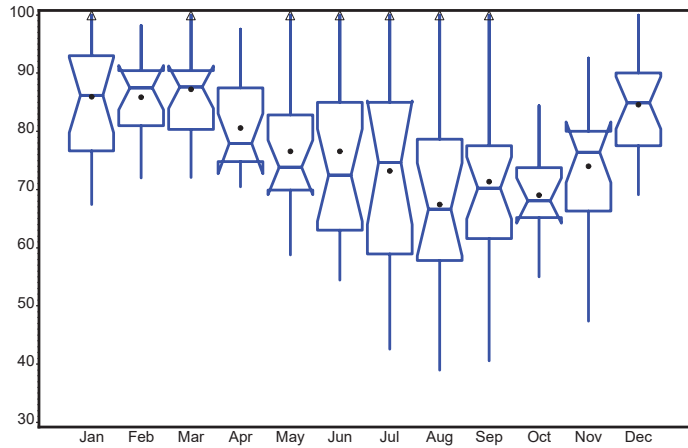
S_21FLPBCH13 Trends
 S_21FLPBCH13 Monthly Data Time Series
 for Mean Dissolved Oxygen (%)
 Not Adjusted for Seasonal Medians



S_21FLPBCH13 Trends
 S_21FLPBCH13 Monthly Data Time Series
 for Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Medians



S_21FLPBCH13 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (%)



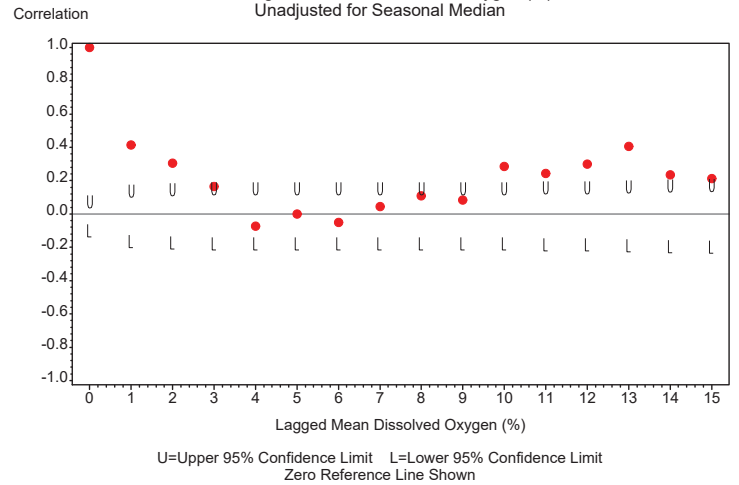
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.415	0.075	0.151	-0.151
2	0.306	0.080	0.159	-0.159
3	0.164	0.082	0.164	-0.164
4	-0.073	0.082	0.165	-0.165
5	0.000	0.083	0.165	-0.165
6	-0.052	0.083	0.165	-0.165
7	0.043	0.083	0.165	-0.165
8	0.108	0.083	0.165	-0.165
9	0.083	0.083	0.166	-0.166
10	0.285	0.083	0.166	-0.166
11	0.243	0.085	0.170	-0.170
12	0.300	0.086	0.172	-0.172
13	0.406	0.088	0.176	-0.176

S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.235	0.092	0.183	-0.183
15	0.212	0.093	0.186	-0.186

S_21FLPBCH13 Trends Appendix
Correlogram for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Median



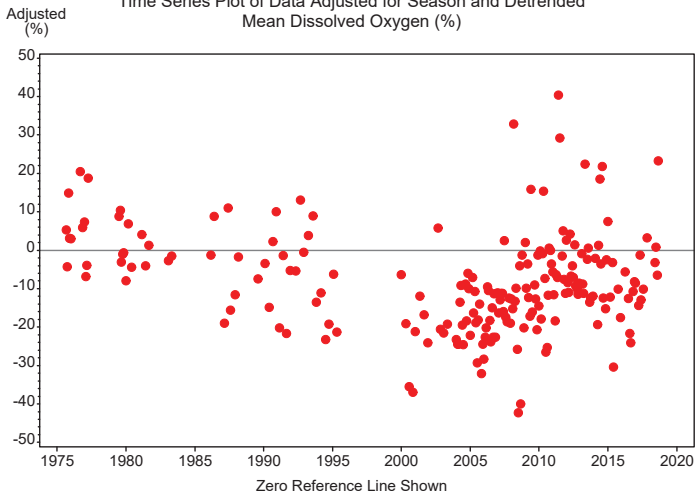
S_21FLPBCH13 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.154	.003	0.082	0.297

S_21FLPBCH13 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (%)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.15403	.00302827	0.081860	0.29673

S_21FLPBCH13 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (%)



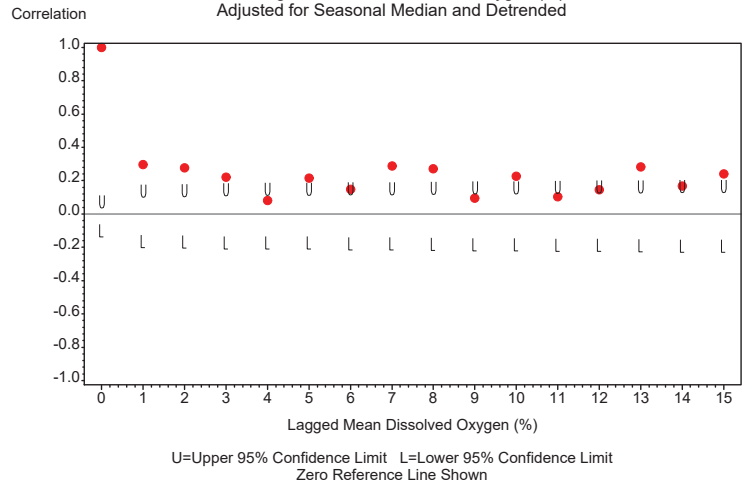
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.295	0.075	0.151	-0.151
2	0.276	0.078	0.155	-0.155
3	0.220	0.079	0.159	-0.159
4	0.082	0.081	0.161	-0.161
5	0.214	0.081	0.161	-0.161
6	0.148	0.082	0.164	-0.164
7	0.287	0.082	0.165	-0.165
8	0.271	0.084	0.168	-0.168
9	0.096	0.086	0.172	-0.172
10	0.225	0.086	0.172	-0.172
11	0.104	0.087	0.174	-0.174
12	0.145	0.087	0.175	-0.175
13	0.281	0.088	0.176	-0.176

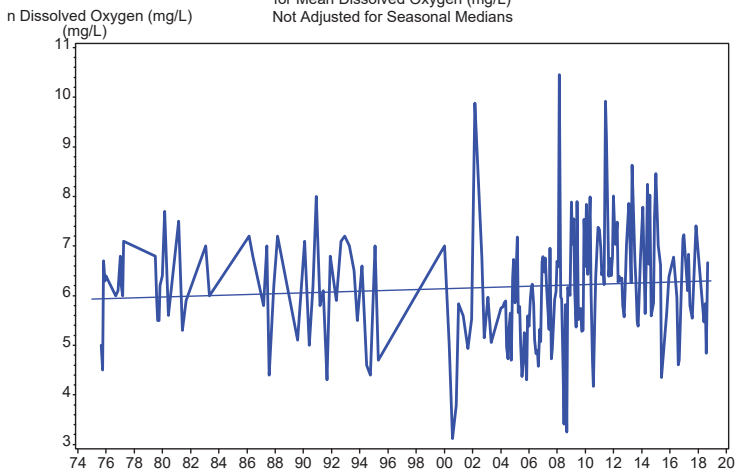
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.168	0.089	0.179	-0.179
15	0.239	0.090	0.180	-0.180

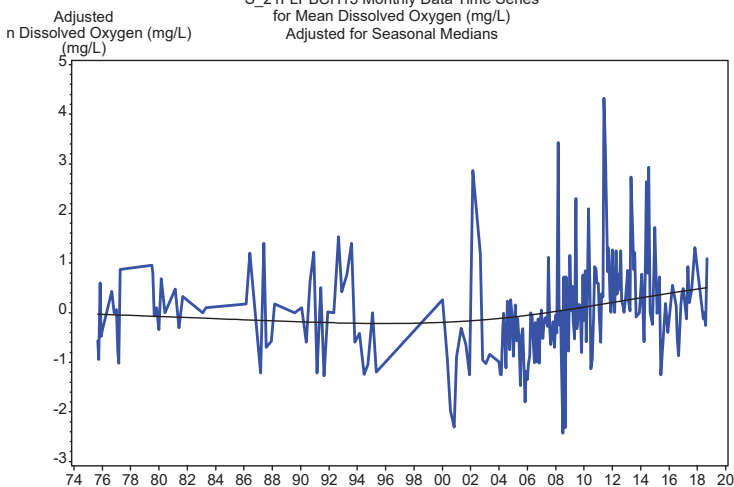
S_21FLPBCH13 Trends Appendix
Correlogram for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended



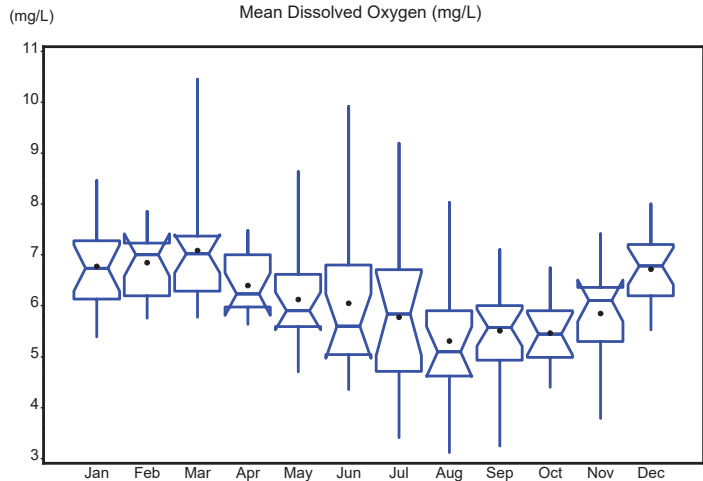
S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Not Adjusted for Seasonal Medians



S_21FLPBCH13 Trends
S_21FLPBCH13 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians



S_21FLPBCH13 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



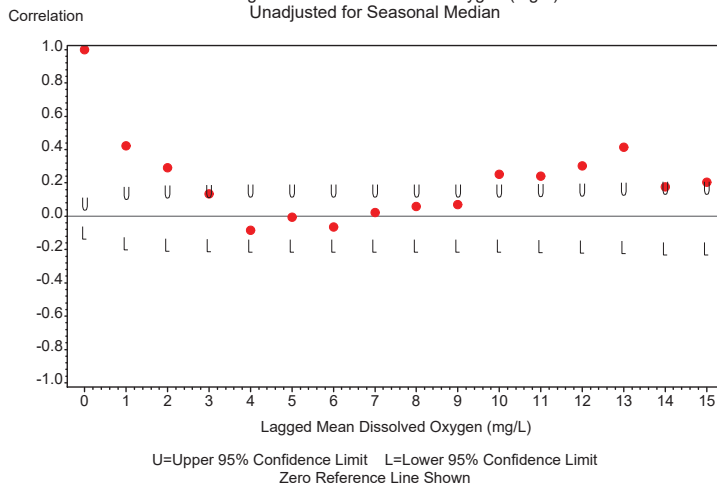
S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.421	0.075	0.151	-0.151
2	0.292	0.080	0.159	-0.159
3	0.135	0.082	0.163	-0.163
4	-0.085	0.082	0.164	-0.164
5	-0.007	0.082	0.165	-0.165
6	-0.065	0.082	0.165	-0.165
7	0.021	0.082	0.165	-0.165
8	0.059	0.082	0.165	-0.165
9	0.070	0.082	0.165	-0.165
10	0.252	0.083	0.165	-0.165
11	0.239	0.084	0.168	-0.168
12	0.302	0.085	0.171	-0.171
13	0.414	0.087	0.175	-0.175

S_21FLPBCH13 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.175	0.091	0.182	-0.182
15	0.203	0.092	0.183	-0.183

S_21FLPBCH13 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



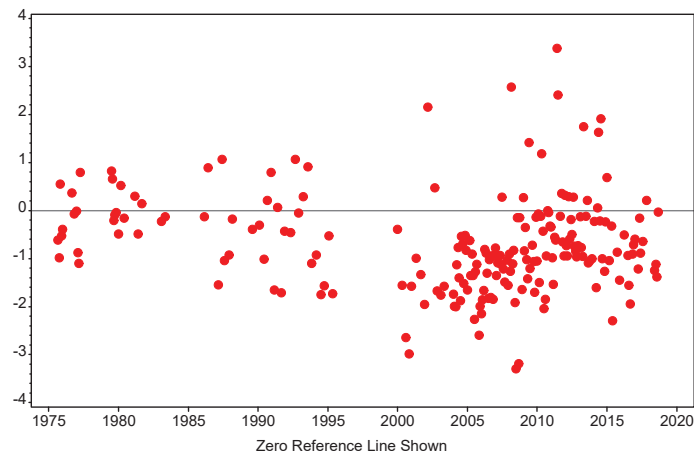
S_21FLPBCH13 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.179	.001	0.038	0.025

S_21FLPBCH13 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.17926	.000537157	0.037989	0.025161

S_21FLPBCH13 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Dissolved Oxygen (mg/L)



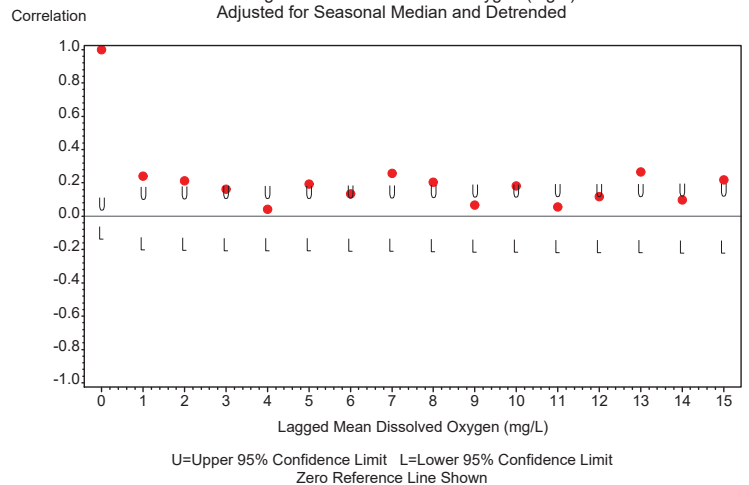
S_21FLPBCH13 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.044	0.087	-0.087
1	0.240	0.075	0.151	-0.151
2	0.212	0.077	0.154	-0.154
3	0.162	0.078	0.156	-0.156
4	0.042	0.079	0.157	-0.157
5	0.193	0.079	0.157	-0.157
6	0.133	0.079	0.159	-0.159
7	0.256	0.080	0.160	-0.160
8	0.203	0.081	0.163	-0.163
9	0.067	0.082	0.165	-0.165
10	0.181	0.083	0.165	-0.165
11	0.056	0.083	0.167	-0.167
12	0.117	0.083	0.167	-0.167
13	0.266	0.084	0.167	-0.167

S_21FLPBCH13 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

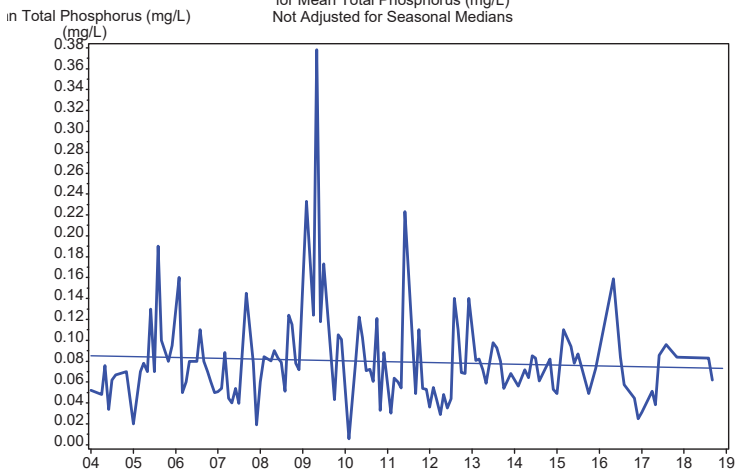
Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.097	0.085	0.170	-0.170
15	0.219	0.085	0.171	-0.171

S_21FLPBCH13 Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

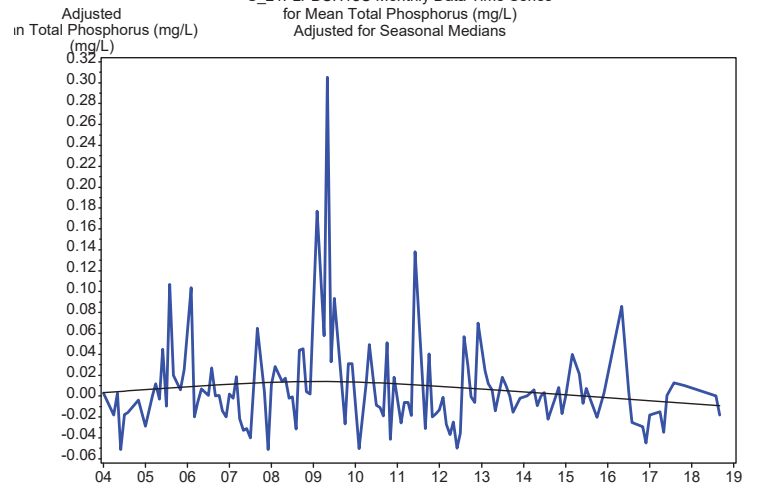


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

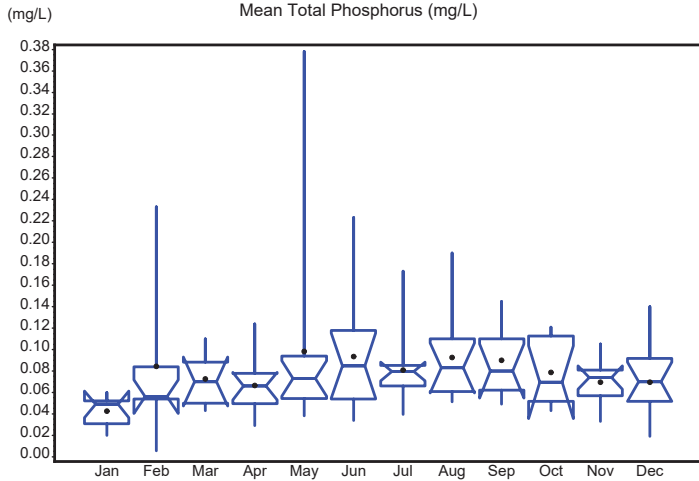
S_21FLPBCH18C Trends
S_21FLPBCH18C Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Not Adjusted for Seasonal Medians



S_21FLPBCH18C Trends
S_21FLPBCH18C Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians



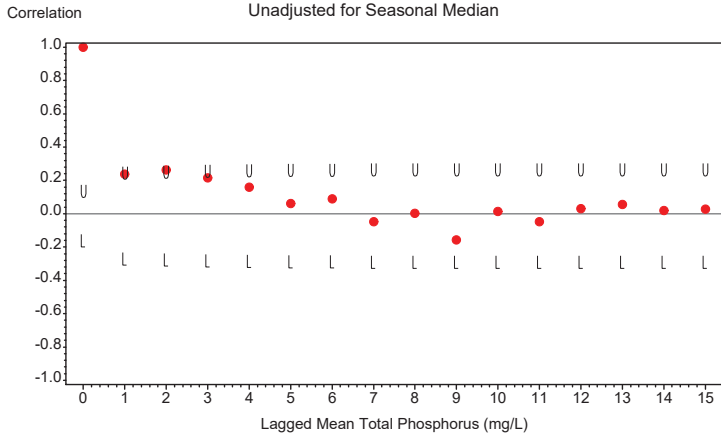
S_21FLPBCH18C Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.237	0.129	0.258	-0.258
2	0.263	0.131	0.263	-0.263
3	0.214	0.134	0.269	-0.269
4	0.159	0.136	0.272	-0.272
5	0.062	0.137	0.275	-0.275
6	0.089	0.137	0.275	-0.275
7	-0.048	0.138	0.276	-0.276
8	0.003	0.138	0.276	-0.276
9	-0.156	0.138	0.276	-0.276
10	0.013	0.139	0.278	-0.278
11	-0.049	0.139	0.278	-0.278
12	0.030	0.139	0.278	-0.278
13	0.056	0.139	0.278	-0.278
14	0.018	0.139	0.278	-0.278
15	0.027	0.139	0.278	-0.278

S_21FLPBCH18C Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

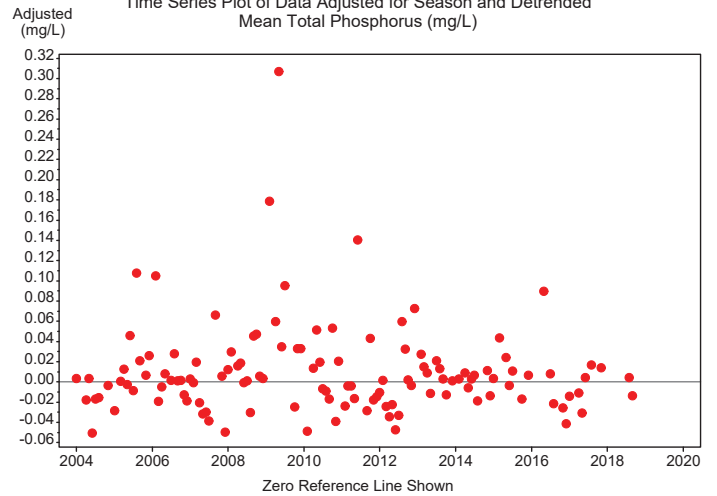
S_21FLPBCH18C Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.021	0.78	0.832	0

S_21FLPBCH18C Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.026359	0.72695	0.79296	-.000272727

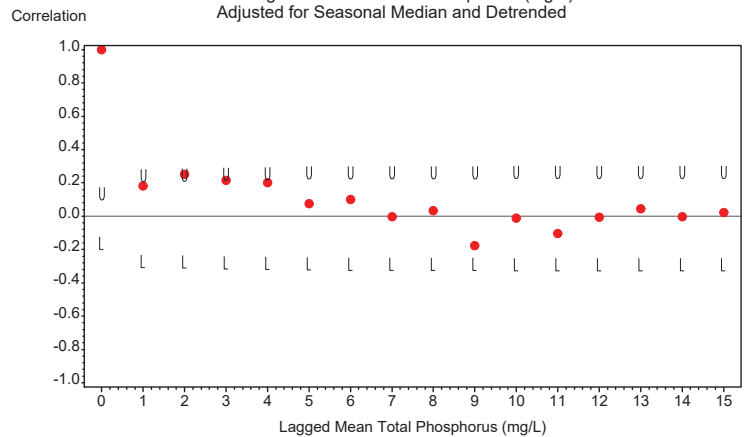
S_21FLPBCH18C Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total Phosphorus (mg/L)



S_21FLPBCH18C Trends Appendix
 Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

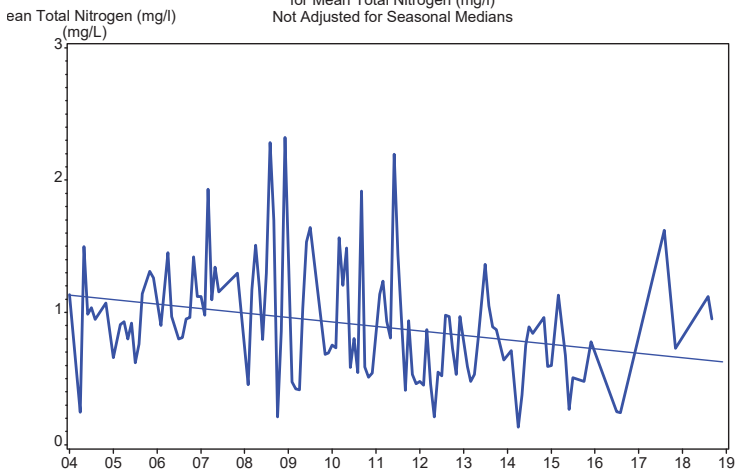
Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.181	0.129	0.258	-0.258
2	0.252	0.131	0.261	-0.261
3	0.215	0.133	0.266	-0.266
4	0.201	0.135	0.270	-0.270
5	-0.076	0.137	0.273	-0.273
6	0.099	0.137	0.274	-0.274
7	-0.003	0.137	0.275	-0.275
8	0.033	0.137	0.275	-0.275
9	-0.177	0.137	0.275	-0.275
10	-0.013	0.139	0.277	-0.277
11	-0.103	0.139	0.277	-0.277
12	-0.006	0.139	0.278	-0.278
13	0.044	0.139	0.278	-0.278
14	-0.004	0.139	0.278	-0.278
15	0.021	0.139	0.278	-0.278

S_21FLPBCH18C Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

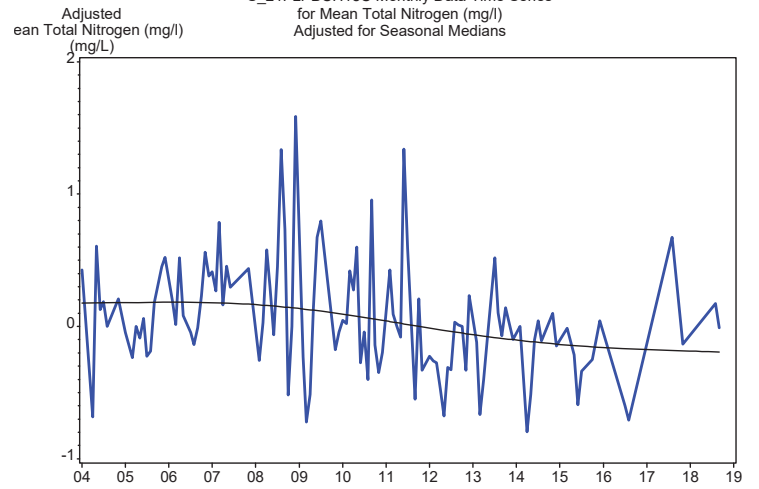


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

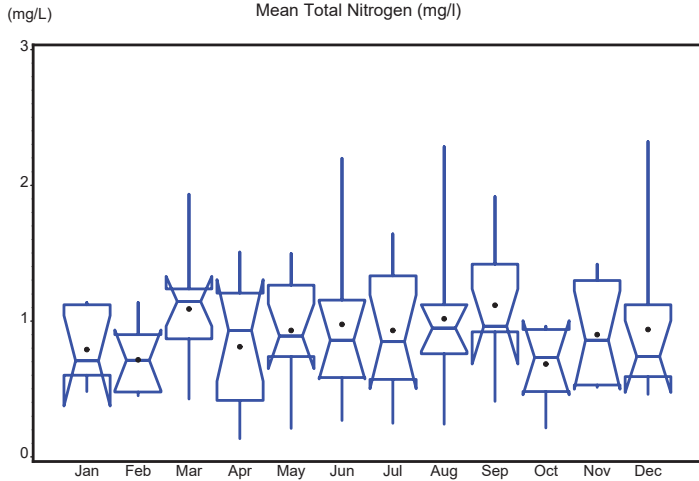
S_21FLPBCH18C Trends
S_21FLPBCH18C Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Not Adjusted for Seasonal Medians



S_21FLPBCH18C Trends
S_21FLPBCH18C Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians



S_21FLPBCH18C Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



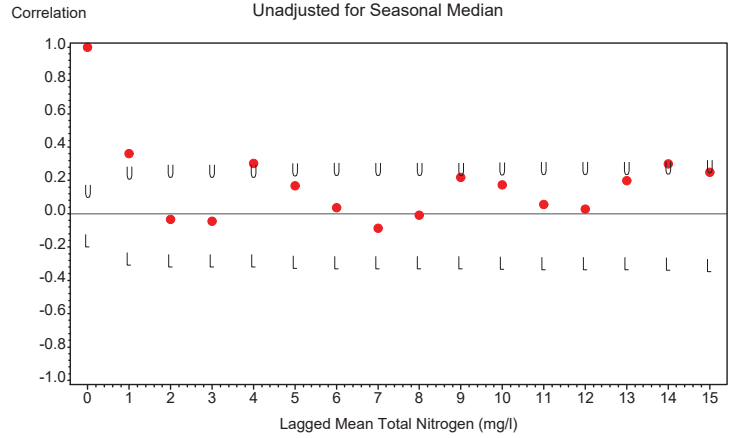
S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.360	0.129	0.258	-0.258
2	-0.034	0.135	0.269	-0.269
3	-0.046	0.135	0.269	-0.269
4	0.303	0.135	0.269	-0.269
5	0.167	0.138	0.277	-0.277
6	0.036	0.140	0.279	-0.279
7	-0.086	0.140	0.279	-0.279
8	-0.009	0.140	0.280	-0.280
9	0.217	0.140	0.280	-0.280
10	0.172	0.142	0.284	-0.284
11	0.055	0.143	0.286	-0.286
12	0.027	0.143	0.286	-0.286
13	0.197	0.143	0.286	-0.286

S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.298	0.145	0.289	-0.289
15	0.249	0.148	0.296	-0.296

S_21FLPBCH18C Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLPBCH18C Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.258	0	0.015	-0.048

S_21FLPBCH18C Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.25752	.000491124	0.015272	-0.048238

S_21FLPBCH18C Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Nitrogen (mg/l)



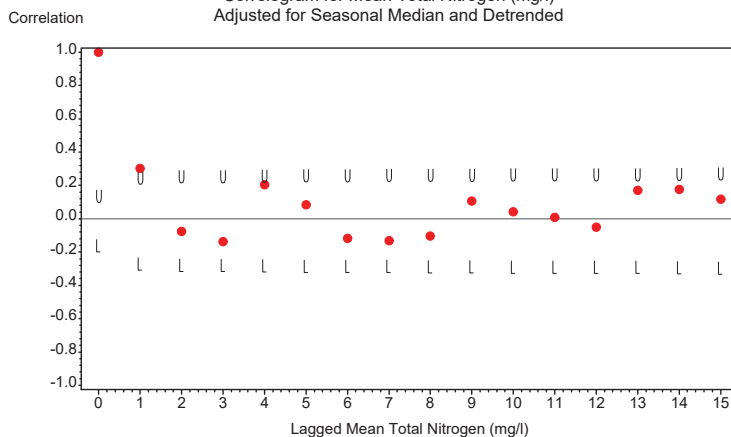
S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.303	0.129	0.258	-0.258
2	-0.075	0.133	0.266	-0.266
3	-0.137	0.133	0.266	-0.266
4	0.204	0.134	0.268	-0.268
5	0.083	0.136	0.271	-0.271
6	-0.118	0.136	0.272	-0.272
7	-0.133	0.137	0.273	-0.273
8	-0.105	0.137	0.275	-0.275
9	0.106	0.138	0.275	-0.275
10	0.042	0.138	0.276	-0.276
11	0.009	0.138	0.277	-0.277
12	-0.052	0.138	0.277	-0.277
13	0.170	0.138	0.277	-0.277

S_21FLPBCH18C Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

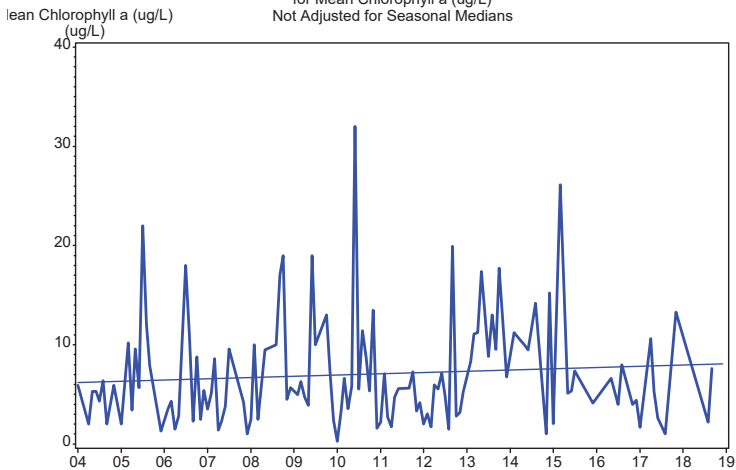
Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.177	0.140	0.279	-0.279
15	0.118	0.141	0.282	-0.282

S_21FLPBCH18C Trends Appendix
 Correlogram for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

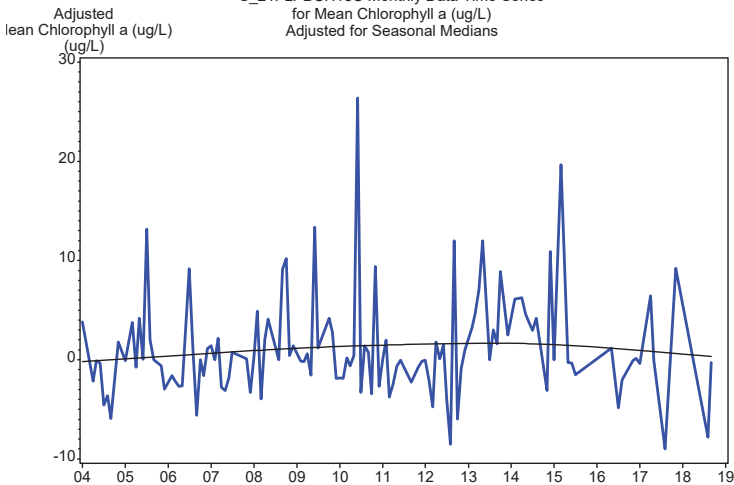


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

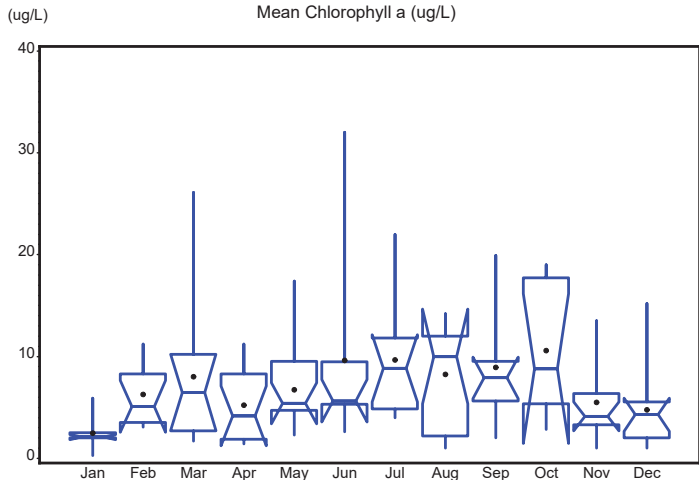
S_21FLPBCH18C Trends
 S_21FLPBCH18C Monthly Data Time Series
 for Mean Chlorophyll a (ug/L)
 Not Adjusted for Seasonal Medians



S_21FLPBCH18C Trends
 S_21FLPBCH18C Monthly Data Time Series
 for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Medians



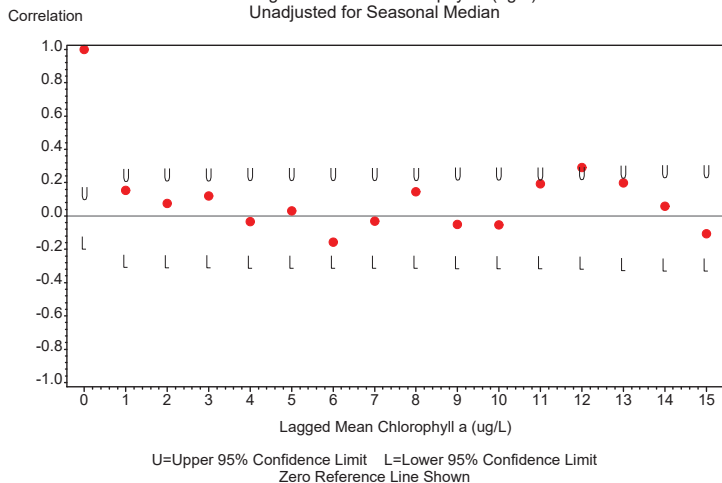
S_21FLPBCH18C Trends Appendix
Seasonal Univariate Statistics
Mean Chlorophyll a (ug/L)



S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.154	0.129	0.258	-0.258
2	0.076	0.130	0.260	-0.260
3	0.121	0.130	0.261	-0.261
4	-0.033	0.131	0.262	-0.262
5	0.031	0.131	0.262	-0.262
6	-0.158	0.131	0.262	-0.262
7	-0.031	0.132	0.264	-0.264
8	0.146	0.132	0.264	-0.264
9	-0.052	0.133	0.266	-0.266
10	-0.053	0.133	0.266	-0.266
11	0.192	0.133	0.267	-0.267
12	0.291	0.135	0.270	-0.270
13	0.197	0.138	0.277	-0.277
14	0.059	0.140	0.280	-0.280
15	-0.106	0.140	0.280	-0.280

S_21FLPBCH18C Trends Appendix
Correlogram for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Median



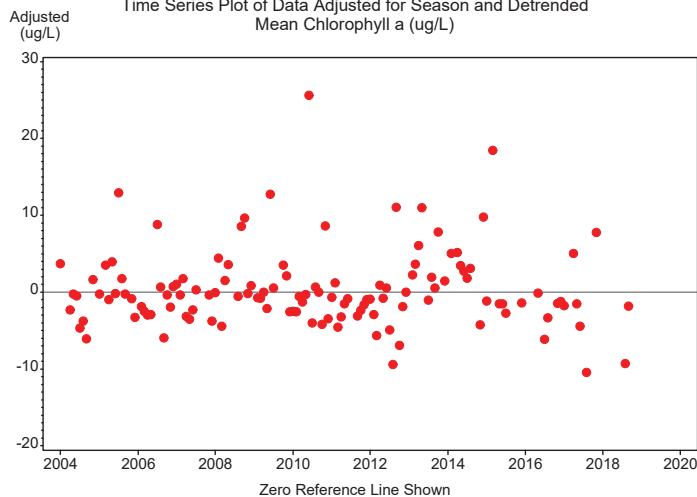
S_21FLPBCH18C Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.073	0.309	0.489	0.098

S_21FLPBCH18C Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.072816	0.30905	0.48930	0.0975

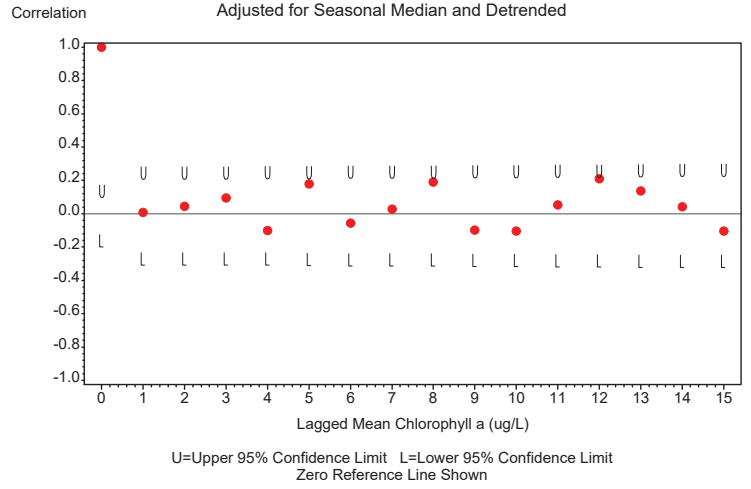
S_21FLPBCH18C Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Chlorophyll a (ug/L)



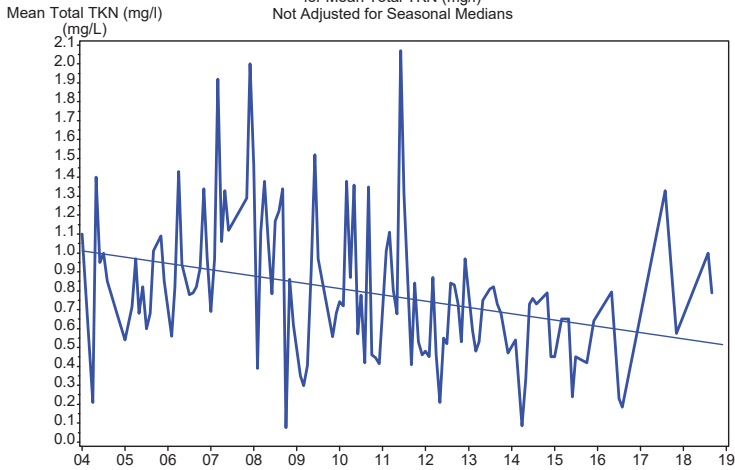
S_21FLPBCH18C Trends Appendix
 Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.007	0.129	0.258	-0.258
2	0.043	0.129	0.258	-0.258
3	0.096	0.129	0.258	-0.258
4	-0.100	0.130	0.259	-0.259
5	0.179	0.130	0.260	-0.260
6	-0.056	0.131	0.263	-0.263
7	0.028	0.131	0.263	-0.263
8	0.190	0.132	0.263	-0.263
9	-0.099	0.133	0.266	-0.266
10	-0.103	0.133	0.267	-0.267
11	0.053	0.134	0.268	-0.268
12	0.209	0.134	0.268	-0.268
13	0.136	0.136	0.272	-0.272
14	0.042	0.137	0.273	-0.273
15	-0.103	0.137	0.273	-0.273

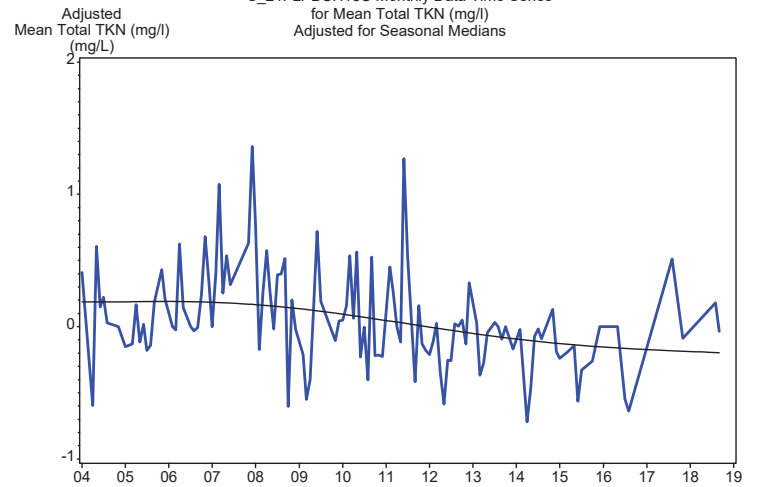
S_21FLPBCH18C Trends Appendix
 Correlogram for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended



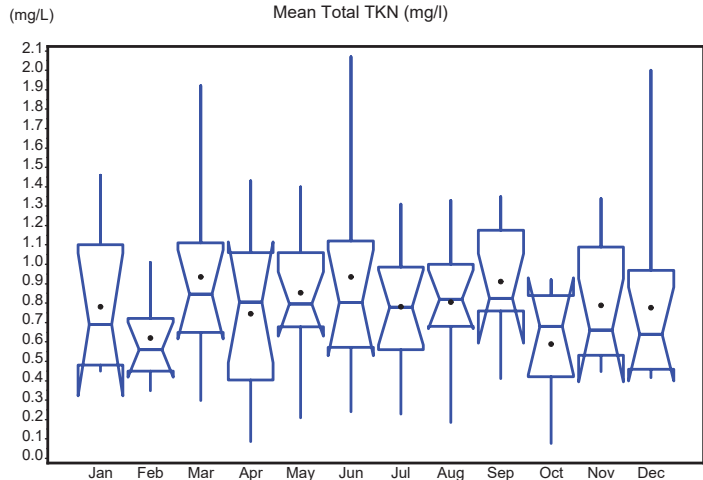
S_21FLPBCH18C Trends
 S_21FLPBCH18C Monthly Data Time Series
 for Mean Total TKN (mg/l)
 Not Adjusted for Seasonal Medians



S_21FLPBCH18C Trends
 S_21FLPBCH18C Monthly Data Time Series
 for Mean Total TKN (mg/l)
 Adjusted for Seasonal Medians



S_21FLPBCH18C Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



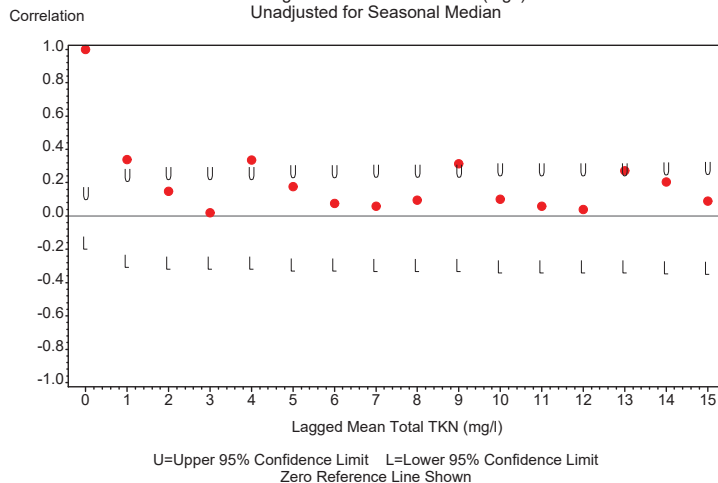
S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.339	0.129	0.258	-0.258
2	0.147	0.134	0.268	-0.268
3	0.018	0.135	0.270	-0.270
4	0.336	0.135	0.270	-0.270
5	0.175	0.139	0.279	-0.279
6	0.074	0.141	0.281	-0.281
7	0.059	0.141	0.282	-0.282
8	0.094	0.141	0.282	-0.282
9	0.312	0.141	0.283	-0.283
10	0.099	0.145	0.290	-0.290
11	0.057	0.145	0.291	-0.291
12	0.040	0.146	0.291	-0.291
13	0.270	0.146	0.291	-0.291

S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.203	0.148	0.297	-0.297
15	0.089	0.150	0.300	-0.300

S_21FLPBCH18C Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



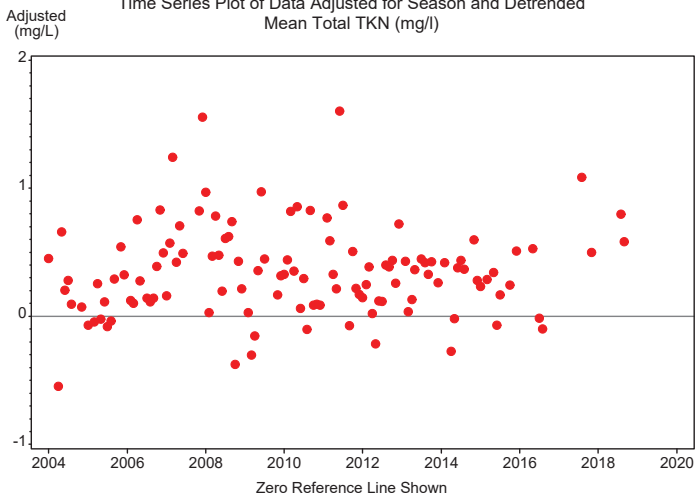
S_21FLPBCH18C Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.289	0	0.01	-0.04

S_21FLPBCH18C Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.28929	.000068784	0.010475	-0.0395

S_21FLPBCH18C Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total TKN (mg/l)



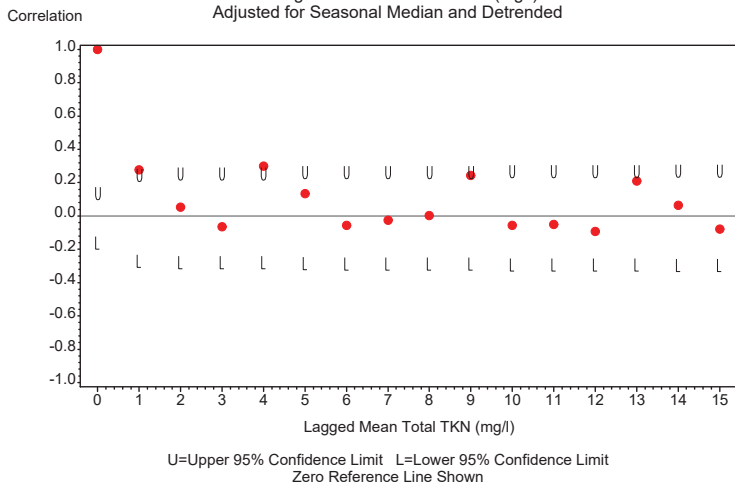
S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.276	0.129	0.258	-0.258
2	0.053	0.132	0.265	-0.265
3	-0.066	0.132	0.265	-0.265
4	0.299	0.133	0.265	-0.265
5	0.135	0.136	0.273	-0.273
6	-0.056	0.137	0.274	-0.274
7	-0.026	0.137	0.274	-0.274
8	0.001	0.137	0.274	-0.274
9	0.244	0.137	0.274	-0.274
10	-0.057	0.140	0.279	-0.279
11	-0.051	0.140	0.279	-0.279
12	-0.093	0.140	0.280	-0.280
13	0.209	0.140	0.280	-0.280

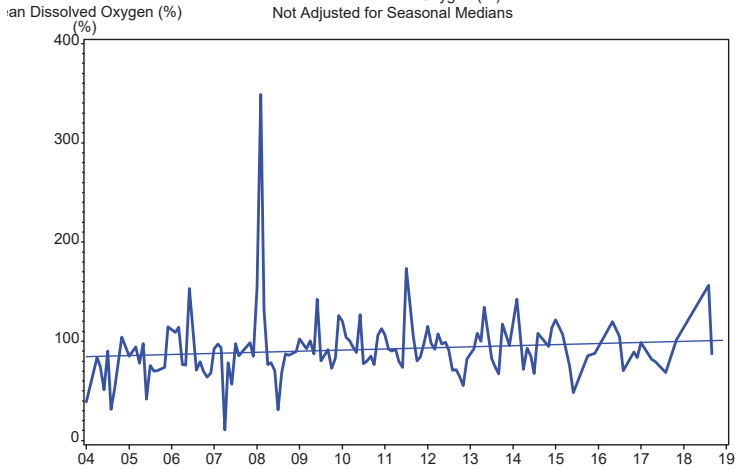
S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.064	0.142	0.284	-0.284
15	-0.080	0.142	0.284	-0.284

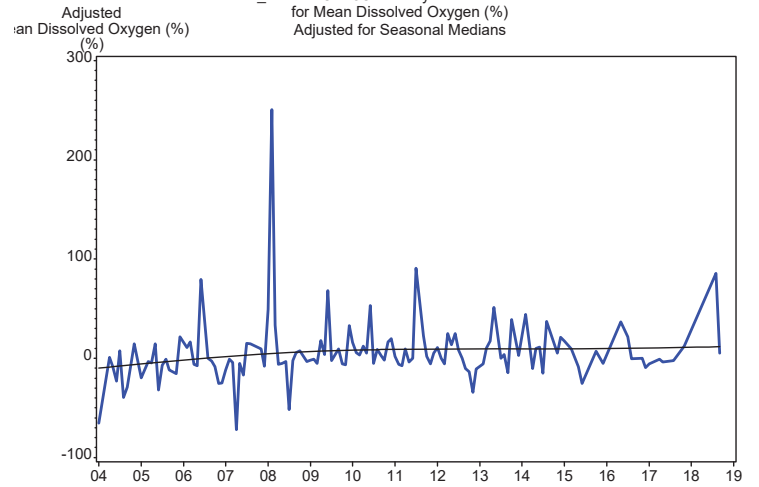
S_21FLPBCH18C Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended



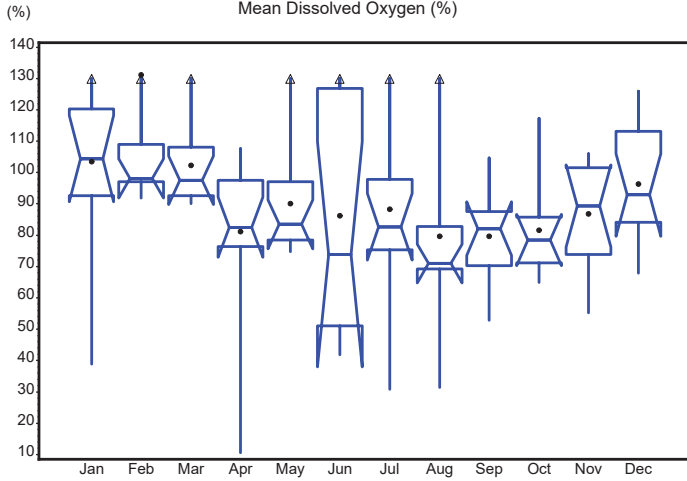
S_21FLPBCH18C Trends
S_21FLPBCH18C Monthly Data Time Series
for Mean Dissolved Oxygen (%)
Not Adjusted for Seasonal Medians



S_21FLPBCH18C Trends
S_21FLPBCH18C Monthly Data Time Series
for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Medians



S_21FLPBCH18C Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (%)



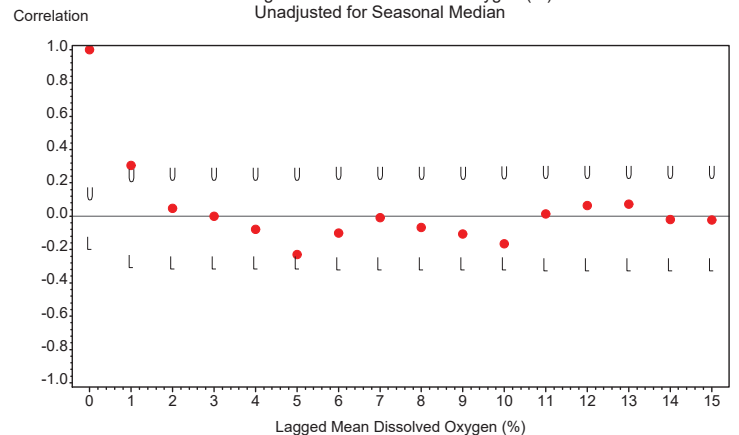
S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.304	0.129	0.258	-0.258
2	0.048	0.133	0.266	-0.266
3	0.000	0.133	0.266	-0.266
4	-0.080	0.133	0.266	-0.266
5	-0.231	0.133	0.267	-0.267
6	-0.100	0.136	0.271	-0.271
7	-0.009	0.136	0.272	-0.272
8	-0.068	0.136	0.272	-0.272
9	-0.106	0.136	0.272	-0.272
10	-0.165	0.137	0.273	-0.273
11	0.013	0.138	0.276	-0.276
12	0.063	0.138	0.276	-0.276
13	0.071	0.138	0.276	-0.276

S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.020	0.138	0.276	-0.276
15	-0.022	0.138	0.276	-0.276

S_21FLPBCH18C Trends Appendix
Correlogram for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

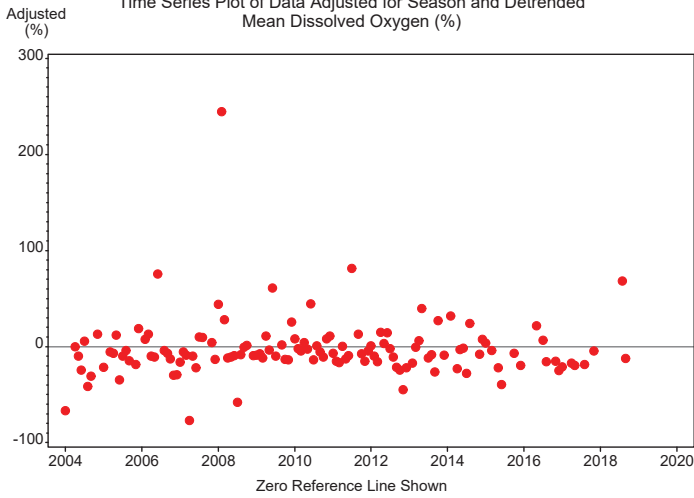
S_21FLPBCH18C Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (%)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.149	0.032	0.04	1.12

S_21FLPBCH18C Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.14855	0.031695	0.039607	1.12

S_21FLPBCH18C Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Dissolved Oxygen (%)



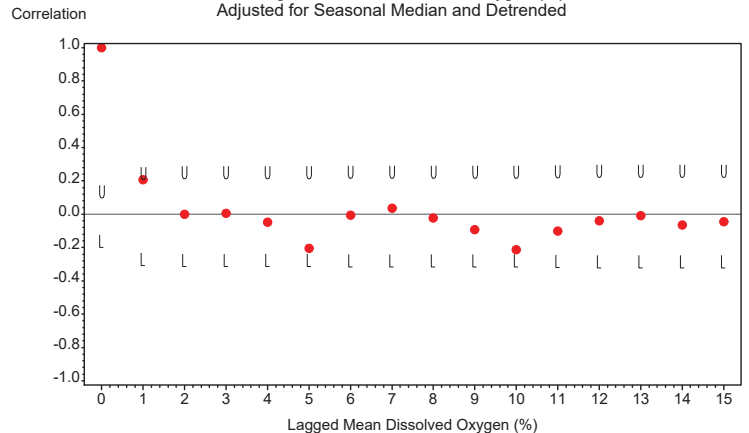
S_21FLPBCH18C Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.206	0.129	0.258	-0.258
2	0.000	0.131	0.262	-0.262
3	0.006	0.131	0.262	-0.262
4	-0.049	0.131	0.262	-0.262
5	-0.205	0.131	0.262	-0.262
6	-0.005	0.133	0.266	-0.266
7	0.037	0.133	0.266	-0.266
8	-0.024	0.133	0.266	-0.266
9	-0.093	0.133	0.266	-0.266
10	-0.213	0.133	0.266	-0.266
11	-0.102	0.135	0.270	-0.270
12	-0.040	0.136	0.271	-0.271
13	-0.009	0.136	0.271	-0.271

S_21FLPBCH18C Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Median and Detrended

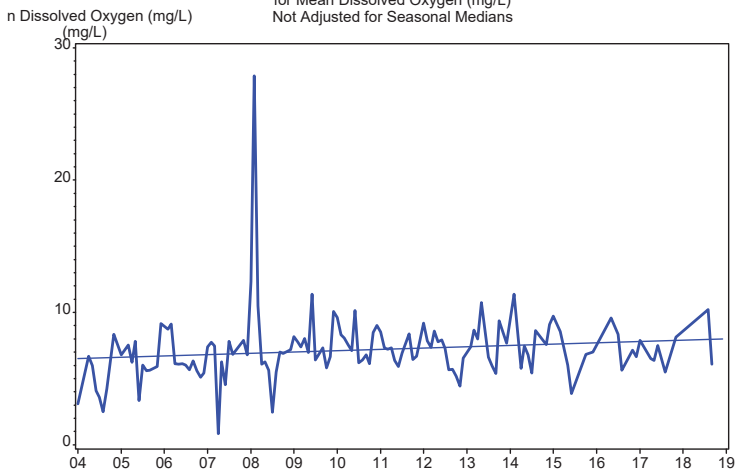
Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.065	0.136	0.271	-0.271
15	-0.046	0.136	0.272	-0.272

S_21FLPBCH18C Trends Appendix
 Correlogram for Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Median and Detrended

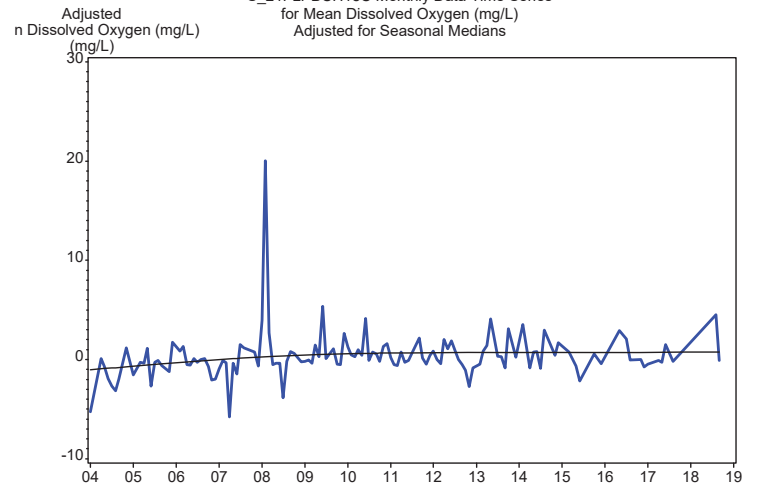


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

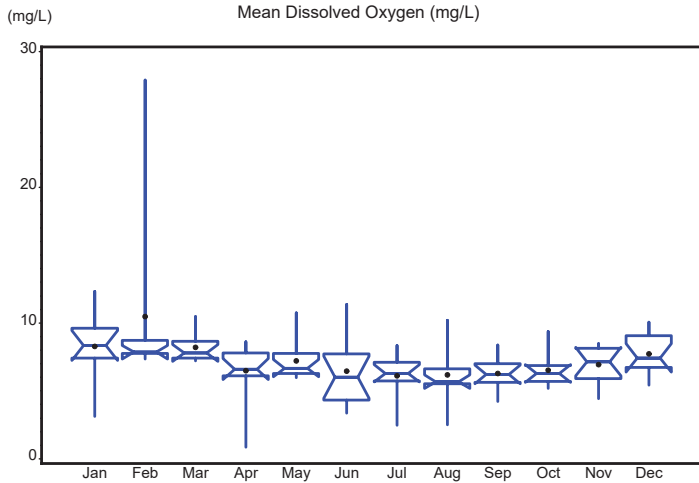
S_21FLPBCH18C Trends
S_21FLPBCH18C Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Not Adjusted for Seasonal Medians



S_21FLPBCH18C Trends
S_21FLPBCH18C Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians



S_21FLPBCH18C Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



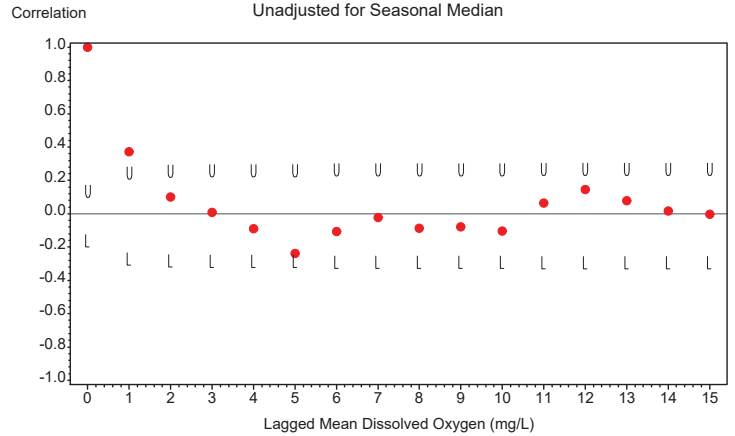
S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.372	0.129	0.258	-0.258
2	0.099	0.135	0.270	-0.270
3	0.008	0.135	0.271	-0.271
4	-0.090	0.135	0.271	-0.271
5	-0.239	0.136	0.271	-0.271
6	-0.107	0.138	0.276	-0.276
7	-0.022	0.138	0.277	-0.277
8	-0.086	0.138	0.277	-0.277
9	-0.079	0.139	0.277	-0.277
10	-0.105	0.139	0.278	-0.278
11	0.065	0.139	0.279	-0.279
12	0.146	0.140	0.279	-0.279
13	0.078	0.140	0.281	-0.281

S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.017	0.141	0.281	-0.281
15	-0.002	0.141	0.281	-0.281

S_21FLPBCH18C Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

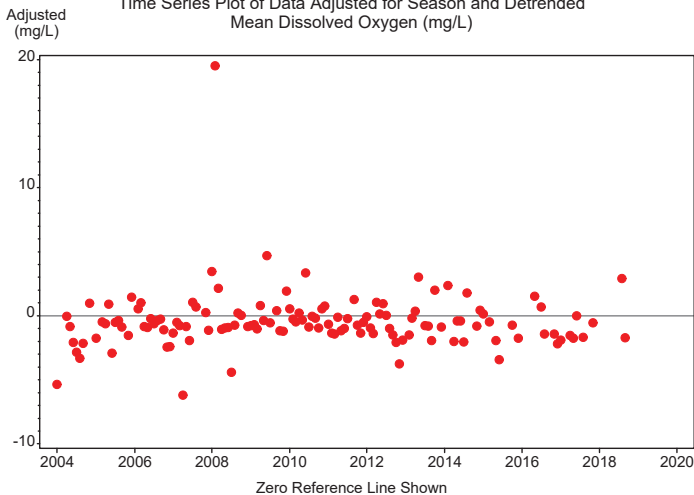
S_21FLPBCH18C Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.184	.007	0.026	0.103

S_21FLPBCH18C Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.18370	.0071528	0.025887	0.103

S_21FLPBCH18C Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (mg/L)



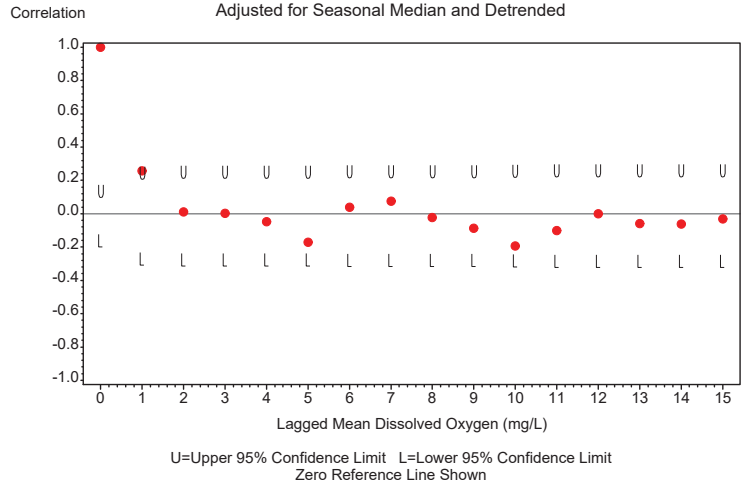
S_21FLPBCH18C Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.075	0.149	-0.149
1	0.258	0.129	0.258	-0.258
2	0.010	0.132	0.264	-0.264
3	0.001	0.132	0.264	-0.264
4	-0.048	0.132	0.264	-0.264
5	-0.171	0.132	0.264	-0.264
6	0.040	0.133	0.267	-0.267
7	0.074	0.133	0.267	-0.267
8	-0.023	0.134	0.267	-0.267
9	-0.088	0.134	0.267	-0.267
10	-0.193	0.134	0.268	-0.268
11	-0.102	0.135	0.271	-0.271
12	0.000	0.136	0.272	-0.272
13	-0.059	0.136	0.272	-0.272

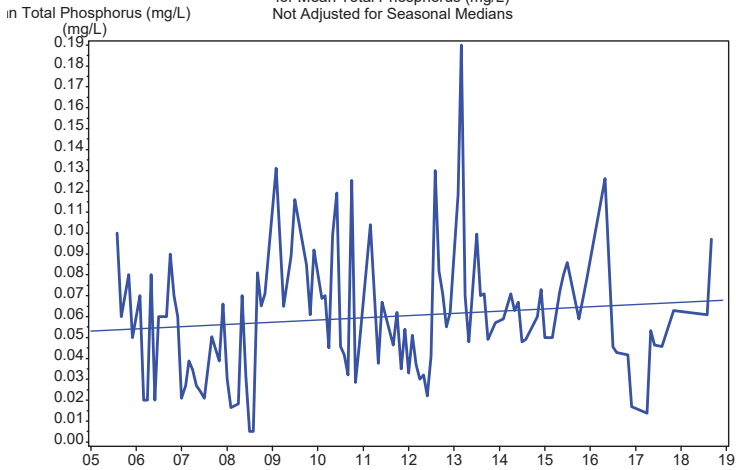
S_21FLPBCH18C Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.063	0.136	0.272	-0.272
15	-0.031	0.136	0.272	-0.272

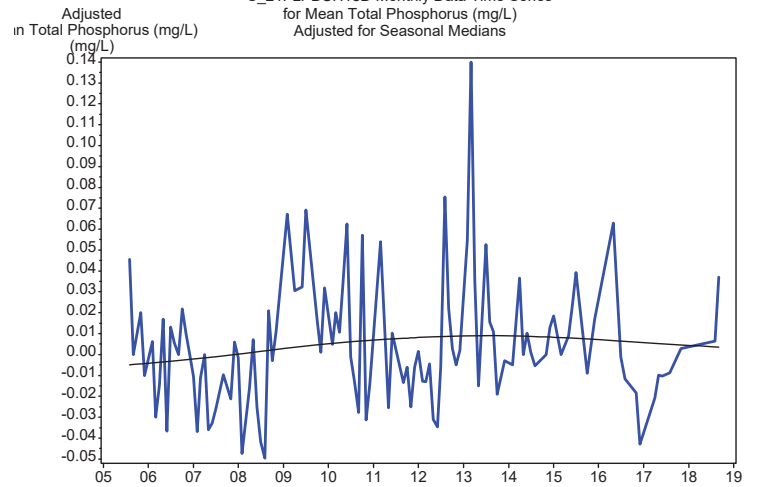
S_21FLPBCH18C Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended



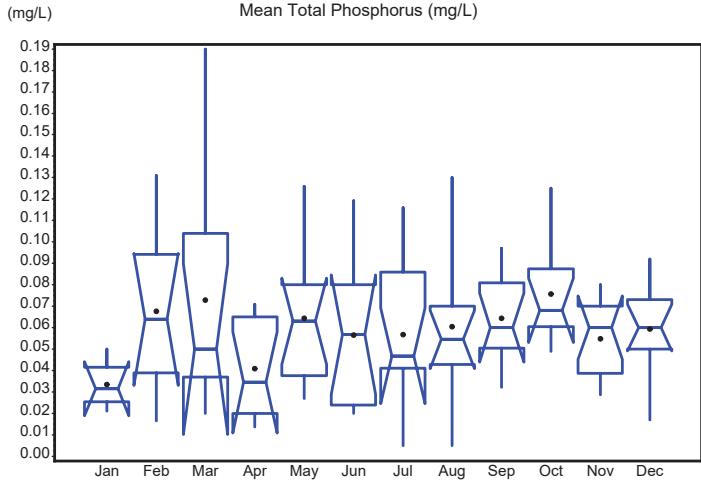
S_21FLPBCH18D Trends
 S_21FLPBCH18D Monthly Data Time Series
 for Mean Total Phosphorus (mg/L)
 Not Adjusted for Seasonal Medians



S_21FLPBCH18D Trends
 S_21FLPBCH18D Monthly Data Time Series
 for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians



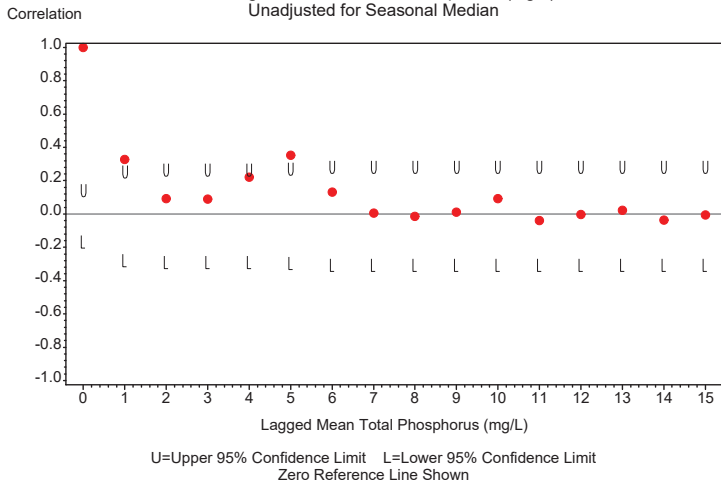
S_21FLPBCH18D Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.328	0.134	0.267	-0.267
2	0.092	0.138	0.277	-0.277
3	0.090	0.139	0.277	-0.277
4	0.221	0.139	0.278	-0.278
5	0.352	0.141	0.282	-0.282
6	0.131	0.146	0.293	-0.293
7	0.005	0.147	0.294	-0.294
8	-0.014	0.147	0.294	-0.294
9	0.010	0.147	0.294	-0.294
10	0.093	0.147	0.294	-0.294
11	-0.040	0.147	0.295	-0.295
12	-0.003	0.147	0.295	-0.295
13	0.021	0.147	0.295	-0.295
14	-0.038	0.147	0.295	-0.295
15	-0.006	0.147	0.295	-0.295

S_21FLPBCH18D Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Median



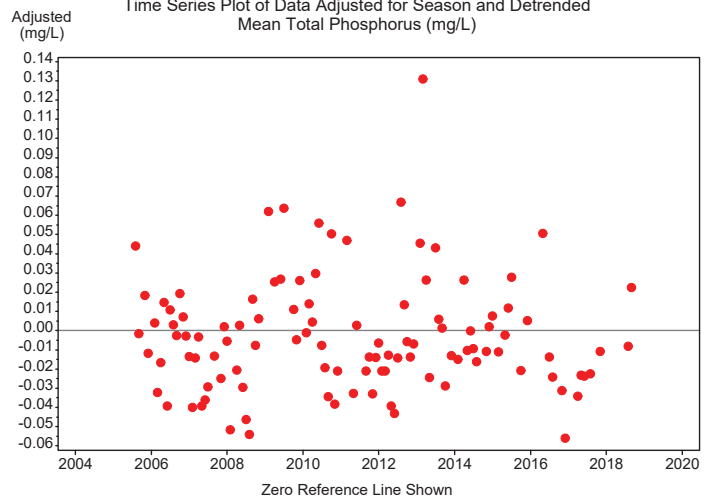
S_21FLPBCH18D Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.084	0.292	0.423	.001

S_21FLPBCH18D Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.081319	0.30539	0.43634	.001

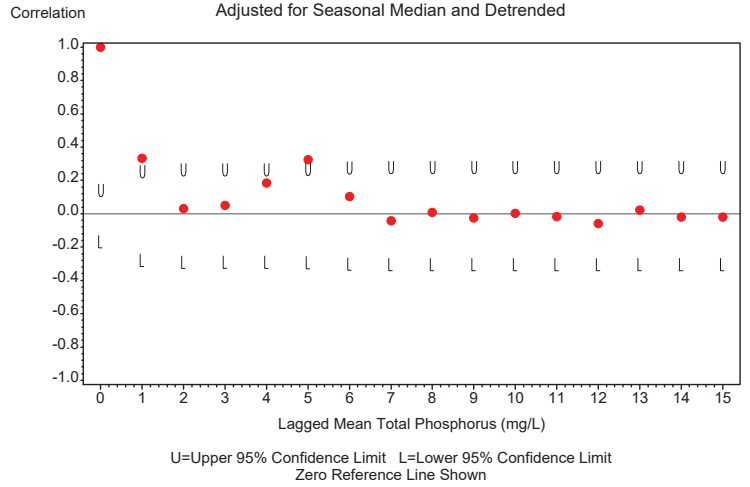
S_21FLPBCH18D Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Phosphorus (mg/L)



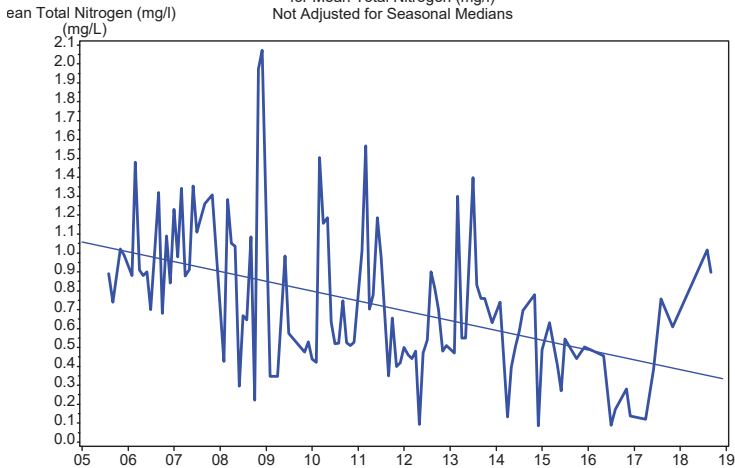
S_21FLPBCH18D Trends Appendix
 Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.333	0.134	0.267	-0.267
2	0.029	0.138	0.277	-0.277
3	0.050	0.139	0.277	-0.277
4	0.183	0.139	0.277	-0.277
5	0.323	0.140	0.280	-0.280
6	0.104	0.144	0.289	-0.289
7	-0.043	0.145	0.290	-0.290
8	0.008	0.145	0.290	-0.290
9	-0.026	0.145	0.290	-0.290
10	0.002	0.145	0.290	-0.290
11	-0.017	0.145	0.290	-0.290
12	-0.059	0.145	0.290	-0.290
13	0.021	0.145	0.290	-0.290
14	-0.019	0.145	0.290	-0.290
15	-0.020	0.145	0.290	-0.290

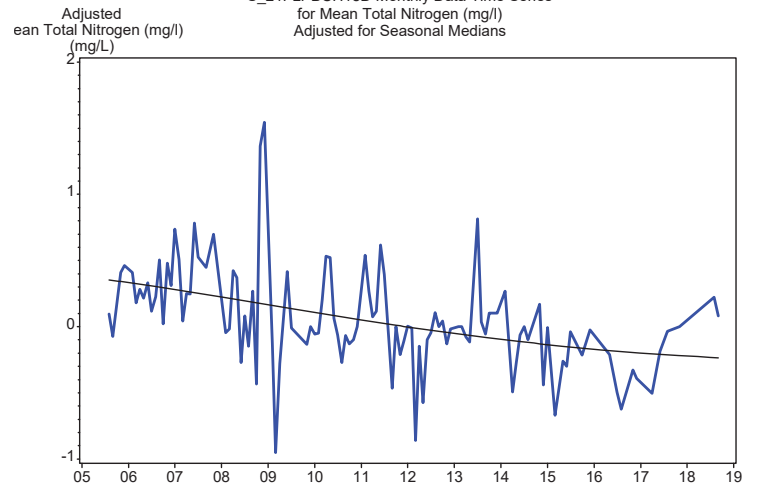
S_21FLPBCH18D Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended



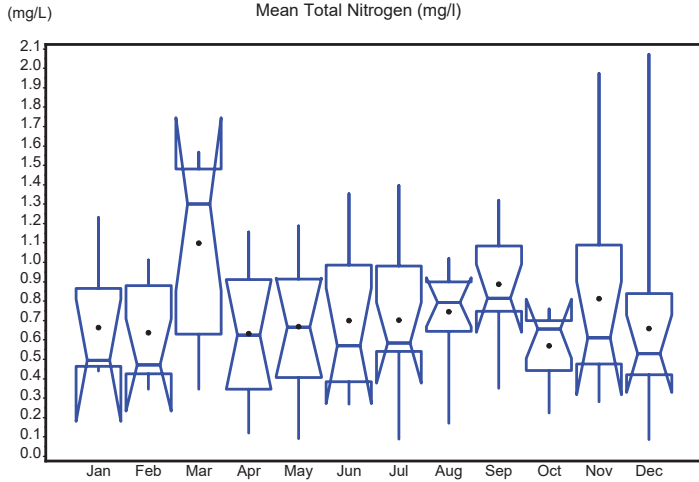
S_21FLPBCH18D Trends
 S_21FLPBCH18D Monthly Data Time Series
 for Mean Total Nitrogen (mg/l)
 Not Adjusted for Seasonal Medians



S_21FLPBCH18D Trends
 S_21FLPBCH18D Monthly Data Time Series
 for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Medians



S_21FLPBCH18D Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



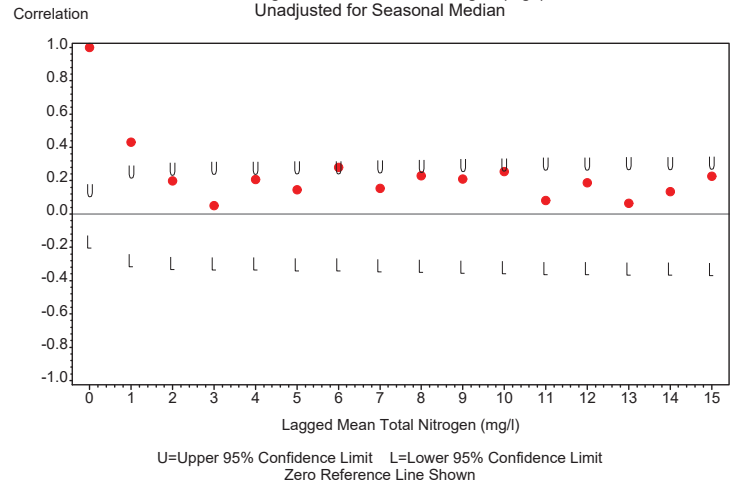
S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.430	0.134	0.267	-0.267
2	0.198	0.142	0.283	-0.283
3	0.051	0.143	0.287	-0.287
4	0.208	0.143	0.287	-0.287
5	0.146	0.145	0.290	-0.290
6	0.280	0.146	0.292	-0.292
7	0.154	0.149	0.298	-0.298
8	0.229	0.150	0.300	-0.300
9	0.210	0.152	0.304	-0.304
10	0.255	0.154	0.308	-0.308
11	0.082	0.156	0.313	-0.313
12	0.187	0.157	0.313	-0.313
13	0.063	0.158	0.316	-0.316

S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.135	0.158	0.316	-0.316
15	0.226	0.159	0.318	-0.318

S_21FLPBCH18D Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



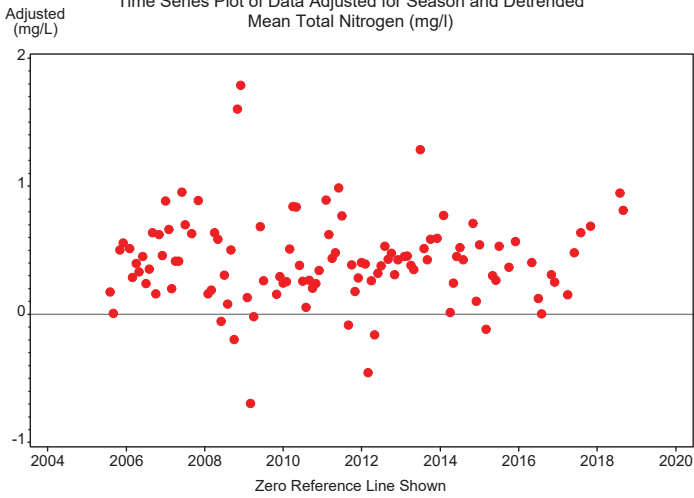
S_21FLPBCH18D Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.308	0	0.019	-0.05

S_21FLPBCH18D Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.30833	.000053695	0.018619	-0.049625

S_21FLPBCH18D Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Nitrogen (mg/l)



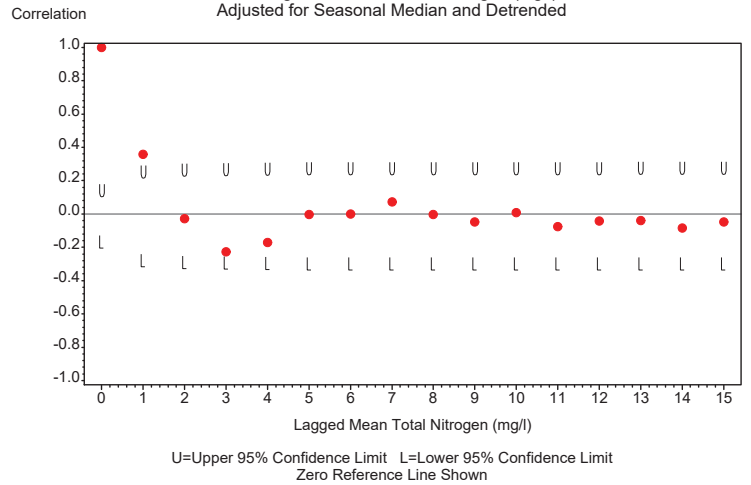
S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.359	0.134	0.267	-0.267
2	-0.028	0.139	0.278	-0.278
3	-0.227	0.139	0.279	-0.279
4	-0.171	0.141	0.283	-0.283
5	-0.003	0.143	0.285	-0.285
6	0.000	0.143	0.285	-0.285
7	0.071	0.143	0.285	-0.285
8	-0.003	0.143	0.286	-0.286
9	-0.049	0.143	0.286	-0.286
10	0.009	0.143	0.286	-0.286
11	-0.075	0.143	0.286	-0.286
12	-0.042	0.143	0.286	-0.286
13	-0.039	0.143	0.287	-0.287

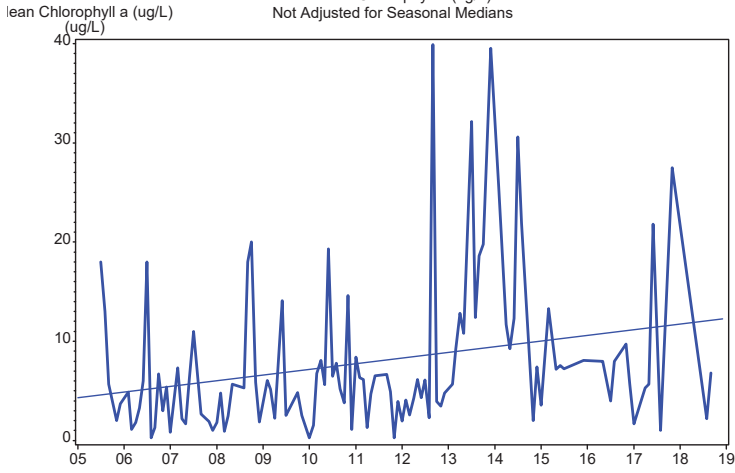
S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.084	0.143	0.287	-0.287
15	-0.047	0.144	0.287	-0.287

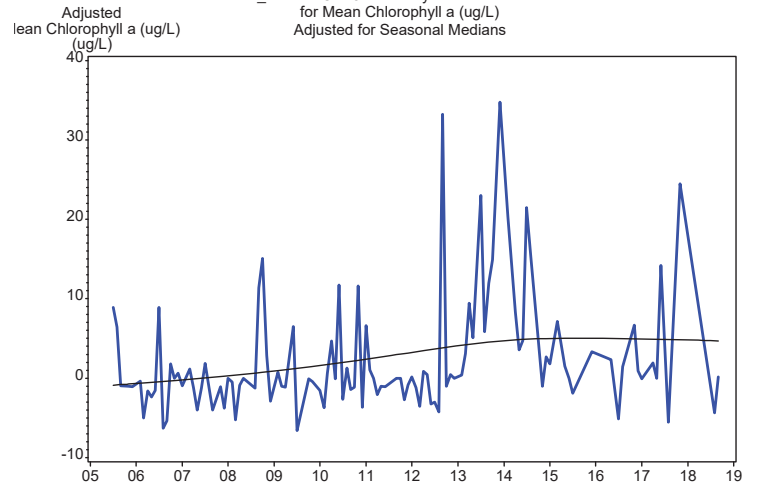
S_21FLPBCH18D Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended



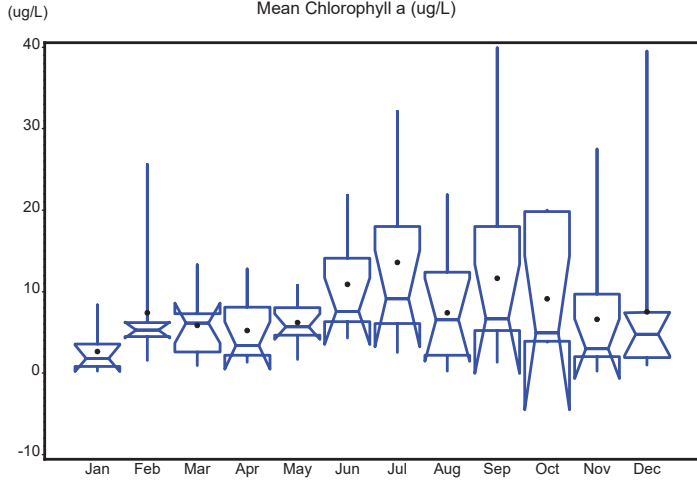
S_21FLPBCH18D Trends
S_21FLPBCH18D Monthly Data Time Series
for Mean Chlorophyll a (ug/L)
Not Adjusted for Seasonal Medians



S_21FLPBCH18D Trends
S_21FLPBCH18D Monthly Data Time Series
for Mean Chlorophyll a (ug/L)
Adjusted for Seasonal Medians



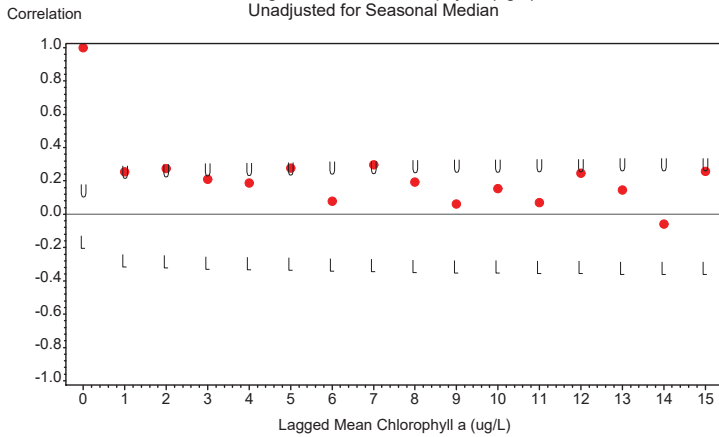
S_21FLPBCH18D Trends Appendix
Seasonal Univariate Statistics
Mean Chlorophyll a (ug/L)



S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.254	0.134	0.267	-0.267
2	0.275	0.136	0.273	-0.273
3	0.209	0.140	0.279	-0.279
4	0.186	0.142	0.283	-0.283
5	0.276	0.143	0.286	-0.286
6	0.078	0.146	0.292	-0.292
7	0.295	0.146	0.293	-0.293
8	0.192	0.150	0.300	-0.300
9	0.062	0.151	0.303	-0.303
10	0.154	0.152	0.303	-0.303
11	0.070	0.152	0.305	-0.305
12	0.245	0.153	0.305	-0.305
13	0.145	0.155	0.310	-0.310
14	-0.059	0.156	0.312	-0.312
15	0.258	0.156	0.312	-0.312

S_21FLPBCH18D Trends Appendix
Correlogram for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

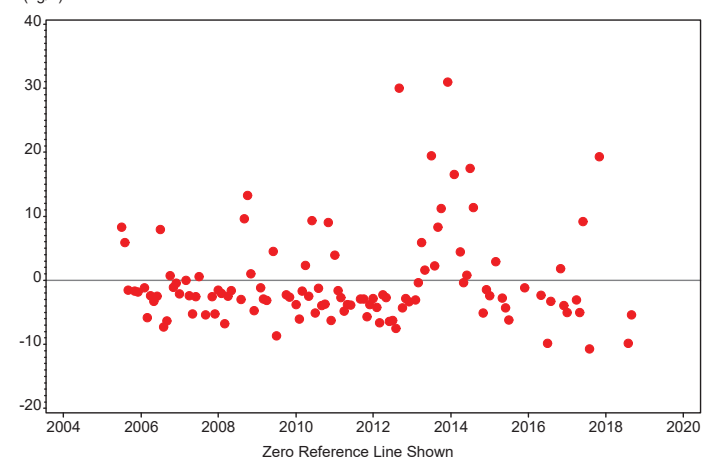
S_21FLPBCH18D Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.289	0	0.024	0.379

S_21FLPBCH18D Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.28870	.000143409	0.023579	0.37864

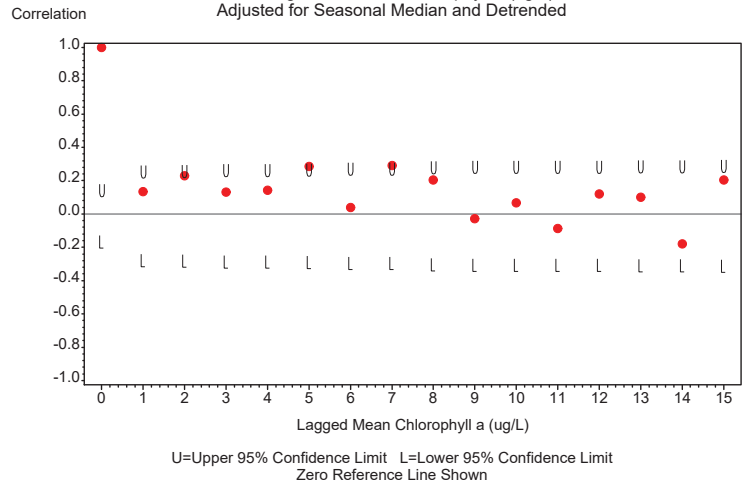
S_21FLPBCH18D Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Chlorophyll a (ug/L)



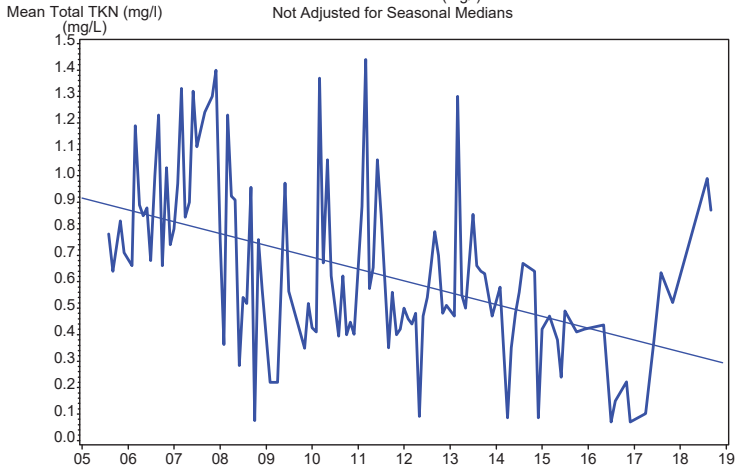
S_21FLPBCH18D Trends Appendix
 Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.135	0.134	0.267	-0.267
2	0.230	0.134	0.269	-0.269
3	0.131	0.137	0.274	-0.274
4	0.142	0.138	0.275	-0.275
5	0.284	0.138	0.277	-0.277
6	0.038	0.142	0.284	-0.284
7	0.291	0.142	0.284	-0.284
8	0.204	0.145	0.291	-0.291
9	-0.028	0.147	0.294	-0.294
10	0.066	0.147	0.294	-0.294
11	-0.088	0.147	0.295	-0.295
12	0.120	0.148	0.295	-0.295
13	0.100	0.148	0.296	-0.296
14	-0.180	0.149	0.297	-0.297
15	0.204	0.150	0.300	-0.300

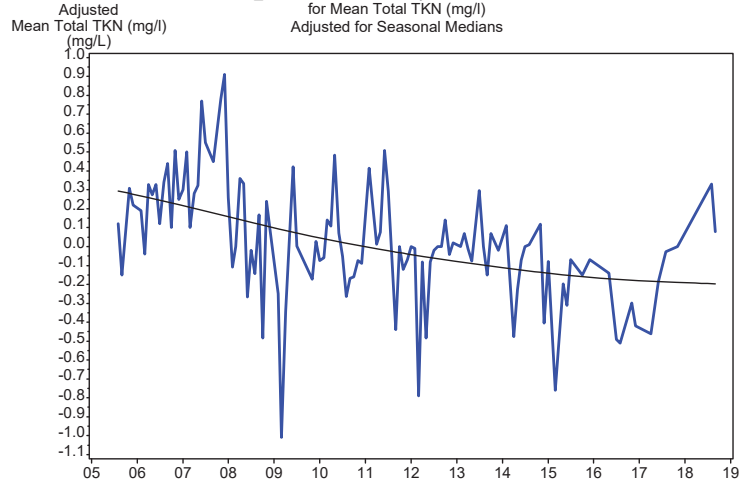
S_21FLPBCH18D Trends Appendix
 Correlogram for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended



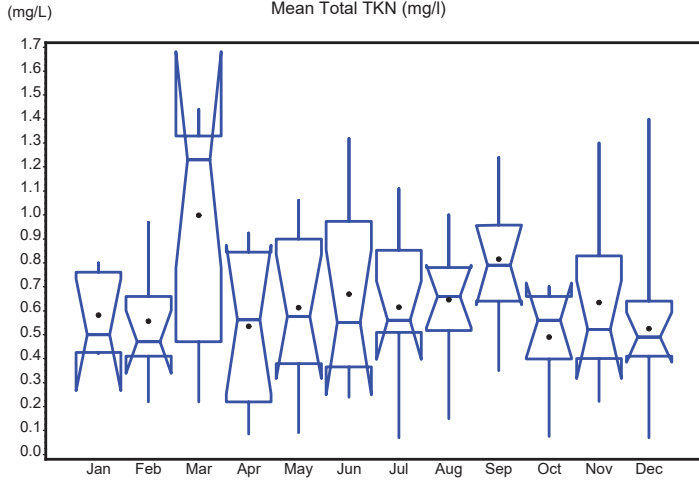
S_21FLPBCH18D Trends
S_21FLPBCH18D Monthly Data Time Series
for Mean Total TKN (mg/l)
Not Adjusted for Seasonal Medians



S_21FLPBCH18D Trends
S_21FLPBCH18D Monthly Data Time Series
for Mean Total TKN (mg/l)
Adjusted for Seasonal Medians



S_21FLPBCH18D Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



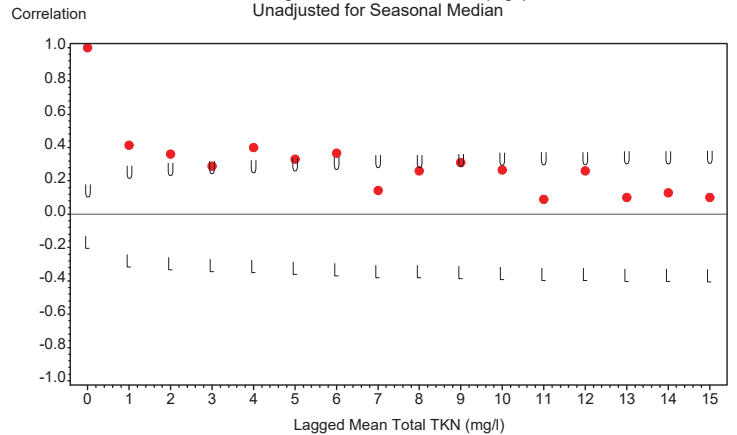
S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.413	0.134	0.267	-0.267
2	0.362	0.141	0.282	-0.282
3	0.288	0.146	0.293	-0.293
4	0.401	0.150	0.300	-0.300
5	0.330	0.156	0.312	-0.312
6	0.365	0.160	0.320	-0.320
7	0.142	0.165	0.330	-0.330
8	0.259	0.166	0.331	-0.331
9	0.311	0.168	0.336	-0.336
10	0.265	0.172	0.343	-0.343
11	0.088	0.174	0.348	-0.348
12	0.261	0.174	0.348	-0.348
13	0.101	0.177	0.353	-0.353

S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.129	0.177	0.354	-0.354
15	0.100	0.177	0.355	-0.355

S_21FLPBCH18D Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

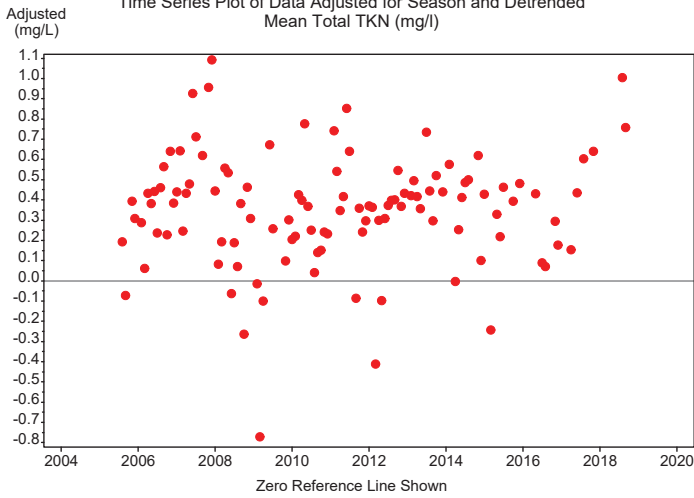
S_21FLPBCH18D Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total TKN (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.343	0	0.018	-0.046

S_21FLPBCH18D Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total TKN (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.34343	.000005336	0.018056	-0.046273

S_21FLPBCH18D Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total TKN (mg/l)



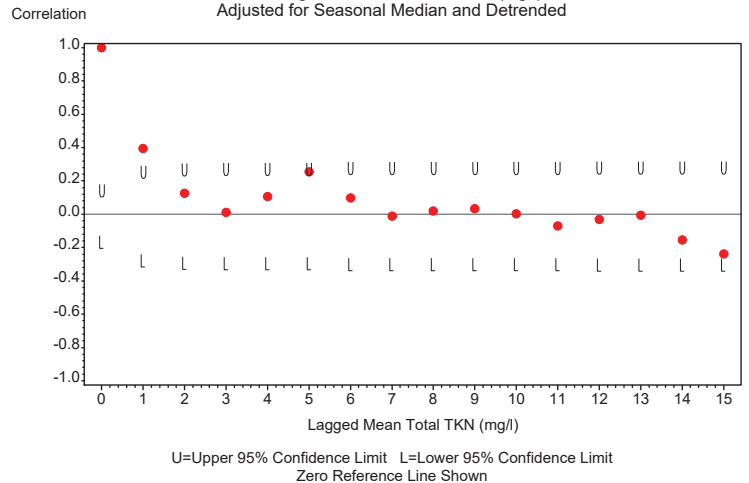
S_21FLPBCH18D Trends Appendix
 Autocorrelation Statistics for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended

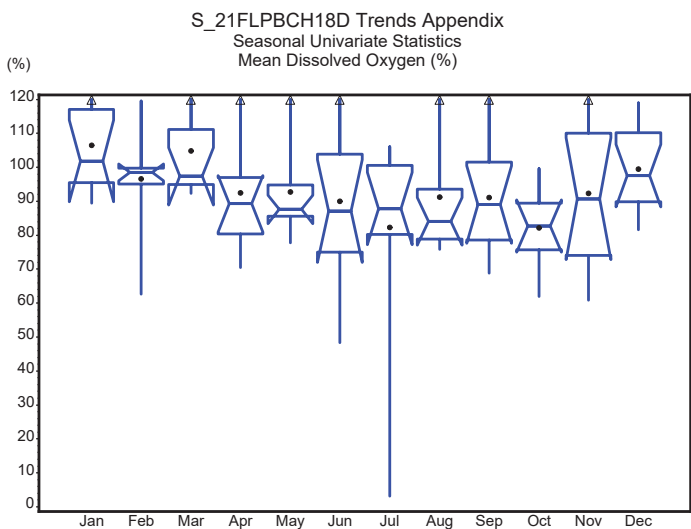
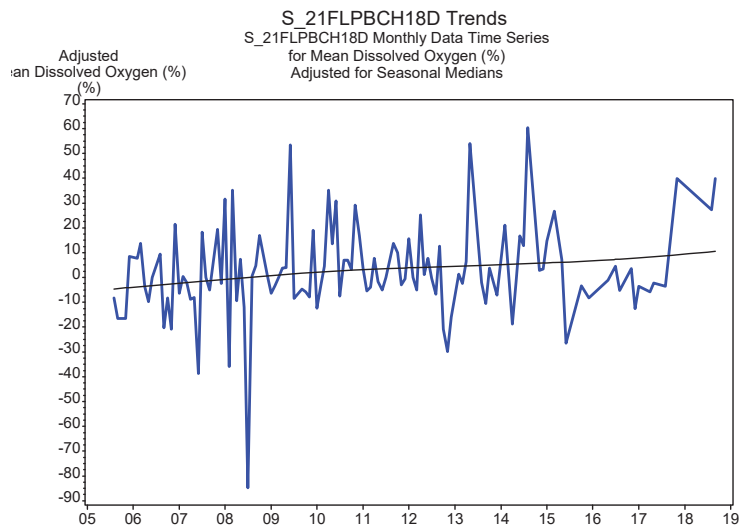
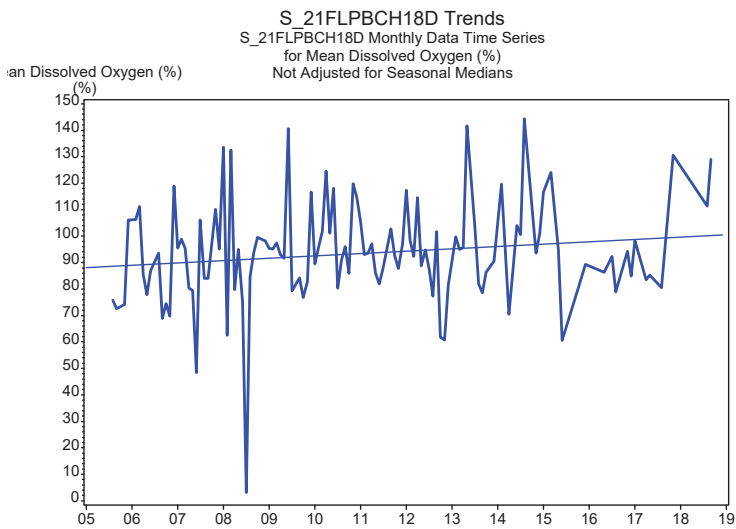
Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.394	0.134	0.267	-0.267
2	0.125	0.140	0.281	-0.281
3	0.012	0.141	0.282	-0.282
4	0.107	0.141	0.282	-0.282
5	0.253	0.142	0.283	-0.283
6	0.097	0.144	0.288	-0.288
7	-0.012	0.145	0.289	-0.289
8	0.018	0.145	0.289	-0.289
9	0.034	0.145	0.289	-0.289
10	0.003	0.145	0.289	-0.289
11	-0.070	0.145	0.289	-0.289
12	-0.032	0.145	0.290	-0.290
13	-0.006	0.145	0.290	-0.290

S_21FLPBCH18D Trends Appendix
 Autocorrelation Statistics for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.155	0.145	0.290	-0.290
15	-0.238	0.146	0.292	-0.292

S_21FLPBCH18D Trends Appendix
 Correlogram for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended





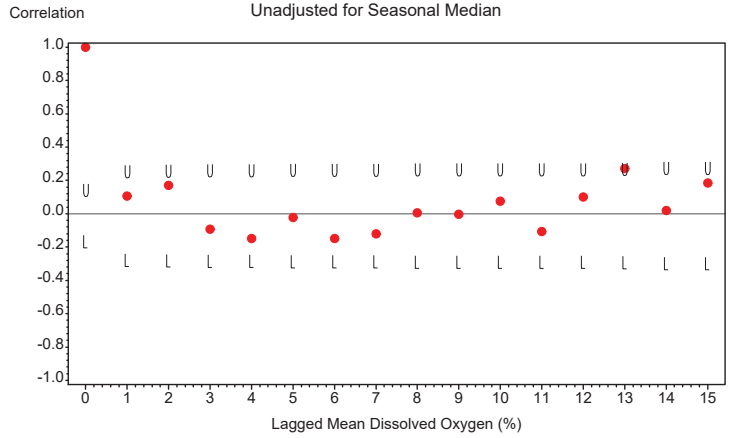
S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.105	0.134	0.267	-0.267
2	0.171	0.134	0.268	-0.268
3	-0.094	0.135	0.271	-0.271
4	-0.149	0.136	0.272	-0.272
5	-0.023	0.137	0.274	-0.274
6	-0.148	0.137	0.274	-0.274
7	-0.122	0.138	0.275	-0.275
8	0.006	0.138	0.277	-0.277
9	-0.002	0.138	0.277	-0.277
10	0.076	0.138	0.277	-0.277
11	-0.108	0.139	0.277	-0.277
12	0.101	0.139	0.278	-0.278
13	0.272	0.140	0.279	-0.279

S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.018	0.143	0.285	-0.285
15	0.184	0.143	0.285	-0.285

S_21FLPBCH18D Trends Appendix
Correlogram for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_21FLPBCH18D Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.077	0.308	0.275	0.562

S_21FLPBCH18D Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (%)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.076628	0.30807	0.27493	0.56222

S_21FLPBCH18D Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (%)



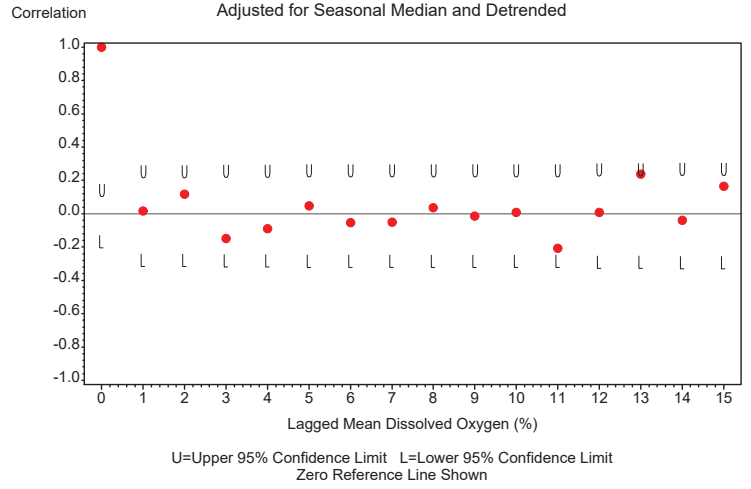
S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.017	0.134	0.267	-0.267
2	0.118	0.134	0.267	-0.267
3	-0.149	0.134	0.269	-0.269
4	-0.089	0.135	0.270	-0.270
5	0.046	0.136	0.271	-0.271
6	-0.053	0.136	0.271	-0.271
7	-0.050	0.136	0.272	-0.272
8	0.036	0.136	0.272	-0.272
9	-0.014	0.136	0.272	-0.272
10	0.007	0.136	0.272	-0.272
11	-0.208	0.136	0.272	-0.272
12	0.009	0.138	0.276	-0.276
13	0.237	0.138	0.276	-0.276

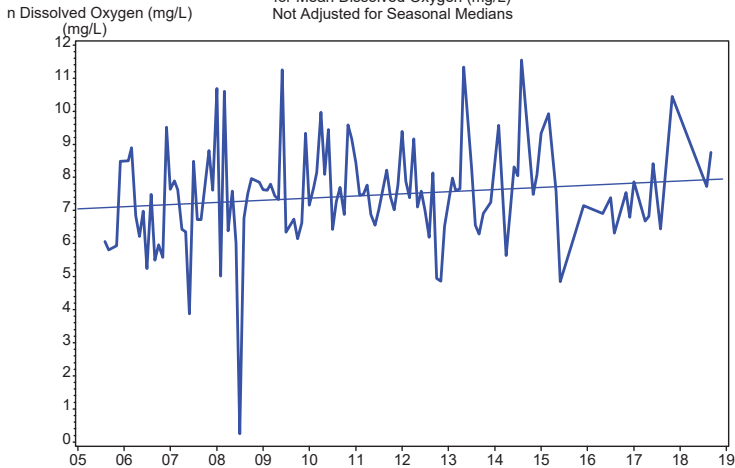
S_21FLPBCH18D Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.040	0.140	0.281	-0.281
15	0.166	0.140	0.281	-0.281

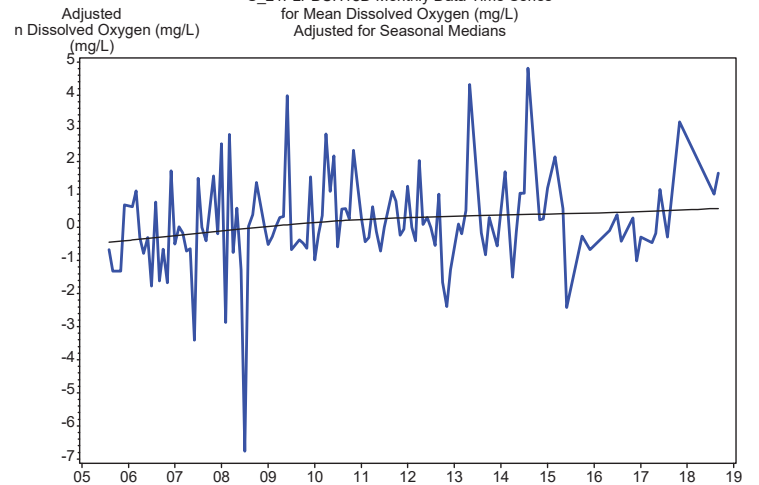
S_21FLPBCH18D Trends Appendix
 Correlogram for Mean Dissolved Oxygen (%)
 Adjusted for Seasonal Median and Detrended



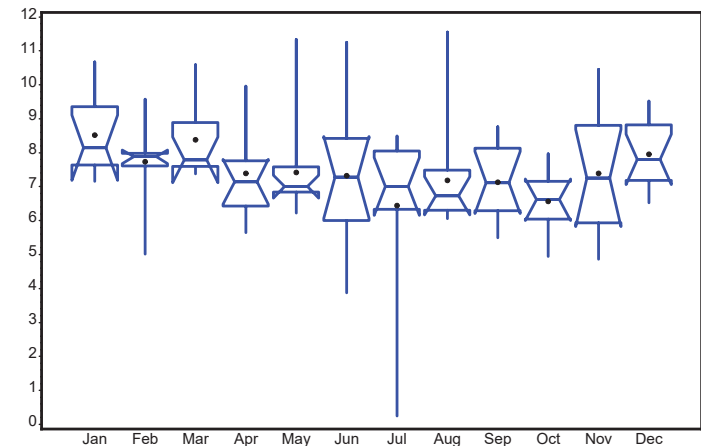
S_21FLPBCH18D Trends
 S_21FLPBCH18D Monthly Data Time Series
 for Mean Dissolved Oxygen (mg/L)
 Not Adjusted for Seasonal Medians



S_21FLPBCH18D Trends
 S_21FLPBCH18D Monthly Data Time Series
 for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Medians



S_21FLPBCH18D Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



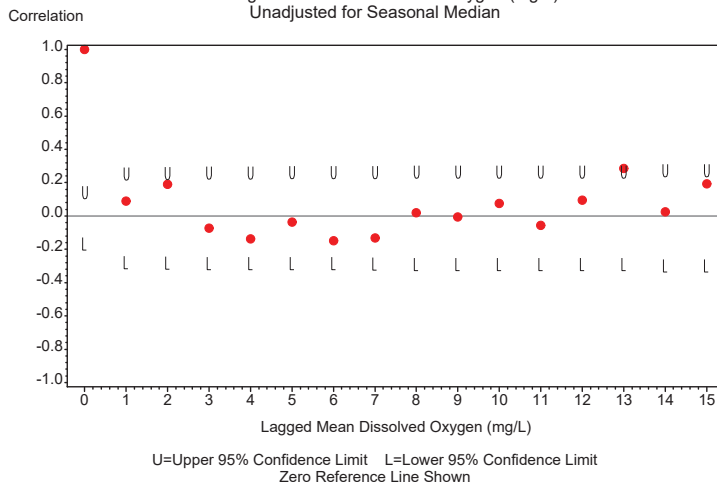
S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	0.088	0.134	0.267	-0.267
2	0.189	0.134	0.268	-0.268
3	-0.072	0.136	0.271	-0.271
4	-0.137	0.136	0.272	-0.272
5	-0.038	0.137	0.273	-0.273
6	-0.149	0.137	0.273	-0.273
7	-0.133	0.138	0.275	-0.275
8	0.019	0.138	0.277	-0.277
9	-0.007	0.138	0.277	-0.277
10	0.076	0.138	0.277	-0.277
11	-0.056	0.139	0.277	-0.277
12	0.095	0.139	0.278	-0.278
13	0.284	0.139	0.278	-0.278

S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.026	0.143	0.285	-0.285
15	0.192	0.143	0.285	-0.285

S_21FLPBCH18D Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



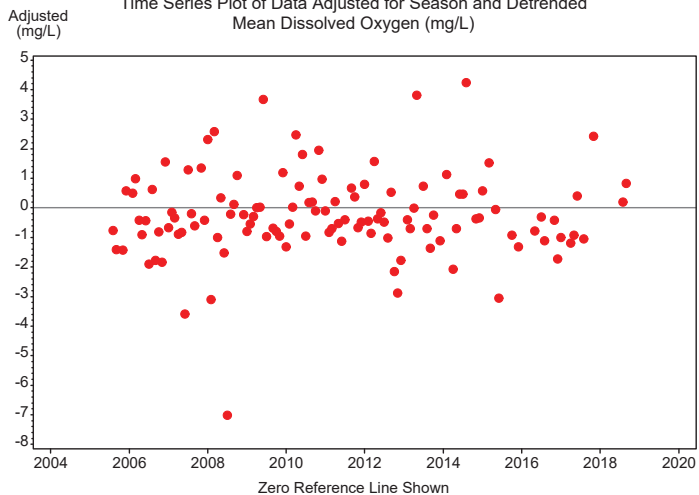
S_21FLPBCH18D Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.096	0.192	0.168	0.055

S_21FLPBCH18D Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.096296	0.19229	0.16783	0.055398

S_21FLPBCH18D Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (mg/L)



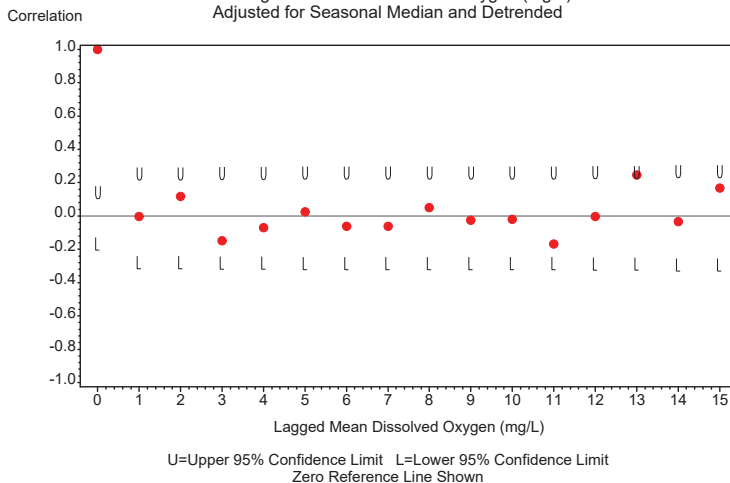
S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.077	0.154	-0.154
1	-0.002	0.134	0.267	-0.267
2	0.117	0.134	0.267	-0.267
3	-0.150	0.134	0.268	-0.268
4	-0.071	0.135	0.270	-0.270
5	0.025	0.135	0.271	-0.271
6	-0.061	0.135	0.271	-0.271
7	-0.063	0.136	0.271	-0.271
8	0.051	0.136	0.272	-0.272
9	-0.025	0.136	0.272	-0.272
10	-0.019	0.136	0.272	-0.272
11	-0.168	0.136	0.272	-0.272
12	-0.002	0.137	0.274	-0.274
13	0.246	0.137	0.274	-0.274

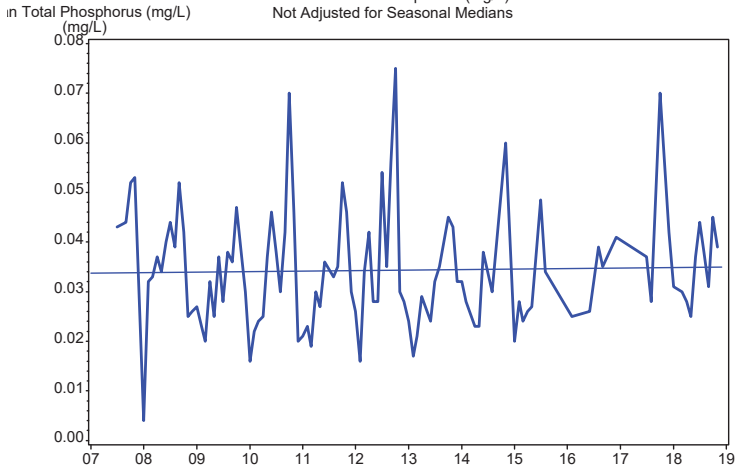
S_21FLPBCH18D Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.034	0.140	0.280	-0.280
15	0.168	0.140	0.280	-0.280

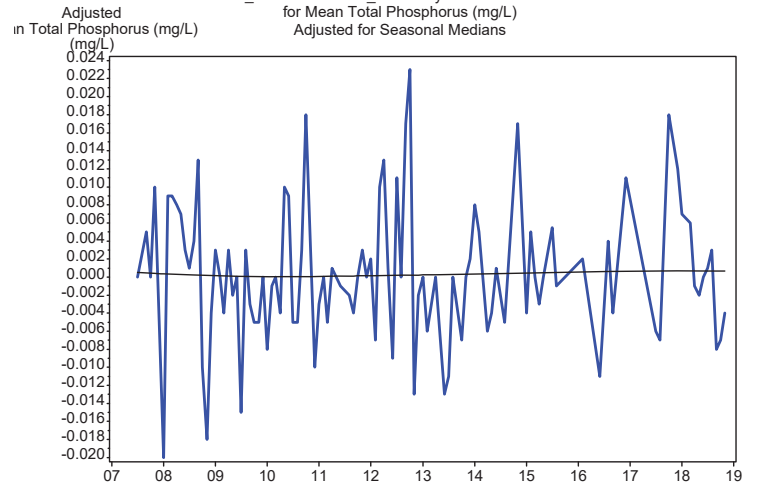
S_21FLPBCH18D Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended



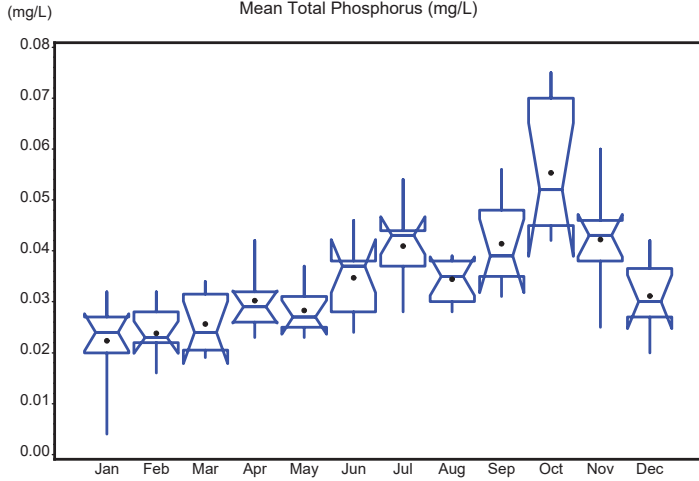
S_21FLSFWMLWL_1 Trends
S_21FLSFWMLWL_1 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_1 Trends
S_21FLSFWMLWL_1 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians



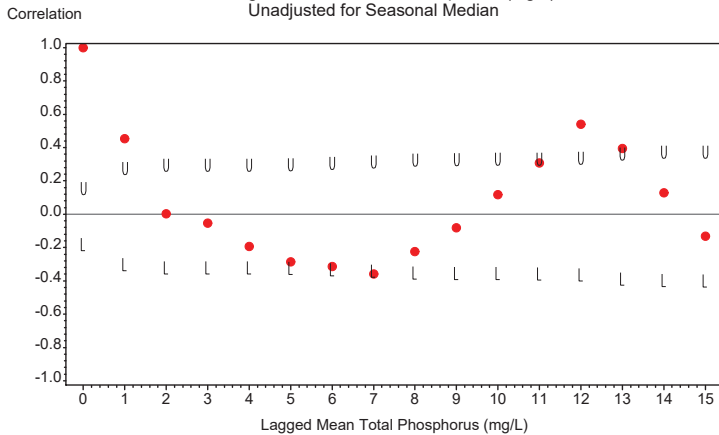
S_21FLSFWMLWL_1 Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.453	0.144	0.289	-0.289
2	0.001	0.154	0.308	-0.308
3	-0.055	0.154	0.308	-0.308
4	-0.194	0.154	0.308	-0.308
5	-0.286	0.156	0.311	-0.311
6	-0.314	0.159	0.319	-0.319
7	-0.360	0.164	0.327	-0.327
8	-0.224	0.169	0.338	-0.338
9	-0.081	0.171	0.342	-0.342
10	0.117	0.171	0.343	-0.343
11	0.307	0.172	0.344	-0.344
12	0.540	0.176	0.351	-0.351
13	0.394	0.187	0.374	-0.374
14	0.127	0.192	0.385	-0.385
15	-0.131	0.193	0.386	-0.386

S_21FLSFWMLWL_1 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

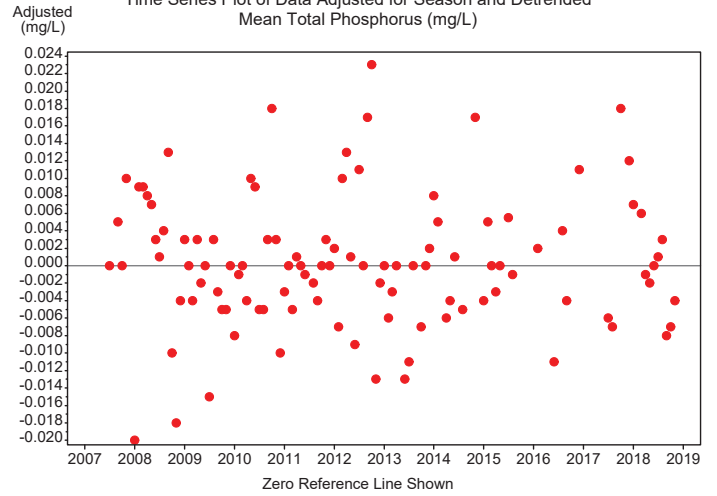
S_21FLSFWMLWL_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.029	0.735	0.689	0

S_21FLSFWMLWL_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.028640	0.73466	0.68872	0

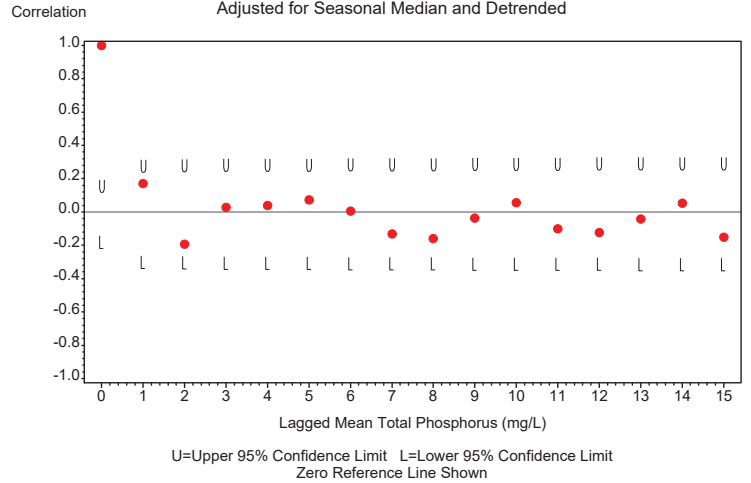
S_21FLSFWMLWL_1 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total Phosphorus (mg/L)



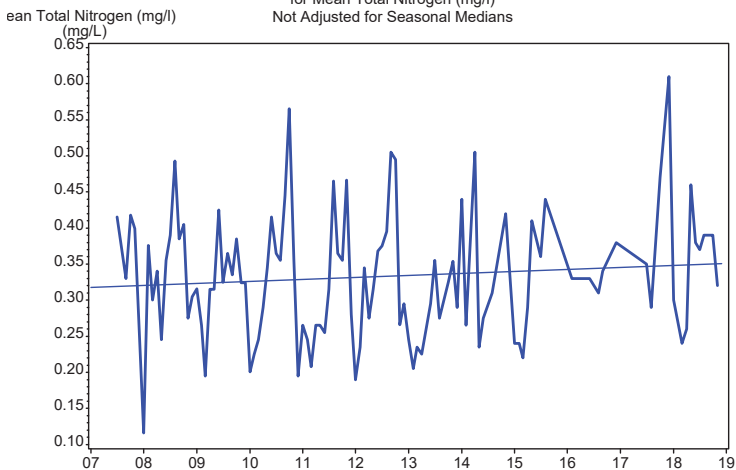
S_21FLSFWMLWL_1 Trends Appendix
 Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.169	0.144	0.289	-0.289
2	-0.193	0.146	0.291	-0.291
3	0.027	0.147	0.295	-0.295
4	0.040	0.148	0.295	-0.295
5	0.073	0.148	0.295	-0.295
6	0.005	0.148	0.296	-0.296
7	-0.132	0.148	0.296	-0.296
8	-0.161	0.149	0.297	-0.297
9	-0.038	0.150	0.300	-0.300
10	0.056	0.150	0.300	-0.300
11	-0.101	0.150	0.300	-0.300
12	-0.124	0.151	0.301	-0.301
13	-0.043	0.151	0.303	-0.303
14	0.052	0.151	0.303	-0.303
15	-0.151	0.151	0.303	-0.303

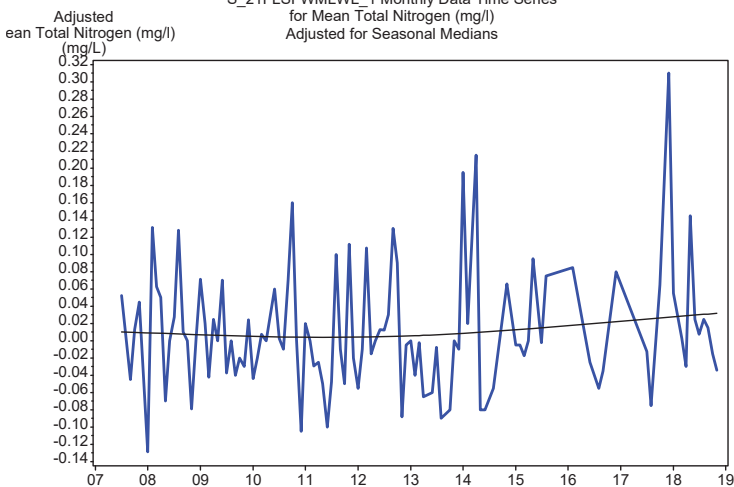
S_21FLSFWMLWL_1 Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended



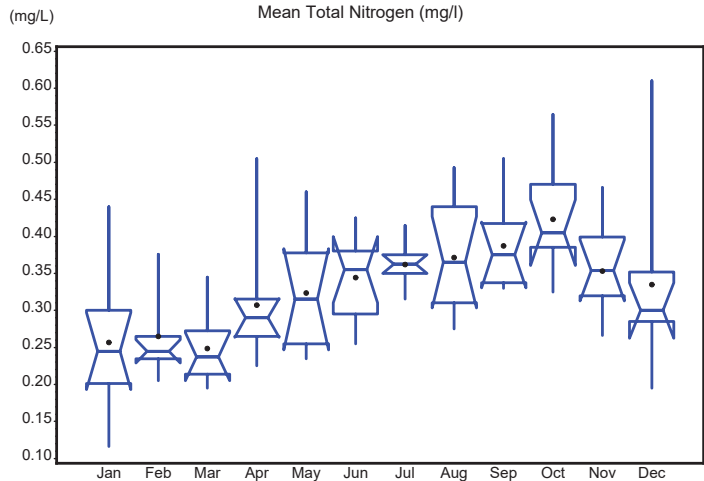
S_21FLSFWMLWL_1 Trends
S_21FLSFWMLWL_1 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_1 Trends
S_21FLSFWMLWL_1 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_1 Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



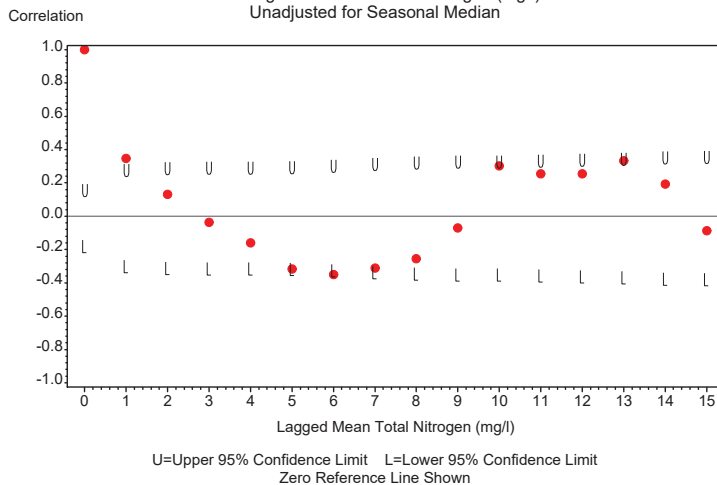
S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.348	0.144	0.289	-0.289
2	0.132	0.150	0.300	-0.300
3	-0.036	0.151	0.302	-0.302
4	-0.160	0.151	0.302	-0.302
5	-0.318	0.152	0.304	-0.304
6	-0.351	0.157	0.313	-0.313
7	-0.310	0.162	0.324	-0.324
8	-0.256	0.166	0.332	-0.332
9	-0.070	0.169	0.338	-0.338
10	0.302	0.169	0.338	-0.338
11	0.255	0.173	0.345	-0.345
12	0.255	0.175	0.351	-0.351
13	0.334	0.178	0.356	-0.356

S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.192	0.182	0.364	-0.364
15	-0.088	0.184	0.367	-0.367

S_21FLSFWMLWL_1 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



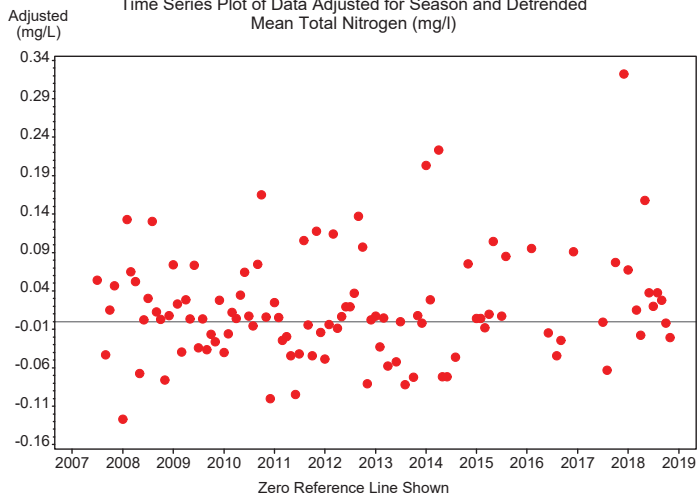
S_21FLSFWMLWL_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Nitrogen (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.037	0.651	0.674	-0.001

S_21FLSFWMLWL_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.037383	0.65098	0.67374	-0.00101667

S_21FLSFWMLWL_1 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total Nitrogen (mg/l)



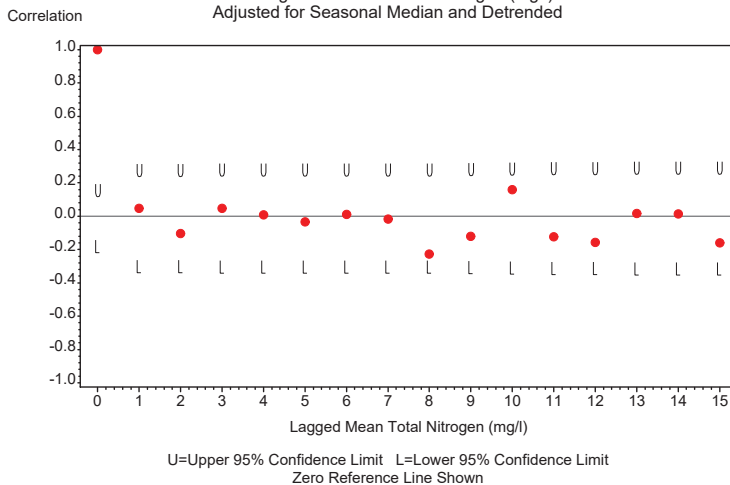
S_21FLSFWMLWL_1 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.046	0.144	0.289	-0.289
2	-0.105	0.144	0.289	-0.289
3	0.046	0.145	0.290	-0.290
4	0.008	0.145	0.290	-0.290
5	-0.035	0.145	0.290	-0.290
6	0.012	0.145	0.290	-0.290
7	-0.017	0.145	0.290	-0.290
8	-0.228	0.145	0.290	-0.290
9	-0.121	0.148	0.295	-0.295
10	0.158	0.148	0.297	-0.297
11	-0.124	0.149	0.299	-0.299
12	-0.158	0.150	0.300	-0.300
13	0.017	0.151	0.303	-0.303

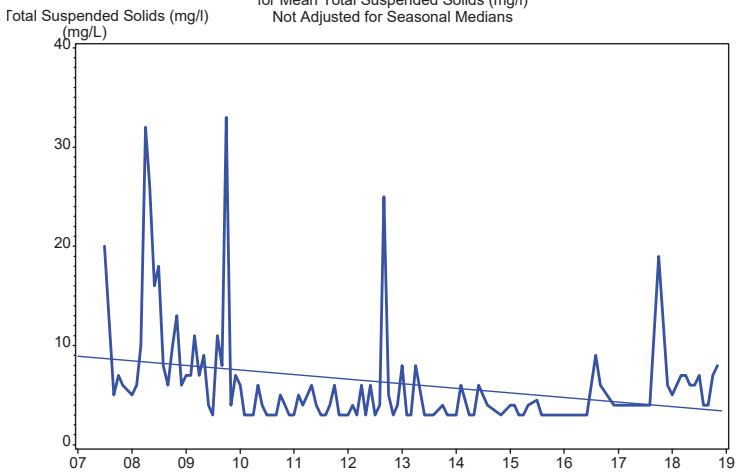
S_21FLSFWMLWL_1 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.014	0.151	0.303	-0.303
15	-0.160	0.151	0.303	-0.303

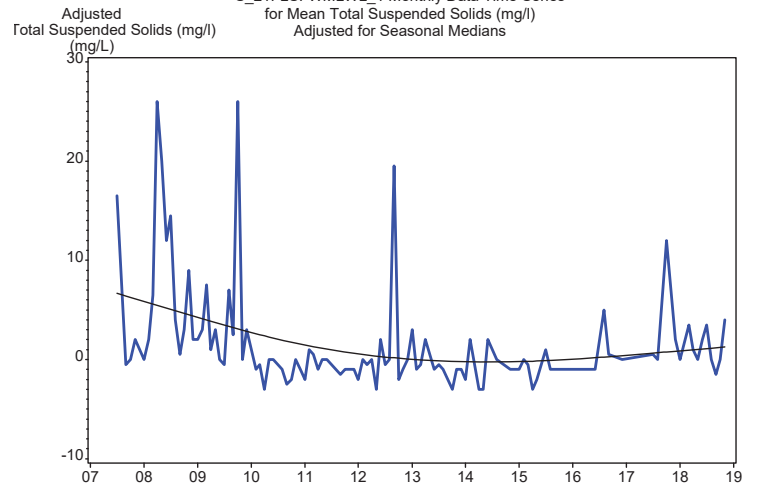
S_21FLSFWMLWL_1 Trends Appendix
 Correlogram for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended



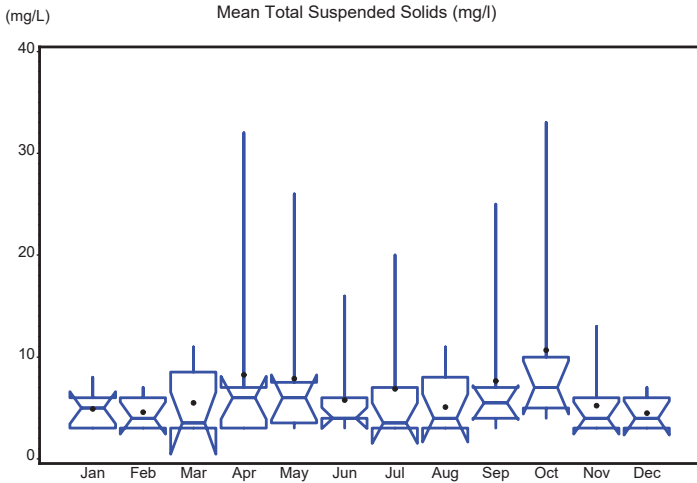
S_21FLSFWMLWL_1 Trends
 S_21FLSFWMLWL_1 Monthly Data Time Series
 for Mean Total Suspended Solids (mg/l)
 Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_1 Trends
 S_21FLSFWMLWL_1 Monthly Data Time Series
 for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Medians



S_21FLSFWMLWL_1 Trends Appendix
 Seasonal Univariate Statistics
 Mean Total Suspended Solids (mg/l)



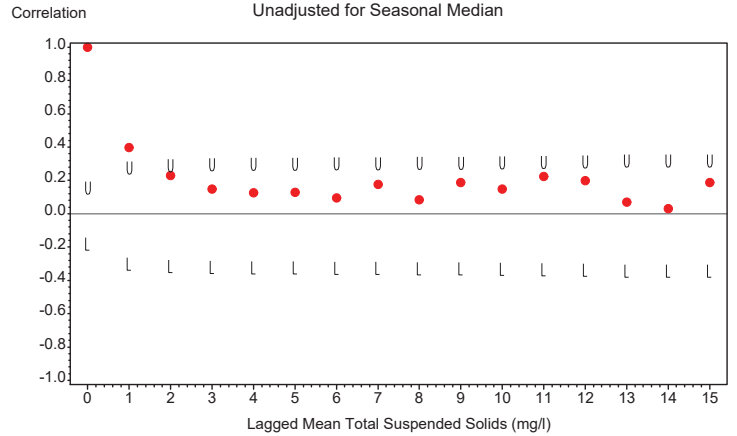
S_21FLSFWMLWL_1 Trends Appendix
 Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
 Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.396	0.144	0.289	-0.289
2	0.228	0.152	0.303	-0.303
3	0.148	0.154	0.308	-0.308
4	0.126	0.155	0.310	-0.310
5	0.129	0.156	0.312	-0.312
6	0.095	0.156	0.313	-0.313
7	0.177	0.157	0.314	-0.314
8	0.084	0.158	0.317	-0.317
9	0.187	0.159	0.317	-0.317
10	0.149	0.160	0.320	-0.320
11	0.224	0.161	0.322	-0.322
12	0.197	0.163	0.326	-0.326
13	0.070	0.165	0.330	-0.330

S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.029	0.165	0.330	-0.330
15	0.187	0.165	0.330	-0.330

S_21FLSFWMLWL_1 Trends Appendix
Correlogram for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

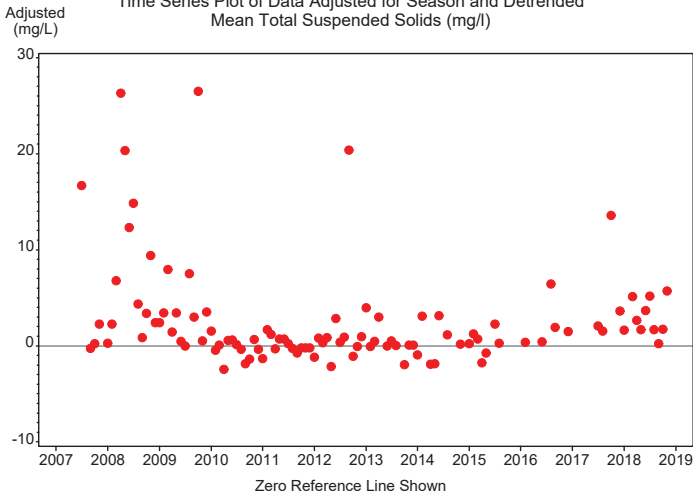
S_21FLSFWMLWL_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.173	0.022	0.285	-0.134

S_21FLSFWMLWL_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.17290	0.021835	0.28525	-0.13393

S_21FLSFWMLWL_1 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Suspended Solids (mg/l)



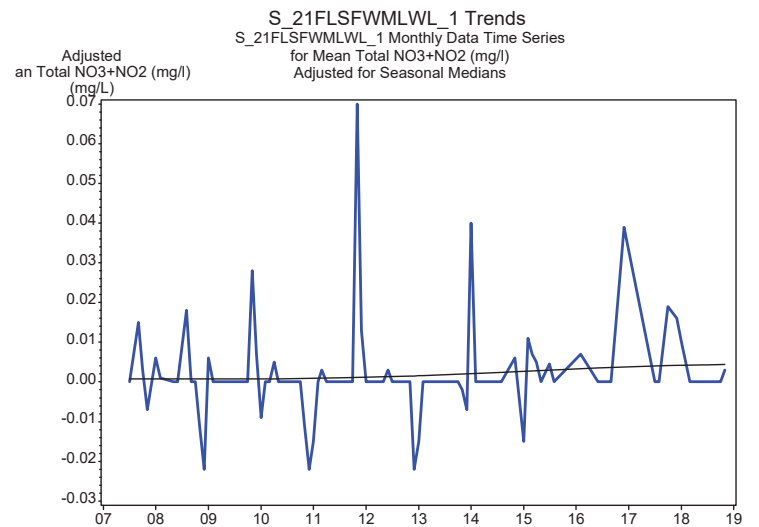
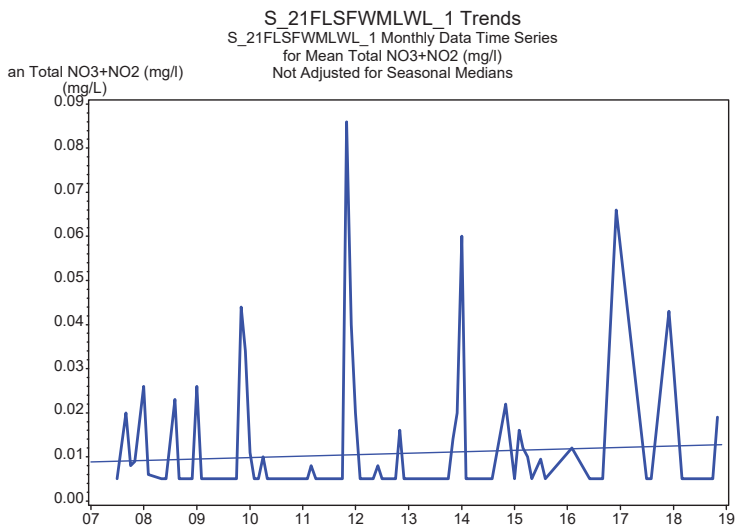
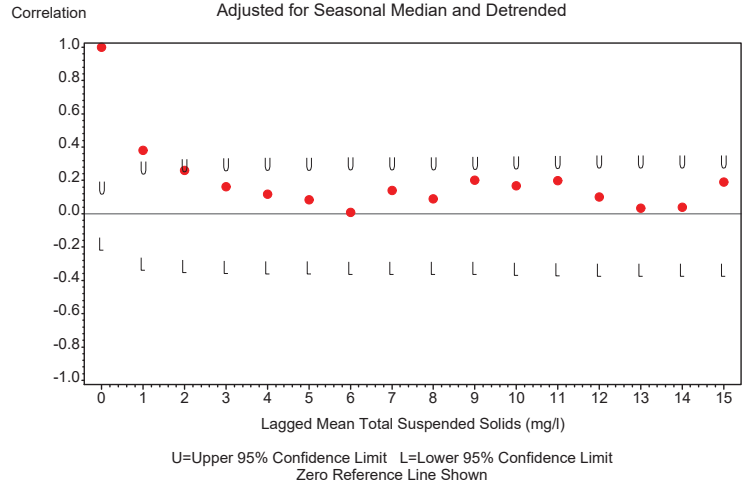
S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.381	0.144	0.289	-0.289
2	0.259	0.151	0.302	-0.302
3	0.161	0.154	0.308	-0.308
4	0.116	0.155	0.311	-0.311
5	0.084	0.156	0.312	-0.312
6	0.007	0.156	0.313	-0.313
7	0.139	0.156	0.313	-0.313
8	0.088	0.157	0.314	-0.314
9	0.201	0.157	0.315	-0.315
10	0.168	0.159	0.318	-0.318
11	0.198	0.160	0.321	-0.321
12	0.101	0.162	0.324	-0.324
13	0.034	0.163	0.325	-0.325

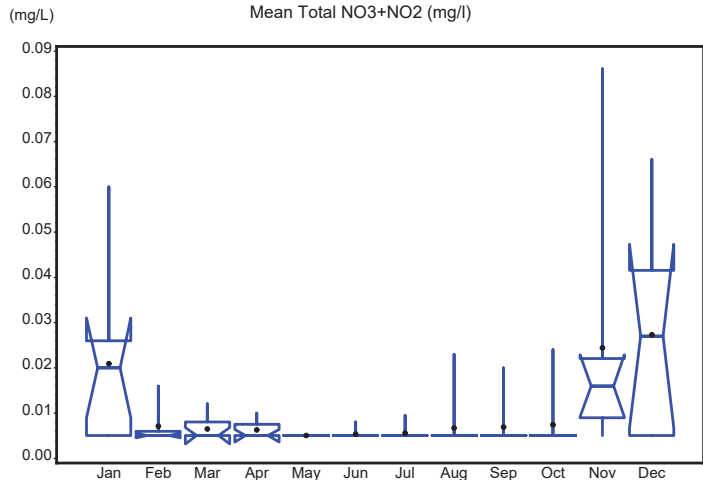
S_21FLSFWMLWL_1 Trends Appendix
 Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.039	0.163	0.325	-0.325
15	0.191	0.163	0.325	-0.325

S_21FLSFWMLWL_1 Trends Appendix
 Correlogram for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended



S_21FLSFWMLWL_1 Trends Appendix
Seasonal Univariate Statistics
Mean Total NO3+NO2 (mg/l)



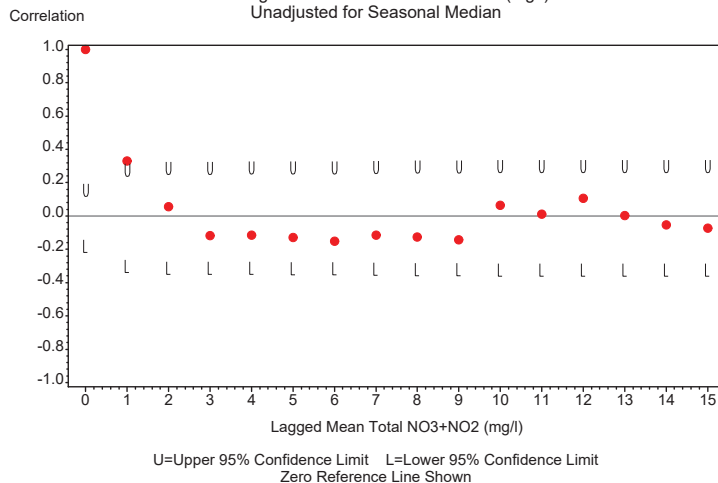
S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.330	0.144	0.289	-0.289
2	0.055	0.149	0.299	-0.299
3	-0.117	0.150	0.299	-0.299
4	-0.116	0.150	0.301	-0.301
5	-0.129	0.151	0.302	-0.302
6	-0.152	0.152	0.303	-0.303
7	-0.115	0.153	0.305	-0.305
8	-0.127	0.153	0.307	-0.307
9	-0.143	0.154	0.308	-0.308
10	0.065	0.155	0.310	-0.310
11	0.011	0.155	0.310	-0.310
12	0.107	0.155	0.310	-0.310
13	0.003	0.156	0.311	-0.311

S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.055	0.156	0.311	-0.311
15	-0.072	0.156	0.312	-0.312

S_21FLSFWMLWL_1 Trends Appendix
Correlogram for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Median



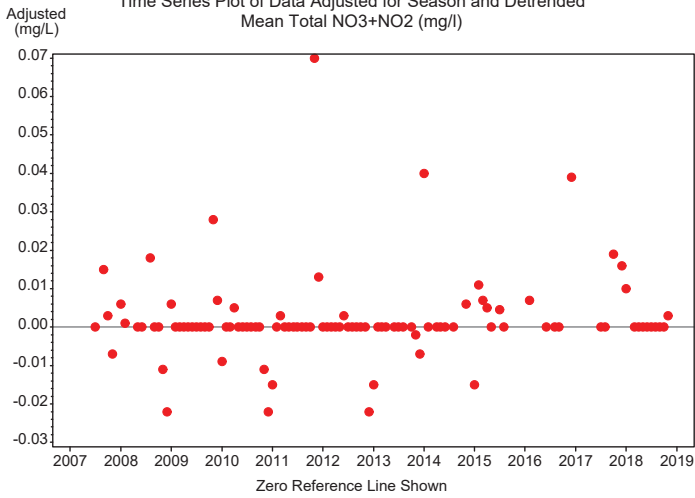
S_21FLSFWMLWL_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.04	0.514	0.546	0

S_21FLSFWMLWL_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.039604	0.51442	0.54603	0

S_21FLSFWMLWL_1 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total NO3+NO2 (mg/l)



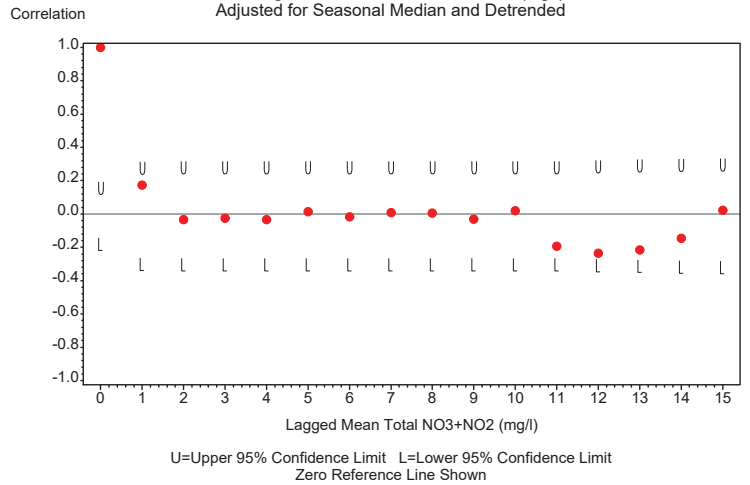
S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.173	0.144	0.289	-0.289
2	-0.033	0.146	0.292	-0.292
3	-0.027	0.146	0.292	-0.292
4	-0.034	0.146	0.292	-0.292
5	0.014	0.146	0.292	-0.292
6	-0.017	0.146	0.292	-0.292
7	0.008	0.146	0.292	-0.292
8	0.005	0.146	0.292	-0.292
9	-0.032	0.146	0.292	-0.292
10	0.019	0.146	0.292	-0.292
11	-0.193	0.146	0.292	-0.292
12	-0.237	0.148	0.296	-0.296
13	-0.215	0.150	0.301	-0.301

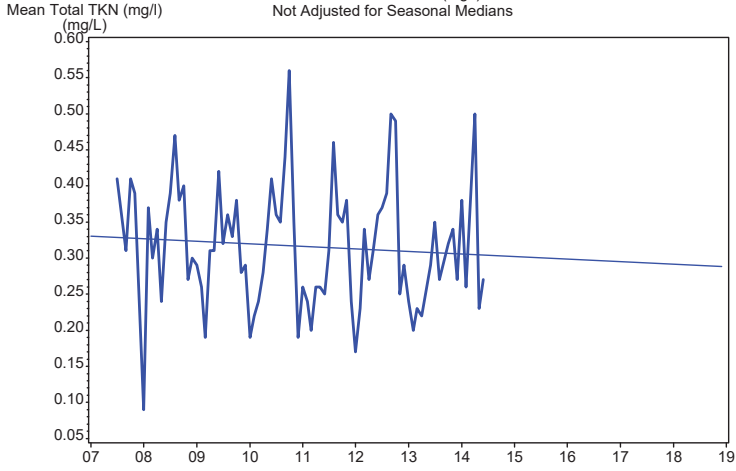
S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.147	0.153	0.305	-0.305
15	0.022	0.153	0.307	-0.307

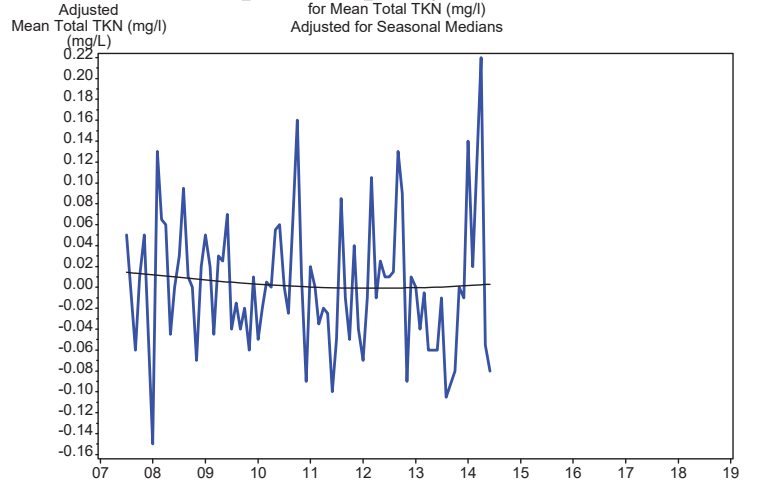
S_21FLSFWMLWL_1 Trends Appendix
Correlogram for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Median and Detrended



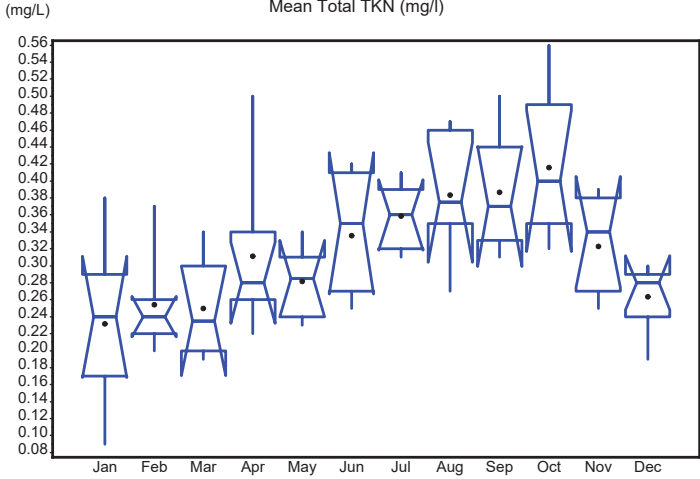
S_21FLSFWMLWL_1 Trends
S_21FLSFWMLWL_1 Monthly Data Time Series
for Mean Total TKN (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_1 Trends
S_21FLSFWMLWL_1 Monthly Data Time Series
for Mean Total TKN (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_1 Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



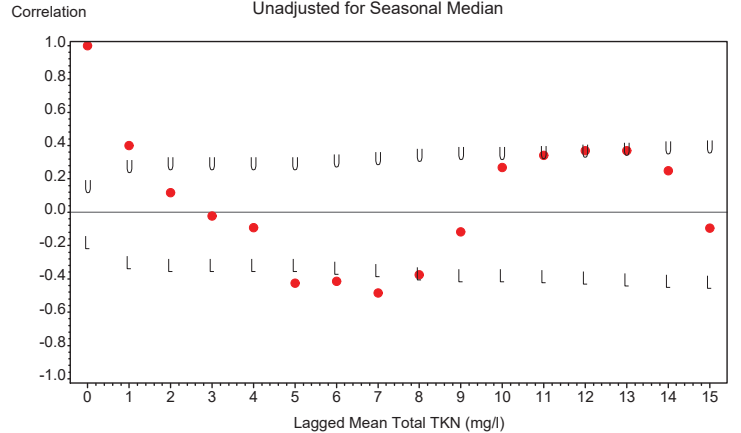
S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.399	0.144	0.289	-0.289
2	0.116	0.152	0.304	-0.304
3	-0.023	0.152	0.305	-0.305
4	-0.092	0.152	0.305	-0.305
5	-0.427	0.153	0.306	-0.306
6	-0.414	0.161	0.322	-0.322
7	-0.486	0.168	0.336	-0.336
8	-0.377	0.178	0.355	-0.355
9	-0.118	0.183	0.366	-0.366
10	0.268	0.184	0.367	-0.367
11	0.340	0.186	0.373	-0.373
12	0.369	0.191	0.381	-0.381
13	0.369	0.195	0.391	-0.391

S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.250	0.200	0.401	-0.401
15	-0.095	0.202	0.405	-0.405

S_21FLSFWMLWL_1 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

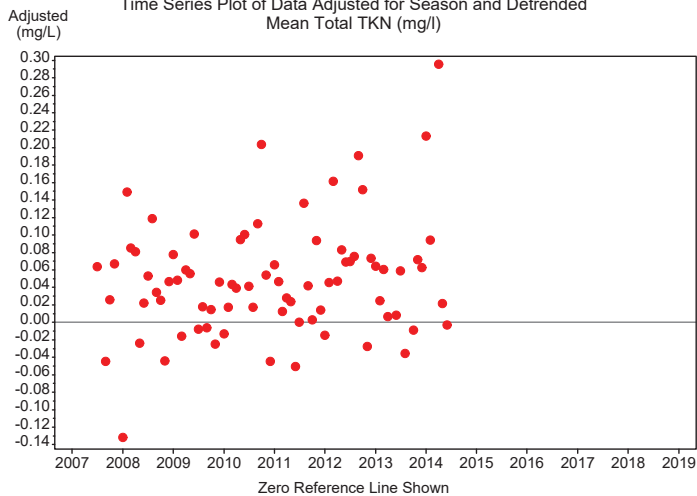
S_21FLSFWMLWL_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total TKN (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.176	0.073	0.134	-.009

S_21FLSFWMLWL_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total TKN (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.17568	0.072920	0.13419	-.00916667

S_21FLSFWMLWL_1 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total TKN (mg/l)



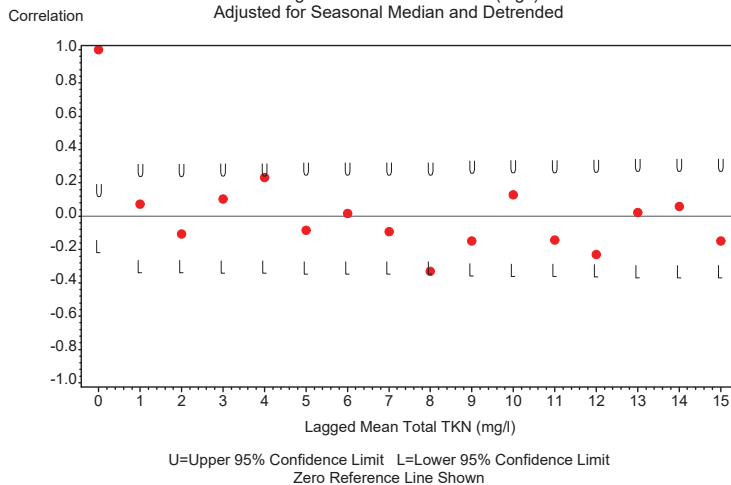
S_21FLSFWMLWL_1 Trends Appendix
 Autocorrelation Statistics for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.071	0.144	0.289	-0.289
2	-0.107	0.145	0.289	-0.289
3	0.103	0.145	0.290	-0.290
4	0.232	0.146	0.291	-0.291
5	-0.085	0.148	0.296	-0.296
6	0.017	0.149	0.297	-0.297
7	-0.094	0.149	0.297	-0.297
8	-0.331	0.149	0.298	-0.298
9	-0.148	0.154	0.308	-0.308
10	0.129	0.155	0.310	-0.310
11	-0.144	0.156	0.311	-0.311
12	-0.229	0.157	0.313	-0.313
13	0.022	0.159	0.318	-0.318

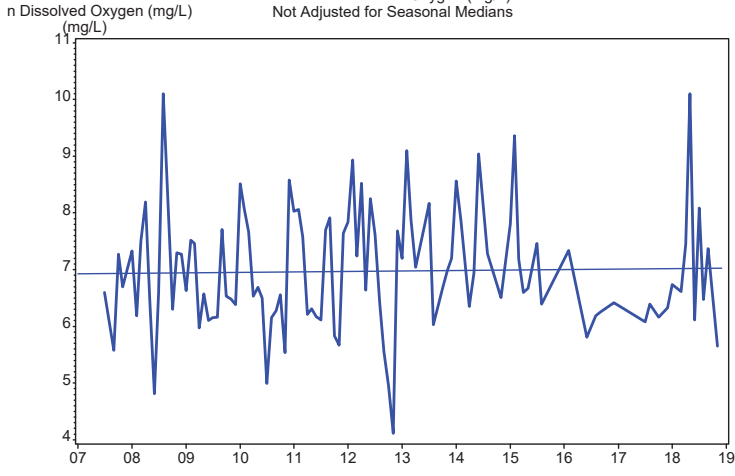
S_21FLSFWMLWL_1 Trends Appendix
 Autocorrelation Statistics for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.058	0.159	0.318	-0.318
15	-0.148	0.159	0.318	-0.318

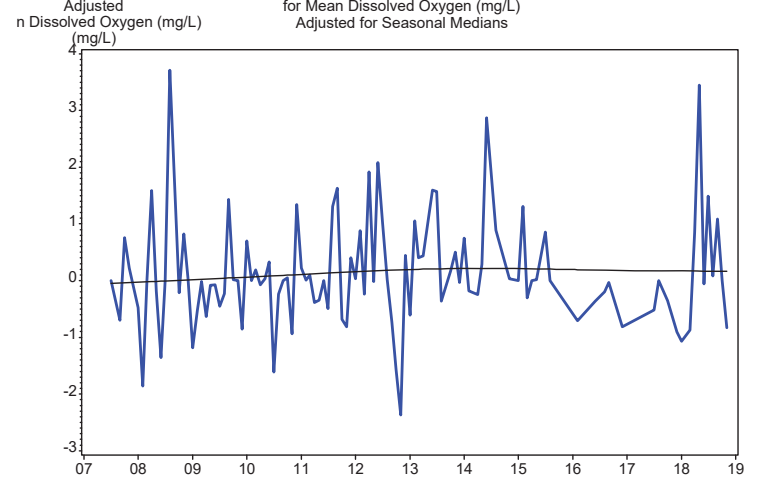
S_21FLSFWMLWL_1 Trends Appendix
 Correlogram for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended



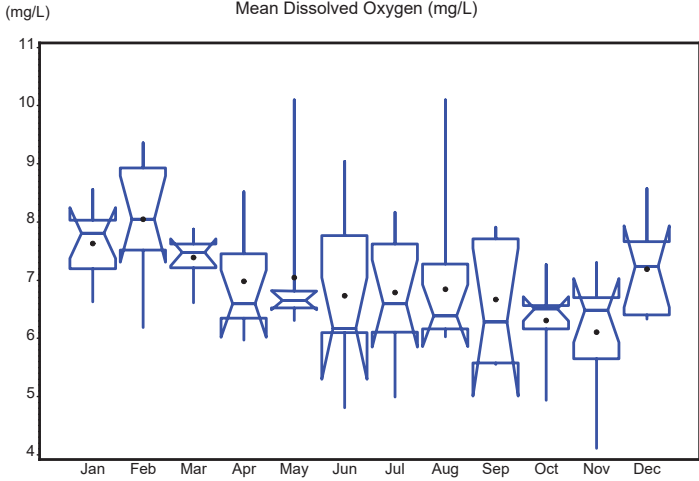
S_21FLSFWMLWL_1 Trends
 S_21FLSFWMLWL_1 Monthly Data Time Series
 for Mean Dissolved Oxygen (mg/L)
 Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_1 Trends
 S_21FLSFWMLWL_1 Monthly Data Time Series
 for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Medians



S_21FLSFWMLWL_1 Trends Appendix
 Seasonal Univariate Statistics
 Mean Dissolved Oxygen (mg/L)



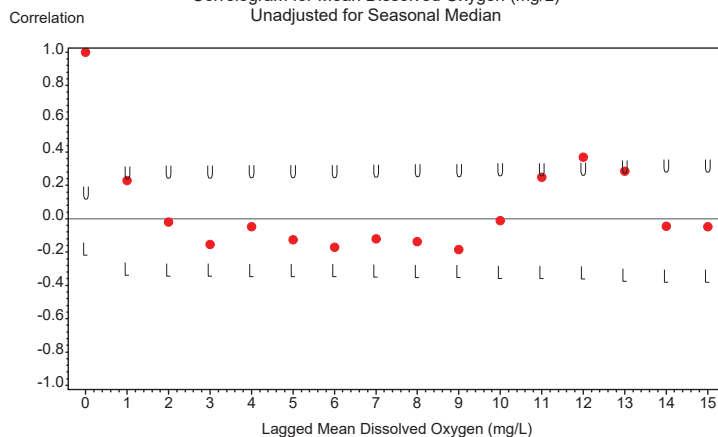
S_21FLSFWMLWL_1 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.229	0.144	0.289	-0.289
2	-0.019	0.147	0.294	-0.294
3	-0.154	0.147	0.294	-0.294
4	-0.048	0.148	0.296	-0.296
5	-0.126	0.148	0.296	-0.296
6	-0.172	0.149	0.298	-0.298
7	-0.121	0.150	0.300	-0.300
8	-0.139	0.151	0.302	-0.302
9	-0.184	0.152	0.303	-0.303
10	-0.011	0.153	0.307	-0.307
11	0.249	0.153	0.307	-0.307
12	0.370	0.156	0.312	-0.312
13	0.285	0.162	0.324	-0.324

S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.044	0.166	0.331	-0.331
15	-0.049	0.166	0.331	-0.331

S_21FLSFWMLWL_1 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

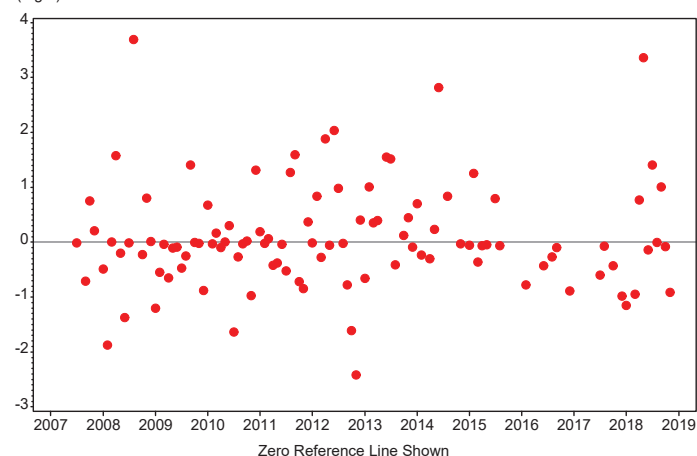
S_21FLSFWMLWL_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.026	0.761	0.781	.007

S_21FLSFWMLWL_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.026128	0.76094	0.78127	.00666667

S_21FLSFWMLWL_1 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (mg/L)



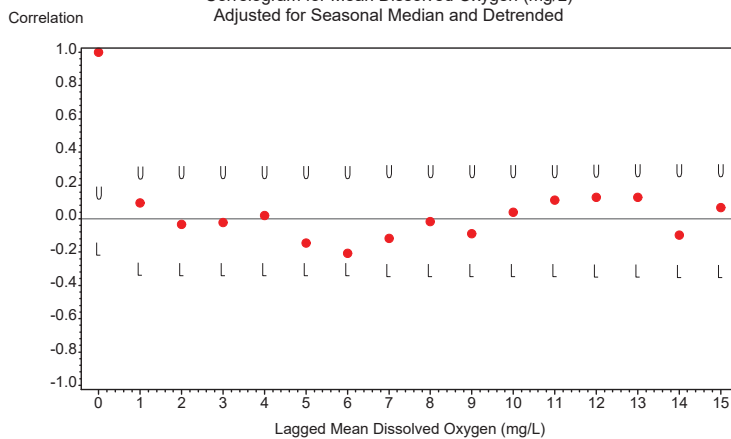
S_21FLSFWMLWL_1 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.095	0.144	0.289	-0.289
2	-0.034	0.145	0.290	-0.290
3	-0.024	0.145	0.290	-0.290
4	0.019	0.145	0.290	-0.290
5	-0.147	0.145	0.290	-0.290
6	-0.208	0.146	0.292	-0.292
7	-0.118	0.148	0.296	-0.296
8	-0.016	0.149	0.297	-0.297
9	-0.091	0.149	0.297	-0.297
10	0.039	0.149	0.298	-0.298
11	0.112	0.149	0.298	-0.298
12	0.128	0.150	0.299	-0.299
13	0.129	0.150	0.301	-0.301

S_21FLSFWMLWL_1 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

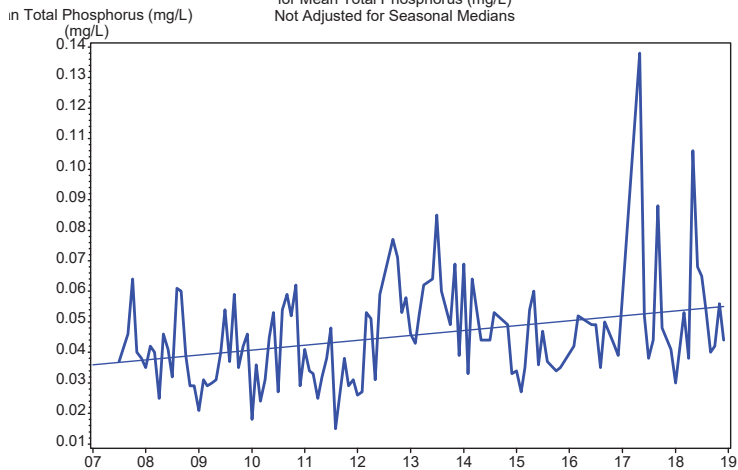
Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.099	0.151	0.302	-0.302
15	0.066	0.152	0.303	-0.303

S_21FLSFWMLWL_1 Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

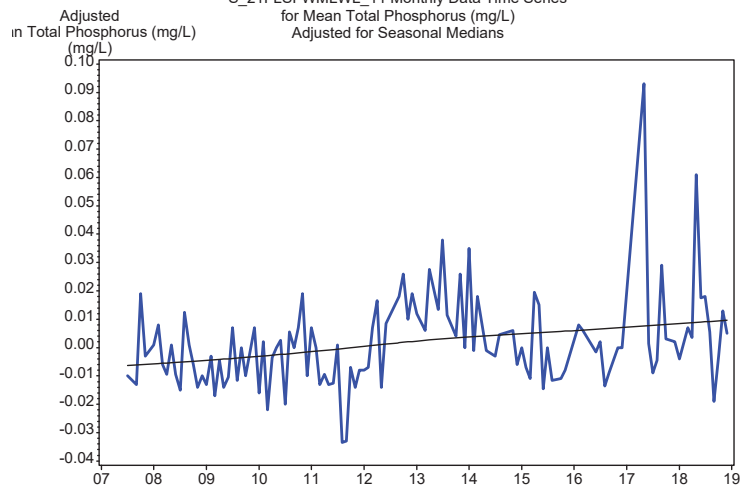


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

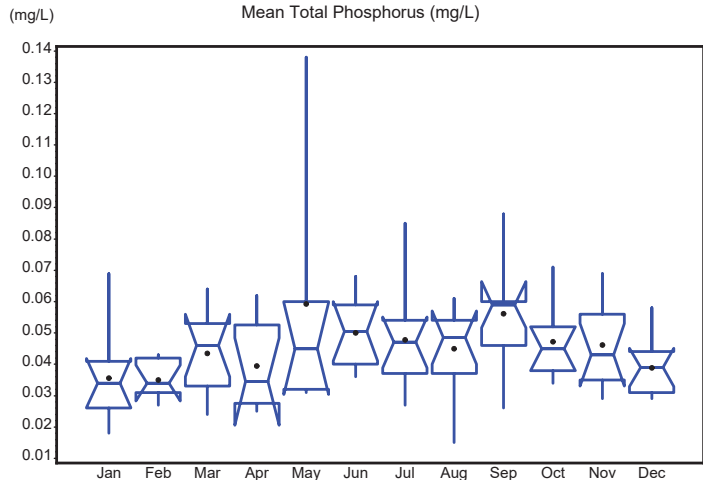
S_21FLSFWMLWL_11 Trends
 S_21FLSFWMLWL_11 Monthly Data Time Series
 for Mean Total Phosphorus (mg/L)
 Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_11 Trends
 S_21FLSFWMLWL_11 Monthly Data Time Series
 for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians



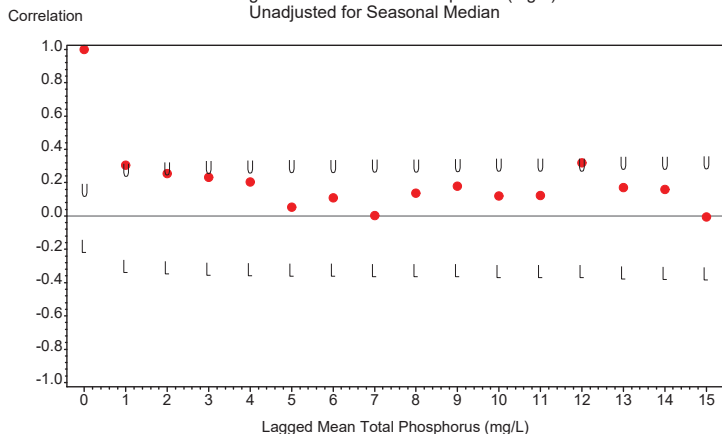
S_21FLSFWMLWL_11 Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.306	0.144	0.289	-0.289
2	0.254	0.149	0.298	-0.298
3	0.231	0.152	0.304	-0.304
4	0.205	0.154	0.308	-0.308
5	0.054	0.156	0.312	-0.312
6	0.110	0.156	0.312	-0.312
7	0.003	0.157	0.313	-0.313
8	0.136	0.157	0.313	-0.313
9	0.178	0.158	0.315	-0.315
10	0.121	0.159	0.318	-0.318
11	0.122	0.160	0.319	-0.319
12	0.318	0.160	0.320	-0.320
13	0.170	0.165	0.329	-0.329
14	0.160	0.166	0.331	-0.331
15	-0.006	0.167	0.334	-0.334

S_21FLSFWMLWL_11 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

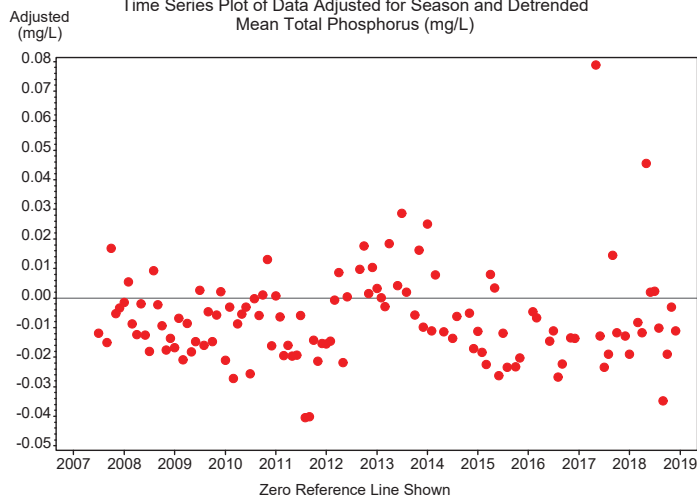
S_21FLSFWMLWL_11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.195	.008	0.119	.001

S_21FLSFWMLWL_11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.19536	.00787997	0.11926	.00125

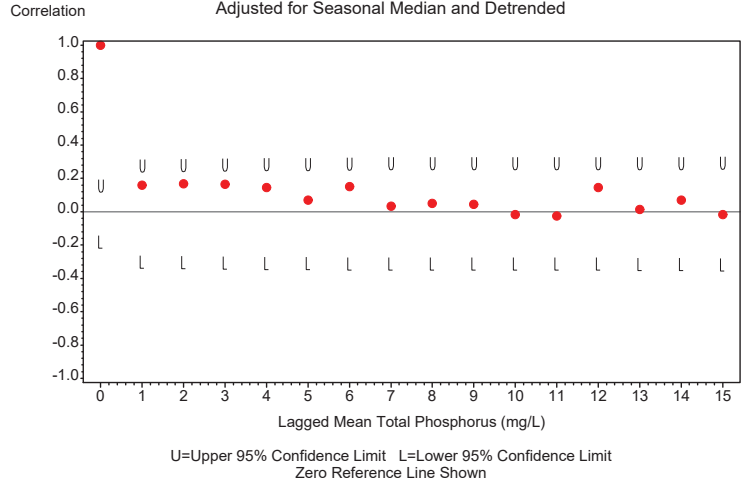
S_21FLSFWMLWL_11 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Phosphorus (mg/L)



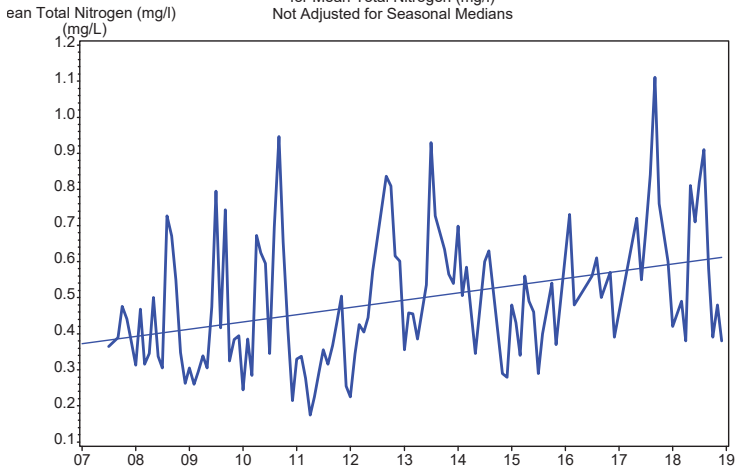
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.160	0.144	0.289	-0.289
2	0.168	0.146	0.291	-0.291
3	0.165	0.147	0.294	-0.294
4	0.145	0.148	0.296	-0.296
5	0.069	0.149	0.298	-0.298
6	0.152	0.149	0.299	-0.299
7	0.033	0.150	0.301	-0.301
8	0.051	0.150	0.301	-0.301
9	0.043	0.151	0.301	-0.301
10	-0.017	0.151	0.301	-0.301
11	-0.025	0.151	0.301	-0.301
12	0.145	0.151	0.301	-0.301
13	0.014	0.152	0.303	-0.303
14	0.069	0.152	0.303	-0.303
15	-0.018	0.152	0.304	-0.304

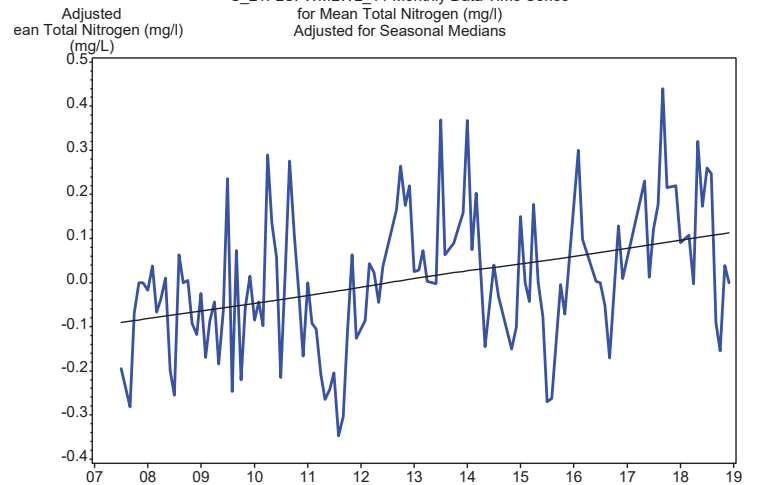
S_21FLSFWMLWL_11 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Median and Detrended



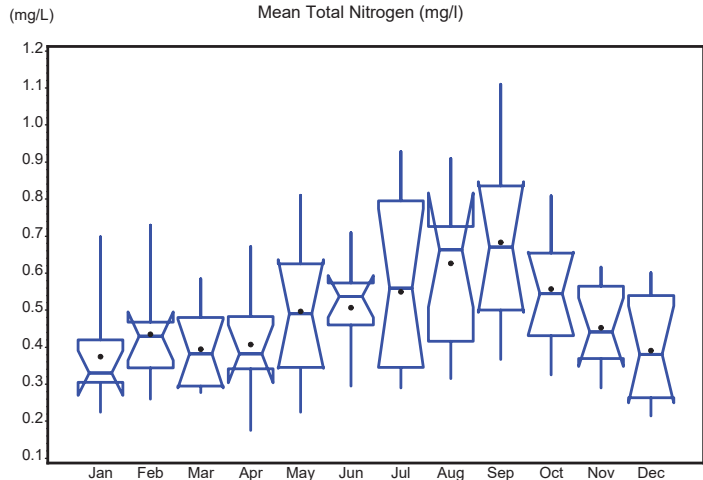
S_21FLSFWMLWL_11 Trends
S_21FLSFWMLWL_11 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_11 Trends
S_21FLSFWMLWL_11 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_11 Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



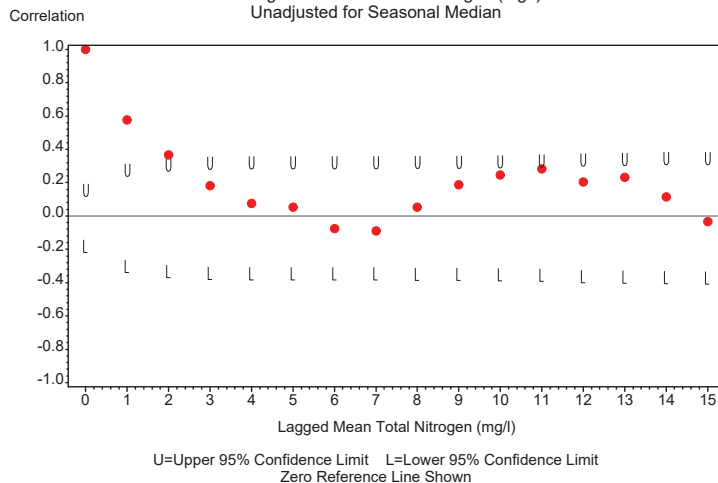
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.575	0.144	0.289	-0.289
2	0.367	0.159	0.319	-0.319
3	0.181	0.165	0.330	-0.330
4	0.074	0.167	0.333	-0.333
5	0.053	0.167	0.334	-0.334
6	-0.076	0.167	0.334	-0.334
7	-0.090	0.167	0.334	-0.334
8	0.054	0.168	0.335	-0.335
9	0.187	0.168	0.335	-0.335
10	0.246	0.169	0.338	-0.338
11	0.281	0.172	0.343	-0.343
12	0.205	0.175	0.349	-0.349
13	0.232	0.176	0.353	-0.353

S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.113	0.178	0.357	-0.357
15	-0.034	0.179	0.358	-0.358

S_21FLSFWMLWL_11 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



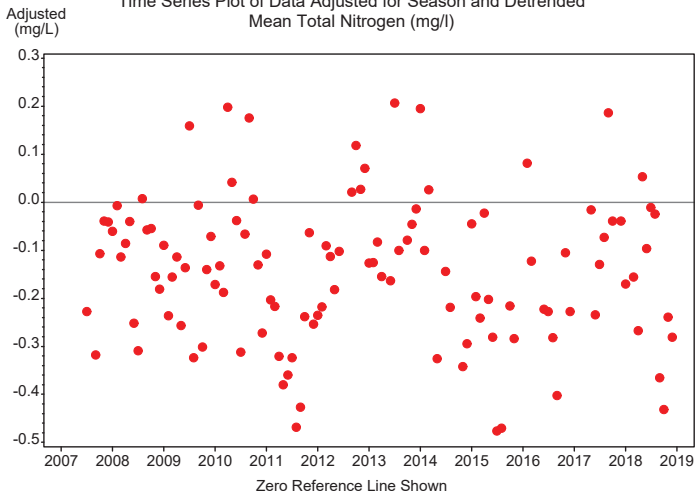
S_21FLSFWMLWL_11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.29	0	0.03	0.022

S_21FLSFWMLWL_11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.29014	.000080466	0.029508	0.021667

S_21FLSFWMLWL_11 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Nitrogen (mg/l)



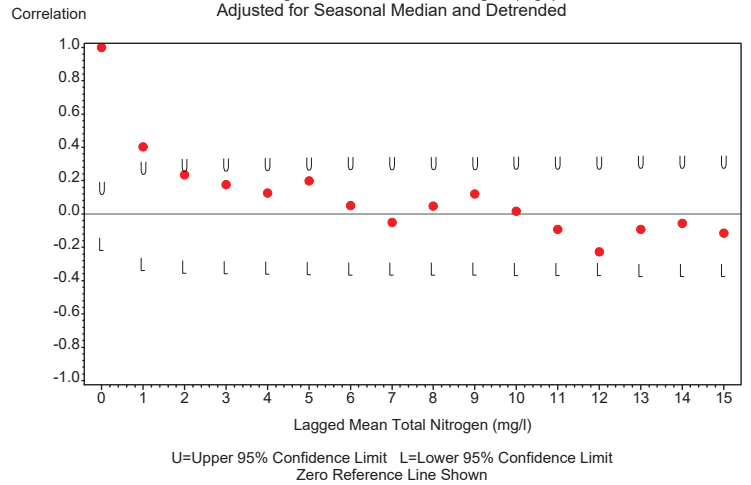
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.404	0.144	0.289	-0.289
2	0.235	0.152	0.304	-0.304
3	0.176	0.154	0.309	-0.309
4	0.126	0.156	0.312	-0.312
5	0.198	0.157	0.313	-0.313
6	0.051	0.158	0.317	-0.317
7	-0.051	0.158	0.317	-0.317
8	0.048	0.159	0.317	-0.317
9	0.119	0.159	0.317	-0.317
10	0.015	0.159	0.319	-0.319
11	-0.094	0.159	0.319	-0.319
12	-0.228	0.160	0.319	-0.319
13	-0.093	0.162	0.324	-0.324

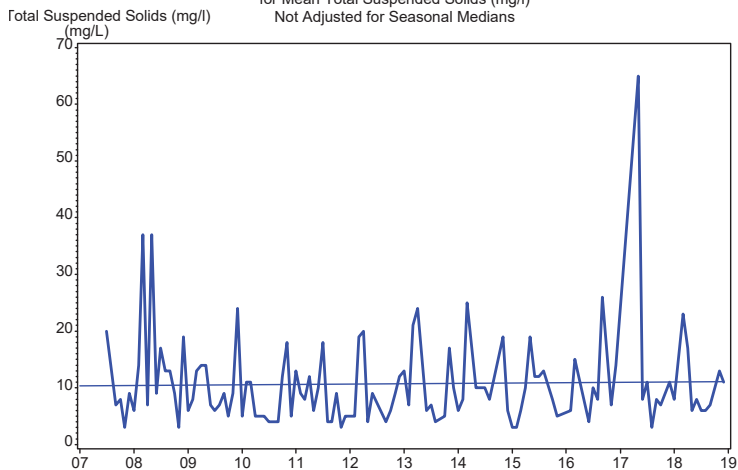
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.056	0.162	0.325	-0.325
15	-0.114	0.162	0.325	-0.325

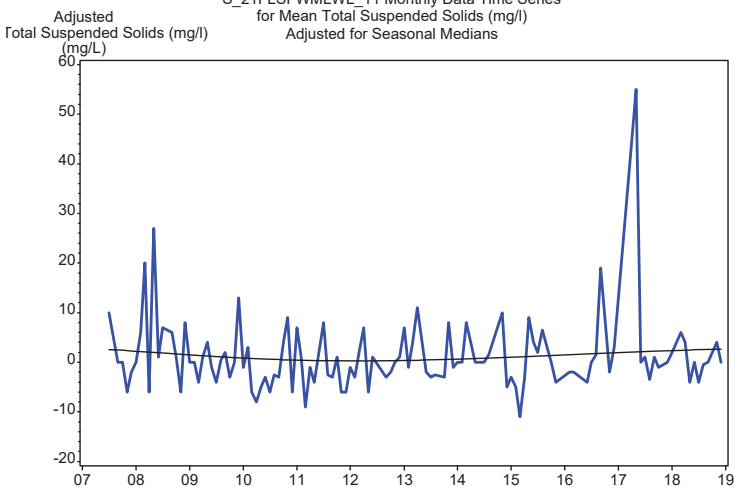
S_21FLSFWMLWL_11 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended



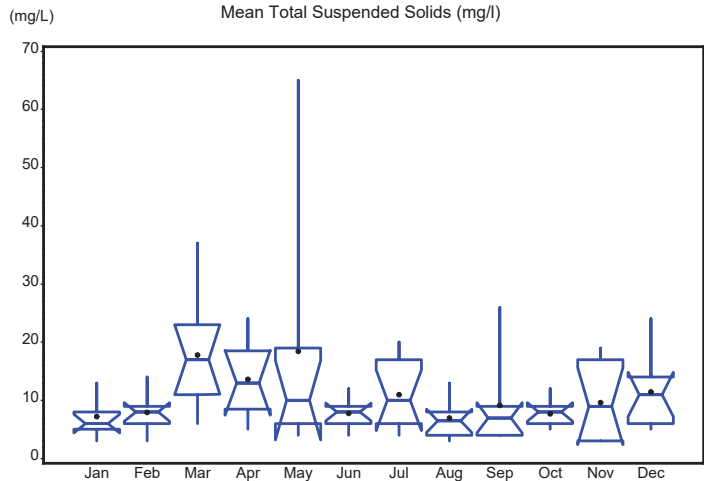
S_21FLSFWMLWL_11 Trends
S_21FLSFWMLWL_11 Monthly Data Time Series
for Mean Total Suspended Solids (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_11 Trends
S_21FLSFWMLWL_11 Monthly Data Time Series
for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_11 Trends Appendix
Seasonal Univariate Statistics
Mean Total Suspended Solids (mg/l)



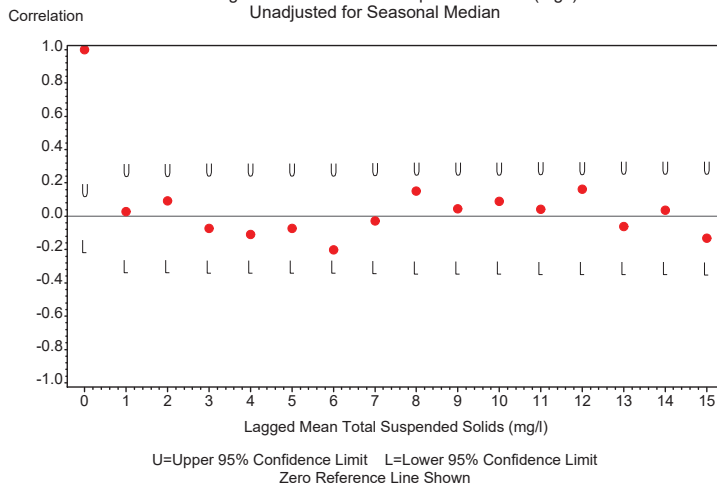
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.027	0.144	0.289	-0.289
2	0.092	0.144	0.289	-0.289
3	-0.072	0.145	0.290	-0.290
4	-0.109	0.145	0.290	-0.290
5	-0.072	0.146	0.291	-0.291
6	-0.201	0.146	0.292	-0.292
7	-0.028	0.148	0.295	-0.295
8	0.150	0.148	0.296	-0.296
9	0.043	0.149	0.298	-0.298
10	0.088	0.149	0.298	-0.298
11	0.042	0.149	0.299	-0.299
12	0.161	0.149	0.299	-0.299
13	-0.062	0.151	0.301	-0.301

S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.036	0.151	0.301	-0.301
15	-0.131	0.151	0.302	-0.302

S_21FLSFWMLWL_11 Trends Appendix
Correlogram for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Median



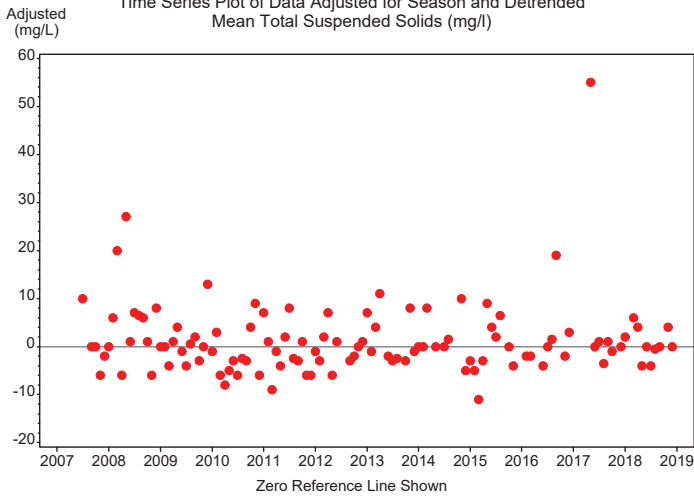
S_21FLSFWMLWL_11 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Suspended Solids (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.041	0.588	0.614	0

S_21FLSFWMLWL_11 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.041339	0.58810	0.61444	0

S_21FLSFWMLWL_11 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total Suspended Solids (mg/l)



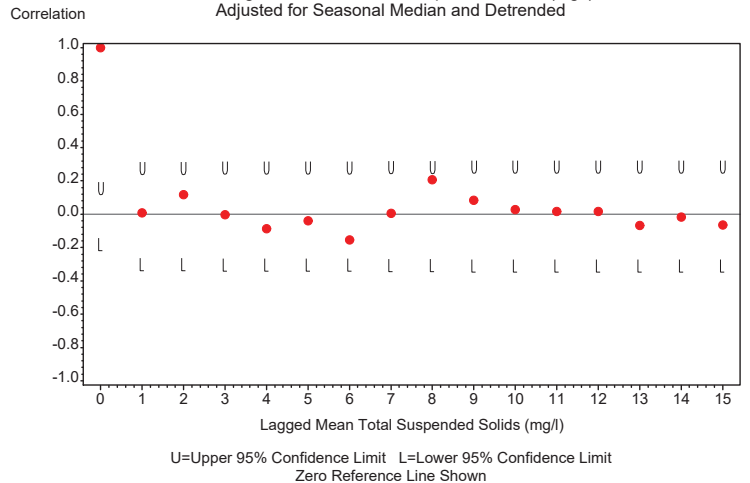
S_21FLSFWMLWL_11 Trends Appendix
 Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended

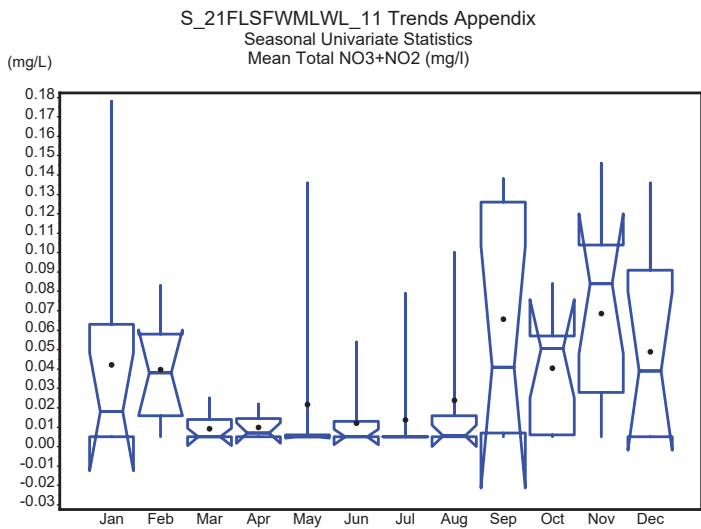
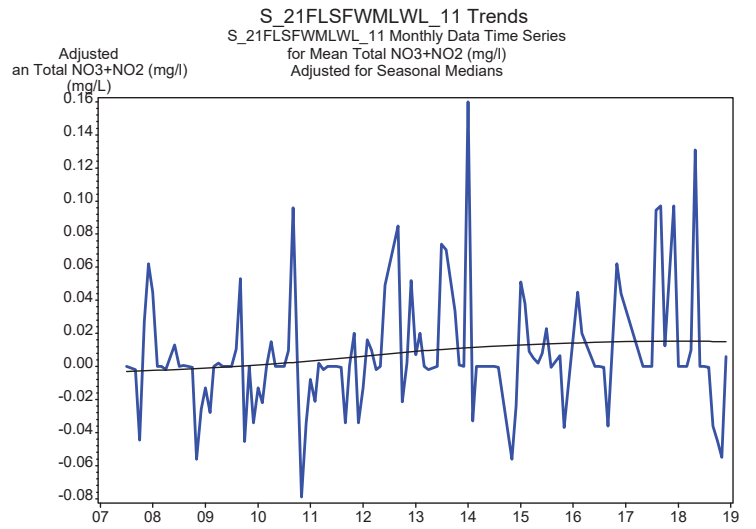
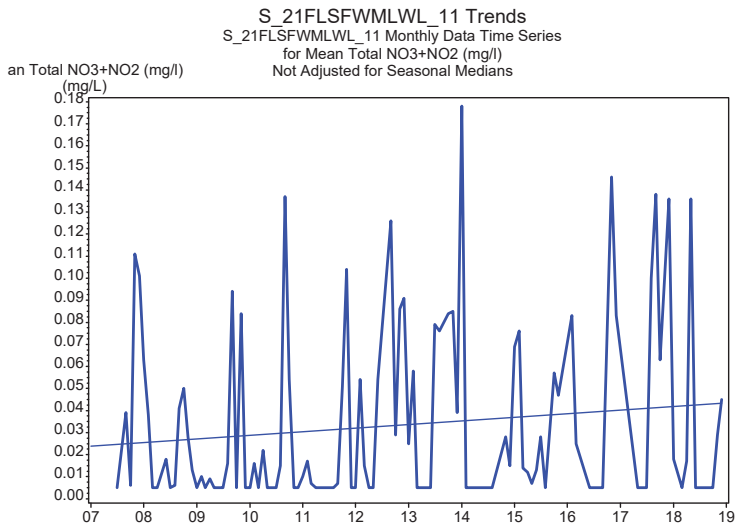
Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.009	0.144	0.289	-0.289
2	0.117	0.144	0.289	-0.289
3	-0.003	0.145	0.290	-0.290
4	-0.086	0.145	0.290	-0.290
5	-0.039	0.145	0.291	-0.291
6	-0.155	0.145	0.291	-0.291
7	0.004	0.147	0.293	-0.293
8	0.206	0.147	0.293	-0.293
9	0.083	0.149	0.297	-0.297
10	0.027	0.149	0.298	-0.298
11	0.016	0.149	0.298	-0.298
12	0.015	0.149	0.298	-0.298
13	-0.067	0.149	0.298	-0.298

S_21FLSFWMLWL_11 Trends Appendix
 Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.018	0.149	0.298	-0.298
15	-0.065	0.149	0.298	-0.298

S_21FLSFWMLWL_11 Trends Appendix
 Correlogram for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended





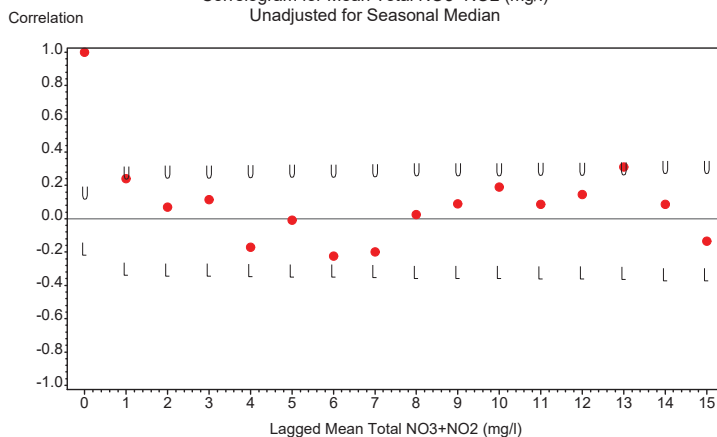
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.239	0.144	0.289	-0.289
2	0.070	0.147	0.294	-0.294
3	0.113	0.147	0.295	-0.295
4	-0.172	0.148	0.296	-0.296
5	-0.009	0.149	0.299	-0.299
6	-0.225	0.149	0.299	-0.299
7	-0.198	0.152	0.303	-0.303
8	0.026	0.153	0.307	-0.307
9	0.089	0.153	0.307	-0.307
10	0.189	0.154	0.308	-0.308
11	0.087	0.155	0.311	-0.311
12	0.146	0.156	0.312	-0.312
13	0.311	0.157	0.313	-0.313

S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.085	0.161	0.322	-0.322
15	-0.136	0.161	0.323	-0.323

S_21FLSFWMLWL_11 Trends Appendix
Correlogram for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

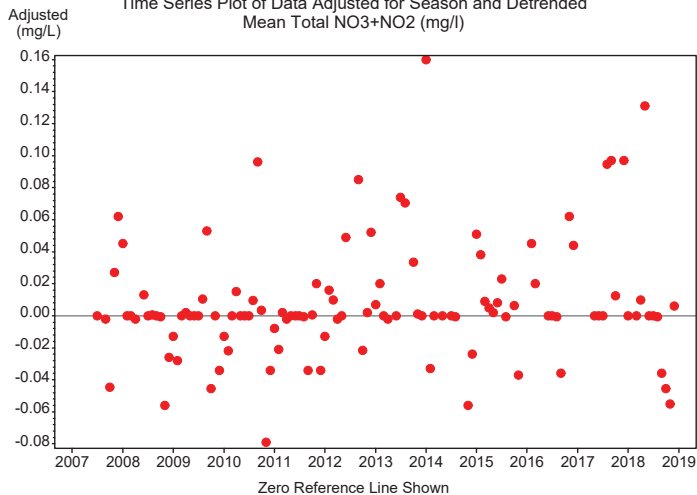
S_21FLSFWMLWL_11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.136	0.047	0.143	0

S_21FLSFWMLWL_11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.13556	0.047094	0.14315	0

S_21FLSFWMLWL_11 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total NO3+NO2 (mg/l)



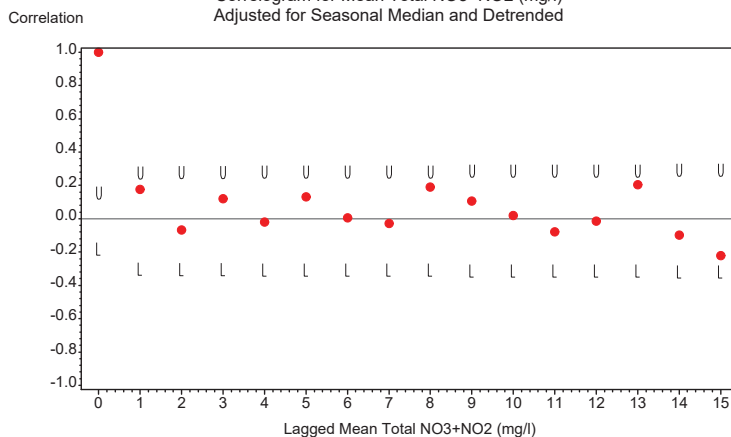
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.175	0.144	0.289	-0.289
2	-0.069	0.146	0.292	-0.292
3	0.119	0.146	0.292	-0.292
4	-0.020	0.147	0.293	-0.293
5	0.132	0.147	0.293	-0.293
6	0.005	0.148	0.295	-0.295
7	-0.029	0.148	0.295	-0.295
8	0.190	0.148	0.295	-0.295
9	0.106	0.149	0.299	-0.299
10	0.018	0.150	0.300	-0.300
11	-0.080	0.150	0.300	-0.300
12	-0.014	0.150	0.300	-0.300
13	0.205	0.150	0.300	-0.300

S_21FLSFWMLWL_11 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

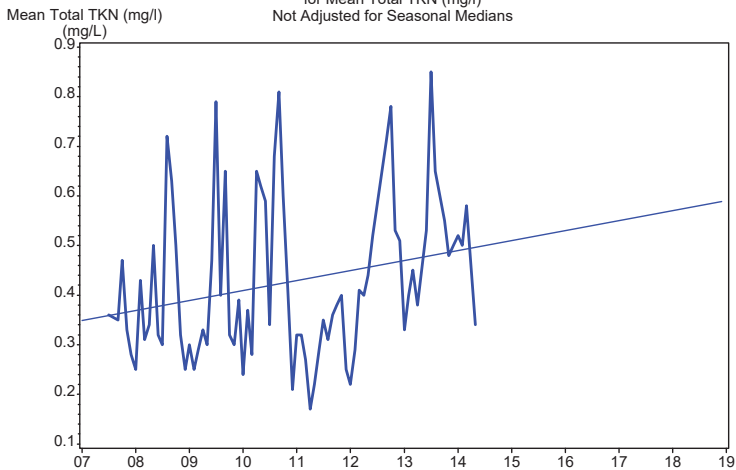
Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.098	0.152	0.304	-0.304
15	-0.222	0.152	0.305	-0.305

S_21FLSFWMLWL_11 Trends Appendix
 Correlogram for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

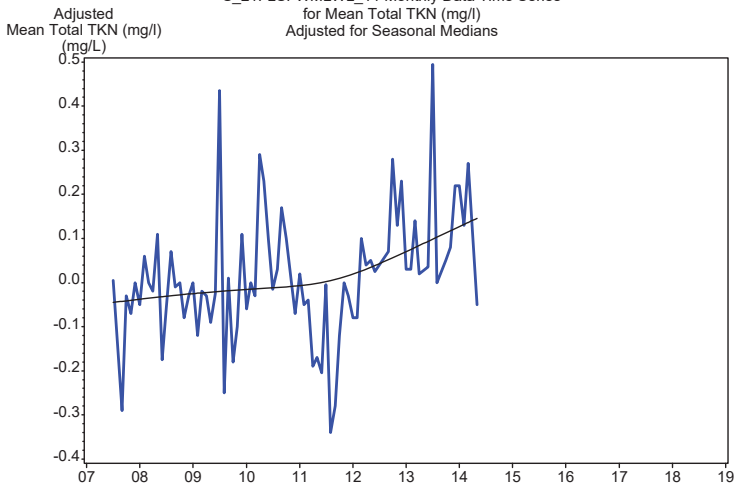


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

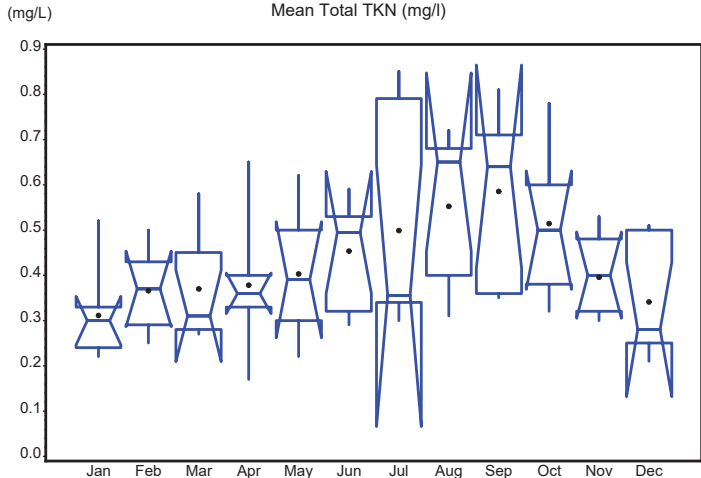
S_21FLSFWMLWL_11 Trends
 S_21FLSFWMLWL_11 Monthly Data Time Series
 for Mean Total TKN (mg/l)
 Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_11 Trends
 S_21FLSFWMLWL_11 Monthly Data Time Series
 for Mean Total TKN (mg/l)
 Adjusted for Seasonal Medians



S_21FLSFWMLWL_11 Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



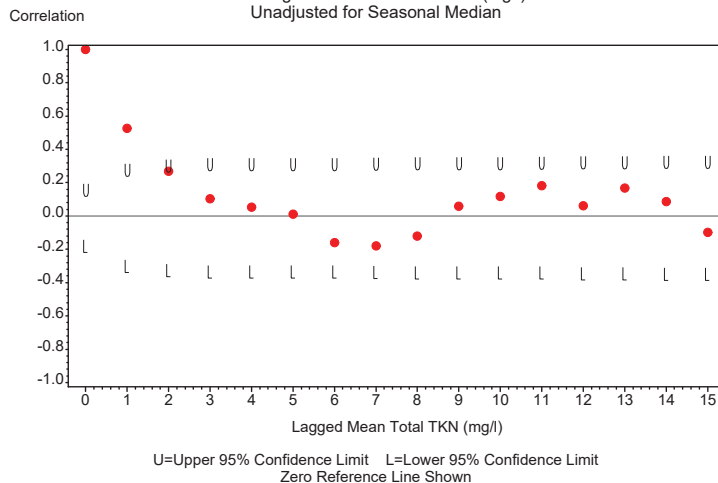
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.527	0.144	0.289	-0.289
2	0.269	0.157	0.314	-0.314
3	0.103	0.160	0.321	-0.321
4	0.053	0.161	0.322	-0.322
5	0.010	0.161	0.322	-0.322
6	-0.159	0.161	0.322	-0.322
7	-0.180	0.162	0.324	-0.324
8	-0.121	0.163	0.327	-0.327
9	0.057	0.164	0.328	-0.328
10	0.117	0.164	0.328	-0.328
11	0.181	0.165	0.329	-0.329
12	0.060	0.166	0.332	-0.332
13	0.168	0.166	0.332	-0.332

S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.086	0.167	0.335	-0.335
15	-0.099	0.168	0.335	-0.335

S_21FLSFWMLWL_11 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



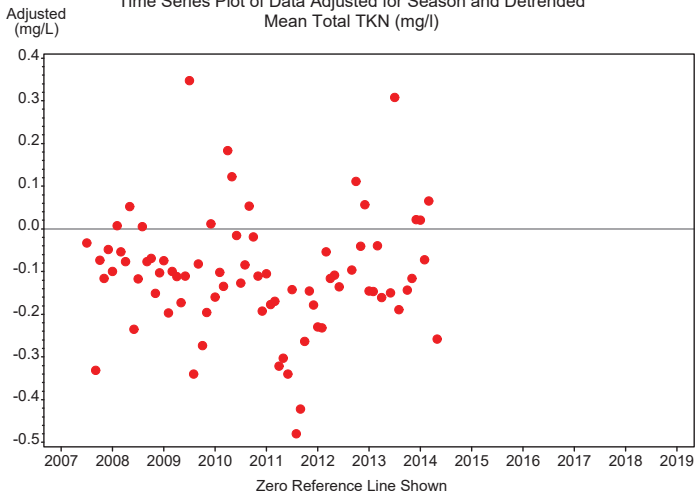
S_21FLSFWMLWL_11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.275	.006	0.122	0.025

S_21FLSFWMLWL_11 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.27488	.005995	0.12210	0.025

S_21FLSFWMLWL_11 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total TKN (mg/l)



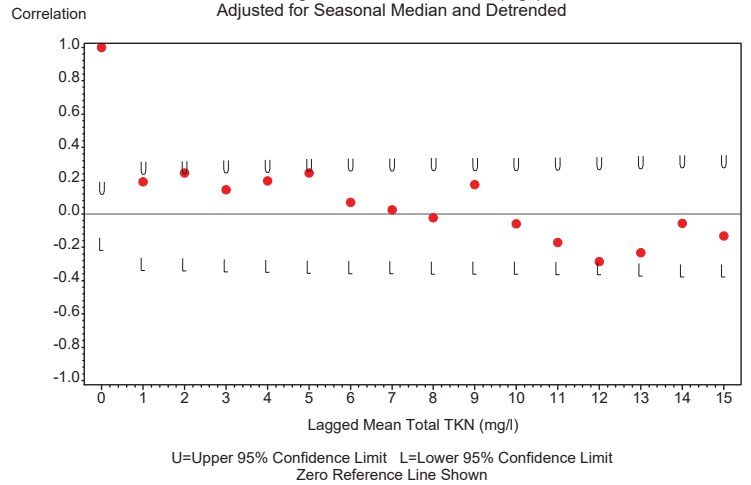
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.194	0.144	0.289	-0.289
2	0.247	0.146	0.292	-0.292
3	0.144	0.149	0.298	-0.298
4	0.199	0.150	0.300	-0.300
5	0.245	0.152	0.304	-0.304
6	0.070	0.155	0.309	-0.309
7	0.026	0.155	0.309	-0.309
8	-0.024	0.155	0.310	-0.310
9	0.176	0.155	0.310	-0.310
10	-0.060	0.156	0.312	-0.312
11	-0.171	0.156	0.313	-0.313
12	-0.286	0.158	0.315	-0.315
13	-0.233	0.161	0.322	-0.322

S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

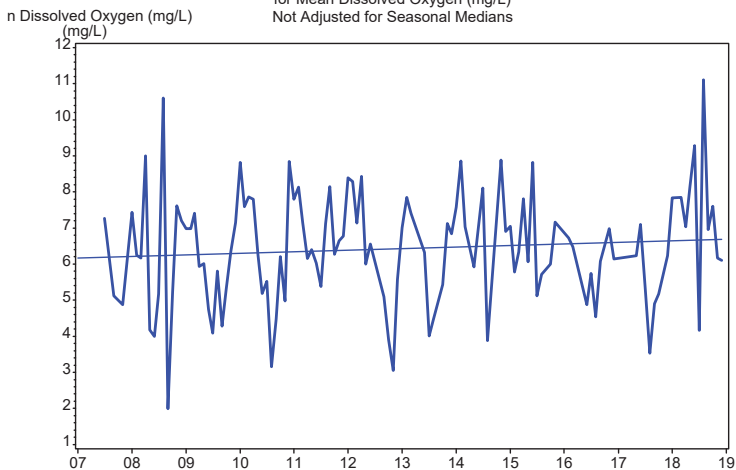
Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.057	0.164	0.327	-0.327
15	-0.133	0.164	0.327	-0.327

S_21FLSFWMLWL_11 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

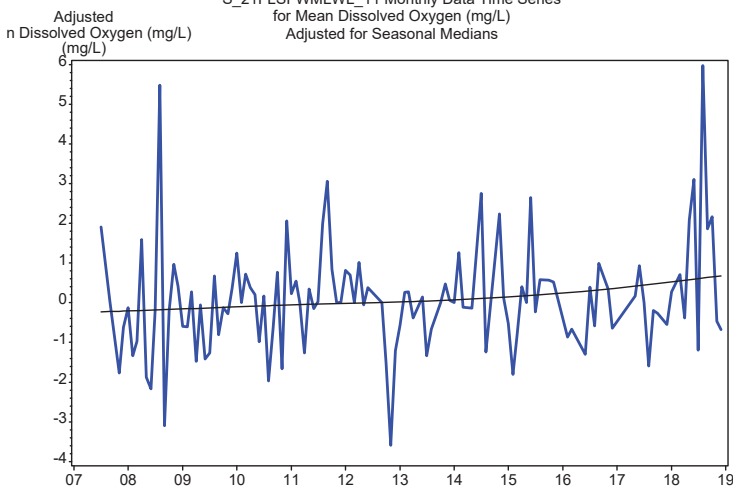


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

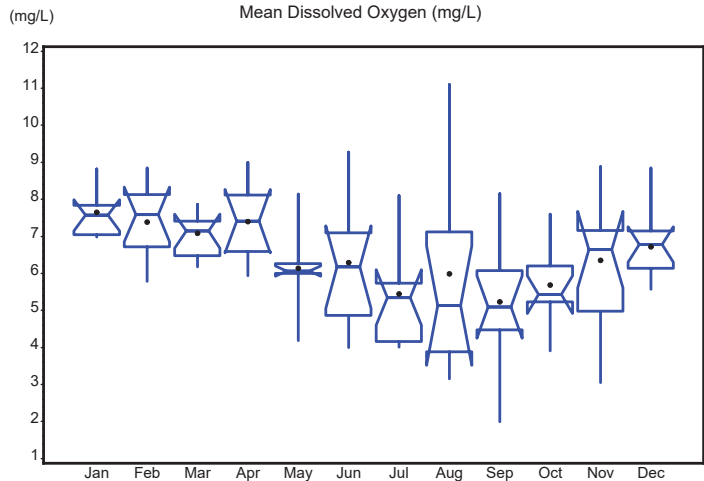
S_21FLSFWMLWL_11 Trends
S_21FLSFWMLWL_11 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_11 Trends
S_21FLSFWMLWL_11 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_11 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



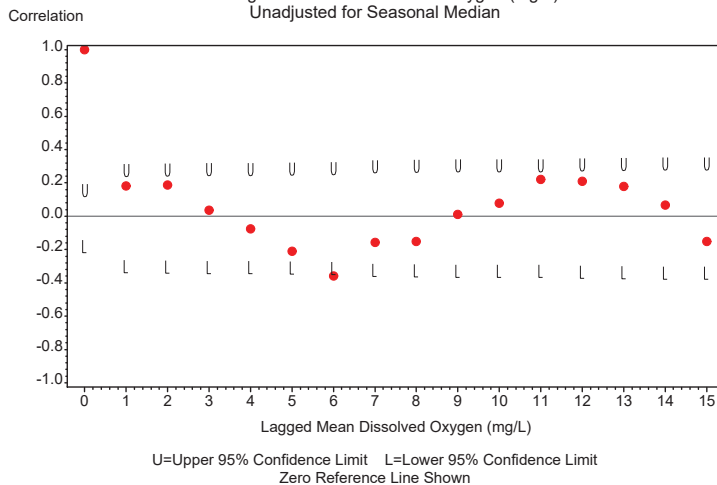
S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.181	0.144	0.289	-0.289
2	0.187	0.146	0.292	-0.292
3	0.035	0.148	0.295	-0.295
4	-0.076	0.148	0.295	-0.295
5	-0.210	0.148	0.296	-0.296
6	-0.360	0.150	0.300	-0.300
7	-0.158	0.156	0.312	-0.312
8	-0.153	0.157	0.314	-0.314
9	0.011	0.158	0.316	-0.316
10	0.079	0.158	0.316	-0.316
11	0.221	0.158	0.317	-0.317
12	0.210	0.160	0.321	-0.321
13	0.179	0.162	0.325	-0.325

S_21FLSFWMLWL_11 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.068	0.164	0.327	-0.327
15	-0.153	0.164	0.328	-0.328

S_21FLSFWMLWL_11 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



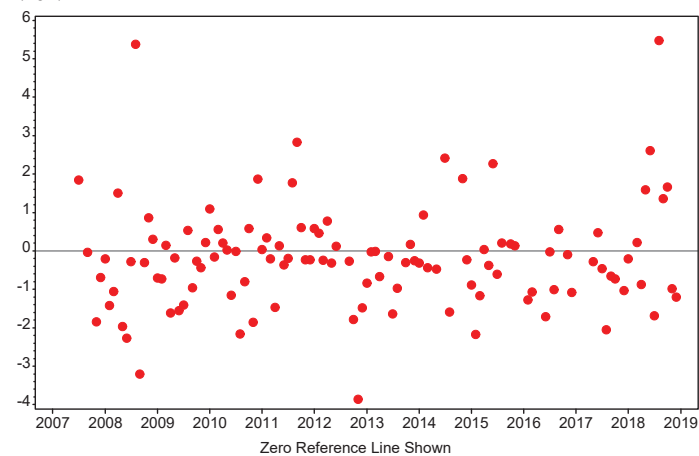
S_21FLSFWMLWL_11 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.096	0.198	0.219	0.04

S_21FLSFWMLWL_11 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.096457	0.19831	0.21942	0.04

S_21FLSFWMLWL_11 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Dissolved Oxygen (mg/L)



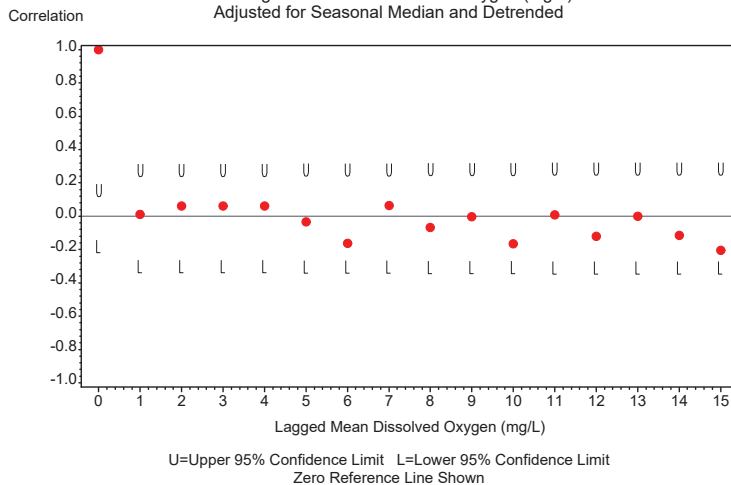
S_21FLSFWMLWL_11 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.011	0.144	0.289	-0.289
2	0.062	0.144	0.289	-0.289
3	0.062	0.145	0.289	-0.289
4	0.061	0.145	0.289	-0.289
5	-0.033	0.145	0.290	-0.290
6	-0.162	0.145	0.290	-0.290
7	0.063	0.146	0.292	-0.292
8	-0.069	0.146	0.293	-0.293
9	-0.003	0.147	0.293	-0.293
10	-0.167	0.147	0.293	-0.293
11	0.007	0.148	0.296	-0.296
12	-0.121	0.148	0.296	-0.296
13	0.000	0.149	0.297	-0.297

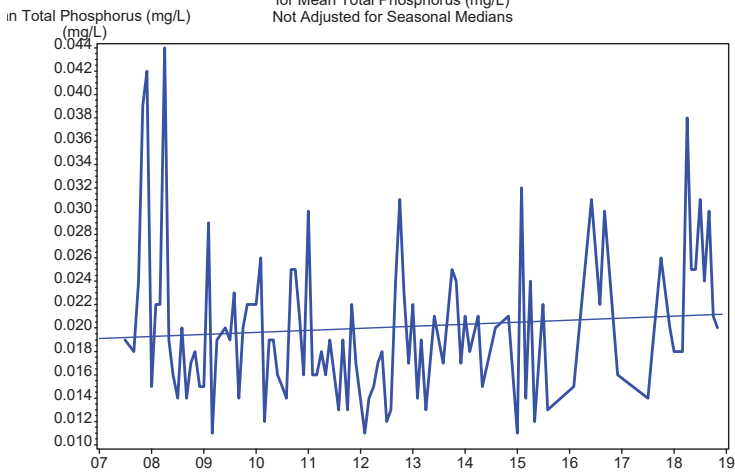
S_21FLSFWMLWL_11 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.116	0.149	0.297	-0.297
15	-0.205	0.149	0.298	-0.298

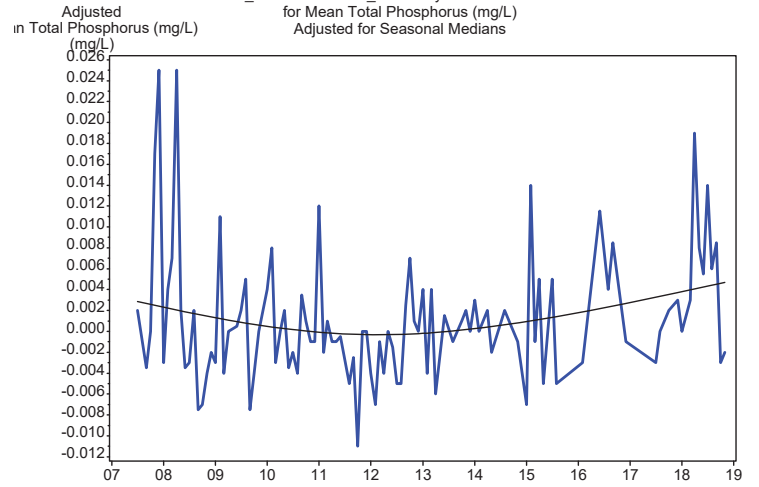
S_21FLSFWMLWL_11 Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended



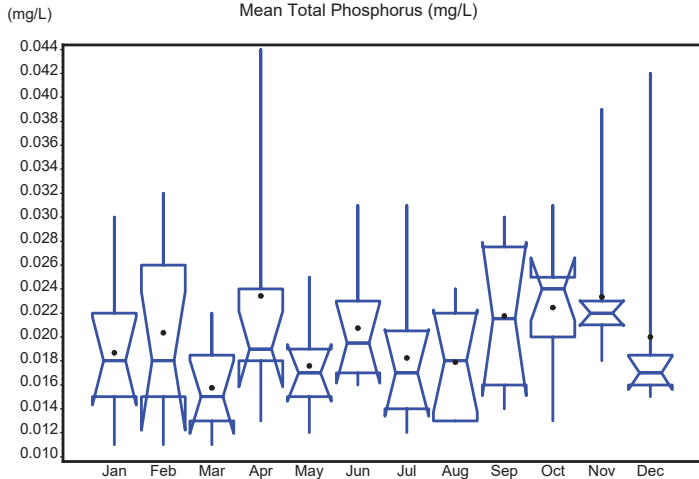
S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians



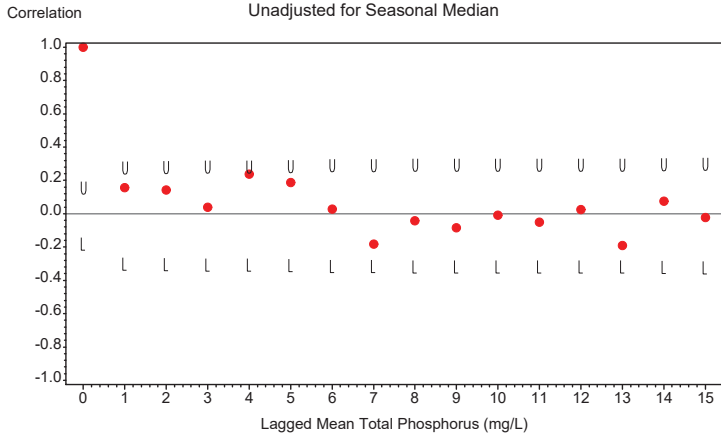
S_21FLSFWMLWL_4 Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.156	0.144	0.289	-0.289
2	0.142	0.145	0.291	-0.291
3	0.040	0.146	0.293	-0.293
4	0.238	0.147	0.293	-0.293
5	-0.186	0.149	0.298	-0.298
6	0.027	0.151	0.302	-0.302
7	-0.183	0.151	0.302	-0.302
8	-0.043	0.152	0.305	-0.305
9	-0.084	0.152	0.305	-0.305
10	-0.008	0.153	0.306	-0.306
11	-0.051	0.153	0.306	-0.306
12	0.024	0.153	0.306	-0.306
13	-0.190	0.153	0.306	-0.306
14	0.076	0.155	0.309	-0.309
15	-0.023	0.155	0.310	-0.310

S_21FLSFWMLWL_4 Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

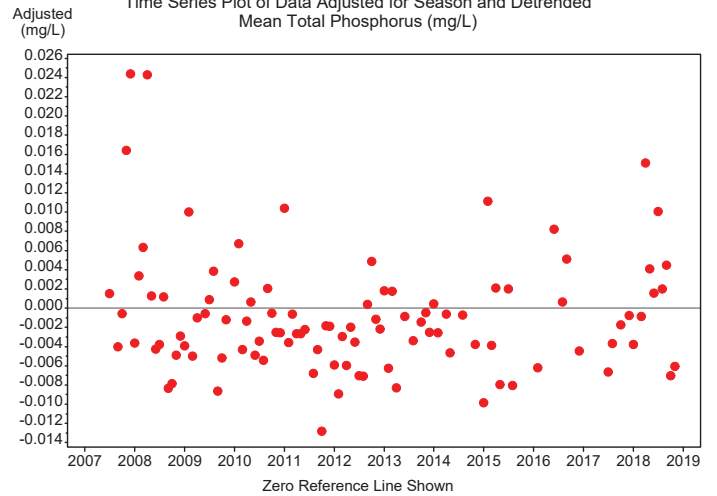
S_21FLSFWMLWL_4 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.119	0.14	0.168	0

S_21FLSFWMLWL_4 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.11869	0.14043	0.16782	.000316667

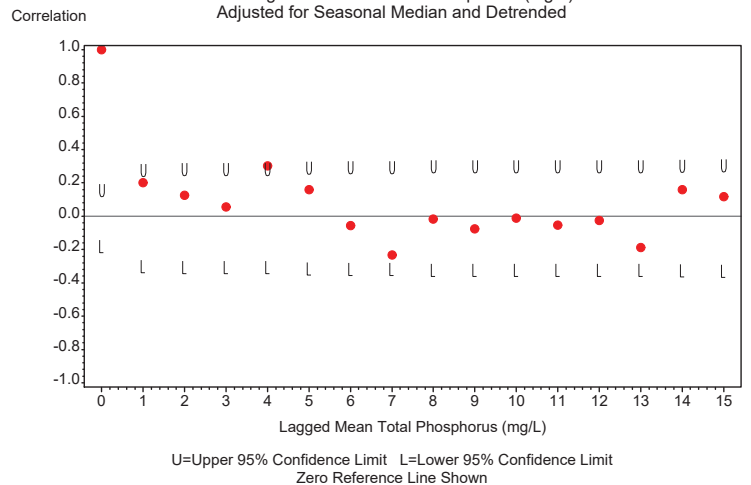
S_21FLSFWMLWL_4 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total Phosphorus (mg/L)



S_21FLSFWMLWL_4 Trends Appendix
 Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

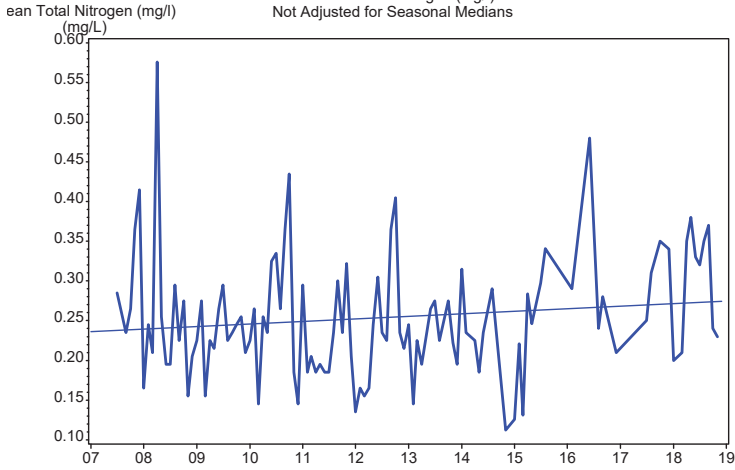
Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.202	0.144	0.289	-0.289
2	0.126	0.146	0.293	-0.293
3	0.055	0.147	0.294	-0.294
4	0.303	0.147	0.294	-0.294
5	-0.158	0.151	0.303	-0.303
6	-0.056	0.153	0.305	-0.305
7	-0.232	0.153	0.305	-0.305
8	-0.017	0.155	0.310	-0.310
9	-0.077	0.155	0.310	-0.310
10	-0.011	0.155	0.311	-0.311
11	-0.055	0.155	0.311	-0.311
12	-0.027	0.156	0.311	-0.311
13	-0.187	0.156	0.311	-0.311
14	0.160	0.157	0.314	-0.314
15	0.116	0.158	0.317	-0.317

S_21FLSFWMLWL_4 Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

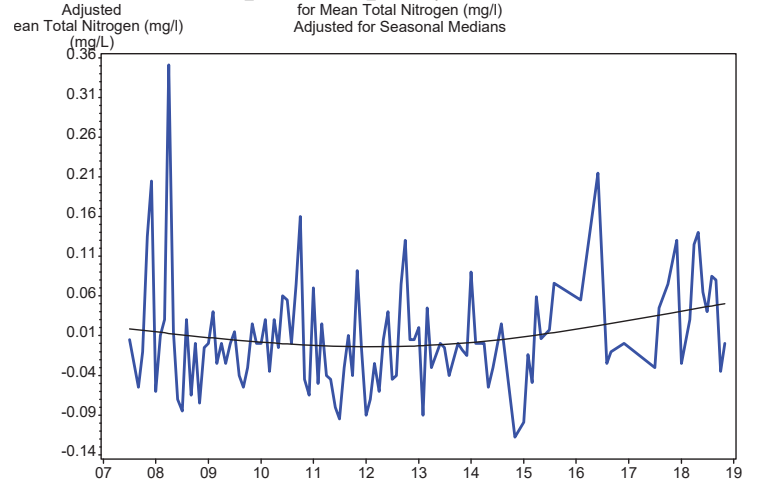


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

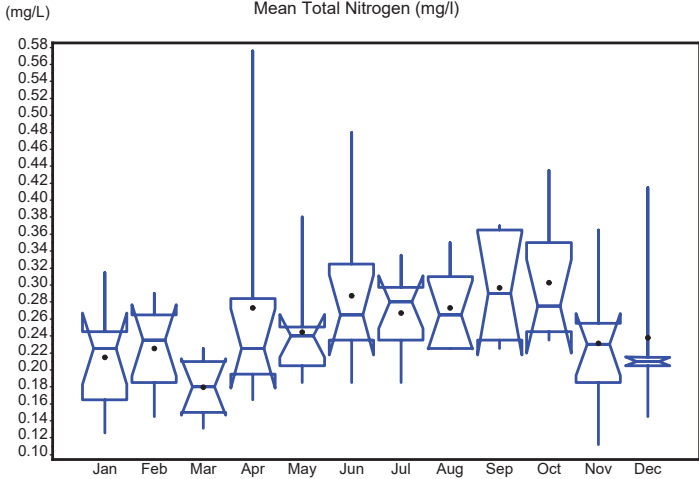
S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



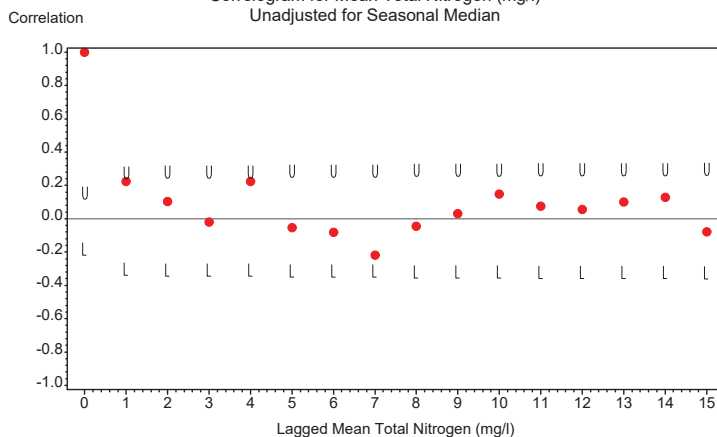
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.224	0.144	0.289	-0.289
2	0.103	0.147	0.293	-0.293
3	-0.021	0.147	0.294	-0.294
4	0.224	0.147	0.294	-0.294
5	-0.054	0.150	0.299	-0.299
6	-0.081	0.150	0.299	-0.299
7	-0.220	0.150	0.300	-0.300
8	-0.045	0.152	0.304	-0.304
9	0.031	0.152	0.305	-0.305
10	0.148	0.152	0.305	-0.305
11	0.074	0.153	0.307	-0.307
12	0.056	0.154	0.307	-0.307
13	0.100	0.154	0.308	-0.308

S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.129	0.154	0.308	-0.308
15	-0.078	0.155	0.310	-0.310

S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

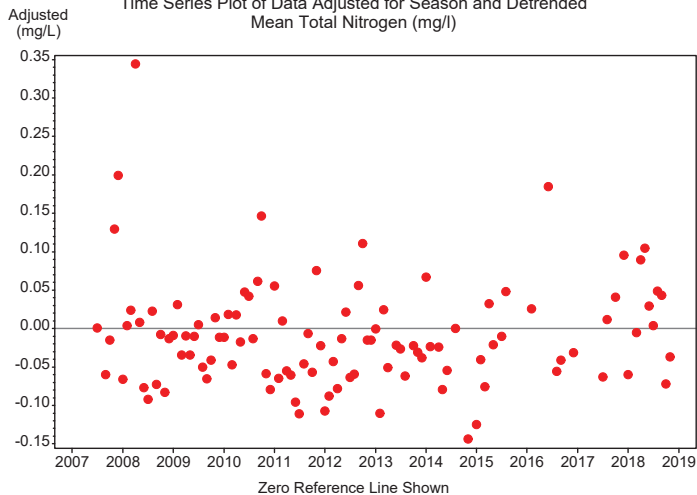
S_21FLSFWMLWL_4 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.122	0.12	0.184	.003

S_21FLSFWMLWL_4 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.12156	0.11963	0.18424	.00288889

S_21FLSFWMLWL_4 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Nitrogen (mg/l)



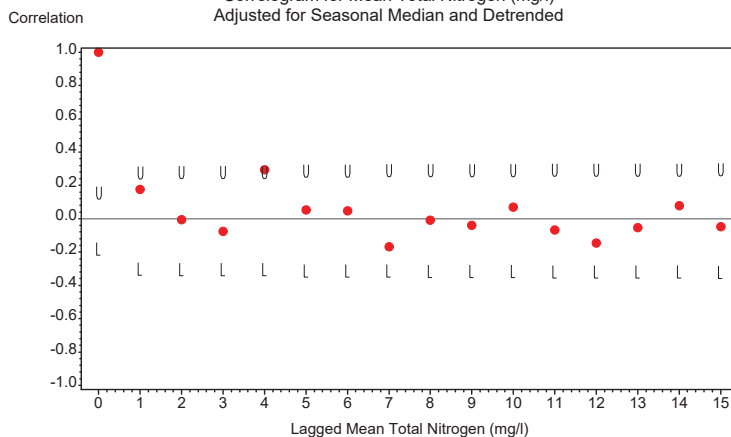
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.176	0.144	0.289	-0.289
2	-0.006	0.146	0.292	-0.292
3	-0.075	0.146	0.292	-0.292
4	0.293	0.146	0.292	-0.292
5	0.053	0.150	0.300	-0.300
6	0.046	0.150	0.300	-0.300
7	-0.168	0.150	0.301	-0.301
8	-0.008	0.152	0.303	-0.303
9	-0.039	0.152	0.303	-0.303
10	0.069	0.152	0.303	-0.303
11	-0.067	0.152	0.304	-0.304
12	-0.147	0.152	0.304	-0.304
13	-0.054	0.153	0.306	-0.306

S_21FLSFWMLWL_4 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

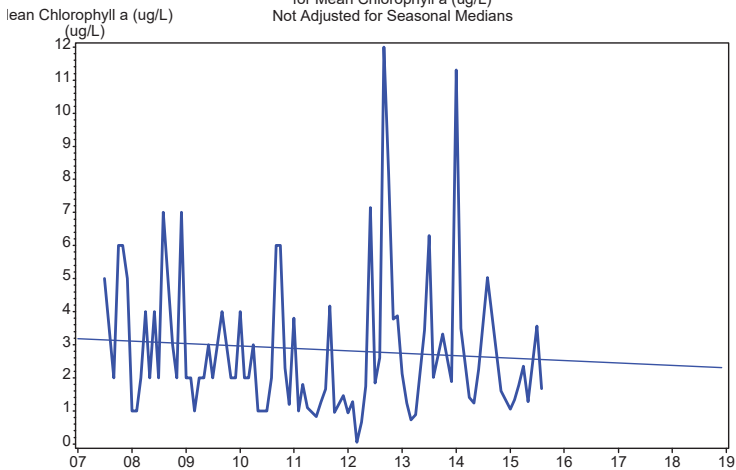
Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.079	0.153	0.306	-0.306
15	-0.047	0.154	0.307	-0.307

S_21FLSFWMLWL_4 Trends Appendix
 Correlogram for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

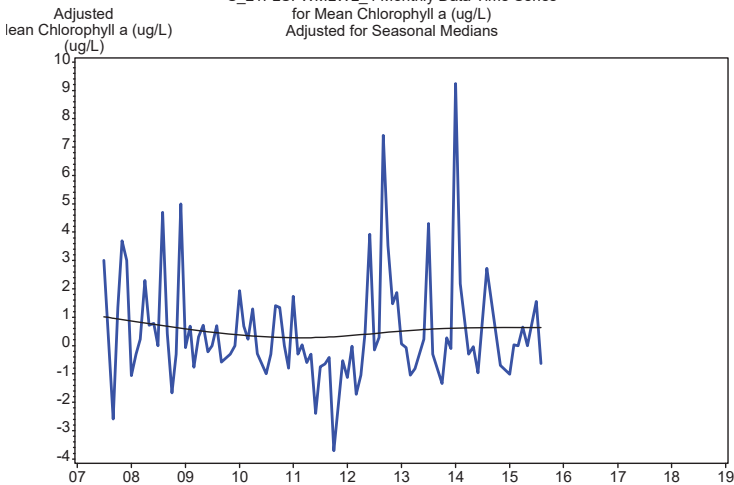


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

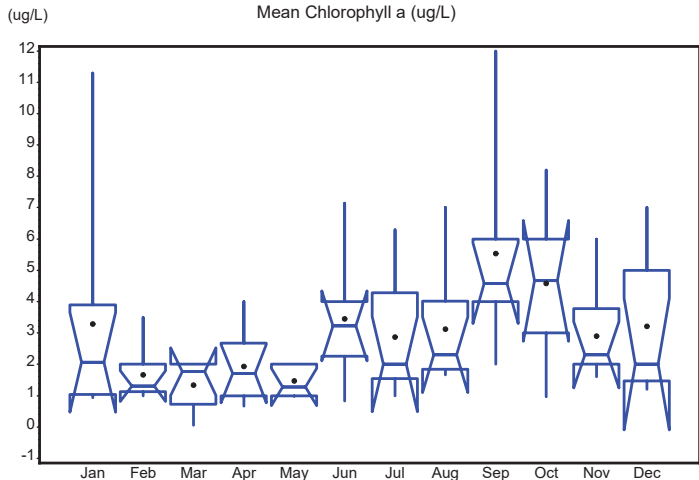
S_21FLSFWMLWL_4 Trends
 S_21FLSFWMLWL_4 Monthly Data Time Series
 for Mean Chlorophyll a (ug/L)
 Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends
 S_21FLSFWMLWL_4 Monthly Data Time Series
 for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Medians



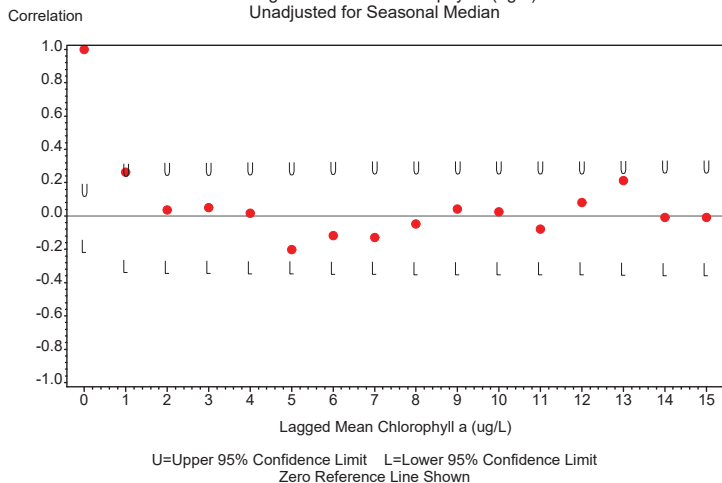
S_21FLSFWMLWL_4 Trends Appendix
Seasonal Univariate Statistics
Mean Chlorophyll a (ug/L)



S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.262	0.144	0.289	-0.289
2	0.036	0.148	0.295	-0.295
3	0.049	0.148	0.295	-0.295
4	0.017	0.148	0.296	-0.296
5	-0.202	0.148	0.296	-0.296
6	-0.118	0.150	0.299	-0.299
7	-0.128	0.150	0.301	-0.301
8	-0.048	0.151	0.302	-0.302
9	0.041	0.151	0.302	-0.302
10	0.024	0.151	0.303	-0.303
11	-0.078	0.151	0.303	-0.303
12	0.081	0.152	0.303	-0.303
13	0.213	0.152	0.304	-0.304
14	-0.008	0.154	0.308	-0.308
15	-0.008	0.154	0.308	-0.308

S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Median



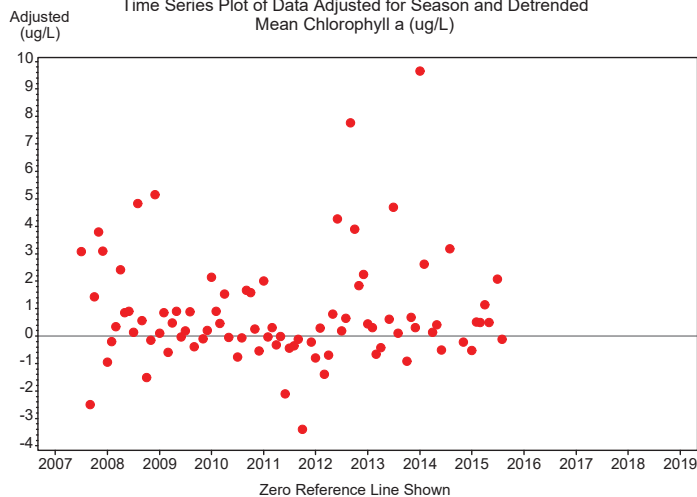
S_21FLSFWMLWL_4 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.089	0.34	0.396	-0.053

S_21FLSFWMLWL_4 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.089219	0.34040	0.39591	-0.053333

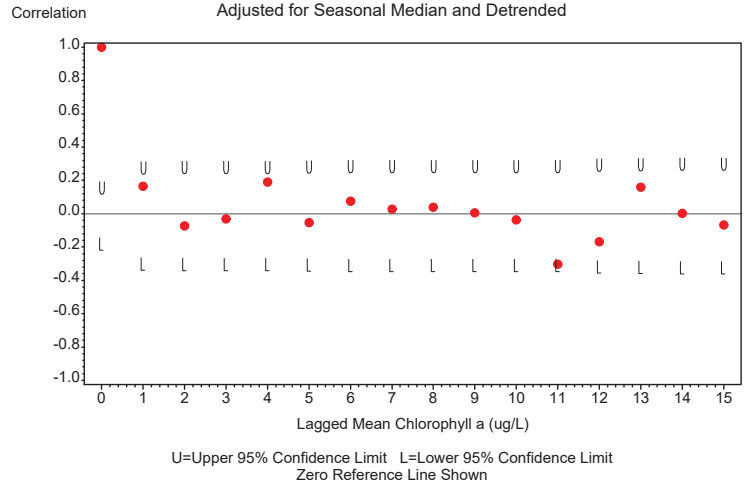
S_21FLSFWMLWL_4 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Chlorophyll a (ug/L)



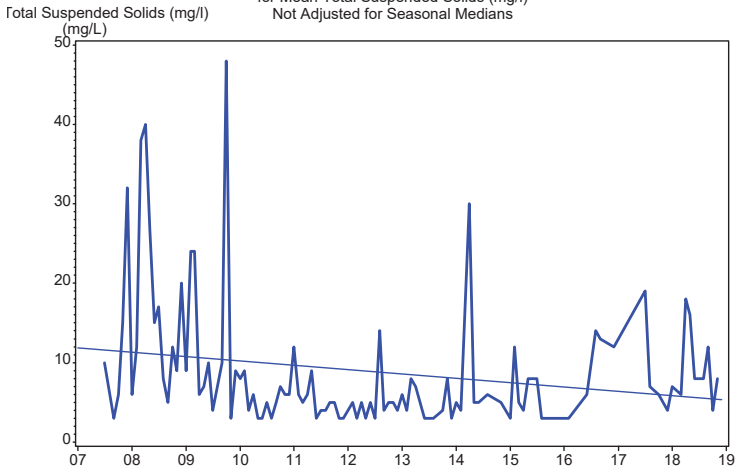
S_21FLSFWMLWL_4 Trends Appendix
 Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.165	0.144	0.289	-0.289
2	-0.073	0.146	0.291	-0.291
3	-0.031	0.146	0.292	-0.292
4	0.190	0.146	0.292	-0.292
5	-0.053	0.148	0.295	-0.295
6	0.076	0.148	0.296	-0.296
7	0.027	0.148	0.296	-0.296
8	0.038	0.148	0.296	-0.296
9	0.004	0.148	0.296	-0.296
10	-0.036	0.148	0.296	-0.296
11	-0.302	0.148	0.296	-0.296
12	-0.168	0.152	0.305	-0.305
13	0.160	0.154	0.307	-0.307
14	0.003	0.155	0.310	-0.310
15	-0.068	0.155	0.310	-0.310

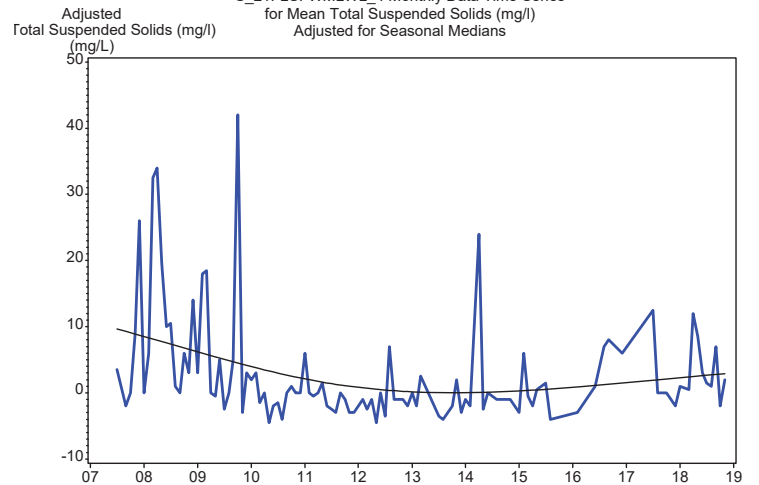
S_21FLSFWMLWL_4 Trends Appendix
 Correlogram for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended



S_21FLSFWMLWL_4 Trends
 S_21FLSFWMLWL_4 Monthly Data Time Series
 for Mean Total Suspended Solids (mg/l)
 Not Adjusted for Seasonal Medians



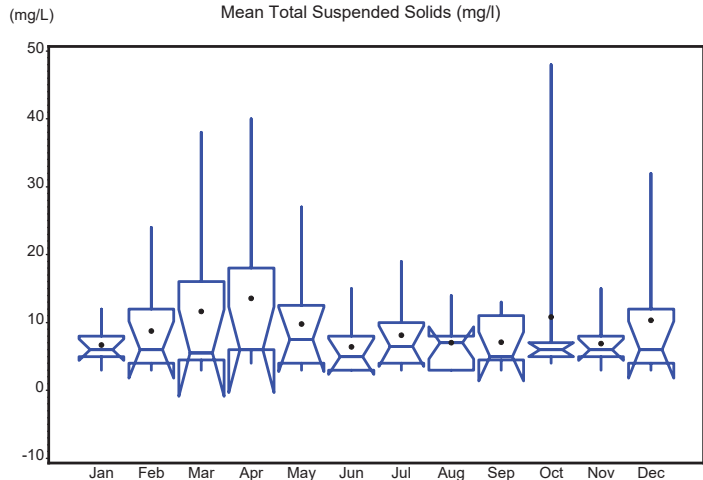
S_21FLSFWMLWL_4 Trends
 S_21FLSFWMLWL_4 Monthly Data Time Series
 for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends Appendix

Seasonal Univariate Statistics

Mean Total Suspended Solids (mg/l)



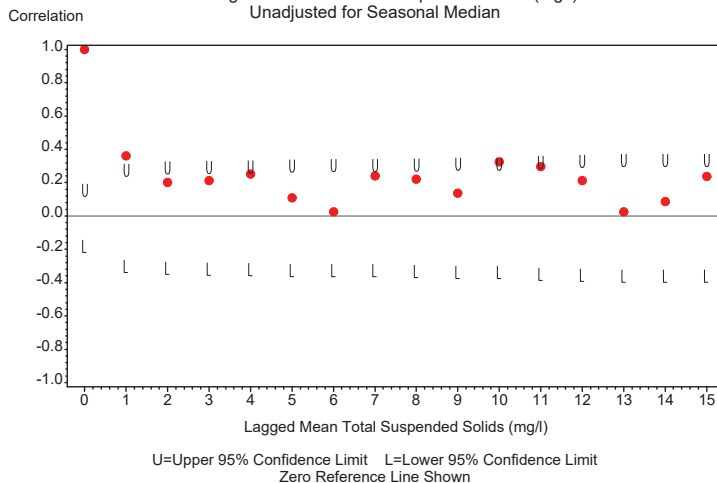
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.361	0.144	0.289	-0.289
2	0.201	0.150	0.301	-0.301
3	0.212	0.152	0.305	-0.305
4	0.251	0.154	0.309	-0.309
5	0.108	0.157	0.314	-0.314
6	0.024	0.158	0.315	-0.315
7	0.240	0.158	0.315	-0.315
8	0.221	0.160	0.320	-0.320
9	0.136	0.162	0.325	-0.325
10	0.325	0.163	0.326	-0.326
11	0.295	0.168	0.335	-0.335
12	0.213	0.171	0.342	-0.342
13	0.025	0.173	0.346	-0.346

S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.086	0.173	0.346	-0.346
15	0.238	0.173	0.347	-0.347

S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Median



S_21FLSFWMLWL_4 Trends Appendix

Seasonal Kendall Tau Trend Test Statistics

Mean Total Suspended Solids (mg/l)

Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.161	0.037	0.254	-0.25

S_21FLSFWMLWL_4 Trends Appendix

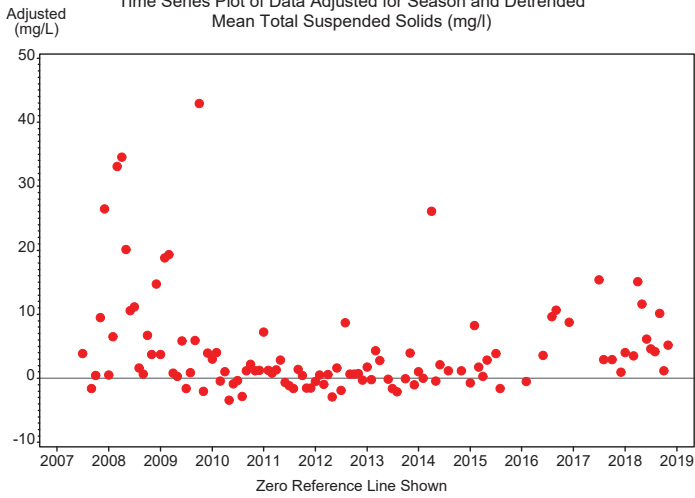
Seasonal Kendall Tau Trend Test Statistics

Mean Total Suspended Solids (mg/l)

Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.16055	0.037083	0.25406	-0.25

S_21FLSFWMLWL_4 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Suspended Solids (mg/l)



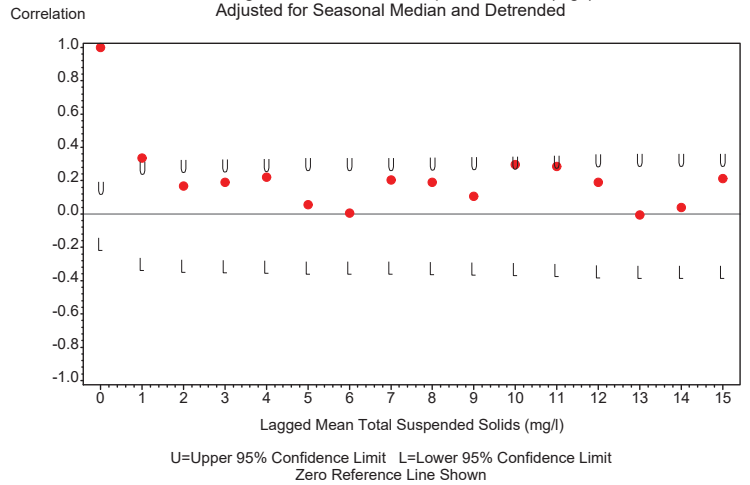
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.336	0.144	0.289	-0.289
2	0.167	0.150	0.299	-0.299
3	0.190	0.151	0.302	-0.302
4	0.222	0.153	0.305	-0.305
5	0.056	0.155	0.310	-0.310
6	0.006	0.155	0.310	-0.310
7	0.203	0.155	0.310	-0.310
8	0.191	0.157	0.314	-0.314
9	0.107	0.158	0.317	-0.317
10	0.296	0.159	0.318	-0.318
11	0.284	0.163	0.325	-0.325
12	0.190	0.166	0.332	-0.332
13	-0.005	0.168	0.335	-0.335

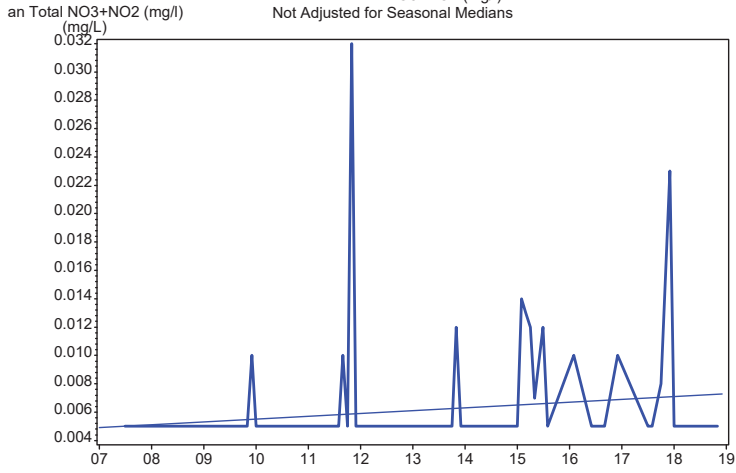
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.040	0.168	0.335	-0.335
15	0.211	0.168	0.335	-0.335

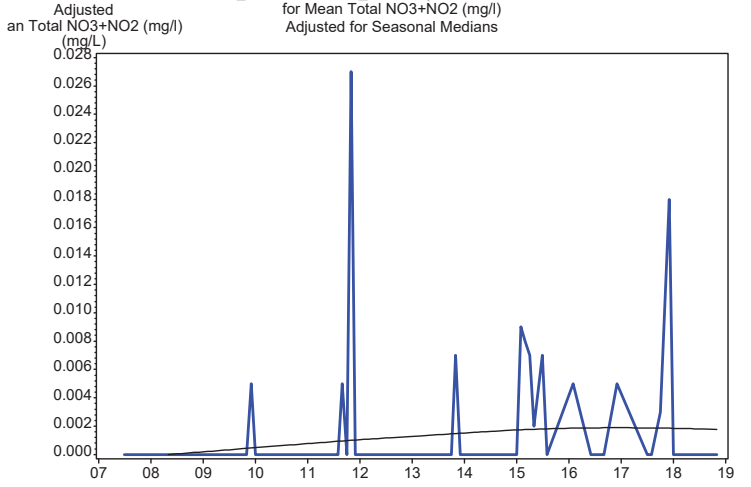
S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended



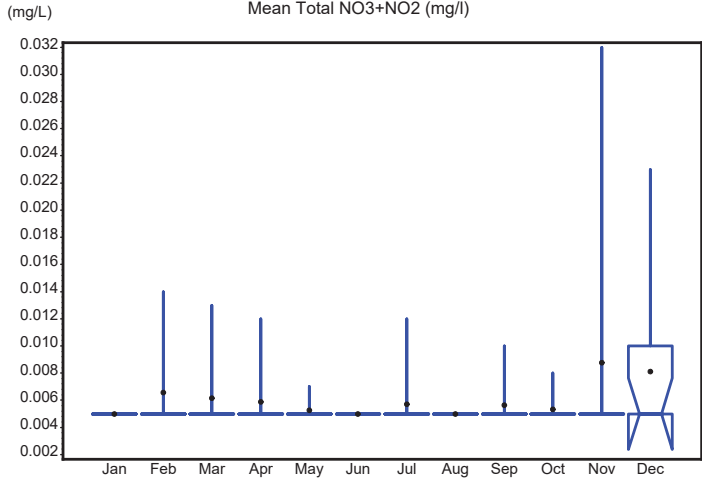
S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Total NO3+NO2 (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends Appendix
Seasonal Univariate Statistics
Mean Total NO3+NO2 (mg/l)



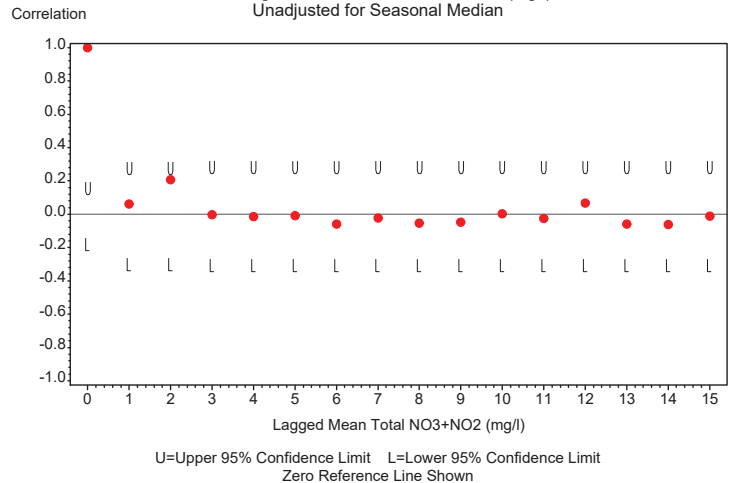
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.061	0.144	0.289	-0.289
2	0.208	0.145	0.289	-0.289
3	-0.004	0.147	0.293	-0.293
4	-0.014	0.147	0.293	-0.293
5	-0.010	0.147	0.293	-0.293
6	-0.058	0.147	0.293	-0.293
7	-0.022	0.147	0.294	-0.294
8	-0.053	0.147	0.294	-0.294
9	-0.047	0.147	0.294	-0.294
10	0.002	0.147	0.294	-0.294
11	-0.025	0.147	0.294	-0.294
12	0.066	0.147	0.294	-0.294
13	-0.058	0.147	0.294	-0.294

S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.063	0.147	0.295	-0.295
15	-0.012	0.148	0.295	-0.295

S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Median



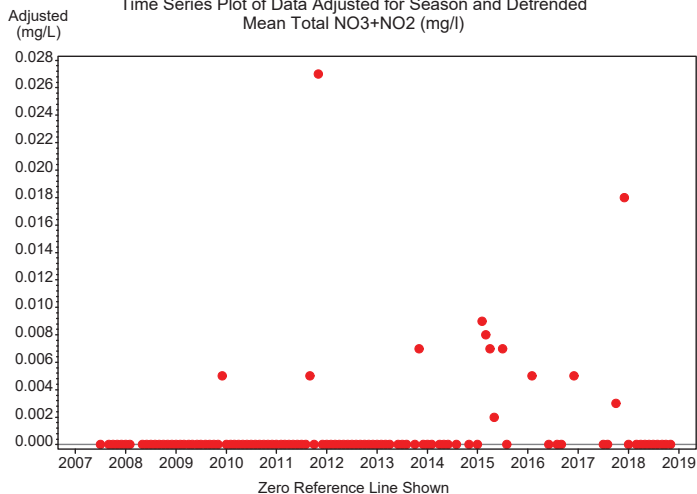
S_21FLSFWMLWL_4 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total NO3+NO2 (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.128	.002	0.072	0

S_21FLSFWMLWL_4 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.12827	.0020901	0.072466	0

S_21FLSFWMLWL_4 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total NO3+NO2 (mg/l)



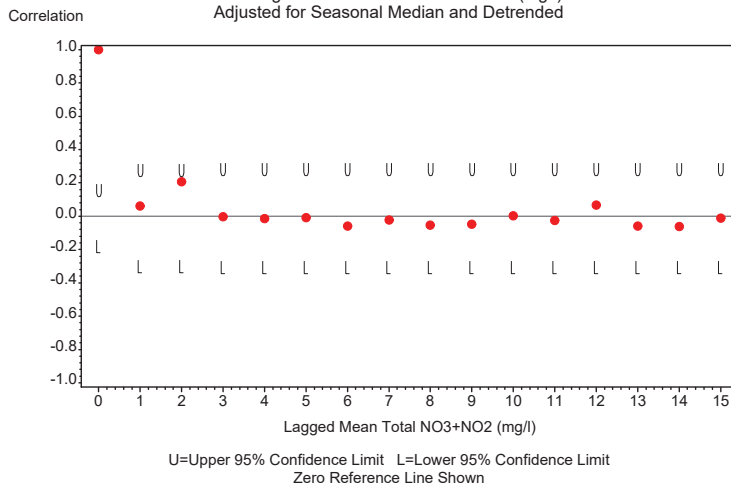
S_21FLSFWMLWL_4 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.061	0.144	0.289	-0.289
2	0.208	0.145	0.289	-0.289
3	-0.004	0.147	0.293	-0.293
4	-0.014	0.147	0.293	-0.293
5	-0.010	0.147	0.293	-0.293
6	-0.058	0.147	0.293	-0.293
7	-0.022	0.147	0.294	-0.294
8	-0.053	0.147	0.294	-0.294
9	-0.047	0.147	0.294	-0.294
10	0.002	0.147	0.294	-0.294
11	-0.025	0.147	0.294	-0.294
12	0.066	0.147	0.294	-0.294
13	-0.058	0.147	0.294	-0.294

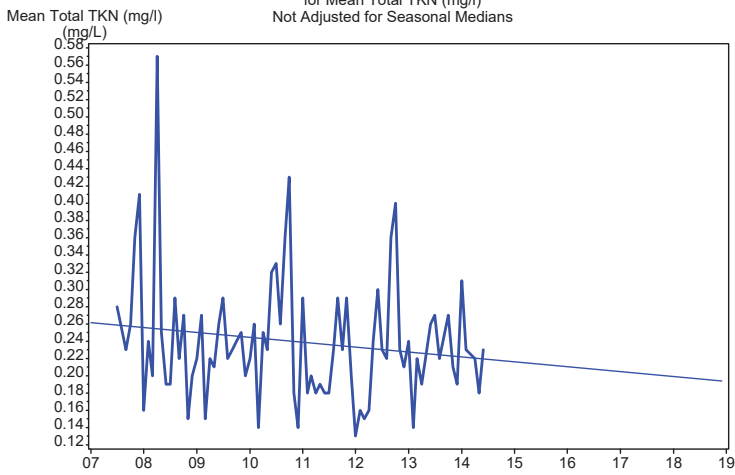
S_21FLSFWMLWL_4 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.063	0.147	0.295	-0.295
15	-0.012	0.148	0.295	-0.295

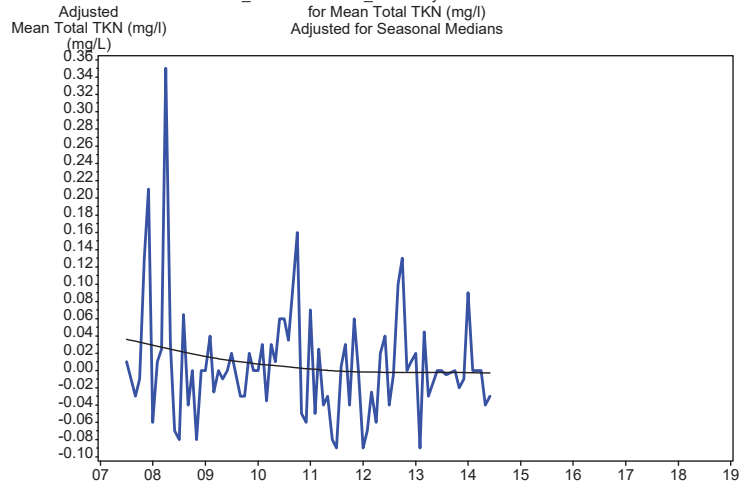
S_21FLSFWMLWL_4 Trends Appendix
 Correlogram for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended



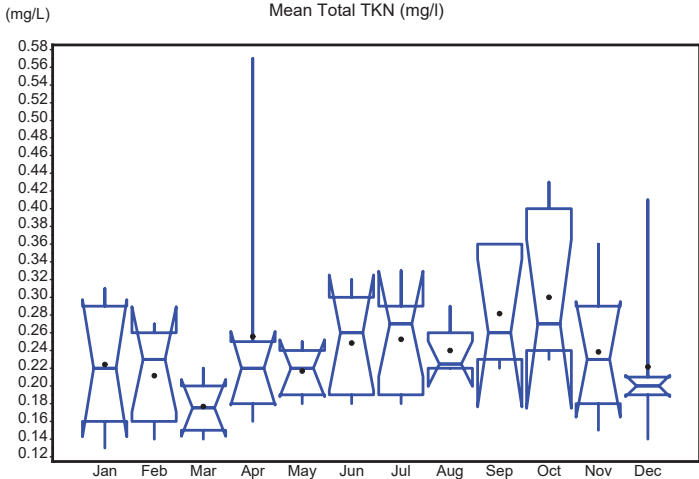
S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Total TKN (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Total TKN (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



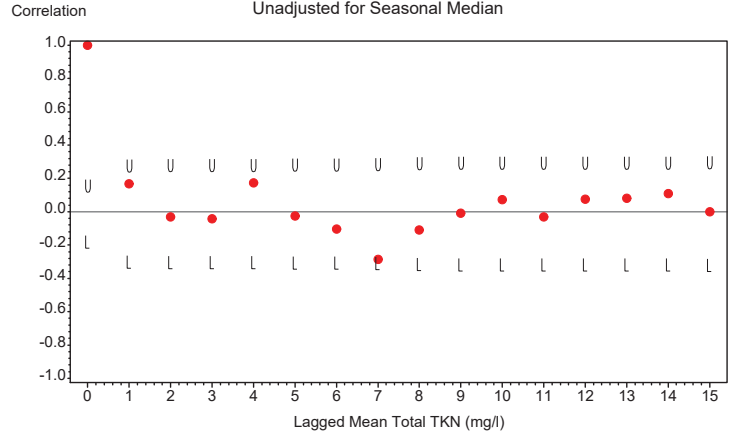
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.167	0.144	0.289	-0.289
2	-0.032	0.146	0.291	-0.291
3	-0.043	0.146	0.291	-0.291
4	0.173	0.146	0.292	-0.292
5	-0.027	0.147	0.294	-0.294
6	-0.105	0.147	0.295	-0.295
7	-0.287	0.148	0.296	-0.296
8	-0.111	0.152	0.303	-0.303
9	-0.010	0.152	0.304	-0.304
10	0.071	0.152	0.304	-0.304
11	-0.030	0.152	0.305	-0.305
12	0.075	0.152	0.305	-0.305
13	0.082	0.153	0.305	-0.305

S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.108	0.153	0.306	-0.306
15	-0.001	0.154	0.307	-0.307

S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

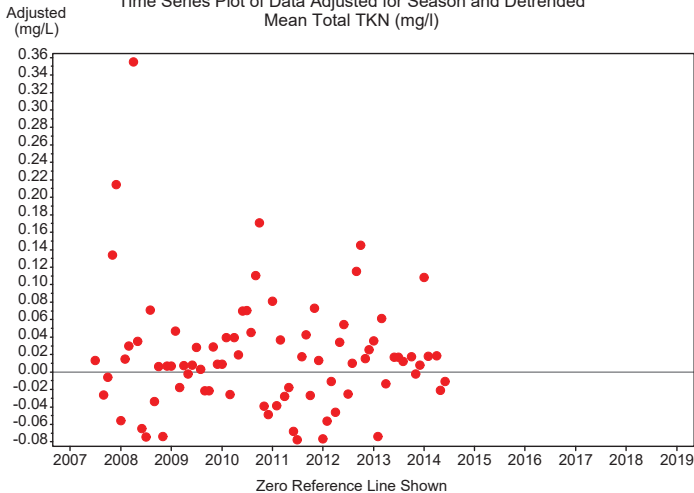
S_21FLSFWMLWL_4 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.088	0.372	0.261	-0.002

S_21FLSFWMLWL_4 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.087719	0.37184	0.26067	-0.00225

S_21FLSFWMLWL_4 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total TKN (mg/l)



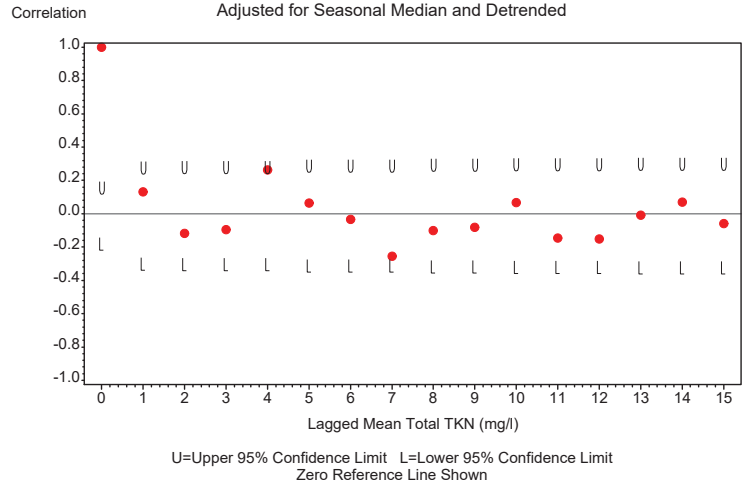
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.130	0.144	0.289	-0.289
2	-0.117	0.145	0.290	-0.290
3	-0.095	0.146	0.292	-0.292
4	0.263	0.146	0.292	-0.292
5	0.065	0.149	0.299	-0.299
6	-0.033	0.150	0.299	-0.299
7	-0.255	0.150	0.299	-0.299
8	-0.100	0.153	0.305	-0.305
9	-0.082	0.153	0.306	-0.306
10	0.066	0.153	0.307	-0.307
11	-0.147	0.154	0.307	-0.307
12	-0.152	0.155	0.309	-0.309
13	-0.009	0.156	0.311	-0.311

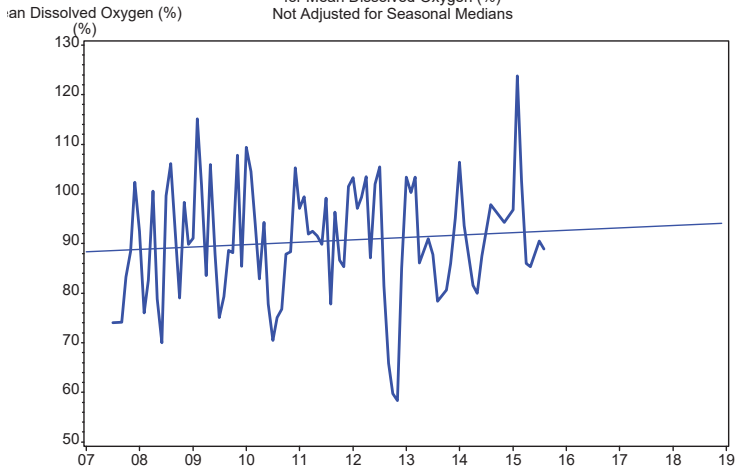
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.069	0.156	0.311	-0.311
15	-0.058	0.156	0.312	-0.312

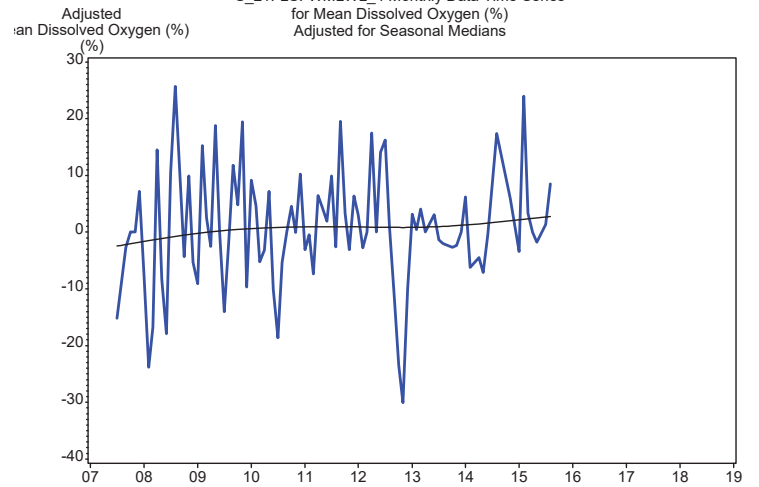
S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended



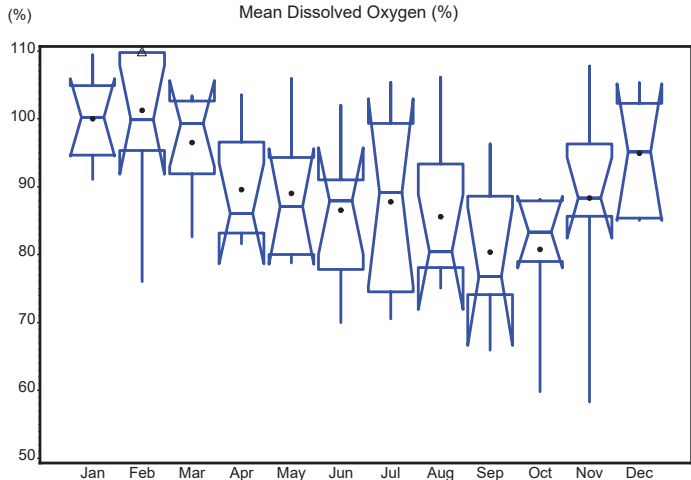
S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Dissolved Oxygen (%)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (%)



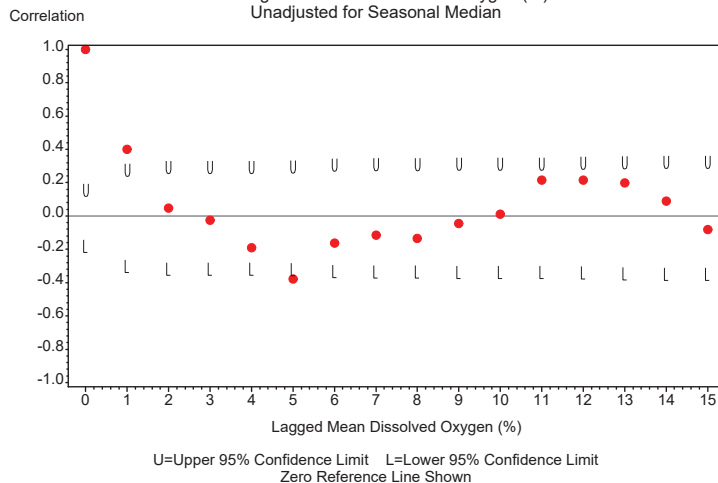
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.399	0.144	0.289	-0.289
2	0.046	0.152	0.304	-0.304
3	-0.026	0.152	0.304	-0.304
4	-0.192	0.152	0.304	-0.304
5	-0.378	0.154	0.307	-0.307
6	-0.163	0.160	0.320	-0.320
7	-0.116	0.161	0.322	-0.322
8	-0.134	0.162	0.323	-0.323
9	-0.045	0.162	0.325	-0.325
10	0.011	0.163	0.325	-0.325
11	0.216	0.163	0.325	-0.325
12	0.216	0.165	0.329	-0.329
13	0.197	0.166	0.333	-0.333

S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.090	0.168	0.336	-0.336
15	-0.083	0.168	0.337	-0.337

S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Median



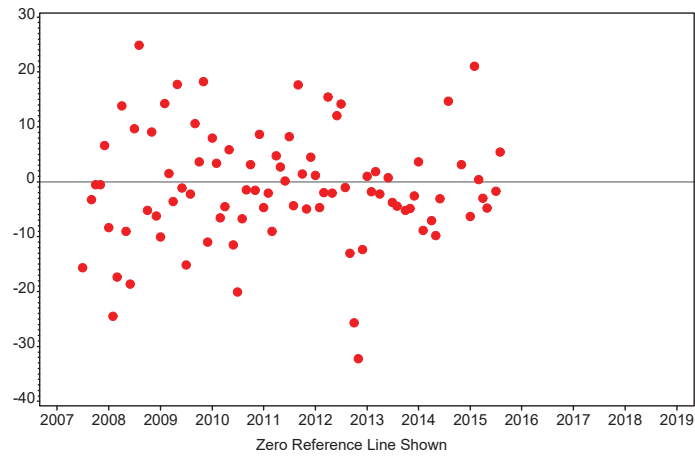
S_21FLSFWMLWL_4 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.032	0.75	0.59	0.32

S_21FLSFWMLWL_4 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (%)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.031802	0.75000	0.59048	0.32

S_21FLSFWMLWL_4 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (%)



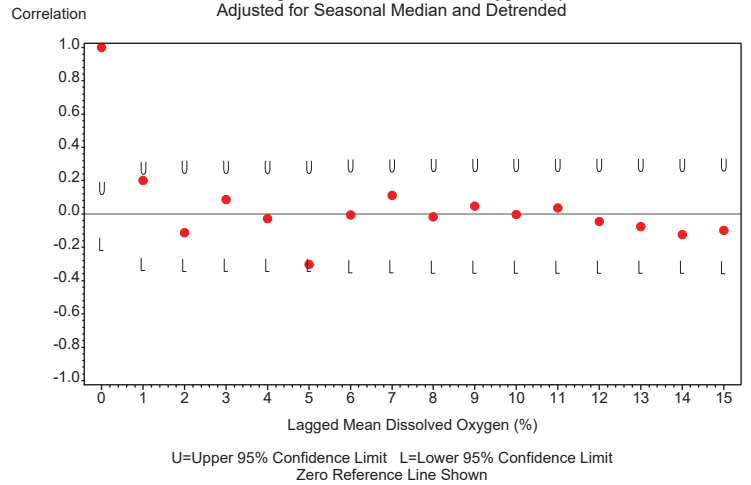
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.202	0.144	0.289	-0.289
2	-0.112	0.146	0.293	-0.293
3	0.087	0.147	0.294	-0.294
4	-0.028	0.147	0.294	-0.294
5	-0.304	0.147	0.295	-0.295
6	-0.006	0.152	0.303	-0.303
7	0.112	0.152	0.303	-0.303
8	-0.018	0.152	0.304	-0.304
9	0.048	0.152	0.304	-0.304
10	-0.003	0.152	0.305	-0.305
11	0.035	0.152	0.305	-0.305
12	-0.046	0.152	0.305	-0.305
13	-0.076	0.152	0.305	-0.305

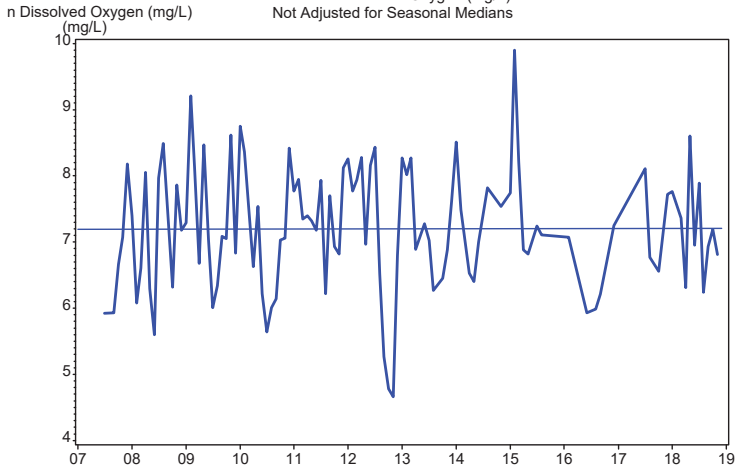
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.124	0.153	0.305	-0.305
15	-0.098	0.153	0.307	-0.307

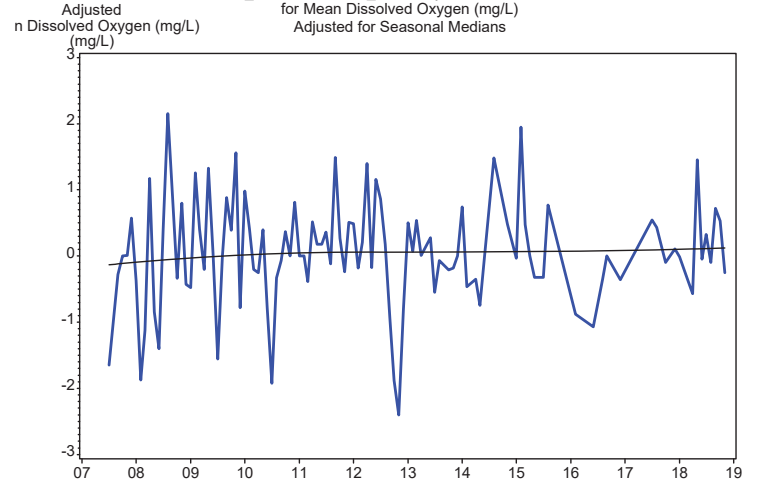
S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended



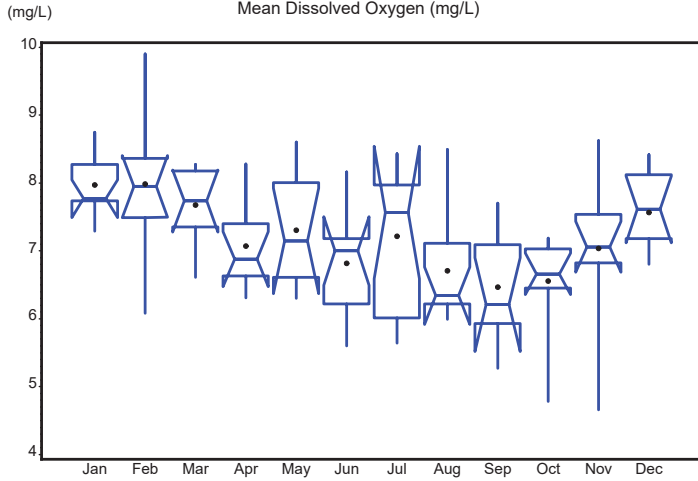
S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends
S_21FLSFWMLWL_4 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_4 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



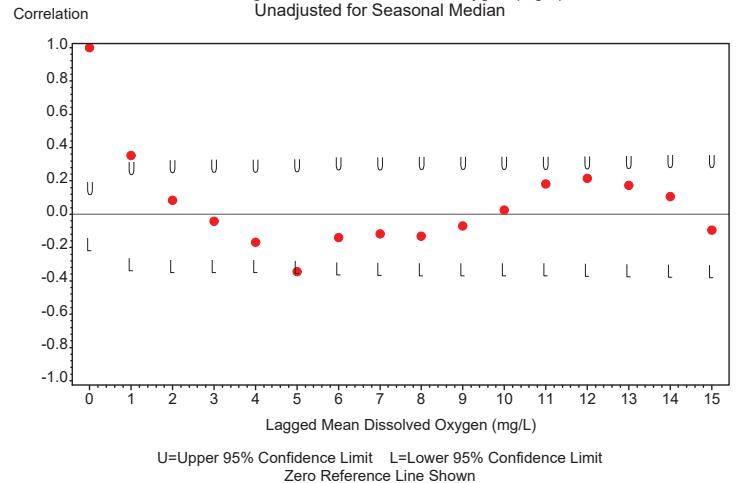
S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.353	0.144	0.289	-0.289
2	0.083	0.150	0.300	-0.300
3	-0.043	0.151	0.301	-0.301
4	-0.169	0.151	0.301	-0.301
5	-0.345	0.152	0.304	-0.304
6	-0.140	0.157	0.315	-0.315
7	-0.119	0.158	0.316	-0.316
8	-0.131	0.159	0.318	-0.318
9	-0.071	0.159	0.319	-0.319
10	0.025	0.160	0.319	-0.319
11	0.181	0.160	0.319	-0.319
12	0.214	0.161	0.322	-0.322
13	0.174	0.163	0.326	-0.326

S_21FLSFWMLWL_4 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.107	0.164	0.329	-0.329
15	-0.097	0.165	0.330	-0.330

S_21FLSFWMLWL_4 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



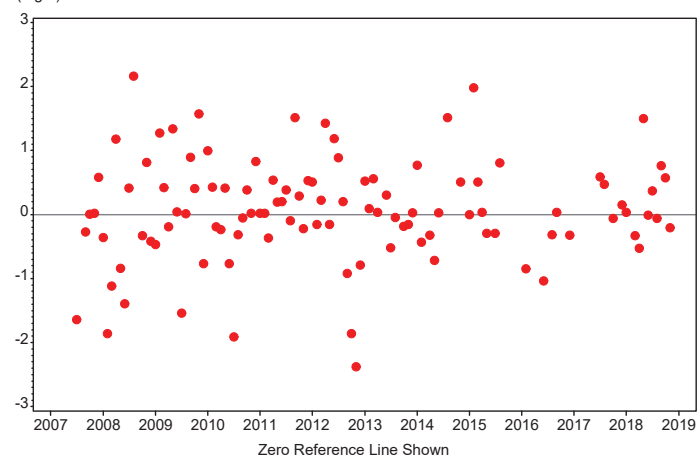
S_21FLSFWMLWL_4 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.016	0.857	0.815	-.003

S_21FLSFWMLWL_4 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.016317	0.85702	0.81520	-.0033333

S_21FLSFWMLWL_4 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Dissolved Oxygen (mg/L)



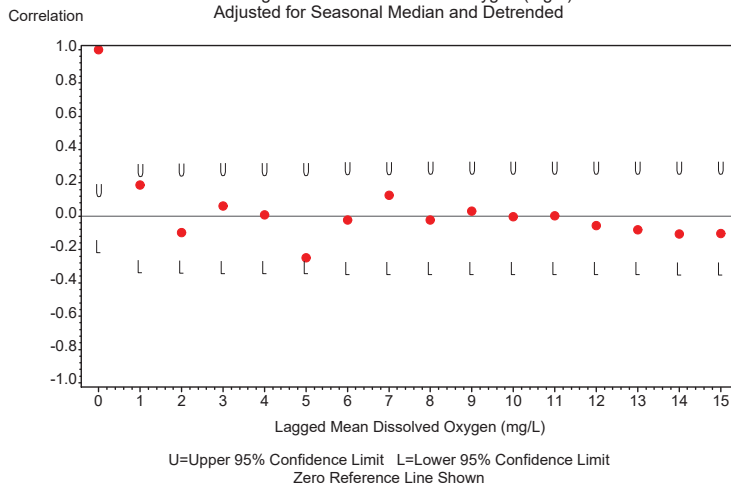
S_21FLSFWMLWL_4 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.186	0.144	0.289	-0.289
2	-0.098	0.146	0.292	-0.292
3	0.061	0.146	0.293	-0.293
4	0.008	0.147	0.293	-0.293
5	-0.251	0.147	0.293	-0.293
6	-0.023	0.150	0.299	-0.299
7	0.125	0.150	0.299	-0.299
8	-0.024	0.150	0.301	-0.301
9	0.029	0.150	0.301	-0.301
10	-0.004	0.150	0.301	-0.301
11	0.002	0.150	0.301	-0.301
12	-0.057	0.150	0.301	-0.301
13	-0.083	0.151	0.301	-0.301

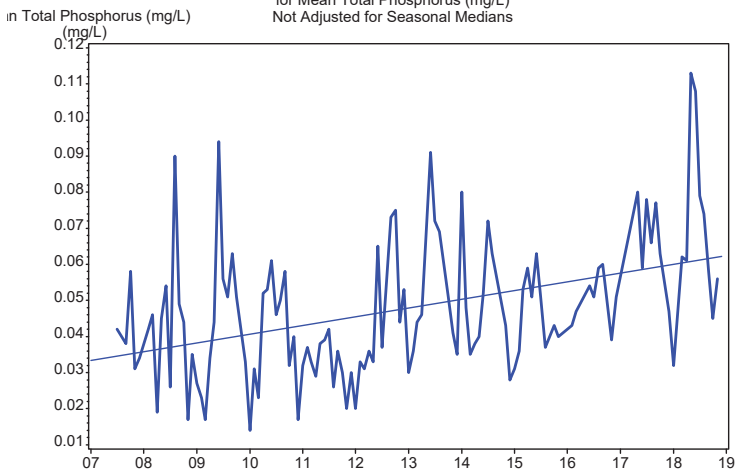
S_21FLSFWMLWL_4 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.108	0.151	0.302	-0.302
15	-0.105	0.151	0.303	-0.303

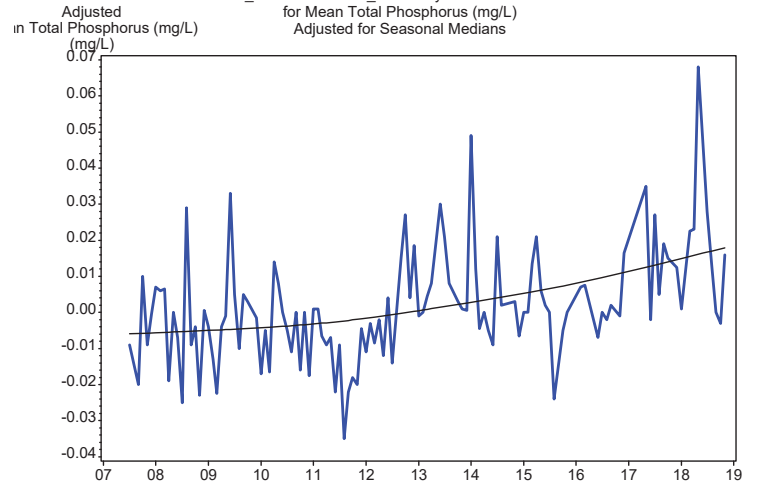
S_21FLSFWMLWL_4 Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended



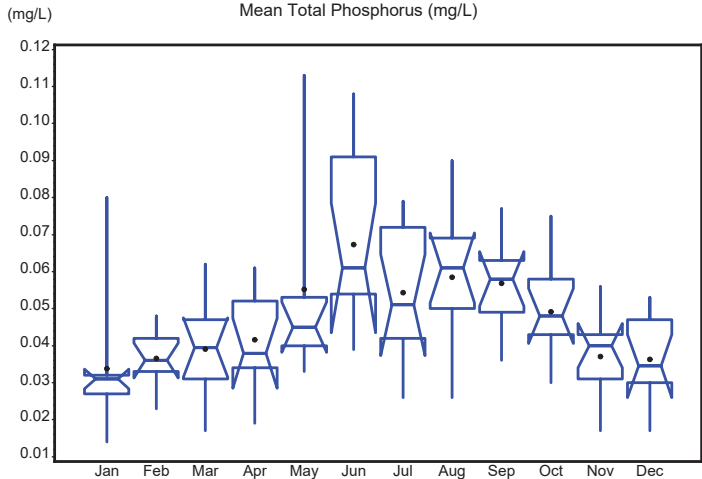
S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians



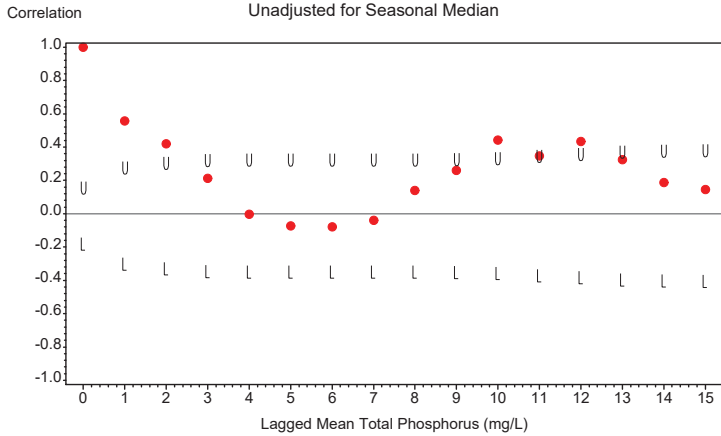
S_21FLSFWMLWL_8 Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.556	0.144	0.289	-0.289
2	0.419	0.158	0.317	-0.317
3	0.211	0.166	0.332	-0.332
4	-0.004	0.168	0.336	-0.336
5	-0.074	0.168	0.336	-0.336
6	-0.078	0.168	0.336	-0.336
7	-0.041	0.168	0.337	-0.337
8	0.140	0.168	0.337	-0.337
9	0.261	0.169	0.338	-0.338
10	0.442	0.172	0.344	-0.344
11	0.347	0.180	0.359	-0.359
12	0.434	0.184	0.369	-0.369
13	0.325	0.191	0.383	-0.383
14	0.186	0.195	0.390	-0.390
15	0.144	0.196	0.393	-0.393

S_21FLSFWMLWL_8 Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

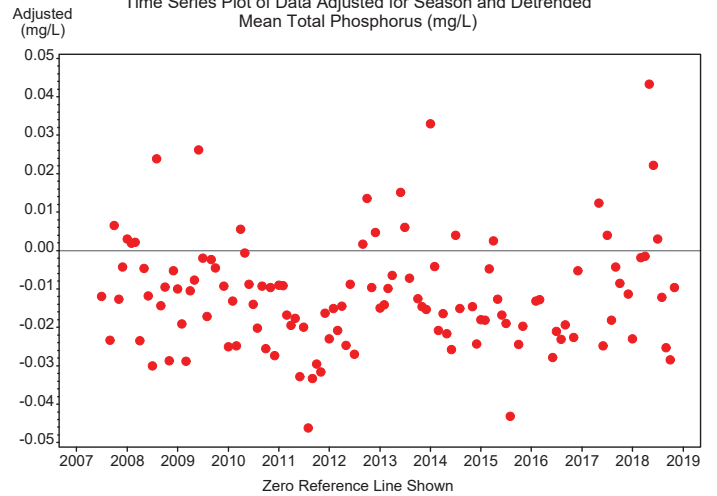
S_21FLSFWMLWL_8 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.319	0	0.013	.002

S_21FLSFWMLWL_8 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.31939	.000011921	0.012746	.002

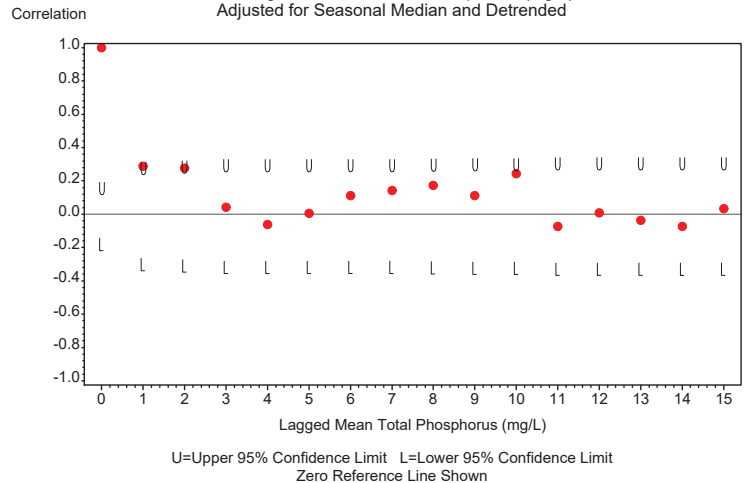
S_21FLSFWMLWL_8 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total Phosphorus (mg/L)



S_21FLSFWMLWL_8 Trends Appendix
 Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

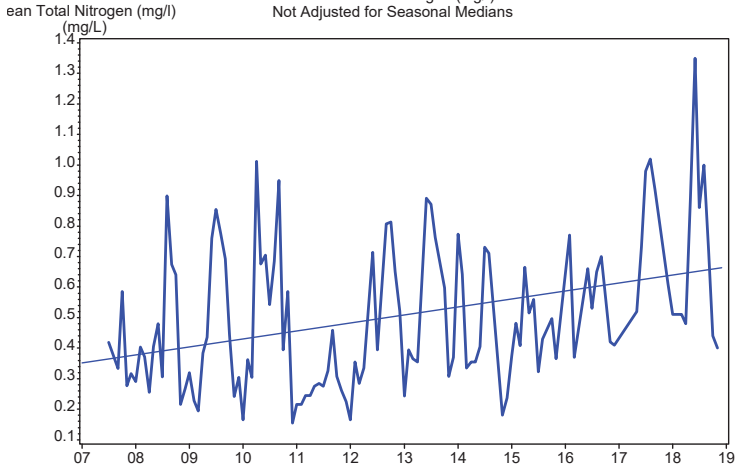
Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.288	0.144	0.289	-0.289
2	0.276	0.148	0.297	-0.297
3	0.041	0.152	0.304	-0.304
4	-0.062	0.152	0.304	-0.304
5	0.004	0.152	0.304	-0.304
6	0.111	0.152	0.304	-0.304
7	0.142	0.153	0.305	-0.305
8	0.173	0.154	0.307	-0.307
9	0.112	0.155	0.310	-0.310
10	0.244	0.155	0.311	-0.311
11	-0.074	0.158	0.316	-0.316
12	0.007	0.158	0.317	-0.317
13	-0.038	0.158	0.317	-0.317
14	-0.072	0.158	0.317	-0.317
15	0.033	0.159	0.317	-0.317

S_21FLSFWMLWL_8 Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

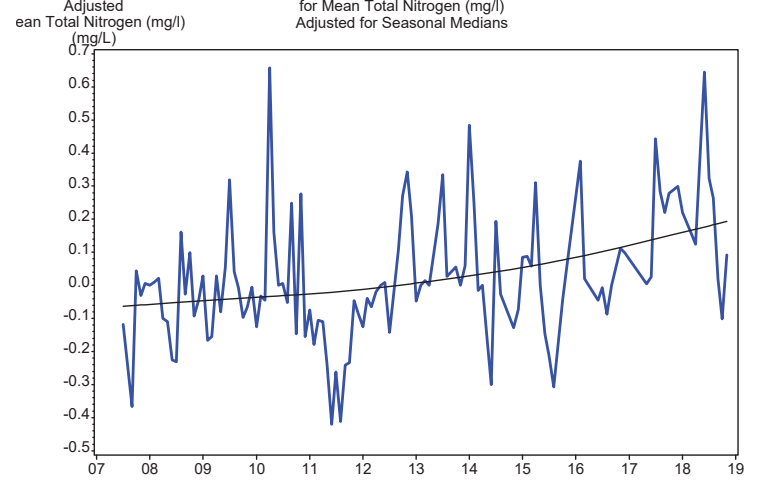


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

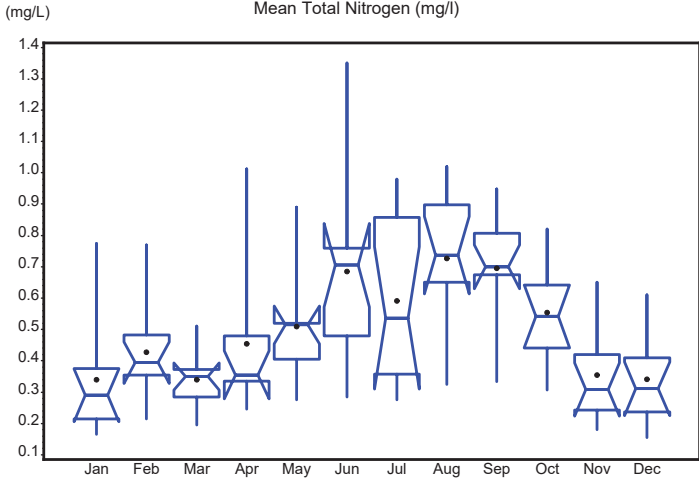
S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



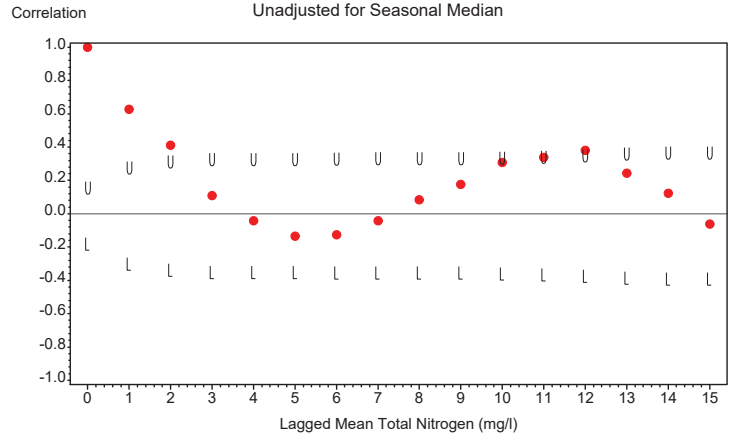
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.628	0.144	0.289	-0.289
2	0.411	0.162	0.324	-0.324
3	0.110	0.169	0.339	-0.339
4	-0.042	0.170	0.340	-0.340
5	-0.136	0.170	0.340	-0.340
6	-0.127	0.171	0.341	-0.341
7	-0.042	0.171	0.343	-0.343
8	0.083	0.171	0.343	-0.343
9	0.176	0.172	0.343	-0.343
10	0.307	0.173	0.346	-0.346
11	0.337	0.177	0.353	-0.353
12	0.381	0.181	0.362	-0.362
13	0.244	0.187	0.373	-0.373

S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.124	0.189	0.377	-0.377
15	-0.063	0.189	0.379	-0.379

S_21FLSFWMLWL_8 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

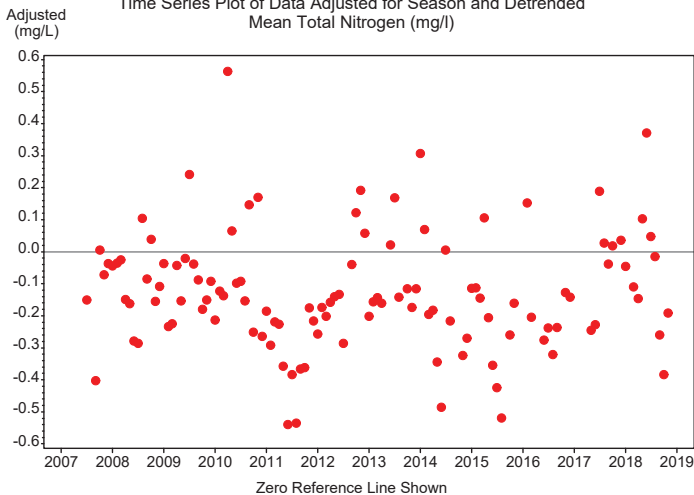
S_21FLSFWMLWL_8 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.304	0	0.031	0.022

S_21FLSFWMLWL_8 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.30410	.000028968	0.031419	0.022125

S_21FLSFWMLWL_8 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Nitrogen (mg/l)



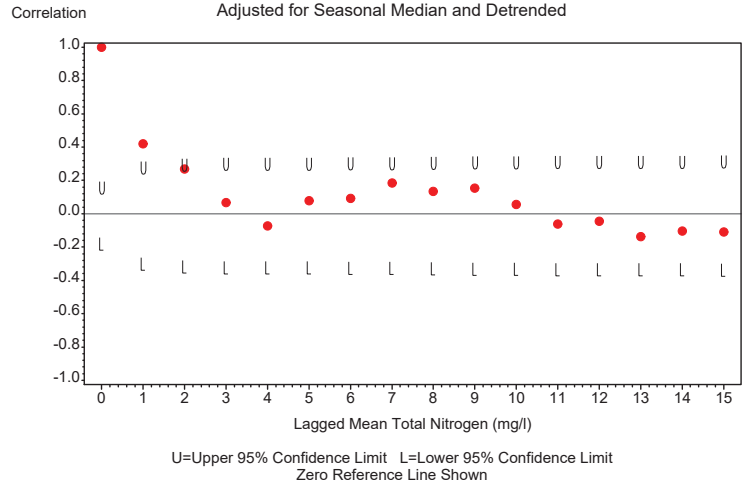
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.419	0.144	0.289	-0.289
2	0.267	0.153	0.305	-0.305
3	0.067	0.156	0.312	-0.312
4	-0.074	0.156	0.312	-0.312
5	0.077	0.156	0.312	-0.312
6	0.093	0.156	0.313	-0.313
7	0.185	0.157	0.314	-0.314
8	0.135	0.158	0.317	-0.317
9	0.154	0.159	0.318	-0.318
10	0.056	0.160	0.320	-0.320
11	-0.061	0.160	0.321	-0.321
12	-0.044	0.160	0.321	-0.321
13	-0.138	0.161	0.321	-0.321

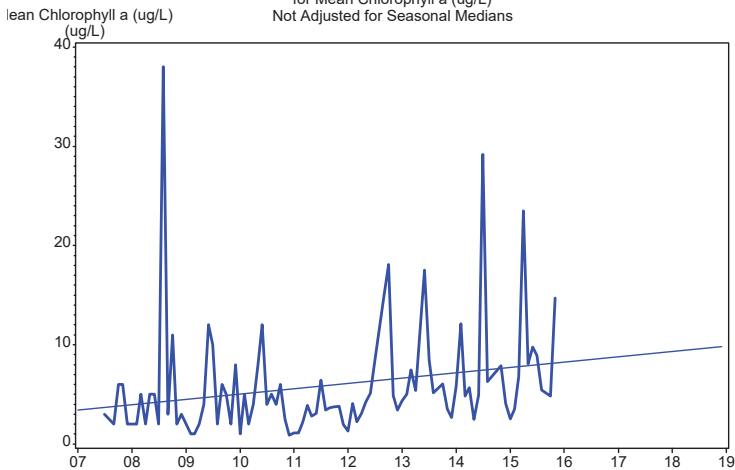
S_21FLSFWMLWL_8 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.105	0.161	0.323	-0.323
15	-0.109	0.162	0.324	-0.324

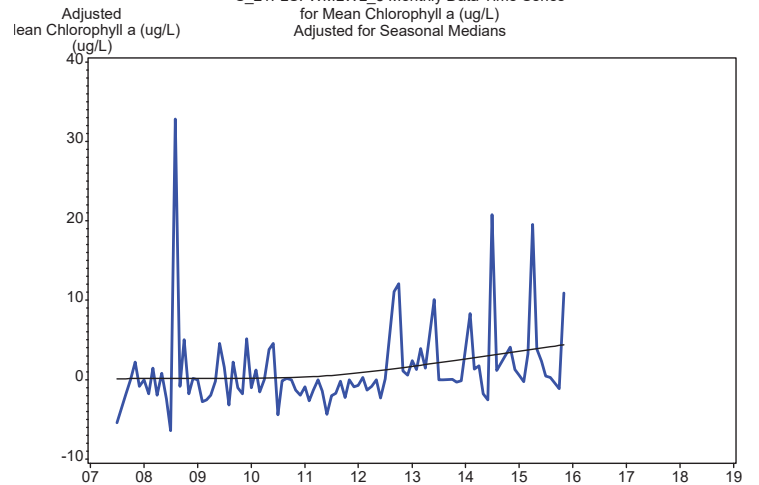
S_21FLSFWMLWL_8 Trends Appendix
 Correlogram for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended



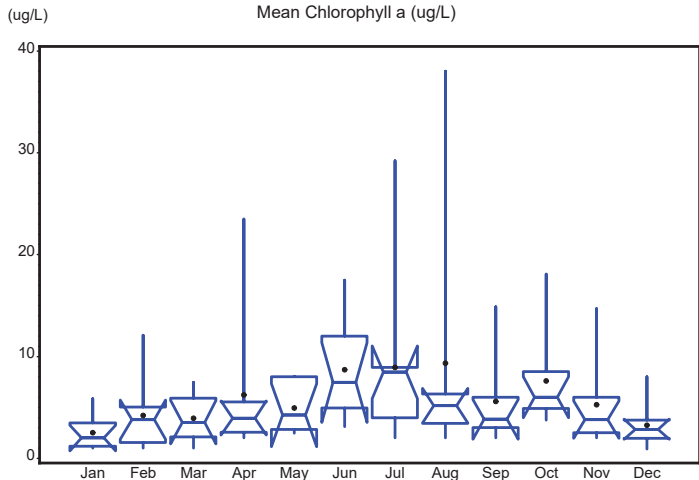
S_21FLSFWMLWL_8 Trends
 S_21FLSFWMLWL_8 Monthly Data Time Series
 for Mean Chlorophyll a (ug/L)
 Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends
 S_21FLSFWMLWL_8 Monthly Data Time Series
 for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Medians



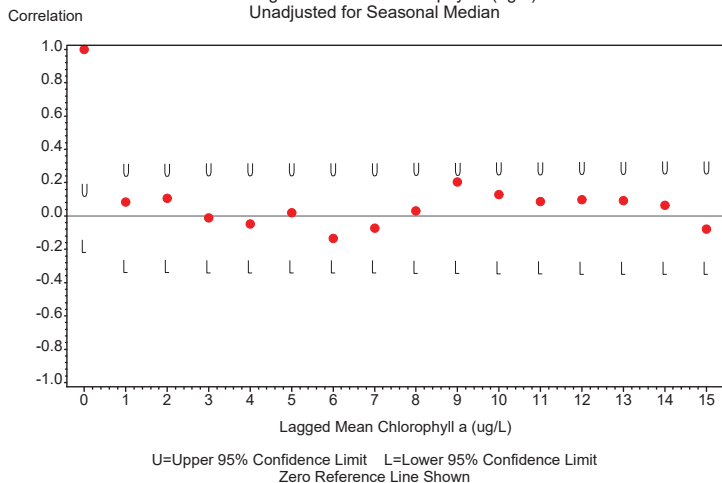
S_21FLSFWMLWL_8 Trends Appendix
Seasonal Univariate Statistics
Mean Chlorophyll a (ug/L)



S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.084	0.144	0.289	-0.289
2	0.105	0.145	0.289	-0.289
3	-0.011	0.145	0.290	-0.290
4	-0.048	0.145	0.290	-0.290
5	0.018	0.145	0.291	-0.291
6	-0.136	0.145	0.291	-0.291
7	-0.074	0.146	0.292	-0.292
8	0.030	0.146	0.293	-0.293
9	0.204	0.147	0.293	-0.293
10	0.128	0.148	0.297	-0.297
11	0.087	0.149	0.298	-0.298
12	0.097	0.150	0.299	-0.299
13	0.091	0.150	0.300	-0.300
14	0.063	0.150	0.301	-0.301
15	-0.079	0.151	0.301	-0.301

S_21FLSFWMLWL_8 Trends Appendix
Correlogram for Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Median



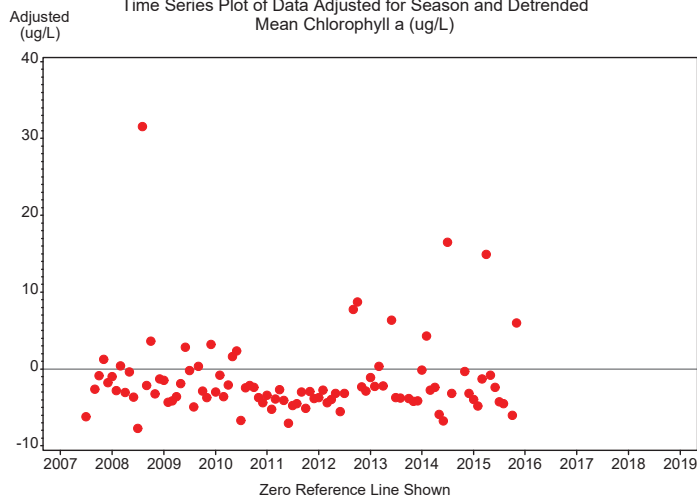
S_21FLSFWMLWL_8 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.351	0	0.014	0.5

S_21FLSFWMLWL_8 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Chlorophyll a (ug/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.35077	.000038624	0.014059	0.5

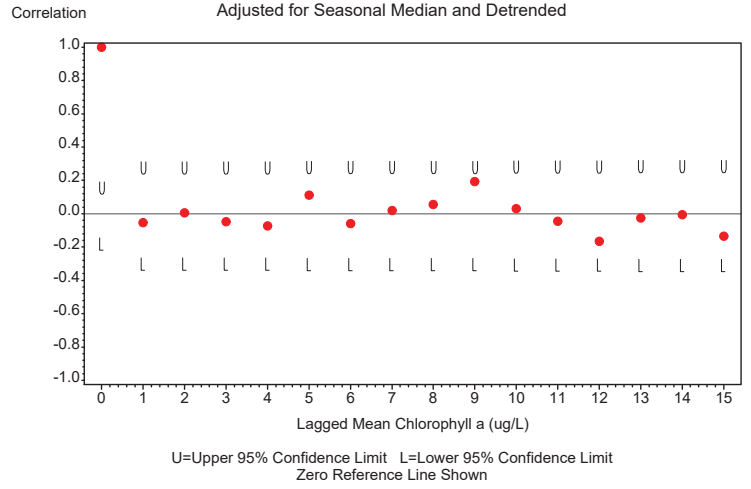
S_21FLSFWMLWL_8 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Chlorophyll a (ug/L)



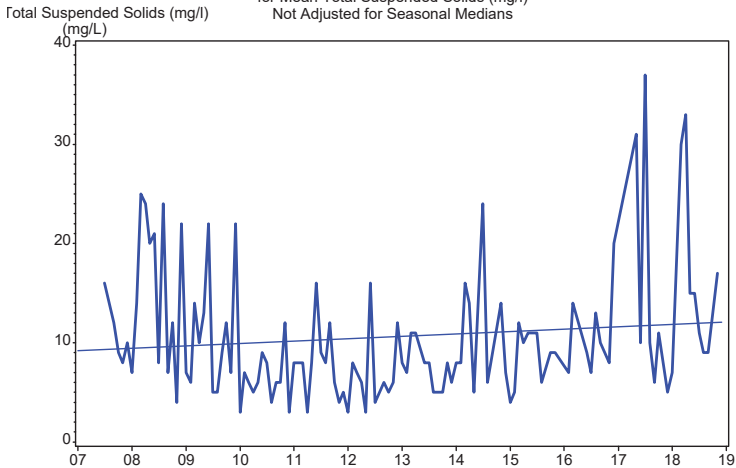
S_21FLSFWMLWL_8 Trends Appendix
 Autocorrelation Statistics for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Chlorophyll a (ug/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	-0.054	0.144	0.289	-0.289
2	0.005	0.144	0.289	-0.289
3	-0.048	0.144	0.289	-0.289
4	-0.074	0.145	0.289	-0.289
5	0.112	0.145	0.290	-0.290
6	-0.059	0.145	0.291	-0.291
7	0.020	0.146	0.291	-0.291
8	0.055	0.146	0.291	-0.291
9	0.192	0.146	0.292	-0.292
10	0.030	0.148	0.295	-0.295
11	-0.044	0.148	0.295	-0.295
12	-0.167	0.148	0.295	-0.295
13	-0.026	0.149	0.298	-0.298
14	-0.007	0.149	0.298	-0.298
15	-0.134	0.149	0.298	-0.298

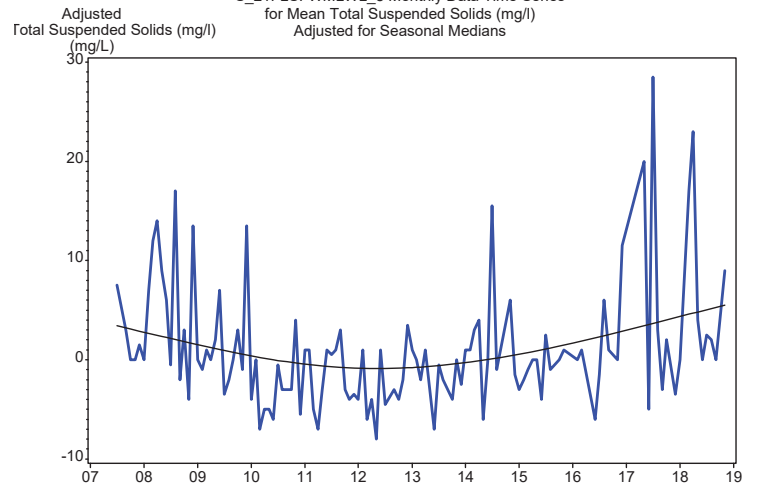
S_21FLSFWMLWL_8 Trends Appendix
 Correlogram for Mean Chlorophyll a (ug/L)
 Adjusted for Seasonal Median and Detrended



S_21FLSFWMLWL_8 Trends
 S_21FLSFWMLWL_8 Monthly Data Time Series
 for Mean Total Suspended Solids (mg/l)
 Not Adjusted for Seasonal Medians



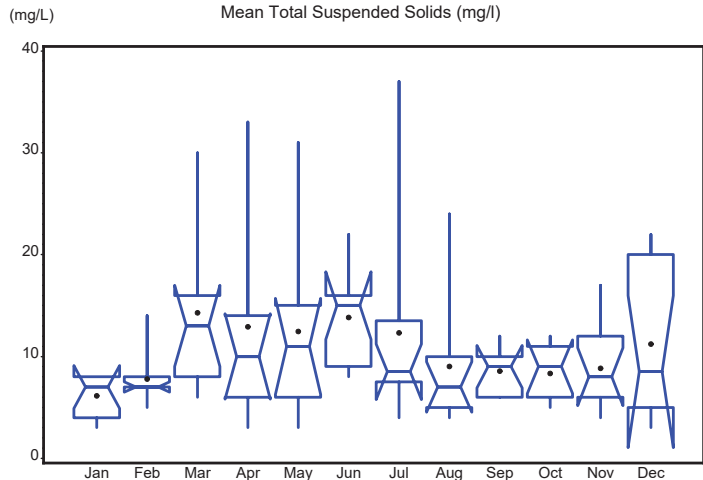
S_21FLSFWMLWL_8 Trends
 S_21FLSFWMLWL_8 Monthly Data Time Series
 for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends Appendix

Seasonal Univariate Statistics

Mean Total Suspended Solids (mg/l)



S_21FLSFWMLWL_8 Trends Appendix

Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)

Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.228	0.144	0.289	-0.289
2	0.289	0.147	0.294	-0.294
3	0.106	0.151	0.301	-0.301
4	0.111	0.151	0.302	-0.302
5	0.001	0.152	0.304	-0.304
6	0.073	0.152	0.304	-0.304
7	0.068	0.152	0.304	-0.304
8	0.170	0.152	0.305	-0.305
9	0.303	0.154	0.307	-0.307
10	0.169	0.158	0.315	-0.315
11	0.196	0.159	0.318	-0.318
12	0.206	0.161	0.321	-0.321
13	0.075	0.162	0.325	-0.325

S_21FLSFWMLWL_8 Trends Appendix

Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)

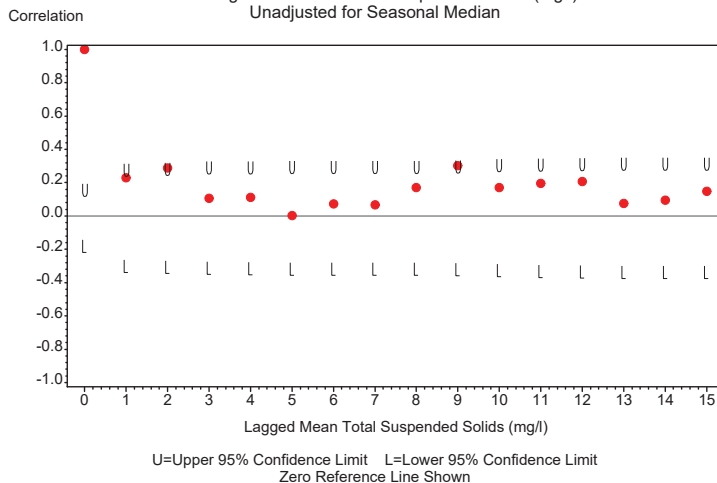
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.095	0.163	0.325	-0.325
15	0.148	0.163	0.326	-0.326

S_21FLSFWMLWL_8 Trends Appendix

Correlogram for Mean Total Suspended Solids (mg/l)

Unadjusted for Seasonal Median



S_21FLSFWMLWL_8 Trends Appendix

Seasonal Kendall Tau Trend Test Statistics

Mean Total Suspended Solids (mg/l)

Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.046	0.542	0.719	0

S_21FLSFWMLWL_8 Trends Appendix

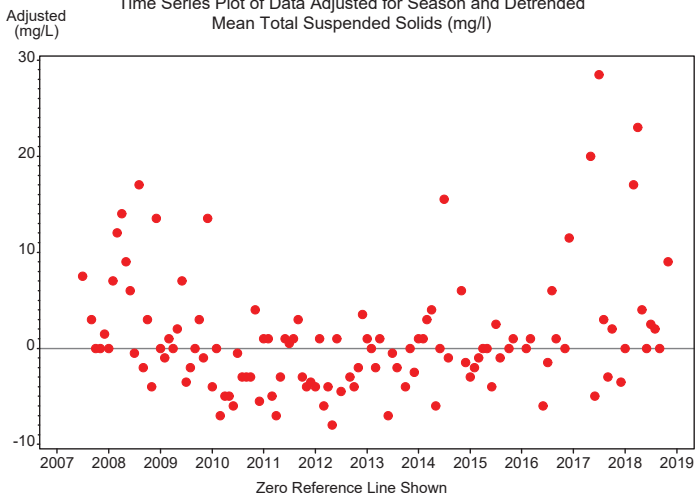
Seasonal Kendall Tau Trend Test Statistics

Mean Total Suspended Solids (mg/l)

Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.045541	0.54248	0.71888	0

S_21FLSFWMLWL_8 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Suspended Solids (mg/l)



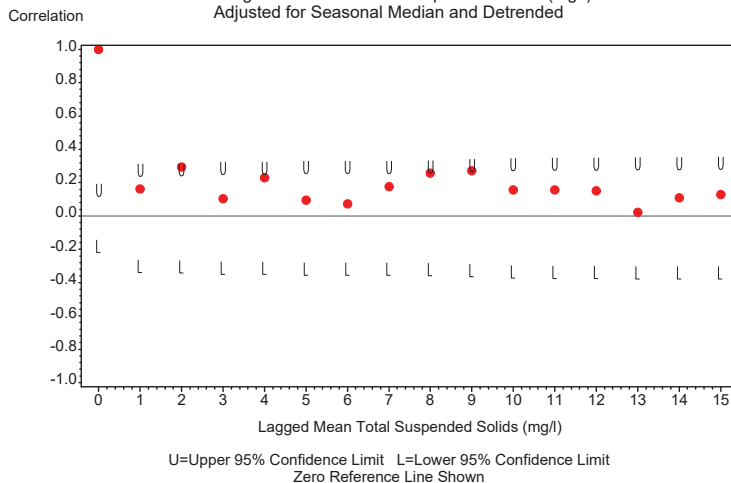
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.161	0.144	0.289	-0.289
2	0.293	0.146	0.291	-0.291
3	0.104	0.150	0.299	-0.299
4	0.230	0.150	0.300	-0.300
5	0.095	0.153	0.305	-0.305
6	0.072	0.153	0.306	-0.306
7	0.175	0.153	0.306	-0.306
8	0.257	0.155	0.309	-0.309
9	0.271	0.158	0.315	-0.315
10	0.157	0.161	0.321	-0.321
11	0.156	0.162	0.324	-0.324
12	0.151	0.163	0.326	-0.326
13	0.023	0.164	0.328	-0.328

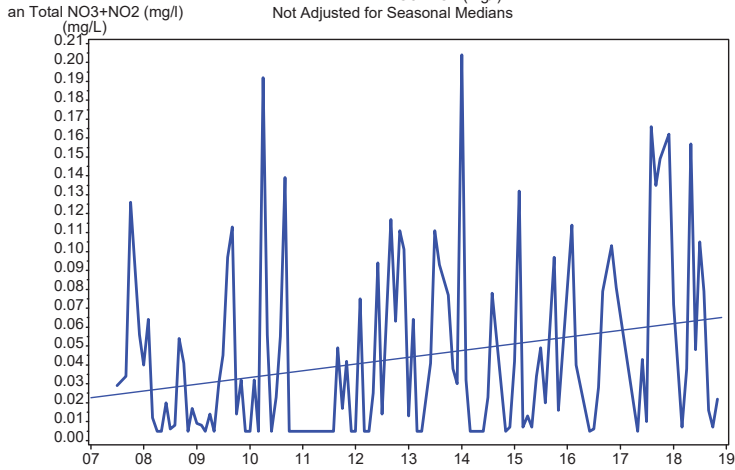
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.109	0.164	0.328	-0.328
15	0.127	0.164	0.329	-0.329

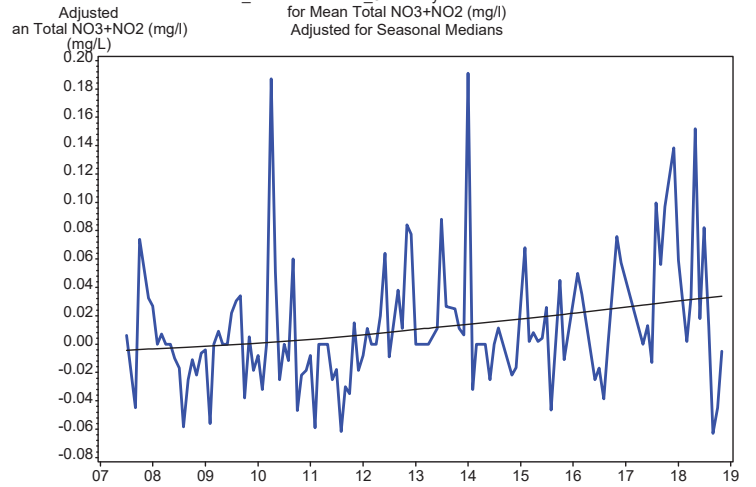
S_21FLSFWMLWL_8 Trends Appendix
Correlogram for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended



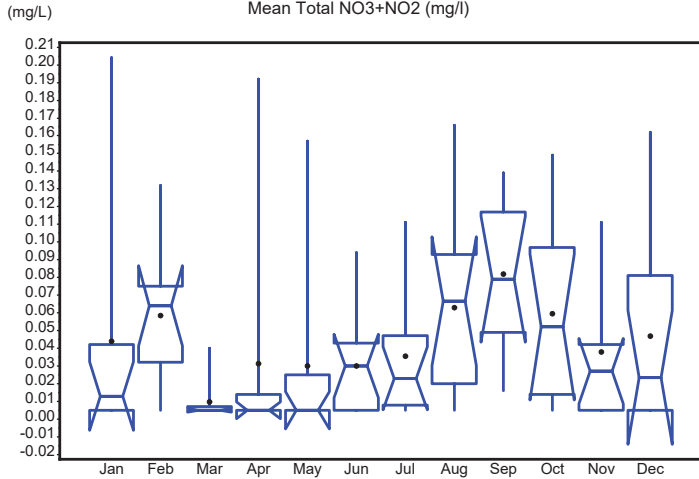
S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Total NO3+NO2 (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends Appendix
Seasonal Univariate Statistics
Mean Total NO3+NO2 (mg/l)



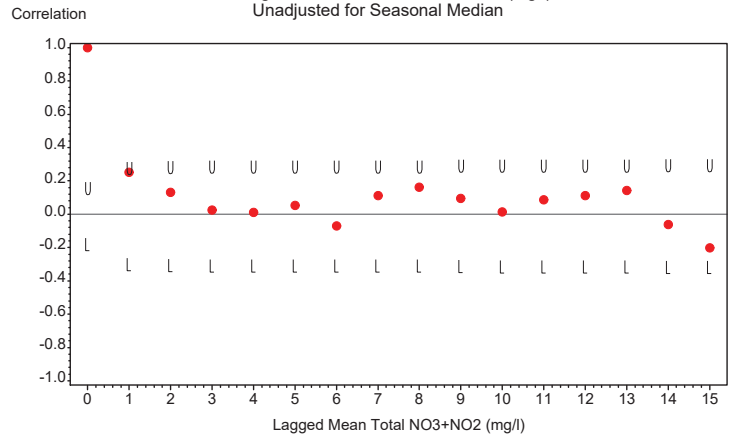
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.251	0.144	0.289	-0.289
2	0.132	0.147	0.295	-0.295
3	0.026	0.148	0.296	-0.296
4	0.012	0.148	0.296	-0.296
5	0.054	0.148	0.296	-0.296
6	-0.071	0.148	0.297	-0.297
7	0.112	0.149	0.297	-0.297
8	0.163	0.149	0.298	-0.298
9	0.094	0.150	0.301	-0.301
10	0.013	0.151	0.302	-0.302
11	0.086	0.151	0.302	-0.302
12	0.111	0.151	0.302	-0.302
13	0.143	0.152	0.303	-0.303

S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.061	0.153	0.305	-0.305
15	-0.202	0.153	0.306	-0.306

S_21FLSFWMLWL_8 Trends Appendix
Correlogram for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

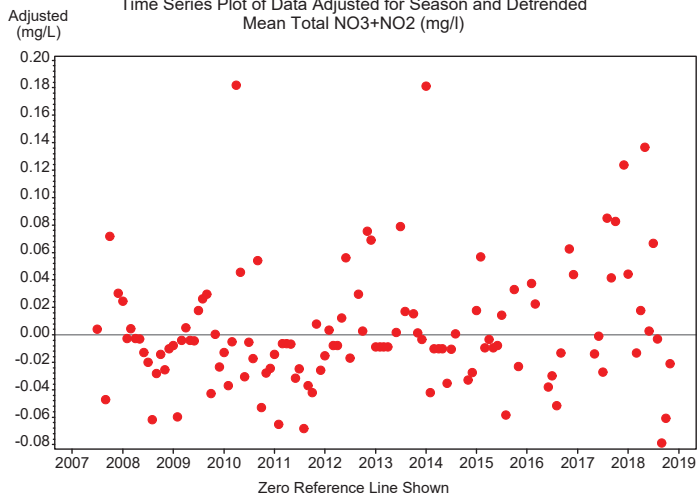
S_21FLSFWMLWL_8 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total NO3+NO2 (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.211	.003	0.056	.001

S_21FLSFWMLWL_8 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.21103	.00302625	0.056487	.00123809

S_21FLSFWMLWL_8 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total NO3+NO2 (mg/l)



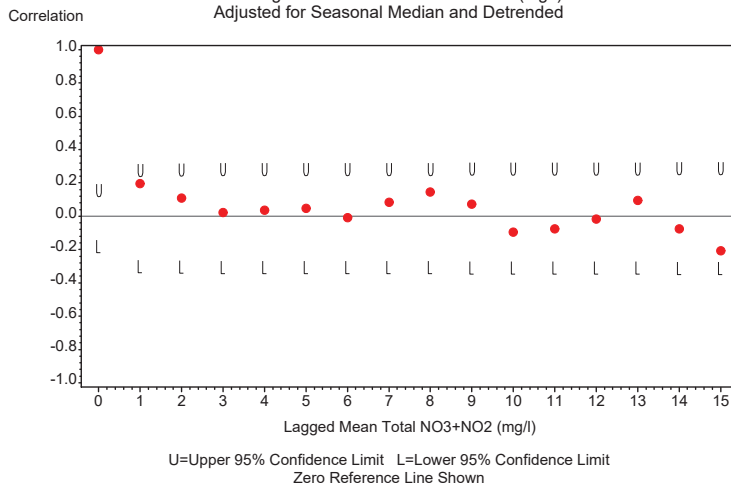
S_21FLSFWMLWL_8 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.196	0.144	0.289	-0.289
2	0.109	0.146	0.292	-0.292
3	0.021	0.147	0.293	-0.293
4	0.036	0.147	0.294	-0.294
5	0.046	0.147	0.294	-0.294
6	-0.010	0.147	0.294	-0.294
7	0.084	0.147	0.294	-0.294
8	0.145	0.147	0.295	-0.295
9	0.073	0.148	0.297	-0.297
10	-0.095	0.149	0.297	-0.297
11	-0.076	0.149	0.298	-0.298
12	-0.017	0.149	0.298	-0.298
13	0.094	0.149	0.298	-0.298

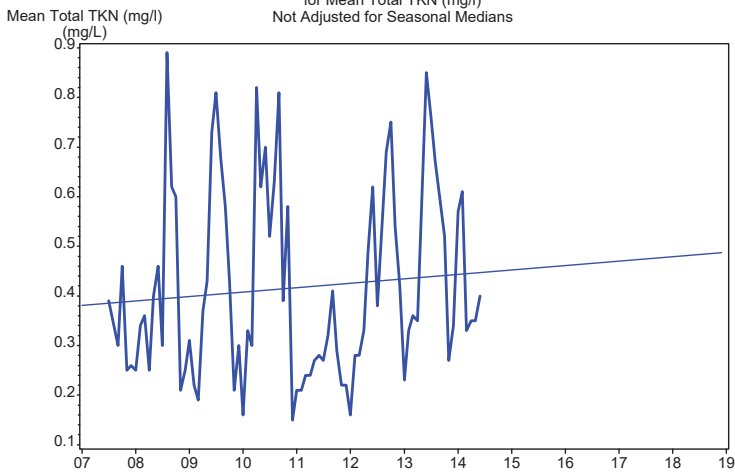
S_21FLSFWMLWL_8 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.075	0.150	0.299	-0.299
15	-0.208	0.150	0.300	-0.300

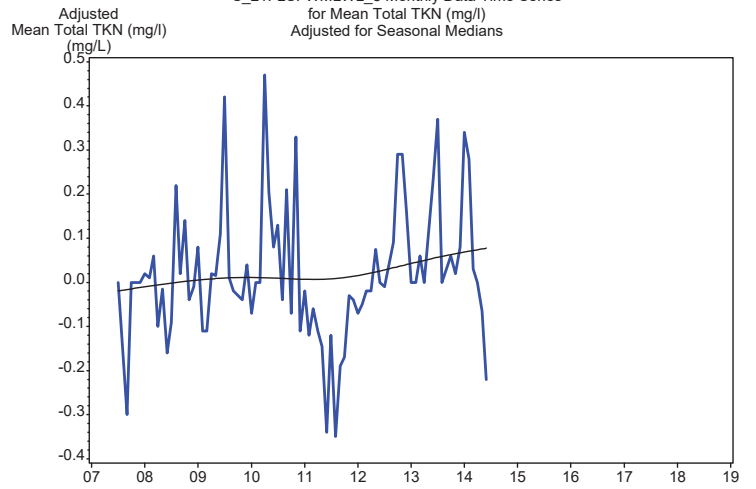
S_21FLSFWMLWL_8 Trends Appendix
 Correlogram for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended



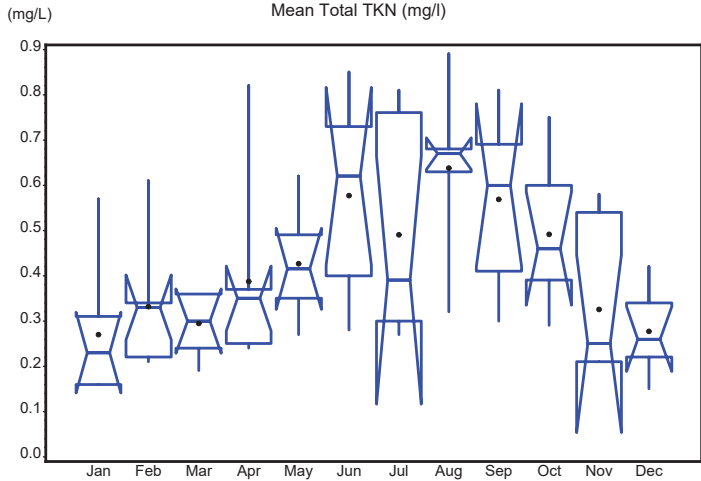
S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Total TKN (mg/l)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Total TKN (mg/l)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



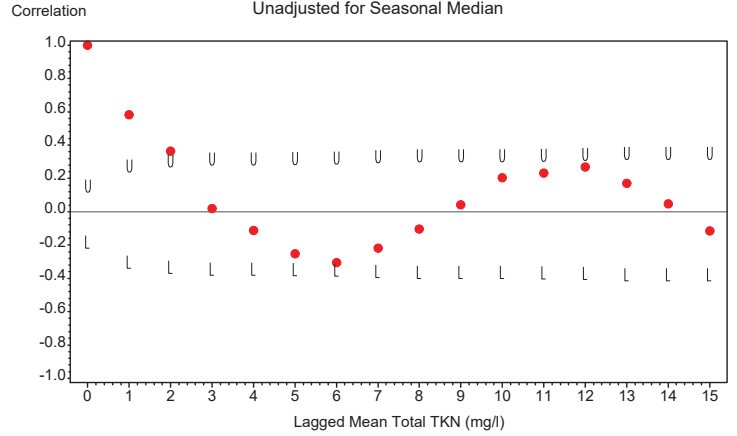
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.582	0.144	0.289	-0.289
2	0.363	0.160	0.320	-0.320
3	0.019	0.165	0.331	-0.331
4	-0.113	0.165	0.331	-0.331
5	-0.253	0.166	0.332	-0.332
6	-0.306	0.169	0.337	-0.337
7	-0.220	0.172	0.345	-0.345
8	-0.104	0.174	0.349	-0.349
9	0.041	0.175	0.350	-0.350
10	0.205	0.175	0.350	-0.350
11	0.232	0.177	0.353	-0.353
12	0.269	0.179	0.357	-0.357
13	0.169	0.181	0.363	-0.363

S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.046	0.183	0.365	-0.365
15	-0.114	0.183	0.365	-0.365

S_21FLSFWMLWL_8 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

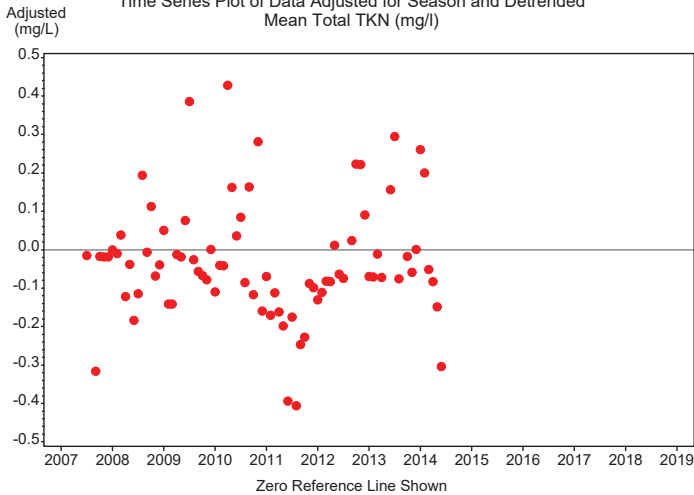
S_21FLSFWMLWL_8 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.087	0.379	0.621	0.01

S_21FLSFWMLWL_8 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.087336	0.37946	0.62123	0.01

S_21FLSFWMLWL_8 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total TKN (mg/l)



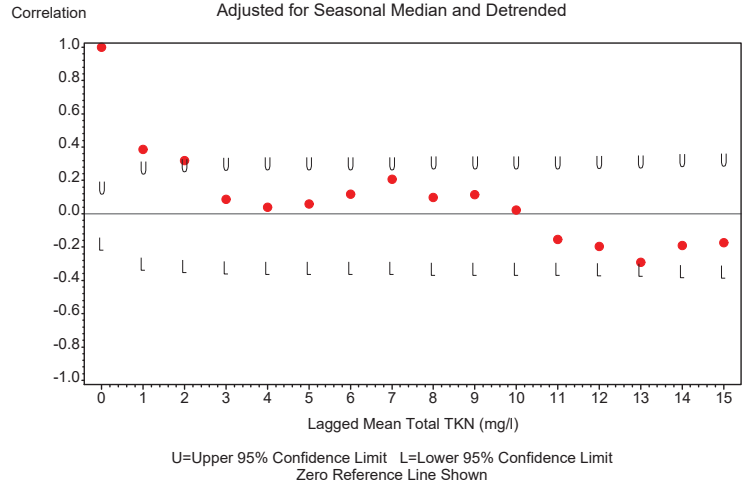
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.386	0.144	0.289	-0.289
2	0.320	0.151	0.303	-0.303
3	0.085	0.156	0.312	-0.312
4	0.040	0.156	0.313	-0.313
5	0.057	0.156	0.313	-0.313
6	0.118	0.156	0.313	-0.313
7	0.207	0.157	0.314	-0.314
8	0.098	0.159	0.318	-0.318
9	0.115	0.159	0.319	-0.319
10	0.023	0.160	0.320	-0.320
11	-0.155	0.160	0.320	-0.320
12	-0.197	0.161	0.322	-0.322
13	-0.293	0.163	0.325	-0.325

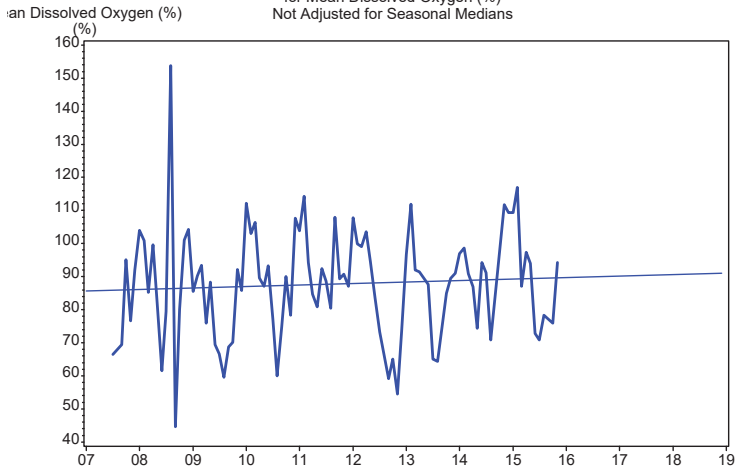
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.191	0.166	0.333	-0.333
15	-0.173	0.168	0.336	-0.336

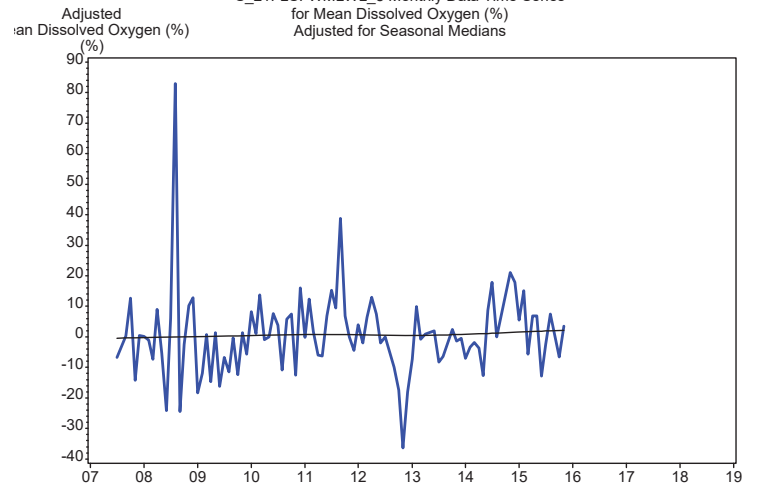
S_21FLSFWMLWL_8 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended



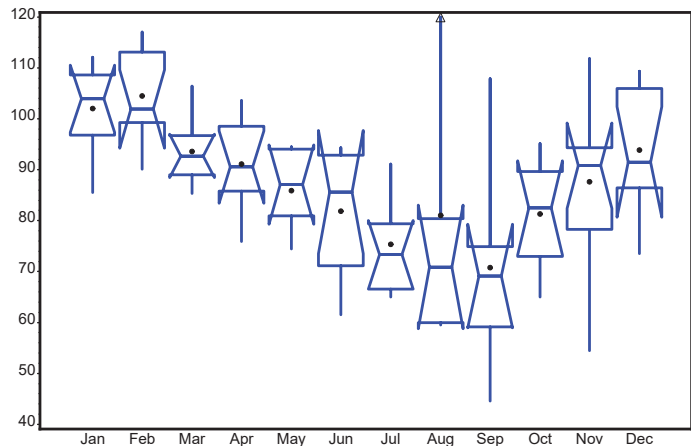
S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Dissolved Oxygen (%)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (%)



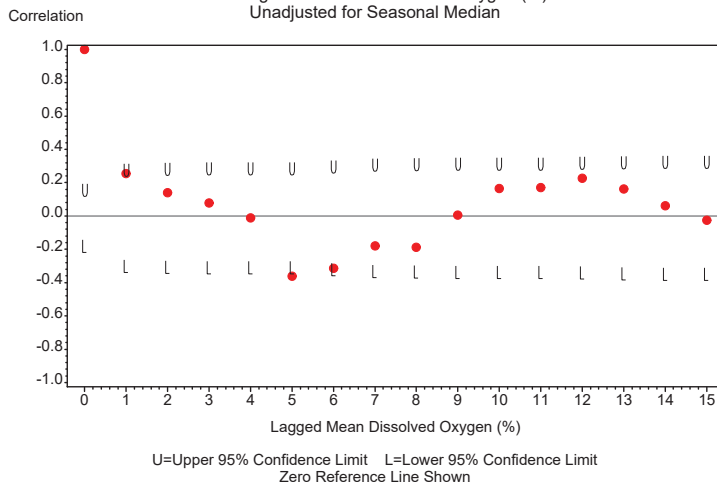
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.253	0.144	0.289	-0.289
2	0.139	0.147	0.295	-0.295
3	0.079	0.148	0.297	-0.297
4	-0.013	0.149	0.297	-0.297
5	-0.361	0.149	0.297	-0.297
6	-0.314	0.155	0.309	-0.309
7	-0.181	0.159	0.318	-0.318
8	-0.189	0.160	0.321	-0.321
9	0.005	0.162	0.324	-0.324
10	0.164	0.162	0.324	-0.324
11	0.170	0.163	0.326	-0.326
12	0.227	0.164	0.329	-0.329
13	0.163	0.166	0.333	-0.333

S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.062	0.168	0.335	-0.335
15	-0.025	0.168	0.335	-0.335

S_21FLSFWMLWL_8 Trends Appendix
Correlogram for Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Median



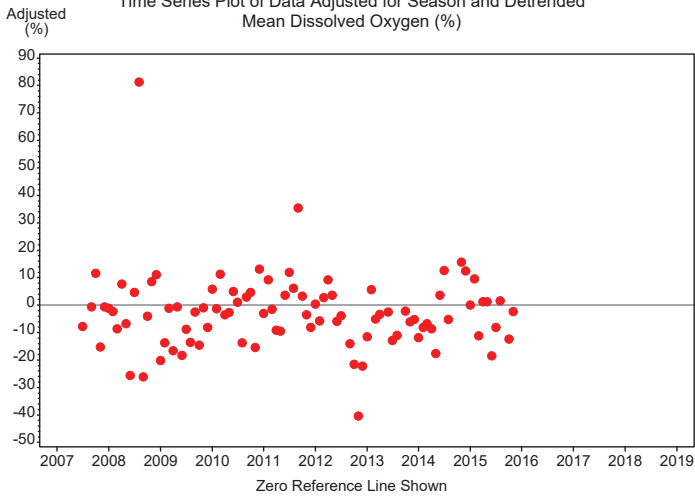
S_21FLSFWMLWL_8 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (%)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.077	0.383	0.491	0.6

S_21FLSFWMLWL_8 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (%)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.076923	0.38347	0.49052	0.6

S_21FLSFWMLWL_8 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (%)



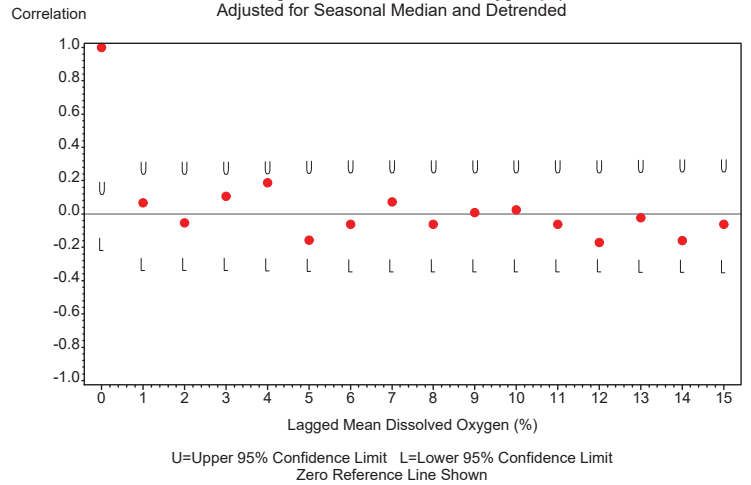
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.067	0.144	0.289	-0.289
2	-0.054	0.145	0.289	-0.289
3	0.105	0.145	0.289	-0.289
4	0.187	0.145	0.290	-0.290
5	-0.157	0.147	0.294	-0.294
6	-0.061	0.148	0.296	-0.296
7	0.073	0.148	0.296	-0.296
8	-0.061	0.148	0.297	-0.297
9	0.008	0.149	0.297	-0.297
10	0.026	0.149	0.297	-0.297
11	-0.061	0.149	0.297	-0.297
12	-0.172	0.149	0.298	-0.298
13	-0.023	0.150	0.300	-0.300

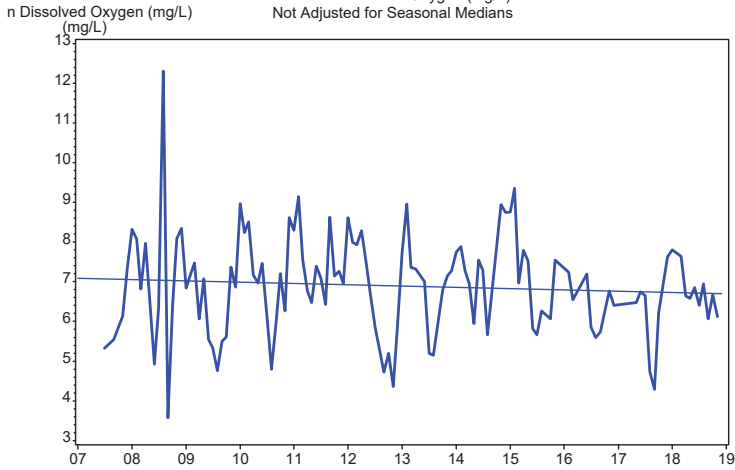
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (%)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.160	0.150	0.301	-0.301
15	-0.063	0.151	0.303	-0.303

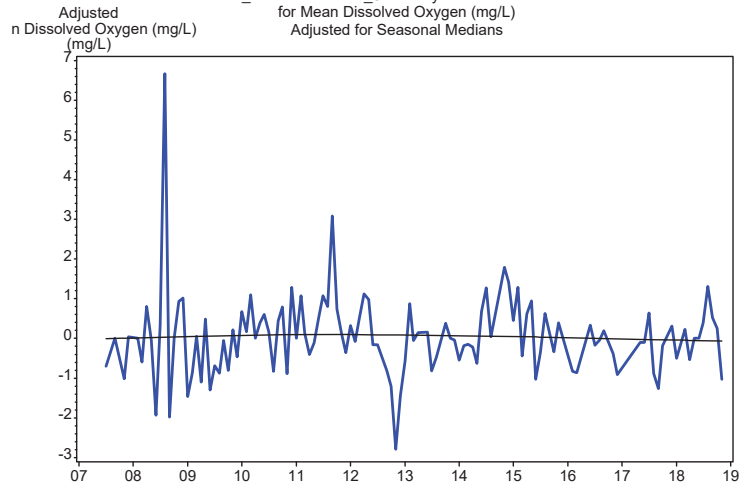
S_21FLSFWMLWL_8 Trends Appendix
Correlogram for Mean Dissolved Oxygen (%)
Adjusted for Seasonal Median and Detrended



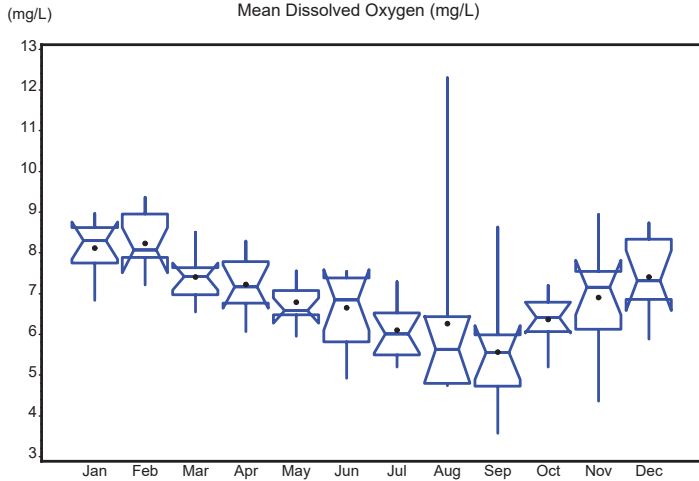
S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Not Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends
S_21FLSFWMLWL_8 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians



S_21FLSFWMLWL_8 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



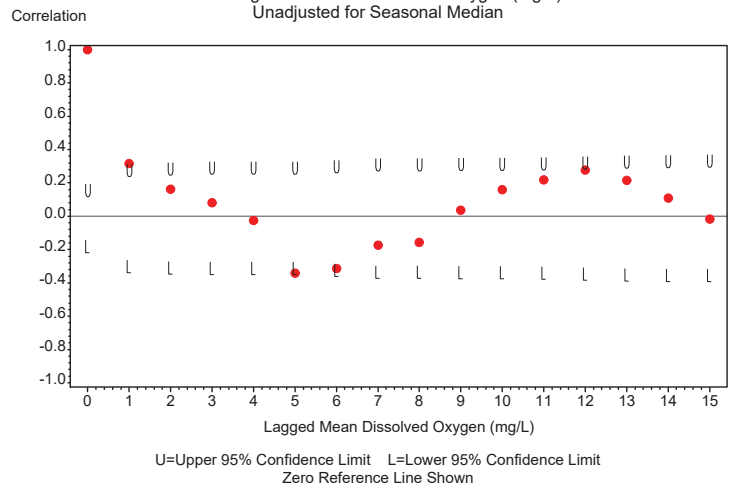
S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.317	0.144	0.289	-0.289
2	0.163	0.149	0.298	-0.298
3	0.080	0.150	0.301	-0.301
4	-0.025	0.151	0.301	-0.301
5	-0.343	0.151	0.301	-0.301
6	-0.314	0.156	0.312	-0.312
7	-0.173	0.160	0.321	-0.321
8	-0.156	0.162	0.323	-0.323
9	0.035	0.163	0.325	-0.325
10	0.160	0.163	0.325	-0.325
11	0.218	0.164	0.328	-0.328
12	0.277	0.166	0.332	-0.332
13	0.215	0.169	0.338	-0.338

S_21FLSFWMLWL_8 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.110	0.171	0.342	-0.342
15	-0.016	0.171	0.343	-0.343

S_21FLSFWMLWL_8 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



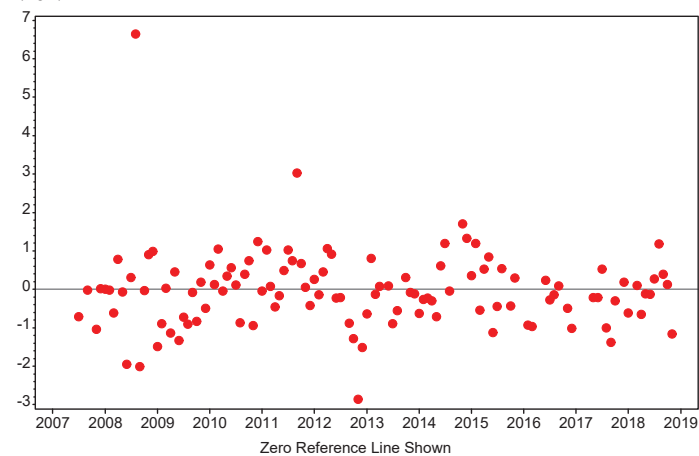
S_21FLSFWMLWL_8 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.021	0.794	0.843	0.01

S_21FLSFWMLWL_8 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.020873	0.79421	0.84295	0.01

S_21FLSFWMLWL_8 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Dissolved Oxygen (mg/L)



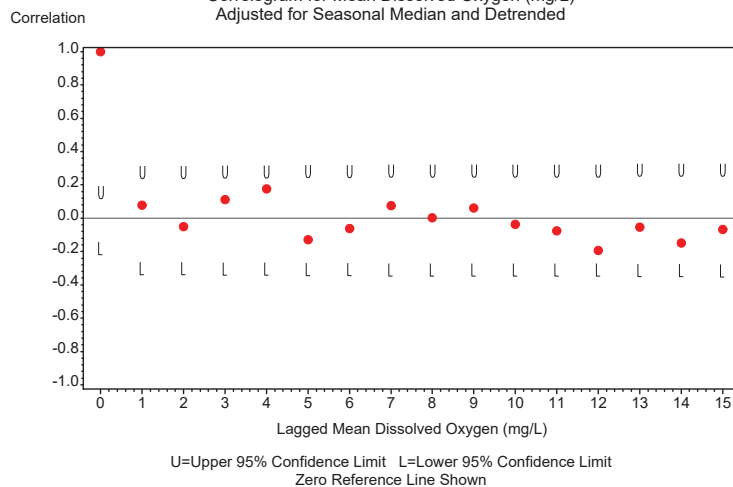
S_21FLSFWMLWL_8 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.083	0.167	-0.167
1	0.077	0.144	0.289	-0.289
2	-0.051	0.145	0.289	-0.289
3	0.111	0.145	0.290	-0.290
4	0.176	0.145	0.291	-0.291
5	-0.130	0.147	0.294	-0.294
6	-0.061	0.148	0.295	-0.295
7	0.074	0.148	0.296	-0.296
8	0.002	0.148	0.296	-0.296
9	0.061	0.148	0.296	-0.296
10	-0.037	0.148	0.296	-0.296
11	-0.077	0.148	0.297	-0.297
12	-0.194	0.149	0.297	-0.297
13	-0.055	0.150	0.301	-0.301

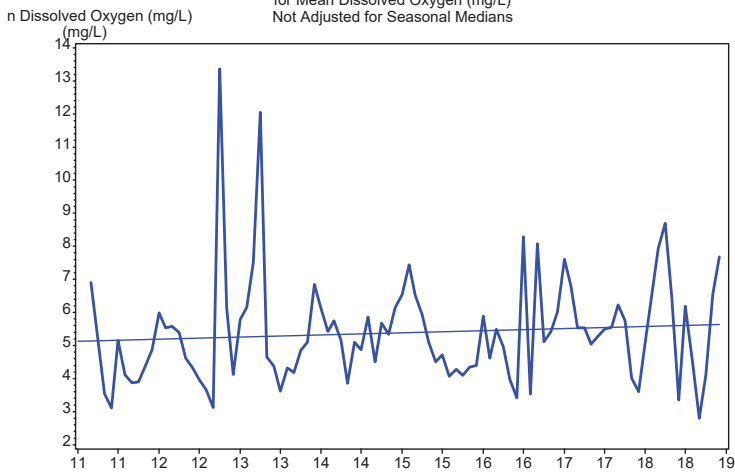
S_21FLSFWMLWL_8 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.148	0.150	0.301	-0.301
15	-0.068	0.151	0.303	-0.303

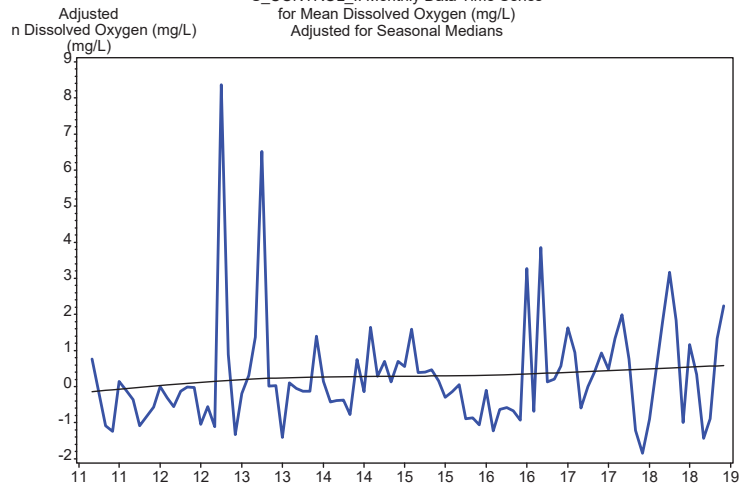
S_21FLSFWMLWL_8 Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended



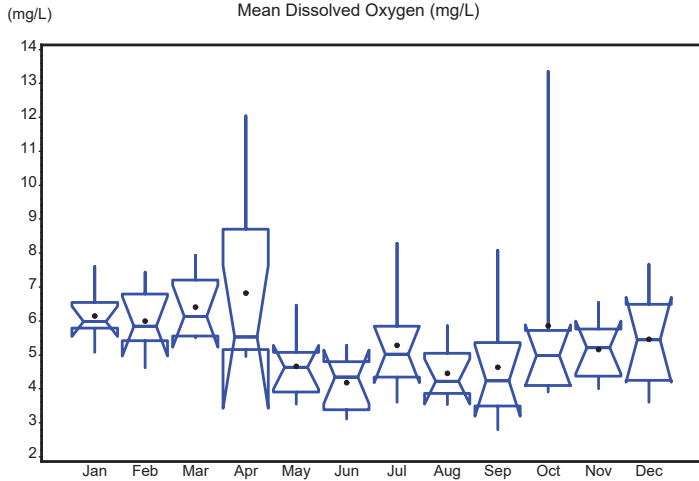
S_CONTROL_II Trends
S_CONTROL_II Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Not Adjusted for Seasonal Medians



S_CONTROL_II Trends
S_CONTROL_II Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians



S_CONTROL_II Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



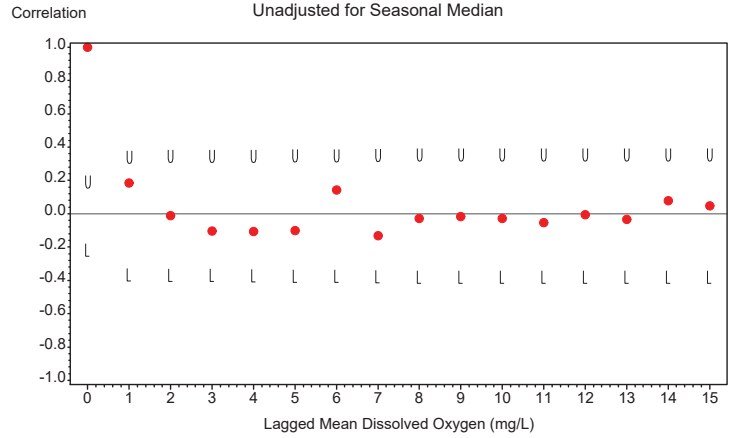
S_CONTROL_II Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.183	0.177	0.354	-0.354
2	-0.012	0.179	0.357	-0.357
3	-0.104	0.179	0.357	-0.357
4	-0.106	0.179	0.359	-0.359
5	-0.101	0.180	0.360	-0.360
6	0.143	0.181	0.361	-0.361
7	-0.131	0.182	0.364	-0.364
8	-0.029	0.183	0.366	-0.366
9	-0.017	0.183	0.366	-0.366
10	-0.029	0.183	0.366	-0.366
11	-0.053	0.183	0.366	-0.366
12	-0.007	0.183	0.366	-0.366
13	-0.033	0.183	0.366	-0.366

S_CONTROL_II Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.078	0.183	0.366	-0.366
15	0.046	0.183	0.367	-0.367

S_CONTROL_II Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

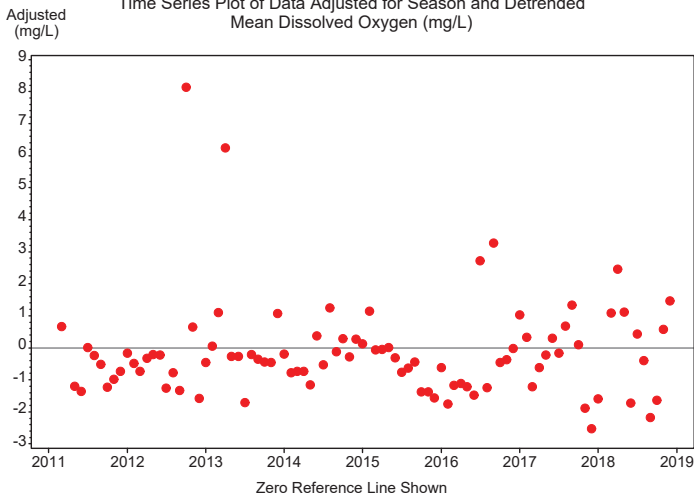
S_CONTROL_II Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.168	0.055	0.064	0.086

S_CONTROL_II Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.16829	0.054589	0.063968	0.086

S_CONTROL_II Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (mg/L)



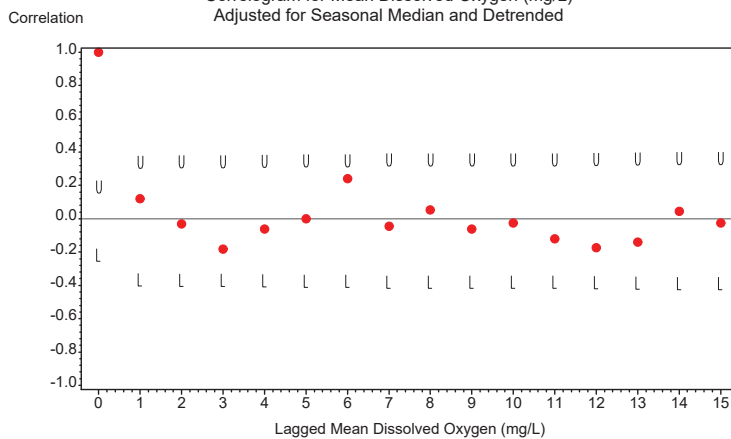
S_CONTROL_II Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.119	0.177	0.354	-0.354
2	-0.030	0.178	0.355	-0.355
3	-0.183	0.178	0.355	-0.355
4	-0.063	0.180	0.359	-0.359
5	0.000	0.180	0.360	-0.360
6	0.240	0.180	0.360	-0.360
7	-0.045	0.183	0.366	-0.366
8	0.054	0.183	0.367	-0.367
9	-0.061	0.183	0.367	-0.367
10	-0.025	0.184	0.367	-0.367
11	-0.120	0.184	0.367	-0.367
12	-0.173	0.185	0.369	-0.369
13	-0.140	0.186	0.372	-0.372

S_CONTROL_II Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

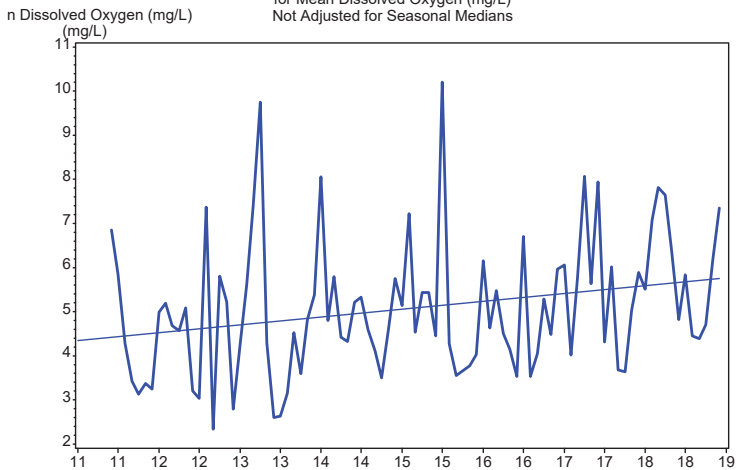
Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.045	0.187	0.375	-0.375
15	-0.027	0.187	0.375	-0.375

S_CONTROL_II Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

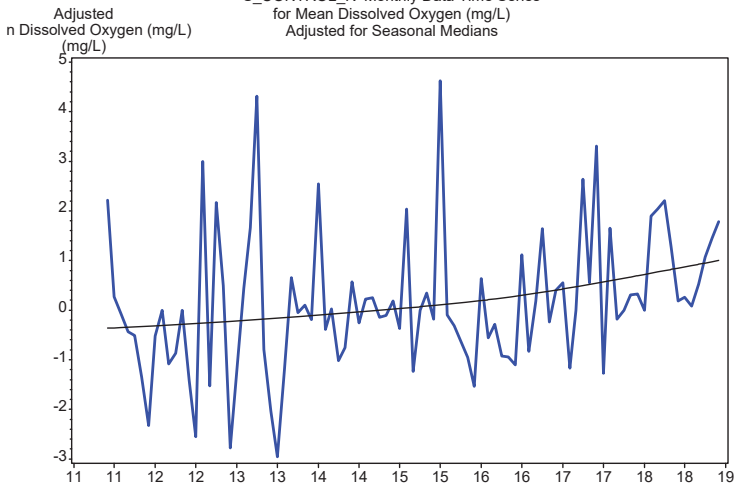


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown

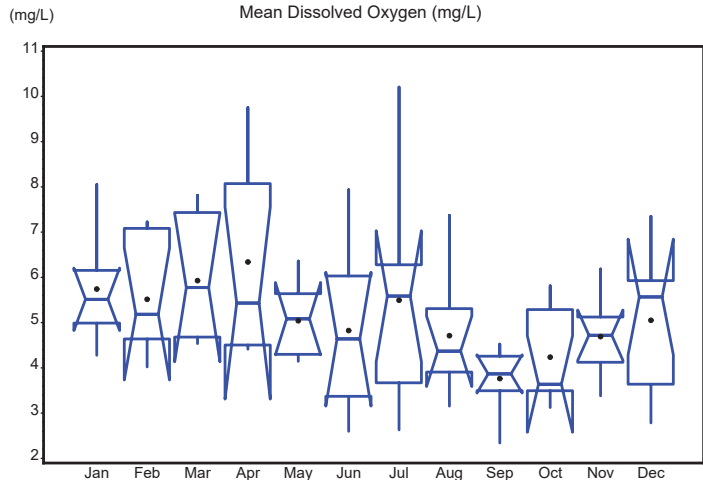
S_CONTROL_IV Trends
 S_CONTROL_IV Monthly Data Time Series
 for Mean Dissolved Oxygen (mg/L)
 Not Adjusted for Seasonal Medians



S_CONTROL_IV Trends
 S_CONTROL_IV Monthly Data Time Series
 for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Medians



S_CONTROL_IV Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



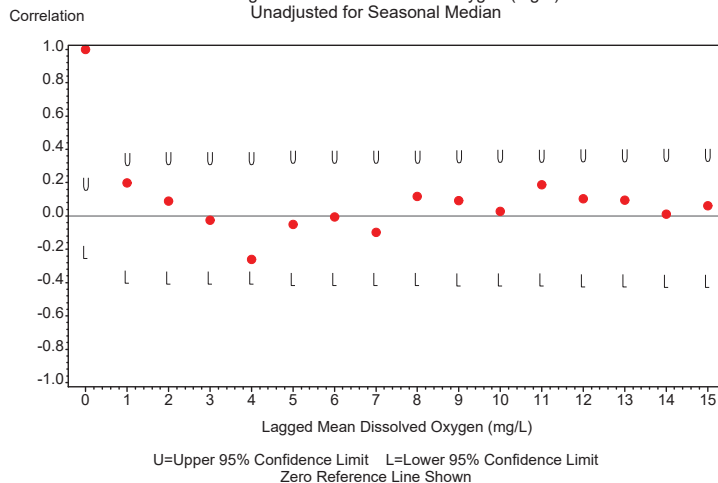
S_CONTROL_IV Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.198	0.177	0.354	-0.354
2	0.088	0.179	0.358	-0.358
3	-0.025	0.180	0.359	-0.359
4	-0.262	0.180	0.359	-0.359
5	-0.052	0.183	0.367	-0.367
6	-0.005	0.184	0.367	-0.367
7	-0.099	0.184	0.367	-0.367
8	0.118	0.184	0.368	-0.368
9	0.091	0.185	0.370	-0.370
10	0.028	0.185	0.371	-0.371
11	0.187	0.185	0.371	-0.371
12	0.103	0.187	0.375	-0.375
13	0.095	0.188	0.376	-0.376

S_CONTROL_IV Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.012	0.189	0.377	-0.377
15	0.062	0.189	0.377	-0.377

S_CONTROL_IV Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



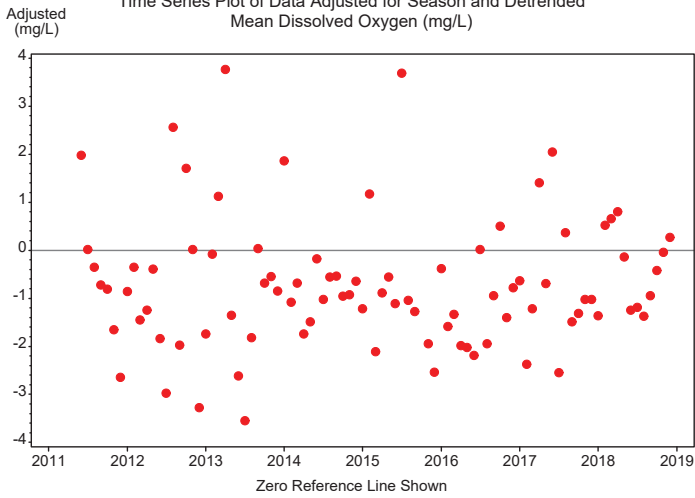
S_CONTROL_IV Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.231	.009	0.046	0.17

S_CONTROL_IV Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.23129	.00900304	0.046312	0.17

S_CONTROL_IV Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (mg/L)



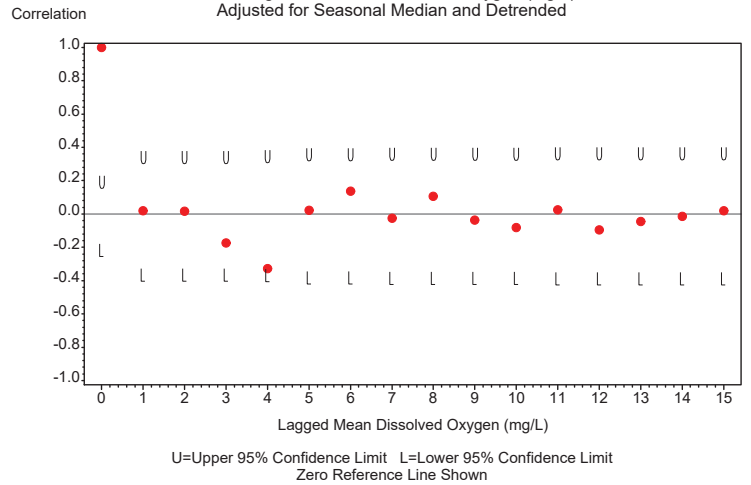
S_CONTROL_IV Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.018	0.177	0.354	-0.354
2	0.015	0.177	0.354	-0.354
3	-0.175	0.177	0.354	-0.354
4	-0.327	0.179	0.357	-0.357
5	0.023	0.185	0.369	-0.369
6	0.136	0.185	0.370	-0.370
7	-0.025	0.186	0.372	-0.372
8	0.105	0.186	0.372	-0.372
9	-0.037	0.186	0.373	-0.373
10	-0.083	0.187	0.373	-0.373
11	0.024	0.187	0.374	-0.374
12	-0.095	0.187	0.374	-0.374
13	-0.045	0.187	0.375	-0.375

S_CONTROL_IV Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

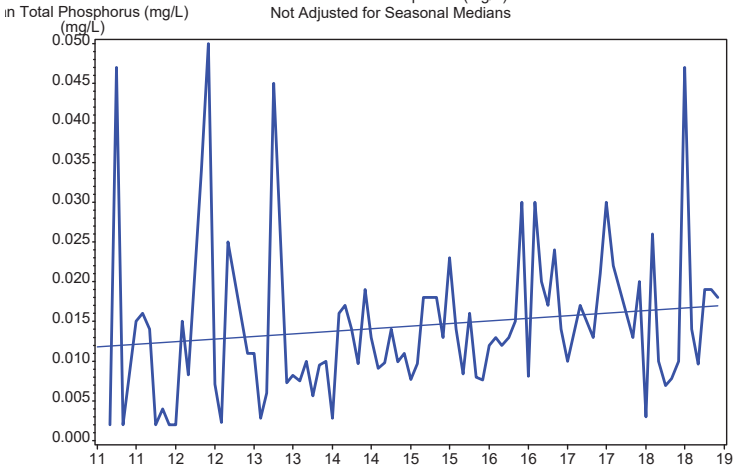
Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.015	0.188	0.375	-0.375
15	0.019	0.188	0.375	-0.375

S_CONTROL_IV Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended



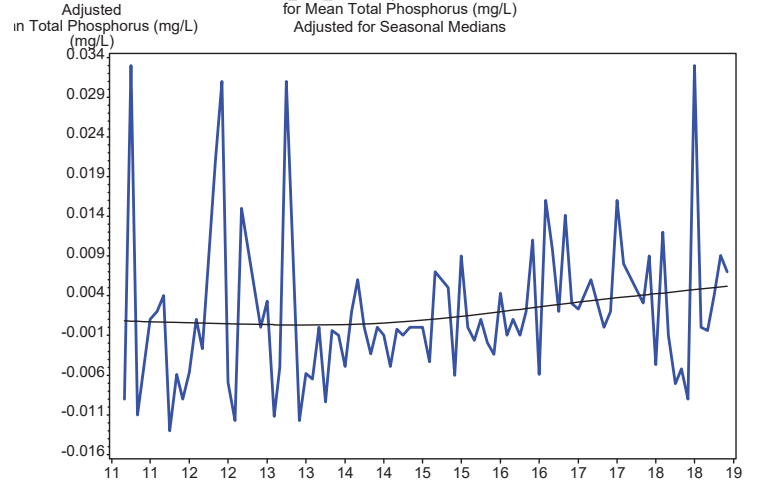
S_GW_1 Trends

S_GW_1 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Not Adjusted for Seasonal Medians

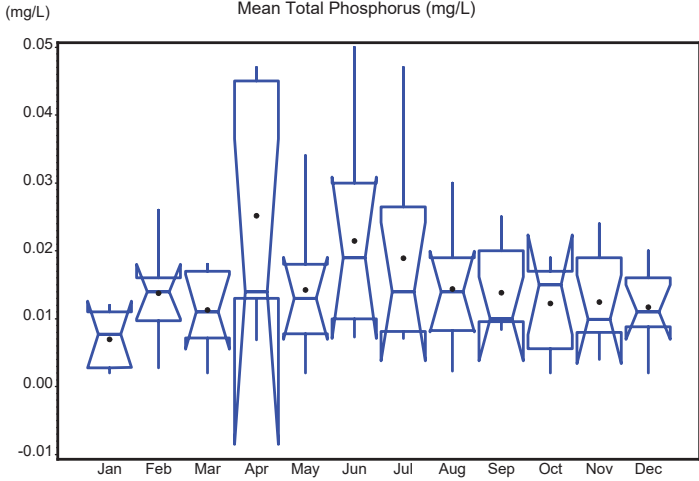


S_GW_1 Trends

S_GW_1 Monthly Data Time Series
for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians



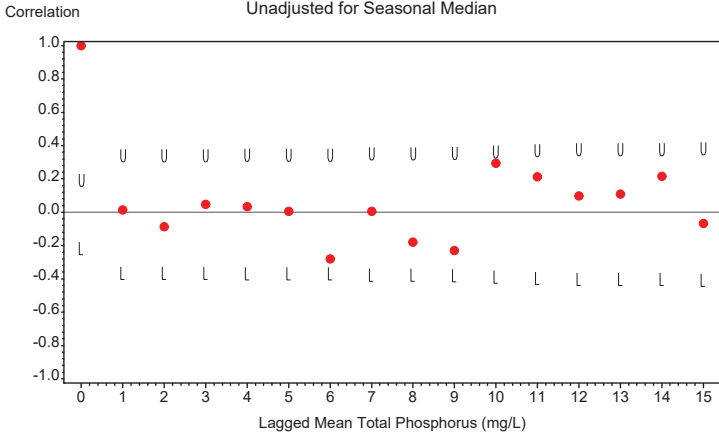
S_GW_1 Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.014	0.177	0.354	-0.354
2	-0.088	0.177	0.354	-0.354
3	0.047	0.177	0.354	-0.354
4	0.033	0.177	0.355	-0.355
5	0.005	0.177	0.355	-0.355
6	-0.280	0.177	0.355	-0.355
7	0.006	0.182	0.364	-0.364
8	-0.180	0.182	0.364	-0.364
9	-0.231	0.184	0.368	-0.368
10	0.293	0.187	0.374	-0.374
11	0.213	0.192	0.383	-0.383
12	0.098	0.194	0.388	-0.388
13	0.110	0.195	0.389	-0.389
14	0.215	0.195	0.390	-0.390
15	-0.068	0.198	0.395	-0.395

S_GW_1 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Median



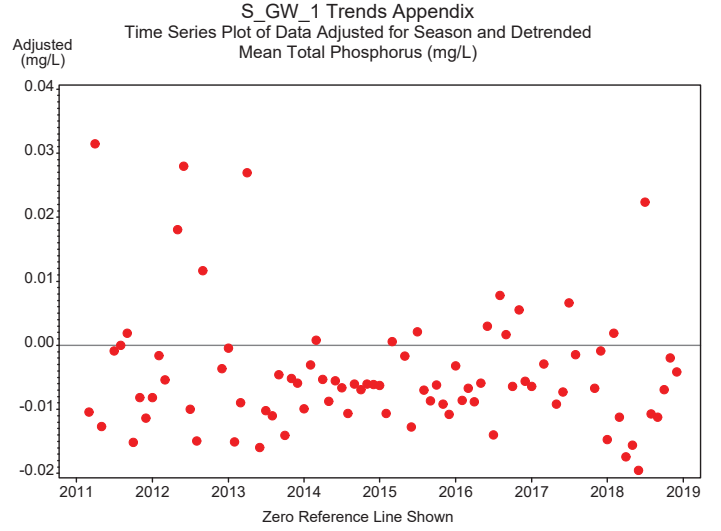
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_GW_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.265	.004	0.045	.001

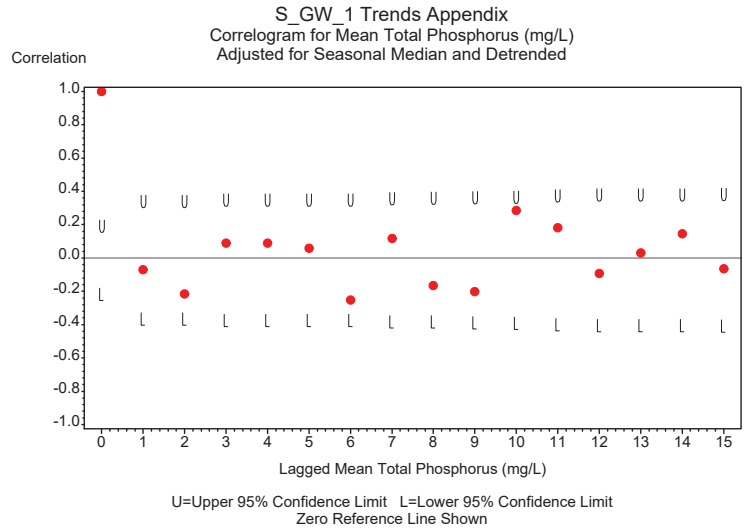
S_GW_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.26459	.00416219	0.045284	.00125



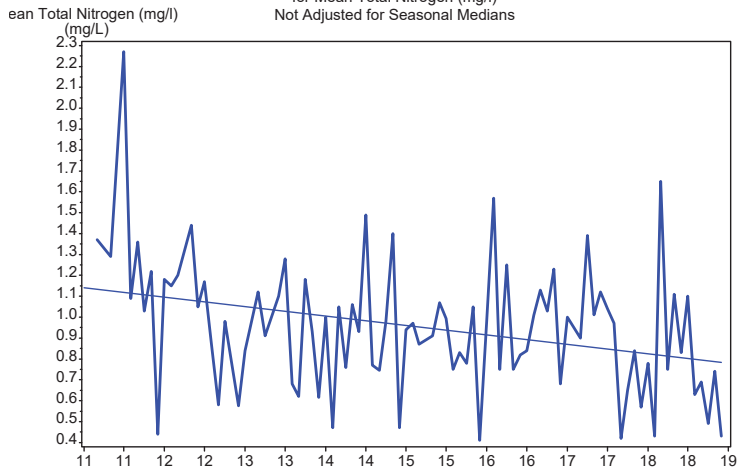
S_GW_1 Trends Appendix
 Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.070	0.177	0.354	-0.354
2	-0.217	0.177	0.354	-0.354
3	0.090	0.180	0.360	-0.360
4	0.089	0.180	0.361	-0.361
5	0.057	0.181	0.361	-0.361
6	-0.252	0.181	0.362	-0.362
7	0.116	0.185	0.369	-0.369
8	-0.166	0.185	0.371	-0.371
9	-0.202	0.187	0.374	-0.374
10	0.286	0.189	0.378	-0.378
11	0.182	0.194	0.387	-0.387
12	-0.093	0.195	0.391	-0.391
13	0.031	0.196	0.392	-0.392
14	0.145	0.196	0.392	-0.392
15	-0.065	0.197	0.394	-0.394



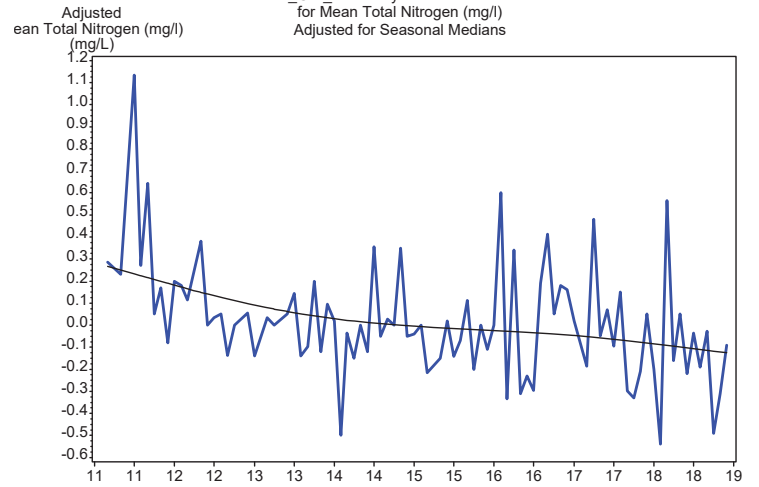
S_GW_1 Trends

S_GW_1 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Not Adjusted for Seasonal Medians



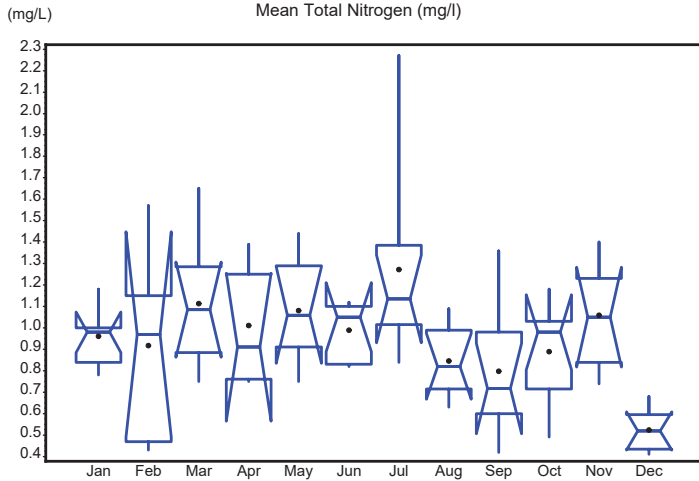
S_GW_1 Trends

S_GW_1 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians



S_GW_1 Trends Appendix

Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



S_GW_1 Trends Appendix

Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.042	0.177	0.354	-0.354
2	0.276	0.177	0.354	-0.354
3	0.007	0.181	0.363	-0.363
4	0.240	0.181	0.363	-0.363
5	-0.256	0.185	0.369	-0.369
6	-0.002	0.188	0.377	-0.377
7	-0.036	0.188	0.377	-0.377
8	0.194	0.188	0.377	-0.377
9	0.043	0.190	0.381	-0.381
10	0.116	0.191	0.381	-0.381
11	0.042	0.191	0.382	-0.382
12	0.425	0.191	0.383	-0.383
13	-0.040	0.201	0.402	-0.402

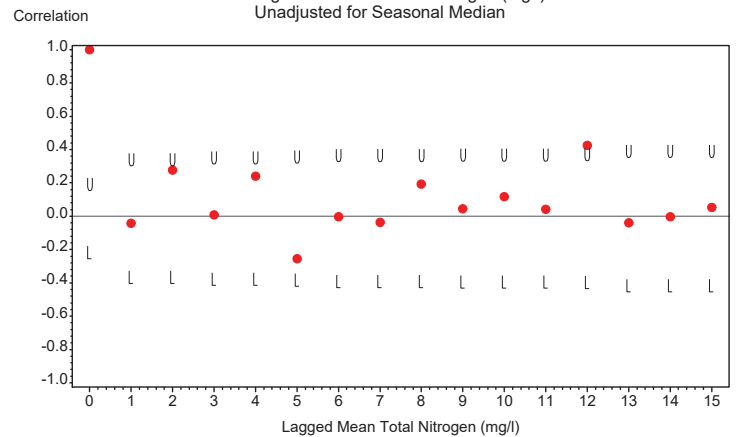
S_GW_1 Trends Appendix

Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.002	0.201	0.402	-0.402
15	0.052	0.201	0.402	-0.402

S_GW_1 Trends Appendix

Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



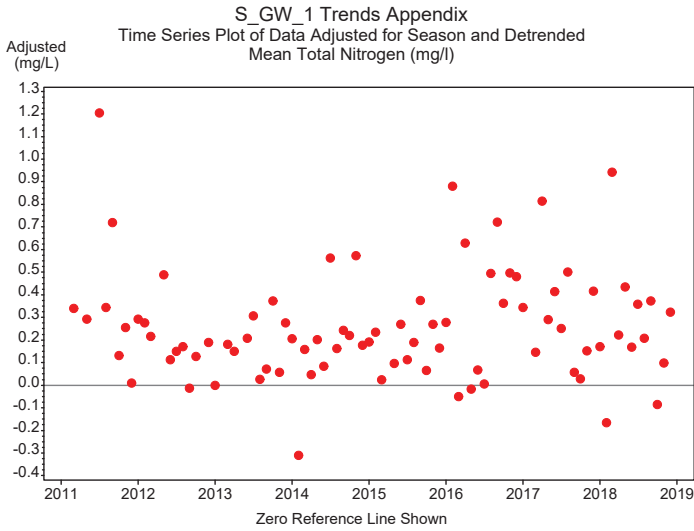
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_GW_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Nitrogen (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.283	.002	0.035	-0.046

S_GW_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.28309	.00191205	0.035020	-0.04625



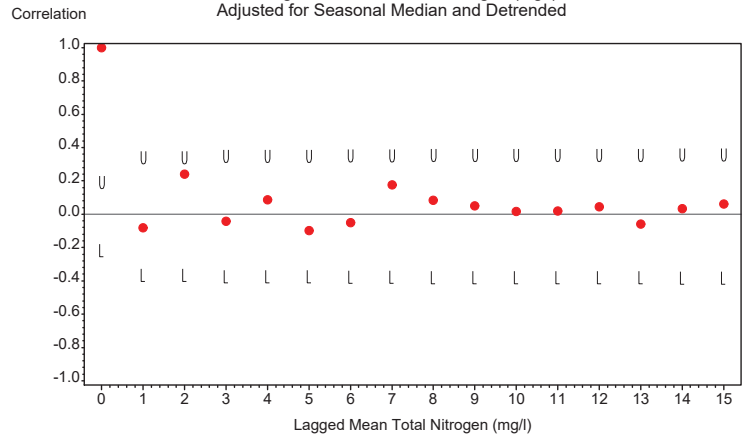
S_GW_1 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.081	0.177	0.354	-0.354
2	0.240	0.177	0.354	-0.354
3	-0.042	0.181	0.361	-0.361
4	0.087	0.181	0.361	-0.361
5	-0.099	0.181	0.362	-0.362
6	-0.050	0.182	0.363	-0.363
7	0.176	0.182	0.363	-0.363
8	0.083	0.184	0.367	-0.367
9	0.049	0.184	0.368	-0.368
10	0.015	0.184	0.368	-0.368
11	0.020	0.184	0.368	-0.368
12	0.044	0.184	0.368	-0.368
13	-0.060	0.184	0.368	-0.368

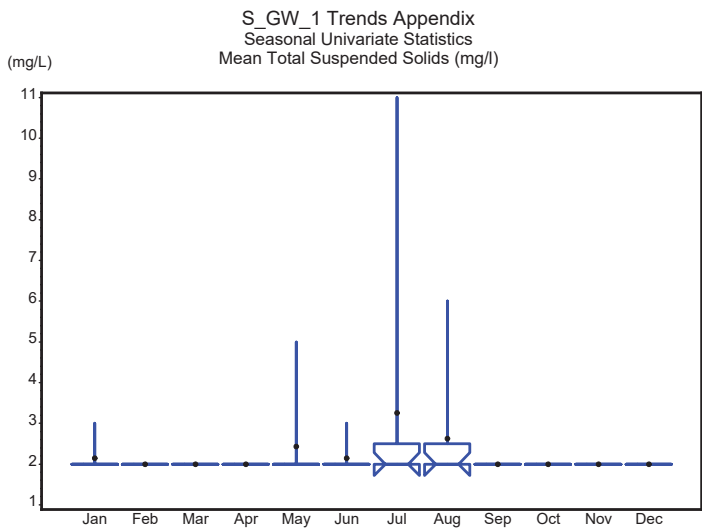
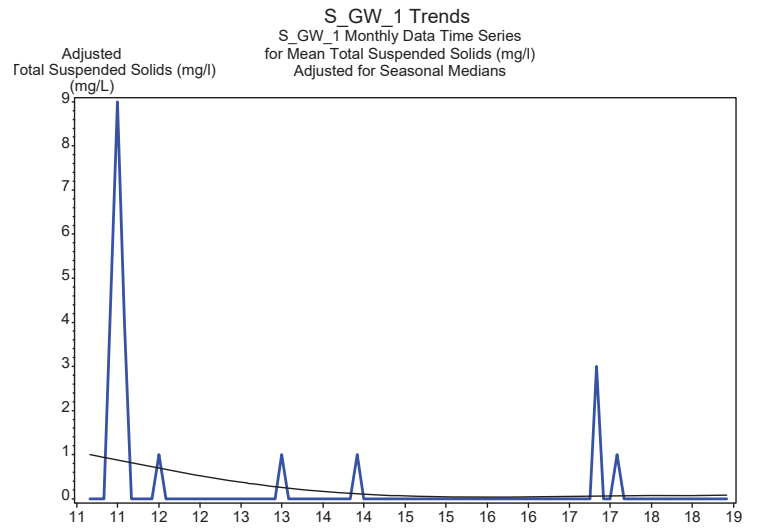
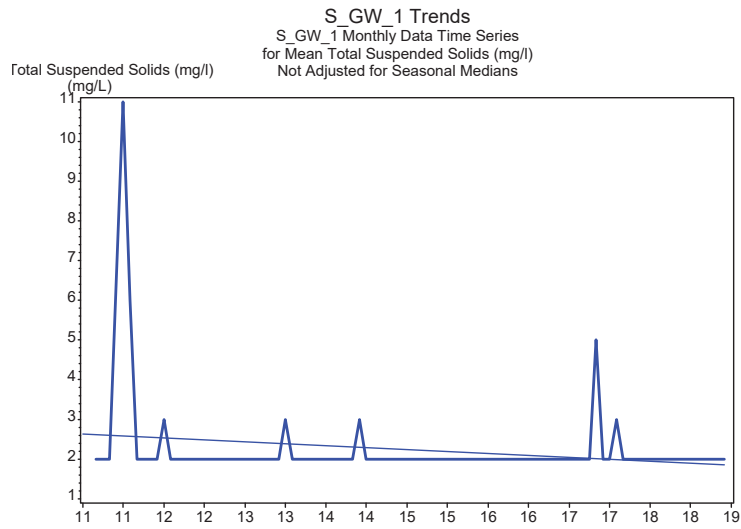
S_GW_1 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.033	0.184	0.369	-0.369
15	0.060	0.184	0.369	-0.369

S_GW_1 Trends Appendix
 Correlogram for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown



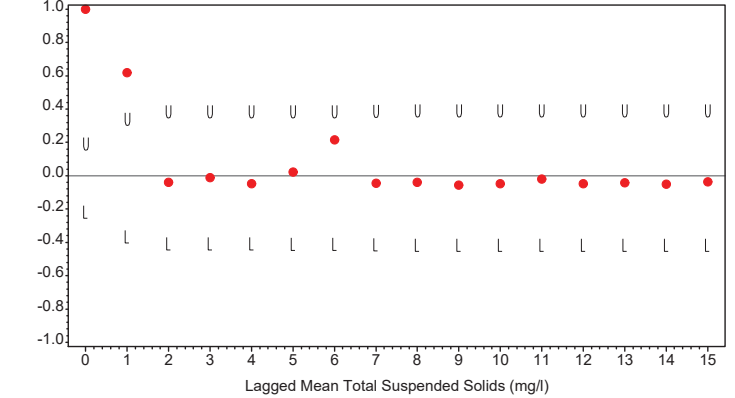
S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.619	0.177	0.354	-0.354
2	-0.039	0.198	0.396	-0.396
3	-0.011	0.198	0.396	-0.396
4	-0.048	0.198	0.396	-0.396
5	0.022	0.198	0.397	-0.397
6	0.214	0.198	0.397	-0.397
7	-0.045	0.201	0.401	-0.401
8	-0.040	0.201	0.402	-0.402
9	-0.057	0.201	0.402	-0.402
10	-0.048	0.201	0.402	-0.402
11	-0.019	0.201	0.402	-0.402
12	-0.049	0.201	0.402	-0.402
13	-0.042	0.201	0.403	-0.403

S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.050	0.201	0.403	-0.403
15	-0.037	0.202	0.403	-0.403

S_GW_1 Trends Appendix
Correlogram for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

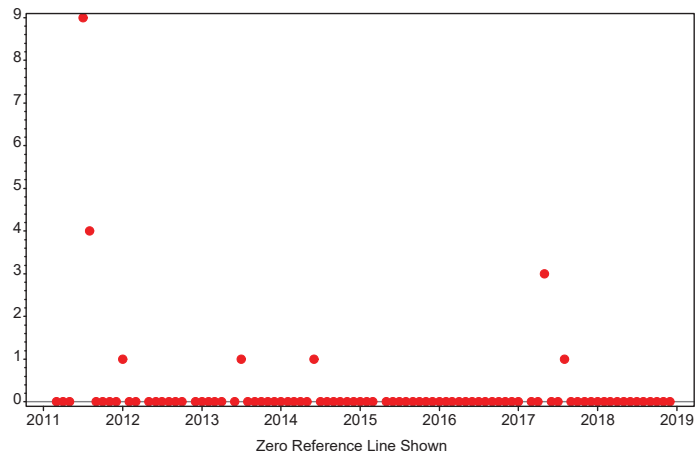
S_GW_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.064	0.124	0.148	0

S_GW_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.063830	0.12378	0.14786	0

S_GW_1 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Suspended Solids (mg/l)



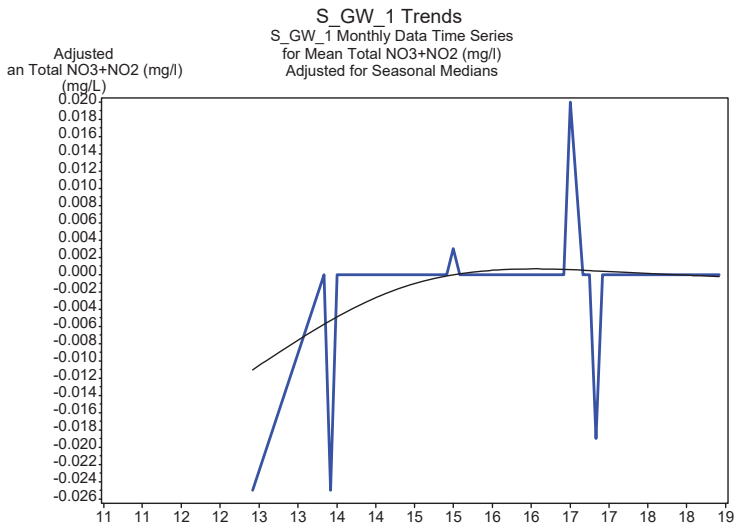
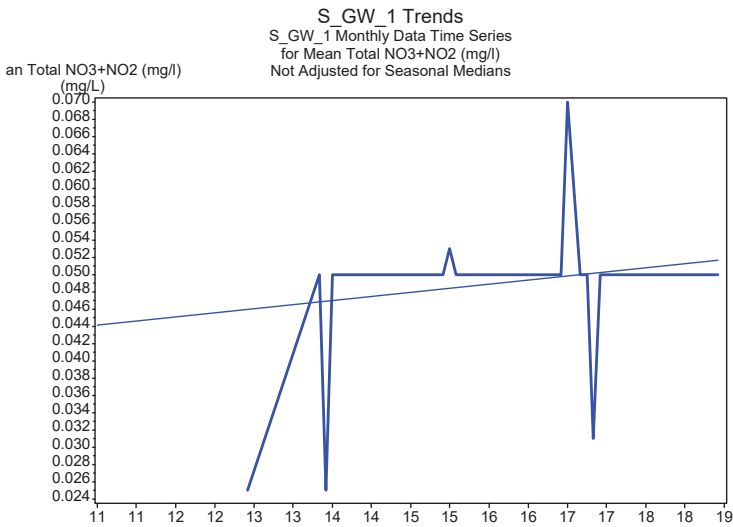
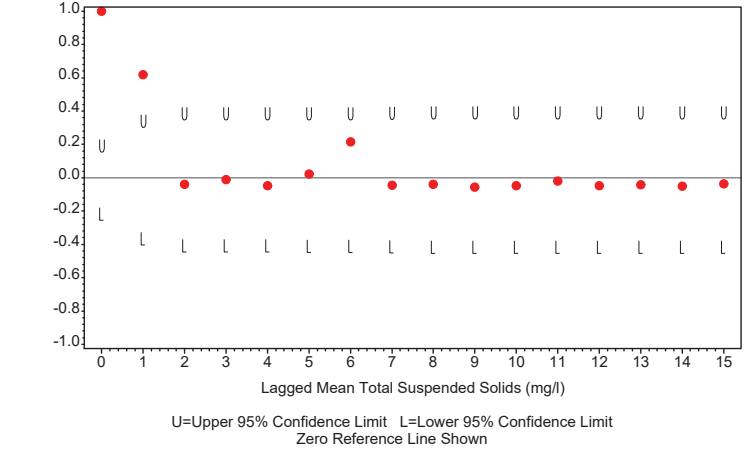
S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.619	0.177	0.354	-0.354
2	-0.039	0.198	0.396	-0.396
3	-0.011	0.198	0.396	-0.396
4	-0.048	0.198	0.396	-0.396
5	0.022	0.198	0.397	-0.397
6	0.214	0.198	0.397	-0.397
7	-0.045	0.201	0.401	-0.401
8	-0.040	0.201	0.402	-0.402
9	-0.057	0.201	0.402	-0.402
10	-0.048	0.201	0.402	-0.402
11	-0.019	0.201	0.402	-0.402
12	-0.049	0.201	0.402	-0.402
13	-0.042	0.201	0.403	-0.403

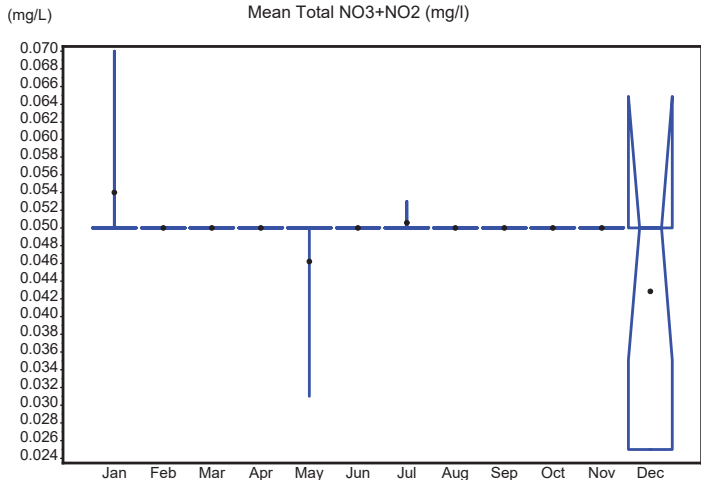
S_GW_1 Trends Appendix
 Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.050	0.201	0.403	-0.403
15	-0.037	0.202	0.403	-0.403

S_GW_1 Trends Appendix
 Correlogram for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended



S_GW_1 Trends Appendix
Seasonal Univariate Statistics
Mean Total NO3+NO2 (mg/l)



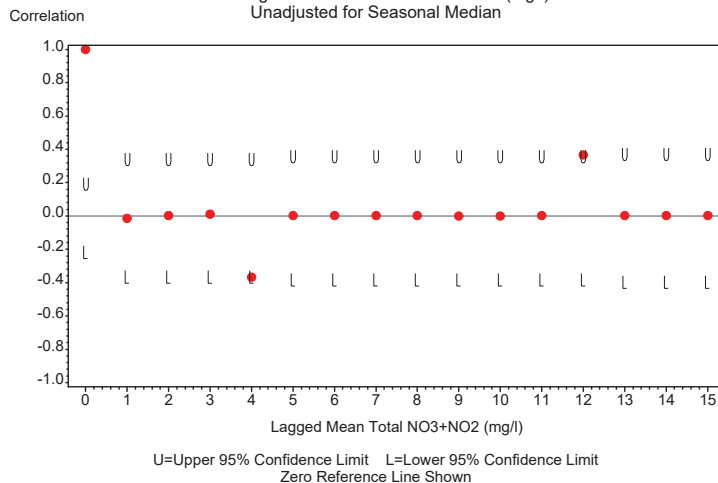
S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.014	0.177	0.354	-0.354
2	0.002	0.177	0.354	-0.354
3	0.011	0.177	0.354	-0.354
4	-0.366	0.177	0.354	-0.354
5	0.002	0.185	0.369	-0.369
6	0.002	0.185	0.369	-0.369
7	0.002	0.185	0.369	-0.369
8	0.002	0.185	0.369	-0.369
9	0.000	0.185	0.369	-0.369
10	0.000	0.185	0.369	-0.369
11	0.003	0.185	0.369	-0.369
12	0.365	0.185	0.369	-0.369
13	0.003	0.192	0.384	-0.384

S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.003	0.192	0.384	-0.384
15	0.003	0.192	0.384	-0.384

S_GW_1 Trends Appendix
Correlogram for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Median



S_GW_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

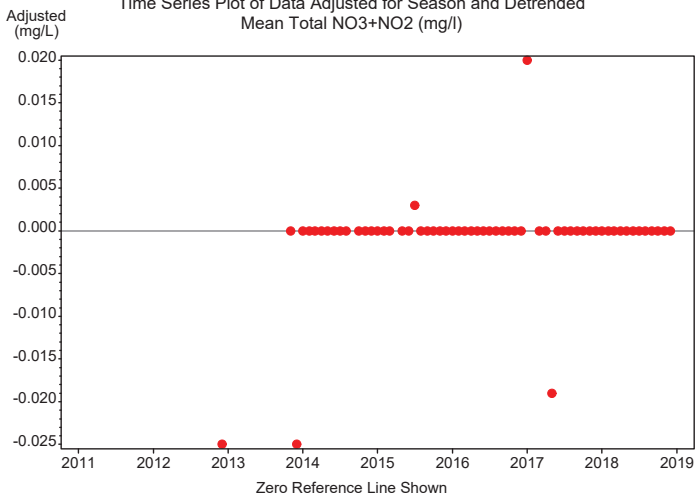
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.065	0.325	0.234	0

S_GW_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.064516	0.32540	0.23448	0

S_GW_1 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended
Mean Total NO3+NO2 (mg/l)



S_GW_1 Trends Appendix

Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.014	0.177	0.354	-0.354
2	0.002	0.177	0.354	-0.354
3	0.011	0.177	0.354	-0.354
4	-0.366	0.177	0.354	-0.354
5	0.002	0.185	0.369	-0.369
6	0.002	0.185	0.369	-0.369
7	0.002	0.185	0.369	-0.369
8	0.002	0.185	0.369	-0.369
9	0.000	0.185	0.369	-0.369
10	0.000	0.185	0.369	-0.369
11	0.003	0.185	0.369	-0.369
12	0.365	0.185	0.369	-0.369
13	0.003	0.192	0.384	-0.384

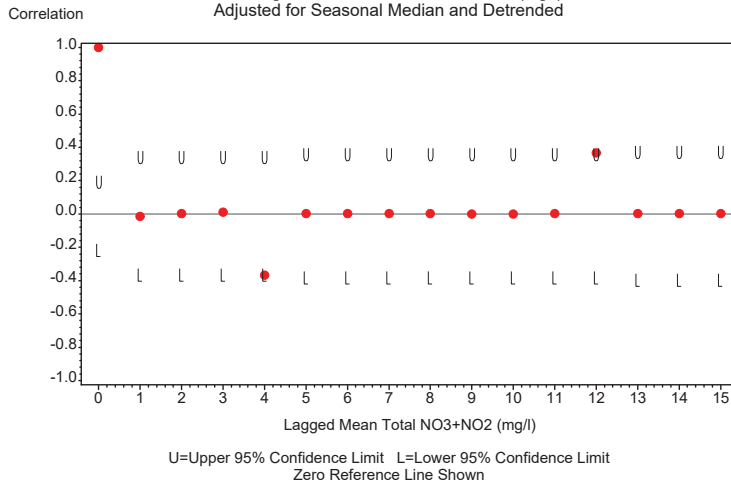
S_GW_1 Trends Appendix

Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.003	0.192	0.384	-0.384
15	0.003	0.192	0.384	-0.384

S_GW_1 Trends Appendix

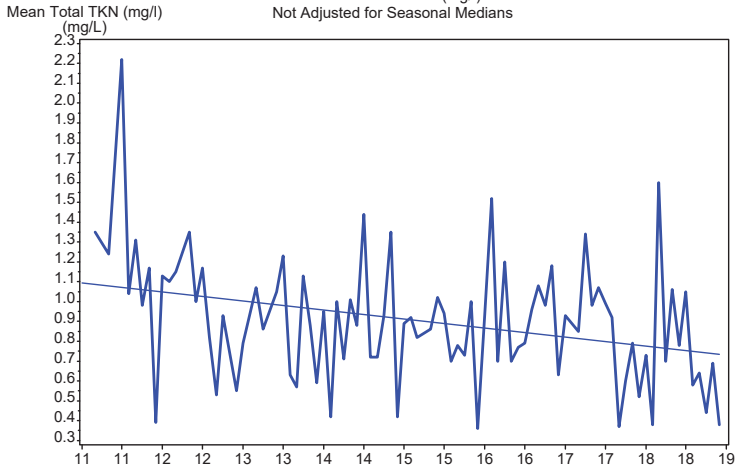
Correlogram for Mean Total NO3+NO2 (mg/l)
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

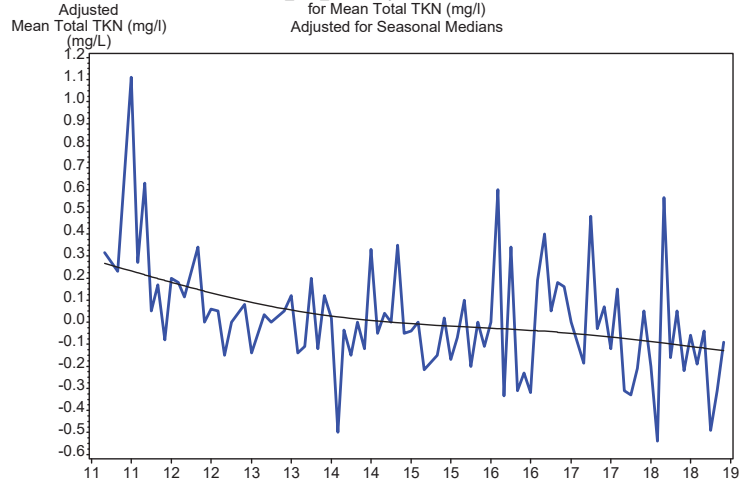
S_GW_1 Trends

S_GW_1 Monthly Data Time Series
for Mean Total TKN (mg/l)
Not Adjusted for Seasonal Medians

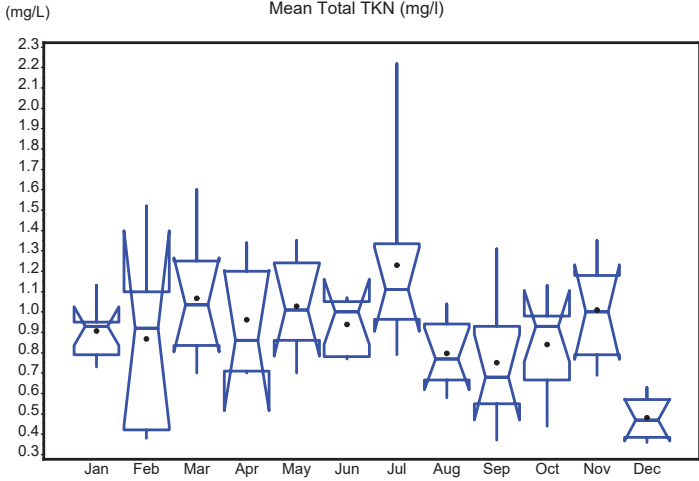


S_GW_1 Trends

S_GW_1 Monthly Data Time Series
for Mean Total TKN (mg/l)
Adjusted for Seasonal Medians



S_GW_1 Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



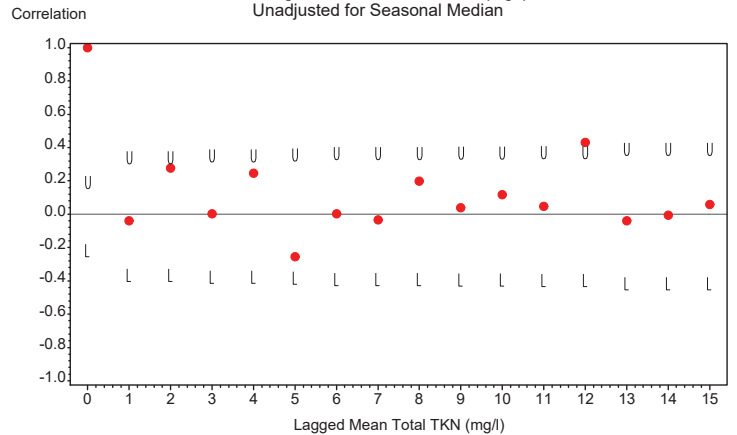
S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.040	0.177	0.354	-0.354
2	0.278	0.177	0.354	-0.354
3	0.002	0.181	0.363	-0.363
4	0.246	0.181	0.363	-0.363
5	-0.255	0.185	0.370	-0.370
6	0.001	0.188	0.377	-0.377
7	-0.035	0.188	0.377	-0.377
8	0.198	0.189	0.377	-0.377
9	0.038	0.191	0.381	-0.381
10	0.116	0.191	0.382	-0.382
11	0.047	0.192	0.383	-0.383
12	0.432	0.192	0.383	-0.383
13	-0.039	0.202	0.403	-0.403

S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.007	0.202	0.403	-0.403
15	0.058	0.202	0.403	-0.403

S_GW_1 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



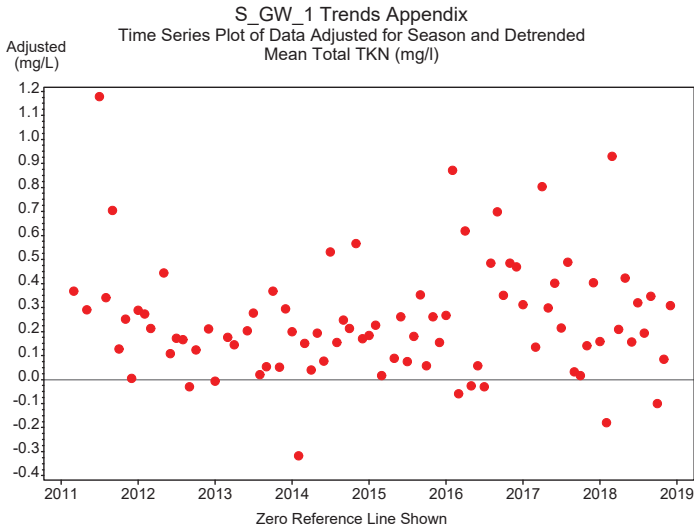
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_GW_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total TKN (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.29	.001	0.032	-0.045

S_GW_1 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total TKN (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
-0.29044	.00144641	0.031782	-0.044667



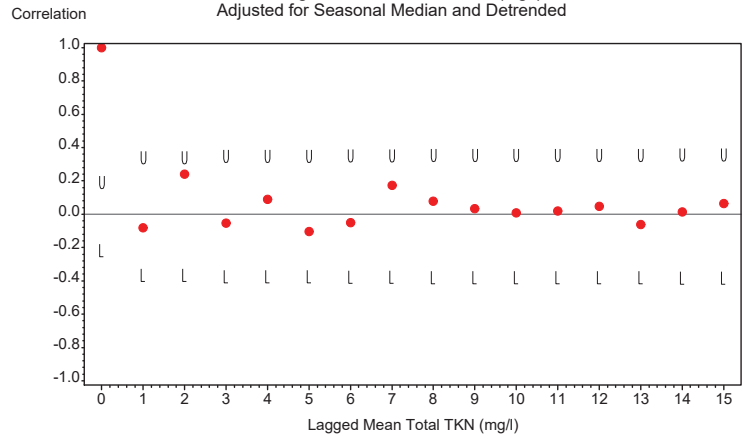
S_GW_1 Trends Appendix
 Autocorrelation Statistics for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended

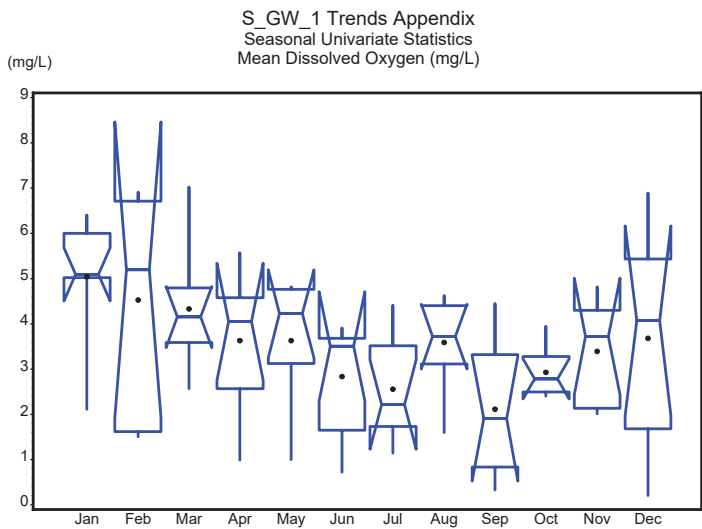
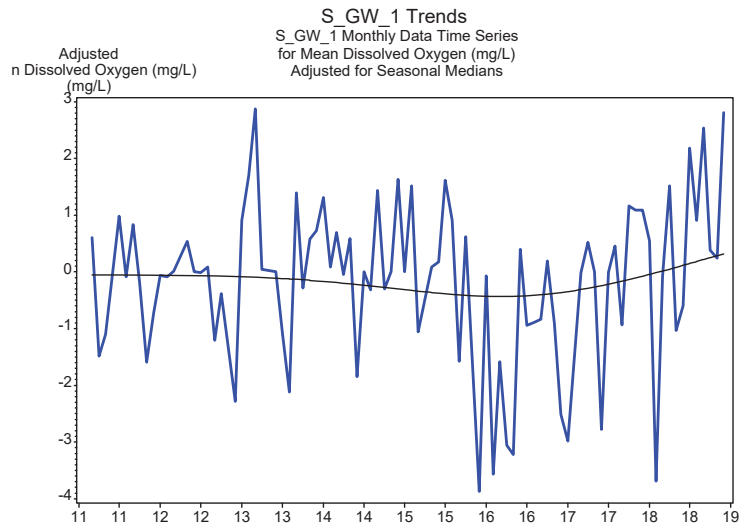
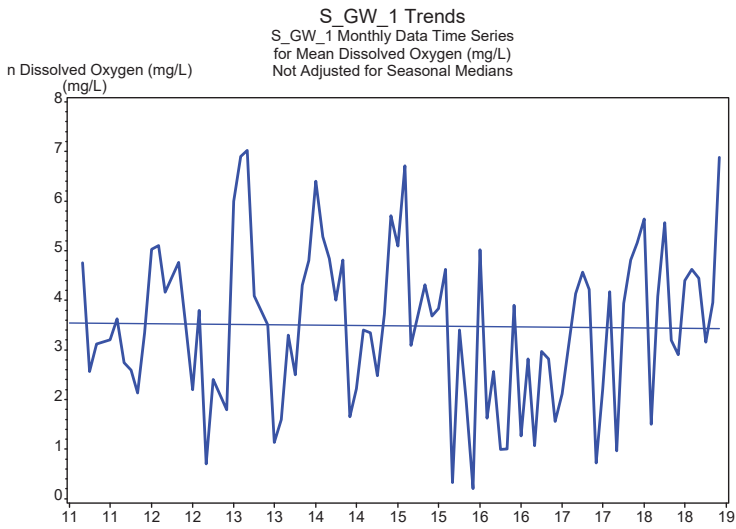
Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.082	0.177	0.354	-0.354
2	0.239	0.177	0.354	-0.354
3	-0.053	0.180	0.361	-0.361
4	0.090	0.181	0.361	-0.361
5	-0.103	0.181	0.362	-0.362
6	-0.050	0.182	0.363	-0.363
7	0.174	0.182	0.364	-0.364
8	0.079	0.184	0.367	-0.367
9	0.034	0.184	0.368	-0.368
10	0.008	0.184	0.368	-0.368
11	0.018	0.184	0.368	-0.368
12	0.046	0.184	0.368	-0.368
13	-0.062	0.184	0.368	-0.368

S_GW_1 Trends Appendix
 Autocorrelation Statistics for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.014	0.184	0.369	-0.369
15	0.063	0.184	0.369	-0.369

S_GW_1 Trends Appendix
 Correlogram for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended





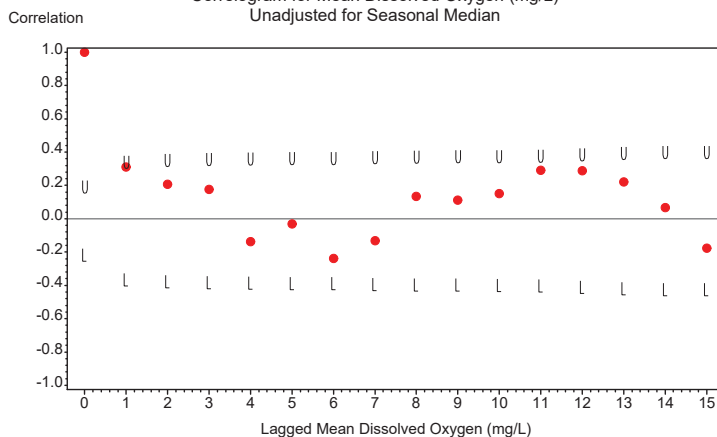
S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.311	0.177	0.354	-0.354
2	0.207	0.182	0.365	-0.365
3	0.176	0.185	0.370	-0.370
4	-0.137	0.187	0.373	-0.373
5	-0.030	0.188	0.375	-0.375
6	-0.238	0.188	0.375	-0.375
7	-0.131	0.191	0.382	-0.382
8	0.134	0.192	0.383	-0.383
9	0.111	0.193	0.385	-0.385
10	0.150	0.193	0.387	-0.387
11	0.292	0.195	0.389	-0.389
12	0.287	0.199	0.398	-0.398
13	0.221	0.203	0.407	-0.407

S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.066	0.206	0.412	-0.412
15	-0.177	0.206	0.412	-0.412

S_GW_1 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

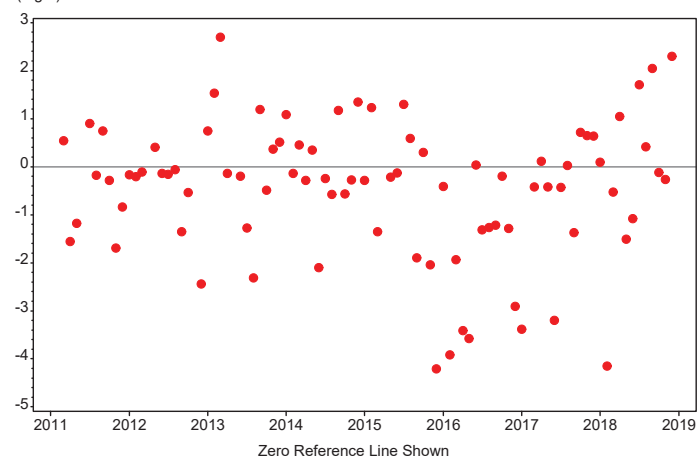
S_GW_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.078	0.401	0.509	0.057

S_GW_1 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.078014	0.40053	0.50903	0.057

S_GW_1 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (mg/L)



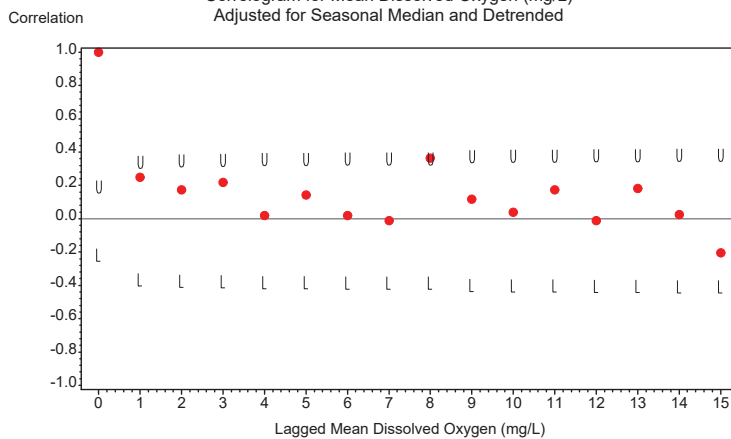
S_GW_1 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.250	0.177	0.354	-0.354
2	0.172	0.180	0.361	-0.361
3	0.218	0.182	0.364	-0.364
4	0.020	0.185	0.370	-0.370
5	0.141	0.185	0.370	-0.370
6	0.018	0.186	0.372	-0.372
7	-0.012	0.186	0.372	-0.372
8	0.364	0.186	0.372	-0.372
9	0.116	0.193	0.387	-0.387
10	0.040	0.194	0.388	-0.388
11	0.173	0.194	0.388	-0.388
12	-0.013	0.196	0.391	-0.391
13	0.182	0.196	0.391	-0.391

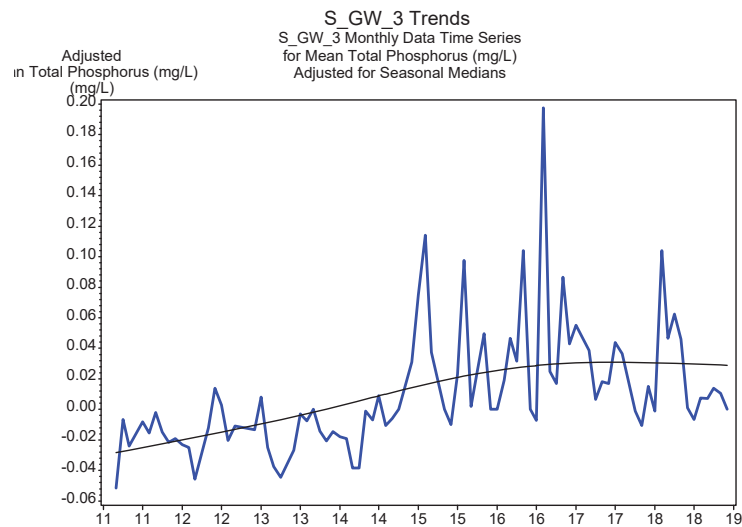
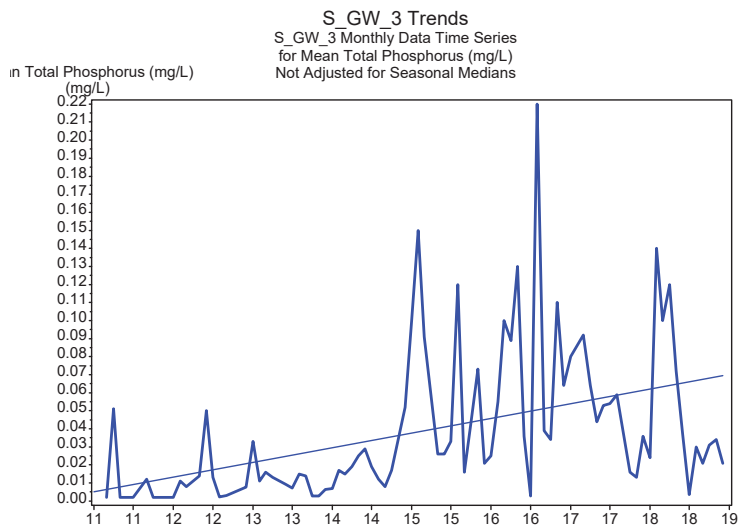
S_GW_1 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.026	0.197	0.395	-0.395
15	-0.205	0.197	0.395	-0.395

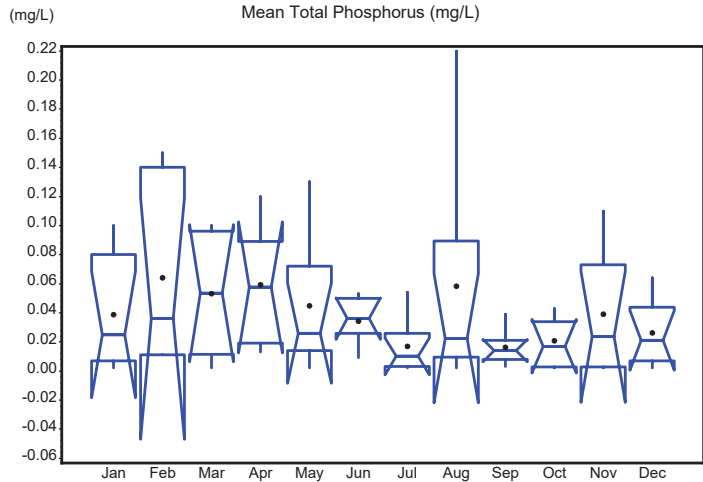
S_GW_1 Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown



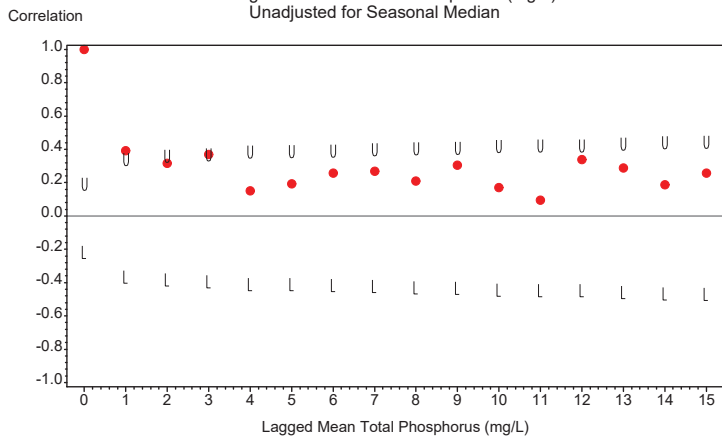
S_GW_3 Trends Appendix
Seasonal Univariate Statistics
Mean Total Phosphorus (mg/L)



S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.391	0.177	0.354	-0.354
2	0.317	0.186	0.371	-0.371
3	0.369	0.191	0.382	-0.382
4	0.150	0.198	0.397	-0.397
5	0.192	0.200	0.399	-0.399
6	0.258	0.201	0.403	-0.403
7	0.268	0.205	0.410	-0.410
8	0.210	0.209	0.417	-0.417
9	0.305	0.211	0.421	-0.421
10	0.171	0.215	0.431	-0.431
11	0.094	0.217	0.433	-0.433
12	0.337	0.217	0.434	-0.434
13	0.288	0.222	0.445	-0.445
14	0.186	0.226	0.453	-0.453
15	0.256	0.228	0.456	-0.456

S_GW_3 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

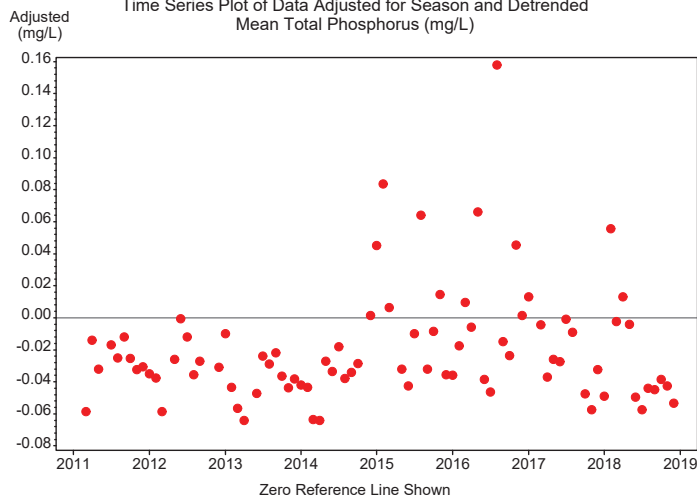
S_GW_3 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.515	0	0.013	.006

S_GW_3 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.51145	0	0.013747	.006

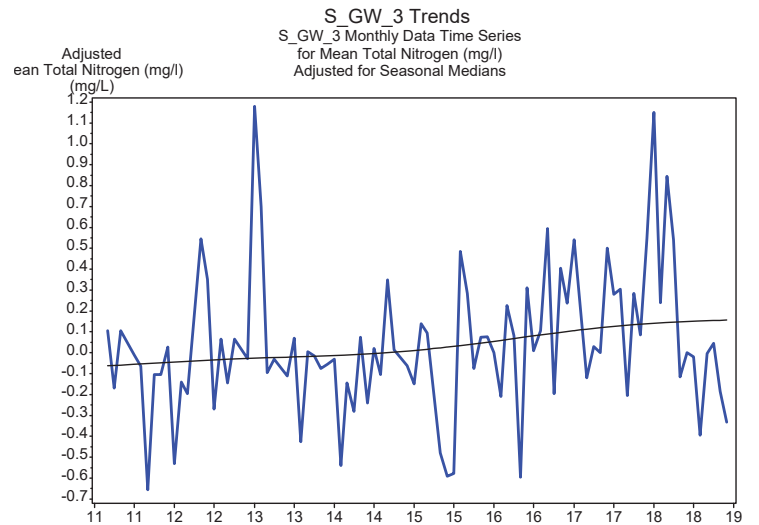
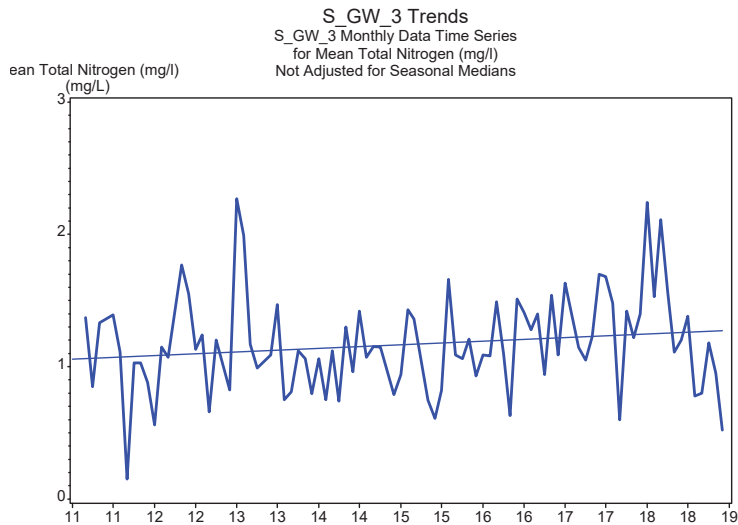
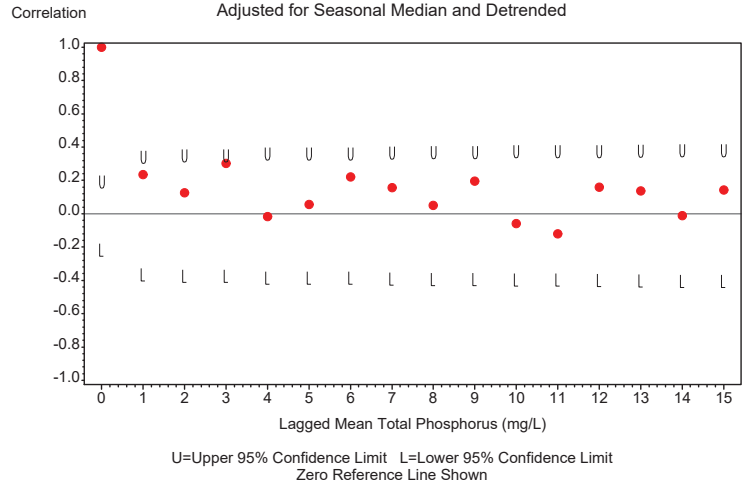
S_GW_3 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Phosphorus (mg/L)



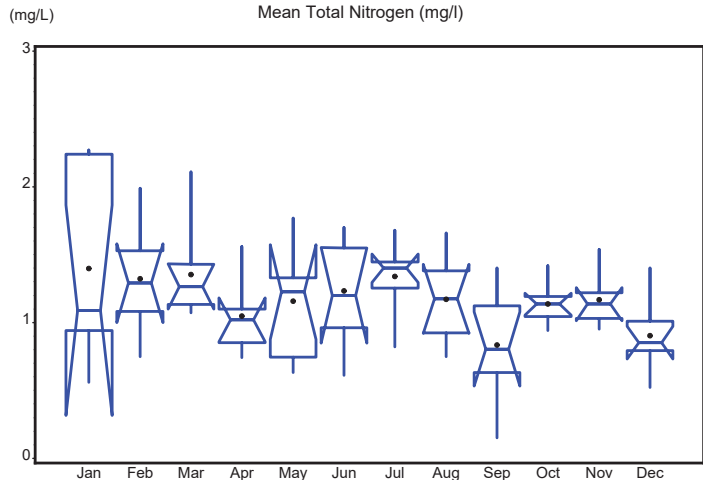
S_GW_3 Trends Appendix
 Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.235	0.177	0.354	-0.354
2	0.125	0.180	0.360	-0.360
3	0.302	0.181	0.362	-0.362
4	-0.018	0.186	0.372	-0.372
5	0.055	0.186	0.372	-0.372
6	0.220	0.186	0.373	-0.373
7	0.157	0.189	0.378	-0.378
8	0.051	0.190	0.381	-0.381
9	0.195	0.190	0.381	-0.381
10	-0.058	0.193	0.385	-0.385
11	-0.122	0.193	0.385	-0.385
12	0.159	0.193	0.387	-0.387
13	0.136	0.195	0.390	-0.390
14	-0.013	0.196	0.392	-0.392
15	0.143	0.196	0.392	-0.392

S_GW_3 Trends Appendix
 Correlogram for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended



S_GW_3 Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



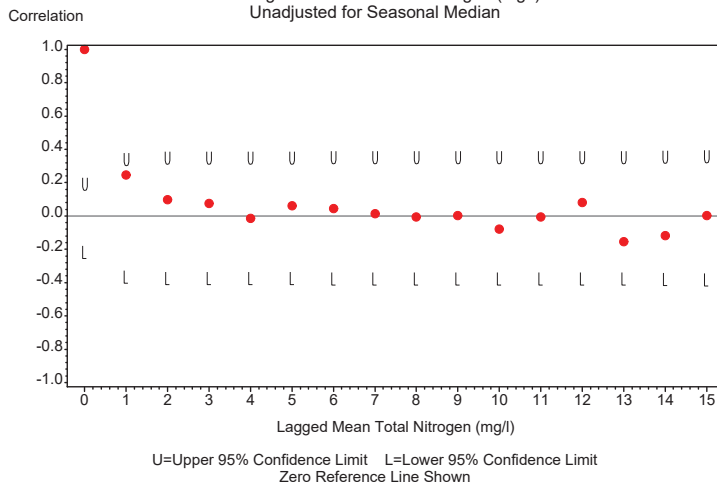
S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.245	0.177	0.354	-0.354
2	0.098	0.180	0.361	-0.361
3	0.074	0.181	0.362	-0.362
4	-0.014	0.181	0.362	-0.362
5	0.062	0.181	0.362	-0.362
6	0.043	0.181	0.363	-0.363
7	0.013	0.181	0.363	-0.363
8	-0.007	0.181	0.363	-0.363
9	0.001	0.181	0.363	-0.363
10	-0.079	0.181	0.363	-0.363
11	-0.007	0.182	0.364	-0.364
12	0.080	0.182	0.364	-0.364
13	-0.154	0.182	0.364	-0.364

S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.119	0.184	0.367	-0.367
15	0.002	0.184	0.369	-0.369

S_GW_3 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



S_GW_3 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

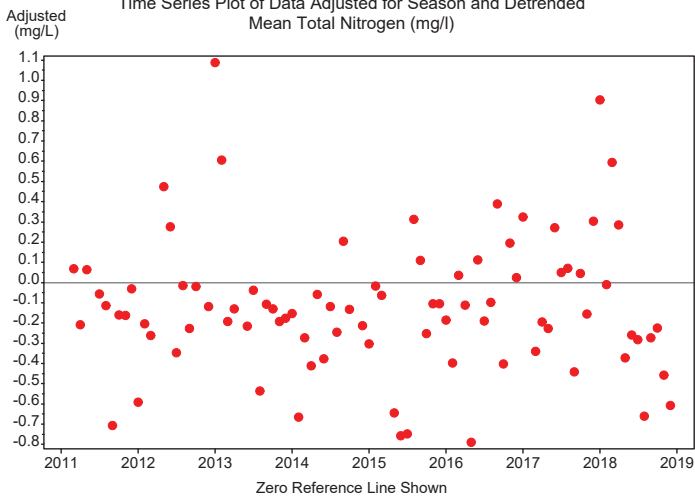
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.152	0.097	0.11	0.031

S_GW_3 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.15217	0.096906	0.10961	0.030833

S_GW_3 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Nitrogen (mg/l)



S_GW_3 Trends Appendix

Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.257	0.177	0.354	-0.354
2	0.122	0.181	0.361	-0.361
3	0.066	0.181	0.363	-0.363
4	-0.081	0.182	0.363	-0.363
5	0.035	0.182	0.364	-0.364
6	-0.002	0.182	0.364	-0.364
7	-0.053	0.182	0.364	-0.364
8	-0.075	0.182	0.365	-0.365
9	-0.055	0.183	0.365	-0.365
10	-0.053	0.183	0.366	-0.366
11	-0.019	0.183	0.366	-0.366
12	-0.071	0.183	0.366	-0.366
13	-0.107	0.183	0.367	-0.367

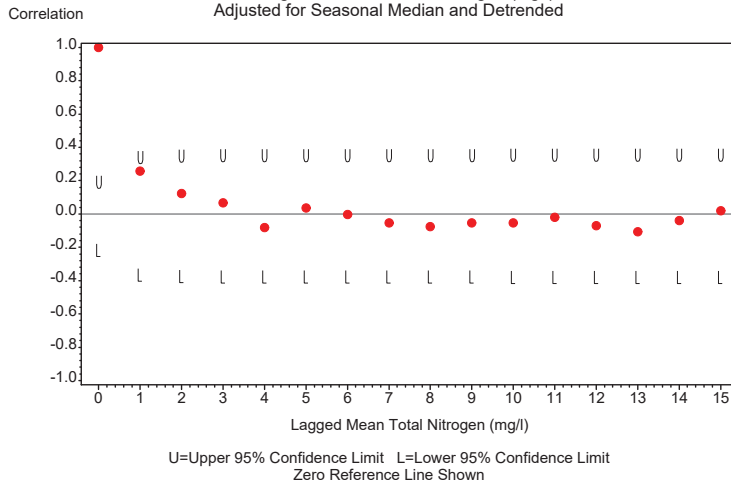
S_GW_3 Trends Appendix

Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.040	0.184	0.368	-0.368
15	0.018	0.184	0.368	-0.368

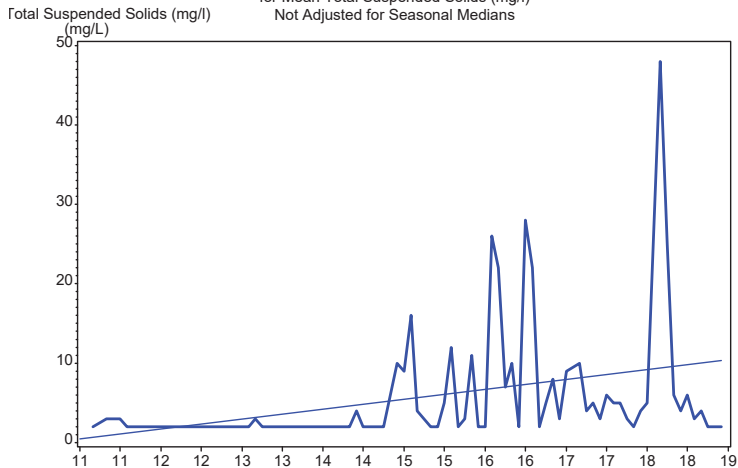
S_GW_3 Trends Appendix

Correlogram for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

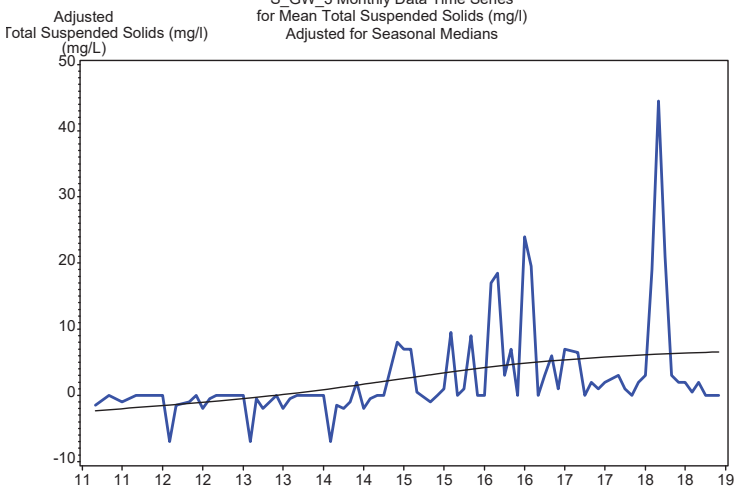


U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

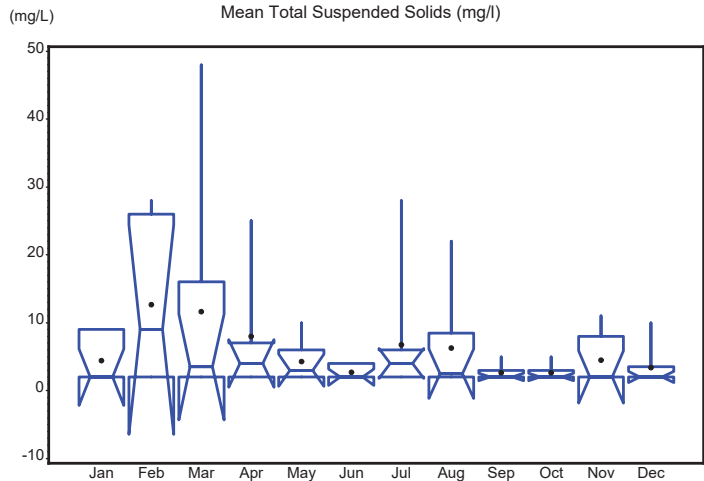
S_GW_3 Trends
S_GW_3 Monthly Data Time Series
for Mean Total Suspended Solids (mg/l)
Not Adjusted for Seasonal Medians



S_GW_3 Trends
S_GW_3 Monthly Data Time Series
for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Medians



S_GW_3 Trends Appendix
Seasonal Univariate Statistics
Mean Total Suspended Solids (mg/l)



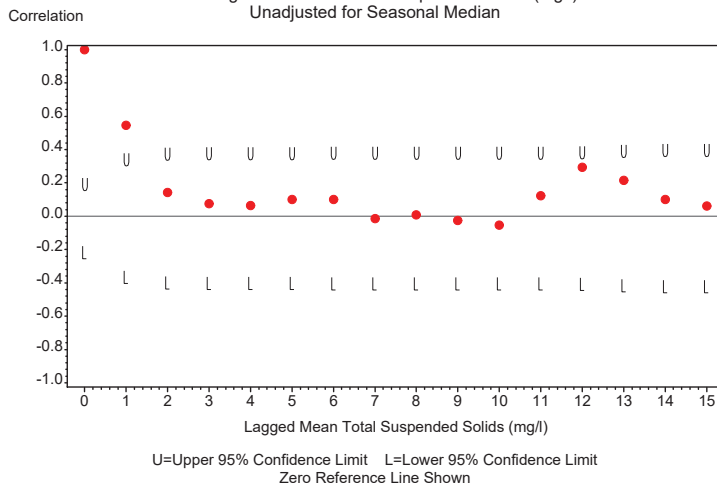
S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.546	0.177	0.354	-0.354
2	0.142	0.194	0.387	-0.387
3	0.075	0.195	0.389	-0.389
4	0.063	0.195	0.390	-0.390
5	0.100	0.195	0.390	-0.390
6	0.100	0.196	0.391	-0.391
7	-0.015	0.196	0.392	-0.392
8	0.008	0.196	0.392	-0.392
9	-0.025	0.196	0.392	-0.392
10	-0.053	0.196	0.393	-0.393
11	0.124	0.196	0.393	-0.393
12	0.293	0.197	0.394	-0.394
13	0.215	0.202	0.403	-0.403

S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.100	0.204	0.408	-0.408
15	0.061	0.205	0.409	-0.409

S_GW_3 Trends Appendix
Correlogram for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Median



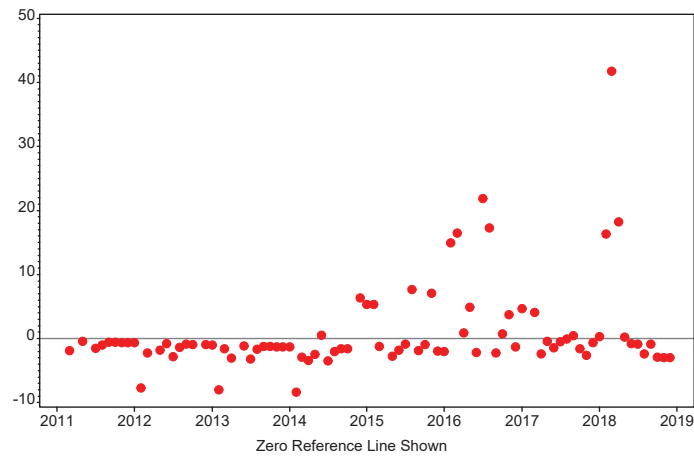
S_GW_3 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Suspended Solids (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.424	0	0.019	0.333

S_GW_3 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.42435	.000000238	0.019307	0.33333

S_GW_3 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total Suspended Solids (mg/l)



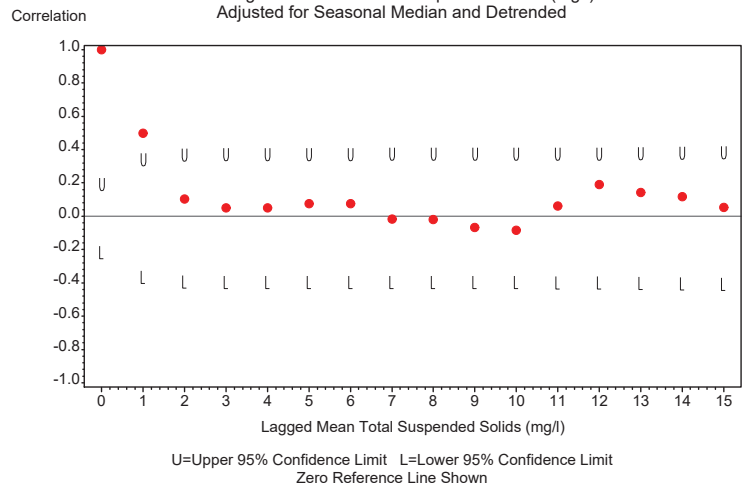
S_GW_3 Trends Appendix
 Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended

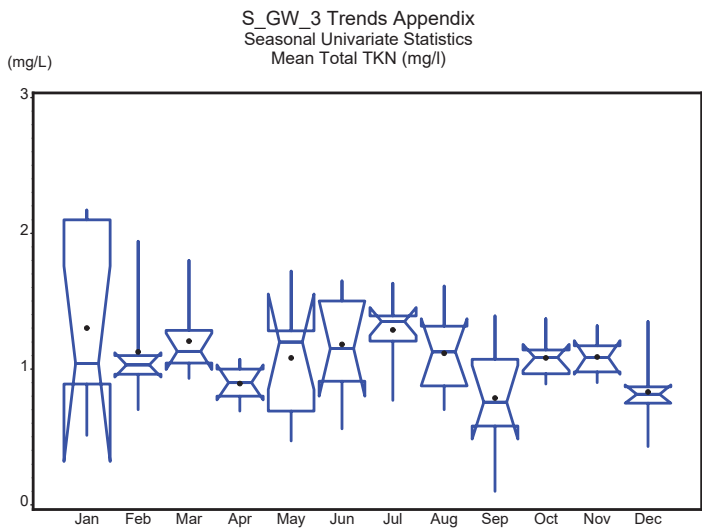
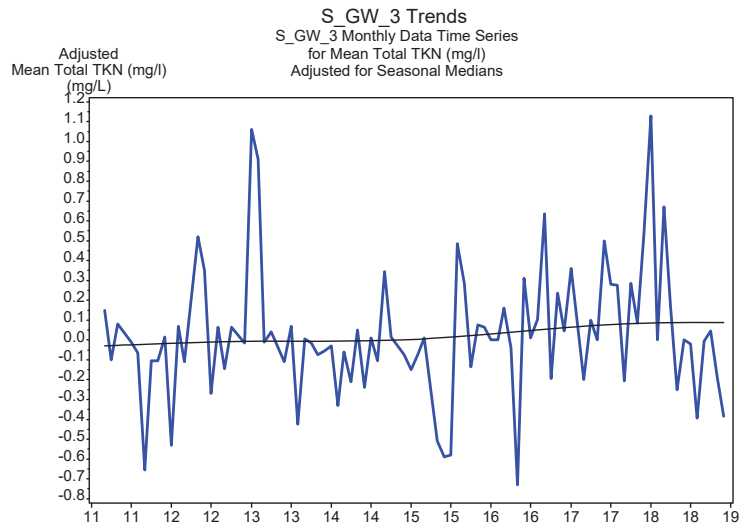
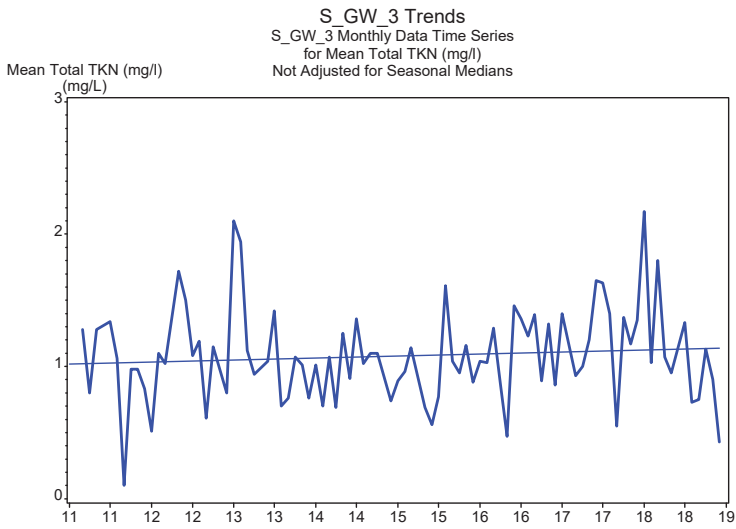
Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.499	0.177	0.354	-0.354
2	0.104	0.191	0.382	-0.382
3	0.050	0.191	0.383	-0.383
4	0.051	0.192	0.383	-0.383
5	0.076	0.192	0.383	-0.383
6	0.076	0.192	0.384	-0.384
7	-0.017	0.192	0.385	-0.385
8	-0.020	0.192	0.385	-0.385
9	-0.068	0.192	0.385	-0.385
10	-0.085	0.193	0.385	-0.385
11	0.062	0.193	0.386	-0.386
12	0.191	0.193	0.386	-0.386
13	0.143	0.195	0.390	-0.390

S_GW_3 Trends Appendix
 Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.117	0.196	0.393	-0.393
15	0.052	0.197	0.394	-0.394

S_GW_3 Trends Appendix
 Correlogram for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended





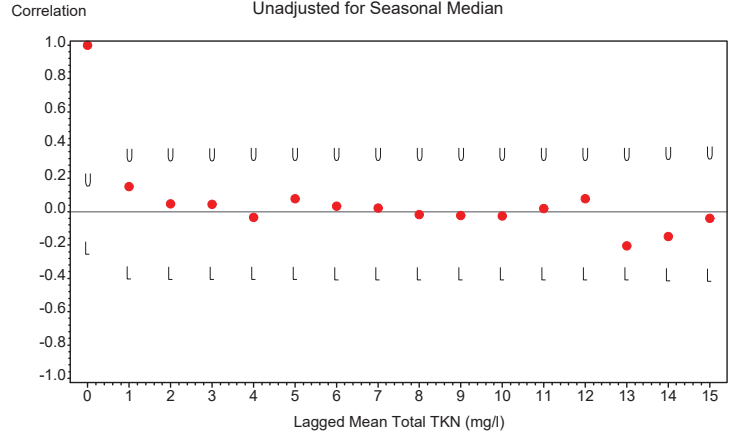
S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.150	0.177	0.354	-0.354
2	0.046	0.178	0.356	-0.356
3	0.043	0.178	0.356	-0.356
4	-0.034	0.178	0.357	-0.357
5	0.077	0.178	0.357	-0.357
6	0.032	0.179	0.358	-0.358
7	0.023	0.179	0.358	-0.358
8	-0.018	0.179	0.358	-0.358
9	-0.024	0.179	0.358	-0.358
10	-0.026	0.179	0.358	-0.358
11	0.018	0.179	0.358	-0.358
12	0.077	0.179	0.358	-0.358
13	-0.205	0.179	0.359	-0.359

S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.148	0.182	0.363	-0.363
15	-0.039	0.183	0.366	-0.366

S_GW_3 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_GW_3 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.123	0.181	0.17	0.015

S_GW_3 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.12319	0.18079	0.16987	0.015

S_GW_3 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total TKN (mg/l)



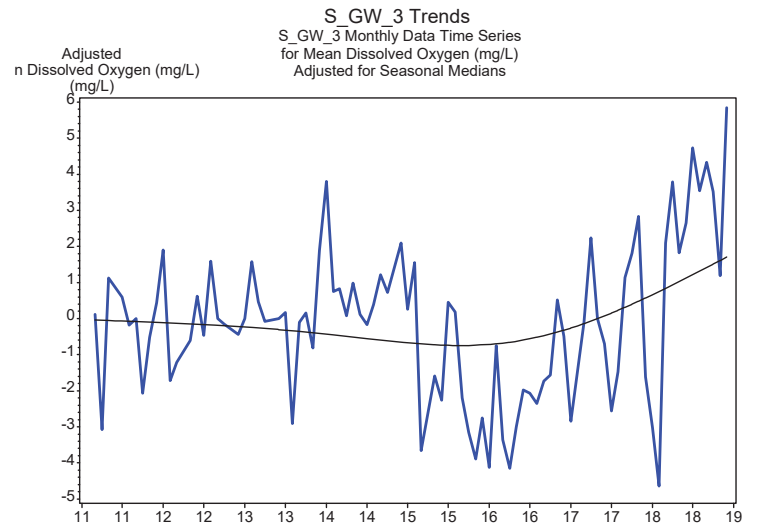
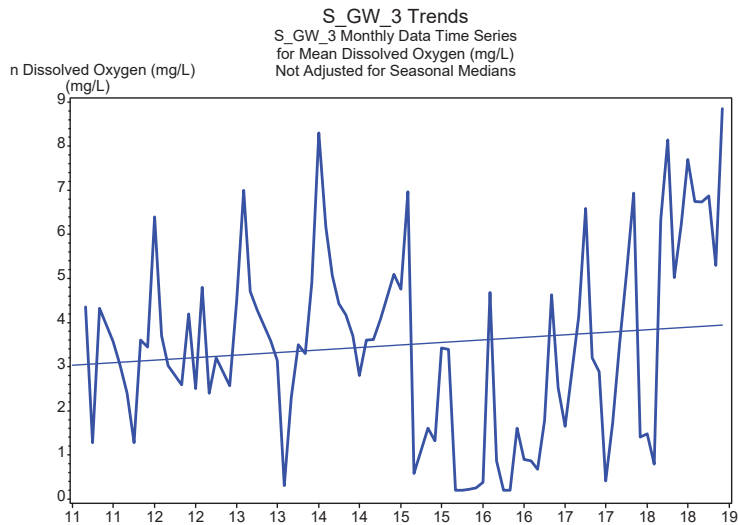
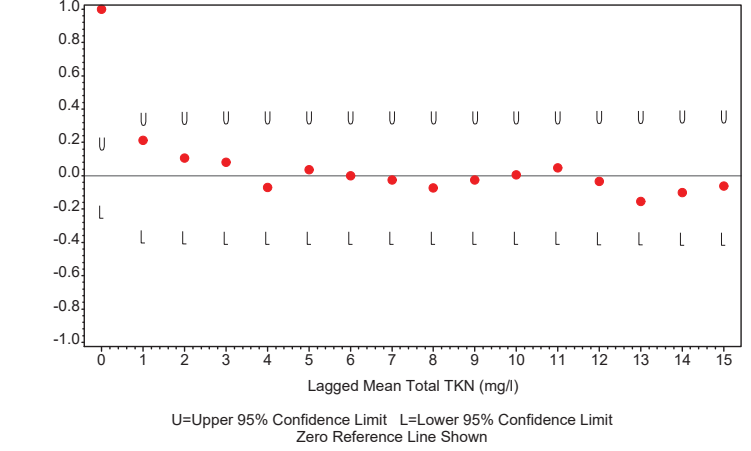
S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.211	0.177	0.354	-0.354
2	0.107	0.179	0.359	-0.359
3	0.082	0.180	0.360	-0.360
4	-0.071	0.180	0.361	-0.361
5	0.035	0.181	0.361	-0.361
6	-0.001	0.181	0.362	-0.362
7	-0.027	0.181	0.362	-0.362
8	-0.074	0.181	0.362	-0.362
9	-0.025	0.181	0.362	-0.362
10	0.004	0.181	0.362	-0.362
11	0.048	0.181	0.362	-0.362
12	-0.035	0.181	0.363	-0.363
13	-0.154	0.181	0.363	-0.363

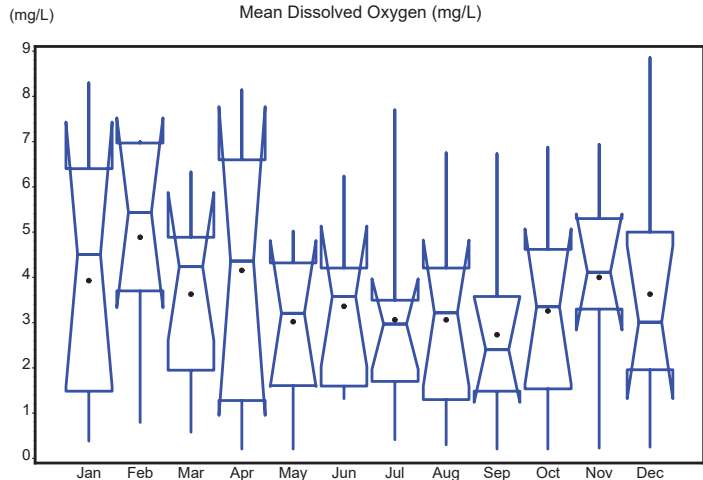
S_GW_3 Trends Appendix
 Autocorrelation Statistics for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.100	0.183	0.366	-0.366
15	-0.063	0.183	0.367	-0.367

S_GW_3 Trends Appendix
 Correlogram for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended



S_GW_3 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



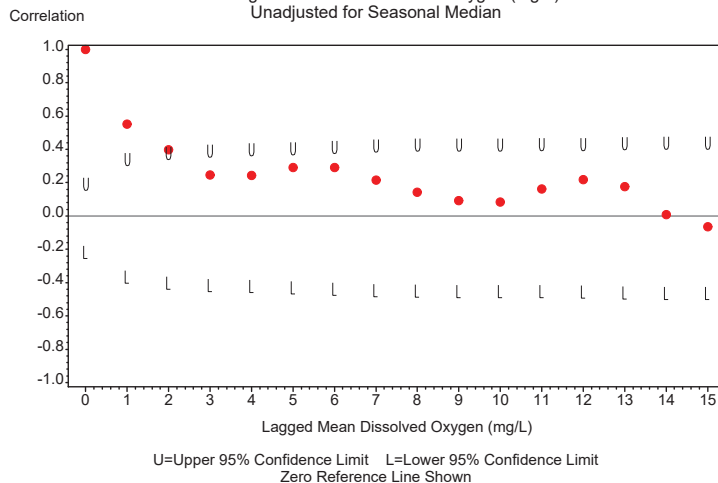
S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.551	0.177	0.354	-0.354
2	0.398	0.194	0.388	-0.388
3	0.245	0.202	0.404	-0.404
4	0.244	0.205	0.410	-0.410
5	0.292	0.208	0.416	-0.416
6	0.290	0.212	0.425	-0.425
7	0.216	0.217	0.433	-0.433
8	0.143	0.219	0.438	-0.438
9	0.093	0.220	0.439	-0.439
10	0.083	0.220	0.440	-0.440
11	0.163	0.220	0.441	-0.441
12	0.219	0.222	0.443	-0.443
13	0.175	0.224	0.448	-0.448

S_GW_3 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.009	0.225	0.451	-0.451
15	-0.065	0.225	0.451	-0.451

S_GW_3 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



S_GW_3 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

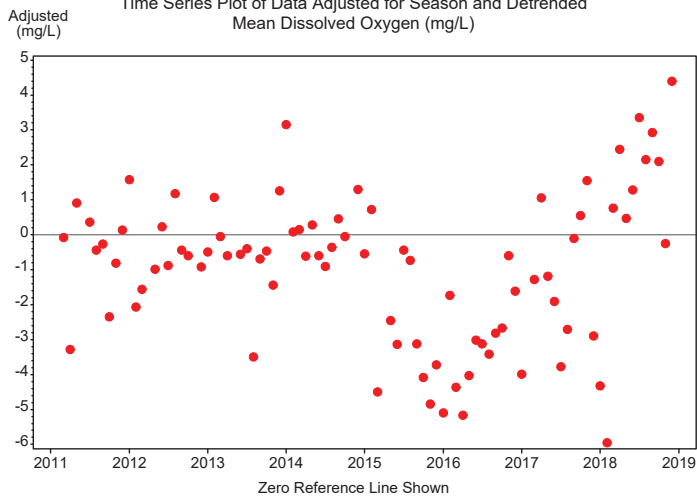
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.069	0.466	0.731	0.163

S_GW_3 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.068841	0.46576	0.73077	0.1625

S_GW_3 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (mg/L)



S_GW_3 Trends Appendix

Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.549	0.177	0.354	-0.354
2	0.419	0.194	0.387	-0.387
3	0.286	0.203	0.406	-0.406
4	0.324	0.207	0.414	-0.414
5	0.353	0.212	0.425	-0.425
6	0.378	0.218	0.437	-0.437
7	0.310	0.225	0.450	-0.450
8	0.189	0.229	0.459	-0.459
9	0.126	0.231	0.462	-0.462
10	0.067	0.232	0.464	-0.464
11	0.139	0.232	0.464	-0.464
12	0.106	0.233	0.466	-0.466
13	0.124	0.233	0.467	-0.467

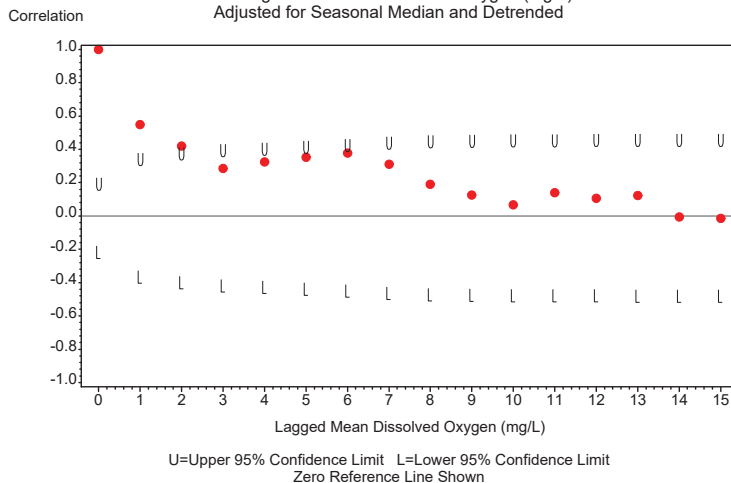
S_GW_3 Trends Appendix

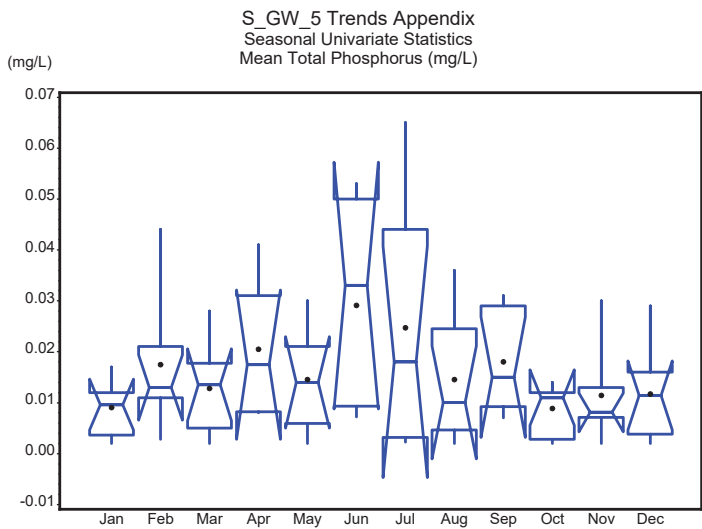
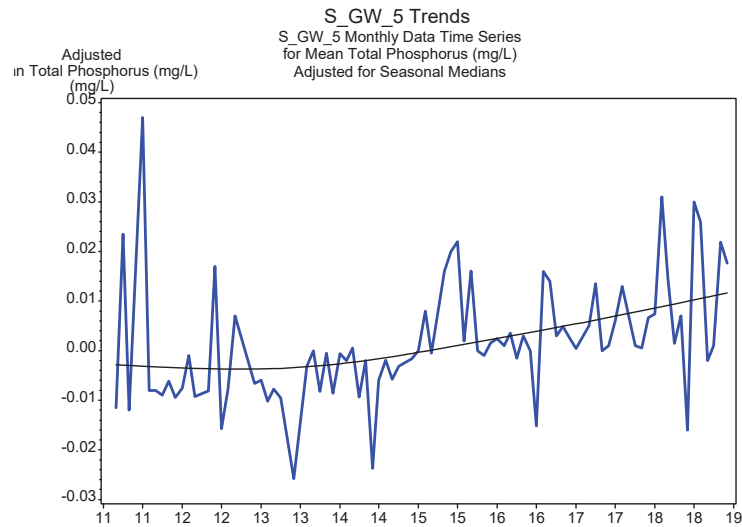
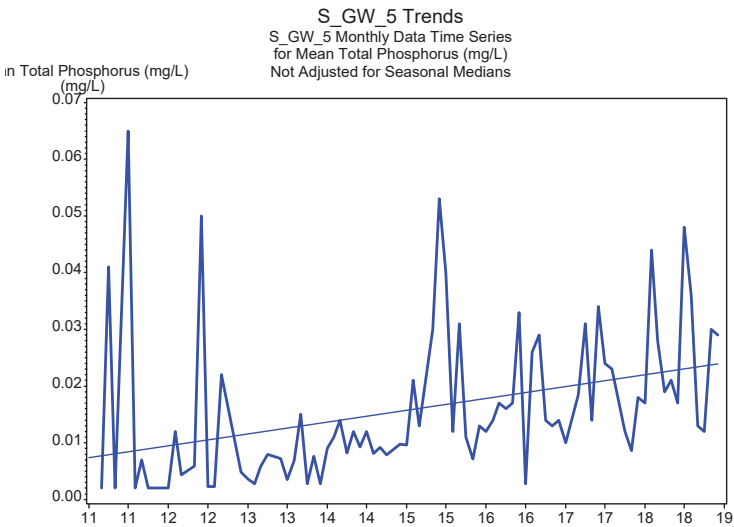
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.005	0.234	0.468	-0.468
15	-0.015	0.234	0.468	-0.468

S_GW_3 Trends Appendix

Correlogram for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

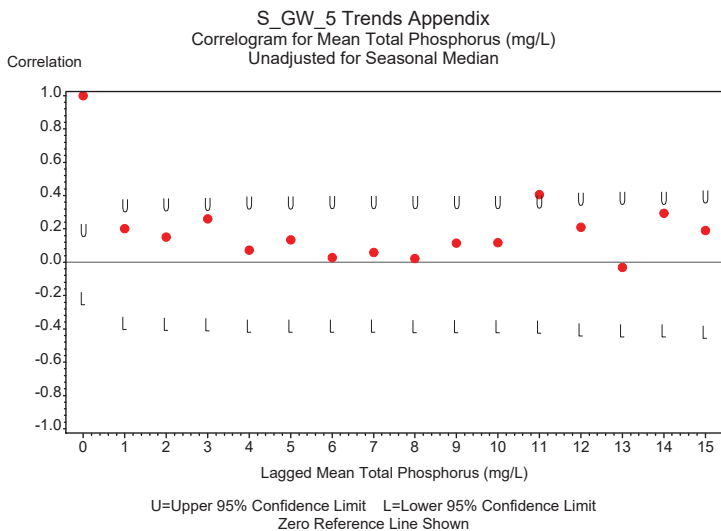




S_GW_5 Trends Appendix

Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.202	0.177	0.354	-0.354
2	0.151	0.179	0.358	-0.358
3	0.261	0.180	0.361	-0.361
4	0.073	0.184	0.369	-0.369
5	0.133	0.185	0.369	-0.369
6	0.027	0.186	0.371	-0.371
7	0.057	0.186	0.371	-0.371
8	0.022	0.186	0.372	-0.372
9	0.115	0.186	0.372	-0.372
10	0.117	0.187	0.373	-0.373
11	0.405	0.187	0.375	-0.375
12	0.209	0.196	0.393	-0.393
13	-0.031	0.199	0.397	-0.397
14	0.293	0.199	0.397	-0.397
15	0.189	0.203	0.406	-0.406



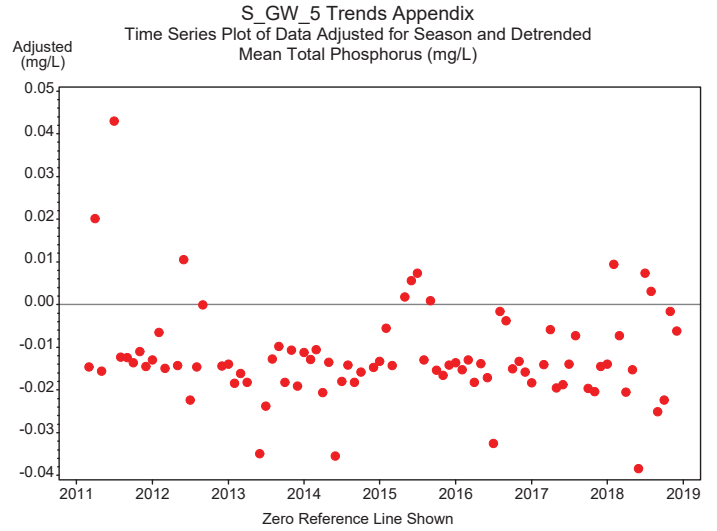
S_GW_5 Trends Appendix

Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.603	0	.003	.003

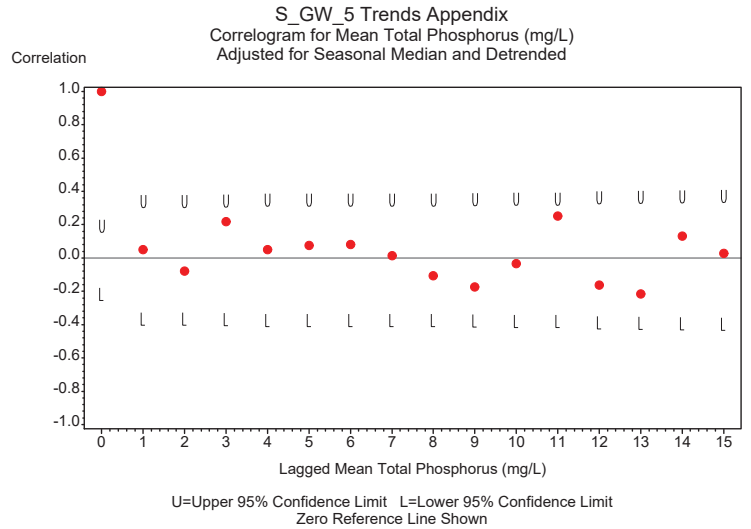
S_GW_5 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.60687	0	.00351405	.00266667



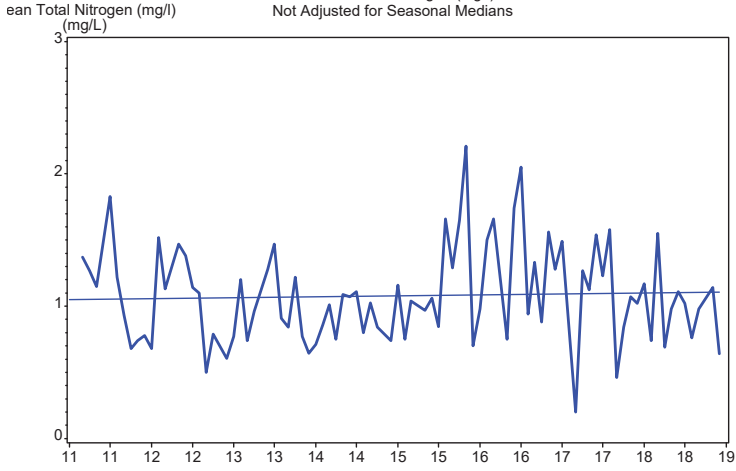
S_GW_5 Trends Appendix
 Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.050	0.177	0.354	-0.354
2	-0.078	0.177	0.354	-0.354
3	0.218	0.177	0.355	-0.355
4	0.049	0.180	0.360	-0.360
5	0.075	0.180	0.360	-0.360
6	0.080	0.181	0.361	-0.361
7	0.014	0.181	0.362	-0.362
8	-0.107	0.181	0.362	-0.362
9	-0.174	0.182	0.363	-0.363
10	-0.034	0.183	0.367	-0.367
11	0.251	0.183	0.367	-0.367
12	-0.162	0.187	0.374	-0.374
13	-0.217	0.188	0.377	-0.377
14	0.131	0.191	0.382	-0.382
15	0.027	0.192	0.384	-0.384



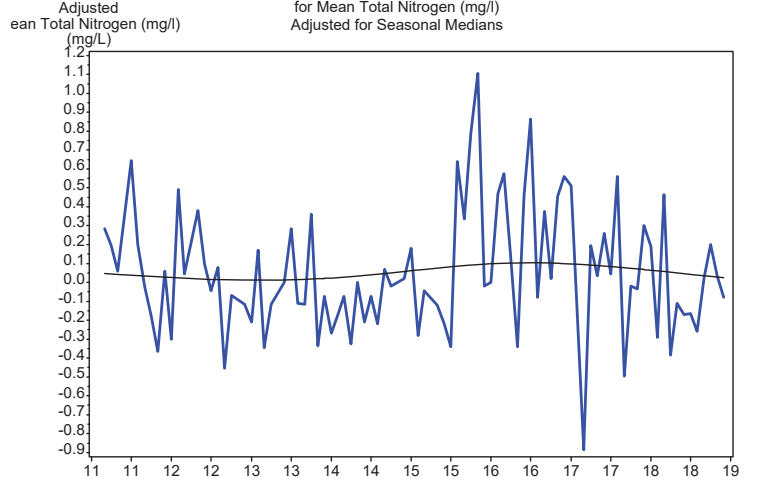
S_GW_5 Trends

S_GW_5 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Not Adjusted for Seasonal Medians

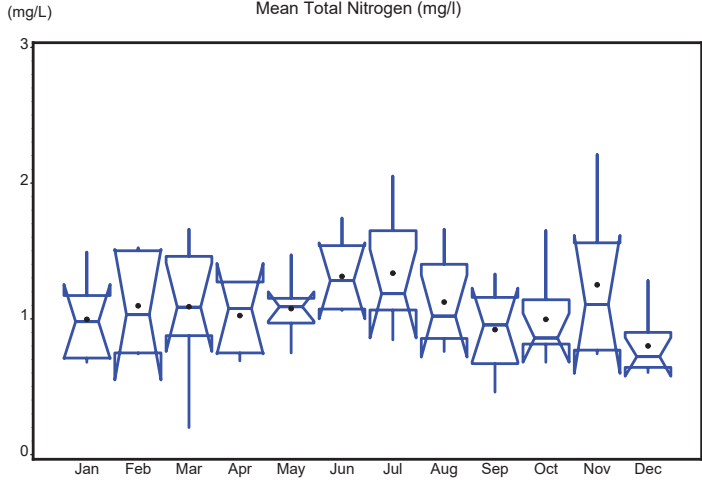


S_GW_5 Trends

S_GW_5 Monthly Data Time Series
for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians



S_GW_5 Trends Appendix
Seasonal Univariate Statistics
Mean Total Nitrogen (mg/l)



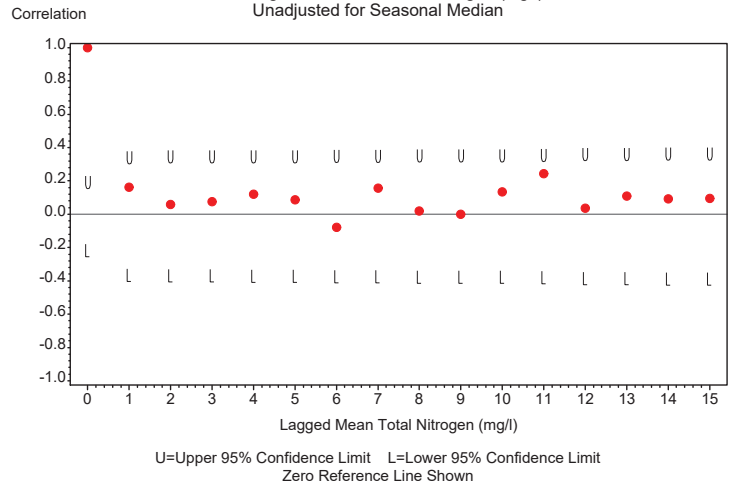
S_GW_5 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.161	0.177	0.354	-0.354
2	0.057	0.178	0.357	-0.357
3	0.075	0.178	0.357	-0.357
4	0.120	0.179	0.358	-0.358
5	0.085	0.180	0.359	-0.359
6	-0.080	0.180	0.360	-0.360
7	0.157	0.180	0.361	-0.361
8	0.019	0.182	0.364	-0.364
9	0.000	0.182	0.364	-0.364
10	0.135	0.182	0.364	-0.364
11	0.242	0.183	0.366	-0.366
12	0.037	0.186	0.372	-0.372
13	0.108	0.186	0.373	-0.373

S_GW_5 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.092	0.187	0.374	-0.374
15	0.095	0.187	0.375	-0.375

S_GW_5 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median

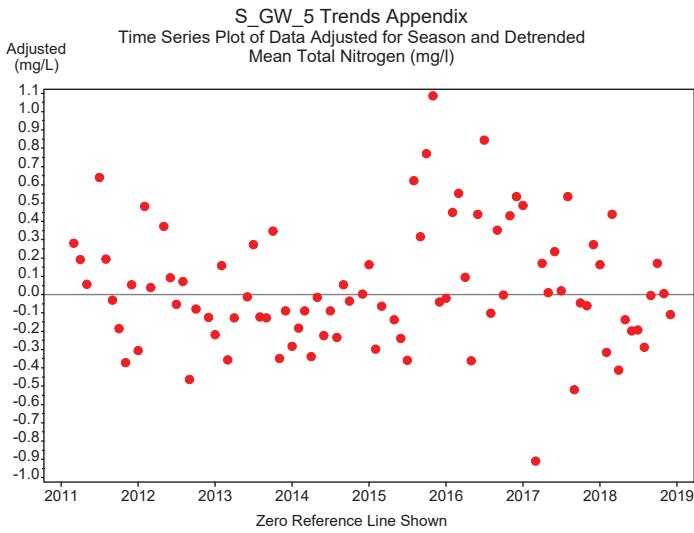


S_GW_5 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Nitrogen (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.014	0.903	0.921	.003

S_GW_5 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.014493	0.90316	0.92081	.00333333



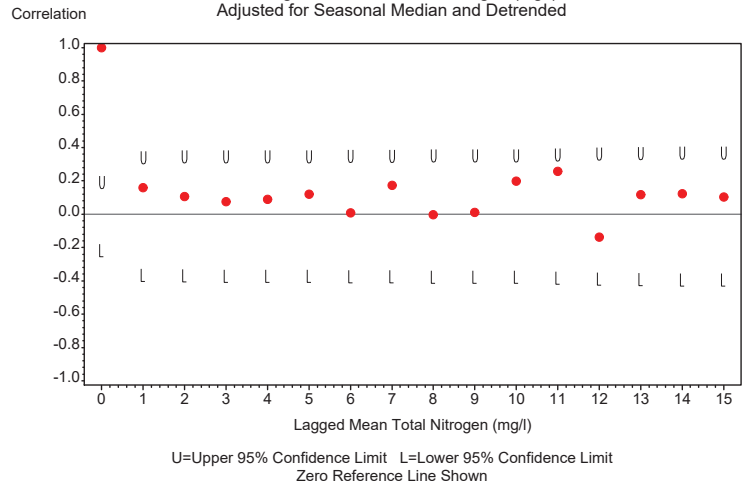
S_GW_5 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

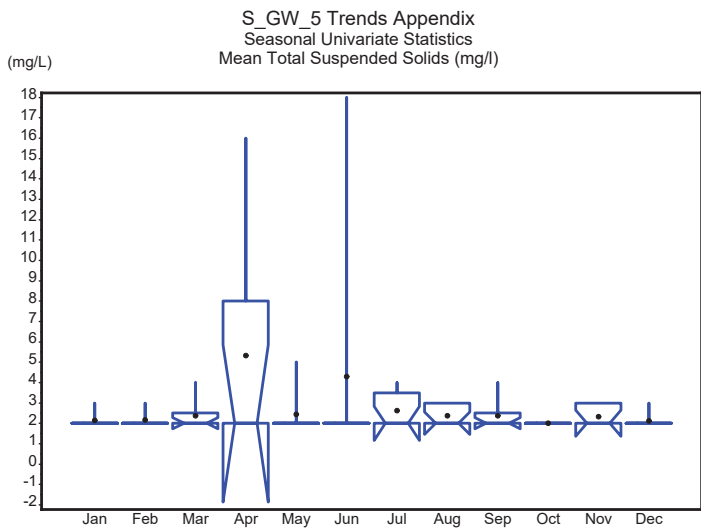
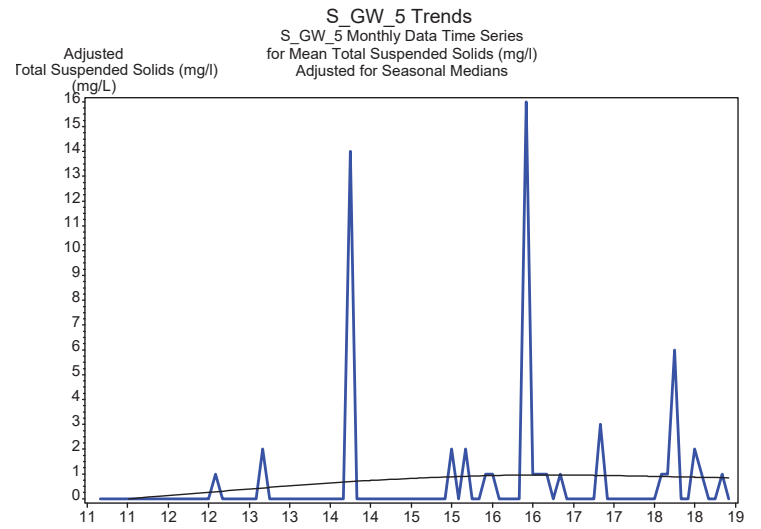
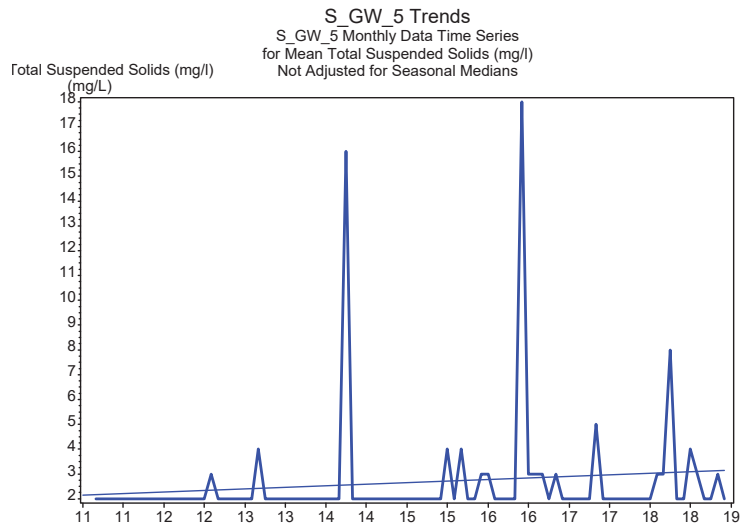
Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.160	0.177	0.354	-0.354
2	0.107	0.178	0.357	-0.357
3	0.075	0.179	0.358	-0.358
4	0.088	0.179	0.359	-0.359
5	0.121	0.180	0.359	-0.359
6	0.008	0.181	0.361	-0.361
7	0.174	0.181	0.361	-0.361
8	-0.003	0.182	0.365	-0.365
9	0.010	0.182	0.365	-0.365
10	0.198	0.182	0.365	-0.365
11	0.256	0.185	0.369	-0.369
12	-0.139	0.188	0.376	-0.376
13	0.117	0.189	0.379	-0.379

S_GW_5 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.123	0.190	0.380	-0.380
15	0.104	0.191	0.382	-0.382

S_GW_5 Trends Appendix
 Correlogram for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended





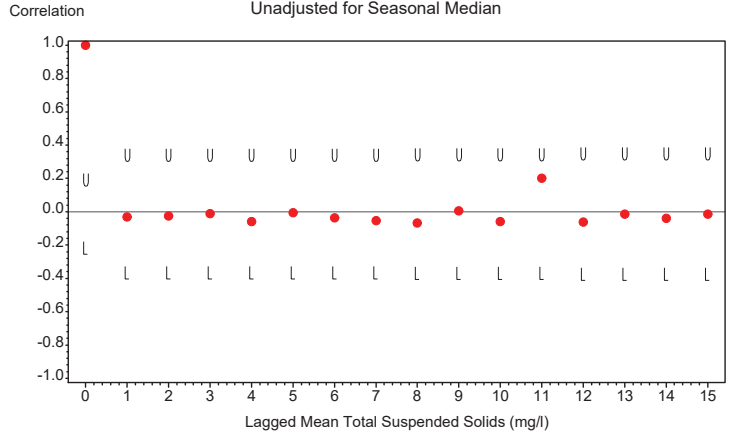
S_GW_5 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.030	0.177	0.354	-0.354
2	-0.027	0.177	0.354	-0.354
3	-0.012	0.177	0.354	-0.354
4	-0.058	0.177	0.354	-0.354
5	-0.006	0.177	0.354	-0.354
6	-0.036	0.177	0.354	-0.354
7	-0.053	0.177	0.354	-0.354
8	-0.067	0.177	0.355	-0.355
9	0.006	0.178	0.355	-0.355
10	-0.059	0.178	0.355	-0.355
11	0.200	0.178	0.356	-0.356
12	-0.063	0.180	0.360	-0.360
13	-0.014	0.180	0.361	-0.361

S_GW_5 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.040	0.180	0.361	-0.361
15	-0.015	0.180	0.361	-0.361

S_GW_5 Trends Appendix
Correlogram for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

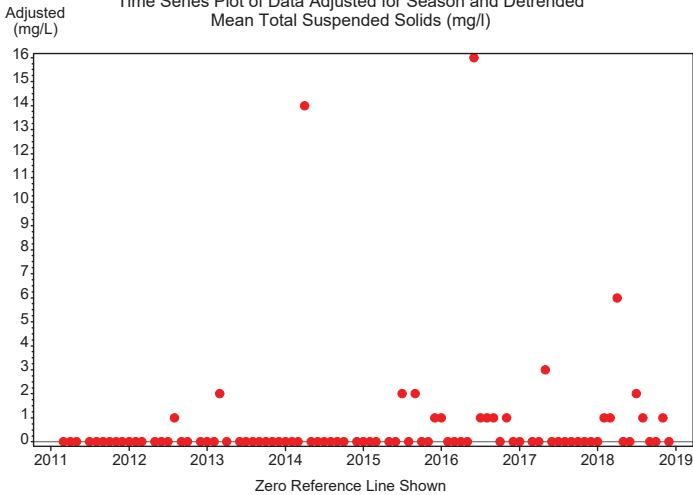
S_GW_5 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.163	.009	0.078	0

S_GW_5 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.16304	.00923312	0.078090	0

S_GW_5 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Suspended Solids (mg/l)



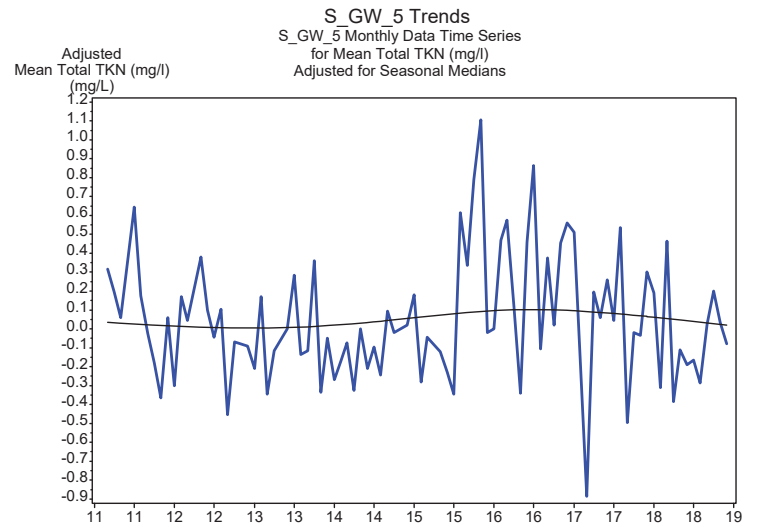
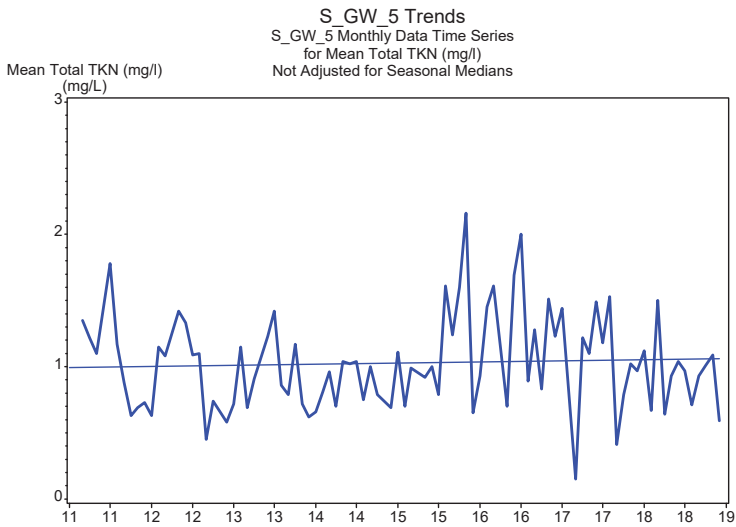
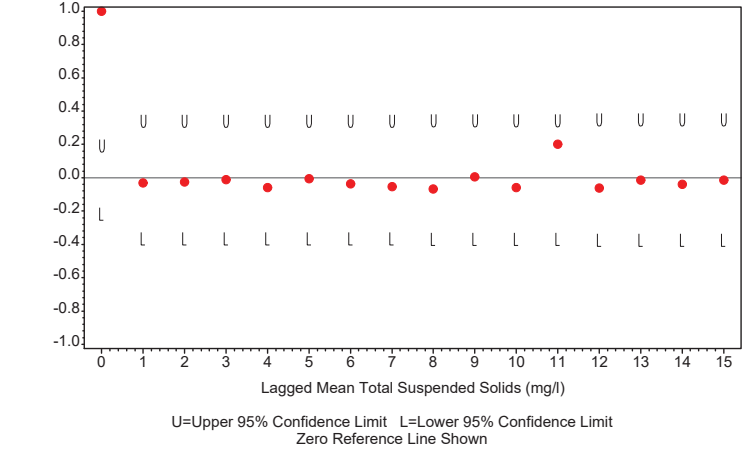
S_GW_5 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.030	0.177	0.354	-0.354
2	-0.027	0.177	0.354	-0.354
3	-0.012	0.177	0.354	-0.354
4	-0.058	0.177	0.354	-0.354
5	-0.006	0.177	0.354	-0.354
6	-0.036	0.177	0.354	-0.354
7	-0.053	0.177	0.354	-0.354
8	-0.067	0.177	0.355	-0.355
9	0.006	0.178	0.355	-0.355
10	-0.059	0.178	0.355	-0.355
11	0.200	0.178	0.356	-0.356
12	-0.063	0.180	0.360	-0.360
13	-0.014	0.180	0.361	-0.361

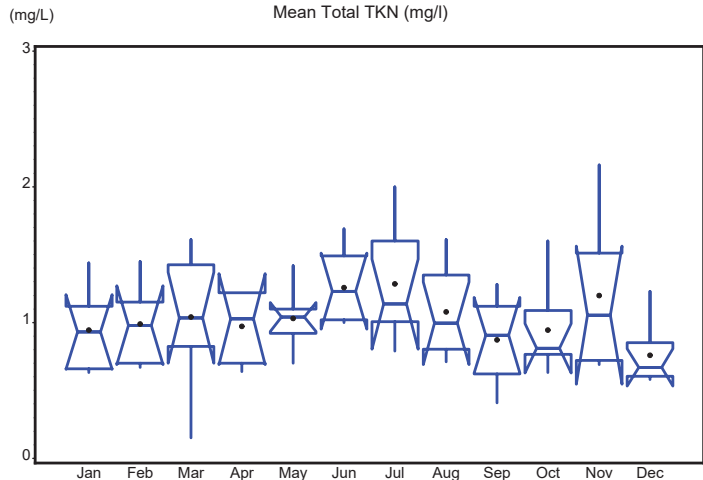
S_GW_5 Trends Appendix
 Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.040	0.180	0.361	-0.361
15	-0.015	0.180	0.361	-0.361

S_GW_5 Trends Appendix
 Correlogram for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Median and Detrended



S_GW_5 Trends Appendix
Seasonal Univariate Statistics
Mean Total TKN (mg/l)



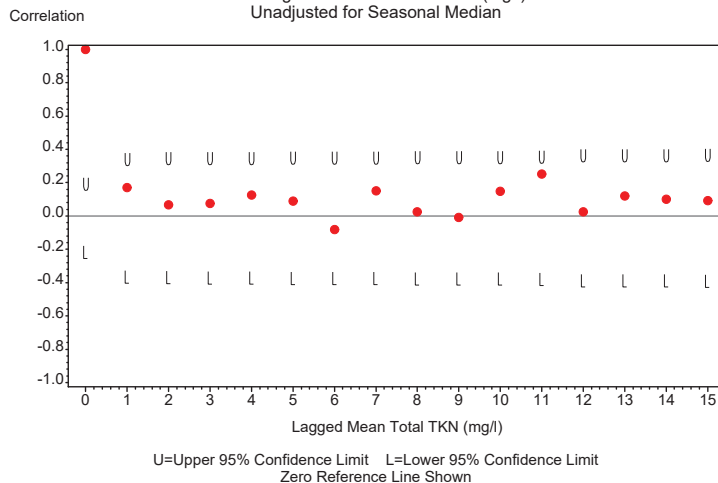
S_GW_5 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.171	0.177	0.354	-0.354
2	0.067	0.178	0.357	-0.357
3	0.074	0.179	0.358	-0.358
4	0.125	0.179	0.358	-0.358
5	0.089	0.180	0.360	-0.360
6	-0.081	0.180	0.361	-0.361
7	0.151	0.181	0.362	-0.362
8	0.024	0.182	0.364	-0.364
9	-0.009	0.182	0.364	-0.364
10	0.148	0.182	0.364	-0.364
11	0.251	0.183	0.367	-0.367
12	0.025	0.187	0.374	-0.374
13	0.120	0.187	0.374	-0.374

S_GW_5 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.100	0.188	0.376	-0.376
15	0.092	0.188	0.377	-0.377

S_GW_5 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



S_GW_5 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

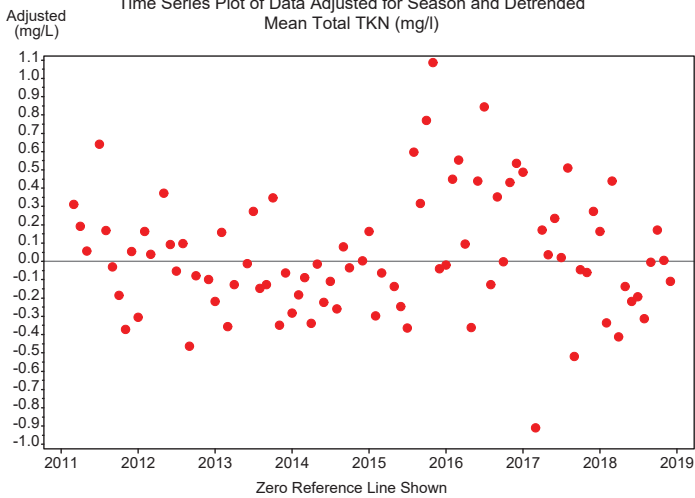
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.029	0.776	0.823	.003

S_GW_5 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.028986	0.77614	0.82324	.00333333

S_GW_5 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended
Mean Total TKN (mg/l)



S_GW_5 Trends Appendix

Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.171	0.177	0.354	-0.354
2	0.104	0.178	0.357	-0.357
3	0.078	0.179	0.358	-0.358
4	0.097	0.179	0.359	-0.359
5	0.131	0.180	0.360	-0.360
6	0.002	0.181	0.362	-0.362
7	0.174	0.181	0.362	-0.362
8	-0.002	0.183	0.365	-0.365
9	0.003	0.183	0.365	-0.365
10	0.202	0.183	0.365	-0.365
11	0.269	0.185	0.370	-0.370
12	-0.152	0.189	0.378	-0.378
13	0.131	0.190	0.381	-0.381

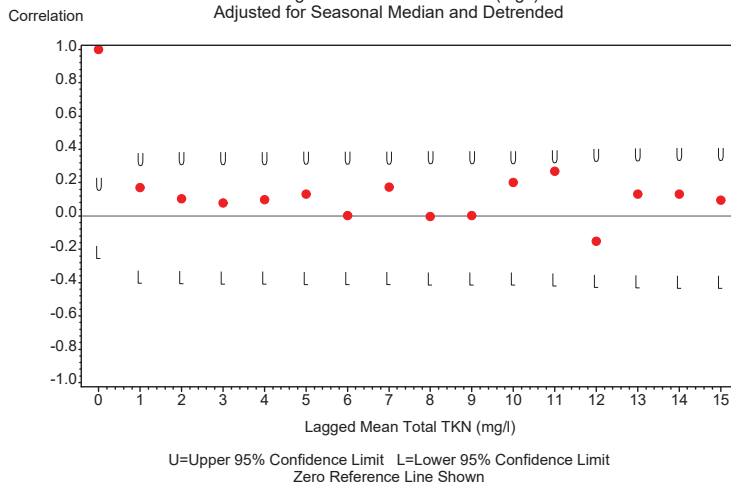
S_GW_5 Trends Appendix

Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.132	0.191	0.383	-0.383
15	0.096	0.192	0.384	-0.384

S_GW_5 Trends Appendix

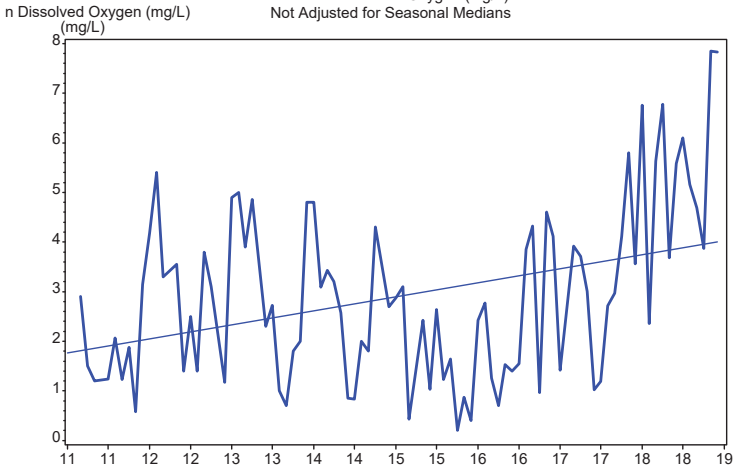
Correlogram for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

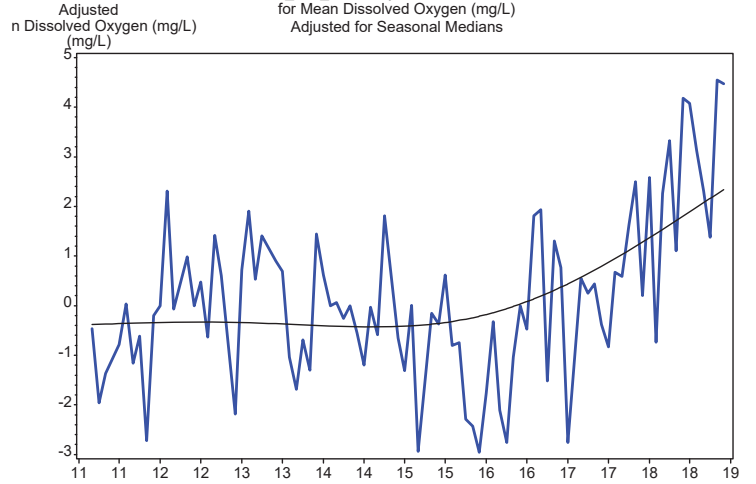
S_GW_5 Trends

S_GW_5 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Not Adjusted for Seasonal Medians

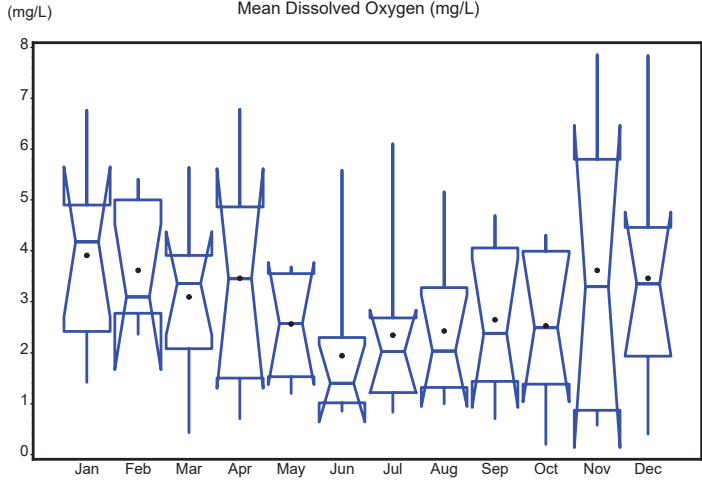


S_GW_5 Trends

S_GW_5 Monthly Data Time Series
for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians



S_GW_5 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



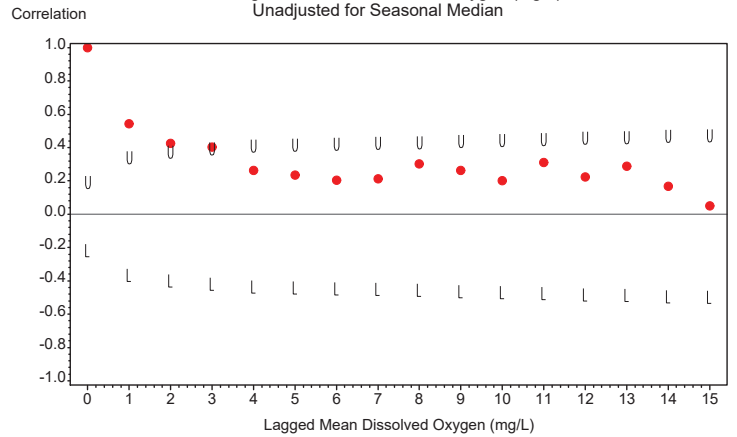
S_GW_5 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.543	0.177	0.354	-0.354
2	0.424	0.193	0.387	-0.387
3	0.402	0.203	0.406	-0.406
4	0.262	0.211	0.422	-0.422
5	0.236	0.214	0.429	-0.429
6	0.205	0.217	0.434	-0.434
7	0.213	0.219	0.438	-0.438
8	0.303	0.221	0.442	-0.442
9	0.264	0.225	0.451	-0.451
10	0.202	0.229	0.457	-0.457
11	0.310	0.231	0.461	-0.461
12	0.224	0.235	0.470	-0.470
13	0.289	0.237	0.474	-0.474

S_GW_5 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.167	0.241	0.481	-0.481
15	0.050	0.242	0.484	-0.484

S_GW_5 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



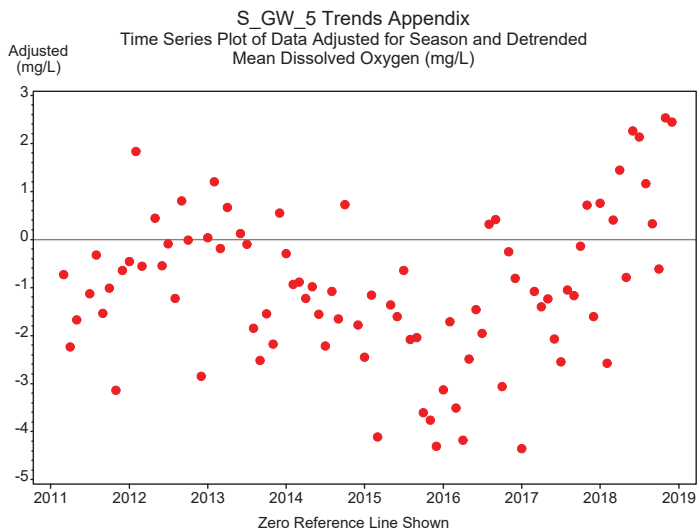
U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

S_GW_5 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.214	0.019	0.223	0.228

S_GW_5 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.21377	0.018759	0.22289	0.22833



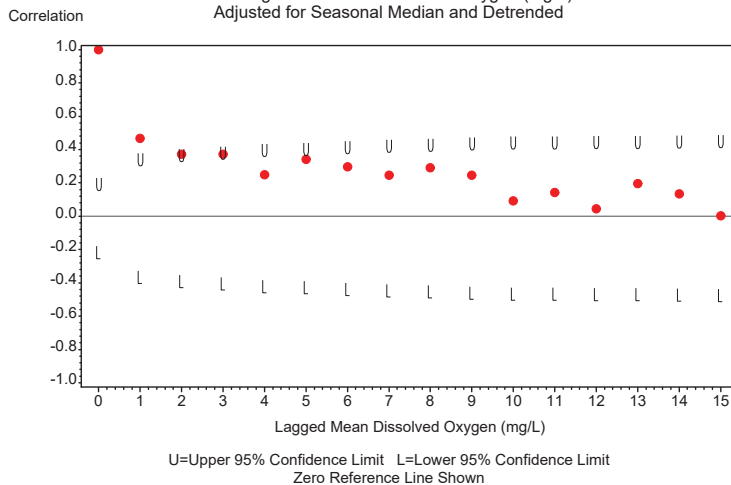
S_GW_5 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

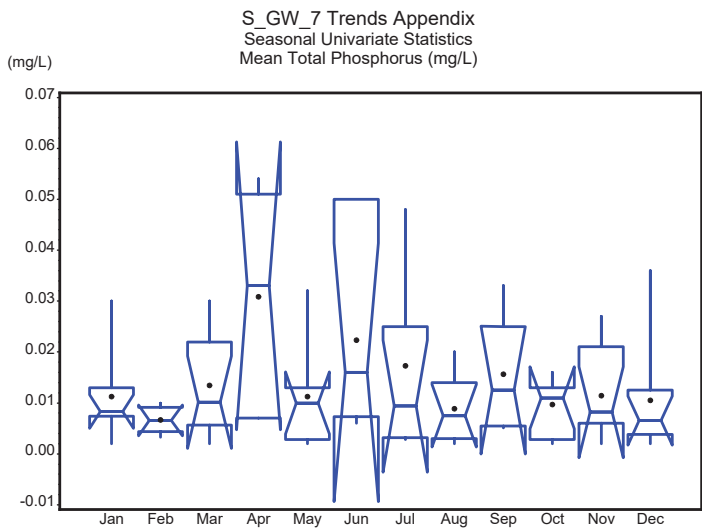
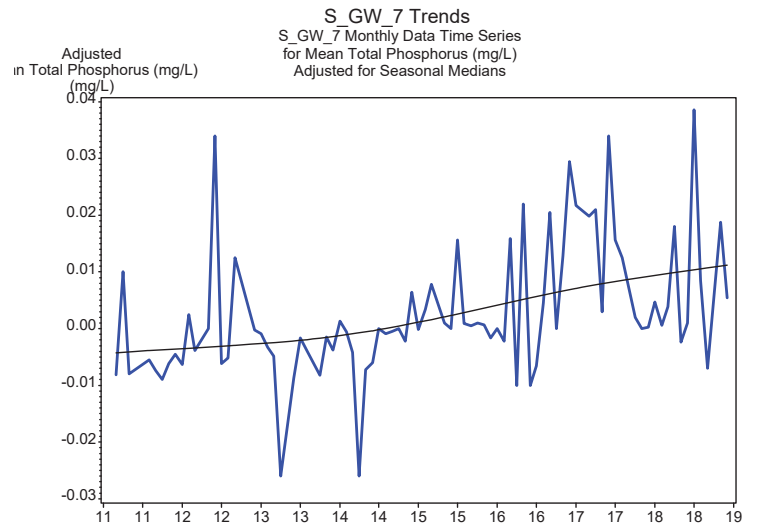
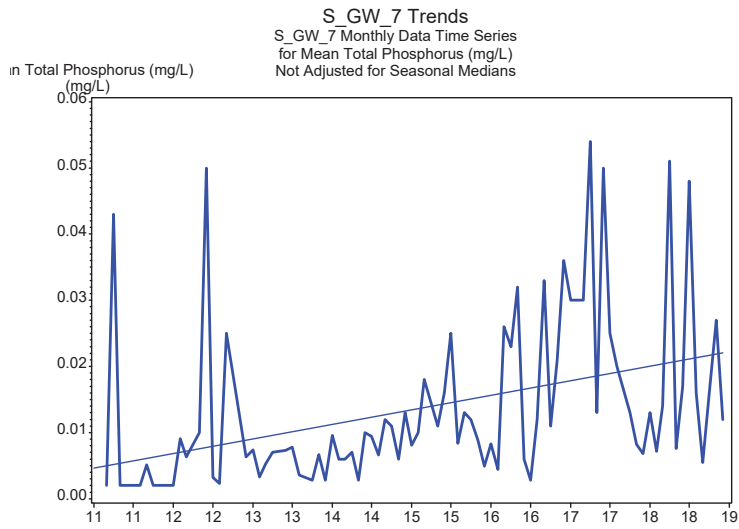
Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.468	0.177	0.354	-0.354
2	0.373	0.189	0.378	-0.378
3	0.373	0.197	0.393	-0.393
4	0.250	0.204	0.408	-0.408
5	0.340	0.207	0.414	-0.414
6	0.297	0.213	0.426	-0.426
7	0.247	0.217	0.434	-0.434
8	0.291	0.220	0.440	-0.440
9	0.246	0.224	0.448	-0.448
10	0.092	0.227	0.454	-0.454
11	0.142	0.227	0.454	-0.454
12	0.043	0.228	0.456	-0.456
13	0.196	0.228	0.456	-0.456

S_GW_5 Trends Appendix
 Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.135	0.230	0.460	-0.460
15	0.002	0.231	0.462	-0.462

S_GW_5 Trends Appendix
 Correlogram for Mean Dissolved Oxygen (mg/L)
 Adjusted for Seasonal Median and Detrended

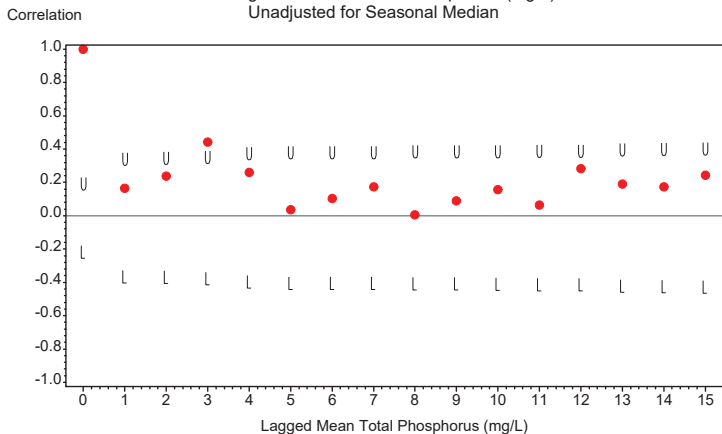




S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.164	0.177	0.354	-0.354
2	0.237	0.178	0.357	-0.357
3	0.441	0.182	0.363	-0.363
4	0.260	0.192	0.385	-0.385
5	0.036	0.196	0.392	-0.392
6	0.102	0.196	0.392	-0.392
7	0.172	0.197	0.393	-0.393
8	0.005	0.198	0.396	-0.396
9	0.090	0.198	0.396	-0.396
10	0.155	0.199	0.397	-0.397
11	0.063	0.200	0.400	-0.400
12	0.281	0.200	0.400	-0.400
13	0.189	0.204	0.408	-0.408
14	0.172	0.206	0.412	-0.412
15	0.242	0.207	0.415	-0.415

S_GW_7 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

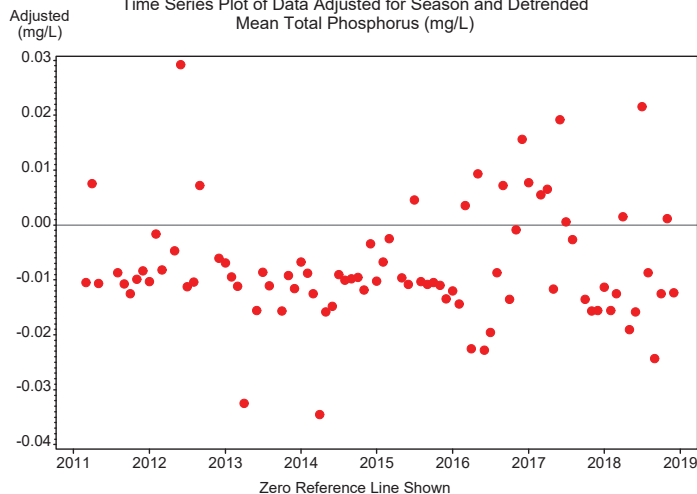
S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.545	0	.006	.002

S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.53726	0	.00606799	.002

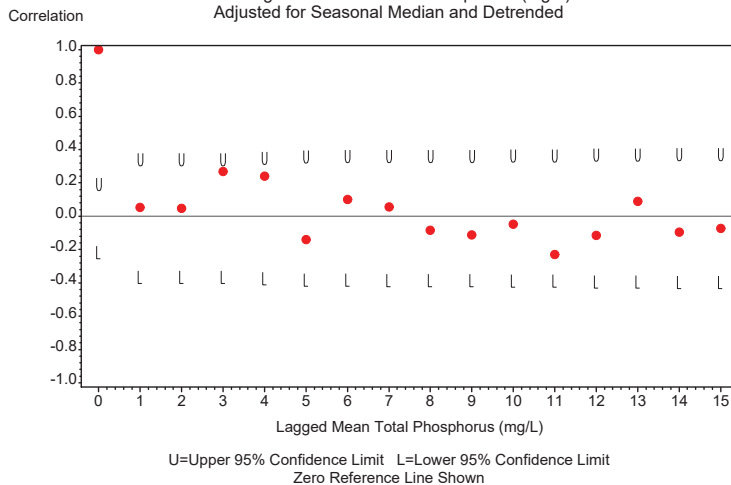
S_GW_7 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Phosphorus (mg/L)



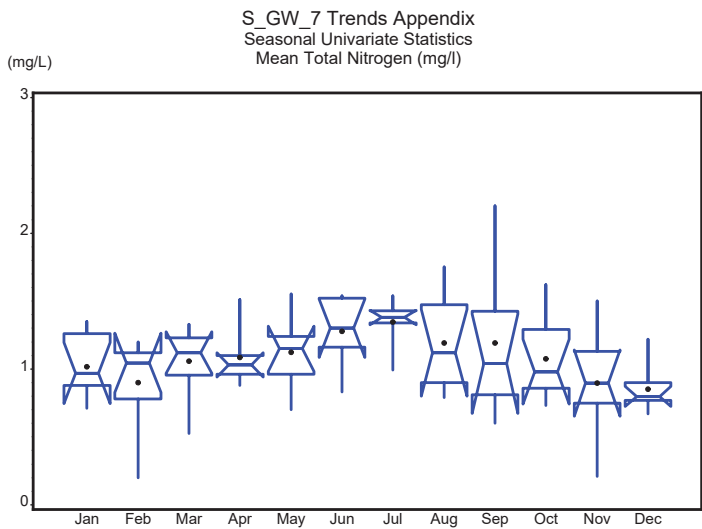
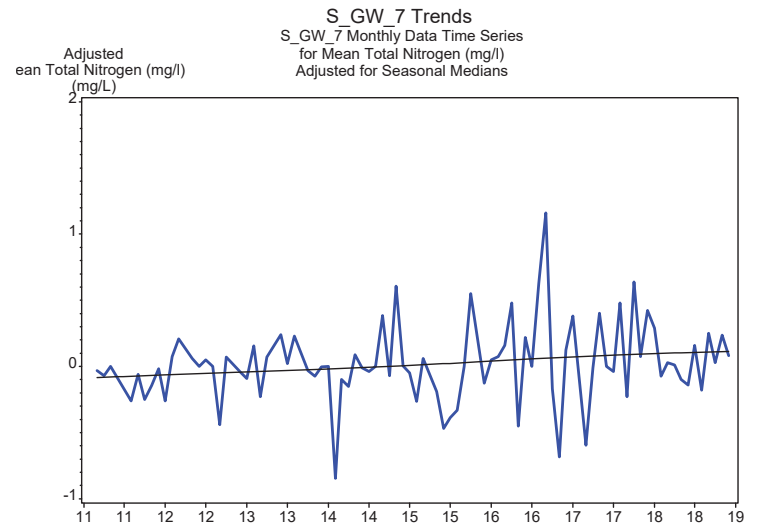
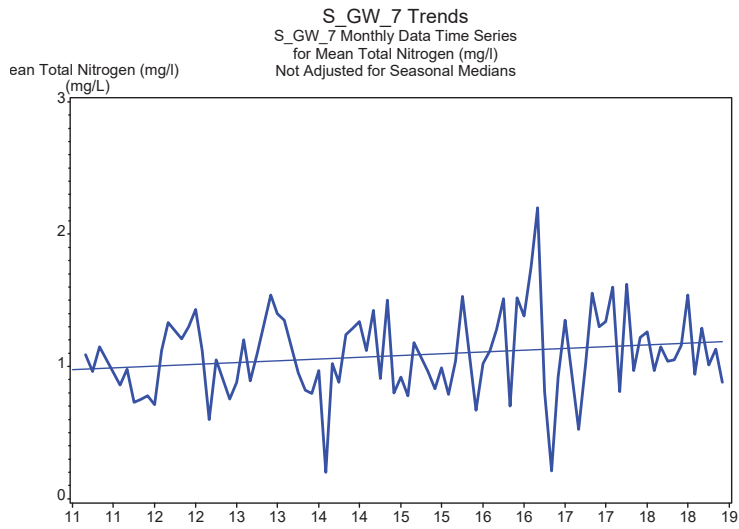
S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Phosphorus (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.053	0.177	0.354	-0.354
2	0.047	0.177	0.354	-0.354
3	0.267	0.177	0.354	-0.354
4	0.240	0.181	0.362	-0.362
5	-0.141	0.184	0.369	-0.369
6	0.101	0.186	0.371	-0.371
7	0.055	0.186	0.372	-0.372
8	-0.084	0.186	0.373	-0.373
9	-0.112	0.187	0.373	-0.373
10	-0.047	0.187	0.375	-0.375
11	-0.229	0.188	0.375	-0.375
12	-0.114	0.190	0.381	-0.381
13	0.090	0.191	0.382	-0.382
14	-0.096	0.192	0.383	-0.383
15	-0.074	0.192	0.384	-0.384

S_GW_7 Trends Appendix
Correlogram for Mean Total Phosphorus (mg/L)
Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown



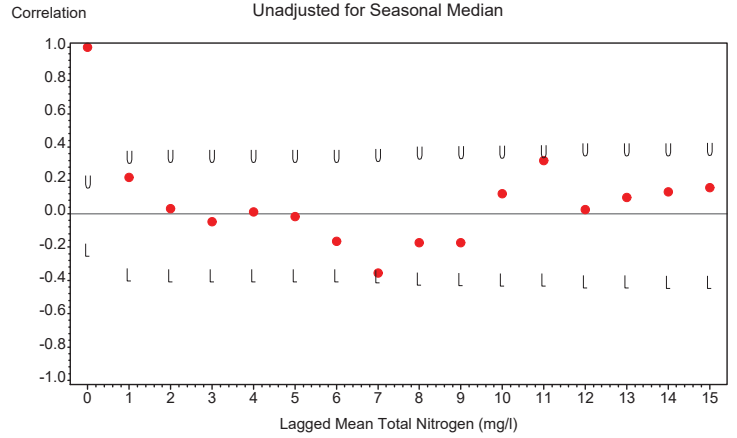
S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.217	0.177	0.354	-0.354
2	0.030	0.180	0.359	-0.359
3	-0.047	0.180	0.359	-0.359
4	0.011	0.180	0.359	-0.359
5	-0.016	0.180	0.359	-0.359
6	-0.166	0.180	0.359	-0.359
7	-0.355	0.181	0.363	-0.363
8	-0.174	0.188	0.377	-0.377
9	-0.175	0.190	0.380	-0.380
10	0.121	0.192	0.384	-0.384
11	0.319	0.193	0.385	-0.385
12	0.024	0.198	0.396	-0.396
13	0.098	0.198	0.396	-0.396

S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.130	0.199	0.397	-0.397
15	0.157	0.199	0.399	-0.399

S_GW_7 Trends Appendix
Correlogram for Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

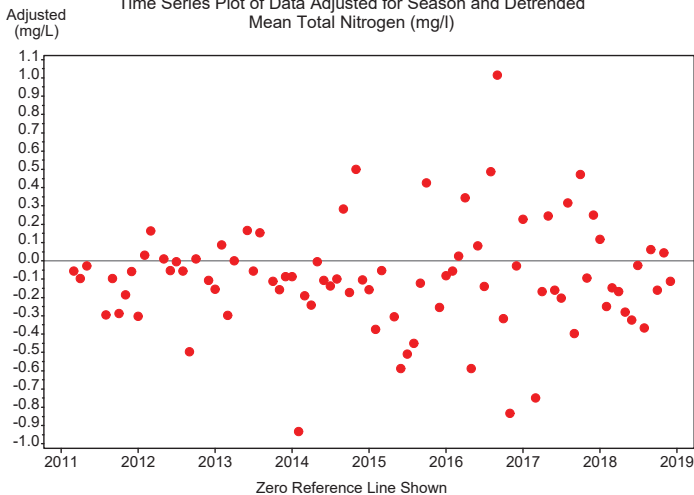
S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.168	0.07	0.143	0.022

S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.16794	0.070199	0.14303	0.021667

S_GW_7 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Nitrogen (mg/l)



Zero Reference Line Shown

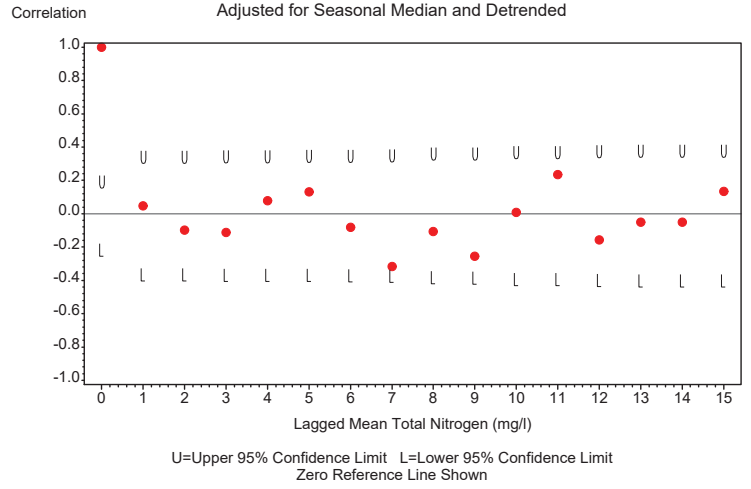
S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.048	0.177	0.354	-0.354
2	-0.098	0.177	0.354	-0.354
3	-0.113	0.177	0.355	-0.355
4	0.077	0.178	0.356	-0.356
5	0.130	0.179	0.357	-0.357
6	-0.082	0.180	0.359	-0.359
7	-0.318	0.180	0.360	-0.360
8	-0.108	0.186	0.371	-0.371
9	-0.255	0.186	0.373	-0.373
10	0.009	0.190	0.380	-0.380
11	0.234	0.190	0.380	-0.380
12	-0.157	0.193	0.386	-0.386
13	-0.052	0.194	0.389	-0.389

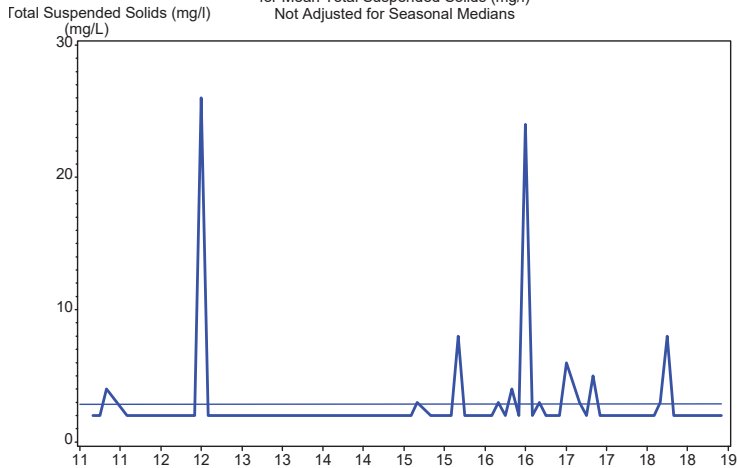
S_GW_7 Trends Appendix
 Autocorrelation Statistics for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total Nitrogen (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.052	0.194	0.389	-0.389
15	0.134	0.195	0.389	-0.389

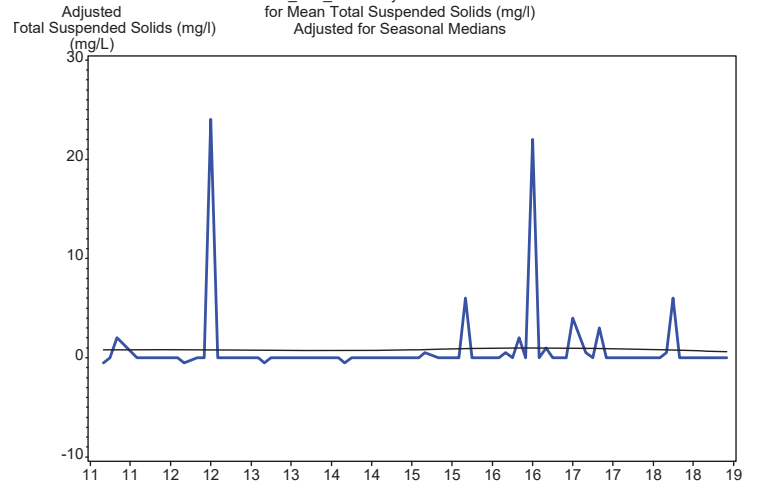
S_GW_7 Trends Appendix
 Correlogram for Mean Total Nitrogen (mg/l)
 Adjusted for Seasonal Median and Detrended



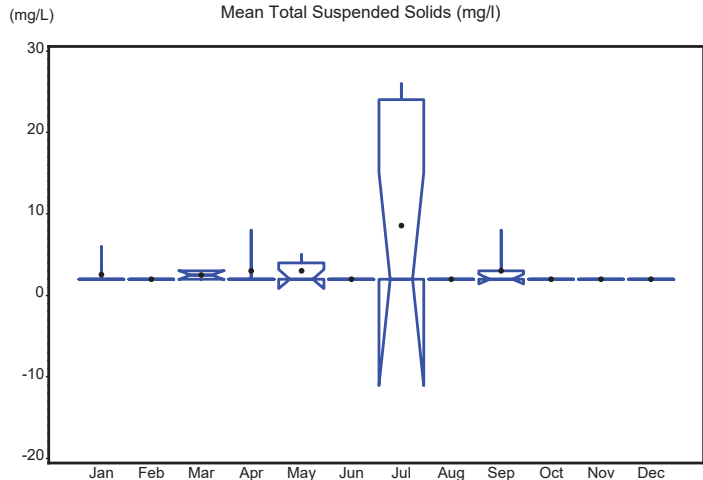
S_GW_7 Trends
 S_GW_7 Monthly Data Time Series
 for Mean Total Suspended Solids (mg/l)
 Not Adjusted for Seasonal Medians



S_GW_7 Trends
 S_GW_7 Monthly Data Time Series
 for Mean Total Suspended Solids (mg/l)
 Adjusted for Seasonal Medians



S_GW_7 Trends Appendix
Seasonal Univariate Statistics
Mean Total Suspended Solids (mg/l)



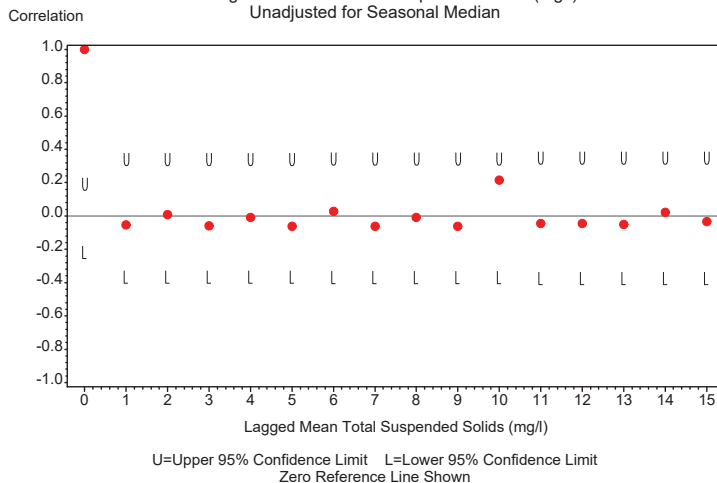
S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.053	0.177	0.354	-0.354
2	0.008	0.177	0.354	-0.354
3	-0.059	0.177	0.354	-0.354
4	-0.010	0.177	0.354	-0.354
5	-0.061	0.177	0.354	-0.354
6	0.028	0.177	0.355	-0.355
7	-0.061	0.177	0.355	-0.355
8	-0.008	0.178	0.355	-0.355
9	-0.063	0.178	0.355	-0.355
10	0.215	0.178	0.356	-0.356
11	-0.046	0.181	0.361	-0.361
12	-0.044	0.181	0.361	-0.361
13	-0.052	0.181	0.362	-0.362

S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.021	0.181	0.362	-0.362
15	-0.033	0.181	0.362	-0.362

S_GW_7 Trends Appendix
Correlogram for Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Median



S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Suspended Solids (mg/l)
Unadjusted for Seasonal Medians

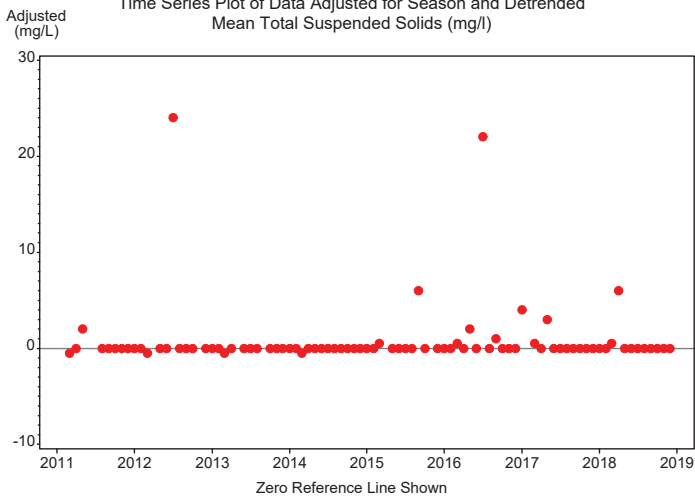
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.088	0.087	0.135	0

S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.087786	0.087405	0.13472	0

S_GW_7 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended
Mean Total Suspended Solids (mg/l)



S_GW_7 Trends Appendix

Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	-0.051	0.177	0.354	-0.354
2	0.009	0.177	0.354	-0.354
3	-0.051	0.177	0.354	-0.354
4	-0.033	0.177	0.354	-0.354
5	-0.054	0.177	0.354	-0.354
6	0.028	0.177	0.355	-0.355
7	-0.053	0.177	0.355	-0.355
8	-0.030	0.178	0.355	-0.355
9	-0.056	0.178	0.355	-0.355
10	0.213	0.178	0.356	-0.356
11	-0.041	0.180	0.361	-0.361
12	-0.038	0.181	0.361	-0.361
13	-0.050	0.181	0.361	-0.361

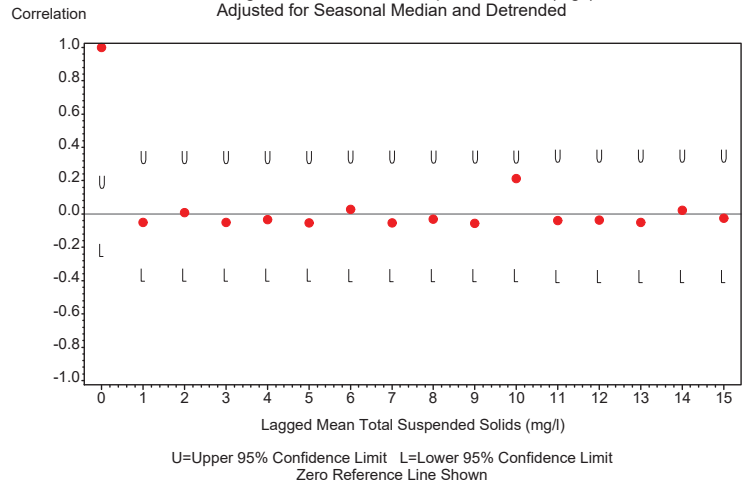
S_GW_7 Trends Appendix

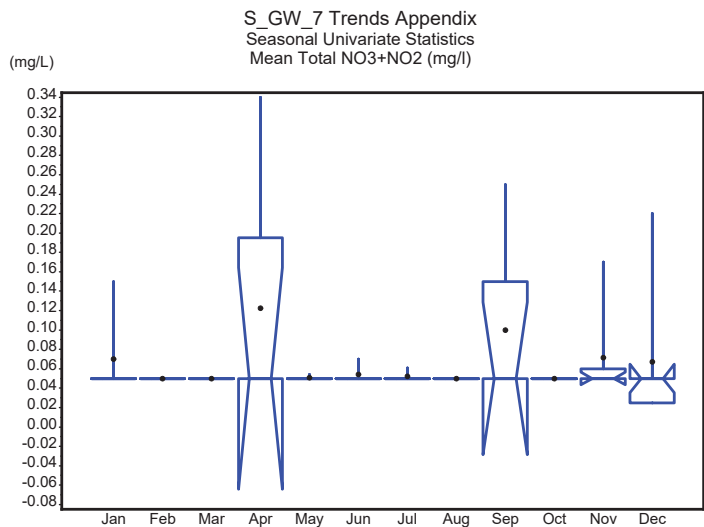
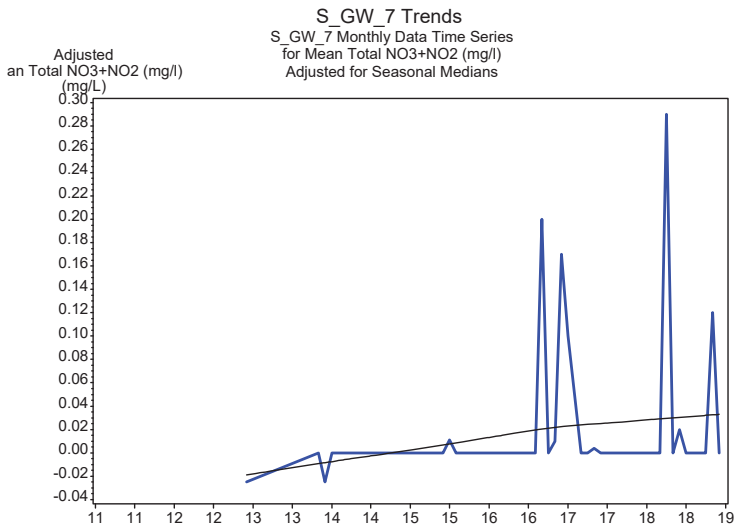
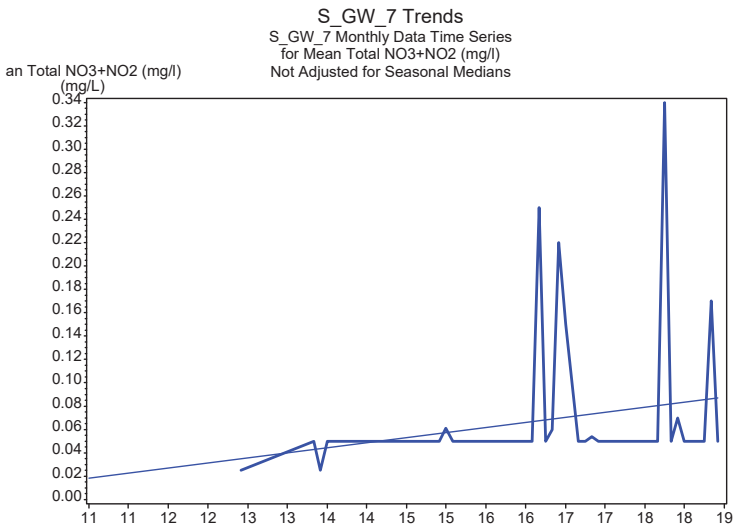
Autocorrelation Statistics for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total Suspended Solids (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.022	0.181	0.361	-0.361
15	-0.026	0.181	0.362	-0.362

S_GW_7 Trends Appendix

Correlogram for Mean Total Suspended Solids (mg/l)
Adjusted for Seasonal Median and Detrended





S_GW_7 Trends Appendix

Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.035	0.177	0.354	-0.354
2	-0.011	0.177	0.354	-0.354
3	0.132	0.177	0.354	-0.354
4	0.042	0.178	0.356	-0.356
5	-0.054	0.178	0.356	-0.356
6	-0.092	0.178	0.356	-0.356
7	0.132	0.179	0.357	-0.357
8	-0.089	0.180	0.359	-0.359
9	-0.090	0.180	0.360	-0.360
10	-0.085	0.181	0.361	-0.361
11	-0.069	0.181	0.362	-0.362
12	-0.073	0.181	0.363	-0.363
13	-0.082	0.182	0.363	-0.363

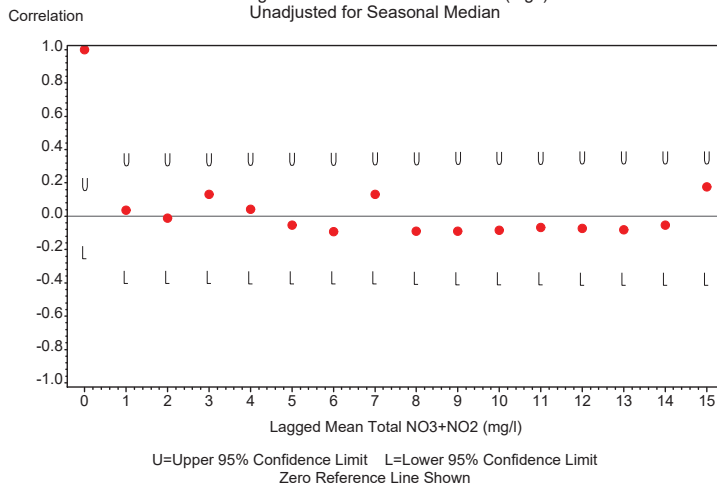
S_GW_7 Trends Appendix

Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.053	0.182	0.364	-0.364
15	0.177	0.182	0.364	-0.364

S_GW_7 Trends Appendix

Correlogram for Mean Total NO3+NO2 (mg/l)
Unadjusted for Seasonal Median



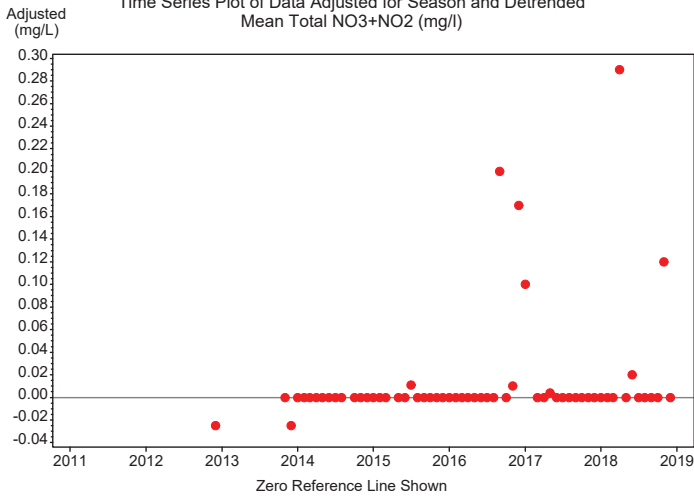
S_GW_7 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total NO3+NO2 (mg/l)
 Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.202	0.014	0.015	0

S_GW_7 Trends Appendix
 Seasonal Kendall Tau Trend Test Statistics
 Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.20161	0.014475	0.015161	0

S_GW_7 Trends Appendix
 Time Series Plot of Data Adjusted for Season and Detrended
 Mean Total NO3+NO2 (mg/l)



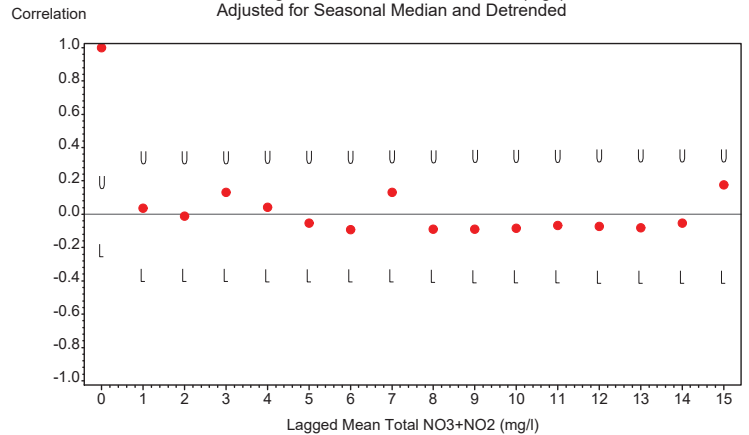
S_GW_7 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.035	0.177	0.354	-0.354
2	-0.011	0.177	0.354	-0.354
3	0.132	0.177	0.354	-0.354
4	0.042	0.178	0.356	-0.356
5	-0.054	0.178	0.356	-0.356
6	-0.092	0.178	0.356	-0.356
7	0.132	0.179	0.357	-0.357
8	-0.089	0.180	0.359	-0.359
9	-0.090	0.180	0.360	-0.360
10	-0.085	0.181	0.361	-0.361
11	-0.069	0.181	0.362	-0.362
12	-0.073	0.181	0.363	-0.363
13	-0.082	0.182	0.363	-0.363

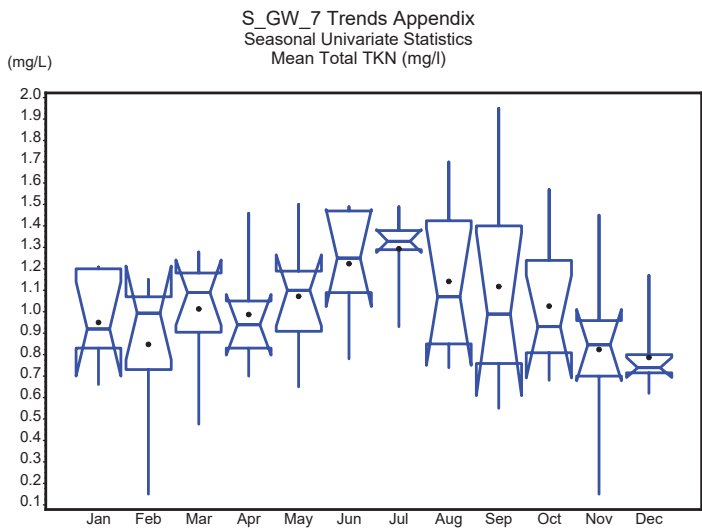
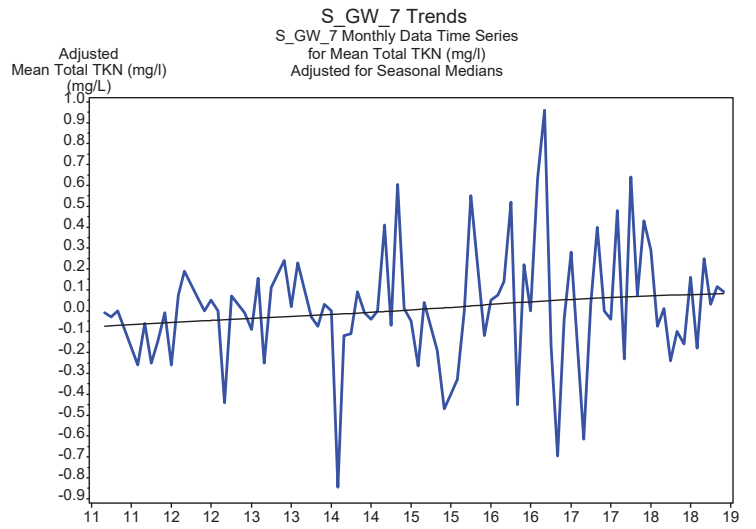
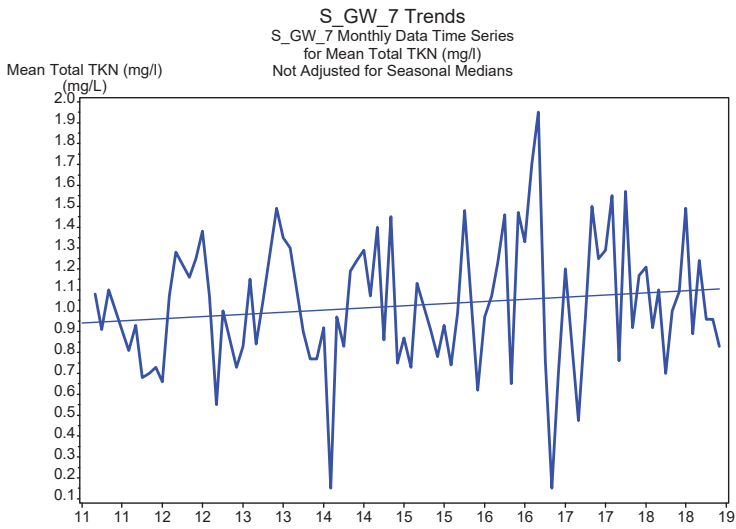
S_GW_7 Trends Appendix
 Autocorrelation Statistics for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total NO3+NO2 (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.053	0.182	0.364	-0.364
15	0.177	0.182	0.364	-0.364

S_GW_7 Trends Appendix
 Correlogram for Mean Total NO3+NO2 (mg/l)
 Adjusted for Seasonal Median and Detrended



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
 Zero Reference Line Shown



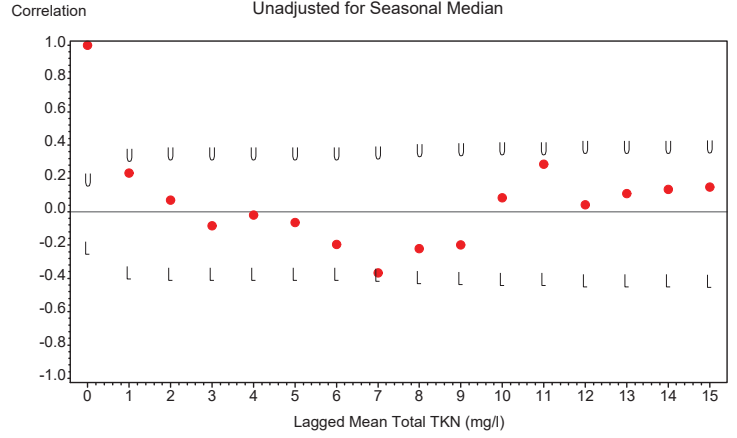
S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.231	0.177	0.354	-0.354
2	0.069	0.180	0.360	-0.360
3	-0.085	0.180	0.360	-0.360
4	-0.020	0.181	0.361	-0.361
5	-0.064	0.181	0.361	-0.361
6	-0.196	0.181	0.362	-0.362
7	-0.366	0.183	0.366	-0.366
8	-0.222	0.191	0.381	-0.381
9	-0.198	0.193	0.386	-0.386
10	0.084	0.195	0.391	-0.391
11	0.285	0.196	0.391	-0.391
12	0.041	0.200	0.400	-0.400
13	0.110	0.200	0.400	-0.400

S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.133	0.201	0.401	-0.401
15	0.147	0.202	0.403	-0.403

S_GW_7 Trends Appendix
Correlogram for Mean Total TKN (mg/l)
Unadjusted for Seasonal Median



U=Upper 95% Confidence Limit L=Lower 95% Confidence Limit
Zero Reference Line Shown

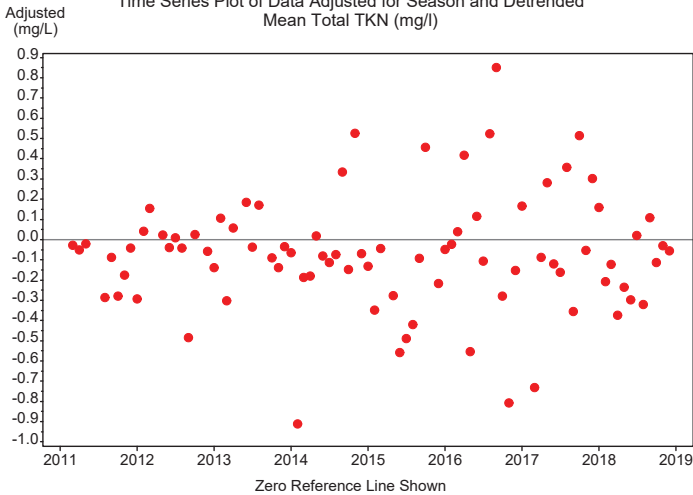
S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Unadjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.126	0.177	0.231	0.016

S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Total TKN (mg/l)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.12595	0.17745	0.23098	0.016333

S_GW_7 Trends Appendix
Time Series Plot of Data Adjusted for Season and Detrended
Mean Total TKN (mg/l)



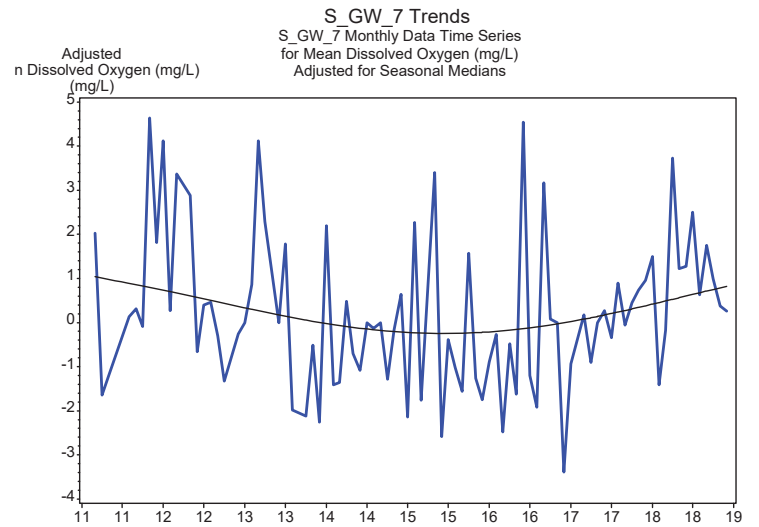
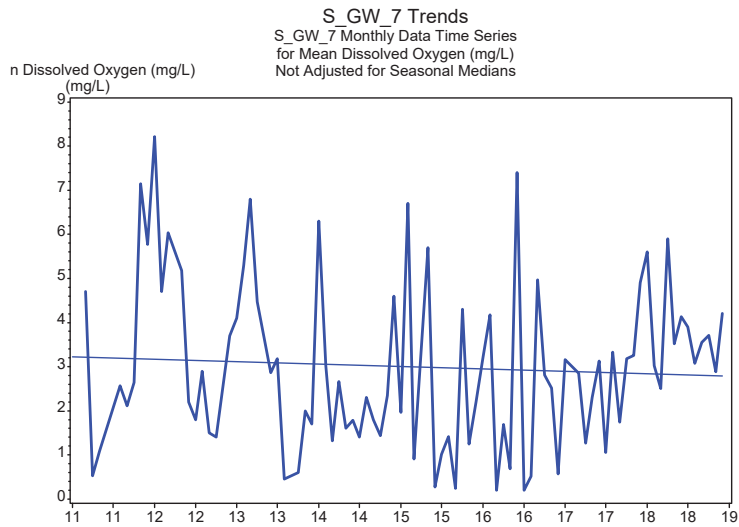
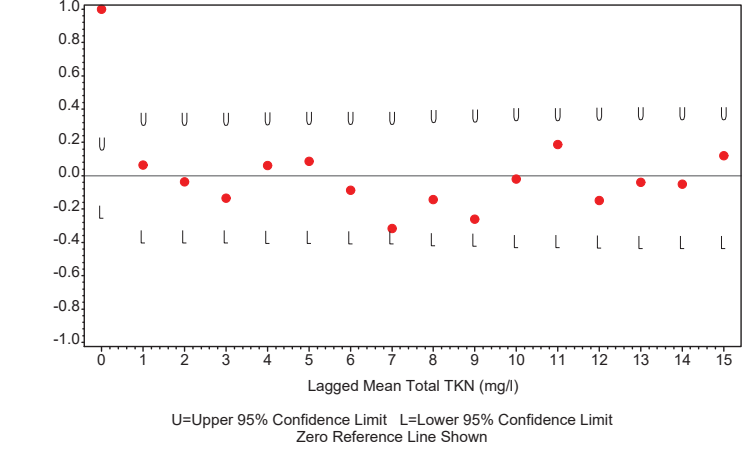
S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Total TKN (mg/l)
Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.063	0.177	0.354	-0.354
2	-0.038	0.177	0.354	-0.354
3	-0.134	0.177	0.354	-0.354
4	0.061	0.178	0.356	-0.356
5	0.086	0.178	0.357	-0.357
6	-0.087	0.179	0.358	-0.358
7	-0.317	0.179	0.359	-0.359
8	-0.142	0.185	0.370	-0.370
9	-0.260	0.186	0.372	-0.372
10	-0.019	0.190	0.380	-0.380
11	0.187	0.190	0.380	-0.380
12	-0.149	0.192	0.384	-0.384
13	-0.041	0.193	0.386	-0.386

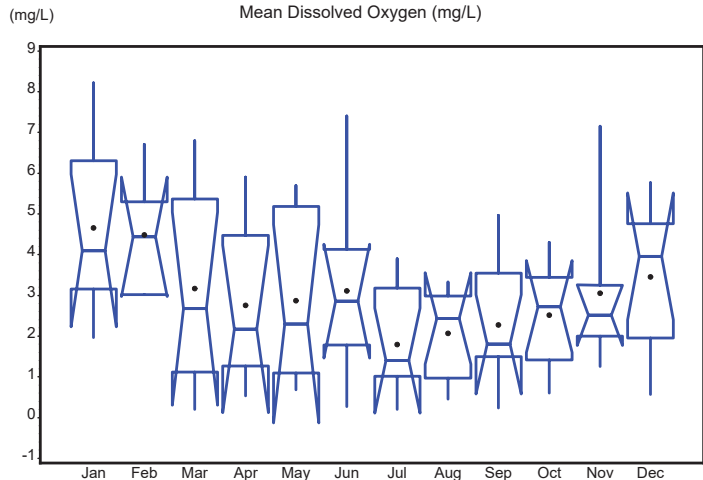
S_GW_7 Trends Appendix
 Autocorrelation Statistics for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended

Lagged Mean Total TKN (mg/l)	Correlation	Standard Error	Upper Limit	Lower Limit
14	-0.052	0.193	0.386	-0.386
15	0.121	0.193	0.386	-0.386

S_GW_7 Trends Appendix
 Correlogram for Mean Total TKN (mg/l)
 Adjusted for Seasonal Median and Detrended



S_GW_7 Trends Appendix
Seasonal Univariate Statistics
Mean Dissolved Oxygen (mg/L)



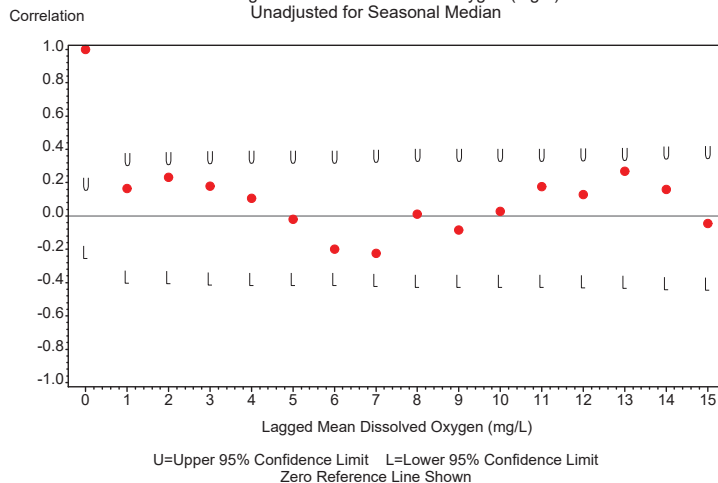
S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.165	0.177	0.354	-0.354
2	0.232	0.178	0.357	-0.357
3	0.178	0.181	0.363	-0.363
4	0.107	0.183	0.367	-0.367
5	-0.020	0.184	0.368	-0.368
6	-0.199	0.184	0.368	-0.368
7	-0.225	0.186	0.372	-0.372
8	0.010	0.189	0.378	-0.378
9	-0.084	0.189	0.378	-0.378
10	0.027	0.189	0.379	-0.379
11	0.177	0.189	0.379	-0.379
12	0.128	0.191	0.382	-0.382
13	0.267	0.192	0.384	-0.384

S_GW_7 Trends Appendix
Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.160	0.196	0.392	-0.392
15	-0.044	0.197	0.394	-0.394

S_GW_7 Trends Appendix
Correlogram for Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Median



S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Unadjusted for Seasonal Medians

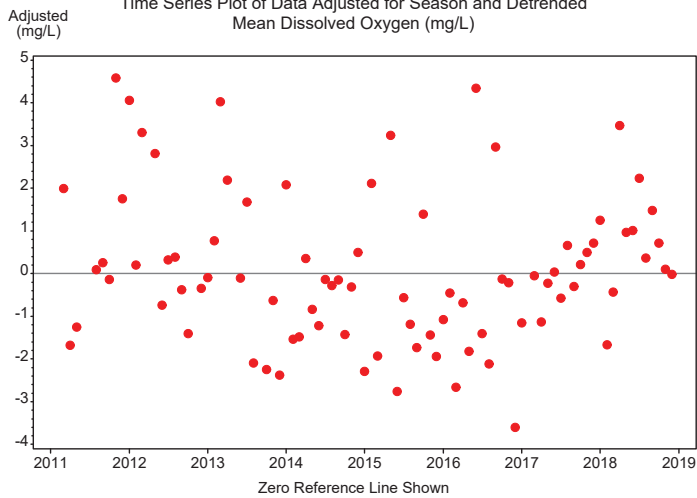
Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.034	0.74	0.789	0.031

S_GW_7 Trends Appendix
Seasonal Kendall Tau Trend Test Statistics
Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Medians

Tau Statistic	P-Value Without Serial Correlation	P-Value With Serial Correlation	Slope Statistic
0.033582	0.74040	0.78854	0.031167

S_GW_7 Trends Appendix

Time Series Plot of Data Adjusted for Season and Detrended
Mean Dissolved Oxygen (mg/L)



S_GW_7 Trends Appendix

Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
0	1.000	0.102	0.204	-0.204
1	0.019	0.177	0.354	-0.354
2	0.226	0.177	0.354	-0.354
3	0.194	0.180	0.360	-0.360
4	0.154	0.182	0.364	-0.364
5	0.099	0.183	0.367	-0.367
6	-0.040	0.184	0.368	-0.368
7	-0.135	0.184	0.368	-0.368
8	0.139	0.185	0.370	-0.370
9	-0.047	0.186	0.372	-0.372
10	0.063	0.186	0.372	-0.372
11	0.052	0.186	0.373	-0.373
12	-0.027	0.187	0.373	-0.373
13	0.193	0.187	0.373	-0.373

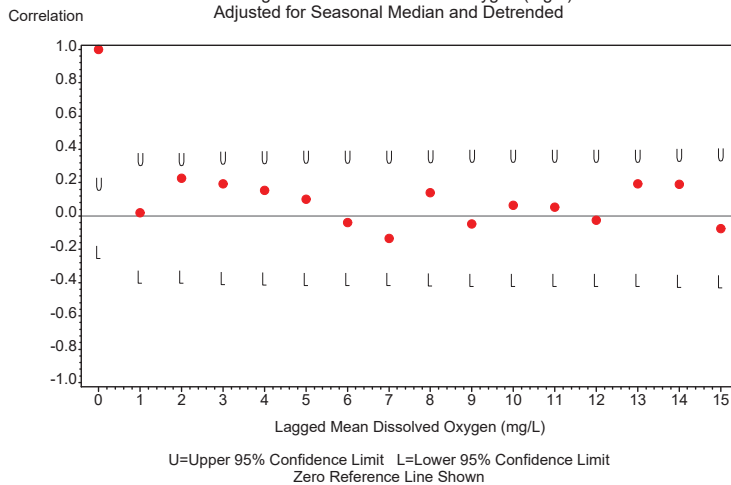
S_GW_7 Trends Appendix

Autocorrelation Statistics for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended

Lagged Mean Dissolved Oxygen (mg/L)	Correlation	Standard Error	Upper Limit	Lower Limit
14	0.190	0.189	0.377	-0.377
15	-0.075	0.191	0.381	-0.381

S_GW_7 Trends Appendix

Correlogram for Mean Dissolved Oxygen (mg/L)
Adjusted for Seasonal Median and Detrended



**Codes and Land Development
Regulations**

City of West Palm Beach



WEST PALM BEACH

Technical Memorandum #13 Stormwater Master Plan

Collective Water Team
Programmatic Administration and Funding Summary

Subject: Programmatic Administration and Funding Summary
Date: October 2016
To: City Staff Technical Team
From: Amelia Fontaine (*Collective Water Resources*)
Brett Cunningham (*Jones Edmunds & Associates, Inc.*)
Elizabeth Perez (*Collective Water Resources*)
Copy to: City Staff Technical Leadership Team
Elizabeth Perez (*President, Collective Water Resources*)
Project File
Stormwater Master Plan

This memorandum summarizes work completed during the Funding and Administration Task including compilation of various project tasks and programmatic reviews with regard to the City's current stormwater management programs and proposed administrative enhancements. This memorandum fulfills the deliverable requirements as provided in Item 8.2.3 of the Scope of Work.

Executive Summary

The Collective Water Team has proposed enhancements to several aspects of the City's stormwater program and associated administration. Proposed enhancements to the City's governance documents include additional details and clarifications, inclusion of state and federal standards and other additions consistent with the City's progressive approach to municipal stormwater programs. Programmatic recommendations include expansion to the City's stormwater program and integrated data management and leverage across departments.

8.1 Introduction

The Collective Water (CW) Team was selected by the City of West Palm Beach to update and improve on the City's existing Stormwater Master Plan (SWMP). As part of the City's SWMP, Jones Edmunds & Associates, Inc. and Collective Water Resources, LLC have reviewed aspects of the of the City's stormwater program administration. This task approach is a look at the multi-faceted nature of administration, including governance documents, administrative procedures, and other technical and programmatic elements of the City's stormwater management. Review and evaluation was guided by the City's direction to continue making the Stormwater Program more progressive and sustainable while striking a balance and achieving consistency with other City goals, including functionality and simplicity. This Technical Memorandum groups the review and evaluation under major sections as follows:

- Governance documents review and recommendations
- Consideration of state and national standards in floodplain management
- Current recommendations for program enhancement

This memorandum summarizes the programmatic review of the City's Stormwater Program and considerations.

8.2 Governance Documents Review

The CW Team reviewed the City's Comprehensive Plan, Code of Ordinances, stormwater utility and other local rules implemented by the City regarding stormwater management. The review included a comprehensive evaluation of each document for references to stormwater, development, floodplain management and other topics relevant to the SWMP. The following sections documents the CW Team comments compiled from the City stormwater governance documents review.

Comprehensive Plan

The Comprehensive Plan does an exemplary job of setting the direction for a progressive and sustainable Stormwater Program. The following list of considerations could be added to make incremental improvements to the Comprehensive Plan with respect to stormwater management:

1. *Future Land Use Element, Goal 1, Objective 1.7, Policy 1.7.5, Item a*): There is a reference to “surface water management systems and levels of service,” but there do not appear to be well-defined levels of service for surface water management systems in the Comprehensive Plan or Code of Ordinances. Clearly defining the levels of service would be beneficial.
2. *Utilities Element, Stormwater Management Subelement, Goal 1*: Consider adding “restoration of impaired waters” to the Goal.
3. *Utilities Element, Stormwater Management Subelement, Goal 1, Objective 1.1, Policy 1.1.1, Item a.*: Controlling new development only up to the 25-year storm event may result in increases in the 100-year flood stages, which may not be consistent with other City goals. The City may want to consider controlling offsite flows for the 100-year storm event, at least in areas with known flooding problems.
4. *Utilities Element, Stormwater Management Subelement, Goal 1, Objective 1.1, Policy 1.1.1, Item d.*: Consider adding other low-impact development/green infrastructure practices (e.g. bioretention, biofiltration, vegetated filter strips, etc.) to the items listed in this Item since the City is interested in promoting these practices.
5. *Utilities Element, Stormwater Management Subelement, Goal 2, Objective 3.1*: Presumably this will be updated to the date of the new Stormwater Master Plan after completion.
6. *Conservation Element, Surface and Groundwater Systems, Goal 2, Objective 2.1*: Consider adding a Policy relating to restoration of impaired water bodies (similar to Item 2 above).
7. *Capital Improvements Element*: Consider adding a means of encouraging CIP projects that achieve multiple goals/objectives as a way to demonstrate the best use of City funds.
8. *Downtown Master Plan Element*: The City’s policy on obtaining water quality treatment/improvements in redevelopment projects is not clear here or in the Code of Ordinances. Consider adding a policy in one or both locations. A possible example to consider is what Pinellas County proposed in its (currently) draft Stormwater Manual.

Code of Ordinances

Flood Management

1. *Sec. 94-542, (b) Areas of special flood hazard*: Potentially consider broadening this definition to allow for use of locally developed data that has not yet been incorporated into the FIRM (e.g. the information developed in the Stormwater Master Plan).
2. *Sec. 94-546. - Provisions for flood hazard reduction, (g) Coastal high hazard areas, (8) Latticework or decorative screening shall be allowed below the base flood elevation*

provided they are not part of the structural support of the building and are designed so as to breakaway, under abnormally high tides or wave action, without damage to the structural integrity of the building on which they are to be used and provided the following design specifications are met: a. No solid walls shall be allowed; and b. Material shall consist of lattice or mesh screening only: This is potentially an area to carry forward into the Model Floodplain Ordinance.

Green Infrastructure (GI)/Low-Impact Development (LID)

In general, the Code of Ordinances is supportive of GI/LID practices. It also contains very few of the impediments to GI/LID that are common in other Ordinances throughout Florida. The following is a list of potential changes to the Ordinances that could help promote the use of GI/LID practices:

1. There are numerous buffer and landscaping requirements throughout the Ordinances. These are potentially portions of the parcel that could be used for GI/LID practices. If the City wants to further promote their use, there could be mentions in these locations of the acceptability of its use. However, there are also restrictions that they City may also want to impose, e.g. it has to be in a drainage easement, it has to be easily accessed for inspection (not in a backyard), etc.
2. *Sec. 94-442. - Open space landscape requirements, (d) Landscaping of private land and public rights-of-way:* The way this is worded may preclude the use of some GI/LID practices in this space.
3. *Sec. 94-482. - Parking requirements for less than three residential dwelling units, (a) Location and surface, Notwithstanding the preceding paragraph, locations where off-street parking spaces, driveways, patios and/or walkways in the front yard exclusively consist of a permeable paver system, 60 percent of the front yard area shall be landscaped with living plant material (such as grass, ground cover, shrubs, hedges, vines or trees):* This requirement is supportive of LID practices. However, the City should consider developing pervious pavement and other applicable GI/LID standards to ensure the proper design and maintenance of these practices.
4. *Sec. 94-485. - General provisions, (e) Surfacing of parking and loading spaces:* Requirement of grass-free would exclude some forms of pervious pavement. The City may want to allow grass when associated with an appropriate pervious pavement practice.

General Stormwater Issues

The following is a list of general stormwater issues we noted during our review of the Ordinances:

1. *Sec. 78-9. - City datum or plane of reference (and other locations):* Consider moving to the National Geodetic Vertical Datum of 1988 (NAVD) since NGVD will eventually be displaced by NAVD.

2. *Sec. 78-91. – Definitions, Swales:* Swales are statutorily defined differently than the definition provided in the Ordinances. In order to avoid a conflict with that definition, the City could use the term *drainage way* or something similar in this context.
3. *Sec. 90-168. - Adjustment of fees. “No credit shall be given for the installation of facilities required by city or county development codes or state stormwater rules.”:* The City may want to consider a fee reduction for parcels served by privately built and maintained stormwater facilities that reduce the burden on the City’s stormwater system.
4. *Sec. 90-171. - Stormwater utility account funds:* The wording seems to collectively suggest that flood protection projects are not part of what can be funded. The City may want to consider explicitly listing flood protection in this Section.
5. *Sec. 90-202. – Definitions, Stormwater system:* Consider including 'treating' in the definition.
6. There does not appear to be a part of the Ordinances that prevent piecemeal development that would circumvent some of the reviews and requirements.
7. *Sec. 94-35. - Site plan review, (c) Site design qualitative development standards, (2) Preservation of natural conditions:* Consider mentioning minimizing soil compaction as appropriate to promote infiltration.
8. *Sec. 94-35. - Site plan review, (c) Site design qualitative development standards, (2) Preservation of natural conditions, (11) Stormwater control:* Although it is mentioned elsewhere in the Ordinances, consider adding that it should comply with City, SFWMD, and State Rules.
9. *Sec. 94-35. - Site plan review, (d) Procedures, (6) Level II site plans:* Consider adding other triggers related to stormwater that may not be captured on this list (e.g. an imperviousness or size threshold) that would move a review to Level II.
10. *Sec. 94-36. - Special use review, (e) Special use standards, (4) Specific standards for all special uses, b. Utility systems:* It is not clear how the stormwater portion of this review is covered. If it is through the use of presumptive criteria, it may be helpful to state them in this location.
11. *Sec. 94-36. - Special use review, (f) Developments of significant impact, (2) Additional application requirements, f. A detailed stormwater drainage plan:* Consider adding specificity (here or in a referenced document) to what should be included in the stormwater drainage plan.
12. *Sec. 94-44. - Subdivision review, (e) Minimum improvements required for final plat approval, e. Drainage:* Consider mentioning attenuation and treatment.
13. *Sec. 94-104. - Prior development approvals, (a) Existing buildings and uses within the DMP [Downtown Master Plan] area which were legally established but do not conform to provisions of the urban regulations as of the effective date of these regulations shall be considered nonconforming, may not be replaced, restored or modified, except in conformity with the urban regulations, and shall follow the regulations for*

nonconformities contained in article XVI of this chapter. When a nonconforming structure is destroyed by windstorm, flood, or natural disaster, it may be replaced by a new structure of the same or lesser size, and reoccupied by the same use, if construction of such structure is commenced within 18 months of destruction: Consider adding restriction for buildings within the Special Flood Hazard Areas. Any building that has “substantial damage” (i.e. 50% of cost of building) would be required to conform to the current regulations. The City would be eligible for CRS points by implementing this restriction.

14. *Sec. 94-105. - Use requirements, (d) Permitted use tables, P16 Off-site accessory surface parking lots in residential subdistricts listed on Figure IV-2, may be allowed to continue with the following conditions:*, 1. The lots shall be improved to the following minimum standards:, ii. Paving materials shall be limited to stabilized grass, brick pavers, plain or colored concrete, or asphalt, subject to the following standards: Consider adding other pervious pavement besides brick pavers.
15. *Sec. 94-307. - Surface water management:* As alluded to in this Section, the City largely defers to SFWMD stormwater management rules. Although SFWMD’s stormwater rules are generally sound, there may other considerations and criteria (as identified in this memorandum) that the City should add.
16. *Sec. 94-342. - General design standards, (i) Easements along streams or canals:* Consider adding “maintaining” to the list.
17. *Sec. 94-344. - Requirements for unplatted subdivisions, (1):* It is unclear if this item means the streets and sidewalks should be built or simply planned. If they should be built, then the stormwater system should also be built (or at least a portion of it) for treatment and attenuation.
18. *Sec. 94-373. - Lands adjacent to water catchment area and designated ecosites, (b), (5) Not adversely affecting the water quality or natural setting in the water catchment area:* Not adversely affecting water quality could potentially be interpreted as not protective enough. Consider something more similar to "net improvement" language that exists for impaired water bodies.
19. *Sec. 94-375. – Wetlands, (a) South Florida Water Management District under Basis of Review for Surface Water Management Permit Applications Appendix 7 (Isolated Wetlands):* This references an older version of the SWERP Applicant’s handbook. The City should reference the new applicant’s handbook. Alternatively, consider replacing this reference with general reference to FAC and SFWMD rules applicable to wetlands, isolated wetlands; this approach would eliminate the need to update for future SWERP handbook versions.
20. *Sec. 94-376. - Aquifer recharge areas, Development in aquifer recharge areas shall not cause the surface water flow off of the property on which the development occurs to exceed the amount of historic flow prior to development. Compliance with the*

requirements of South Florida Water Management District F.A.C. 40E-4, shall constitute compliance with this provision and with the provisions of the city's comprehensive plan which relate to the aquifer recharge areas: It appears that the intent of this Section is to address runoff volume and retention. If that is the case, it may be beneficial to add the word “volume” after “flow” and specify that retention-based best management practices are being applied.

21. *Sec. 94-579. - Level of service standards, (4) Drainage:* Consider adding more LOS standards for drainage (e.g. allowable road flooding based on road type, 100-year control in areas of known flooding, etc.).
22. *Sec. 94-611. – Definitions, Permeable paver system:* Consider expanding the definition to include other forms of pervious pavement besides pavers.

Overall Recommendation- Stormwater Ordinance Consolidation

Stormwater criteria are located in several different locations throughout the Ordinances, as can be seen in the references in the Section above. Consolidating the stormwater criteria into a single Section of the Ordinances would make the Ordinances easier to use from a stormwater perspective. The Sections that would need to be consolidated are those referenced above. Additionally, as can be seen in our comments, there are other criteria that the City may want to consider adding. The consolidation could be implemented in the Ordinances, or the Ordinances could include a reference to a separate Stormwater Manual (see the Future Considerations Section below).

Additional Review of MS4 NPDES Summary Report Document

In addition to review of City Governance Documents above, the CW Team reviewed the Summary Report “Land Development Regulations and Municipal Code Review for Opportunities to Reduce the Water Quality Impacts of Stormwater Runoff resulting from Development or Significant Redevelopment Activities”. This document was prepared as part of MS4 NPDES compliance activities in 2012. The City was required to review its land development related codes and ordinances to identify if any changes could be made that would further reduce the impact to stormwater from new development or significant redevelopment. Mock Roos created the document on behalf of the City, reviewing from a NPDES compliance perspective and providing recommendations to the City. The City provided the document to the CW Team for review and comment. The CW Team provided comments to City staff via email on January 3, 2016.

Specific Ordinance Review Requests

In addition to the general review of the City’s codes and ordinances, staff has requested specific potential issues be considered for ordinance modification recommendations by the Collective Water Team:

- *Review section 90-203 regarding the City’s NPDES MS4 Permit. The state NPDES Generic Permit for stormwater does not require an NOI to be filed for sites less than one (1) acre. The comment was that the City has an ordinance to prohibit construction site runoff from*

any site from entering the MS4, so the City has an obligation to enforce the ordinance. The City should include enforcement of this ordinance into their site inspection process, if already not a part of the construction.

- *There was concern stated over litter falling from garbage trucks into Grassy Water Preserve. The City should investigate who is doing the trash hauling and see if it is possible to better manage the waste as it is hauled. The City may also consider an ordinance to enforce hauled waste management practices.*
- *The City would like review of the South Florida Building Code.*
- *Look at development/ redevelopment onsite parking LOS for vehicle flood protection.*
- *Seawall height continuity (as coastal bulkhead), add ordinance?*
- *Illicit discharges with fee structure for non-compliance*
- *Below are recent (2015) requirements that the State of Florida included for the Coastal Management Element of the Comprehensive Plan. My initial reading of these requirements is that a lot of this will be addressed through the proposed Floodplain Ordinance as well as through some of the engineering solutions being discussed for some of these areas. I just wanted to see if you could verify whether my assessment is accurate. If something is not being addressed through the Ordinance or through the other efforts please highlight those gaps for us.*
 - *"Adds a redevelopment component that outlines the principles that must be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. The component must:*
 - *1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.*
 - *2. Encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency.*
 - *3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.*
 - *4. Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.*
 - *5. Require that any construction activities seaward of the coastal construction control lines established pursuant to s. 161.053 be consistent with chapter 161.*
 - *6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency*

Management Agency to achieve flood insurance premium discounts for their residents."

This should be covered by the use of the model floodplain ordinance.

Stormwater Utility

The City's existing stormwater utility rate is currently under evaluation by others (Public Resources Management Group, Inc.). It is recommended that the City's stormwater utility rate structure be addressed in parallel with that project.

8.3 State and National Program Standards

There are several state and federal program standards and regulations, pertaining to stormwater/ floodplain management, for consideration to enhance the City's current stormwater management program.

State Standards

10/2 Criteria

Section 403.814(12), FS, which grants SFWMD/FDEP authority to grant general permits to construct, alter, or maintain a stormwater management system serving a project that involves qualifying activities in uplands having less than 10 acres of total project area and less than 2 acres of impervious surface, went into effect July 1, 2012. This general permit requires an "electronic self-certification" to be submitted within 30 days after construction begins. Therefore, these projects receive minimal ERP review. One concern with the way the Statute was written is that it is vague with respect to requiring "net improvement" standards in the watershed of an impaired water body. Meeting only the current presumptive water quality criteria would have the effect of shifting the burden of future pollutant load reductions to the City. Preventing this shift may not necessarily require a change to the Ordinances, although a specific requirement in the Ordinances to the "net improvement" requirement may help with awareness of the issue at the design phase of a project. It should also be noted that there have been attempts to make this change legislatively. If a future attempt is successful, this issue will be resolved.

Model Floodplain Ordinance

Changes in the 2010 Florida Building Code (FBC) have necessitated changes to local floodplain management regulations. To make help with this process, the Florida Division of Emergency Management (DEM) has developed a Model Ordinance that is consistent with the FBC and the National Flood Insurance Program (NFIP). The Model Ordinance is designed to repeal and replace existing floodplain management regulations, which in the City's case is Chapter 94 Article XVII. - Flood Prevention and Control of the Code of Ordinances. Communities are allowed to adopt standards that are higher than what is in the Model Ordinance, and there are Community Rating

System points that can be achieved by adopting higher standards. The City is currently evaluating and considering a freeboard requirement of two (2) feet.

Also, see section below on CRS standards.

National Standards- CRS

This section of the Technical Memorandum discusses which higher regulatory standards the City may want to consider adopting – either as a carryover from Chapter 94 Article XVII or a new standard. The following is a summary of suggested applicability of the higher standards currently listed in Section 430 of the *National Flood Insurance Program Community Rating System Coordinator's Manual FIA-15/2013*:

Development Limitations (DL)

Adopting prohibition of fill (DL1) does not seem practical for the City. However, compensatory storage (DL1b) is a higher standard that the City may want to consider since it would normally be required as part of an Environmental Resource Permit. Prohibition of buildings (DL2) would also be impractical. Prohibition of outdoor storage of materials is a possible consideration.

Freeboard (FRB)

Freeboard refers to the distance above base flood elevation to which buildings are required to be built within Special Flood Hazard Areas. The minimum recommendation is that the City require a freeboard of 1 foot, which is ½ foot higher than the current freeboard. The 1-foot freeboard is a prerequisite for any community to earn a Class 4 CRS designation or higher. Higher freeboard requirements (2.0 foot) are also being considered and under review by City staff and management.

Foundation Protection (FDN)

The City could receive credit for this higher standard if the City requires that registered design professionals sign and seal plans demonstrating that foundations of all new buildings in the regulatory floodplain comply with the International Building Code or its equivalent.

Cumulative Substantial Improvements (CSI)

The City could receive CRS credit for requiring that substantial improvement and/or substantial damage be calculated and tracked cumulatively over a 5 or 10-year period of time.

Lower Substantial Improvements (LSI)

The City could receive CRS credit for requiring that the threshold for substantial improvement or substantial damage be lower than 50%.

Protection of Critical Facilities (PCF)

The City could receive CRS credit for requiring that critical facilities be either prohibited from the 500-year floodplain or protected to at least a height one foot above the 500-year floodplain.

Enclosure Limits (ENL)

CRS credit is given for regulations that limit enclosures below the base floor elevation of buildings. The amount of points awarded is based upon the extent of the enclosure limitations.

Building Code (BC)

Because the *Florida Building Code* includes a number of higher regulatory standards, the City will receive CRS credit for its continued enforcement of this Code.

Local Drainage Protection (LDP)

Since there is language in the current Ordinances that addresses LDP, this appears to be a higher standard for which the City will receive CRS credit.

Manufactured Home Parks (MHP)

CRS credit is given for higher standards pertaining to the elevation requirements of manufactured homes. Because the credit to be earned is small, this higher standard may not be worth the effort to adopt and enforce it.

Coastal A Zones (CAZ)

CRS credit is given to communities that enforce the higher V Zone regulations in “Coastal A Zones.” The City may choose to consider the designation of Coastal A Zones and the accompanying implementation of these higher standards.

Special Flood-related Hazards Regulations (SHR)

CRS credit is offered for higher regulations pertaining to a number of addition flood-related hazards, including coastal erosion.

Other Higher Standard (OHS)

If the City implements other higher regulations that tend to mitigate flooding, CRS credit can be received, even if the specific regulation is not listed above.

State-mandated Regulatory Standards (SMS)

The City will earn credit for State-mandated regulatory standards without needing to adopt any additional higher standards.

Regulations Administration (RA)

The City will earn CRS credit for the training and certifications of its personnel that address floodplain management and flood mitigation.

The CRS credit that the City will receive for its adoption of higher regulatory standards is not as significant as would be the case for many other communities because a large percentage of this City’s floodplain is open space, and thus not regulated. Accordingly, none of the higher regulatory standards described above are crucial to adopt from the perspective of earning a significant number of CRS points. However, there is one higher regulatory standard which the

City should adopt: freeboard. The City of West Palm Beach may earn enough CRS points to become a Class 4 community, however, one prerequisite for a Class 4 community is the adoption of a freeboard of at least one foot. The implementation of this higher regulation is strongly recommended for the following reasons:

1. Currently there is already a freeboard requirement of six inches, so the addition of six more inches would not pose a great difficulty for the City's citizens.
2. The decision has been made on the State level that a future edition of the Florida Building Code will include a one-foot freeboard requirement. Thus the adoption of this higher standard is simply a proactive step to take.
3. The benefit in flood insurance premium reductions that can be gained for the residents and businesses in the City will result in significant annual savings.

8.4 Recommendations

Recommendations based on the information presented in this memorandum are incorporated in Volume 1 SWMP, Section 6: Recommendations- Programmatic and Administrative.

Exhibit III.A.4

Stormwater Retrofit Projects Planned / Under Construction

No.	Project
1	Stormsewer System Rehab-26 th St & Flagler Dr.
2	Stormsewer Improvements – Currie Park Green Streets

Note the other projects listed as Retrofit projects planned or under construction in the 2016-2017 Annual Report are actually flood control projects or pipe rehabilitation projects.