MS4 NPDES

Municipal Separate Storm Sewer System
National Pollutant Discharge
Elimination System

Palm Beach County MS4
Permit No. FLS000018-004

DRAFT

NPDES MS4
A Joint Program of Palm Beach County Permittees

Palm Beach County MS4s

Joint Annual Report

Cycle 4- Year 8

October 1, 2023 Thru
September 30, 2024

Submitted by
Northern Palm Beach County
Improvement District
as Lead Permittee

prepared by
MOCK•ROOS

Contents

Tables

Figures

Appendices

APPENDIX C – Permittee Individual Annual Reports

1	Atlantis, City of	21	Lake Worth Beach, City of
2	Belle Glade, City of	22	Lantana, Town of
3	Boca Raton, City of	23	Manalapan, Town of
4	Boynton Beach, City of	24	Mangonia Park, Town of
5	Cloud Lake, Town of	25	Northern Palm Beach County Impr. District
6	Delray Beach, City of	26	North Palm Beach, Village of
7	FDOT – District Four	27	Ocean Ridge, Town of
8	FDOT, Turnpike Enterprise	28	Palm Beach, Town of
9	Glen Ridge, Town of	29	Palm Beach County
10	Greenacres, City of	30	Palm Beach Gardens, City of
11	Gulf Stream, Town of	31	Palm Beach Shores, Town of
12	Haverhill, Town of	32	Palm Springs, Village of
13	Highland Beach, Town of	33	Riviera Beach, City of
14	Hypoluxo, Town of	34	Royal Palm Beach, Village of
15	Indian Trail Improvement District	35	South Bay, City of
16	Juno Beach, Town of	36	South Indian River Water Control District
17	Jupiter, Town of	37	South Palm Beach, Town of
18	Jupiter Inlet Colony, Town of	38	Tequesta, Village of
19	Lake Clarke Shores, Town of	39	Wellington, Village of
20	Lake Park, Town of	40	West Palm Beach, City of

*Permittee Individual Annual Reporting is available on the Group's website: www.pbco-npdes.org > Annual Reporting > Cycle 4, Year 8.

Report Certification

Northern Palm Beach County Improvement District (Northern) is the Lead Permittee for the Palm Beach County MS4 Permit. As the lead permittee, Northern entered into interlocal agreements with each of the other 39 permittees for, among other activities, the administration of joint program activities and the compilation of the Joint Annual Report. Northern's governing body (Board of Supervisors) and the Palm Beach County MS4 NPDES Steering Committee has authorized Mock•Roos to coordinate, on their behalf, the joint program activities and preparation and submittal of this Joint Annual Report.

Therefore, per Rule 62-620.305(4), Florida Administrative Code, "I certify under penalty of law that this document and all attachments, if any, excluding Appendix A - Individual Permittee Annual Reports, were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on 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."

Alan D. Wertepny, P.E.
Vice President Water Resources
Fl. P.E. No. 32350

Date

Mock, Roos & Associates, Inc.
5720 Corporate Way
West Palm Beach, FL 33407
FL Reg. No. 48

Permittee Certifications

Certifications for the individual permittee annual reports are included in each individual annual report form, which are listed in Appendix C and provided on the Group's website at www.pbco-npdes.org/annual.asp.

1.0 Palm Beach County MS4 Program

1.1 Introduction

The Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) is a federal program designed to reduce stormwater pollutant discharges to receiving waters of the United States. In 1987, the United States Environmental Protection Agency (EPA) was required under Section 402 (p) of the Clean Water Act (N40CFR Part 112.26) to establish final regulations governing stormwater discharge permit application requirements. In 1990, the Federal Register indicated that Palm Beach County was to begin compliance with the program. In 1997, the first 5-year permit (No. FLS000018) was issued by EPA to Palm Beach County's permittees. In 2001, the Florida Department of Environmental Protection (Department) received delegation from EPA for the MS4 Programs. In November 2002, the Cycle 2 MS4 Permit was issued by the Department. The Cycle 3 permit was issued on March 2, 2011, and the Cycle 4 Permit was issued on September 8, 2016.

1.2 Permittees

There are 40 permittees identified in the Palm Beach County group Cycle 4 MS4 permit. **Table 1-1** is a list of the designated MS4 NPDES stormwater management program contacts for each of the Palm Beach County MS4 permittees.

1.3 Steering Committee

To coordinate the joint activities in Palm Beach County group's MS4 Program, the permittees established an MS4 Steering Committee in 1991. The seven-member Steering Committee is comprised of two representatives of large municipalities, two representatives of small municipalities, one representative from the lead permittee (Northern Palm Beach County Improvement District), one representative of special districts, and one representative from Palm Beach County. A list of the current MS4 Steering Committee and administrative personnel is provided in **Table 1-2**. Minutes of all meetings and descriptions of programs overseen by the Steering Committee may be viewed on the Palm Beach County group's MS4 NPDES website at http://www.pbco-npdes.org. Since 2014, there have been approximately 25,272 visitors to the website.

During the reporting period, the Steering Committee met three times. Permittee representation at the meetings averaged sixty-three percent. Major meeting agenda items included the following:

- Cycle 4, Year 7 Annual Reports
- Joint Program Income and Disbursement Reports
- 2024-2025 Program Budget Estimates
- Sedimentation & Erosion Control Inspector Training
- Water Quality Monitoring Program
- Public Education Program
- Status of Cycle 5 Permit
- MS4 Websites – pbco-npdes.org and StormwaterAndMe.org

1.4 Interlocal Agreements

Northern Palm Beach County Improvement District (Northern) acts as lead permittee for the Palm Beach coalition of permittees. As the lead permittee, Northern re-entered into Interlocal Agreements with each of the other permittees in 2017 for the purposes of identifying duties and responsibilities of the parties and fulfilling the conditions of the Palm Beach County Cycle 4 MS4 permit. Through these Interlocal Agreements, cost sharing for joint activities is provided by each of the permittees.

This joint annual report was reviewed by the permittees and approved by the Steering Committee.

Table 1-1
Palm Beach County Permittee Contacts

	Permittee, Address	Name, Title, Telephone
1	Atlantis, City of 260 Orange Tree Drive Atlantis, FL 33462	Travis Hawthorne Utilities/Public Works Director (561) 965-1744
2	Belle Glade, City of 110 Dr. Martin Luther King, Jr. Blvd. Belle Glade, FL 33430	Johnny Gooden Public Works Director (561) 992-2216
3	Boca Raton, City of 201 West Palmetto Park road Boca Raton, FL 33432	Lauren Burack, P.E. City Engineer (561) 416-3430
4	Boynton Beach, City of 124 East Woolbright Road Boynton Beach, FL 33435	Juan Manzano Oper/Enviro Compliance Manager (561) 742-6400
5	Cloud Lake, Town of 100 Lang Road Cloud Lake, FL 33406-3222	Dorothy Gravelin Town Clerk (561) 686-2815
6	Delray Beach, City of 434 S. Swinton Avenue Delray Beach, FL 32444-2698	Juan Cuesta Stormwater Engineer, Public Works Dept. (561) 243-7000 x7220
7	FDOT – District Four 3400 West Commercial Boulevard Ft. Lauderdale, FL 33309-3421	Ivette Leiva NPDES Coordinator (954) 777-4221
8	FDOT- Turnpike Enterprise P.O. Box 9828 Ft. Lauderdale, FL 33310-9828	Briston DeArmas NPDES Coordinator (954) 934-1213
9	Glen Ridge, Town of 1501 Glen road West Palm Beach, FL 33406	John J. Deal Town Manager (561) 697-8868
10	Greenacres, City of 5750 Melaleuca Greenacres, FL 33463	Carlos Cedeño Public Works Director (561) 642-2040
11	Gulf Stream, Town of 100 Sea Road Gulf Stream, FL 33483-7427	Greg Dunham Town Manager (561) 276-5116
12	Haverhill, Town of 4585 Charlotte Street Haverhill, FL 33417-5911	Joe Petrick Coordinator (561) 689-9500
13	Highland Beach, Town of 3614 South Ocean Blvd. Highland Beach, FL 33487	Pat Roman Public Works Director (561) 243-2084
14	Hypoluxo, Town of 7580 S. Federal Highway Hypoluxo, FL 33462	Leonard G. Rubin, P.A. Town Attorney (561) 686-8700
15	Indian Trail Improvement District 13476 61st Street North West Palm Beach, FL 33412-1915	Greg Shafer Director of Stormwater (561) 793-0874

	Permittee, Address	Name, Title, Telephone
16	Juno Beach, Town of 340 Ocean Drive Juno Beach, FL 33408	Steven Hallock Director of Public Works (561) 656-0310
17	Jupiter, Town of 210 Military Trail Jupiter, FL 33458	Jonathan A. Batista, P.E. Sr. Utilities Engineer (561) 741-2531
18	Jupiter Inlet Colony, Town of 1 Colony Road Jupiter Inlet Colony, FL 33469	Heidi Siegel Town Manager (561) 746-3787
19	Lake Clarke Shores, Town of 1701 Barbados Road West Palm Beach, FL 33406	Damon Gammons Utilities Superintendent (561) 642-7870
20	Lake Park, Town of 650 Old Dixie Highway Lake Park, FL 33403	John Wylie Storm Water Infrastructure Manager (561) 881-3345
21	Lake Worth Beach, City of 7 North Dixie Highway Lake Worth, FL 33461	Judy Love Water Sewer Storm Field Manager (561) 586-1719
22	Lantana, Town of 500 Greynolds Circle Lantana, FL 33462	Jerry Darr Assistant Utilities Director (561) 540-5758
23	Manalapan, Town of 600 S. Ocean Blvd. Manalapan, FL 33462-3398	Eric Marmer Town Manager (561) 585-9477
24	Mangonia Park, Town of 1755 East Tiffany Drive Mangonia Park, FL 33407	Kenneth Metcalf Town Manager (561) 848-1235
25	Northern Palm Beach County Improvement District 359 Hiatt Drive Palm Beach Gardens, FL 33418	Jared Kneiss Program Administrator (561) 624-7830
26	North Palm Beach, Village of 501 U.S. Highway No. 1 North Palm Beach, FL 33408	Chad Girard Public Works Director (561) 691-3450
27	Ocean Ridge, Town of 6450 N. Ocean Blvd. Ocean Ridge, FL 33435	Lynne Ladner Town Manager (561) 732-2635
28	Palm Beach, Town of 360 S. County Road Palm Beach, FL 33480	H. Paul Brazil, P.E. Public Works Director (561) 838-5440
29	Palm Beach County 2300 North Jog Road, 4th Floor West Palm Beach, FL 33411	Patrick Wille Environmental Division Director (561) 233-2400
30	Palm Beach Gardens, City of 10500 North Military Trail Palm Beach Gardens, FL 33410	Todd Engle, P.E. City Engineer (561) 804-7012

	Permittee, Address	Name, Title, Telephone
31	Palm Beach Shores, Town of 247 Edwards Lane Palm Beach Shores, FL 33404	Alan Welch Public Services Director (561) 844-3457
32	Palm Springs, Village of 226 Cypress Lane Palm Springs, FL 33461	Ivana J. Zapata Stormwater Program Coordinator (754) 333-9645
33	Riviera Beach, City of 2391 Avenue L Riviera Beach, FL 33404	Sedrick Clarke Stormwater Coordinator (561) 814-6492
34	Royal Palm Beach, Village of 10996 Okeechobee Blvd. Royal Palm Beach, FL 33411	Paul L. Webster, P.E. Director of Public Works (561) 790-5122
35	South Bay, City of 335 S.W. Second Avenue South Bay, FL 33493	Edgar Kerr Director of Public Works (561) 996-6751
36	South Indian River WCD 15600 Jupiter Farms Road Jupiter, FL 33478	Chad Kennedy District Manager (561) 747-0550
37	South Palm Beach, Town of 3577 S. Ocean Blvd. South Palm Beach, FL 33480	Jamie TItcomb (561) 588-8889
38	Tequesta, Village of 345 Tequesta Drive Tequesta, FL 33469	Marjorie Craig Utilities Director (561) 529-1453
39	Wellington, Village of 12300 Forest Hill Boulevard Wellington, FL 33414	Jonathan Reinsvold Village Engineer (561) 791-4052
40	West Palm Beach, City of P. O. Box 3368 West Palm Beach, FL 33402	Leighton Walker Asst Director of Public Utilities (561) 494-1073

Table 1-2
Palm Beach County MS4 Steering Committee

Laurent Van Cott, P.E. Steering Committee Chair For Town of Mangonia Park Southern Design Group, Inc. Phone (561) 758-5285	Karen Brandon, P.E. Steering Committee Member For South Indian River Water Control District AECOM Phone (561) 684-3375
Jay Foy, P.E. Steering Committee Vice-Chair For City of Atlantis Stormwater J. Engineering, Inc. Phone (561) 242-0028	Patrick Wille Steering Committee Member Palm Beach County Phone (561) 233-2400
Juan Cuesta Steering Committee Secretary City of Delray Beach Phone (561) 243-7000	Lauren Burack, P.E. Steering Committee Member City of Boca Raton Phone (561) 416-3430
Jared Kneiss Steering Committee Member Northern Palm Beach County Improvement District Phone (561) 624-7830	

Administration – Northern Palm Beach County Improvement District as Lead Permittee

Alan Wertepny, P.E. Mock, Roos & Associates, Inc. Program Manager Phone (561) 683-3113, x-231	Betsy S. Burden, Esq. Caldwell Pacetti Edwards Schoech & Viator LLP Legal Counsel Phone (561) 655-0620
Anne Capelli Mock, Roos & Associates, Inc. Program Coordinator Phone (561) 683-3113, x-287	Laura Ham, CPA Northern Palm Beach County Improvement District Budget Manager Phone (561) 624-7830
Brian Einkauf Mock, Roos & Associates, Inc. Webmaster Phone (561) 683-3113, x-250	

2.0 Training Program

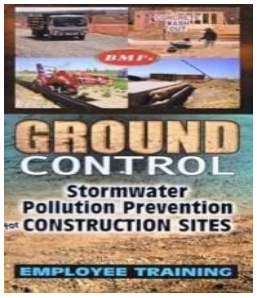
The Palm Beach County MS4 permit requires that permittees provide training on three topics:

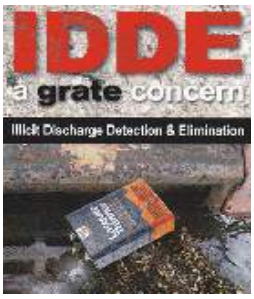
1. Identification & reporting procedures for a suspected illicit discharge or dumping in the MS4 for all appropriate permittee personnel (including field crews, fleet maintenance staff, and inspectors) and contractors. (Part III.A.7.c)
2. Spill prevention, containment & response procedures (including techniques for mitigating pollution from spills) for all appropriate permittee personnel (including field crews, firefighters, fleet maintenance staff, and inspectors). (Part III.A.7.d)
3. Stormwater management and erosion and sedimentation control BMPs for construction sites for construction site plan reviewers, construction site operators, and construction site inspectors. Construction site inspectors must be certified through the Florida Stormwater, Erosion, and Sedimentation Control Inspector Training programs, or equivalent. (Part III.A.9.c)

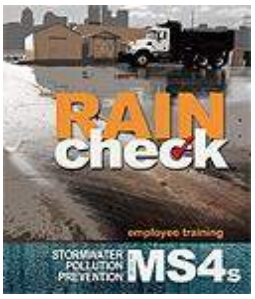
The Palm Beach County MS4 permittees carry out a joint refresher training program that is available to all permittee personnel, as well as contractors and private individuals. Typically, this training is provided in March. Appropriate training videos and/or presentations are used to review the permit requirements and educate/update attendees on programs and/or activities necessary for compliance. Attendance logs are maintained for each training session. In addition, the group maintains a lending library of EXCAL Visual training videos for the permittees to borrow anytime for use at in-house training sessions.

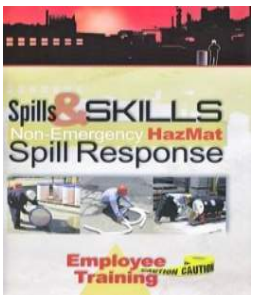
EXCAL Visual videos may not be reproduced, but additional copies may be purchased from the vendor to assist in meeting training requirements (www.excalvisual.com).

Videos currently in the library at www.pbco-npdes.org (group/joint activities) include:

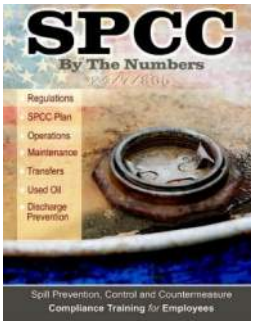


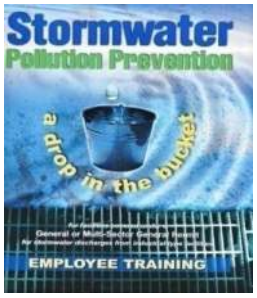


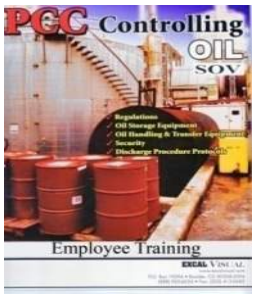




Stormwater Training







The Palm Beach County group also sponsors an annual Florida Stormwater Erosion and Sedimentation Control Inspector Training course, typically each May. This two-day course with exam allow permittee personnel, as well as contractors to obtain the certificate required for all construction site inspectors.

Both of the Palm Beach County group training sessions for 2023-2024 were conducted by Cheryl Moore (Cheryl L. Moore Consulting, LLC) and included:

1. An in-person and ZOOM presentation including slides covering the three required annual refresher training topics (spill prevention and response, illicit discharge detection and elimination, and sedimentation and erosion controls for construction sites). Participants for the training included staff from 26 of the 40 Palm Beach County MS4 permittees.
2. Florida Stormwater, Erosion and Sedimentation Control Inspector Training Program (May 15 - 16, 2024). The breakdown of participants included 51 permittee employees (representing 15 different permittees), 3 construction company employees and 2 engineering consultant employees.

3.0 Public Education Program

The Palm Beach County MS4 permittees have undertaken a jointly funded program to meet the public education requirements of the MS4 permit. In so doing, all permittees participate in conducting the program. The premise of a joint program is that a unified message, repeated throughout the County will have more of an impact than 40 separate messages. The Stormwater and Me (SAM) program, as it is called, kicked off in 2009 and the website has had over 10,900 visitors.

Objective:

The objective of the public education program is to put relevant information in the hands of the residents of and visitors to the Palm Beach County geographic area, so they can make better decisions with respect to pesticides, herbicides, fertilizers, illicit discharges, illegal dumping, and the disposal of household hazardous waste. The intent is that this will result in less of these items ending up in our stormwater systems and, in turn, our water bodies.

Topics:

As prescribed by the MS4 permit, the following topics are covered by the public education program:

Encourage citizens to reduce their use of pesticides, herbicides, and fertilizers. [Part III.A.6.]

Promote, publicize, and facilitate public reporting of the presence of illicit discharges and improper disposal of materials into the MS4. [Part III.A.7.e.]

Encourage the proper use and disposal of used motor vehicles fluids, leftover hazardous household products, and lead acid batteries. [Part III.A.7.f.]

Target Audience:

The target audience of the program is residents (children and adults) of and visitors to Palm Beach County, Florida.

Activities and Materials:

This reporting period, the SAM public outreach program included three 30-second Public Service Announcements (PSAs) dealing with pet waste pickup, keeping grass clippings off the streets, and reducing the use of pesticides, herbicides and fertilizers. The PSAs were aired on 29 commercial television channels (AMC, FFLA, FSUA, BRVO, TOON CNBC, CNN, CMDY, ESPN, ESPN2, FOOD, FBN, FXNC, FS2, FS1, FRFM, GOLF, HLN, MAG, MNBC, NGC, NFLM, NICK, PAR, SECN, SYFY, DIS, TNT, TRU), broadcast by a local cable television provider (Comcast) during the months of January 2024 through June 2024 to all broadcast zones within Palm Beach County. A total of 13,205 PSAs were aired. In addition, the spots appeared on Comcast's Digital TV streaming service. The PSA program is estimated to have reached 318,035 Comcast households and 286,029 AT&T U-Verse viewers in Palm Beach County. The PSAs were also aired by some local/municipal TV stations throughout the year and many permittees play the videos on their website. Copies of the PSAs can be found on the Group's public outreach website: StormwaterAndMe.org.

During the 2023-2024 reporting period, the Palm Beach County Extension Service conducted outreach on the commercial agriculture, commercial horticulture and urban/residential horticulture program and reported that it distributed 6,650 brochures, conducted 54 neighborhood presentations (1,889 participants), presented 9 school presentations (283 participants), conducted 28 workshops (663 participants), published 28 articles, distributed 5,040 newsletters, produced 12 public displays, and conducted two special events (728 participants). UF/IFAS also conducted outreach on the Florida Yards and Neighborhoods program and reported that it distributed 2,222 brochures, conducted 10 neighborhood presentations (43 participants), presented 11 school presentation (330 participants), conducted 23 workshops (547 participants), and ran five public service announcements. UF/IFAS also

provided Green Industry BMP training to 136 participants. The County Extension Service has estimated that its outreach program reached about 0.37% of the population in Palm Beach County. Costs for these programs totaled $26,371.

The Solid Waste Authority (SWA) of Palm Beach County continued to carry out a public education/outreach program to educate Palm Beach County residents and visitors about proper disposal of household hazardous waste (HHW). Through the MS4 NPDES Interlocal Agreement between Palm Beach County and Northern Palm Beach County Improvement District, SWA continues its program, in part, to fulfill the permit requirement that all permittees educate their residents on proper disposal of HHW. During the 2023-2024 reporting period, SWA reported that it distributed 101,125 brochures, collected/recycled/disposed of 2,467 tons of HHW, conducted 119 neighborhood presentations reaching 1,458 participants, distributed eight newsletters, produced 237 displays, aired 4,700 PSAs, conducted 120 school presentations reaching 6,533 participants, conducted 5 workshops reaching 136 participants, and conducted 110 special events reaching 500,693 participants. SWA also hosts a public outreach website at *https://www.swa.org/421/Community-Education-Programs*.

SWA has estimated that its outreach program reached 40% of the population in Palm Beach County. Costs for these programs totaled $5.13 million which included SWA inspections, brochures, flyers, presentation and workshops and HHW operating expenses.

Methods for Distribution:

The television PSAs allow the greatest opportunity for the distribution of information. In addition, the website, brochures, and meetings allow for the presentation of more in-depth information.

Annual Schedule:

The television PSA campaign effort included the months of January through June, when residential population in the County is at its highest. School presentations are in sync with the school calendar. Other outreach activities occur throughout the year.

Documentation:

The Group's Public Education Coordinator, SWA and PBC Extension Services, respectively, maintain record information for all materials distributed.

Responsible Entities:

The program is coordinated by the Palm Beach County MS4 Steering Committee administrative staff. HHW outreach is carried out by the SWA for all permittees under the inter-local agreement with Palm Beach County.

Resources Allocated:

The 2023-2024 allocation for the public education program (not including SWA programs) was $40,000.

Assessment Method:

The bottom line on the effectiveness of public education is if the receiving waters experience improved water quality. Therefore, the water quality monitoring is offered as a measure of the collective effectiveness of this and other MS4 permit programs.

Public Reporting of Illicit Discharge:

The StormwaterAndMe.org website contains information on stormwater pollution and illicit discharges. Included is a list of contacts for each of the 40 permittees to report an illicit discharge or spill.

4.0 Total Maximum Daily Load (TMDL) Program

4.1 Description

The PBC MS4 permit includes requirements for conducting activities associated with TMDLs that were adopted when the current cycle permit was issued. Activities include the submittal of a schedule for developing an implementation plan to reduce the discharge of pollutants from each TMDL stakeholder permittee's MS4 to the maximum extent practicable. No TMDLs were in place for the Palm Beach County Cycle 1 or Cycle 2 permits. For Cycle 3, there were seven EPA TMDLs that were evaluated and addressed by the applicable MS4s. As of the issuance date of the Cycle4 permit, there were three additional TMDLs for water bodies within Palm Beach County and these included both the Department and EPA issued TMDLs.

4.2 Established and Adopted TMDLs – Cycle 4

TMDLs established by EPA and verified by the Department or adopted by the Department as of the issuance date of the Cycle 4 permit (September 8, 2016), along with the respective potentially affected permittees, are listed in **Table 4-1**.

Table 4-1

Cycle 4 TMDLs in Palm Beach County

Agency	WBID	Segment Name	Basin	Constituent	TMDL	Percent Reduction	Date	MS4 Stakeholder
EPA	3226C	SW Fork Loxahatchee River	St. Lucie/ Loxahatchee	Fecal Coliform	<43 (counts/100 ml)	93	05/16/12	Jupiter, FDOT, PBC, SIRWCD, Turnpike, NPBCID
EPA	3262A	Lake Ida	Lake Worth Lagoon	Nutrients	TN=0.857 mg/l TP=0.062 mg/l	20 45	11/09/12	Delray, Boynton, FDOT, PBC
FDEP	3364A	E-1 Canal	Lake Worth Lagoon	Fecal Coliform	<400 (counts/100 ml)	94 0	08/31/11	FDOT, PBC

During Year 1 of this permit cycle the eight permittees identified as TMDL stakeholders submitted Prioritization Plans which were approved by the Department. The schedules for implementation activities are identified in **Table 4-2.**

Table 4-2
Cycle 4 Prioritized TMDLs

MS4 Stakeholder	WBID-Waterbody-TMDL	Monitoring Summary Due	BPCP Due	Supplemental SWMP Due
Boynton Beach	3262A- Lake IDA – Nutrients (EPA)	03/31/20	N/A	03/31/21
Delray Beach	3262A- Lake IDA – Nutrients (EPA)	03/31/20	N/A	03/31/21
FDOT District 4	3264A – E-1 Canal – Bacteria	03/31/20	03/31/20	N/A
	Loxahatchee River Pollutant Reduction Plan (3226C)	N/A	N/A	N/A
FDOT Turnpike Enterprise	3226C – SW Loxahatchee River – Pollutant Reduction Plan	N/A	03/31/20	N/A
Jupiter	Loxahatchee River Pollutant Reduction Plan (3226C)	N/A	N/A	N/A
NPBCID	Loxahatchee River Pollutant Reduction Plan (3226C)	03/31/21	03/31/21	N/A
Palm Beach County	3264A – E-1 Canal Bacteria	N/A	03/31/20	N/A
	Loxahatchee River Pollutant Reduction Plan (3226C)	N/A	N/A	N/A
SIRWCD	Loxahatchee River Pollutant Reduction Plan (3226C)	N/A	N/A	N/A

4.3 TMDL Activities

During Years 5 through 8 of the Cycle 4 Permit, there were no additional TMDL activities to be addressed by the Palm Beach County MS4s. Progress and programs to address TMDLs for the Loxahatchee River, E-1 Canal (Hillsboro Watershed) and Lake Ida were addressed in previous individual annual reports (Florida Department of Transportation District IV, Florida Turnpike Enterprise, Town of Jupiter, Palm Beach County, Northern Palm Beach County Improvement District, South Indian River Water Control District, Village of Tequesta, Boynton Beach, Delray Beach and Palm Beach County) and summarized in previous Joint annual reports.

4.4 Upcoming Permit Cycle TMDLs

From 2019 through 2021, FDEP Division of Environmental Assessment and Restoration (DEAR) developed a nutrient TMDL to address the identified water quality impairments in **Pine Lake** and Lake Osborne. Draft TMDL reports were released, several public workshops were held, and coordination with the Palm Beach County MS4 stakeholders was conducted.

Both Pine Lake and Lake Osborne were reassessed by DEAR as part of its 2020-2022 Biennial Water Quality Watershed Assessment Program. As a result of this assessment, Pine Lake was confirmed to be impaired for nutrients, however, Lake Osborne is no longer identified as impaired. Lake Osborne was placed on the "Delist List" at that time. The Department moved forward with a nutrient TMDL for Pine Lake, published in September 2021. Two MS4 permittees are stakeholders: the City of West Palm Beach and Palm Beach County.

In 2001, the FDEP adopted a TP TMDL for **Lake Okeechobee**, after nine WBIDs in Lake Okeechobee were identified as impaired for TP. The TP TMDL for Lake Okeechobee indicated loading of 140 metric tons per year (mt/yr), of which 35 mt/yr are estimated to fall directly on the lake via atmospheric deposition. The remaining 105 mt/yr of TP are allocated to the entire Lake Okeechobee Watershed (LOW), which consists of nine sub-watersheds. PBC is within two of the sub-watersheds (East and South).

During calendar years 2001 through 2012, the six northern sub-watersheds contributed 88.3% of the discharge to Lake Okeechobee and 89.1% of the TP load (SFWMD 2014). Therefore, FDEP decided to focus on these sub-watersheds during the initial BMAP iteration.

In February 2013, FDEP initiated the BMAP development process and held a series of technical meetings involving stakeholders and the general public and in December 2014, adopted the first Lake Okeechobee BMAP implementation in the LOW concentrating on the six northern sub-watersheds.

In early 2015, FDACS contracted SWET to revise the watershed assessment model (WAM), which was used as the basis for the BMAP load estimation tool. Under this contract, SWET updated the model

datasets and extended the WAM simulation period through 2013 for all six sub-watersheds north of Lake Okeechobee. In 2017, SWET updated the WAM to include the three southern watersheds (East, South, and West).

In January 2020, FDEP updated the Lake Okeechobee BMAP. Five Palm Beach County MS4s (Belle Glade, FDOT District 4, South Bay, Indian Trail Improvement District, Palm Beach County) were identified as entities needing to comply with the provisions of the BMAP. Pursuant to Chapter 62- 304, F.A.C., each MS4 permittee must revise its SWMP to address the assigned waste load in the TMDL. The permittees will address this TMDL under the next permit cycle.

4.5 FDEP TMDL Two-Year Workplan

Although no action is required by the MS4 permit for TMDLs in the development stage, this information is still tracked by the MS4 group. FDEP has an updated procedure for prioritizing the development of TMDLs ("Prioritization 2.0"), which was presented at the 2022 Florida Stormwater Association Winter Conference. The procedures are being used to develop a TMDL workplan on a biennial basis, presumably to follow the biennial water quality assessments which result in updated verified impaired waterbodies. FDEP points out that waters labeled as a priority by this exercise, are those that are favorable for site-specific TMDL development, and indicates that other impaired waterbodies may be addressed via reasonable assurance plans or water quality restoration plans (4b or 4e plans, respectively). FDEP's 2022-2024 "Nutrients Priority List" does not include any WBIDs in Palm Beach County. FDEP also identified what is called the "Nutrients Draft List" containing nutrient-impaired WBIDs that are on the development horizon, but not within the next two years. On this current list is Lake Worth Lagoon WBID 3226F1, impaired for nutrients. The lack of a coincident chlorophyl-a impairment prevented FDEP from including this on its Priority list. In addition, FDEP is anticipating that the Lake Worth Lagoon Management Plan will proceed as a sort of alternate restoration plan. Finally, FDEP identifies a "Draft List – Bacteria." FDEP has explained that this list contains all the bacteria-impaired waters that could become TMDLs once they have worked through their pilot bacteria TMDL elsewhere in the state. WBIDs in, or partially within Palm Beach County that are currently on this list include 3226F5 – Hillsboro and El Rio Canals and 3264D – E-4 Canal.

5.0 Water Quality Monitoring Program

5.1 Description

To provide water quality monitoring data to permittees, and to assist them with their required program assessments, the group made the decision to continue the +20-year joint ambient water quality monitoring program. The monitoring program includes the following components:

- ambient water quality sampling
- water quality data analyses
- trend analyses
- annual pollutant loading estimates in Year 3 of each permit cycle
- program modifications as needed

The Palm Beach County MS4 NPDES water quality monitoring program now includes 44 ambient water quality monitoring sites which were selected after coordination among the South Florida Water Management District (SFWMD), Palm Beach County Environmental Resource Management (ERM), the Loxahatchee River District (LRD), Broward County (BC), and City of West Palm Beach (CWPB).

5.2 Monitoring Sites

Table 5-1 identifies each monitoring site location and provides the watershed name, water classification, site designation, the entity (agency) conducting the sampling, whether the site is freshwater or marine, and the site's location northing and easting coordinates. Note that site designations are unique within an individual agency but may be duplicated across agencies. Data for these sites are assigned a unique agency code and station identification in the State's database (dBHydro or WIN/STORET).

Figure 5-1 (two pages) graphically depicts the water quality monitoring site locations and shows the boundaries of the associated watersheds within which they are located. The legend provides the key to which agency does the sampling and what type of water that site represents (fresh or marine).

Table 5-1
Water Quality Monitoring Sites

Watershed	Surface Water Classification	Site Designation	Agency	Marine/ Freshwater	Northing	Easting
C-15	III (Fresh)	31E	ERM	Freshwater	760549.91	916736.89
		31C	ERM	Freshwater	760879.83	943443.02
		31B	ERM	Freshwater	802772.09	964368.10
C-16	III (Fresh)	22	ERM	Freshwater	828280.34	957602.68
		24	ERM	Freshwater	820399.97	957270.70
		27B	ERM	Freshwater	802276.58	916052.08
		27A	ERM	Freshwater	802545.25	942880.04
		28	ERM	Freshwater	760234.13	959303.11
C-17	III (Fresh)	12A	ERM	Freshwater	882520.57	953672.56
		C17S44	SFWMD	Freshwater	903830.19	955552.70
C-18	I (Fresh)	16	ERM	Freshwater	923477.26	902076.42
		15	ERM	Freshwater	901986.07	931378.31
		92	LRD	Freshwater	924685.07	937805.48
		81	LRD	Freshwater	946081.68	935811.57
C-51	III (Fresh)	38B	ERM	Freshwater	854963.27	867962.99
		37B	ERM	Freshwater	853637.29	916592.84
		C51S155	SFWMD	Freshwater	841132.85	964349.43
Lox	III (Fresh)	69	LRD	Freshwater	947071.77	924822.40
	II (Marine)	51	LRD	Marine	954939.97	948224.55
		62	LRD	Marine	938898.36	961525.58
		72	LRD	Marine	946223.78	954573.37
ICWW-N	III (Marine)	30	LRD	Freshwater	961625.76	961625.76
LWL-N	III (Marine)	LWL-1	ERM	Marine	913398.12	964095.22
		11	ERM	Marine	908969.28	962655.71
		13	ERM	Marine	900706.79	964049.58
		LWL-4	ERM	Marine	898346.67	970040.36
LWL-C	III (Marine)	LWL-8	ERM	Marine	856238.64	968284.93
		18C	ERM	Marine	839740.15	969747.03
		18D	ERM	Marine	835593.23	967942.19
		LWL-11	ERM	Marine	830580.53	967926.64
ICWW-S	III (Marine)	LWL-13	ERM	Marine	819086.28	968516.09
		LWL-18	ERM	Marine	798402.11	965585.04
Hillsboro	III (Marine)	1	BC	Marine	724863.71	953909.23
		2	BC	Marine	725864.04	940799.29
	III (Fresh)	3	BC	Freshwater	725348.47	917217.65
		S39	SFWMD	Freshwater	734632.99	888668.58
L-8	III (Fresh)	Culv10	SFWMD	Freshwater	938859.59	778727.09
S-2-6-7	III (Fresh)	S-2	SFWMD	Freshwater	860426.94	748850.27
		39	ERM	Freshwater	855232.20	764581.68
		43	ERM	Freshwater	847294.87	750036.29
WPBWS	I (Fresh)	M-Canal	CWPB	Freshwater	884890.58	908925.59
		Control 4	CWPB	Freshwater	879672.31	943612.31
		Lake Mangonia	CWPB	Freshwater	875721.42	957872.24
		Clear Lake	CWPB	Freshwater	866387.08	959660.53

Figure 5-1
Water Quality Monitoring Sites (Page 1 of 2)

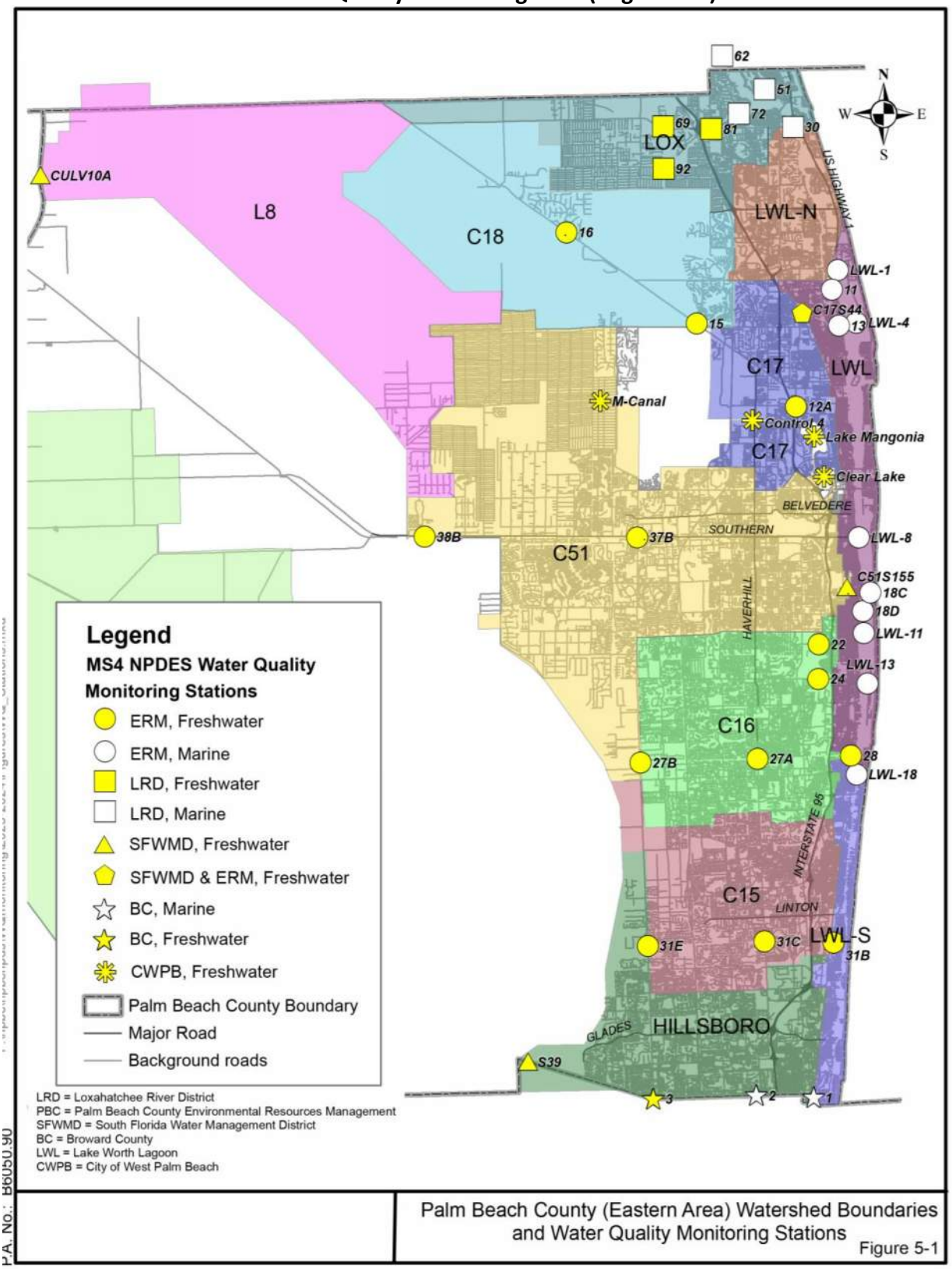
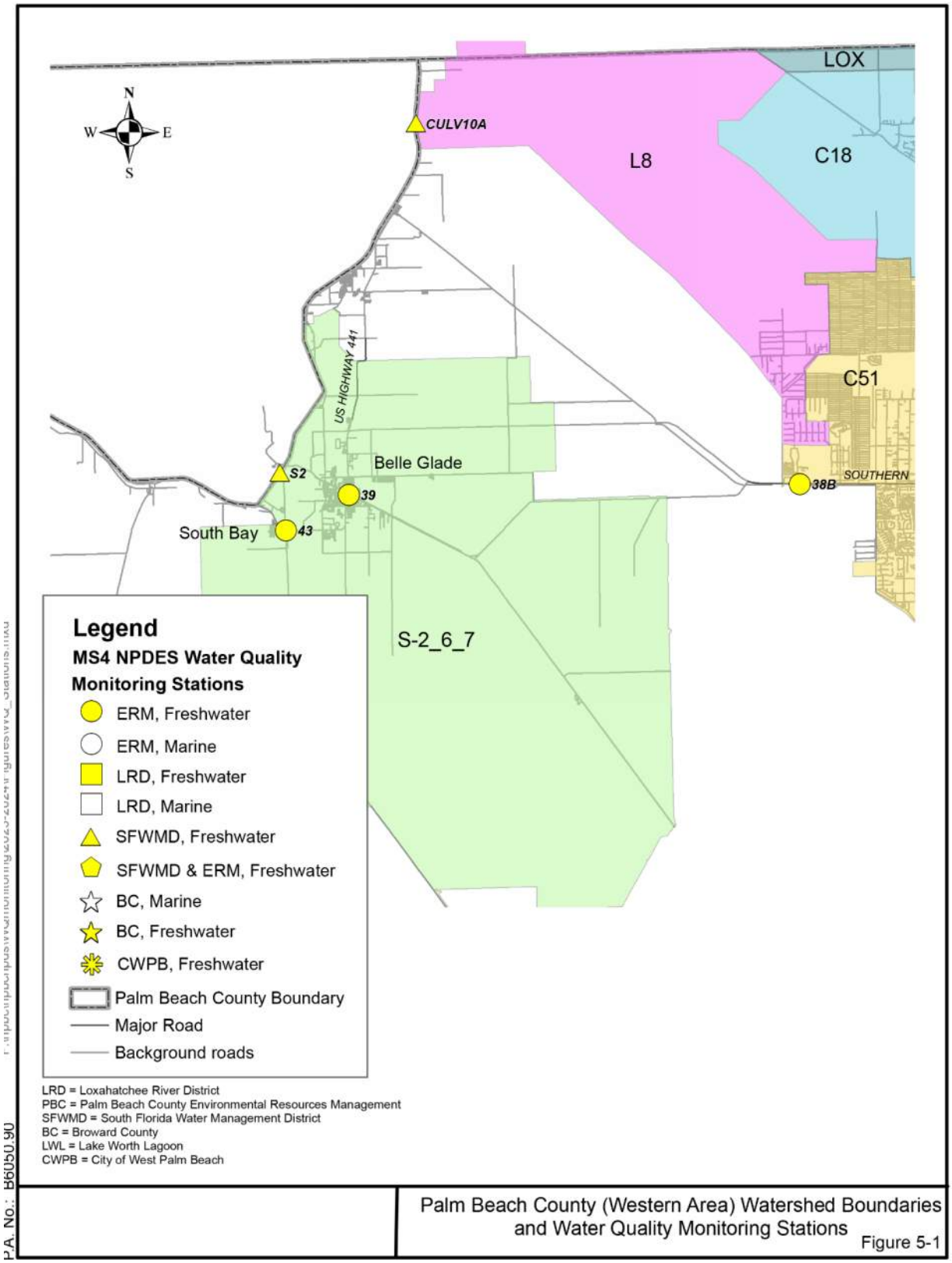


Figure 5-1
Water Quality Monitoring Sites (Page 2 of 2)



The LRD monitors four marine sites and three freshwater sites. ERM monitors 10 marine sites and 16 freshwater sites. The SFWMD monitors five freshwater sites. BC monitors one freshwater and two marine water sites. CWPB monitors four freshwater sites. All of Palm Beach County ERM, BC, LRD and WPB sampling results are in WIN/STORET and SFWMD data is in dBHydro.

The 26 sites monitored by ERM are sampled and initially analyzed in-situ by ERM staff using a multi-parameter water quality monitoring instrument. Water samples are collected, preserved, and stored according to the Department Standard Operating Procedures. Quality assurance/quality control measures include pre-cleaned equipment blanks, field cleaned equipment blanks, field spikes, and the collection of duplicate samples.

Further analysis of samples of ERM's 10 Lake Worth Lagoon marine sites is handled by SFWMD. Analysis of the remaining 16 ERM sites is conducted by an independent laboratory under contract with ERM. The water quality parameters and frequency being monitored by ERM, LRD, SFWMD, BC, and CWPB are listed in **Table 5-2**.

Table 5-2
Water Quality Parameter Collection Schedule

Parameter	ERM		SFWMD	LRD	BC
	Freshwater	Marine			
Alkalinity	--	--	--	M	
Arsenic	BM	Q	--	--	
Cadmium	BM	Q	--	--	
Chlorophyll-a (corrected)	BM	M	BM	M	Q
Copper	BM	Q	--	--	
Dissolved Oxygen	BM	M	M	M	Q
Fecal Coliform	--	--	--	M	
Lead	BM	Q	--	--	
Nitrogen, Ammonia	BM	M	M	M	Q
Nitrogen, Nitrate-Nitrite	BM	M	M	M	Q
Nitrogen, Total Kjeldahl	BM	M	M	M	Q
Nitrogen, Total	BM	M	M	M	Q
pH	BM	M	M	M	Q
Phosphorus, Orthophosphate	BM	M	M	M	
Phosphorus, Total	BM	M	M	M	
Salinity	--	M	--	M	Q
Specific Conductivity	BM	M	M	M	Q
Temperature	BM	M	M	M	Q
Total Hardness (as $CaCO_3$)	BM	--	--	--	
Total Suspended Solids	BM	M	M	M	
Turbidity	BM	M	M	M	Q
Zinc	BM	Q	--	--	

BM = Bi-monthly; M = Monthly; Q = Quarterly; -- = Not Sampled

Notes:

- Not all parameters are collected for every site.
- LRD – Loxahatchee River District sites 62, 69, & 72, are sampled monthly; sites 30, 51, 81, & 92 bi-monthly.
- ERM – Palm Beach County Environmental Resource Management
- SFWMD – South Florida Water Management District
- BC – Broward County

For this reporting period some monitoring events were missed. The Lake Worth Lagoon monitoring routinely experiences missed monitoring events due to the monitoring protocol that requires tidal sites to be sampled “immediately at or prior to slack low tide.” This allows only +/- 2 times per month when low tide is between 11:00 a.m. and 2:30 p.m., which may occur on weekends. The time on either side of this time frame is necessary for initial calibration, equipment decontamination, mobilization, travel, boat launch, boat recovery, travel, continuing calibration verification, and paper/tablet documentation work.

Monitoring protocol prohibits monitoring during rain. Boating safety requirements prohibit monitoring during lightning events and winds exceeding 20 knots. Mechanical problems such as trailer lights malfunction, and engine problems also result in missed monitoring events.

The water quality sampling program in Palm Beach County is a cooperative effort designed to incorporate desirable elements of existing monitoring programs being administered by various agencies throughout the County. Attempts to coordinate sampling frequencies, parameters, and methodologies are ongoing, but not all sampling programs produce results that are compatible for a combined analysis. Data for a given parameter, location, and event may be unavailable due to the specific goals of that agency's monitoring program or procedural variations, including event frequency, sample depth, methodology, and instrumentation.

5.3 Water Quality Monitoring Results and Exceedances

Standards

State water quality standards have become increasingly complicated in recent years, with differing types of water bodies having different established criteria, such as chlorophyll-a (corrected for pheophytin). Therefore, **Table 5-3** (7 pages) has been prepared to provide a quick reference for determining exceedances in the water bodies being monitored in Palm Beach County. It provides a list of the parameters and the Florida Surface Water Quality Standards (WQ Standards), as promulgated in Florida Administrative Code (F.A.C.) 62-302.530, 62-302.532, and 62-302.530 (47)(b). Furthermore, in Class I and Class III freshwater systems, the numeric limits for heavy metals are based on a logarithmic function of the water's total hardness measured at the time of the sampling. Thus, the last page of **Table 5-3** provides the relationship of hardness to the calculated limit for cadmium, copper, lead, and zinc.

Table 5-3
Numeric Surface Water Quality Standards by Watershed
(Page 1 of 7)

Applicable Class I - Freshwater Peninsular Region Water Quality Criteria		
Site(s):	**C-18** (16, 15, 92, 81)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.01
Cadmium	mg/L	$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	$\leq [e^{(1.273\ (lnH]\ -4.705}]\ 10^{-3}$
Nitrogen, Total	mg/L	≤ 1.54 AGM
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	≤ 0.12 mg/l AGM
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

Applicable Class III - Freshwater Lakes Water Quality Criteria		
Site(s):	**C-16** (22 and 24 in Lake Osborne)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	$\leq [e^{(1.273\ (lnH]\ -4.705}]\ 10^{-3}$
Nitrogen, Total	mg/L	1.27 to 2.23 AGM
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	0.05 to 0.16 AGM
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

Notes:
(1) InH means the natural logarithm of total hardness expressed as milligrams/L of $CaCo_3$.
(2) For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Value applies if Chlorophyll-a is > 20 ug/l, Maximum Value also applies if Chlorophyll-a is ≤20 ug/l.
(3) AMG - Annual Geometric Mean
(4) Per Palm Beach County Chain-of-Lakes December 2015 Water Quality Report, Lake Osborne Color >40 Platinum Colbat Units

Table 5-3
Numeric Surface Water Quality Standards by Watershed
(Page 2 of 7)

Applicable Class III - Freshwater South Florida Region Water Quality Criteria		
Site(s):	**C-15** (31E, 31C, 31B), **C-16** (27B, 27A, 28), **C-17** (12A, C17S44) **C-51** (38B, 37B, C51S155), **Lox** (69), **Hillsboro** (3, S39) **L-8** (Culv10), **S-2-6-7** (S-2, 39, 43)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	$\leq [e^{(1.273\ [lnH]\ -4.705)}]\ 10^{-3}$
Nitrogen, Total	mg/L	Narrative
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	Narrative
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

Applicable Class II - Marine North Fork Water Quality Criteria		
Site(s):	**Loxahatchee River (51)**	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 4.0 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Fecal	cfu/100 ml	≤ 43
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	0.80 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	0.030 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Notes:
(1) InH means the natural logarithm of total hardness expressed as milligrams/L of $CaCo_3$.
(2) For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Value applies if Chlorophyll-a is > 20 ug/l, Maximum Value also applies of Chlorophyll-a is ≤20 ug/l.
(3) AMG - Annual Geometric Mean
(4) Per Palm Beach County Chain-of-Lakes December 2015 Water Quality Report, Lake Osborne Color >40 Platinum Colbat Units

Table 5-3
Numeric Surface Water Quality Standards by Watershed
(Page 3 of 7)

Applicable Class II - Marine Northwest Fork Water Quality Criteria		
Site(s):	**Loxahatchee River** (62)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 5.5 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Fecal	cfu/100 ml	≤ 43
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	< 1.26 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	< 0.075 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Applicable Class II - Marine Southwest Fork Water Quality Criteria		
Site(s):	**Loxahatchee River** (72)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 5.5 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Fecal	cfu/100 ml	≤ 43
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 1.26 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.075 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Notes:
(1) AGM - Annual Geometric Mean

Table 5-3
Numeric Surface Water Quality Standards by Watershed
(Page 4 of 7)

Applicable Class III - Marine Water Quality Criteria		
Sites:	**Hillsboro** (1 and 2)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 11 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	Narrative
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	Narrative
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Applicable Class III - Marine Water Quality Criteria		
Site(s):	**ICWW-N** (30)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 4.7 AGM
Copper	mg/L	<0.0037
Dissolved Oxygen	% Saturation	> 42
Enterococci Bacteria	cfu/100mL	≤ 130 Count TPTV
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 0.66 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.035 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Notes:
(1) AGM - Annual Geometric Mean
(2) TPTV - Ten Percent Threshold Value shall not be exceeded in more than 10% of the measurement
(3) Narrative - Shall not cause an imbalance in flora and fauna

Table 5-3
Numeric Surface Water Quality Standards by Watershed
(Page 5 of 7)

Applicable Class III - Marine Water Quality Criteria		
Site(s):	**Lake Worth Lagoon North** (LWL-1, 11, 13, LWL-4)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 2.9 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 0.54 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.044 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Applicable Class III - Marine Water Quality Criteria		
Site(s):	**Lake Worth Lagoon Central** (LWL-8, 18C, 18D, LWL-11)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 10.2 TPTV
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 0.66 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.049 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Notes:
(1) AGM - Annual Geometric Mean
(2) TPTV - Ten Percent Threshold Value shall not be exceeded in more than 10% of the measurement

Table 5-3
Numeric Surface Water Quality Standards by Watershed
(Page 6 of 7)

Applicable Class III - Marine Water Quality Criteria		
Site(s):	**ICWW-S** (LWL-13 and LWL-18)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 5.7 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 0.59 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.050 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Applicable Class I - Freshwater Canal South Florida Region Water Quality Criteria		
Site(s):	**City of West Palm Beach Water Supply Canals** (M-Canal, Control 4)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.01
Cadmium	mg/L	$\leq [e^{(0.7409\ [\ln H]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	$\leq [e^{(0.8545\ [\ln H]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	$\leq [e^{(1.273\ [\ln H]\ -4.705)}]\ 10^{-3}$
Nitrogen, Total	mg/L	Narrative
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	Narrative
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	$\leq [e^{(0.8473\ [\ln H]\ +\ 0.884)}]\ 10^{-3}$

Notes:
(1) AGM - Annual Geometric Mean
(2) Narrative - Shall not cause an imbalance in flora and fauna

Table 5-3
Numeric Surface Water Quality Standards by Watershed
(Page 7 of 7)

Applicable Class I - Freshwater Lakes Water Quality Criteria		
Site(s):	**City of West Palm Beach Water Supply Canals** (Lake Mangonia and Clear Lake)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.01
Cadmium	mg/L	$\leq [e^{(0.7409\ [\ln H]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	$\leq [e^{(0.8545\ [\ln H]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	$\leq [e^{(1.273\ (\ln H]\ -4.705}]\ 10^{-3}$
Nitrogen, Total	mg/L	1.05 to 1.91 AGM
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	0.03 to 0.09 AGM
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	$\leq [e^{(0.8473\ [\ln H]\ +\ 0.884)}]\ 10^{-3}$

Notes:
(1) AGM - Annual Geometric Mean

(2) For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Value applies if Chlorphyll-a is >20ug/l, Maximum Value applies if Chlorophyll-a is ≤20ug/l.

Monitoring Results

The results of the monitoring conducted from October 2023 through September 2024 are provided in the tables of **APPENDIX A** (44 pages). Analysis result values that were below the limits of detection ("BDL" or "non-detect") have been replaced in the tables whenever possible with one-half of the respective minimum detection limit (MDL) value for more reasonable calculated statistics. MDLs were provided by Palm Beach County ERM for results that were reported as BDL within the data set. MDLs are determined by instrumentation and method of analysis. These substitutions have been highlighted in blue. MDL values greater than the WQ Standard value were not counted as exceedances. Exceedances of the WQ Standards are highlighted in yellow.

For samples where a total hardness was not measured, an exceedance limit for metals could not be calculated, and therefore, no exceedance could be identified.

For those results which require an annual geometric mean (to compare to the standard), the annual geometric mean was calculated for the reporting period (October through September).

Table 5-4 provides a summary of the number of exceedances at each site. Each cell where there was an exceedance provides the number of exceedances and the total number of samples taken at that site during the reporting period.

Table 5-4
Summary of Exceedences per Site

Watershed	Site	Dissolved Oxygen	Turbidity	e. coli	pH	Specific Conductivity	Chl-a* (AGM or %TPTV)	Copper
C-15	31E							
	31C							
	31B							
C-16	22					9/12		
	24					10/12		
	27B	1/7						
	27A							
	28	1/7						
C-17	12A							
	C17S44							
C-18	16	1/12				10/12		
	15	3/8				3/8		
	92							
	81							
C-51	38B					1/7		
	37B							
	C51S155							
Lox	69	1/12						
	51						6.6	
	62	1/12					5.6	
	72	2/12					11.2	
ICWW-N	30						6.8	
LWL-N	LWL-1						5.2	
	11				1/12			2/12
	13				1/12			2/11
	LWL-4							
LWL-C	LWL-8							1/3
	18C							2/10
	18D							2/10
	LWL-11							
ICWW-S	LWL-13							
	LWL-18				1/12			1/3
Hillsboro	1							
	2	1/12						
	3							
	S39							
L-8	Culv10a	2/12	5/12			4/12	21.2	
S-2-6-7	S-2	1/12				4/12		
	39	2/8				6/8		
	43					4/7		
WPBWS	M Canal							
	Control 4							
	Lake Mangonia							
	Clear Lake				1/7			

Another brief summary of exceedances for the reporting period is provided below in **Table 5-5**.

Table 5-5
Summary of Exceedances by Parameter

Parameter	Exceedance Watershed(s)
DO	C-16, C-18, Loxahatchee River, Hillsboro, L-8, S-2-6-7
Turbidity	L-8
E. coli	
pH	LWL-N, ICWW-S, WPBWS
Specific Conductivity	C-16, C-18, C-51, L-8, S-2-6-7
Chl-a	Loxahatchee River, ICWW-N, LWL-N, L-8
Copper	LWL-N, LWL-C, ICWW-S

Comments

The criterion for fecal coliform in the NW and SW Forks of the Loxahatchee River (a natural Class II water body) is extremely low (< 43 cfu/100 ml) compared to all other water body classifications (< 400 cfu/ 100 ml). Potential sources of bacteria are being investigated by stakeholders.

Exceedances of the turbidity in the L-8 and of specific conductivity are very likely linked to discharges from Lake Okeechobee.

Tabular Summaries

A statistical summary of monitoring results for the period of record of each monitoring site, grouped by watershed, is provided in tables in **APPENDIX B** (25 pages). The tables include approximately 22 water quality parameters (21 measured parameters plus calculated TN) and all sampling events for each site's period of record. The periods of record vary by site. The "Samples" value is the total number of times samples were taken at the site (may differ from the number of times a particular parameter was sampled). The "Count" is the number of times a particular parameter was sampled.

Table 5-6 provides the geometric mean values for TN, TP, and Chl-a, at each site for the period of record in a single table. Historically, based on Chl-a, exceedances of the nutrient criteria have occurred in the Loxahatchee River, the Lake Worth Lagoon (North and Central), and Intracoastal Waterway South. This table highlights the individual monitoring sites where exceedances of water quality standards have occurred.

Table 5-6
Summary of Geometric Mean for TN, TP, Chl-a
Full Period of Record (January 1999 – September 2024)

Watershed	Site	Total Nitrogen mg/L	Total Phosphorus mg/L	Chlorophyll-a µg/L
C-15	31E	1.38	0.25	15.65
	31C	1.14	0.12	13.22
	31B	0.98	0.11	9.08
C-16	22	0.86	0.06	8.39
	24	0.54	0.03	9.86
	27B	1.37	0.16	11.43
	27A	1.02	0.10	8.58
	28	0.76	0.05	7.37
C-17	12A	1.17	0.05	10.17
	C17S44	0.71	0.03	7.70
C-18	16	0.85	0.03	3.27
	15	0.82	0.02	1.91
	92	0.82	0.02	4.12
	81	0.78	0.02	4.71
C-51	38B	1.49	0.09	6.03
	37B	1.16	0.04	4.07
	C51S155	1.06	0.06	2.53
Lox	69	0.96	0.04	2.96
	51	0.34	0.02	4.15
	62	0.70	0.04	5.19
	72	0.58	0.04	8.74
ICWW-N	30	0.29	0.03	4.16
LWL-N	LWL-1	0.33	0.03	4.78
	11	0.37	0.03	2.62
	13	0.41	0.03	3.18
	LWL-4	0.26	0.02	2.34
LWL-C	LWL-8	0.47	0.05	5.57
	18C	0.53	0.05	4.42
	18D	0.50	0.05	4.17
	LWL-11	0.39	0.04	5.66
ICWW-S	LWL-13	0.37	0.03	4.90
	LWL-18	0.40	0.04	5.74
Hillsboro	1	0.65	0.09	5.37
	2	0.86	0.08	6.00
	3	1.13	0.08	6.85
	S39	0.43	0.02	
L-8	Culv10a	1.99	0.14	3.54
S-2-6-7	S-2	1.87	0.09	2.65
	39	1.37	0.09	3.49
	43	1.80	0.12	6.43
WPBWS	M Canal	1.32	0.10	3.70
	Control 4	1.03	0.05	2.35
	Lake Mangonia	0.84	0.02	4.03
	Clear Lake	0.81	0.02	3.13

5.4 Short Terms Trends

Since nutrient impairment is the primary impairment concern in Palm Beach County waterbodies, the most recent 10 years of data for TN, TP, and Chl-a were summarized for exceedances using a "traffic light" symbology (red for exceedance, green for no exceedance, and yellow where there is no numeric standard). The annual geometric mean was calculated for each monitoring site (based on a reporting year) and also for the watershed (based on all the sample sites and data within the watershed).

The "traffic light" symbology presented in **Tables 5-7** through **5-9** (each 4 pages) readily display the annual compliance with the standard, and a simple indicator of the short-term trend for each site and each basin. It should be noted that while FDEP has established a state-wide Chl-a numeric standard for all waterbodies, there is no numeric criteria for TP and TN in the South Florida Region Canals. This results in 20 of the 44 monitoring sites having no established numeric criteria for these two parameters.

Review of **Table 5-7** indicates that the TN standard (basin averaging of sites) was met in all 14 watersheds. The exceedances identified in this table, occurred over five years ago. Short term trends, where data is possible, indicate compliance with state water quality standards for TN.

Table 5-8 presents the last 10 years of TP compliance with the state water quality standard (where there is one). From the tables, there is a clear short-term trend towards meeting the state water quality standard for TP.

Table 5-9 presents the Chl-a annual compliance results. While most watersheds have no, or just a few random exceedances identified in the past ten years, there are a few that continue to see only mild improvement. The Loxahatchee Watershed is not showing a strong improvement, despite a number of improvement programs that have been carried out there. The ICWW-N Watershed has had the second year in a row of criterion exceedance. The data for the LWL-N Watershed indicates improvement, however there continue to be random hits. In the LWL-C and the ICWW-S Watersheds, there are short term tends that indicate improvement in meeting the criteria after many years of exceedances across the sites located there.

5.5 Long Term Trends

Surface water quality values can have variability driven by seasonal fluctuation, flow variation, changes in watershed, precipitation variation, and other independent variables. Statistical analysis can be used to determine if changes in water quality are part of this variability or if the changes represent a significant water quality trend. The Mann-Kendall Test (M-K) has been accepted by many governmental agencies as a robust method to evaluate water quality data statistically for trends over time. In this report, the M-K is used to identify surface water quality trends in nutrient data for each water quality monitoring site.

The M-K works well with data that has seasonal variations, violates assumptions of normality required for other regressions, and is resistant to outliers. The M-K can detect monotonic trends that do not double back on themselves. The analysis provides a Kendell Tau that is resistant to power-transforms. This is to say the Kendell Tau for a raw data set, or the same data set transformed would result in the same value. The M-K uses a ranked method of analysis. The M-K results contain a Kendell Tau value that is a measurement of the monotonic relationship between X and Y, in this analysis time and concentration. Kendell Tau is a ranked-based correlation measure, therefore, the scale it is evaluated on differs from non-ranked-based correlation measures such as R. Tau will have lower values than other correlation measures such as R. A strong correlation similar to R = 0.9, would be equivalent to Tau = 0.7. Kendell Tau can be calculated by the following Formula:

$$\tau = \frac{S}{\frac{n(n-1)}{2}}$$

In the formula above, the Kendell (S) value is calculated by subtracting the number of "discordant pairs" M, or the pairs that have y (concentration) decreasing as x (time) increases (this is called "M"), from the number of "concordant pairs" where y increases with x (these are called "P"). Kendell S can be written in the form S = P - M. It should be noted that due to the possible number of comparisons available to compare P and M if all comparisons are increasing Tau would equal one and if all comparisons are decreasing Tau would equal -1.

Sen's Slope (also called Theil slope) estimator ($\hat{b}$) is closely related to Kendall's S and Tau. Sen's Slope can be calculated by the following formula for x and y values:

$$\hat{b}_1 = \text{median}\ \frac{(Yj - Yi)}{(Xj - Xi)} \quad \text{for all } i < j \text{ and } i=1,2,...(n-1)\ j=2,3,...n.$$

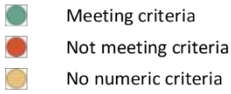
Thus, Kendell Tau, Kendell S, and Sen's Slope all indicate the direction of the trend. To determine if a trend is significant, a p-value must be tested against the null hypothesis "H_o" that Tau = 0. For small sample sized or data pairs, these values can be pulled from a table of p-values based on Kendell S, Kendell Tau, and the number of data pairs "n." When the n is greater than 10 it is more appropriate that the p-value be approximated by a normal distribution Z_s test statistic.

$$\sigma_s = \sqrt{\left(\frac{n}{18}\right) * (n-1) * (2n+5)} \quad , \quad Z_s = \begin{pmatrix} {}^{S-1}/_{\sigma_s} & if\ S > 0 \\ 0 & if\ S = 0 \\ {}^{S+1}/_{\sigma_s} & if\ S < 0 \end{pmatrix}$$

S was defined previously as the Kendell S value. Z_{crit} is the value of $\alpha/2$, where α is the selected significance level. The H_o is rejected when $|Z_s| > Z_{crit}$. M-K analysis can be used to see the slope and direction of a trend regardless of significances. Though it may be useful to see this trend as a potential indicator of the direction of data. It must be emphasized that rejection of the H_o means there is not enough evidence available to conclude that there is a trend or no trend. An alternative statement of this would be there is not enough evidence to say that the trend is any different than the null hypothesis. For additional information on Kendell Tau, the USGS "Statistical Methods in Water Resources" By D.R. Helsel and R.M. Hirsch, provides examples and narrative on the topic.

Table 5-10 (14 pages) summarizes the trend analyses results and identifies the trend for TN, TP and Chl-a for the historical period of record for each site. (Graphs of the plotted data are available within the Excel worksheets that may be downloaded from the Group's website at www.pbco-npdes.org/monitoring.asp). Note that while the trends may be statistically significant, they may not be ecologically significant. Out of the 44 sites, 32 showed statistically significant decreasing trends for TN concentration; 15 showed a significant decreasing trend for TP, two showed a statistically significant increasing trend for TP; and 14 showed a statistically significant deceasing trend for Chl-a. **Figures 5-2** through **5-4** graphically depict the statistical trend direction, for TP, TN and Chlorophyll-a, respectively.

Table 5-7
Summary of Annual Geometric Mean for TN
To indicate Short-Term Trends
(1 of 4 pages)



	C-15				C-16						C-17		
	31E	31C	31B	Basin	22	24	27B	27A	28	Basin	12A	C17S44	Basin
2015													
2016													
2017													
2018													
2019													
2020													
2021													
2022													
2023													
2024													
FDEP Criteria	No Criteria	No Criteria	No Criteria	No Criteria	Varies	Varies	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria

Values Used (mg/l)

2015	1.21	0.76	0.88	0.93	0.91	0.83	1.31	0.80	1.46	1.03	1.07	0.77	0.91
2016	1.61	1.09	1.02	1.21	0.96	0.85	1.33	1.22	0.82	1.02	0.98	0.88	0.93
2017	1.19	1.09	1.07	1.12	0.84	1.05	1.43	1.22	0.57	0.97	1.03	0.69	0.84
2018	1.19	1.00	0.92	1.03	1.13	0.90	1.29	0.39	0.80	0.84	0.39	0.86	0.58
2019	1.33	0.99	0.56	0.90	0.92	0.09	1.34	0.51	0.31	0.44	0.98	0.78	0.88
2020	1.07	0.96	0.89	0.97	0.93	0.15	0.84	0.62	0.14	0.40	0.68	0.78	0.73
2021	1.07	0.94	0.95	0.99	0.92	0.15	1.01	1.00	0.06	0.38	0.38	0.74	0.53
2022	1.19	1.02	0.86	1.02	0.80	0.09	1.21	0.82	0.09	0.37	0.86	0.16	0.36
2023	1.14	0.73	1.02	0.95	0.41	0.15	1.22	0.89	0.20	0.42	0.96	0.12	0.34
2024	0.93	1.05	0.99	0.99	0.38	0.34	1.30	1.01	1.32	0.74	0.95	0.82	0.88

Varies for sites 22 and 24 TN ≤ 1.27 AGM when Chlorophyll-a >20 mg/l
TN ≤ 2.23 AGM when Chlorophyll-a ≤20 mg/l

Table 5-7
Summary of Annual Geometric Mean for TN
To indicate Short-Term Trends
(2 of 4 pages)

Meeting criteria
Not meeting criteria
No numeric criteria

	C-18					C-51				Lox	Lox			
	16	15	92	81	Basin	38B	37B	C51S155	Basin	69	51	62	72	Basin
2015														
2016														
2017														
2018														
2019														
2020														
2021														
2022														
2023														
2024														
FDEP Criteria	<=1.54	<=1.54	<=1.54	<=1.54	<=1.54	No Criteria	No Criteria	No Criteria	No Criteria	<=1.54	<=0.8	<=1.26	<=1.26	No Criteria

Values Used (mg/l)

2015	0.77	0.76	0.80	0.74	0.77	1.19	1.09	0.97	1.08	0.85	0.20	0.58	0.52	0.39
2016	0.94		0.97	0.91	0.94	1.37	1.02	1.14	1.17	0.91	0.25	0.72	0.70	0.50
2017	0.88		0.87	0.97	0.91	1.14	0.80	0.79	0.90	1.01	0.22	0.57	0.69	0.44
2018	1.08	0.27	1.13	0.83	0.72	2.22	1.65	1.34	1.70	0.95	0.52	0.71	0.79	0.66
2019	0.96	0.74	0.84	0.87	0.85	0.48	0.14	0.96	0.40	0.87	0.27	0.69	0.58	0.47
2020	0.62	0.70	0.81	0.87	0.74	1.75	0.17	0.88	0.64	0.84	0.43	0.69	0.63	0.57
2021	0.95	0.76	1.00	0.86	0.89	1.03	0.09	0.68	0.40	0.94	0.30	0.54	0.56	0.45
2022	0.77	0.68	0.89	0.93	0.81	1.34	0.20	0.80	0.59	0.84	0.30	0.57	0.48	0.44
2023	0.85		0.80	0.73	0.79	1.54	0.11	1.02	0.55	0.82	0.25	0.43	0.55	0.39
2024	0.31	0.66	0.93	0.84	0.63	1.68	1.07	1.03	1.23	0.88	0.31	0.43	0.42	0.38

Table 5-7
Summary of Annual Geometric Mean for TN
To indicate Short-Term Trends
(3 of 4 pages)

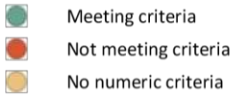
Meeting criteria
Not meeting criteria
No numeric criteria

	ICWW-N	LWL-N					LWL-C					ICWW-S		
	30	LWL-1	11	13	LWL-4	Basin	LWL-8	18C	18D	LWL-11	Basin	LWL-13	LWL-18	Basin
2015														
2016														
2017														
2018														
2019														
2020														
2021														
2022														
2023														
2024														
FDEP Criteria	<=0.66	<=0.54	<=0.54	<=0.54	<=0.54	<=0.54	<=0.66	<=0.66	<=0.66	<=0.66	<=0.66	<=0.59	<=0.59	<=0.59

Values Used (mg/l)

2015	0.20	0.32	0.22	0.25	0.21	0.25	0.39	0.62	0.30	0.39	0.41	0.30	0.46	0.37
2016	0.25	0.33	0.23	0.37	0.31	0.31	0.55	0.45	0.30	0.53	0.45	0.32	0.46	0.39
2017	0.25	0.34	0.13	0.14	0.25	0.20	0.67	0.21	0.15	0.66	0.35	0.99	0.56	0.74
2018	0.37	0.41	0.20	0.40	0.31	0.32	0.74		0.70	0.47	0.62	0.44	0.27	0.34
2019	0.28	0.33	0.29	0.31	0.24	0.29	0.42	0.43	0.42	0.43	0.42	0.34	0.36	0.35
2020	0.36	0.31	0.18	0.22	0.25	0.23	0.35	0.48	0.37	0.38	0.39	0.33	0.34	0.34
2021	0.25	0.27	0.22	0.16	0.18	0.20	0.33	0.11	0.35	0.33	0.26	0.35	0.39	0.37
2022	0.28		0.28	0.18		0.23		0.16			0.16			
2023	0.20	0.23	0.36	0.40	0.20	0.28	0.35	0.38		0.04	0.18	0.31	0.36	0.34
2024	0.33	0.30	0.35	0.39	0.18	0.29	0.30	0.04	0.44	0.37	0.21	0.31	0.36	0.33

Table 5-7
Summary of Annual Geometric Mean for TN
To indicate Short-Term Trends
(4 of 4 pages)



	Hillsboro					L-8	S-2-6-7				WPBWS				
	1	2	3	S39	Basin	Culv10A	S-2	39	43	Basin	M Canal	Control 4	Lake Mangoni	Clear Lake	Basin
2015															
2016															
2017															
2018															
2019															
2020															
2021															
2022															
2023															
2024															
FDEP Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	1.05 to 1.91	1.05 to 1.91	1.05 to 1.91

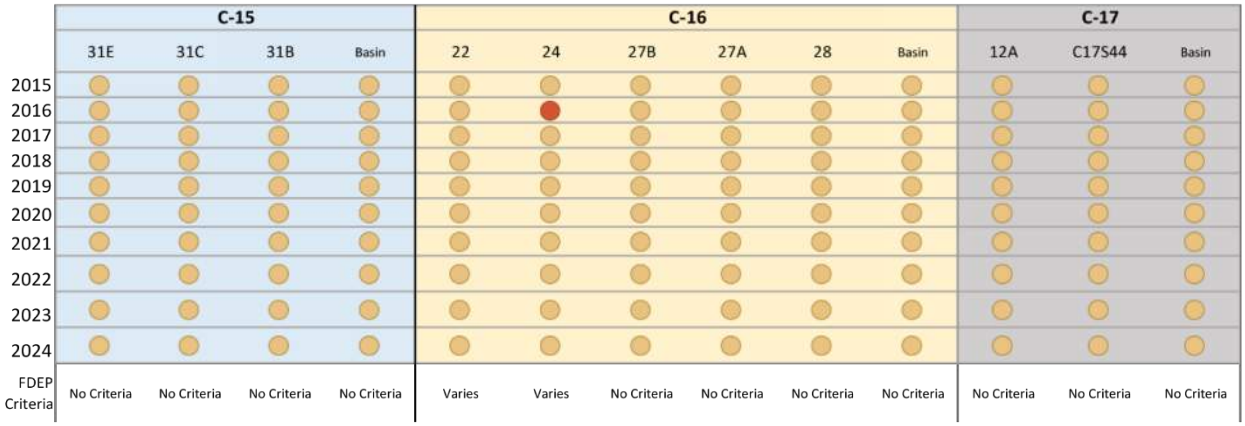
Values Used (mg/l)

2015											1.25	0.94	0.95	0.91	1.00
2016	1.19	1.25	1.42		1.28						1.34	1.11	0.84	0.89	1.03
2017	0.59	1.38	1.38		1.04			4.23	5.22	4.70	1.61	1.19	0.95	0.82	1.11
2018	1.41	1.47	1.52	0.03	0.56	2.23	1.77	1.62	1.57	1.65	1.24	1.08	0.85	0.80	0.98
2019	0.60	1.13	1.45		0.99	2.21	1.79	2.00	1.93	1.90	1.38	1.12	0.80	0.75	0.98
2020	0.68	1.02	1.22	0.33	0.73	1.78	2.15	0.49	1.79	1.23	1.20	1.10	0.74	0.71	0.91
2021	0.61	1.02	1.17	1.16	0.96	2.29	1.84	1.62	1.49	1.64	1.30	0.70	0.75	0.70	0.83
2022	0.61	1.02	1.26	1.10	0.96	1.58	1.18			1.18	1.14	0.92	0.86	0.81	0.93
2023	0.05	0.05	0.05	0.50	0.09	2.00	2.35	1.97	1.96	2.08	1.17	1.28	0.76	0.85	0.99
2024	0.71	0.47	1.07	1.16	0.80	2.09	2.23	1.16	2.23	1.79	1.81	0.96	0.79	0.83	1.03

Varies for Lake Magnonia and Clear Lake TN ≤ 1.27 AGM when Chlorophyll-a >20 mg/l
TN ≤ 2.23 AGM when Chlorophyll-a ≤20 mg/l

Table 5-8
Summary of Annual Geometric Mean for TP
To indicate Short-Term Trends
(1 of 4 pages)

Meeting criteria
Not meeting criteria
No numeric criteria



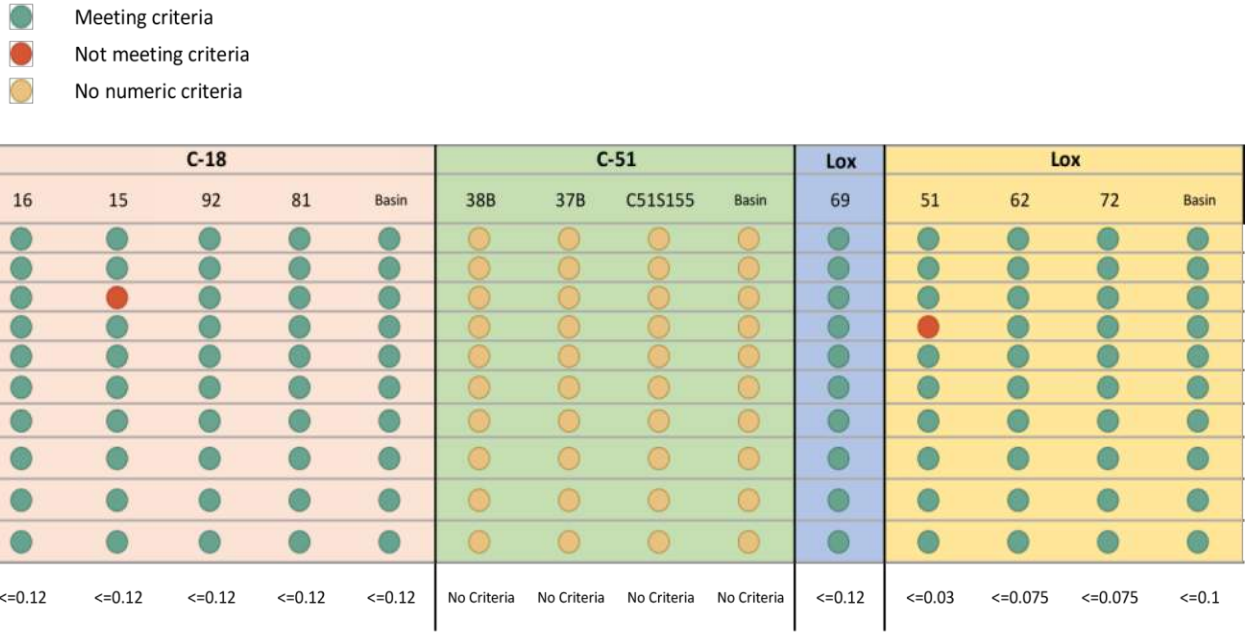
	C-15				C-16						C-17		
	31E	31C	31B	Basin	22	24	27B	27A	28	Basin	12A	C17S44	Basin
2015													
2016													
2017													
2018													
2019													
2020													
2021													
2022													
2023													
2024													
FDEP Criteria	No Criteria	No Criteria	No Criteria	No Criteria	Varies	Varies	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria

Values Used (mg/l)

2015	0.16	0.07	0.05	0.08	0.05	0.07	0.16	0.05	0.05	0.07	0.04	0.04	0.04
2016	0.30	0.16	0.13	0.19	0.06	0.05	0.33	0.14	0.14	0.11	0.06	0.04	0.05
2017	0.18	0.12	0.02	0.08	0.01	0.02	0.11	0.07	0.03	0.03	0.05	0.03	0.04
2018	0.16	0.12		0.13	0.07	0.06	0.14	0.03	0.08	0.07	0.06	0.05	0.06
2019	0.32	0.13	0.07	0.15	0.07	0.00	0.17	0.03	0.02		0.07	0.05	
2020	0.25	0.12	0.10	0.14	0.06	0.01	0.11	0.07	0.01	0.03	0.05	0.05	0.05
2021	0.19	0.14	0.11	0.14	0.07	0.01	0.11	0.10	0.00	0.02	0.03	0.04	0.03
2022	0.29	0.12	0.08	0.14	0.09	0.00	0.12	0.07	0.00	0.02	0.06	0.01	0.02
2023	0.31	0.06	0.14	0.14	0.02	0.00	0.22	0.09	0.01	0.03	0.08	0.01	0.02
2024	0.25	0.11	0.13	0.15	0.06	0.05	0.18	0.11	0.18	0.10	0.07	0.04	0.06

Varies for sites 22 and 24 TP ≤ 0.050 AGM when Chlorophyll-a >20 mg/l
TP ≤ 0.16 AGM when Chlorophyll-a ≤20 mg/l

Table 5-8
Summary of Annual Geometric Mean for TP
To indicate Short-Term Trends
(2 of 4 pages)



Values Used (mg/l)

2015	0.02	0.01	0.02	0.02	0.02	0.11	0.08	0.08	0.09	0.03	0.02	0.05	0.04	0.03
2016	0.02	0.01	0.03	0.03	0.02	0.08	0.09	0.06	0.08	0.03	0.02	0.05	0.05	0.04
2017	0.03	0.15	0.04	0.02	0.04	0.18	0.05	0.06	0.08	0.04	0.02	0.04	0.03	0.03
2018	0.02	0.01	0.06	0.03	0.02	0.16	0.11	0.09	0.11	0.06	0.03		0.04	0.03
2019	0.03	0.01	0.03	0.02		0.04	0.01	0.07		0.03	0.02	0.05	0.04	0.03
2020	0.03	0.01	0.03	0.02	0.02	0.08	0.01	0.05	0.04	0.03	0.02	0.04	0.04	0.03
2021	0.04	0.02	0.03	0.02	0.02	0.06	0.00	0.06	0.03	0.03	0.02	0.04	0.03	0.03
2022	0.03	0.02	0.02	0.02	0.02	0.06	0.00	0.05	0.02	0.03	0.03	0.05	0.03	0.03
2023	0.02	0.01	0.02	0.02	0.02	0.11	0.00	0.07	0.02	0.03	0.02	0.04	0.04	0.03
2024	0.06	0.01	0.04	0.02	0.03	0.09	0.05	0.06	0.07	0.03	0.03	0.04	0.04	0.03

Table 5-8
Summary of Annual Geometric Mean for TP
To indicate Short-Term Trends
(3 of 4 pages)

Meeting criteria
Not meeting criteria
No numeric criteria

	ICWW-N	LWL-N					LWL-C					ICWW-S		
	30	LWL-1	11	13	LWL-4	Basin	LWL-8	18C	18D	LWL-11	Basin	LWL-13	LWL-18	Basin
2015														
2016														
2017														
2018														
2019														
2020														
2021														
2022														
2023														
2024														
FDEP Criteria	<=0.035	<=0.044	<=0.044	<=0.044	<=0.044	<=0.044	<=0.049	<=0.049	<=0.049	<=0.049	<=0.049	<=0.05	<=0.05	<=0.05

Values Used (mg/l)

2015	0.02	0.03	0.06	0.06	0.02	0.04	0.04	0.08	0.07	0.04	0.05	0.02	0.05	0.03
2016	0.02	0.03	0.04	0.04	0.02	0.03	0.05	0.08	0.06	0.04	0.06	0.03	0.05	0.04
2017	0.02	0.03	0.01	0.01	0.02	0.01	0.06	0.05	0.02	0.06	0.04	0.07	0.07	0.07
2018	0.03	0.04	0.03	0.04	0.02	0.03	0.07	0.07	0.06	0.03	0.06	0.03	0.03	0.03
2019	0.02	0.03	0.05	0.05	0.02	0.03	0.04	0.09	0.06	0.04	0.06	0.03	0.05	0.04
2020	0.03	0.04	0.04	0.03	0.02	0.03	0.04	0.08	0.06	0.03	0.05	0.03	0.04	0.03
2021	0.03	0.03	0.02	0.01	0.02	0.01	0.04	0.01	0.04	0.03	0.03	0.03	0.03	0.03
2022	0.02		0.01	0.00		0.01		0.00	0.02		0.01			
2023	0.02	0.05	0.02	0.01	0.02	0.02	0.04	0.02	0.02	0.00	0.01	0.03	0.04	0.03
2024	0.03	0.03	0.02	0.02	0.01	0.02	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03

Table 5-8
Summary of Annual Geometric Mean for TP
To indicate Short-Term Trends
(4 of 4 pages)

Meeting criteria
Not meeting criteria
No numeric criteria

	Hillsboro					L-8	S-2-6-7				WPBWS				
	1	2	3	S39	Basin	Culv10a	S-2	39	43	Basin	M Canal	Control 4	Lake Mangoni	Clear Lake	Basin
2015															
2016															
2017															
2018															
2019															
2020															
2021															
2022															
2023															
2024															
FDEP Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	0.03 to 0.09	0.03 to 0.10	0.03 to 0.11

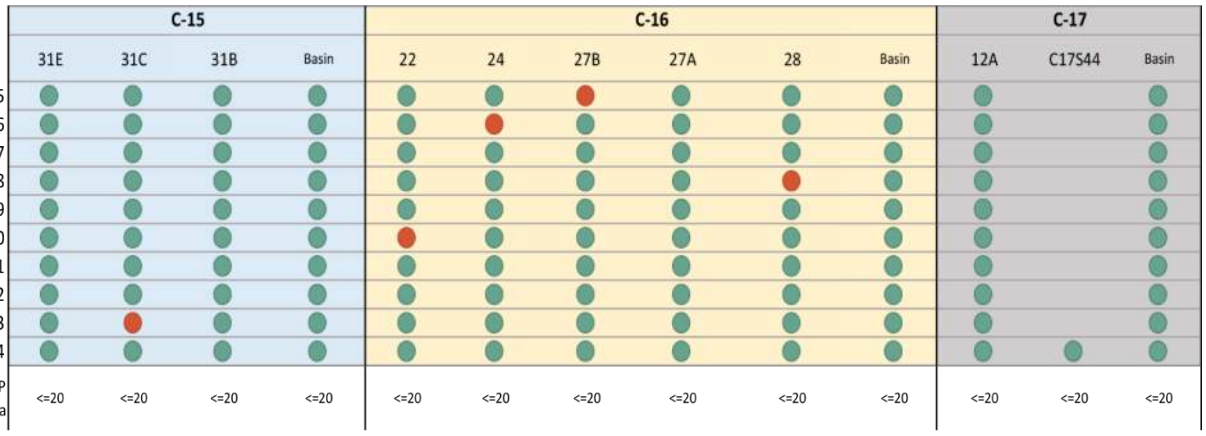
Values Used (mg/l)

2015				0.01	0.01	0.15					0.12	0.06	0.04	0.02	0.05
2016	0.18	0.10	0.13	0.01	0.08	0.15					0.11	0.04	0.03	0.02	0.04
2017	0.11	0.05	0.06	0.01	0.04	0.19	0.11	0.12	0.09	0.11	0.12	0.05	0.03	0.02	0.04
2018	0.07	0.06	0.06	0.02	0.04	0.17	0.13	0.13	0.13	0.13	0.10	0.06	0.02	0.01	0.03
2019	0.13	0.10	0.10	0.01	0.07	0.16	0.10	0.11	0.10	0.10	0.11	0.07	0.02	0.02	0.04
2020				0.01	0.01	0.17	0.13	0.02	0.13	0.07	0.08	0.05	0.03	0.02	0.04
2021	0.13	0.07	0.09	0.02	0.06	0.16	0.13	0.12	0.12	0.12	0.10	0.05	0.03	0.02	0.04
2022	0.14	0.11	0.11	0.01	0.07	0.15	0.07	0.10	0.11	0.09	0.09	0.04	0.02	0.02	0.03
2023	0.01	0.01	0.01	0.01	0.01	0.17	0.14		0.15	0.14	0.15	0.15	0.02	0.02	0.05
2024	0.13	0.09	0.04	0.01	0.05	0.14	0.13	0.13	0.11	0.12	0.10	0.03	0.02	0.01	0.03

Varies for sites Lake and Clear Lake TP ≤ 0.03 AGM when Chlorophyll-a >20 mg/l
TP ≤ 0.09 AGM when Chlorophyll-a ≤20 mg/l

Table 5-9
Summary of Annual Geometric Mean for Chl-a
To indicate Short-Term Trends
(page 1 of 4)

Meeting criteria
Not meeting criteria
No numeric criteria

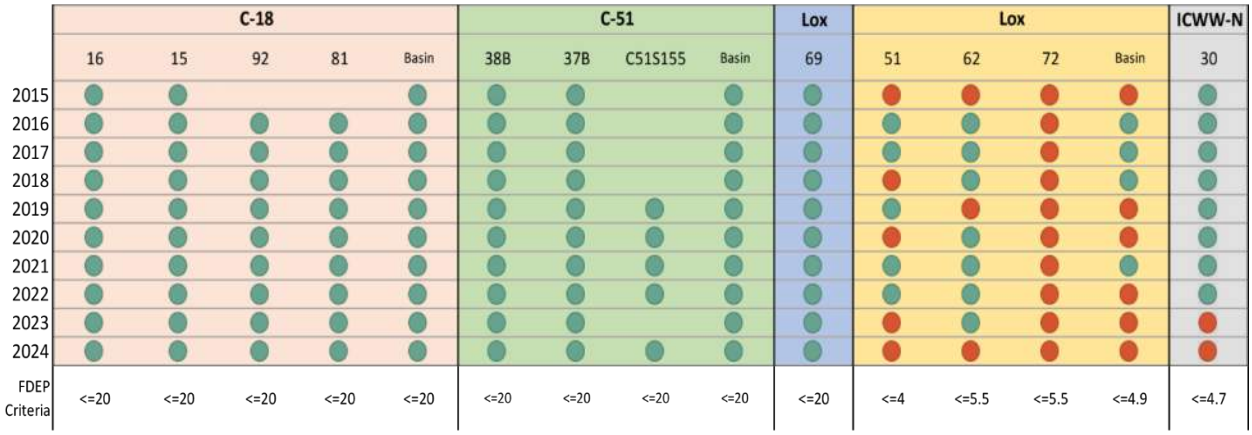


Values Used (ug/l)

2015	16.28	9.10	18.72	14.05	9.86	13.62	26.83	8.03	8.27	11.91	12.94		12.94
2016	9.72	8.42	17.18	11.20	12.73	20.70	7.45	8.11	5.56	9.76	11.78		11.78
2017	16.15	15.39	19.16	16.82	18.04	6.14	9.60	8.04	4.57	8.29	8.10		8.10
2018	14.58	9.63	16.84	13.32	9.52	4.58	3.39	10.83	20.68	8.02	5.98		5.98
2019	8.11	13.38	8.39	9.69	11.97	5.77	11.96	3.86	5.83	7.14	7.61		7.61
2020	17.54	12.22	11.39	13.47	21.37	19.80	18.01	10.93	13.99	16.34	14.67		14.67
2021	0.80	1.93	0.61	0.98	0.67	1.42	1.07	0.55	1.27	0.93	1.08		1.08
2022	15.64	13.41	6.60	11.15	6.84	12.78	14.61	5.82	11.59	9.70	12.02		12.02
2023	16.02	21.29	12.78	16.34	2.58	8.02	14.06	4.25	7.21	6.16	9.11		9.11
2024	8.30	7.70	4.65	6.67	1.75	3.30	5.58	1.63	5.58	3.12	4.54	4.00	4.26

Table 5-9
Summary of Annual Geometric Mean for Chl-a
To indicate Short-Term Trends
(page 2 of 4)

Meeting criteria
Not meeting criteria
No numeric criteria



	C-18					C-51				Lox	Lox				ICWW-N
	16	15	92	81	Basin	38B	37B	C51S155	Basin	69	51	62	72	Basin	30
2015	●	●			●	●	●		●	●	●	●	●	●	●
2016	●	●	●	●	●	●	●		●	●	●	●	●	●	●
2017	●	●	●	●	●	●	●		●	●	●	●	●	●	●
2018	●	●	●	●	●	●	●		●	●	●	●	●	●	●
2019	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2020	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2021	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2022	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2023	●	●	●	●	●	●	●		●	●	●	●	●	●	●
2024	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FDEP Criteria	<=20	<=20	<=20	<=20	<=20	<=20	<=20	<=20	<=20	<=20	<=4	<=5.5	<=5.5	<=4.9	<=4.7

Values Used (ug/l)

2015	2.54	1.26			1.79	5.64	2.06		3.41	1.92	4.07	5.94	10.83	5.70	
2016	5.63	2.34	6.51	8.05	5.13	10.17	3.93		6.32	2.47	2.95	4.76	7.07	4.33	
2017	4.80	2.02	3.44	6.71	3.87	3.16	3.98		3.55	2.09	2.29	5.33	7.71	4.29	
2018	2.57	2.58	3.09	5.52	3.26	4.22	4.99		4.59	3.30	5.96	4.83	4.90	4.63	
2019	2.71	2.02	5.04	7.80	3.83	3.90	2.35		3.03	3.70	3.72	5.91	9.45	5.92	3.75
2020	6.83	1.12	3.35	6.76	3.63	19.55	8.26	0.72	4.88	3.75	5.17	3.79	8.30	5.46	4.51
2021	0.86	0.55	5.00	3.17	1.65	0.91	0.61	5.24	1.42	1.91	3.03	4.57	6.63	4.51	4.30
2022	2.18	3.38	5.57	4.24	3.63	13.22	7.00	3.26	6.71	2.74	3.98	3.98	8.90	5.21	3.45
2023	0.85	1.07	4.33	5.15	2.12	5.60	5.10		5.34	3.50	6.18	5.04	15.11	7.78	6.79
2024	3.49	1.06	7.07	4.33	3.26	5.06	4.16	10.04	5.96	3.13	6.59	5.61	11.16	7.45	6.76

Table 5-9
Summary of Annual Geometric Mean for Chl-a
To indicate Short-Term Trends
(page 3 of 4)

Values Used (ug/l)

)15	5.10	3.28	3.41	1.81	3.19	1/10	2/7	1/7	2/10	6/44	4.08	5.11	4.6
)16		7.06	3.82		5.19		1/5	1/5		2/5			
)17		2.81	3.92		3.32	1/7	1/6	1/6	2/7	5/26	5.4	7.9	6.7
)18	6.92	3.12	4.26	5.79	4.81	9/10	5/6	5/6	9/10	28/32	11.11	5.73	7.98
)19	4.37	1.73	2.94	1.81	2.52	2/9	1/9	1/9	1/9	5/36	4.60	7.72	5.96
)20	2.40	2.17	2.79	2.47	2.45	3/10	0/10	0/10	1/11	4/42	4.59	4.94	4.76
)21	4.44	0.58	0.71	1.71	1.33	2/11	0/6	0/8	1/11	3/36	3.85	4.40	4.11
)22		1.95	2.31		2.12		0/10	1/10		1/20			
)23		3.20	3.44		3.32		1/10	1/10		2/20			
)24	5.22	1.04	1.13	1.74	1.81	0/11	0/10	0/10	0/11	0/42	5.15	5.99	5.55

Note: Chlorophyll-a criteria for LWL-C shall not be exceeded in more than 10 percent of the measurements

Table 5-9
Summary of Annual Geometric Mean for Chl-a
To indicate Short-Term Trends
(page 4 of 4)

Meeting criteria
Not meeting criteria
No numeric criteria

	Hillsboro					L-8	S-2-6-7				WPBWS			
	1	2	3	S39	Basin	Culv10a	S-2	39	43	Basin	M Canal	Control 4	Lake Mangonia	Clear Lake
2015	●	●	●		●						●		●	●
2016	●	●	●		●						●	●	●	●
2017	●	●	●		●			●	●	●	●	●	●	●
2018	●	●	●		●	●		●	●	●	●	●	●	●
2019	●	●	●		●			●	●	●	●	●	●	●
2020								●	●	●	●	●	●	●
2021	●	●	●		●			●	●	●	●	●	●	●
2022	●	●	●		●			●	●	●	●	●	●	●
2023	●	●	●		●			●	●	●	●	●	●	●
2024	●	●	●		●			●	●	●	●	●	●	●
FDEP Criteria	<=11	<=11	<=20	<=20	<=15.5	<=20	<=20	<=20	<=20	<=20	<=20	<=20	<=20	<=20

Values Used (ug/l)

2015	4.33	4.61	3.61		4.16						5.33		7.78	3.69
2016	3.55	2.76	3.10		3.12						4.54	3.39	9.04	8.40
2017	3.13	2.22	0.85		1.81			4.23	5.22	4.70	4.49	5.45	6.61	4.63
2018	6.14	4.34	5.17		5.16	2.23		7.17	8.20	7.67	2.13	1.90	3.37	3.17
2019	7.56	9.13	12.05		9.41			4.03	8.16	5.73	4.70	2.80	3.69	3.05
2020								4.10	7.97	5.72	3.73	2.36	2.38	1.89
2021	3.95	4.20	6.63		4.79			0.98	1.40	1.17	2	0.60	0.70	0.80
2022	3.74	6.80	5.86		5.30			4.52	12.22	7.43	8.63	3.22	5.51	6.87
2023	6.18	10.82	10.35		8.85			5.46	8.56	6.84	3.61	3.61	4.07	5.26
2024	4.55	3.43	3.51		3.80	21.17		2.24	6.09	3.69	3.16	1.69	4.66	2.41

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 1 of 14)

C-15 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
31C	1999 - 2024	-0.306323	-0.000071	0.000001	Significant Decreasing Trend
31E	1999 - 2024	-0.430498	-0.000101	0.000000	Significant Decreasing Trend
31B	2000 - 2024	-0.177786	-0.000027	0.000769	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
31C	1999 - 2024	-0.068905	-0.000002	0.261937	Decreasing Trend
31E	1999 - 2024	-0.013133	-0.000001	0.832018	Decreasing Trend
31B	2000 - 2024	-0.096036	-0.000003	0.081391	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
31C	1999 - 2024	-0.185801	-0.001601	0.002805	Significant Decreasing Trend
31E	1999 - 2024	-0.199403	-0.001740	0.001159	Significant Decreasing Trend
31B	2000 - 2024	-0.202856	-0.001585	0.005901	Significant Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 2 of 14)

C-16 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
22	2004 - 2024	-0.384378	-0.000082	0.000000	Significant Decreasing Trend
24	1999 - 2024	-0.452408	-0.000118	0.000000	Significant Decreasing Trend
27B	1999 - 2024	-0.257432	-0.000061	0.000120	Significant Decreasing Trend
27A	1999 - 2024	-0.370608	-0.000079	0.000000	Significant Decreasing Trend
28	1999 - 2024	-0.277150	-0.000074	0.000000	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
22	2004 - 2024	0.057445	0.000001	0.376920	Increasing Trend
24	1999 - 2024	-0.261126	-0.000005	0.000022	Significant Decreasing Trend
27B	1999 - 2024	-0.020130	-0.000001	0.759276	Decreasing Trend
27A	1999 - 2024	-0.214510	-0.000010	0.000479	Significant Decreasing Trend
28	1999 - 2024	-0.213740	-0.000007	0.000099	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
22	2004 - 2024	-0.119673	-0.000686	0.070240	Decreasing Trend
24	1999 - 2024	-0.105363	-0.000612	0.098912	Decreasing Trend
27B	1999 - 2024	-0.108990	-0.000701	0.111091	Decreasing Trend
27A	1999 - 2024	-0.343950	-0.002124	0.000000	Significant Decreasing Trend
28	1999 - 2024	-0.018226	-0.000075	0.815858	Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 3 of 14)

C-17 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
12A	1999 - 2024	-0.336288	-0.000067	0.000000	Significant Decreasing Trend
C17S44	1999 - 2024	-0.424168	-0.000050	0.000000	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
12A	1999 - 2024	-0.011872	0.000000	0.847519	Decreasing Trend
C17S44	1999 - 2024	-0.077280	-0.0000009	0.093746	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
12A	1999 - 2024	-0.167043	-0.000998	0.007522	Significant Decreasing Trend
C17S44	1999 - 2024	-0.153467	-0.000479	0.252134	Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 4 of 14)

C-18 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
16	1999 - 2024	-0.274448	-0.000055	0.000003	Significant Decreasing Trend
15	1999 - 2024	-0.320247	-0.000052	0.000000	Significant Decreasing Trend
92	1999 - 2024	-0.062677	-0.000007	0.210461	Decreasing Trend
81	1999 - 2024	-0.029771	-0.000002	0.555935	Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
16	1999 - 2024	-0.045878	0.000000	0.437529	Decreasing Trend
15	1999 - 2024	-0.188066	-0.000001	0.002107	Significant Decreasing Trend
92	1999 - 2024	0.189497	0.000001	0.000272	Significant Increasing Trend
81	1999 - 2024	-0.044710	0.000000	0.400788	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
16	1999 - 2024	-0.118866	-0.000175	0.056524	Decreasing Trend
15	1999 - 2024	-0.262956	-0.000202	0.000028	Significant Decreasing Trend
92	1999 - 2024	0.234213	0.000278	0.006670	Significant Increasing Trend
81	1999 - 2024	0.084433	0.000106	0.349586	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 5 of 14)

C-51 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
38B	1999 - 2024	-0.193111	-0.000063	0.002061	Significant Decreasing Trend
37B	1999 - 2024	-0.219895	-0.000054	0.000398	Significant Decreasing Trend
C51S155	1999 - 2024	-0.250417	-0.000049	0.000000	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
38B	1999 - 2024	-0.012652	0.000000	0.841509	Decreasing Trend
37B	1999 - 2024	-0.258464	-0.000006	0.000050	Significant Decreasing Trend
C51S155	1999 - 2024	-0.024258	0.000000	0.593124	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
38B	1999 - 2024	-0.013881	-0.000041	0.826573	Decreasing Trend
37B	1999 - 2024	-0.018698	-0.000033	0.771546	Decreasing Trend
C51S155	1999 - 2024	0.173505	0.000726	0.028411	Significant Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 6 of 14)

Loxahatchee Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
69	2003 - 2024	-0.216243	-0.000033	0.000006	Significant Decreasing Trend
51	2000 - 2024	-0.221369	-0.000029	0.000845	Significant Decreasing Trend
62	2000 - 2024	-0.296166	-0.000074	0.000000	Significant Decreasing Trend
72	2000 - 2024	-0.134732	-0.000027	0.003184	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
69	2003 - 2024	-0.070549	-0.000001	0.140473	Decreasing Trend
51	2000 - 2024	-0.051632	0.000000	0.427716	Decreasing Trend
62	2000 - 2024	-0.014491	0.000000	0.762519	Decreasing Trend
72	2000 - 2024	-0.076412	-0.0000005	0.096742	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
69	2003 - 2024	-0.055970	-0.000084	0.241632	Decreasing Trend
51	2000 - 2024	-0.007217	0.000000	0.917077	Decreasing Trend
62	2000 - 2024	-0.080533	-0.000178	0.094238	Decreasing Trend
72	2000 - 2024	0.018338	0.000082	0.690390	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 7 of 14)

ICWW-N Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
30	2000 - 2024	-0.218671	-0.000041	0.000840	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
30	2000 - 2024	-0.054791	0.000000	0.398271	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
30	2000 - 2024	-0.054335	-0.000114	0.423000	Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 8 of 14)

LWL-N Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-1	1999 - 2024	-0.305663	-0.000028	0.000000	Significant Decreasing Trend
11	1999 - 2024	-0.301871	-0.000054	0.000000	Significant Decreasing Trend
13	2000 - 2024	-0.357255	-0.000073	0.000000	Significant Decreasing Trend
LWL-4	2004 - 2024	-0.365438	-0.000025	0.000000	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-1	1999 - 2024	-0.072851	-0.000001	0.184034	Decreasing Trend
11	1999 - 2024	-0.066880	-0.000001	0.165438	Decreasing Trend
13	2000 - 2024	-0.133544	-0.000002	0.006317	Significant Decreasing Trend
LWL-4	2004 - 2024	-0.353899	-0.000002	0.000000	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-1	1999 - 2024	-0.138161	-0.000230	0.017349	Significant Decreasing Trend
11	1999 - 2024	-0.150237	-0.000191	0.002357	Significant Decreasing Trend
13	2000 - 2024	-0.147686	-0.000230	0.002722	Significant Decreasing Trend
LWL-4	2004 - 2024	-0.155181	-0.000131	0.007072	Significant Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 9 of 14)

LWL-C Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-8	1999 - 2024	-0.224251	-0.000032	0.000010	Significant Decreasing Trend
18C	2004 - 2024	-0.465308	-0.000127	0.000000	Significant Decreasing Trend
18D	2005 - 2024	-0.350219	-0.000077	0.000000	Significant Decreasing Trend
LWL-11	1999 - 2024	-0.311567	-0.000054	0.000000	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-8	1999 - 2024	-0.158528	-0.0000019	0.001355	Significant Decreasing Trend
18C	2004 - 2024	-0.232189	-0.000006	0.000008	Significant Decreasing Trend
18D	2005 - 2024	-0.230439	-0.000005	0.000013	Significant Decreasing Trend
LWL-11	1999 - 2024	-0.263262	-0.000003	0.000001	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-8	1999 - 2024	0.110114	0.000248	0.036819	Significant Increasing Trend
18C	2004 - 2024	-0.152064	-0.000359	0.002810	Significant Decreasing Trend
18D	2005 - 2024	-0.113976	-0.000290	0.031538	Significant Decreasing Trend
LWL-11	1999 - 2024	0.028841	0.000078	0.608070	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 10 of 14)

ICWW-S Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-13	2004 - 2024	-0.255291	-0.000029	0.000002	Significant Decreasing Trend
LWL-18	2000 - 2024	-0.247851	-0.000030	0.000003	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-13	2004 - 2024	-0.229578	-0.000002	0.000017	Significant Decreasing Trend
LWL-18	2000 - 2024	-0.104744	-0.000001	0.043616	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-13	2004 - 2024	-0.058169	-0.000086	0.297533	Decreasing Trend
LWL-18	2000 - 2024	0.081202	0.000155	0.143552	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 11 of 14)

Hillsboro Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
1	2006 - 2024	-0.202861	-0.000053	0.027931	Significant Decreasing Trend
2	2006 - 2024	-0.449914	-0.000099	0.000000	Significant Decreasing Trend
3	2006 - 2024	-0.413695	-0.000063	0.000014	Significant Decreasing Trend
S39	2000 - 2022	0.103142	0.000029	0.185446	Increasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
1	2006 - 2024	0.040167	0.000001	0.681425	Increasing Trend
2	2006 - 2024	-0.066017	-0.000002	0.473918	Decreasing Trend
3	2006 - 2024	-0.200090	-0.000007	0.046418	Significant Decreasing Trend
S39	2000 - 2022	-0.375372	-0.000002	0.000000	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
1	2006 - 2024	-0.121671	-0.000310	0.179707	Decreasing Trend
2	2006 - 2024	-0.294325	-0.001093	0.000261	Significant Decreasing Trend
3	2006 - 2024	-0.212169	-0.001116	0.015110	Significant Decreasing Trend
S39	No Data	No Data	No Data	No Data	

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 12 of 14)

L-8 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
Culv10a	2000 - 2023	-0.095037	-0.000081	0.227553	Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
Culv10a	2000 - 2023	0.018107	0.0000008	0.650884	Increasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
Culv10a	2000 - 2023	0.630917	0.001738	0.001604	Significant Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 13 of 14)

S-2-6-7 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
S-2	1999 - 2021	0.102888	0.000139	0.193863	Increasing Trend
39	2017 - 2024	0.021448	0.000021	0.870422	Increasing Trend
43	2017 - 2024	0.082645	0.000113	0.479989	Increasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
S-2	1999 - 2021	0.084078	0.000003	0.030664	Significant Increasing Trend
39	2017 - 2024	0.051915	0.000005	0.659260	Increasing Trend
43	2017 - 2024	0.048430	0.000003	0.659553	Increasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
S-2	1999 - 2021	0.000000	0.000000	1.000000	Increasing Trend
39	2017 - 2024	-0.140393	-0.000746	0.190513	Decreasing Trend
43	2017 - 2024	0.048980	0.000549	0.656670	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-10
Long-Term Trend Analyses for TN, TP, & Chl-a
(page 14 of 14)

WPBWS Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
M Canal	2011 - 2024	-0.012257	0.000000	0.852302	Decreasing Trend
Control 4	2011 - 2024	-0.107925	-0.000040	0.140749	Decreasing Trend
Lake Mangonia	2011 - 2024	-0.134968	-0.000017	0.078474	Decreasing Trend
Clear Lake	2011 - 2024	0.028681	0.000004	0.696967	Increasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
M Canal	2011 - 2024	0.133447	0.000007	0.051316	Increasing Trend
Control 4	2011 - 2024	-0.040465	-0.000001	0.596765	Decreasing Trend
Lake Mangonia	2011 - 2024	-0.012098	0.000000	0.882512	Decreasing Trend
Clear Lake	2011 - 2024	-0.041573	0.000000	0.603038	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
M Canal	2011 - 2024	0.013639	0.000000	0.843924	Increasing Trend
Control 4	2011 - 2024	-0.102267	-0.000333	0.192147	Decreasing Trend
Lake Mangonia	2011 - 2024	-0.115257	-0.000583	0.140544	Decreasing Trend
Clear Lake	2011 - 2024	0.014594	0.000000	0.855766	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Figure 5-2
TP Trends Graphic

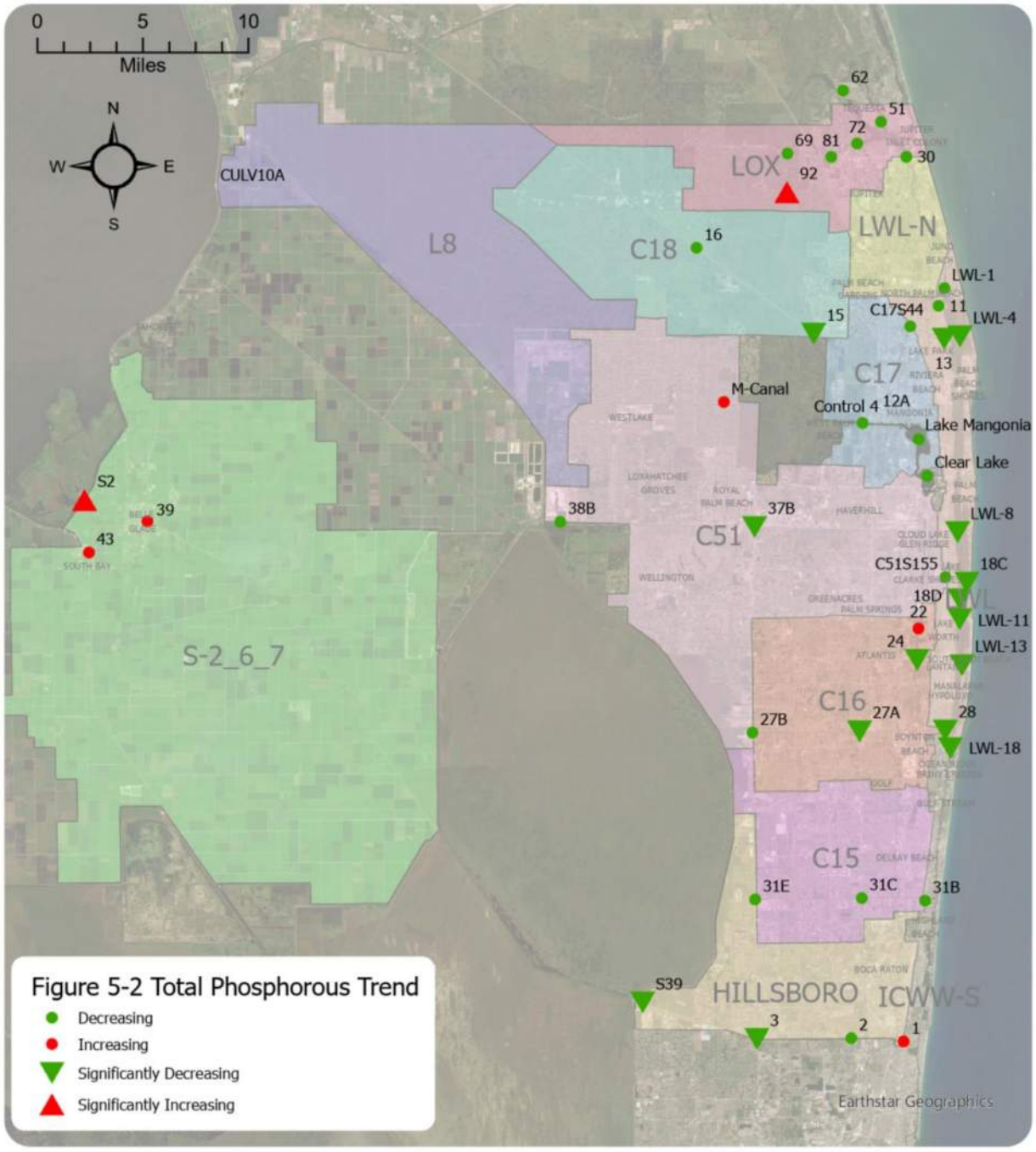


Figure 5-3
TN Trends Graphic

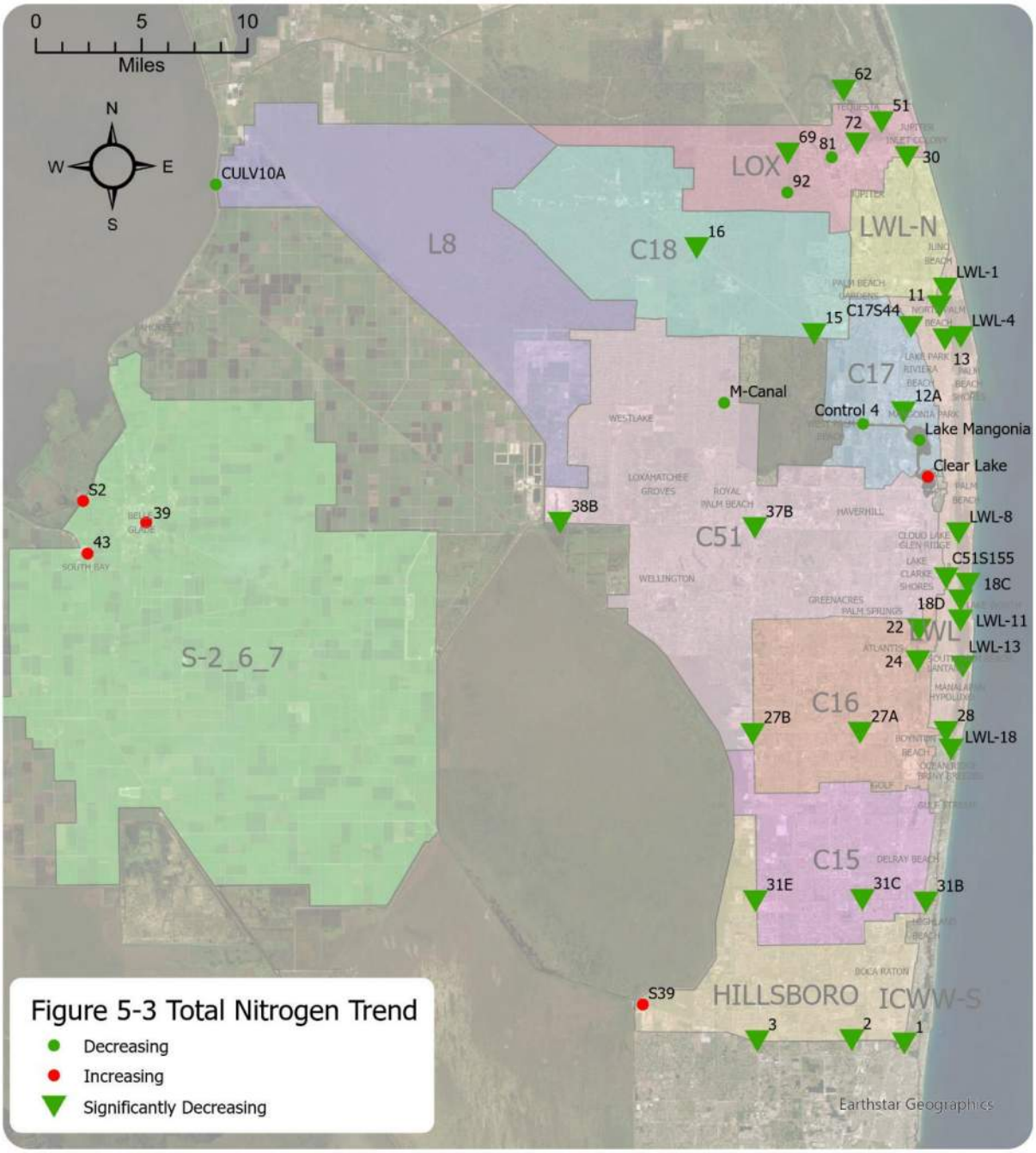
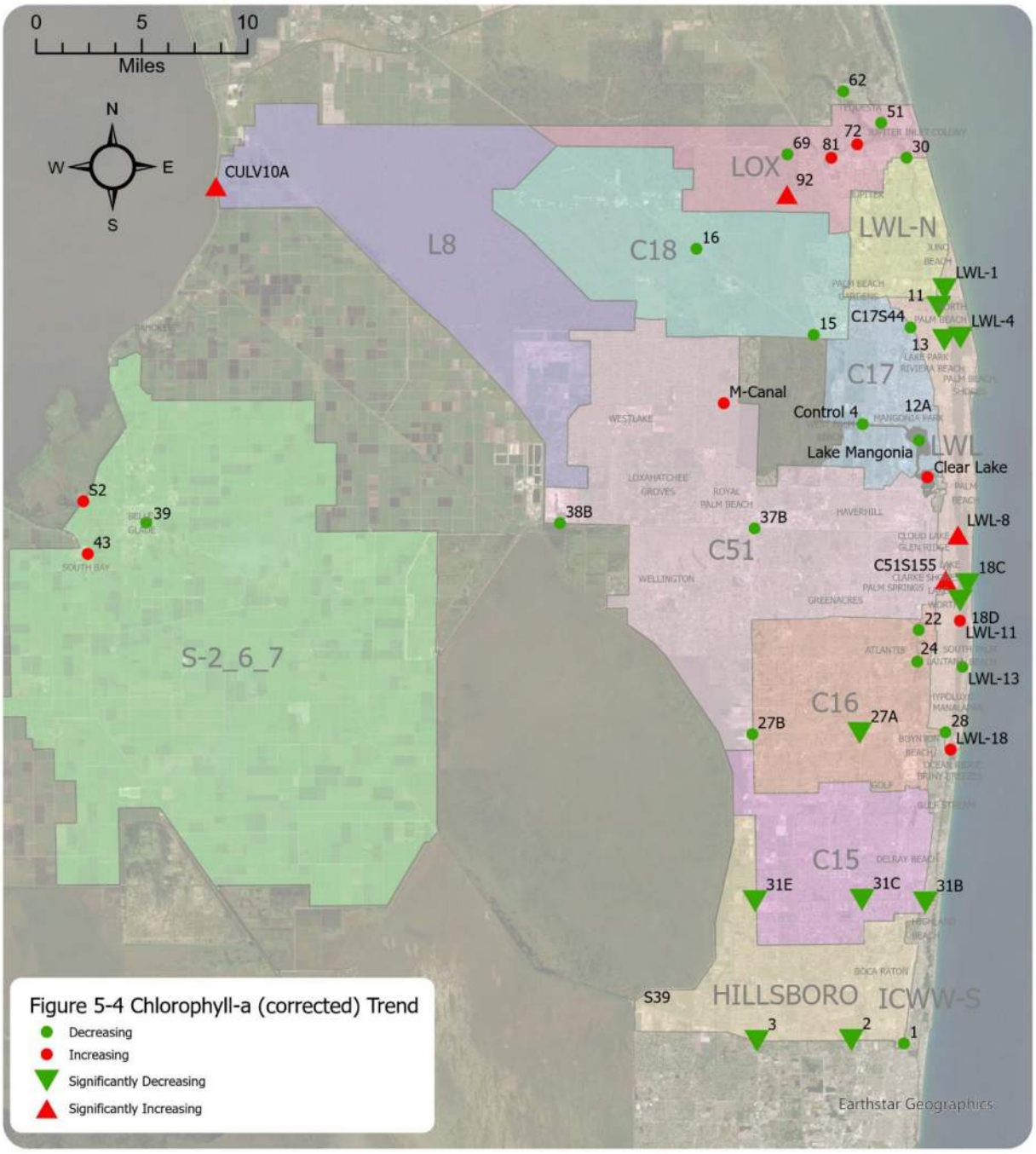


Figure 5-4
Chl-a Trends Graphic



5.6 Pollutant Loading Analyses

The Cycle 4 permit requires each permittee to provide estimates of the average annual pollutant loading for six water quality parameters for each major outfall or major watershed into which they discharge, during Year 3 of the permit cycle. Each permittee is required to compare the current cycle pollutant loading estimates with the previous cycle pollutant loading estimates. Palm Beach County permittees have elected to provide the pollutant loading estimates on a watershed basis. For consistency, this permit requirement is one of the activities performed by the Group. During Year 3 of the Cycle 4 permit, permittees provided the needed input data and were given the opportunity to review the pollutant loading model inputs and results. Thirteen (13) major watersheds were included in the analysis. The Lake Worth Lagoon (North and Central) and the northern portion of the Intracoastal Waterway South (ICWWS) were combined as one watershed and identified as the Lake Worth Lagoon (LWL). The Cycle 4/Year 3 (2018) MS4 annual pollutant load estimates were lower than the Cycle 3/Year 3 (2013) estimates for all six water quality parameters, in all 13 watersheds. Information on this analysis was provided in the Cycle4/Year 3 Joint Annual Report.

5.7 Program Modifications

Generally, the water quality monitoring data and analyses (annual exceedances, historical statistical data, more recent data, trends) indicate an improvement in the water quality of the receiving water bodies for the Palm Beach County MS4s. Consequently, the stormwater management programs implemented by the permittees, as required by the MS4 permit, appear to be effective.

APPENDIX A

Water Quality Monitoring Data

October 1, 2023 through September 30, 2024

(44 Pages)

C-15 Watershed Monitoring Events

SITE 31B	SAMPLE DATE	10/17/23	12/18/23	1/10/24	3/12/24	5/14/24	7/18/24	9/24/24						Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L		157	169											
Arsenic	mg/L	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017							≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002							See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	9.10	2.40	2.30	1.50	4.20	11.5	12.9						4.6	≤ 20 AGM
Copper	mg/L	0.0013	0.0061	0.0031	0.0027	0.0029	0.0013	0.0049							See Table 5-3, page 2
Dissolved Oxygen	% Saturation	94.0	81.7	94.6	70.3	90.4	107.3	81.1							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011							See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.150	0.310	0.088	0.092	0.018	0.018	0.160							
Nitrogen, nitrate + nitrite	mg/L	0.110	0.250	0.310	0.035	0.008	0.0075	0.140							
Nitrogen, Total	mg/L	1.08	1.25	1.16	1.04	0.69	0.79	1.05						0.99	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.97	1	0.85	1	0.68	0.78	0.91							
pH	None	7.84	7.73	8.00	7.88	8.39	7.73	7.21							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.1200	0.100	0.091	0.088	0.045	0.038	0.092							
Phosphorus, Total	mg/L	0.1900	0.1400	0.1400	0.12	0.0870	0.1	0.1500						0.129	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	479	491	532	504	500	469	421.9							≤ 1275
Temperature	deg C	27.6	21.1	21.0	24.4	28.3	32.0	29.3							
Total Hardness	mg/L	178	194	206	192	178	167	158							
Total Suspended Solids	mg/L														
Turbidity	NTU	0.3	1.4	1.4	1.4	1.7	1.6	1.9							≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055							See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-15 Watershed Monitoring Events

SITE 31E	SAMPLE DATE	10/17/23	12/18/23	1/10/24	3/12/24	5/14/24	7/18/24	9/24/24						Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L		237	232											
Arsenic	mg/L	0.0017	0.0017	0.0036	0.0017	0.0017	0.0017	0.0017							≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002							See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	17.00	5.70	8.90	5.60	5.10	13	8.5						8.3	≤ 20 AGM
Copper	mg/L	0.0039	0.0045	0.0034	0.0034	0.0028	0.0013	0.0013							See Table 5-3, page 2
Dissolved Oxygen	% Saturation	78.2	69.9	83.2	92.4	78.7	47.8	47.1							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011							See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.120	0.430	0.110	0.018	0.018	0.075	0.150							
Nitrogen, nitrate + nitrite	mg/L	0.031	0.210	0.094	0.0075	0.008	0.025	0.096							
Nitrogen, Total	mg/L	0.93	0.93	0.93	0.93	0.93	0.93	0.93						0.93	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.3	1.4	1.1	1.4	0.84	1.1	0.83							
pH	None	7.70	7.74	7.84	7.69	8.18	7.18	7.19							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0340	0.220	0.230	0.3	0.033	0.22	0.110							
Phosphorus, Total	mg/L	0.4300	0.3000	0.3100	0.4	0.0940	0.28	0.1600						0.254	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	584	634	673	625	547	582	414.2							≤ 1275
Temperature	deg C	24.4	20.6	20.7	24.2	28.7	31.9	28.8							
Total Hardness	mg/L	231	250	254	255	176	213	162							
Total Suspended Solids	mg/L														
Turbidity	NTU	0.5	2.6	3.0	3.9	2.8	0.3	1.8							≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055							See Table 5-3, page 2

- Metal exceedences are based on hardness
- Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.
- Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
- AGM - Annual Geometric Mean
- TPTV - Ten Percent Threshold Value
- Narrative - Shall not cause an imbalance in flora and fauna

C-15 Watershed Monitoring Events

SITE 31C	SAMPLE DATE	10/17/23	12/18/23	1/10/24	3/12/24	5/14/24	7/18/24	9/24/24						Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L		168	169											
Arsenic	mg/L	0.0017	0.0017	0.0036	0.0017	0.0017	0.0017	0.0017							≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002							See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	13.80	2.80	4.70	6.5	12.60	16.8	6.4						7.7	≤ 20 AGM
Copper	mg/L	0.0013	0.0057	0.0040	0.0045	0.0013	0.0013	0.0047							See Table 5-3, page 2
Dissolved Oxygen	% Saturation	93.7	71.7	82.3	64.6	92.9	142.4	75.3							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011							See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.058	0.490	0.150	0.120	0.018	0.120	0.230							
Nitrogen, nitrate + nitrite	mg/L	0.100	0.220	0.310	0.1	0.008	0.0075	0.140							
Nitrogen, Total	mg/L	1.05	1.05	1.05	1.05	1.05	1.05	1.05						1.05	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.1	1.1	0.92	1.2	0.72	1	0.91							
pH	None	7.56	7.51	7.78	7.39	8.21	7.45	7.11							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0440	0.120	0.096	0.094	0.036	0.013	0.060							
Phosphorus, Total	mg/L	0.0780	0.1700	0.1400	0.17	0.1000	0.071	0.1100						0.114	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	495.6	5.2	543	523	510	515	429.1							≤ 1275
Temperature	deg C	25.4	21.6	21.9	25.1	28.4	33.1	29.3							
Total Hardness	mg/L	190	197	202	204	176	191	158							
Total Suspended Solids	mg/L	6.8	3.6	2.9	2.9	5.4	3.9	2.1							
Turbidity	NTU	0.3	2.3	1.8	2.2	3.0	0.6	1.8							≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055							See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-16 Watershed Monitoring Events

SITE 22	SAMPLE DATE	10/18/23	11/20/23	12/20/23	1/30/24	2/26/24	3/20/24	4/15/24	5/22/24	6/25/24	7/16/24	8/21/24	9/23/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L				210										
Arsenic	mg/L	0.0017	0.0077	0.0017	0.0017		0.0036		0.0017		0.0017		0.0017		≤ 0.05
Cadmium	mg/L	0.0002		0.0002	0.0002		0.0002		0.0002		0.0002		0.0002		See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	2.5	2.2	0.5	0.5	1.3	1.7		2.6		2.7		7.3	1.8	≤ 20 AGM
Copper	mg/L	0.0013		0.0013	0.0013		0.0013		0.0013		0.0013		0.0013		See Table 5-3, page 8
Dissolved Oxygen	% Saturation	80.1	99.2	81.9	77.8	55.5	96.0	103.6	101.2	83.8	140.9	72.4	125.2		> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011		0.0011	0.0011		0.0011		0.0011		0.0011		0.0011		See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.032	0.032	0.016	0.016	0.156	0.027	0.027	0.027	0.027	0.056	0.027	0.059		
Nitrogen, nitrate + nitrite	mg/L	0.036	0.036	0.036	0.012	0.037	0.012	0.012	0.012	0.012	0.027	0.012	0.063		
Nitrogen, Total	mg/L	0.17	0.37	0.46	0.29	1.43	0.29	0.44	0.43	0.30	0.75	0.08	0.71	0.38	≤ 2.23 AGM
Nitrogen, Total Kjeldahl	mg/L	0.136	0.335	0.425	0.281	1.39	0.281	0.427	0.415	0.29	0.72	0.067	0.65		
pH	None	8.00	8.17	8.06	8.30	7.47	8.24	8.22	8.24	8.01	8.18	7.83	7.70		6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0420	0.040	0.045	0.039	0.001	0.0005	0.024	0.005	0.005	0.05	0.050	0.048		
Phosphorus, Total	mg/L	0.0700	0.0700	0.0700	0.085	0.0150	0.034	0.0340	0.034	0.0340	0.095	0.1570	0.094	0.055	≤ 0.16 AGM
Salinity	ppth	32.64	33.31	31.07	32.65	0.37	32.03	31.59	34.02	33.67	33.24	27.97	26.4		
Specific Conductivity	umho/cm	49900	50900	48500	50600	747	49300	48600	51500	50900	445.4	42720	380.2		≤ 1275
Temperature	deg C	24.8	23.5	14.3	15.6	20.5	21.4	22.8	28.9	30.9	33.8	30.5	31.3		
Total Hardness	mg/L	172		196	234		194		200		156		146		
Total Suspended Solids	mg/L	1.1		6.1	3.2		1.9		8.9		3.6		2.8		
Turbidity	NTU	1.5	1.9	1.1	1.4	1.0	1.8	1.4	2.2	4.7	2.6	2.4	1.6		≤ 29
Zinc	mg/L	0.0055		0.0055	0.0055		0.0055		0.0055		0.0055		0.0055		See Table 5-3, page 1

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-16 Watershed Monitoring Events

SITE 24	SAMPLE DATE	10/18/23	11/20/23	12/20/23	1/30/24	2/26/24	3/20/24	4/15/24	5/22/24	6/25/24	7/16/24	8/21/24	9/23/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L				202										
Arsenic	mg/L	0.0017	0.0038	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017		≤ 0.05
Cadmium	mg/L														See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	1.4		2.8	1.1		2.3		4.25		4.8		21.4	3.3	≤ 20 AGM
Copper	mg/L	0.0013		0.0013	0.0013		0.0013		0.0013		0.0013		0.0013		See Table 5-3, page 1
Dissolved Oxygen	% Saturation	65.2	83.1	87.3	83.1	95.1	93.2	94.5	84.9	79.2	110.9	73.7	121.9		> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011		0.0011	0.0011		0.0011		0.0011		0.0011		0.0011		See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.056	0.032	0.016	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027		
Nitrogen, nitrate + nitrite	mg/L	0.141	0.036	0.036	0.012	0.012	0.012	0.012	0.012	0.012	0.0075	0.012	0.0075		
Nitrogen, Total	mg/L	0.65	0.28	0.24	0.29	0.26	0.33	0.35	0.39	0.35	0.67	0.08	0.74	0.34	≤ 2.23 AGM
Nitrogen, Total Kjeldahl	mg/L	0.504	0.247	0.205	0.278	0.252	0.319	0.342	0.375	0.341	0.66	0.067	0.73		
pH	None	7.57	8.08	8.02	8.19	8.16	8.24	8.16	8.09	8.02	7.96	7.93	7.87		6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0150	0.032	0.015	0.012	0.005	0.005	0.011	0.005	0.005	0.037	0.037	0.013		
Phosphorus, Total	mg/L	0.0800	0.0700	0.0700	0.034	0.3450	0.034	0.0340	0.0340	0.0340	0.0340	0.0340	0.076	0.053	≤ 0.16 AGM
Salinity	ppth	21.4	33.26	32.18	32.64	31.21	32.25	32.97	34.3	34.29	34.07	27.67	27.45		
Specific Conductivity	umho/cm	33500	50900	50000	50500	48500	49600	50500	51900	51700	449.3	42313	351.2		≤ 1275
Temperature	deg C	26.2	22.7	14.9	16.7	16.8	21.5	22.7	28.5	31.2	33.2	30.6	30.7		
Total Hardness	mg/L	171		195	220		202		207		149		128		
Total Suspended Solids	mg/L	1.1		2.5	1.9		2.7		2.7		2.3		3.9		
Turbidity	NTU	1.6	0.9	3.8	3.8	2.3	2.9	1.8	2.2	3.0	1.7	2.7	3.2		≤ 29
Zinc	mg/L	0.0055		0.0055	0.0055		0.0055		0.0055		0.0166		0.0055		See Table 5-3, page 1

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-16 Watershed Monitoring Events

SITE 27B	SAMPLE DATE	10/17/23	12/18/23	1/10/24	3/12/24	5/14/24	7/18/24	9/24/24					Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS													
Alkalinity	mg/L		228	228										
Arsenic	mg/L	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017						≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002						See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	5.1	2.0	3.6	6.2	2	15.4	24.1					5.6	≤ 20 AGM
Copper	mg/L	0.0044	0.0054	0.0034	0.0044	0.0013	0.0013	0.0038						See Table 5-3, page 1
Dissolved Oxygen	% Saturation	47.6	37.0	74.1	99.4	70.1	48.1	65.0						> 38
E. Coli	cfu/100mL													≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011						See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.360	0.700	0.180	0.072	0.072	0.130	0.440						
Nitrogen, nitrate + nitrite	mg/L	0.110	0.290	0.19	0.39	0.052	0.1	0.016						
Nitrogen, Total	mg/L	1.31	1.69	1.19	1.79	1.04	1.04	1.22					1.30	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.2	1.4	1	1.4	0.99	0.94	1.2						
pH	None	7.41	7.40	7.66	7.69	7.97	7.24	7.33						6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.1200	0.130	0.076	0.36	0.018	0.19	0.22						
Phosphorus, Total	mg/L	0.1900	0.1900	0.11	0.44	0.05	0.24	0.32					0.182	Narrative
Salinity	ppth													
Specific Conductivity	umho/cm	525	576	762	614	794	564	515						≤ 1275
Temperature	deg C	24.3	20.9	20.4	23.8	28.9	31.9	28.1						
Total Hardness	mg/L	227	254	265	258	225	230	214						
Total Suspended Solids	mg/L	9.1	4.8	5.9	3.6	2.8	2.6	5.5						
Turbidity	NTU	0.4	3.3	3.6	2.9	2.5	0.3	3.9						≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055						See Table 5-3, page 1

- Metal exceedences are based on hardness
- Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.
- Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
- AGM - Annual Geometric Mean
- TPTV - Ten Percent Threshold Value
- Narrative - Shall not cause an imbalance in flora and fauna

C-16 Watershed Monitoring Events

SITE 27A	SAMPLE DATE	10/17/23	12/18/23	1/10/24	3/12/24	5/14/24	7/18/24	9/24/24					Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS													
Alkalinity	mg/L		188	189										
Arsenic	mg/L	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017						≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002						See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	1.4	1.3	1.8	0.5	2	1.9	5					1.6	≤ 20 AGM
Copper	mg/L	0.0039	0.0060	0.0041	0.0034	0.0013	0.0013	0.0038						See Table 5-3, page 1
Dissolved Oxygen	% Saturation	64.3	74.2	93.2	94.6	84.7	67.1	38.3						> 38
E. Coli	cfu/100mL													≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011						See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.210	0.510	0.130	0.018	0.018	0.100	0.280						
Nitrogen, nitrate + nitrite	mg/L	0.096	0.330	0.37	0.084	0.0075	0.0075	0.12						
Nitrogen, Total	mg/L	0.97	1.53	1.23	0.96	0.70	0.82	1.06					1.01	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.87	1.2	0.86	0.88	0.69	0.81	0.94						
pH	None	7.60	7.80	8.07	7.97	7.38	7.39	7.21						6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0490	0.190	0.12	0.021	0.0042	0.16	0.22						
Phosphorus, Total	mg/L	0.0760	0.2300	0.15	0.037	0.035	0.2	0.28					0.110	Narrative
Salinity	ppth													
Specific Conductivity	umho/cm	377	547	554	514	586	540	461.2						≤ 1275
Temperature	deg C	26.5	20.6	20.0	24.0	28.4	31.9	28.7						
Total Hardness	mg/L	159	228	213	202	193	201	177						
Total Suspended Solids	mg/L	1.7	1.3	0.5	0.5	0.5	0.5	2						
Turbidity	NTU	0.4	2.4	0.95	0.8	1.2	0.55	1.7						≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055						See Table 5-3, page 1

- Metal exceedences are based on hardness
- Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.
- Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
- AGM - Annual Geometric Mean
- TPTV - Ten Percent Threshold Value
- Narrative - Shall not cause an imbalance in flora and fauna

C-16 Watershed Monitoring Events

SITE 28	SAMPLE DATE	10/17/23	12/18/23	1/10/24	3/12/24	5/14/24	7/18/24	9/24/24						Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L		228	228											
Arsenic	mg/L	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017							≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002							See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	5.1	2.0	3.6	6.2	2.0	15.4	24.1						5.6	≤ 20 AGM
Copper	mg/L	0.0044	0.0054	0.0034	0.0044	0.0013	0.0013	0.0038							See Table 5-3, page 1
Dissolved Oxygen	% Saturation	47.6	37.0	74.1	99.4	70.1	48.1	65.0							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011							See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.360	0.700	0.180	0.072	0.072	0.130	0.440							
Nitrogen, nitrate + nitrite	mg/L	0.110	0.290	0.190	0.39	0.052	0.1	0.160							
Nitrogen, Total	mg/L	1.31	1.69	1.19	1.79	1.04	1.04	1.36						1.32	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.2	1.4	1	1.4	0.99	0.94	1.2							
pH	None	7.41	7.40	7.66	7.69	7.97	7.24	7.33							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.1200	0.130	0.076	0.36	0.018	0.19	0.220							
Phosphorus, Total	mg/L	0.1900	0.1900	0.1100	0.44	0.0500	0.24	0.3200						0.182	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	525	576	762	614	794	564	515							≤ 1275
Temperature	deg C	24.3	20.9	20.4	23.8	28.9	31.9	28.1							
Total Hardness	mg/L	227	254	265	258	225	230	214							
Total Suspended Solids	mg/L	9.1	4.8	5.9	3.6	2.8	2.6	5.5							
Turbidity	NTU	0.4	3.3	3.6	2.9	2.5	0.3	3.9							≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055							See Table 5-3, page 1

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-17 Watershed Monitoring Events

SITE 12A	SAMPLE DATE	10/18/23	12/19/23	1/9/24	3/11/24	5/13/24	7/16/24	9/23/24						Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L			165											
Arsenic	mg/L	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017							≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002							See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	3.0	2.0	2.3	4.1	4.8	14.2	10.3						4.5	≤ 20 AGM
Copper	mg/L	0.0013	0.0039	0.0013	0.0075	0.0036	0.0013	0.0013							See Table 5-3, page 2
Dissolved Oxygen	% Saturation	68.1	75.1	77.9	71.4	75.6	93.9	74.3							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011							See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.280	0.230	0.240	0.110	0.018	0.018	0.110							
Nitrogen, nitrate + nitrite	mg/L	0.170	0.250	0.220	0.07	0.008	0.0075	0.100							
Nitrogen, Total	mg/L	1.04	1.01	1.10	0.67	0.99	0.95	0.94						0.95	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.87	0.76	0.88	0.6	0.98	0.94	0.84							
pH	None	7.64	7.62	7.75	7.60	7.83	7.38	7.48							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0330	0.026	0.020	0.038	0.010	0.0019	0.002							
Phosphorus, Total	mg/L		0.0530	0.0540		0.0850	0.092	0.0700						0.069	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	415.2	403.1	453	448.1	451.2	439.5	433.2							≤ 1275
Temperature	deg C	24.3	19.3	20.3	23.9	28.3	31.9	29.0							
Total Hardness	mg/L	168	156	182	179	154	179	160							
Total Suspended Solids	mg/L	2.9	3.2	3.2	4	4.9	6.1	3.4							
Turbidity	NTU	1.6	2.2	2.2	2	0.6	4.7	2.6							≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0160	0.0055						0.0064	See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-17 Watershed Monitoring Events

SITE C17S44	SAMPLE DATE	10/5/23	11/16/23	12/21/23	1/18/24	2/15/24	3/14/24	4/8/24	5/9/24	6/3/24	7/29/24	8/26/24	9/23/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L			1.0	2.6		5.7		1.9		11.4		11.9	4.0	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	73.2	67.8	69.9	65.6	96.8	116.8	69.0	79.5	49.8	56.4	51.8	33.4		> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.105	0.152	0.108	0.106	0.010	0.011	0.028	0.012	0.028	0.057	0.071	0.081		
Nitrogen, nitrate + nitrite	mg/L	0.141	0.159	0.282	0.259	0.036	0.012	0.016	0.0025	0.030	0.042	0.036	0.043		
Nitrogen, Total	mg/L	0.99	1.01	0.98	1.00	0.76	0.76	0.64	0.68	0.70	0.75	0.87	0.87	0.82	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.30	7.50	7.30	7.60	8.00	7.90	7.40	7.60	7.30	7.40	7.20	7.40		6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0320	0.034	0.026	0.035	0.003	0.006	0.012	0.009	0.005	0.009	0.006	0.008		
Phosphorus, Total	mg/L	0.0870	0.0660	0.0510	0.057	0.0280	0.043	0.0280	0.038	0.0290	0.031	0.0620	0.05	0.044	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	540	460	443	461	472	464	438	420	390	409	389	432		≤ 1275
Temperature	deg C	28.3	23.6	19.0	22.0	21.4	25.5	23.7	28.3	27.8	32.4	29.0	29.6		
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Turbidity	NTU	2.7	1.8	1.2	1.5	1.1	1.3	0.6	1.1	0.7	1	2.6	2.2		≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-18 Watershed Monitoring Events

SITE 16	SAMPLE DATE	10/23/23	11/20/23	12/20/23	1/30/24	2/20/24	3/20/24	4/15/24	5/22/24	6/25/24	7/16/24	8/21/24	9/23/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L				80.5										
Arsenic	mg/L	0.0017		0.0053	0.0017		0.0017		0.0017		0.0017		0.0017		≤ 0.01
Cadmium	mg/L	0.0002		0.0002	0.0002		0.0002		0.0002		0.0002		0.0002		See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	2.0	6.8	2.5	0.5		15.3		11.1		3.8		2	3.5	≤ 20 AGM
Copper	mg/L	0.0013		0.0013	0.0013		0.0013		0.0013		0.0013		0.0013		See Table 5-3, page 1
Dissolved Oxygen	% Saturation	89.6	93.3	88.5	88.6	92.5	88.2	92.5	89.8	88.6	11.2	75.0	55.0		> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011		0.0011	0.0011		0.0011		0.0011		0.0011		0.0011		See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.032	0.032	0.016	0.027	0.027	0.027	0.027	0.027	0.056	0.200	0.086	0.063		
Nitrogen, nitrate + nitrite	mg/L	0.036	0.036	0.036	0.012	0.012	0.026	0.012	0.012	0.012	0.0075	0.012	0.0075		
Nitrogen, Total	mg/L	0.10	0.24	0.23	0.31	0.53	0.35	0.48	0.26	0.26	1.11	0.08	0.88	0.31	≤ 1.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.0615	0.206	0.19	0.297	0.52	0.319	0.472	0.249	0.247	1.1	0.067	0.87		
pH	None	7.95	8.12	7.91	8.21	8.10	8.10	8.00	7.98	8.02	6.91	7.77	6.91		6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0370	0.036	0.015	0.039	0.005	0.005	0.033	0.033	0.029	0.012	0.136	0.0019		
Phosphorus, Total	mg/L	0.0700	0.0700	0.0700	0.108	0.0340	0.087	0.0340	0.034	0.0340	0.066	0.1280	0.023	0.055	≤ 0.12 mg/l AGM
Salinity	ppth	31.29	31.73	31.65	30.15	28.44	29.2	29.78	31.51	32.47	32.88	22.61	19.5		
Specific Conductivity	umho/cm	48100	48800	49100	47000	44600	45300	46100	48100	49300	353	35289	185.1		≤ 1275
Temperature	deg C	24.1	22.8	17.0	17.0	17.1	22.7	22.8	28.8	30.5	30.4	31.1	28.3		
Total Hardness	mg/L	66.7		160	91.2		193		2.6		153		70.7		
Total Suspended Solids	mg/L	1.1		8.6	1.3		8.1		8		3.6		3		
Turbidity	NTU	5.0	1.6	2.5	1.2	1.2	1.9	2.4	2.6	2.6	5.4	1.5	2		≤ 29
Zinc	mg/L	0.0055		0.0055	0.0055		0.0055		0.0055		0.0055		0.0055		See Table 5-3, page 1

- Metal exceedences are based on hardness
- Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.
- Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
- AGM - Annual Geometric Mean
- TPTV - Ten Percent Threshold Value
- Narrative - Shall not cause an imbalance in flora and fauna

C-18 Watershed Monitoring Events

SITE 15	SAMPLE DATE	10/18/23	11/1/23	12/19/23	1/9/24	3/13/24	5/21/24	7/16/24	9/23/24					Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L				75.1										
Arsenic	mg/L	0.0017	0.0017	0.0046	0.0017	0.0014	0.0017	0.0017	0.0017						≤ 0.01
Cadmium	mg/L	0.0002	0.0001	0.0002	0.0002	0.0001	0.0001	0.0002	0.0002						See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	1.2	1.9	0.5	0.5	3.6	1.3	0.5	1.2					1.1	≤ 20 AGM
Copper	mg/L	0.0013	0.0083	0.0013	0.0013	0.0048	0.00408	0.0013	0.0013						See Table 5-3, page 1
Dissolved Oxygen	% Saturation	45.5	36.6	50.2	47.2	63.8	86.8	21.4	35.1						> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0001	0.0011	0.0011	0.0001	0.0001	0.0011	0.0011						See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.018	0.060	0.018	0.018	0.063	0.022	0.018	0.064						
Nitrogen, nitrate + nitrite	mg/L	0.008	0.287	0.008	0.0075	0.278	0.028	0.008	0.0075						
Nitrogen, Total	mg/L	0.59	1.38	0.49	0.53	1.40	0.26	0.71	0.69					0.66	≤ 1.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.58	1.09	0.48	0.52	1.12	0.232	0.7	0.68						
pH	None	7.62	7.63	7.30	7.46	7.65	7.91	6.81	7.00						6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0019	0.002	0.002	0.0019	0.001	0.009	0.002	0.0019						
Phosphorus, Total	mg/L		0.0400	0.0050	0.0033	0.0260	0.106	0.0077	0.0068					0.014	≤ 0.12 mg/l AGM
Salinity	ppth		4.15			1.63	33.1								
Specific Conductivity	umho/cm	153.1	7610	266.6	231	3130	50600	249.6	199.7						≤ 1275
Temperature	deg C	20.5	26.8	16.1	19.2	25.1	29.0	28.8	26.9						
Total Hardness	mg/L	52.2		86.9	83.2	96.8	85	101	77.7						
Total Suspended Solids	mg/L	1.1		0.5	0.5	0.5	1.3	0.5	0.5						
Turbidity	NTU	0.6	1.0	0.3	0.35	1.6	1.3	0.6	0.55						≤ 29
Zinc	mg/L	0.0055	0.0083	0.0055	0.0055	0.0050	0.0063	0.0055	0.0055						See Table 5-3, page 1

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-18 Watershed Monitoring Events

SITE 92	SAMPLE DATE	11/13/23	2/13/24	5/15/24	8/14/24									Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	148	218	201	123										
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	8.0	4.7	7.8	8.5									7.1	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 1
Dissolved Oxygen	% Saturation	64.8	62.7	76.9	48.5										> 38
E. Coli	cfu/100mL	52	173	10	41										≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.070	0.150	0.030	0.070										
Nitrogen, nitrate + nitrite	mg/L	0.037	0.096	0.005	0.052										
Nitrogen, Total	mg/L	1.00		0.90	0.90									0.93	≤ 1.54 AGM
Nitrogen, Total Kjeldahl	mg/L	1	0.9	0.9	0.8										
pH	None	7.39	7.33	7.59	7.30										6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0080	0.020	0.018	0.005										
Phosphorus, Total	mg/L	0.0330	0.0590	0.0420	0.027									0.039	≤ 0.12 mg/l AGM
Salinity	ppth	0.2	0.3	0.3	0.2										
Specific Conductivity	umho/cm	459	636	695	480										≤ 1275
Temperature	deg C	26.2	22.7	29.7	31.2										
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.9	3.0	3.0	2.1										
Turbidity	NTU	2.4	5.0	3.0	1.7										≤ 29
Zinc	mg/L														See Table 5-3, page 1

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-18 Watershed Monitoring Events

SITE 81	SAMPLE DATE	12/11/23	3/12/24	6/12/24	9/10/24									Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L			143	83										
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	2.4	2.1	4.2	16.6									4.3	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 1
Dissolved Oxygen	% Saturation	86.0	101.2	78.0	87.7										> 38
E. Coli	cfu/100mL	30	52	683	96										≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.070	0.050	0.030	0.040										
Nitrogen, nitrate + nitrite	mg/L	0.074	0.004	0.004	0.033										
Nitrogen, Total	mg/L	1.00	0.70	0.80	0.90									0.84	≤ 1.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.9	0.7	0.8	0.9										
pH	None	7.81	7.70	7.28	7.50										6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0150	0.004	0.007	0.004										
Phosphorus, Total	mg/L		0.0150	0.0170	0.033									0.020	≤ 0.12 mg/l AGM
Salinity	ppth	0.2	0.2	0.3	0.1										
Specific Conductivity	umho/cm	397	449	567	271										≤ 1275
Temperature	deg C	23.4	25.0	30.1	31.4										
Total Hardness	mg/L														
Total Suspended Solids	mg/L	0.5	2.8	2.1	2.8										
Turbidity	NTU	0.8	0.9	2.2	2										≤ 29
Zinc	mg/L														See Table 5-3, page 1

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-51 Watershed Monitoring Events

SITE 38B	SAMPLE DATE	10/19/23	12/20/23	1/11/24	3/13/24	5/15/24	7/17/24	9/25/24						Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L		272	218										244	
Arsenic	mg/L	0.0170	0.0068	0.0017	0.0035	0.0017	0.0017	0.0017							≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002							See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	8.1	3.3	2.2	2.3	4.6	22.4	6.1						5.1	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013							See Table 5-3, page 2
Dissolved Oxygen	% Saturation	110.0	61.7	84.6	73.8	51.8	129.7	46.0							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011							See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.018	0.640	0.018	0.018	0.100	0.041	0.630							
Nitrogen, nitrate + nitrite	mg/L	0.008	1.300	0.880	0.56	0.028	0.0075	0.008							
Nitrogen, Total	mg/L	0.89	3.50	2.18	1.96	1.13	1.51	1.71						1.7	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.88	2.2	1.3	1.4	1.1	1.5	1.7							
pH	None	8.24	7.45	7.91	8.16	7.64	8.09	7.58							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0140	0.087	0.059	0.052	0.036	0.0019	0.022							
Phosphorus, Total	mg/L	0.0640	0.1100	0.0980	0.1	0.0820	0.079	0.1000						0.089	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	726	1267	1176	898	737	1341	1052							≤ 1275
Temperature	deg C	26.2	18.5	18.8	22.0	28.4	32.7	27.9							
Total Hardness	mg/L	265	380	298	264	214	309	267							
Total Suspended Solids	mg/L	7.8	9.7	8.2	12.6	8.9	134	4.2							
Turbidity	NTU	5.4	8.6	6.8	14	7.4	5.5	3.5							≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055							

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-51 Watershed Monitoring Events

SITE 37B	SAMPLE DATE	10/19/23	12/20/23	1/11/24	3/13/24	5/15/24	7/17/24	9/25/24						Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L		234	233										233	
Arsenic	mg/L	0.0017	0.0059	0.0017	0.0017	0.0017	0.0017	0.0017							≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002							See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	4.2	1.1	1.7	6.1	11.8	6.8	5.6						4.2	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013	0.0027	0.0013							See Table 5-3, page 2
Dissolved Oxygen	% Saturation	80.6	56.2	74.0	97.1	91.9	79.7	65.9							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011							See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.052	0.390	0.230	0.018	0.018	0.018	0.150							
Nitrogen, nitrate + nitrite	mg/L	0.093	0.740	0.200	0.0075	0.008	0.044	0.120							
Nitrogen, Total	mg/L	0.70	2.24	1.01	0.95	1.31	0.77	1.04						1.1	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.61	1.5	0.81	0.94	1.3	0.73	0.92							
pH	None	7.97	7.35	7.59	8.09	7.88	7.43	7.40							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0019	0.053	0.012	0.0065	0.006	0.0019	0.002							
Phosphorus, Total	mg/L	0.0330	0.0810	0.0400	0.05	0.0640	0.04	0.0470						0.049	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	618	915	801	733	1135	818	744							≤ 1275
Temperature	deg C	25.9	19.1	20.2	24.7	28.7	32.3	29.1							
Total Hardness	mg/L	232	297	272	255	313	295	269							
Total Suspended Solids	mg/L	4.0	4.5	3.1	13.3	7.7	4	4.6							
Turbidity	NTU	1.9	4.5	2.4	3	4.3	1.8	2.4							≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0160	0.0055	0.0055	0.0055							See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

C-51 Watershed Monitoring Events

SITE C51S155	SAMPLE DATE	10/10/23	11/7/23	12/5/23	1/16/24	2/13/24	3/12/24	4/9/24	5/6/24	6/3/24	7/15/24	8/12/24	9/9/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	6.5	9.3	10.7	3.8	9.8	5.66	3.7	20.7	18.6	14.8	19.0	19.4	10.0	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	42.1	88.5	63.1	63.4	93.4	61.0	69.8	67.1	44.3	66.2	91.6	37.7		> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.168	0.021	0.089	0.115	0.014	0.060	0.085	0.010	0.058	0.048	0.003	0.049		
Nitrogen, nitrate + nitrite	mg/L	0.219	0.340	0.332	0.273	0.202	0.266	0.089	0.0025	0.008	0.114	0.003	0.074		
Nitrogen, Total	mg/L	0.96	1.24	1.22	1.14	0.84	1.20	0.85	1.20	1.04	0.92	0.87	1.00	1.0	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.20	7.80	7.50	7.60	7.70	7.50	7.60	7.70	7.40	7.40	7.50	7.30		6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0400	0.016	0.025	0.019	0.003	0.029	0.016	0.02	0.099	0.004	0.001	0.001		
Phosphorus, Total	mg/L	0.0670	0.0570	0.0590	0.049	0.0420	0.095	0.0630	0.112	0.0620	0.061	0.0610	0.07	0.064	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	474	507	596	665	650	540	533	761	717	622	550	533		≤ 1275
Temperature	deg C	28.4	24.3	24.4	22.0	22.1	24.0	23.9	25.8	28.0	30.2	30.7	31.3		
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.5	1.5	2.0	3.0	1.5	2.0	2.0	2.0	2.0	2.0	1.5	1.5		
Turbidity	NTU	2.0	1.4	1.7	2.6	1.4	2.2	1.9	2.4	2.3	1.9	19.0	2.6		≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

Loxahatchee River Watershed Monitoring Events

SITE 69 (Lox)	SAMPLE DATE	10/9/23	11/13/24	12/11/23	1/16/24	2/13/24	3/12/24	4/9/24	5/15/24	6/12/24	7/9/24	8/14/24	9/10/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	125	159	162	130	207		212	195	169	194	133	113		
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	5.3	2.9	2.9	2.2	2.0	1.6	1.0	2.5	2.7	7.2	7.6	7.7	3.1	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	40.8	46.5	58.7	61.6	58.7	58.4	56.6	55.5	49.4	30.4	52.9	39.6		> 38
E. Coli	cfu/100mL	84	134	20	63	73	30	10	20	41	52	41	96	0%	≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.050	0.090	0.110	0.060	0.060	0.070		0.050	0.080	0.070	0.050	0.110		
Nitrogen, nitrate + nitrite	mg/L	0.082	0.099	0.099	0.1	0.089	0.079	0.038	0.04	0.059	0.062	0.062	0.079		
Nitrogen, Total	mg/L	0.90	1.00	0.80	0.80	0.70	0.90	0.70	0.80	0.90	1.10	1.00	1.10	0.9	≤ 1.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.8	0.9	0.7	0.7	0.6	0.8	0.7	0.8	0.8	1	0.9	1		
pH	None	7.05	7.41	7.51	6.89	7.44	7.04	7.58	7.71	6.52	6.27	7.42	7.13		6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0160	0.014	0.005	0.014	0.011	0.007	0.011	0.019	0.024	0.032	0.006	0.013		
Phosphorus, Total	mg/L	0.0380	0.0340		0.023	0.0260	0.027	0.0220	0.028	0.0390	0.068	0.0320	0.047	0.033	≤ 0.12 mg/l AGM
Salinity	ppth	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2		
Specific Conductivity	umho/cm	404	542	531	459	674	612	669	696	684	662	526	443		≤ 1275
Temperature	deg C	28.1	25.8	22.1	21.6	22.5	23.6	24.1	29.3	28.9	30.9	31.1	30.6		
Total Hardness	mg/L														
Total Suspended Solids	mg/L	2.2	1.3	0.8	1	0.9	1	1.4	0.9	0.8	2.1	2.0	5.1		
Turbidity	NTU	2.8	1.7	1.1	1.6	1.4	1.7	1.3	1.2	1.4	2.1	1.6	3.2		≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Loxahatchee River Watershed Monitoring Events

SITE 51 (Lox)	SAMPLE DATE	10/10/23	1/17/24	4/10/24	7/10/24									Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	93	128	135	120										
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	16.7	4.3	2.8	9.4									6.6	≤ 4 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation	58.6	93.5	94.6	82.9										> 42
E. Coli	cfu/100mL														≤ 43 cfu/100ml
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.080	0.060		0.030										
Nitrogen, nitrate + nitrite	mg/L	0.027	0.033	0.004	0.004										
Nitrogen, Total	mg/L	0.80	0.20	0.20	0.30									0.31	≤ .8 AGM
Nitrogen, Total Kjeldahl	mg/L	0.8	0.2	0.2	0.3										
pH	None	7.51	8.09	7.97	7.83										6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0170	0.008	0.004	0.008										
Phosphorus, Total	mg/L	0.0360	0.0200	0.0230	0.026									0.026	≤ .03 AGM
Salinity	ppth	22	26.8	35	31.5										
Specific Conductivity	umho/cm	35032	41777	52983	48550										None
Temperature	deg C	28.5	23.5	23.7	30.2										
Total Hardness	mg/L														
Total Suspended Solids	mg/L	2.5	4.8	10.7	7.9										
Turbidity	NTU	1.9	3.9	7.6	3.5										≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Loxahatchee River Watershed Monitoring Events (Marine)

SITE 62 (Lox)	SAMPLE DATE	10/9/23	11/13/24	12/11/23	1/16/24	2/13/24	3/12/24	4/9/24	5/15/24	6/12/24	7/9/24	8/14/24	9/10/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	107	142	153	143	159		155	164	161	135	138	114		
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	2.6	6.4	3.0	3.3	5.1	6	4.8	6.1	6.6	6.5	12.2	12.7	5.6	≤ 5.5 AGM
Copper	mg/L														<0.0037
Dissolved Oxygen	% Saturation	47.0	82.4	68.0	73.2	6.9	85.1	85.0	61.1	57.9	55.7	56.8	52.4		> 42
E. Coli	cfu/100mL														≤ 43 cfu/100ml
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.040	0.040	0.120	0.060	0.040	0.030		0.030	0.100	0.030	0.050	0.030		
Nitrogen, nitrate + nitrite	mg/L	0.057	0.024	0.089	0.116	0.024	0.027	0.004	0.004	0.020	0.074	0.046	0.09		
Nitrogen, Total	mg/L	0.80	0.20	0.50	0.80	0.20	0.20	0.20	0.30	0.40	0.90	0.70	1.00	0.43	≤ 1.26 AGM
Nitrogen, Total Kjeldahl	mg/L	0.7	0.2	0.4	0.7	0.2	0.2	0.2	0.3	0.4	0.8	0.7	0.9		
pH	None	7.07	7.81	7.77	7.75	7.90	7.75	7.76	7.42	7.40	7.40	7.47	7.33		6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0410	0.015	0.019	0.025	0.015	0.013	0.017	0.025	0.042	0.036	0.027	0.028		
Phosphorus, Total	mg/L	0.0640	0.0310		0.036	0.0260	0.03	0.0300	0.033	0.0630	0.063	0.0680	0.06	0.043	≤ 0.075 AGM
Salinity	ppth	1.7	28.7	15.1	2.9	19.8	25.3	26.3	20	19.3	6.3	1.2	2.6		
Specific Conductivity	umho/cm	3238	44475	23594	5415	31672	39690	41085	32218	31104	11223	2271	4828		None
Temperature	deg C	27.5	26.6	22.6	22.3	23.0	23.9	23.7	29.2	29.0	31.4	30.9	30.2		
Total Hardness	mg/L														
Total Suspended Solids	mg/L	2.3	3.9	2.8	2.8	3.5	4.4	9.2	5.5	5.1	3.8	5.6	3		
Turbidity	NTU	2.5	2.4	2.0	2.2	2.5	3	5.3	3.3	3.0	2.3	3.7	2.4		≤ 29
Zinc	mg/L														≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Loxahatchee River Watershed Monitoring Events (Marine)

SITE 72	SAMPLE DATE	10/10/23	11/14/23	12/11/23	1/17/24	2/13/24	3/12/24	4/10/24	5/15/24	6/12/24	7/10/24	8/14/24	9/10/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	143	133	135	130	132		136	123	118	119	146	114		
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	35.6	11.6	3.1	3.7	4.9	6.7	10.0	13.5	11.7	28.7	48.5	10.9	11.2	≤ 5.5 AGM
Copper	mg/L														<0.0037
Dissolved Oxygen	% Saturation	31.9	90.7	71.4	82.6	6.3	96.8	100.4	69.1	51.7	70.8	61.1	71.4		> 42
E. Coli	cfu/100mL														≤ 43 cfu/100ml
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.040	0.060	0.390	0.190	0.130	0.050		0.300	0.260	0.030	0.070	0.160		
Nitrogen, nitrate + nitrite	mg/L	0.041	0.012	0.048	0.05	0.021	0.004	0.031	0.042	0.032	0.032	0.007	0.026		
Nitrogen, Total	mg/L	1.40	0.40	0.40	0.30	0.20	0.20	0.20	0.50	0.40	0.50	0.90	0.70	0.42	≤ 1.26 AGM
Nitrogen, Total Kjeldahl	mg/L	1.4	0.4	0.4	0.2	0.2	0.2	0.2	0.5	0.4	0.5	0.9	0.7		
pH	None	7.56	7.89	8.05	8.00	8.00	7.93	7.83	7.80	7.63	7.73	7.65	7.66		6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0250	0.005	0.021	0.012	0.010	0.004	0.006	0.021	0.004	0.007	0.007	0.011		
Phosphorus, Total	mg/L	0.0840	0.0320		0.027	0.0270	0.021	0.0270	0.031	0.0320	0.04	0.0720	0.037	0.036	≤ 0.075 AGM
Salinity	ppth	26.8	32.2	30.9	28.2	33.7	30.6	30.6	34.6	34.7	25.2	33.3	23.7		
Specific Conductivity	umho/cm	41964	49292	46206	43628	51267	46925	47106	52673	52739	39646	51071	37589		None
Temperature	deg C	29.4	26.4	23.9	23.2	23.2	22.9	24.3	29.0	27.7	30.3	32.3	31.0		
Total Hardness	mg/L														
Total Suspended Solids	mg/L	3.9	15.1	3.5	6	7.5	4.8	10.5	8.4	6.3	6.1	17.6	5.8		
Turbidity	NTU	3.4	6.1	2.5	3	4.3	3.9	5.8	5	4.0	3.8	4.3	3.5		≤ 29
Zinc	mg/L														≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorop

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

ICWW-N Watershed Monitoring Events

SITE 30 (Lox)	SAMPLE DATE	10/10/23	1/17/24	4/10/24	7/10/24									Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	125	133	137	124										
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	42.3	2.5	3.8	5.2									6.8	≤ 4.7 AGM
Copper	mg/L														<0.0037
Dissolved Oxygen	% Saturation	72.4	86.3	91.4	71.0										> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.040	0.070	0.070	0.030										
Nitrogen, nitrate + nitrite	mg/L	0.007	0.058	0.004	0.012										
Nitrogen, Total	mg/L	0.40	0.30	0.20	0.50									0.33	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L	0.4	0.2	0.2	0.5										
pH	None	7.60	8.00	7.72	7.75										6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0050	0.006	0.005	0.01										
Phosphorus, Total	mg/L	0.0370	0.0230	0.0250	0.028									0.028	≤ 0.035 AGM
Salinity	ppth	23.9	27	32.3	30.3										
Specific Conductivity	umho/cm														None
Temperature	deg C	28.4	23.0	24.7	31.0										
Total Hardness	mg/L														
Total Suspended Solids	mg/L	3.3	10.8	12.2	7.6										
Turbidity	NTU	2.7	4.0	6.0	3										≤ 29
Zinc	mg/L														≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• TPTV - Ten Percent Threshold Value

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Lake Worth Lagoon North Watershed Monitoring Events (Marine)

SITE LWL-1	SAMPLE DATE	10/26/23	11/27/23	1/25/24	2/22/24	4/25/24	5/23/24	7/10/24	8/22/24	9/19/24				Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L			0.0017		0.0017				0.0017				0.0017	≤ 0.05
Cadmium	mg/L			0.0002		0.0002				0.0002				0.0002	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	15.900	6.900	2.380	3.730	3.700	3.060	5.750	5.580	8.150				5.2	≤ 2.9 AGM
Copper	mg/L			0.0013		0.0065				0.0026					≤ 0.0037
Dissolved Oxygen	% Saturation	85.9	96.7	95.6	94.5	104.6	101.4	89.7	82.6	93.7					> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L			0.0011		0.0011				0.0011					≤ 0.0085
Nitrogen, Ammonia	mg/L	0.011	0.050	0.065	0.036	0.003	0.010	0.008	0.025	0.016					
Nitrogen, nitrate + nitrite	mg/L	0.003	0.073	0.076	0.031	0.003	0.003	0.003	0.010	0.003					
Nitrogen, Total	mg/L	0.37	0.35	0.36	0.33	0.25	0.24	0.24	0.31	0.33				0.30	≤ 0.54 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.00	8.00	8.00	7.90	8.20	7.90	7.80	7.80	7.90					6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0150	0.0220	0.0010	0.0120	0.0010	0.0010	0.0090	0.0150	0.0110					
Phosphorus, Total	mg/L	0.0510	0.0370	0.0320	0.0330	0.0310	0.0200	0.0300	0.0380	0.0370				0.033	≤ 0.044 AGM
Salinity	ppth	29.9	29.1	29.6	31	33.7	33.6	32.7	31.5	26.2					
Specific Conductivity	umho/cm	46179	44971	45652	47606	51348	51407	50285	48565	41156					None
Temperature	deg C	25.9	25.2	20.6	20.3	25.7	30.5	31.8	30.9	30.7					
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.5	1.5	1.5	1.5	4.0	1.5	1.5	1.5	1.5					
Turbidity	NTU	1.2	1.4	0.3	1.8	0.9	0.7	1.8	0.6	1.1					≤ 29
Zinc	mg/L			0.0055		0.0055				0.0055				0.0055	≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

Lake Worth Lagoon North Watershed Monitoring Events (Marine)

SITE 11	SAMPLE DATE	10/31/23	11/27/23	12/19/23	1/25/24	2/28/24	3/26/24	4/17/24	5/28/24	6/18/24	7/23/24	8/27/24	9/11/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0017	0.0085		0.0017	0.0085	0.0017	0.0017	0.0017	0.0017	0.0085	0.0017	0.0017		≤ 0.05
Cadmium	mg/L	0.0002	0.0002		0.0002	0.0008	0.0002	0.0002	0.0008	0.0011	0.0022	0.0008	0.0033		≤ 0.0088
Chlorophyll-a (corrected)	ug/L		0.5		1.3	0.5	1.4	0.5	0.5	6.3	0.5	1.8	2.4		≤ 2.9 AGM
Copper	mg/L	0.0013	0.0065		0.0013	0.0065	0.0174	0.0013	0.0065	0.0013	0.0191	0.0030	0.0013		≤ 0.0037
Dissolved Oxygen	% Saturation	100.7	95.8	86.5	99.0	96.2	97.5	99.4	86.2	109.8	90.6	80.5	80.8		> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0053		0.0011	0.0053	0.0011	0.0011	0.0011	0.0011	0.0053	0.0011	0.0210		≤ 0.0085
Nitrogen, Ammonia	mg/L	0.047	0.050	0.032	0.018	0.018	0.018	0.018	0.018	0.038	0.018	0.082	0.060		
Nitrogen, nitrate + nitrite	mg/L	0.008	0.064	0.036	0.071	0.008	0.0075	0.0225	0.0075	0.008	0.0075	0.043	0.028		
Nitrogen, Total	mg/L	0.30	0.32	0.41	0.77	0.44	0.40	0.12	0.26	0.36	0.25	0.44	0.45	0.35	≤ 0.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.29	0.26	0.372	0.7	0.43	0.39	0.1	0.25	0.35	0.24	0.4	0.42		
pH	None	12.12	7.98	8.00	8.00	8.02	7.94	8.23	7.72	7.91	7.80	7.56	7.71		6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0019	0.019	0.062	0.014	0.015	0.0019	0.002	0.0019	0.002	0.014	0.011	0.85		
Phosphorus, Total	mg/L	0.0160	0.0190	0.1420	0.016	0.0097	0.015	0.0110	0.024	0.0170	0.013	0.0260	0.025	0.020	≤ 0.044 AGM
Salinity	ppth	31.76	29.98	30.07	29.33	31.64	30.95	34.17	35.18	25.42	33.83	26.34	23.46		
Specific Conductivity	umho/cm	48713	46240	46900	45240	48395	47494	51938	53544	39981	51710	41325	37250		None
Temperature	deg C	26.3	25.5	16.8	21.2	21.3	22.6	24.7	30.8	28.7	30.7	29.9	30.2		
Total Hardness	mg/L														
Total Suspended Solids	mg/L		3.2		2.6	7.9	17.4	3.3	8.9	4.3	2.6	3.0	6.2		
Turbidity	NTU	1.0	1.0	8.8	0.55	0.8	0.45	0.8	1.4	0.1	1.2	1.0	1.3		≤ 29
Zinc	mg/L	0.0055	0.0275		0.0055	0.0055	0.0275	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055		≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

• TPTV - Ten Percent Threshold Value

Lake Worth Lagoon North Watershed Monitoring Events (Marine)

SITE 13	SAMPLE DATE	10/31/23	11/27/23	12/19/23	1/25/24	2/28/24	3/26/24	4/17/24	5/28/24	6/18/24	7/23/24	8/27/24	9/11/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0037	0.0017		0.0039	0.0085	0.0017	0.0017	0.0017	0.0017	0.0085	0.0017	0.0017		≤ 0.05
Cadmium	mg/L	0.0002			0.0002	0.0008	0.0002	0.0002	0.0008	0.0002	0.0023	0.0008	0.0002		≤ 0.0088
Chlorophyll-a (corrected)	ug/L	7.6	0.5	1.5	0.5	0.5	0.5	0.5	0.5	3.7	0.5	3.6	3.5	1.1	≤ 2.9 AGM
Copper	mg/L	0.0043	0.0028		0.0013	0.0013	0.0031	0.0013	0.0013	0.0013	0.0193	0.0013	0.0013		≤ 0.0037
Dissolved Oxygen	% Saturation	106.1	90.8	89.2	97.2	102.1	100.8	97.4	96.5	113.8	93.6	89.1	83.3		> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L	0.0094	0.0011		0.0011	0.0053	0.0011	0.0011	0.0011	0.0011	0.0053	0.0011	0.0420		≤ 0.0085
Nitrogen, Ammonia	mg/L	0.018	0.076	0.032	0.076	0.018	0.018	0.018	0.018	0.120	0.018	0.100	0.110		
Nitrogen, nitrate + nitrite	mg/L	0.044	0.130	0.036	0.100	0.140	0.023	0.008	0.008	0.008	0.008	0.008	0.041		
Nitrogen, Total	mg/L										0.24	0.43	0.57	0.39	≤ 0.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.46	0.44	0.291	0.42	0.48	0.38	0.1	0.21	0.59	0.23	0.42	0.53		
pH	None	11.61	7.89	8.01	8.05	8.07	8.17	8.37	7.86	7.80	7.88	7.64	7.58		6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0070	0.0220	0.0150	0.0190	0.0019	0.0039	0.0019	0.0019	0.002	0.0055	0.004	0.016		
Phosphorus, Total	mg/L	0.0280	0.0340	0.0700	0.0300	0.0059	0.0180	0.0150	0.0067	0.0410	0.0096	0.0220	0.046	0.021	≤ 0.044 AGM
Salinity	ppth	21.43	17.61	30.73	21.58	33.59	28.15	34	35.9	13.03	34.31	23.94	11.93		
Specific Conductivity	umho/cm	33637	28585	47800	34307	51095	43642	51708	54513	21823	52348	37929	20172		None
Temperature	deg C	26.7	25.4	17.2	21.8	22.1	23.1	24.8	30.7	29.7	30.4	30.2	30.1		
Total Hardness	mg/L														
Total Suspended Solids	mg/L		3.5		2.4	8.0	7.2	4.6	8.5	6.6	3	3.5	2.8		
Turbidity	NTU	1.1	1.2	1.3	0.85	1.0	0.5	0.7	1.3	0.1	1.1	1.3	1.5		≤ 29
Zinc	mg/L	0.0055		0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055		≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

• TPTV - Ten Percent Threshold Value

Lake Worth Lagoon North Watershed Monitoring Events (Marine)

SITE LWL-4	SAMPLE DATE	10/26/23	11/27/23	1/25/24	2/22/24	4/25/24	5/23/24	6/26/24	7/10/24	8/22/24	9/19/24			Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L			0.0017		0.0017					0.0017			0.0017	≤ 0.05
Cadmium	mg/L			0.0002		0.0002					0.0003			0.0002	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	1.8	3.8	1.3	1.92	0.8	1.19	2.6	1.6	1.12	3.3			1.7	≤ 2.9 AGM
Copper	mg/L			0.0013		0.0013					0.0013			0.0013	≤ 0.0037
Dissolved Oxygen	% Saturation	92.8	99.5	98.7	100.5	99.8	96.0	99.5	94.7	97.2	94.1			97.2	> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L			0.0011		0.0011					0.0011			0.0011	≤ 0.0085
Nitrogen, Ammonia	mg/L	0.008	0.021	0.016	0.010	0.003	0.010	0.003	0.006	0.003	0.003				
Nitrogen, nitrate + nitrite	mg/L	0.003	0.035	0.018	0.015	0.003	0.003	0.003	0.003	0.003	0.003				
Nitrogen, Total	mg/L	0.23	0.22	0.18	0.22	0.14	0.16	0.15	0.17	0.12	0.23			0.18	≤ 0.54 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.10	8.10	8.10	8.10	8.40	8.00	8.00	7.80	7.90	7.90			8.04	6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0040	0.008	0.0040	0.003	0.001	0.001	0.001	0.001	0.001	0.001			0.002	
Phosphorus, Total	mg/L	0.018	0.020	0.014	0.023	0.010	0.010	0.012	0.012	0.009	0.014			0.014	≤ 0.044 AGM
Salinity	ppth	33.5	31.4	32.9	31.6	35.9	35.7	32.7	34	35	29.3			33.14	
Specific Conductivity	umho/cm	50997	48189	50186	48293	54230	54131	50207	51915	53332	45508			50626	None
Temperature	deg C	25.2	25.0	21.7	20.0	24.4	29.0	30.1	30.6	30.2	29.9			26.3	
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.5	4.0	4.0	5.0	1.5	4.0	1.5	1.5	1.5	1.5				
Turbidity	NTU	1.1	1.3	0.7	2.1	1.3	1.3	1.2	1.0	0.5	1.0			1.1	≤ 29
Zinc	mg/L			0.0055		0.0055					0.0055			0.0055	≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)

SITE LWL-8	SAMPLE DATE	11/28/23	12/12/23	1/24/24	2/21/24	3/21/24	4/24/24	5/22/24	6/25/24	7/9/24	8/21/24	9/18/24		AGM or %>TPTV	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L			0.0017			0.0017					0.0017			≤ 0.05
Cadmium	mg/L			0.0002			0.0002					0.0002			≤ 0.0088
Chlorophyll-a (corrected)	ug/L	4.7	2.0	2.1	3.26	3.3	6.3	4.0	7.23	7.1	5.95	6.6			≤ 10.2 TPTV
Copper	mg/L			0.0013			0.0148					0.0027			≤ 0.0037
Dissolved Oxygen	% Saturation	101.0	102.3	109.6	100.9	93.5	99.2	100.8	86.5	97.9	94.2	86.0			> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L			0.0011			0.0011					0.0021			≤ 0.0085
Nitrogen, Ammonia	mg/L	0.022	0.006	0.003	0.008	0.017	0.007	0.008	0.014	0.003	0.020	0.021			
Nitrogen, nitrate + nitrite	mg/L	0.100	0.007	0.021	0.017	0.035	0.003	0.003	0.023	0.003	0.048	0.060			
Nitrogen, Total	mg/L	0.33	0.21	0.26	0.24	0.32	0.30	0.26	0.38	0.33	0.37	0.43		0.30	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.00	8.10	8.20	8.00	7.90	8.20	7.80	7.80	7.90	7.80	7.80			6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0130	0.009	0.0060	0.007	0.005	0.001	0.004	0.011	0.003	0.013	0.022			
Phosphorus, Total	mg/L	0.0250	0.0210	0.0150	0.028	0.0270	0.0330	0.0290	0.034	0.0230	0.034	0.0360		0.027	≤ 0.049 AGM
Salinity	ppth	28.2	30.5	26.5	31.1	30.9	34.1	35.1	23.6	23.7	30	21			
Specific Conductivity	umho/cm	43759	46896	41217	47609	47486	51871	53444	37510	37706	46537	33644			None
Temperature	deg C	24.1	21.4	20.1	19.9	24.7	25.1	30.9	30.6	32.7	31.0	30.3			
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.5	1.5	1.5	6.0	6.0	9.0	1.5	1.5	1.5	4.0	1.5			
Turbidity	NTU	0.8	1.4	0.7	2.5	3.8	6.2	3.1	2.9	1.0	2.5	3.2			≤ 29
Zinc	mg/L			0.0055			0.0055					0.0055		0.0055	≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• TPTV - Ten Percent Threshold Value

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)

SITE 18C	SAMPLE DATE	10/31/23	12/12/23	1/24/24	2/21/24	3/25/24	4/16/24	6/17/24	7/22/24	8/26/24	9/9/24			AGM or %>TPTV	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017				≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0010	0.0003	0.0003	0.0003				≤ 0.0088
Chlorophyll-a (corrected)	ug/L	3.0	0.5	1.4	0.5	3.3	2.5	5.1	5.8	3.7	7.5			0%	≤ 10.2 TPTV
Copper	mg/L	0.0013	0.0013	0.0065	0.0077	0.0013	0.0013	0.0069	0.0260	0.0013	0.0013				≤ 0.0037
Dissolved Oxygen	% Saturation	92.1	92.3	96.8	92.3	86.8	84.6	88.0	94.0	76.1	80.8				> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L	0.0045	0.0011	0.0011	0.0021	0.0011	0.0011	0.0021	0.0021	0.0011	0.0011				≤ 0.0085
Nitrogen, Ammonia	mg/L	0.077	0.018	0.045	0.018	0.079	0.018	0.096	0.018	0.092	0.018				
Nitrogen, nitrate + nitrite	mg/L	0.050	0.008	0.030	0.035	0.078	0.0075	0.067	0.0075	0.320	0.27				
Nitrogen, Total	mg/L	0.05	0.01	0.03	0.04	0.08	0.01	0.07	0.01	0.32	0.27			0.040	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.02	7.92	8.07	7.77	7.84	7.86	7.62	7.67	7.55	7.74				6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0220	0.014	0.012	0.019	0.027	0.0076	0.016	0.0043	0.014	0.0019				
Phosphorus, Total	mg/L	0.0380	0.0220	0.0310	0.026	0.0370	0.04	0.0630	0.04	0.0480	0.042			0.037	≤ 0.049 AGM
Salinity	ppth	29.99	29.69	26.13	28.71	22.15	33.29	19.43	22.33	20.27	18.09				
Specific Conductivity	umho/cm	46253	45747	47060	44359	35127	50714	31382	35674	32638	29446				None
Temperature	deg C	25.7	19.8	19.6	17.7	22.1	23.7	29.5	31.7	30.2	30.5				
Total Hardness	mg/L		5450												
Total Suspended Solids	mg/L		9.0	19.1	16	15.4	21.2	18.8	8.5	16.5	16				
Turbidity	NTU	1.7	1.3	3.6	0.1	0.5	9.7	11.0	6	6.4	11				≤ 29
Zinc	mg/L	0.0055	0.0055	0.0275	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055				≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• TPTV - Ten Percent Threshold Value

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)

SITE 18D	SAMPLE DATE	10/31/23	12/12/23	1/24/24	2/21/24	3/25/24	4/16/24	6/17/24	7/22/24	8/26/24	9/9/24			AGM or %>TPTV	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0017	0.0017	0.0017	0.0017	0.0036	0.0017	0.0017	0.0017	0.0017	0.0017				≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0009	0.0002	0.0002	0.0002				≤ 0.0088
Chlorophyll-a (corrected)	ug/L	17.700	0.500	2.100	0.5	3.300	2.500	5.200	9.200	5.200	4.6			10%	≤ 10.2 TPTV
Copper	mg/L	0.0013	0.0013	0.0013	0.0086	0.0013	0.0013	0.0067	0.0013	0.0013	0.0013				≤ 0.0037
Dissolved Oxygen	% Saturation	101.7	96.4	89.3	97.5	92.2	93.5	102.3	94.7	95.1	87.2				> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011				≤ 0.0085
Nitrogen, Ammonia	mg/L	0.018	0.049	0.018	0.018	0.044	0.040	0.018	0.018	0.080	0.018				
Nitrogen, nitrate + nitrite	mg/L	0.026	0.008	0.030	0.035	0.068	0.0075	0.081	0.0075	0.052	0.0075				
Nitrogen, Total	mg/L	0.30	0.33	0.77	0.52	0.52	0.27	0.63	0.34	0.54	0.41			0.436	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L	0.27	0.32	0.74	0.48	0.45	0.26	0.55	0.33	0.49	0.4				
pH	None	7.87	7.77	7.99	7.65	7.81	7.79	7.60	7.63	7.57	7.83				6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0110	0.018	0.009	0.03	0.014	0.0051	0.007	0.0019	0.002	0.0051				
Phosphorus, Total	mg/L	0.0270	0.0340	0.0170	0.042	0.0320	0.027	0.0490	0.028	0.0340	0.023			0.030	≤ 0.049 AGM
Salinity	ppth	29.8	30.09	26.73	28.71	21.66	33.36	18.37	26.53	19.82	21.65				
Specific Conductivity	umho/cm	45970	46284	41604	44361	34428	50808	29813	41671	31976	34641				None
Temperature	deg C	25.1	20.9	20.1	19.5	22.2	23.7	28.9	31.7	29.9	30.2				
Total Hardness	mg/L		5460												
Total Suspended Solids	mg/L		30.1	14.2	28.2	17.5	11.1	20.9	11.3	13.3	7.3				
Turbidity	NTU	1.3	2.2	1.1	0.1	0.4	4.5	4.1	3.5	4.5	4.2				≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055				≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• TPTV - Ten Percent Threshold Value

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)

SITE LWL-11	SAMPLE DATE	11/28/23	12/12/23	1/24/24	2/21/24	3/21/24	4/24/24	5/22/24	6/25/24	7/9/24	8/21/24	9/18/24		AGM or %>TPTV	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L						0.0017					0.0017			≤ 0.05
Cadmium	mg/L						0.0002					0.0002			≤ 0.0088
Chlorophyll-a (corrected)	ug/L	7.80	3.47	3.03	5.85	8.75	7.03	5.79	12.30	11.40	13.60	20.60			≤ 10.2 TPTV
Copper	mg/L						0.0013					0.0013			≤ 0.0037
Dissolved Oxygen	% Saturation	99.4	95.3	101.1	94.7	96.9	102.4	105.4	100.4	77.7	87.5	111.1			> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L						0.0011					0.0021			≤ 0.0085
Nitrogen, Ammonia	mg/L	0.031	0.018	0.003	0.026	0.007	0.003	0.010	0.006	0.003	0.007	0.003			
Nitrogen, nitrate + nitrite	mg/L	0.088	0.013	0.033	0.038	0.003	0.003	0.003	0.003	0.003	0.004	0.003			
Nitrogen, Total	mg/L	0.37	0.25	0.32	0.35	0.50	0.31	0.32	0.46	0.36	0.41	0.49		0.37	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.00	8.00	8.10	7.90	8.00	8.10	7.80	7.80	7.90	7.70	7.90			6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0120	0.0120	0.0070	0.0100	0.0010	0.0010	0.0010	0.0040	0.0010	0.0050	0.0080			
Phosphorus, Total	mg/L	0.0280	0.0290	0.0280	0.0360	0.0300	0.0330	0.0380	0.0380	0.0360	0.0420	0.0420		0.034	≤ 0.049 AGM
Salinity	ppth	27	31	27.9	28	30.7	34.5	35	22.7	30.5	27.4	19.8			
Specific Conductivity	umho/cm	42016	47583	43285	43425	47187	52376	53380	63222	47226	42927	31911			None
Temperature	deg C	24.0	21.2	20.6	19.9	24.5	25.5	31.3	30.8	32.0	31.0	30.5			
Total Hardness	mg/L														
Total Suspended Solids	mg/L	4.0	1.5	6.0	7.0	7.0	7.0	9.0	4.0	5.0	6.0	2.0			
Turbidity	NTU	1.2	3.4	3.6	3.9	5.2	5.3	5.4	3.5	4.0	4.4	2.4			≤ 29
Zinc	mg/L						0.0055					0.0055			≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

ICWW-S Watershed Monitoring Events (Marine)

SITE LWL-18	SAMPLE DATE	10/23/23	11/29/23	12/11/23	1/23/24	2/20/24	3/20/24	4/23/24	5/21/24	6/24/24	7/8/24	8/20/24	9/17/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L				0.0017			0.0017					0.0017	0.0017	≤ 0.05
Cadmium	mg/L				0.0002			0.0002					0.0002	0.0002	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	10.100	3.910	11.300	4.440	2.070	8.150	4.690	6.180	3.450	5.310	8.700	13.800	6.0	≤ 5.7 AGM
Copper	mg/L				0.0013			0.0148					0.0035		≤ 0.0037
Dissolved Oxygen	% Saturation	99.9	92.5	105.0	97.4	87.0	107.6	94.1	115.2	75.7	88.8	45.9	30.9		> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L				0.0011			0.0011					0.0021		≤ 0.0085
Nitrogen, Ammonia	mg/L	0.035	0.034	0.017	0.030	0.096	0.007	0.008	0.010	0.027	0.014	0.003	0.003		
Nitrogen, nitrate + nitrite	mg/L	0.047	0.075	0.010	0.123	0.080	0.003	0.003	0.008	0.006	0.003	0.003	0.003		
Nitrogen, Total	mg/L	0.48	0.32	0.29	0.45	0.58	0.31	0.24	0.36	0.33	0.33	0.32	0.40	0.36	≤ 0.59 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.6	8.0	8.1	8.0	7.9	8.5	8.5	7.8	7.8	7.7	7.9	7.8		6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0130	0.0160	0.0090	0.0190	0.0260	0.0010	0.0010	0.0040	0.0130	0.0060	0.0010	0.0230		
Phosphorus, Total	mg/L	0.0410	0.0260	0.0320	0.0420	0.0480	0.022	0.0260	0.0300	0.034	0.0340	0.0280	0.0510	0.033	≤ 0.050 AGM
Salinity	ppth	22.2	29.2	31.6	27.1	20.1	28.4	35.8	31.1	28.1	34	32.2	22.5		
Specific Conductivity	umho/cm	35375	45100	48362	41344	32141	43948	54132	47949	43883	51897	49510	35883		None
Temperature	deg C	28.0	23.6	23.5	20.8	20.4	24.5	24.4	30.6	30.6	30.8	30.6	30.8		
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.5	1.5	4.0	4.0	5.0	1.5	9.0	1.5	1.5	1.5	5.0	1.5		
Turbidity	NTU	1.90	0.70	2.60	2.80	2.90	2.20	5.60	2.50	2.50	1.90	2.70	1.50		≤ 29
Zinc	mg/L				0.0055			0.0055					0.0055	0.0055	≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

Hillsboro Watershed Monitoring Events

SITE 1	SAMPLE DATE	10/12/23	11/6/23	12/7/23	3/7/24	5/20/24								Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L		8.1	2.5	4.36	4.9								4.5	≤ 11 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation		64.8		62.3	68.5									> 42
Enterococci	cfu/100mL														≤ 130 cfu/100ml TPTV
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.110	0.072	0.027	0.068	0.040									
Nitrogen, nitrate + nitrite	mg/L	0.098	0.151	0.094	0.064	0.008									
Nitrogen, Total	mg/L	1.45	0.62	0.64	0.88	0.36								0.71	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.35	0.471	0.55	0.819	0.353									
pH	None		7.44		7.47	7.60									6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.2670	0.071	0.088	0.042	0.031									
Phosphorus, Total	mg/L	0.2900	0.1380	0.0900	0.094	0.1190								0.132	Narrative
Salinity	ppth	0.30	17.6	0.5	4.82	30.3									
Specific Conductivity	umho/cm	532	29800	978	8430	47000									None
Temperature	deg C		24.2		24.4	30.3									
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.0	1.0	1.0											
Turbidity	NTU	4.7	1.1	2.1	1.2	1.7									≤ 29
Zinc	mg/L														≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

• TPTV - Ten Percent Threshold Value

Hillsboro Watershed Monitoring Events

SITE 2	SAMPLE DATE	10/30/23	11/8/23	12/13/23	1/8/24	2/13/24	3/11/24	4/8/24	5/22/24	6/10/24	7/10/24	8/14/24	9/10/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	1.7	6.8	2.1	2.7	3.6	4.4	3.2	2.74	5.4	15.3	1.7	2.1	3.4	≤ 11 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation	79.6	86.2	78.2	86.0	94.0	74.7	74.9	69.3	100.3	95.2	38.6	48.1	74.6	> 42
Enterococci	cfu/100mL	28	2	22	24	22	6		1	1.5	1	64	168	9.59	≤ 130 cfu/100ml TPTV
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.092	0.032	0.032	0.027	0.114	0.027	0.027	0.081	0.027	0.027	0.159	0.083	0.048	
Nitrogen, nitrate + nitrite	mg/L	0.206	0.036	0.036	0.036	0.012	0.012	0.040	0.022	0.012	0.012	0.074	0.084	0.032	
Nitrogen, Total	mg/L	1.06	0.24	0.35	0.45	0.36	0.29	0.50	1.00	0.27	0.48	0.33	1.18	0.47	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.855	0.202	0.314	0.409	0.352	0.276	0.458	0.982	0.26	0.463	0.259	1.099	0.42	
pH	None	7.34	7.82	7.98	7.97	7.91	7.82	7.95	7.58	7.94	7.87	7.05	7.07	7.68	6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0810	0.062	0.073	0.076	0.089	0.024	0.151	0.005	0.088	0.11	0.241	0.278	0.074	
Phosphorus, Total	mg/L	0.0960	0.0700	0.0700	0.105	0.0970	0.034	0.1170	0.022	0.0980	0.128	0.2570	0.259	0.092	Narrative
Salinity	ppth	0.29	27.65	29.85	23.85	27.5	24.17	23.59	0.2	28.36	23.91	4.57	3.51	8.73	
Specific Conductivity	umho/cm	598	43100	46400	38000	43100	38200	37300	429	43600	37400	8128	6350	14687	None
Temperature	deg C	24.5	23.3	19.6	17.7	19.7	22.8	24.5	29.8	32.3	32.3	29.8	28.7	24.9	
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.0	1.0	1.0										1.0	
Turbidity	NTU	1.3	1.5	2.1	1.4	1.4	1.1	2.4	1.1	1.6	2.1	1.9	2	1.6	≤ 29
Zinc	mg/L														≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

• TPTV - Ten Percent Threshold Value

Hillsboro Watershed Monitoring Events

SITE 3	SAMPLE DATE	10/30/23	3/11/24	5/22/24										Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	5.3	1.9	4.4										3.5	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	45.8	60.8	69.4											> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.133	0.054	0.124											
Nitrogen, nitrate + nitrite	mg/L	0.172	0.036	0.074											
Nitrogen, Total	mg/L	1.14	1.03	1.06										1.07	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.963	0.992	0.982											
pH	None	7.49	7.46	7.50											6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0750	0.012	0.003											
Phosphorus, Total	mg/L	0.0990	0.0460	0.0180										0.043	Narrative
Salinity	ppth	0.3	0.25	0.22											
Specific Conductivity	umho/cm	620	526	460											≤ 1275
Temperature	deg C	24.9	24.6	30.5											
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	1.0	1.0	0.9											≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

• TPTV - Ten Percent Threshold Value

Hillsboro Watershed Monitoring Events

SITE S39	SAMPLE DATE	10/30/23	11/28/23	12/27/23	1/23/24	2/20/24	3/19/24	4/30/24	5/28/24	6/25/24	7/23/24	8/20/24	9/3/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	146			113	91	74	84	65	150	152	152	157		
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L														≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	81.4	76.8	81.8	64.9	95.6	63.8	81.8	62.0	66.9	62.2	59.3	35.2		> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.020			0.010	0.010	0.007	0.009	0.031	0.024	0.048	0.025			
Nitrogen, nitrate + nitrite	mg/L	0.010	0.010	0.012	0.011	0.007	0.01	0.006	0.009	0.061	0.023	0.013	0.022		
Nitrogen, Total	mg/L	1.00	1.07	1.11	0.91	0.89	0.97	1.07	1.12	1.53	1.70	1.58	1.34	1.2	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.90	7.30	7.70	7.40	7.90	7.20	7.80	7.30	7.60	7.60	7.50	7.70		6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0010	0.0010	0.0010	0.0030	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010			
Phosphorus, Total	mg/L	0.0100	0.0090	0.0110	0.0110	0.0120	0.0140	0.0140	0.0150	0.0160	0.0150	0.0180	0.014	0.013	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	637	596	825	522	402	353	395	279	726	773	877	800		≤ 1275
Temperature	deg C	24.8	23.6	20.0	19.0	20.0	26.1	25.4	30.5	30.1	30.9	30.7	29.4		
Total Hardness	mg/L	177.9			138.6	105.6	86	96.8	73.4	190.7	213.4	206.4	204.6		
Total Suspended Solids	mg/L	2.0			2.0	1.5	1.5	1.5	1.5	1.5	1.5	2.0			
Turbidity	NTU	0.5			0.6	0.5	0.7	0.6	0.9	0.9	0.5	0.7	0.6		≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

L-8 Watershed Monitoring Events

Culv10	SAMPLE DATE	10/30/23	11/27/23	12/27/23	1/22/24	2/19/24	3/18/24	4/29/24	5/28/24	6/24/24	7/22/24	8/19/24	9/16/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	342	198	311	375	108	105	102	112	158	226	103	51		
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L								43.7	10.0	21.7			21.2	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	14.0	57.1	59.7	72.0	85.1	102.4	90.4	65.7	57.5	59.7	78.9	20.1		> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.512	0.081	0.683	0.179	0.052	0.003	0.003	0.039	237.000	458.000	0.018	0.014		
Nitrogen, nitrate + nitrite	mg/L	0.003	0.702	1.401	1.854	0.314	0.203	0.233	0.06	0.122	0.242	0.289	0.022		
Nitrogen, Total	mg/L	2.85	2.51	4.06	4.32	2.09	1.44	1.32	1.70	1.53	2.67	1.32	1.56	2.1	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.30	7.60	7.20	7.90	7.70	8.30	8.40	8.00	7.40	7.70	7.80	7.10		6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.1160	0.073	0.107	0.094	0.061	0.044	0.057	0.033	0.069	0.077	0.045	0.011		
Phosphorus, Total	mg/L	0.1790	0.1560	0.1470	0.147	0.2500	0.153	0.1380	0.168	0.1420	0.149	0.1360	0.052	0.144	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	1904	1089	1621	2172	400	424	417	463	617	1376	442	272		≤ 1275
Temperature	deg C	24.8	23.3	18.8	17.6	20.1	26.1	24.5	30.1	30.1	29.9	29.5	29.8		
Total Hardness	mg/L	393.1			431.3			124.8			135.2				
Total Suspended Solids	mg/L	1.5	19.0	8.0	3	55.0	23	8.0	47	16.0	9	13.0	6		
Turbidity	NTU	4.0	19.8	12.8	9.6	90.2	32	34.6	32.5	16.3	14.4	29.4	4.2		≤ 29
Zinc	mg/L														See Table 5-3, page 2

- Metal exceedences are based on hardness
- Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.
- Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
- AGM - Annual Geometric Mean
- TPTV - Ten Percent Threshold Value
- Narrative - Shall not cause an imbalance in flora and fauna

S-2-6-7 Watershed Monitoring Events

SITE S2	SAMPLE DATE	10/16/23	11/13/23	12/11/23	1/8/24	2/19/24	3/4/24	4/29/24	5/28/24	6/24/24	7/22/24	8/19/24	9/16/24	Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	346	111	118	403	353	229	110	117	221	263	345	403		
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L														≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	47.0	81.8	80.1	69.6	61.5	84.8	79.0	72.4	96.0	43.0	78.1	15.9		> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.327	0.034	0.056	0.396	0.431	0.264	0.096	0.099	0.048	0.164	0.128	1.192		
Nitrogen, nitrate + nitrite	mg/L	0.797	0.025	0.139	0.711	0.380	0.588	0.080	0.034	0.604	0.177	0.517	1.341		
Nitrogen, Total	mg/L	3.15	1.20	1.16	3.53	2.12	2.32	1.58	1.29	3.94	2.29	2.27	4.77	2.2	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.50	7.80	7.70	7.80	7.50	7.70	7.80	8.10	7.60	7.70	7.70	7.20		6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0820	0.020	0.052	0.11	0.086	0.049	0.029	0.001	0.317	0.059	0.051	0.087		
Phosphorus, Total	mg/L	0.1110	0.0880	0.0930	0.151	0.1270	0.097	0.1270	0.101	0.4990	0.113	0.1040	0.14	0.127	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	1268	436	448	1835	1880	1162	463	459	740	928	2022	1832		≤ 1275
Temperature	deg C	26.8	25.8	19.6	18.9	20.1	23.0	24.9	30.9	30.9	30.7	31.8	28.9		
Total Hardness	mg/L	437.7			506.9			363.5			384.3				
Total Suspended Solids	mg/L	1.5	9.0	3.0	3	11.0	2	21.0	10	15.0	2	2.0	1.5		
Turbidity	NTU	4.1	8.3	10.9	3.8	10.2	5	27.5	13.8	6.2	4.6	4.4	2.9		≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

S-2-6-7 Watershed Monitoring Events

SITE 39	SAMPLE DATE	10/19/23	11/8/23	12/20/23	1/11/24	3/13/24	5/15/24	7/17/24	9/25/24					Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L			454	417										
Arsenic	mg/L	0.0017	0.0016	0.0111	0.0017	0.0017	0.0016	0.0017	0.0045						≤ 0.05
Cadmium	mg/L	0.0002	0.0001	0.0002	0.0002	0.0002	0.0001	0.0002	0.0002						See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	3.3	0.7	0.5	2.4	2.6	1.44	15.1	4.4					2.2	≤ 20 AGM
Copper	mg/L	0.0013	0.0029	0.0013	0.0013	0.0013	0.0022	0.0013	0.0013						See Table 5-3, page 2
Dissolved Oxygen	% Saturation	48.4	68.5	28.9	56.2	77.8	78.4	70.9	29.1						> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0001	0.0011	0.0011	0.0011	0.0001	0.0011	0.0011						See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.360	0.023	1.500	0.540	0.018	0.015	0.100	0.870						
Nitrogen, nitrate + nitrite	mg/L	0.860	0.050	0.650	0.58	0.020	0.024	0.094	0.61						
Nitrogen, Total	mg/L	2.96	0.30	3.95	2.98	0.97	0.24							1.2	Narrative
Nitrogen, Total Kjeldahl	mg/L	2.1	0.248	3.3	2.4	0.95	0.215	1.7	2.7						
pH	None	7.90	7.63	7.18	7.69	7.99	7.77	7.66	7.43						6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0950	0.006	0.210	0.099	0.026	0.005	0.043	0.13						
Phosphorus, Total	mg/L	0.1200	0.1500	0.2400	0.13	0.0820	0.1	0.1000	0.17					0.129	Narrative
Salinity	ppth		31.8			29.4	34.5								
Specific Conductivity	umho/cm	1828	48800	1973	2160	449.6	52500	934	1981						≤ 1275
Temperature	deg C	25.3	25.8	18.7	19.2	22.6	29.2	31.8	28.7						
Total Hardness	mg/L	514		562	563	149	156	355	573						
Total Suspended Solids	mg/L	3.2		2.7	6	5.5	26.8	4.3	5.5						
Turbidity	NTU	6.5	0.9	3.1	5.1	5.7	2.5	2.0	4.5						≤ 29
Zinc	mg/L	0.0055	0.0052	0.0055	0.0055	0.0055	0.0049	0.0055	0.0055						See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

S-2-6-7 Watershed Monitoring Events

SITE 43	SAMPLE DATE	10/19/23	12/20/23	1/11/24	3/13/24	5/15/24	7/17/24	9/25/24						Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L		380	427											
Arsenic	mg/L	0.0017	0.0095	0.0038	0.0042	0.0017	0.0017	0.0035							≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002							See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	7.2	0.5	4.0	8.5	2.7	48.5	19.3						6.1	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013							See Table 5-3, page 2
Dissolved Oxygen	% Saturation	67.7	58.1	56.3	81.9	75.3	166.2	99.4							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011							See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.140	0.950	1.100	0.018	0.089	0.018	0.180							
Nitrogen, nitrate + nitrite	mg/L	1.200	0.710	0.470	0.093	0.160	0.0075	0.930							
Nitrogen, Total	mg/L	3.30	3.11	3.17	1.19	1.56	2.01							2.2	Narrative
Nitrogen, Total Kjeldahl	mg/L	2.1	2.4	2.7	1.1	1.4	2	2.2							
pH	None	7.98	7.47	7.53	8.14	7.73	7.97	7.55							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0840	0.190	0.120	0.026	0.052	0.0019	0.011							
Phosphorus, Total	mg/L	0.1100	0.1400	0.1600	0.071	0.1500	0.099	0.0690						0.109	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	1432	1761	1900	624	444.8	950	1421							≤ 1275
Temperature	deg C	26.1	18.5	19.5	22.8	28.5	31.9	28.7							
Total Hardness	mg/L	511	479	591	191	158	370	535							
Total Suspended Solids	mg/L	3.3	3.8	6.9	1.2	68.0	10.4	3.2							
Turbidity	NTU	2.7	3.1	5.1	3.7	29.0	2.5	2.9							≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055							See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

WPBWS Watershed Monitoring Events

M Canal	SAMPLE DATE	10/24/23	1/17/24	2/13/24	4/9/24	7/23/24	8/13/24	9/10/24						Geometric Mean	
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														See Table 5-3, page 6
Chlorophyll-a (corrected)	ug/L	7.00	5.60	0.50	0.55	13.10	4.80	4.6						3.2	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 6
Dissolved Oxygen	% Saturation	87.7	83.0	8260.1	87.3	104.0	39.1	62.3							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 6
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L	0.01	0.01	0.17	0.08	0.10	0.09	0.110							
Nitrogen, Total	mg/L	0.96	14.00	1.60	1.10	1.60	1.50	1.10						1.8	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.96	1.00	1.40	0.98	1.50	1.40	0.98							
pH	None	8.1	8.3	7.8	8.0	7.7	7.2	7.5							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.016	0.020	0.016	0.018	0.110	0.049	0.041							
Phosphorus, Total	mg/L	0.099	0.089	0.077	0.090	0.230	0.120	0.0750						0.103	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	328	327	345	425	598	336	317							≤ 1275
Temperature	deg C	26.40	21.20	24.20	23.70	32.80	30.00	28.8							
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	17.0	20.0	18.0	26.0	18.0	14.0	8.9							≤ 29
Zinc	mg/L														See Table 5-3, page 6

- Metal exceedences are based on hardness
- Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.
- Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
- AGM - Annual Geometric Mean
- TPTV - Ten Percent Threshold Value
- Narrative - Shall not cause an imbalance in flora and fauna

WPBWS Watershed Monitoring Events

Control 4	SAMPLE DATE	1/17/24	2/13/24	4/9/24	7/23/24	8/13/24	9/10/24							Geometric Mean	
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														See Table 5-3, page 6
Chlorophyll-a (corrected)	ug/L	0.5	0.5	0.5	4.1	9.3	4.9							1.7	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 6
Dissolved Oxygen	% Saturation	59.2	76.4	65.7	61.6	48.8	64.2								> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														See Table 5-3, page 6
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L	0.0075	0.0075	0.0075	0.0075	0.120	0.19								
Nitrogen, Total	mg/L	0.63	1.2	0.81	0.99	1.3	1							1.0	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.62	1.2	0.81	0.98	1.2	0.84								
pH	None	7.2	7	7.4	7.4	7.1	7.5								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0019	0.00175	0.0019	0.0079	0.026	0.02								
Phosphorus, Total	mg/L	0.018	0.015	0.018	0.043	0.0880	0.044							0.031	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	334	211	270	511	1030	751								≤ 1275
Temperature	deg C	20.8	22.1	22.9	30.7	30.4	28.5								
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	1.3	1	2.1	6.3	13	2.7								≤ 29
Zinc	mg/L														See Table 5-3, page 6

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• Narrative - Shall not cause an imbalance in flora and fauna

WPBWS Watershed Monitoring Events

Lake Mangonia	SAMPLE DATE	10/24/23	1/17/24	2/13/24	4/9/24	7/23/24	8/13/24	9/10/24						Geometric Mean	
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	6.50	6.50	5.90	0.50	9.10	11.30	3.7						4.7	≤ 20 AGM
Copper	mg/L														$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	97.3	97.1	91.9	98.5	87.5	99.7	94.7							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														$\leq [e^{(1.273\ (lnH)\ -4.705}]\ 10^{-3}$
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L	0.01	0.01	0.01	0.01	0.01	0.01	0.01							
Nitrogen, Total	mg/L	0.76	0.62	1.21	0.73	0.78	0.90	0.69						0.79	≤ 1.05 to 1.91 AGM
Nitrogen, Total Kjeldahl	mg/L	0.75	0.61	1.20	0.72	0.77	0.89	0.68							
pH	None	7.9	7.7	7.8	8.1	8.2	8.2	7.90							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002							
Phosphorus, Total	mg/L	0.024	0.019	0.02	0.023	0.0019	0.03	0.0200						0.016	≤ 0.03 to 0.09 AGM
Salinity	ppth														
Specific Conductivity	umho/cm	292	614	372	316	686	699	794							≤ 1275
Temperature	deg C	25.20	21.40	21.10	24.00	29.90	29.90	30.8							
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	3.80	2.90	2.30	3.70	4.50	3.80	2.1							≤ 29
Zinc	mg/L														$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• TPTV - Ten Percent Threshold Value

• For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Values applies if Chlorophyll-a is >20 ug/l, Maximum Values applies if Chlorophyll-a is ≤20 ug/l.

WPBWS Watershed Monitoring Events

Clear Lake	SAMPLE DATE	10/24/23	1/17/24	2/13/24	4/9/24	7/23/24	8/13/24	9/10/24						Geometric Mean	
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	4.60	2.20	0.50	0.50	5.40	5.60	6.1						2.4	≤ 20 AGM
Copper	mg/L														$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	99.0	101.7	99.8	9876.7	87.1	107.5	102.6							> 38
E. Coli	cfu/100mL														≤ 400 cfu/100ml TPTV
Lead	mg/L														$\leq [e^{(1.273\ (lnH)\ -4.705}]\ 10^{-3}$
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L	0.01	0.04	0.01	0.01	0.01	0.01	0.01							
Nitrogen, Total	mg/L	0.90	0.66	1.20	0.63	0.92	0.87	0.73						0.83	1.05 to 1.91 AGM
Nitrogen, Total Kjeldahl	mg/L	0.90	0.62	1.20	0.63	0.92	0.87	0.73							
pH	None	8.4	8.0	8.0	8.4	8.5	8.3	8.6							6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002							
Phosphorus, Total	mg/L	0.018	0.019	0.023	0.014	0.002	0.018	0.0160	.					0.013	0.03 to 0.09 AGM
Salinity	ppth														
Specific Conductivity	umho/cm	327	287	458	280	337	1219	360							≤ 1275
Temperature	deg C	25.40	20.30	22.30	24.50	30.50	31.90	31.1							
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	4.60	2.60	2.80	2.70	3.80	3.30	3.2							≤ 29
Zinc	mg/L														$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

- Metal exceedences are based on hardness
- Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.
- Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
- AGM - Annual Geometric Mean
- TPTV - Ten Percent Threshold Value
- For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Values applies if Chlorophyll-a is >20 ug/l, Maximum Values applies if Chlorophyll-a is ≤20 ug/l.

APPENDIX B

Water Quality Monitoring Data Summary

Full Periods of Record

(25 Pages)

C-15 Watershed

SITE 31E		Date Range: 03/24/99 - 09/24/24 Samples: 134					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	28	169	164	237	123	27
Arsenic	mg/L	117	0.0025	0.0025	0.0098	0.0005	0.0013
Cadmium	mg/L	131	0.0004	0.0003	0.0050	0.0001	0.0014
Chlorophyll-a (corrected)	ug/L	122	15.7	18.7	120.0	0.5	21.4
Copper	mg/L	130	0.0038	0.0043	0.0200	0.0010	0.0033
Dissolved Oxygen	% Saturation	60	57.3	67.5	154.1	7.7	27.6
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	120	0.0020	0.0023	0.0050	0.0005	0.0012
Nitrogen, Ammonia	mg/L	127	0.052	0.052	0.820	0.003	0.122
Nitrogen, nitrate + nitrite	mg/L	121	0.039	0.034	0.785	0.001	0.154
Nitrogen, Total	mg/L	120	1.38	1.32	3.87	0.39	0.60
Nitrogen, Total Kjeldahl	mg/L	125	1.33	1.30	3.84	0.37	0.59
pH	None	130	7.6	7.6	8.9	6.3	0.3
Phosphorus, orthophosphate	mg/L	126	0.137	0.150	1.330	0.003	0.197
Phosphorus, Total	mg/L	123	0.249	0.240	1.490	0.020	0.229
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	132	549	554	833	227	101
Temperature	deg C	132	25.6	26.4	32.8	16.7	3.9
Total Hardness	mg/L	127	200	205	390	99	35
Total Suspended Solids	mg/L	122	5.3	6.2	18.0	0.5	3.6
Turbidity	NTU	130	3.5	4.0	15.9	0.2	2.7
Zinc	mg/L	131	0.0056	0.0055	0.0140	0.0018	0.0025

SITE 31C		Date Range: 01/28/99 - 09/24/24 Samples: 134					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	25	153	153	188	123	16
Arsenic	mg/L	114	0.0028	0.0025	2.2350	0.0005	0.2091
Cadmium	mg/L	131	0.0004	0.0003	0.0050	0.0001	0.0015
Chlorophyll-a (corrected)	ug/L	119	13.2	15.5	93.0	0.1	16.8
Copper	mg/L	131	0.0033	0.0038	0.0295	0.0003	0.0037
Dissolved Oxygen	% Saturation	59	78.1	78.4	176.5	33.1	30.6
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	119	0.0020	0.0023	0.0070	0.0005	0.0013
Nitrogen, Ammonia	mg/L	128	0.047	0.045	0.490	0.001	0.083
Nitrogen, nitrate + nitrite	mg/L	120	0.061	0.064	1.300	0.006	0.160
Nitrogen, Total	mg/L	121	1.14	1.09	3.09	0.11	0.51
Nitrogen, Total Kjeldahl	mg/L	131	1.03	1.00	3.07	0.10	0.48
pH	None	131	7.5	7.5	8.5	6.3	0.3
Phosphorus, orthophosphate	mg/L	128	0.047	0.056	0.440	0.002	0.067
Phosphorus, Total	mg/L	124	0.121	0.120	0.560	0.001	0.081
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	133	507	506	11188	5	930
Temperature	deg C	131	26.3	26.9	33.1	19.2	3.3
Total Hardness	mg/L	128	173	186	260	0	28
Total Suspended Solids	mg/L	123	4.0	4.0	15.7	1.0	2.9
Turbidity	NTU	129	2.3	2.4	13.3	0.1	1.8
Zinc	mg/L	131	0.0057	0.0055	0.1030	0.0016	0.0091

C-15 Watershed

SITE 31B		Date Range: 06/15/00 - 09/24/24 Samples: 169					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	93	149	152	207	32	19
Arsenic	mg/L	80	0.0025	0.0025	0.0070	0.0005	0.0012
Cadmium	mg/L	92	0.0003	0.0002	0.0050	0.0001	0.0014
Chlorophyll-a (corrected)	ug/L	86	9.1	12.7	52.0	0.5	12.5
Copper	mg/L	92	0.0033	0.0034	0.0200	0.0013	0.0031
Dissolved Oxygen	% Saturation	57	94.2	96.8	141.5	50.7	21.8
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	92	0.0020	0.0023	0.0260	0.0003	0.0028
Nitrogen, Ammonia	mg/L	158	0.021	0.018	0.310	0.003	0.056
Nitrogen, nitrate + nitrite	mg/L	163	0.022	0.017	0.470	0.001	0.101
Nitrogen, Total	mg/L	163	0.98	0.99	4.23	0.06	0.37
Nitrogen, Total Kjeldahl	mg/L	167	0.91	0.91	4.18	0.04	0.34
pH	None	166	7.8	7.8	9.1	6.7	0.4
Phosphorus, orthophosphate	mg/L	163	0.049	0.068	0.344	0.001	0.065
Phosphorus, Total	mg/L	151	0.105	0.106	0.702	0.003	0.082
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	169	490	492	787	392	48
Temperature	deg C	169	25.3	26.5	32.5	15.0	4.0
Total Hardness	mg/L	97	178	178	230	138	17
Total Suspended Solids	mg/L	158	2.9	2.5	43.7	0.6	4.0
Turbidity	NTU	169	2.2	2.3	17.8	0.1	2.1
Zinc	mg/L	92	0.0059	0.0055	0.0492	0.0027	0.0049

C-16 Watershed

SITE 22		Date Range: 01/29/04 - 09/23/24 Samples: 112					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	26	144	141	210	110	21
Arsenic	mg/L	105	0.0026	0.0025	0.0300	0.0005	0.0029
Cadmium	mg/L	104	0.0003	0.0003	0.0026	0.0002	0.0005
Chlorophyll-a (corrected)	ug/L	106	8.4	12.3	62.7	0.5	13.3
Copper	mg/L	104	0.0023	0.0023	0.0180	0.0010	0.0034
Dissolved Oxygen	% Saturation	54	84.8	100.7	154.0	9.4	32.6
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	92	0.0017	0.0023	0.0050	0.0005	0.0008
Nitrogen, Ammonia	mg/L	104	0.027	0.030	1.010	0.002	0.100
Nitrogen, nitrate + nitrite	mg/L	104	0.041	0.029	1.990	0.003	0.230
Nitrogen, Total	mg/L	104	0.86	0.93	3.07	0.08	0.40
Nitrogen, Total Kjeldahl	mg/L	110	0.77	0.84	2.19	0.07	0.31
pH	None	105	8.0	8.1	8.9	6.5	0.4
Phosphorus, orthophosphate	mg/L	105	0.012	0.017	0.086	0.001	0.020
Phosphorus, Total	mg/L	110	0.056	0.062	0.840	0.001	0.093
Salinity	ppth	12	21.8139	32.3350	34.0200	0.3700	9.3309
Specific Conductivity	umho/cm	108	727	503	51500	7	13539
Temperature	deg C	105	25.7	26.0	36.3	14.3	4.6
Total Hardness	mg/L	98	167	179	239	0	29
Total Suspended Solids	mg/L	99	3.9	4.2	33.8	1.0	3.8
Turbidity	NTU	109	2.3	2.5	6.6	0.1	1.3
Zinc	mg/L	104	0.0053	0.0055	0.0600	0.0013	0.0075

SITE 24		Date Range: 01/25/99 - 09/23/24 Samples: 130					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	20	116	150	202	3	40
Arsenic	mg/L	107	0.0025	0.0025	0.0071	0.0005	0.0012
CFdmium	mg/L	110	0.0004	0.0003	0.0050	0.0002	0.0015
Chlorophyll-a (corrected)	ug/L	113	9.9	13.4	49.0	0.5	10.9
Copper	mg/L	117	0.0025	0.0023	0.0113	0.0007	0.0028
Dissolved Oxygen	% Saturation	57	103.2	100.6	145.6	65.2	21.0
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	110	0.0020	0.0023	0.0050	0.0007	0.0012
Nitrogen, Ammonia	mg/L	120	0.024	0.027	0.105	0.007	0.021
Nitrogen, nitrate + nitrite	mg/L	120	0.028	0.020	0.940	0.001	0.130
Nitrogen, Total	mg/L	120	0.54	0.85	2.67	0.05	0.54
Nitrogen, Total Kjeldahl	mg/L	121	0.48	0.80	2.61	0.04	0.50
pH	None	124	8.0	8.0	8.8	7.1	0.4
Phosphorus, orthophosphate	mg/L	123	0.008	0.009	0.230	0.001	0.028
Phosphorus, Total	mg/L	124	0.030	0.054	0.345	0.001	0.054
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	128	724	488	51900	348	12867
Temperature	deg C	122	25.2	26.2	33.8	2.8	4.9
Total Hardness	mg/L	109	130	176	233	0	44
Total Suspended Solids	mg/L	114	4.3	5.0	16.5	1.0	3.1
Turbidity	NTU	127	3.0	3.0	11.4	0.4	1.8
Zinc	mg/L	117	0.0057	0.0055	0.0360	0.0013	0.0048

C-16 Watershed

SITE 27B		Date Range: 01/28/99 - 09/24/24 Samples: 113					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	24	181	187	228	121	30
Arsenic	mg/L	94	0.0026	0.0025	0.0120	0.0005	0.0016
Cadmium	mg/L	111	0.0004	0.0003	0.0050	0.0001	0.0016
Chlorophyll-a (corrected)	ug/L	99	11.4	15.0	76.4	0.5	15.2
Copper	mg/L	111	0.0037	0.0037	0.0975	0.0007	0.0095
Dissolved Oxygen	% Saturation	46	57.2	64.7	139.7	12.1	29.9
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	105	0.0020	0.0023	0.0067	0.0005	0.0013
Nitrogen, Ammonia	mg/L	107	0.052	0.049	0.740	0.007	0.123
Nitrogen, nitrate + nitrite	mg/L	104	0.068	0.054	0.785	0.006	0.161
Nitrogen, Total	mg/L	103	1.37	1.40	3.42	0.06	0.48
Nitrogen, Total Kjeldahl	mg/L	109	1.24	1.22	3.37	0.04	0.47
pH	None	110	7.6	7.6	8.7	6.7	0.4
Phosphorus, orthophosphate	mg/L	106	0.068	0.082	0.680	0.001	0.147
Phosphorus, Total	mg/L	109	0.160	0.180	0.770	0.004	0.166
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	112	564	564	10481	8	947
Temperature	deg C	112	25.4	26.6	32.4	16.5	3.8
Total Hardness	mg/L	110	202	206	308	113	36
Total Suspended Solids	mg/L	109	5.4	5.6	23.6	1.0	4.1
Turbidity	NTU	111	3.5	3.8	14.9	0.3	2.8
Zinc	mg/L	110	0.0060	0.0055	0.0350	0.0016	0.0048

SITE 27A		Date Range: 01/28/99 - 09/24/24 Samples: 128					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	27	154	151	191	128	17
Arsenic	mg/L	109	0.0026	0.0025	0.0078	0.0005	0.0014
Cadmium	mg/L	126	0.0004	0.0003	0.0050	0.0001	0.0015
Chlorophyll-a (correEDed)	ug/L	112	8.6	11.9	66.0	0.5	14.3
Copper	mg/L	126	0.0038	0.0042	0.0200	0.0013	0.0030
Dissolved Oxygen	% Saturation	0	None	None	None	None	None
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	120	0.0021	0.0023	0.0150	0.0005	0.0018
Nitrogen, Ammonia	mg/L	123	0.035	None	2.060	0.002	0.194
Nitrogen, nitrate + nitrite	mg/L	119	0.042	0.040	0.750	0.006	0.122
Nitrogen, Total	mg/L	119	1.02	None	4.32	0.02	0.54
Nitrogen, Total Kjeldahl	mg/L	124	0.98	1.00	3.96	0.04	0.49
pH	None	124	7.8	7.9	9.0	6.5	0.4
Phosphorus, orthophosphate	mg/L	116	0.033	0.039	0.440	0.001	0.089
Phosphorus, Total	mg/L	122	0.101	0.101	1.580	0.001	0.181
Salinity	ppth	1	7.9200	7.9200	7.9200	7.9200	None
Specific Conductivity	umho/cm	126	514	513	939	219	111
Temperature	deg C	124	25.6	26.4	32.6	18.5	3.9
Total Hardness	mg/L	125	181	180	258	117	25
Total Suspended Solids	mg/L	117	3.0	3.3	38.0	0.5	4.3
Turbidity	NTU	125	2.3	2.7	71.5	0.1	6.8
Zinc	mg/L	124	0.0057	0.0055	0.0690	0.0013	0.0076

C-16 Watershed

SITE 28		Date Range: 01/28/99 - 09/24/24 Samples: 167					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	92	148	148	228	119	19
Arsenic	mg/L	73	0.0023	0.0025	0.0071	0.0003	0.0013
Cadmium	mg/L	90	0.0004	0.0003	0.0050	0.0002	0.0017
Chlorophyll-a (corrected)	ug/L	79	7.4	8.2	50.0	0.5	9.5
Copper	mg/L	90	0.0026	0.0027	0.0200	0.0007	0.0034
Dissolved Oxygen	% Saturation	51	73.8	80.6	147.0	12.1	28.9
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	90	0.0021	0.0023	0.0261	0.0003	0.0029
Nitrogen, Ammonia	mg/L	160	0.028	0.030	2.760	0.001	0.227
Nitrogen, nitrate + nitrite	mg/L	162	0.034	0.038	13.000	0.001	1.022
Nitrogen, Total	mg/L	161	0.76	0.97	13.71	0.05	1.16
Nitrogen, Total Kjeldahl	mg/L	165	0.67	0.86	5.81	0.04	0.54
pH	None	164	7.7	7.8	8.6	6.2	0.4
Phosphorus, orthophosphate	mg/L	164	0.017	0.025	0.360	0.001	0.058
Phosphorus, Total	mg/L	153	0.050	0.061	0.877	0.001	0.099
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	167	461	478	946	5	120
Temperature	deg C	162	25.3	26.0	56.8	13.1	4.7
Total Hardness	mg/L	91	126	176	308	0	52
Total Suspended Solids	mg/L	157	3.1	2.8	24.9	1.0	3.1
Turbidity	NTU	167	2.2	2.4	13.0	0.1	2.0
Zinc	mg/L	90	0.0060	0.0055	0.1180	0.0024	0.0120

C-17 Watershed

SITE 12A		Date Range: 01/19/99 - 09/23/24 Samples: 132					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	30	148	149	186	87	20
Arsenic	mg/L	113	0.0026	0.0025	0.0071	0.0005	0.0014
Cadmium	mg/L	130	0.0004	0.0003	0.0050	0.0001	0.0015
Chlorophyll-a (corrected)	ug/L	118	10.2	13.6	74.8	0.5	11.3
Copper	mg/L	130	0.0028	0.0027	0.0500	0.0010	0.0051
Dissolved Oxygen	% Saturation	54	75.2	76.4	137.6	27.9	18.9
E. Coli	CKu/100mL	0	None	None	None	None	None
Lead	mg/L	124	0.0019	0.0023	0.0076	0.0004	0.0014
Nitrogen, Ammonia	mg/L	126	0.059	0.052	2.260	0.008	0.227
Nitrogen, nitrate + nitrite	mg/L	122	0.066	0.079	1.590	0.006	0.164
Nitrogen, Total	mg/L	124	1.17	1.10	9.08	0.03	2.00
Nitrogen, Total Kjeldahl	mg/L	129	0.95	0.97	3.10	0.04	0.41
pH	None	127	7.6	7.7	9.4	6.2	0.5
Phosphorus, orthophosphate	mg/L	120	0.007	0.008	0.058	0.001	0.012
Phosphorus, Total	mg/L	124	0.052	0.065	0.340	0.001	0.037
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	130	449	458	831	231	67
Temperature	deg C	130	25.3	25.9	31.9	16.3	3.8
Total Hardness	mg/L	124	147	169	216	0	31
Total Suspended Solids	mg/L	127	4.3	4.7	15.5	1.0	2.8
Turbidity	NTU	128	3.3	3.6	50.0	0.3	4.3
Zinc	mg/L	130	0.0064	0.0055	0.0614	0.0013	0.0071

SITE C17S44		Date Range: 01/19/99 - 09/23/24 Samples: 227					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	78	158	163	192	112	19
Arsenic	mg/L	14	0.0017	0.0019	0.0049	0.0005	0.0011
Cadmium	mg/L	31	0.0014	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	29	7.7	8.4	40.0	1.0	9.2
Copper	mg/L	31	0.0042	0.0050	0.0500	0.0007	0.0089
Dissolved Oxygen	% Saturation	77	67.4	69.9	116.8	33.3	18.3
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	31	0.0021	0.0019	0.0250	0.0003	0.0045
Nitrogen, Ammonia	mg/L	223	0.029	0.033	1.500	0.003	0.112
Nitrogen, nitrate + nitrite	mg/L	224	0.033	0.036	0.863	0.001	0.138
Nitrogen, Total	mg/L	221	0.71	0.87	1.51	0.02	0.28
Nitrogen, Total Kjeldahl	mg/L	117	0.87	0.87	1.33	0.20	0.16
pH	None	225	7.6	7.7	8.3	6.6	0.3
Phosphorus, orthophosphate	mg/L	223	0.006	0.007	0.095	0.001	0.016
Phosphorus, Total	mg/L	216	0.035	0.046	0.126	0.001	0.022
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	227	453	459	728	300	48
Temperature	deg C	227	25.7	26.2	90.0	15.7	5.7
Total Hardness	mg/L	40	174	185	233	90	30
Total Suspended Solids	mg/L	223	2.4	1.5	26.0	0.1	3.1
Turbidity	NTU	226	1.8	2.1	18.1	0.1	1.7
Zinc	mg/L	31	0.0080	0.0100	0.0954	0.0032	0.0161

C-18 Watershed

SITE 16		Date Range: 01/19/99 - 09/23/24 Samples: 140					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	31	119	138	216	31	51
Arsenic	mg/L	116	0.0024	0.0025	0.0170	0.0005	0.0032
Cadmium	mg/L	133	0.0004	0.0003	0.0050	0.0001	0.0015
Chlorophyll-a (corrected)	ug/L	120	3.3	3.3	43.0	0.5	6.7
Copper	mg/L	131	0.0018	0.0013	0.0100	0.0003	0.0028
Dissolved Oxygen	% Saturation	64	56.0	58.2	147.1	11.2	27.2
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	131	0.0020	0.0023	0.0125	0.0005	0.0016
Nitrogen, Ammonia	mg/L	132	0.040	0.040	0.498	0.008	0.069
Nitrogen, nitrate + nitrite	mg/L	131	0.031	0.029	1.210	0.006	0.134
Nitrogen, Total	mg/L	131	0.85	0.90	2.35	0.06	0.42
Nitrogen, Total Kjeldahl	mg/L	138	0.80	0.89	2.30	0.04	0.41
pH	None	129	7.4	7.4	9.7	6.0	0.5
Phosphorus, orthophosphate	mg/L	132	0.006	0.005	0.560	0.001	0.051
Phosphorus, Total	mg/L	133	0.033	0.034	1.500	0.001	0.132
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	120	528	401	49300	105	12758
Temperature	deg C	132	24.5	25.4	33.4	15.8	4.0
Total Hardness	mg/L	123	128	148	734	3	80
Total Suspended Solids	mg/L	129	2.4	2.5	29.7	0.5	3.6
Turbidity	NTU	136	1.8	1.8	10.2	0.4	1.4
Zinc	mg/L	132	0.0059	0.0055	0.0500	0.0012	0.0096

SITE 15		Date Range: 01/19/99 - 09/23/24 Samples: 133					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	27	109	98	244	41	64
Arsenic	mg/L	114	0.0022	0.0025	0.0071	0.0005	0.0012
Cadmium	mg/L	131	0.0004	0.0003	0.0050	0.0001	0.0015
Chlorophyll-a (corrected)	ug/L	118	1.9	2.0	25.3	0.1	3.7
Copper	mg/L	130	0.0022	0.0013	49.5000	0.0003	5.9152
Dissolved Oxygen	% Saturation	57	34.4	37.9	86.8	8.2	15.4
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	131	0.0018	0.0023	0.0060	0.0001	0.0013
Nitrogen, Ammonia	mg/L	128	0.038	0.040	8.167	0.007	0.719
Nitrogen, nitrate + nitrite	mg/L	124	0.021	0.018	0.480	0.006	0.079
Nitrogen, Total	mg/L	116	0.82	0.82	4.51	0.01	0.49
Nitrogen, Total Kjeldahl	mg/L	124	0.81	0.77	4.50	0.23	0.46
pH	None	122	7.3	7.3	9.4	2.8	0.6
Phosphorus, orthophosphate	mg/L	124	0.004	0.003	0.071	0.001	0.012
Phosphorus, Total	mg/L	124	0.018	0.016	1.500	0.001	0.231
Salinity	ppth	3	6.0723	4.1500	33.1000	1.6300	17.4872
Specific Conductivity	umho/cm	125	332	321	50600	91	4544
Temperature	deg C	125	23.6	24.4	30.9	15.8	4.0
Total Hardness	mg/L	116	104	102	260	33	49
Total Suspended Solids	mg/L	126	1.5	1.5	15.0	0.5	1.9
Turbidity	NTU	129	0.8	0.7	18.3	0.1	1.7
Zinc	mg/L	131	0.0054	0.0055	0.0300	0.0012	0.0036

C-18 Watershed

SITE 92		Date Range: 01/19/99 - 08/14/24 Samples: 185					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	129	144	142	278	61	51
Arsenic	mg/L	16	0.0011	0.0009	0.0024	0.0005	0.0007
Cadmium	mg/L	33	0.0013	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	64	4.1	4.1	15.3	1.0	2.8
Copper	mg/L	33	0.0033	0.0027	0.0100	0.0003	0.0042
Dissolved Oxygen	% Saturation	34	56.2	63.3	91.2	5.7	18.1
E. Coli	cfu/100mL	16	31	41	173	10	41
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	179	0.034	0.039	1.500	0.003	0.155
Nitrogen, nitrate + nitrite	mg/L	180	0.023	0.033	0.520	0.001	0.061
Nitrogen, Total	mg/L	182	0.82	0.90	1.65	0.00	0.21
Nitrogen, Total Kjeldahl	mg/L	158	0.86	0.87	1.40	0.22	0.16
pH	None	183	7.4	7.5	8.2	6.2	0.3
Phosphorus, orthophosphate	mg/L	184	0.005	0.004	0.500	0.001	0.039
Phosphorus, Total	mg/L	172	0.024	0.024	23.000	0.002	1.752
Salinity	ppth	41	0.2537	0.2000	0.5000	0.1000	0.0946
Specific Conductivity	umho/cm	185	430	436	1038	148	174
Temperature	deg C	183	26.3	26.5	3001.0	15.8	220.0
Total Hardness	mg/L	40	158	172	298	60	61
Total Suspended Solids	mg/L	174	1.4	1.5	153.0	0.0	11.5
Turbidity	NTU	184	1.7	1.7	8.6	0.4	1.2
Zinc	mg/L	33	0.0075	0.0100	0.1580	0.0027	0.0270

SITE 81		Date Range: 01/19/99 - 09/10/24 Samples: 181					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	122	133	139	247	59	43
Arsenic	mg/L	16	0.0012	0.0011	0.0024	0.0005	0.0007
Cadmium	mg/L	33	0.0013	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (correEDed)	ug/L	59	4.7	4.7	17.1	1.0	4.6
Copper	mg/L	33	0.0033	0.0033	0.0100	0.0003	0.0042
Dissolved Oxygen	% Saturation	31	79.7	80.0	122.2	25.0	19.1
E. Coli	cfu/100mL	13	197	211	1515	10	519
Lead	mg/L	33	0.0020	0.0013	0.0236	0.0003	0.0042
Nitrogen, Ammonia	mg/L	171	0.027	None	0.140	0.003	0.028
Nitrogen, nitrate + nitrite	mg/L	178	0.017	0.021	0.244	0.002	0.038
Nitrogen, Total	mg/L	179	0.78	None	1.32	0.00	0.19
Nitrogen, Total Kjeldahl	mg/L	157	0.82	0.82	1.30	0.26	0.15
pH	None	167	7.6	7.7	8.3	6.5	0.4
Phosphorus, orthophosphate	mg/L	177	0.004	0.003	0.082	0.001	0.012
Phosphorus, Total	mg/L	166	0.021	0.021	0.210	0.002	0.021
Salinity	ppth	32	0.2084	0.2000	1.0000	0.1000	0.1557
Specific Conductivity	umho/cm	177	409	418	1588	151	211
Temperature	deg C	178	25.5	26.3	33.2	15.8	4.0
Total Hardness	mg/L	42	156	173	311	60	60
Total Suspended Solids	mg/L	155	1.6	1.5	6.0	0.3	1.0
Turbidity	NTU	181	1.4	1.3	8.7	0.3	0.9
Zinc	mg/L	33	0.0070	0.0080	0.0429	0.0018	0.0075

C-51 Watershed

SITE 38B		Date Range: 01/21/99 - 09/25/24 Samples: 131					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	30	143	141	291	62	59
Arsenic	mg/L	111	0.0026	0.0025	0.0170	0.0005	0.0027
Cadmium	mg/L	128	0.0004	0.0003	0.0050	0.0001	0.0015
Chlorophyll-a (corrected)	ug/L	117	6.0	6.9	70.7	0.5	11.8
Copper	mg/L	126	0.0022	0.0016	0.0100	0.0005	0.0028
Dissolved Oxygen	% Saturation	48	75.3	84.6	141.0	31.6	28.5
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	128	0.0020	0.0023	0.0152	0.0003	0.0017
Nitrogen, Ammonia	mg/L	127	0.060	0.049	0.950	0.008	0.184
Nitrogen, nitrate + nitrite	mg/L	121	0.144	0.200	1.400	0.006	0.263
Nitrogen, Total	mg/L	117	1.49	1.55	4.05	0.06	0.75
Nitrogen, Total Kjeldahl	mg/L	129	1.29	1.30	4.00	0.04	0.72
pH	None	122	7.7	7.7	14.0	6.6	0.7
Phosphorus, orthophosphate	mg/L	123	0.030	0.046	0.540	0.002	0.061
Phosphorus, Total	mg/L	119	0.092	0.100	0.891	0.003	0.120
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	121	745	763	1837	2	406
Temperature	deg C	124	24.9	25.8	33.4	16.7	4.2
Total Hardness	mg/L	123	220	226	522	59	89
Total Suspended Solids	mg/L	125	9.7	9.6	134.0	1.0	15.2
Turbidity	NTU	127	9.4	9.7	69.9	0.6	13.1
Zinc	mg/L	126	0.0061	0.0055	0.0894	0.0013	0.0099

SITE 37B		Date Range: 01/21/99 - 09/25/24 Samples: 128					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	32	163	169	238	103	39
Arsenic	mg/L	109	0.0023	0.0025	0.0071	0.0002	0.0012
Cadmium	mg/L	125	0.0004	0.0003	0.0050	0.0001	0.0015
Chlorophyll-a (corrected)	ug/L	113	4.1	4.3	25.3	0.4	4.8
Copper	mg/L	125	0.0022	0.0017	0.0100	0.0005	0.0027
Dissolved Oxygen	% Saturation	45	74.2	77.8	118.5	31.0	20.0
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	125	0.0020	0.0023	0.0155	0.0005	0.0017
Nitrogen, Ammonia	mg/L	127	0.051	0.053	0.390	0.008	0.068
Nitrogen, nitrate + nitrite	mg/L	115	0.134	0.173	1.320	0.008	0.208
Nitrogen, Total	mg/L	119	1.16	1.17	6.89	0.20	0.74
Nitrogen, Total Kjeldahl	mg/L	125	0.99	0.92	6.70	0.13	0.69
pH	None	117	7.5	7.6	9.6	2.8	0.6
Phosphorus, orthophosphate	mg/L	122	0.015	0.025	0.193	0.001	0.036
Phosphorus, Total	mg/L	115	0.036	0.054	1.540	0.001	0.163
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	119	670	684	1198	163	173
Temperature	deg C	119	25.4	26.1	32.3	16.8	3.8
Total Hardness	mg/L	121	125	220	313	0	74
Total Suspended Solids	mg/L	123	4.5	4.7	43.3	0.5	7.2
Turbidity	NTU	124	4.2	4.2	87.0	0.1	12.2
Zinc	mg/L	124	0.0060	0.0055	0.1100	0.0013	0.0113

C-51 Watershed

SITE C51S155		Date Range: 01/21/99 - 09/09/24 Samples: 235					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	86	161	163	216	100	24
Arsenic	mg/L	14	0.0014	0.0016	0.0029	0.0005	0.0008
Cadmium	mg/L	30	0.0015	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	75	2.5	6.5	45.0	0.0	9.0
Copper	mg/L	41	0.0033	0.0028	0.0230	0.0010	0.0047
Dissolved Oxygen	% Saturation	65	66.5	67.5	111.6	30.2	18.3
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	30	0.0022	0.0039	0.0152	0.0005	0.0030
Nitrogen, Ammonia	mg/L	229	0.043	0.055	0.520	0.003	0.065
Nitrogen, nitrate + nitrite	mg/L	227	0.110	0.193	20.900	0.003	1.390
Nitrogen, Total	mg/L	229	1.06	1.10	21.79	0.03	1.42
Nitrogen, Total Kjeldahl	mg/L	127	0.96	0.94	3.87	0.41	0.37
pH	None	230	7.6	7.6	9.8	6.2	0.4
Phosphorus, orthophosphate	mg/L	232	0.019	0.025	0.279	0.001	0.038
Phosphorus, Total	mg/L	222	0.064	0.066	0.200	0.003	0.030
Salinity	ppth	1	0.3300	0.3300	0.3300	0.3300	None
Specific Conductivity	umho/cm	232	577	583	1681	6	174
Temperature	ECg C	232	25.5	26.2	56.3	15.3	4.3
Total Hardness	mg/L	63	23	178	337	1	105
Total SuspenECd Solids	mg/L	220	3.3	3.1	47.0	1.0	5.4
Turbidity	NTU	234	4.0	3.6	59.4	0.1	7.5
Zinc	mg/L	30	0.0079	0.0100	0.0310	0.0032	0.0056

Loxahatchee River Watershed

SITE 69		Date Range: 11/20/03 - 11/13/24 Samples: 213					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	191	153	153	245	74	36
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	189	2.9	3.0	27.8	0.1	3.8
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	% Saturation	108	46.9	48.8	69.6	12.0	12.1
E. Coli	cfu/100mL	30	51	52	602	10	109
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	182	0.081	0.080	0.471	0.025	0.057
Nitrogen, nitrate + nitrite	mg/L	191	0.061	0.059	0.262	0.007	0.045
Nitrogen, Total	mg/L	191	0.96	0.93	38.00	0.50	2.69
Nitrogen, Total Kjeldahl	mg/L	174	0.86	0.84	2.52	0.50	0.26
pH	None	197	7.3	7.3	8.1	6.3	0.3
Phosphorus, orthophosphate	mg/L	191	0.012	0.013	0.433	0.001	0.034
Phosphorus, Total	mg/L	191	0.036	0.033	0.246	0.003	0.028
Salinity	ppth	163	0.2893	0.3000	11.4000	0.1000	1.4280
Specific Conductivity	umho/cm	161	580	512	19200	218	2458
Temperature	deg C	192	25.1	25.5	31.3	17.0	3.7
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	191	1.9	1.9	21.8	0.5	2.1
Turbidity	NTU	89	3.2	3.2	7.2	1.5	1.1
Zinc	mg/L	8	0.0080	0.0100	0.0100	0.0050	0.0024

SITE 51		Date Range: 05/11/00 - 07/10/24 Samples: 126					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	81	119	123	163	62	16
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0033	0.0050	0.0440	0.0008	0.0146
Chlorophyll-a (corrected)	ug/L	79	4.0	4.0	62.0	0.5	7.4
Copper	mg/L	7	0.0088	0.0050	0.0700	0.0014	0.0296
Dissolved Oxygen	% Saturation	27	83.2	86.8	98.5	41.3	13.2
E. Coli	cfu/100mL	0	None	None	None	None	None
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	7	0.0034	0.0050	0.0340	0.0011	0.0119
Nitrogen, Ammonia	mg/L	57	0.031	0.030	0.140	0.002	0.028
Nitrogen, nitrate + nitrite	mg/L	89	0.008	0.006	0.068	0.002	0.016
Nitrogen, Total	mg/L	86	0.35	0.30	2.29	0.10	0.45
Nitrogen, Total Kjeldahl	mg/L	78	0.35	0.30	2.23	0.10	0.46
pH	None	90	7.8	7.9	8.4	6.7	0.3
Phosphorus, orthophosphate	mg/L	86	0.006	0.006	0.177	0.001	0.020
Phosphorus, Total	mg/L	89	0.025	0.025	0.222	0.006	0.025
Salinity	ppth	71	23.9211	31.1000	37.5000	0.6000	9.2724
Specific Conductivity	umho/cm	72	37460	47750	56271	1118	13459
Temperature	deg C	88	24.7	25.2	31.1	15.9	3.8
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	89	5.5	5.3	43.5	0.8	6.4
Turbidity	NTU	89	3.2	3.2	7.2	1.5	1.1
Zinc	mg/L	8	0.0080	0.0100	0.0100	0.0050	0.0024

Loxahatchee River Watershed

SITE 62		Date Range: 05/31/00 - 11/13/24 Samples: 214					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	194	134	139	226	64	27
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0027	0.0050	0.0080	0.0008	0.0027
Chlorophyll-a (corrected)	ug/L	185	5.2	5.5	89.8	0.5	8.2
Copper	mg/L	7	0.0071	0.0100	0.0500	0.0017	0.0184
Dissolved Oxygen	% Saturation	98	67.7	69.9	93.9	37.3	12.6
E. Coli	cfu/100mL	23	113	119	414	10	109
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	7	0.0030	0.0050	0.0130	0.0011	0.0042
Nitrogen, Ammonia	mg/L	187	0.051	0.050	0.650	0.010	0.071
Nitrogen, nitrate + nitrite	mg/L	202	0.031	0.043	0.182	0.002	0.038
Nitrogen, Total	mg/L	202	0.73	0.74	3.93	0.20	0.53
Nitrogen, Total Kjeldahl	mg/L	191	0.68	0.69	3.93	0.20	0.53
pH	None	202	7.7	7.6	73.8	7.0	4.9
Phosphorus, orthophosphate	mg/L	200	0.022	0.025	0.121	0.002	0.016
Phosphorus, Total	mg/L	190	0.045	0.045	0.480	0.006	0.038
Salinity	ppth	187	7.2841	11.2000	35.7000	0.1000	9.4329
Specific Conductivity	umho/cm	172	13148	20390	53860	250	14623
Temperature	deg C	197	25.1	25.7	32.8	7.5	4.0
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	190	4.2	4.0	23.2	1.0	2.9
Turbidity	NTU	201	2.9	2.8	22.0	1.0	1.9
Zinc	mg/L	15	0.0033	0.0050	0.0480	0.0002	0.0159

SITE 72		Date Range: 05/11/00 - 09/10/24 Samples: 221					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	200	124	129	178	28	19
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0035	0.0050	0.0720	0.0008	0.0244
Chlorophyll-a (corrected)	ug/L	203	8.6	9.4	97.9	0.5	10.9
Copper	mg/L	7	0.0076	0.0100	0.0600	0.0010	0.0246
Dissolved Oxygen	% Saturation	110	78.8	83.0	130.9	27.2	15.9
E. Coli	cfu/100mL	22	168	199	1017	31	258
Enterococci	cfu/100mL	7	41	52	132	10	39
Lead	mg/L	7	0.0044	0.0050	0.0640	0.0011	0.0229
Nitrogen, Ammonia	mg/L	194	0.090	0.100	3.000	0.015	0.224
Nitrogen, nitrate + nitrite	mg/L	208	0.020	0.026	0.172	0.000	0.027
Nitrogen, Total	mg/L	207	0.59	0.62	2.88	0.10	0.35
Nitrogen, Total Kjeldahl	mg/L	190	0.57	0.60	2.85	0.10	0.35
pH	None	209	7.8	7.8	30.7	6.8	1.6
Phosphorus, orthophosphate	mg/L	206	0.009	0.010	0.100	0.001	0.013
Phosphorus, Total	mg/L	208	0.036	0.035	0.640	0.006	0.044
Salinity	ppth	188	19.4721	28.1500	37.9800	0.0400	9.7992
Specific Conductivity	umho/cm	173	30232	43544	63745	500	15072
Temperature	deg C	204	25.8	27.0	32.5	7.7	3.8
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	207	5.1	4.8	31.8	0.5	4.8
Turbidity	NTU	207	3.0	3.1	8.7	0.3	1.3
Zinc	mg/L	8	0.0164	0.0100	0.2780	0.0050	0.0941

Table 5-6 Monitoring Data Summary

ICWW-N River Watershed

SITE 30		Date Range: 05/10/00 - 07/10/24 Samples: 127					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	105	124	125	140	79	9
Arsenic	mg/L	6	0.0035	0.0042	0.0047	0.0021	0.0011
Cadmium	mg/L	8	0.0027	0.0050	0.0080	0.0008	0.0027
Chlorophyll-a (corrected)	ug/L	102	4.2	4.4	42.3	0.5	5.5
Copper	mg/L	7	0.0116	0.0100	0.0900	0.0017	0.0319
Dissolved Oxygen	% Saturation	63	80.7	84.3	94.8	15.6	11.0
Enterococci	cfu/100mL	7	32	20	262	10	90
Lead	mg/L	7	0.0040	0.0050	0.1020	0.0011	0.0375
Nitrogen, Ammonia	mg/L	70	0.048	0.040	0.300	0.010	0.082
Nitrogen, nitrate + nitrite	mg/L	113	0.011	0.010	0.146	0.003	0.025
Nitrogen, Total	mg/L	112	0.29	0.30	2.04	0.02	0.38
Nitrogen, Total Kjeldahl	mg/L	102	0.33	0.30	2.02	0.10	0.36
pH	None	126	7.8	7.8	8.3	7.1	0.2
Phosphorus, orthophosphate	mg/L	105	0.006	0.006	0.100	0.001	0.012
Phosphorus, Total	mg/L	113	0.026	0.024	0.130	0.010	0.016
Salinity	ppth	103	30.2133	32.2000	37.9000	15.6000	5.1488
Specific Conductivity	umho/cm	110	38944	49043	56789	281	11261
Temperature	deg C	124	25.8	26.2	32.3	17.7	3.5
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	113	5.7	5.7	18.5	2.0	3.3
Turbidity	NTU	113	2.9	3.0	7.6	1.1	1.3
Zinc	mg/L	8	0.0182	0.0100	0.1210	0.0016	0.0470

Lake Worth Lagoon North Watershed

SITE LWL-1		Date Range: 01/26/99 - 09/19/24 Samples: 176					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	16	0.0037	0.0036	0.0170	0.0017	0.0039
Cadmium	mg/L	16	0.0005	0.0004	0.0025	0.0002	0.0009
Chlorophyll-a (corrected)	ug/L	137	4.8	5.0	19.7	0.0	3.4
Copper	mg/L	40	0.0028	0.0029	0.0130	0.0013	0.0020
Dissolved Oxygen	mg/L	51	98.6	99.4	119.0	80.7	8.7
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	16	0.0030	0.0024	0.0246	0.0011	0.0076
Nitrogen, Ammonia	mg/L	162	0.010	0.010	0.260	0.001	0.028
Nitrogen, nitrate + nitrite	mg/L	144	0.006	0.003	0.120	0.003	0.020
Nitrogen, Total	mg/L	141	0.33	0.33	0.96	0.00	0.16
Nitrogen, Total Kjeldahl	mg/L	96	0.36	0.35	0.92	0.09	0.17
pH	None	169	7.9	7.9	8.9	7.2	0.2
Phosphorus, orthophosphate	mg/L	157	0.007	0.008	0.104	0.001	0.012
Phosphorus, Total	mg/L	155	0.032	0.033	0.320	0.002	0.028
Salinity	ppth	132	30.5047	31.2000	36.1000	21.1000	3.0725
Specific Conductivity	umho/cm	172	45938	47712	67154	4184	6149
Temperature	deg C	172	26.2	26.8	32.8	14.6	4.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	139	3.9	4.0	33.0	1.5	5.3
Turbidity	NTU	170	1.5	1.8	6.0	0.1	0.8
Zinc	mg/L	15	0.0054	0.0055	0.0110	0.0034	0.0023

SITE 11		Date Range: 01/26/99 - 09/11/24 Samples: 209					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	2	131	132	133	130	2
Arsenic	mg/L	48	0.0063	0.0036	2.5000	0.0017	0.6106
Cadmium	mg/L	61	0.0007	0.0004	0.2500	0.0001	0.0543
Chlorophyll-a (corrected)	ug/L	188	2.6	2.5	50.5	0.1	5.4
Copper	mg/L	67	0.0049	0.0034	6.2500	0.0013	0.8843
Dissolved Oxygen	mg/L	72	93.7	95.1	111.0	72.0	8.1
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	67	0.0038	0.0023	2.5000	0.0002	0.5198
Nitrogen, Ammonia	mg/L	200	0.033	0.030	0.250	0.007	0.041
Nitrogen, nitrate + nitrite	mg/L	180	0.035	0.029	1.200	0.007	0.150
Nitrogen, Total	mg/L	180	0.37	0.38	1.87	0.04	0.31
Nitrogen, Total Kjeldahl	mg/L	200	0.33	0.35	1.86	0.04	0.28
pH	None	198	7.9	7.9	12.1	6.6	0.4
Phosphorus, orthophosphate	mg/L	187	0.013	0.022	0.850	0.001	0.079
Phosphorus, Total	mg/L	198	0.031	0.033	1.110	0.001	0.086
Salinity	ppth	173	30.5117	31.3800	35.9700	9.5400	3.9840
Specific Conductivity	umho/cm	200	44074	48343	54441	425	8029
Temperature	deg C	188	26.0	26.5	32.4	16.5	3.9
Total Hardness	mg/L	6	5203	5365	6120	4190	716
Total Suspended Solids	mg/L	28	10.2	12.5	59.0	1.0	15.4
Turbidity	NTU	204	1.5	1.7	12.4	0.1	1.5
Zinc	mg/L	64	0.0121	0.0066	5.0000	0.0034	1.0631

Lake Worth Lagoon North Watershed

SITE 13		Date Range: 05/11/00 - 09/11/24 Samples: 203					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	2	136	136	140	132	6
Arsenic	mg/L	58	0.0044	0.0035	2.5000	0.0017	0.5576
Cadmium	mg/L	56	0.0005	0.0002	0.2500	0.0001	0.0566
Chlorophyll-a (corrected)	ug/L	189	3.2	3.6	50.5	0.1	5.3
Copper	mg/L	63	0.0034	0.0017	12.9000	0.0013	1.7568
Dissolved Oxygen	mg/L	72	92.9	93.6	113.8	59.9	10.8
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	64	0.0035	0.0023	2.5000	0.0002	0.5318
Nitrogen, Ammonia	mg/L	198	0.038	0.031	13.000	0.007	0.921
Nitrogen, nitrate + nitrite	mg/L	184	0.039	0.031	7.500	0.003	0.579
Nitrogen, Total	mg/L	178	0.41	0.45	7.60	0.05	0.65
Nitrogen, Total Kjeldahl	mg/L	200	0.36	0.42	1.83	0.04	0.31
pH	None	193	7.8	7.8	11.6	6.4	0.4
Phosphorus, orthophosphate	mg/L	192	0.013	0.019	0.650	0.001	0.054
Phosphorus, Total	mg/L	193	0.029	0.038	1.400	0.001	0.115
Salinity	ppth	174	25.2673	30.1550	38.3000	0.6300	7.6707
Specific Conductivity	umho/cm	192	38056	46708	59740	531	11744
Temperature	deg C	192	26.1	26.8	33.0	16.0	3.8
Total Hardness	mg/L	7	1114	4770	5840	0	2050
Total Suspended Solids	mg/L	25	11.2	8.5	56.0	2.4	17.0
Turbidity	NTU	196	1.7	2.0	13.0	0.1	1.4
Zinc	mg/L	59	0.0099	0.0055	5.0000	0.0034	1.1057

SITE LWL-4		Date Range: 04/05/04 - 09/19/24 Samples: 175					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	16	0.0033	0.0034	0.0090	0.0017	0.0024
Cadmium	mg/L	16	0.0003	0.0003	0.0017	0.0002	0.0005
Chlorophyll-a (corrected)	ug/L	140	2.3	2.1	14.7	0.1	2.5
Copper	mg/L	39	0.0019	0.0018	0.0036	0.0009	0.0007
Dissolved Oxygen	mg/L	54	100.6	99.5	132.3	72.5	8.8
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	16	0.0028	0.0024	0.0230	0.0005	0.0063
Nitrogen, Ammonia	mg/L	165	0.008	0.008	0.390	0.003	0.031
Nitrogen, nitrate + nitrite	mg/L	154	0.004	0.003	0.050	0.003	0.008
Nitrogen, Total	mg/L	152	0.26	0.25	0.74	0.11	0.14
Nitrogen, Total Kjeldahl	mg/L	94	0.29	0.27	0.73	0.13	0.15
pH	None	169	8.0	8.0	9.0	7.5	0.2
Phosphorus, orthophosphate	mg/L	146	0.003	0.003	0.183	0.001	0.016
Phosphorus, Total	mg/L	153	0.021	0.020	0.064	0.009	0.010
Salinity	ppth	137	32.6587	33.3000	36.6000	24.7000	2.6519
Specific Conductivity	umho/cm	172	49099	50525	80722	4594	6094
Temperature	deg C	172	25.8	26.7	32.2	15.2	4.2
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	142	5.7	6.0	52.0	1.5	6.9
Turbidity	NTU	171	2.1	2.3	10.3	0.3	1.7
Zinc	mg/L	15	0.0059	0.0055	0.0197	0.0034	0.0043

Lake Worth Lagoon Central Watershed

SITE LWL-8		Date Range: 01/26/99 - 09/18/24 Samples: 212					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	4	120	124	141	95	19
Arsenic	mg/L	14	0.0033	0.0035	0.0098	0.0017	0.0024
Cadmium	mg/L	26	0.0009	0.0007	0.0060	0.0002	0.0023
Chlorophyll-a (corrected)	ug/L	165	5.6	5.4	41.2	0.5	6.8
Copper	mg/L	46	0.0028	0.0017	0.0500	0.0012	0.0102
Dissolved Oxygen	mg/L	75	96.9	97.8	144.4	61.2	12.6
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	25	0.0035	0.0025	0.0530	0.0011	0.0102
Nitrogen, Ammonia	mg/L	196	0.021	0.021	3.046	0.001	0.230
Nitrogen, nitrate + nitrite	mg/L	188	0.021	0.027	0.430	0.003	0.056
Nitrogen, Total	mg/L	177	0.47	0.44	1.67	0.02	0.29
Nitrogen, Total Kjeldahl	mg/L	102	0.45	0.47	1.50	0.13	0.31
pH	None	205	7.8	7.9	10.6	1.9	0.5
Phosphorus, orthophosphate	mg/L	190	#NUM!	0.013	0.130	-0.001	0.015
Phosphorus, Total	mg/L	188	0.045	0.044	0.270	0.012	0.029
Salinity	ppth	157	25.8699	28.8000	36.4000	9.3200	6.6989
Specific Conductivity	umho/cm	209	38734	43270	63187	2762	10539
Temperature	deg C	208	25.8	26.7	34.1	12.1	4.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	176	8.3	8.5	82.0	1.0	10.8
Turbidity	NTU	208	4.7	5.3	14.7	0.7	2.7
Zinc	mg/L	26	0.0078	0.0055	0.1200	0.0034	0.0228

SITE 18C		Date Range: 01/30/04 - 09/09/24 Samples: 187					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	1	140	140	140	140	None
Arsenic	mg/L	60	0.0043	0.0031	2.5000	0.0017	0.5485
Cadmium	mg/L	59	0.0003	0.0002	0.2500	0.0001	0.0553
Chlorophyll-a (corrected)	ug/L	176	4.4	4.9	32.0	0.1	5.4
Copper	mg/L	59	0.0028	0.0013	4.8000	0.0007	0.7319
Dissolved Oxygen	mg/L	70	90.2	92.2	156.6	51.9	15.3
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	59	0.0033	0.0023	2.5000	0.0009	0.5533
Nitrogen, Ammonia	mg/L	173	0.041	0.038	0.310	0.009	0.052
Nitrogen, nitrate + nitrite	mg/L	172	0.061	0.064	1.677	0.006	0.237
Nitrogen, Total	mg/L	158	0.53	0.66	20.80	0.01	1.69
Nitrogen, Total Kjeldahl	mg/L	165	0.50	0.56	20.70	0.04	1.63
pH	None	169	7.8	7.8	9.4	7.0	0.2
Phosphorus, orthophosphate	mg/L	175	0.018	0.030	0.156	0.001	0.024
Phosphorus, Total	mg/L	170	0.046	0.068	1.280	0.001	0.108
Salinity	ppth	141	23.1632	28.0900	3388.0000	4.7400	283.3964
Specific Conductivity	umho/cm	158	34438	44230	59566	537	13865
Temperature	deg C	158	26.6	27.9	37.0	14.1	4.5
Total Hardness	mg/L	7	4686	5320	5800	2460	1126
Total Suspended Solids	mg/L	14	20.4	19.0	42.0	8.5	12.2
Turbidity	NTU	180	7.9	10.5	222.0	0.1	20.3
Zinc	mg/L	55	0.0092	0.0055	5.0000	0.0034	1.1443

Lake Worth Lagoon Central Watershed

SITE 18D		Date Range: 07/28/05 - 09/09/24 Samples: 173					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	59	0.0049	0.0036	2.5000	0.0017	0.5528
Cadmium	mg/L	59	0.0003	0.0002	0.2500	0.0001	0.0553
Chlorophyll-a (corrected)	ug/L	163	4.2	4.9	41.1	0.1	7.6
Copper	mg/L	59	0.0027	0.0013	3.0000	0.0013	0.4470
Dissolved Oxygen	mg/L	71	96.6	96.3	152.9	70.7	13.2
Enterococci	CRu/100mL	0	None	None	None	None	None
Lead	mg/L	59	0.0032	0.0023	2.5000	0.0002	0.5532
Nitrogen, Ammonia	mg/L	166	0.036	0.030	0.400	0.007	0.055
Nitrogen, nitrate + nitrite	mg/L	152	0.046	0.053	1.477	0.006	0.210
Nitrogen, Total	mg/L	144	0.50	0.50	3.87	0.03	0.45
Nitrogen, Total Kjeldahl	mg/L	162	0.43	0.47	3.86	0.04	0.38
pH	mg/L	143	7.9	7.9	9.3	7.3	0.2
Phosphorus, orthophosphate	mg/L	162	0.014	0.020	0.500	0.000	0.046
Phosphorus, Total	mg/L	164	0.050	0.058	1.620	0.001	0.150
Salinity	mg/L	134	26.4847	29.8300	352.2000	8.3300	28.9902
SpeCRfic Conductivity	mg/L	141	39759	45848	54782	3311	10836
Temperature	mg/L	146	26.7	27.2	263.7	16.6	20.1
Total Hardness	mg/L	8	4655	5440	5960	2320	1255
Total Suspended Solids	mg/L	12	20.6	19.2	126.0	7.3	32.0
Turbidity	mg/L	169	4.5	6.1	72.2	0.1	6.6
Zinc	mg/L	56	0.0106	0.0055	6.7000	0.0034	1.5939

SITE LWL-11		Date Range: 01/26/99 - 09/18/24 Samples: 190					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	14	0.0038	0.0035	0.0173	0.0017	0.0052
Cadmium	mg/L	14	0.0003	0.0003	0.0018	0.0002	0.0005
Chlorophyll-a (corrected)	ug/L	146	5.7	6.3	59.2	0.0	7.0
Copper	mg/L	37	0.0019	0.0017	0.0160	0.0008	0.0031
Dissolved Oxygen	mg/L	57	87.4	96.5	149.2	43.2	22.2
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	14	0.0032	0.0024	0.0198	0.0011	0.0051
Nitrogen, Ammonia	mg/L	173	0.014	0.011	0.410	0.001	0.045
Nitrogen, nitrate + nitrite	mg/L	167	0.011	0.007	0.194	0.003	0.044
Nitrogen, Total	mg/L	161	0.39	0.46	1.54	0.00	0.28
Nitrogen, Total Kjeldahl	mg/L	92	0.47	0.49	1.40	0.05	0.27
pH	None	186	7.9	8.0	10.7	1.8	0.5
Phosphorus, orthophosphate	mg/L	172	0.007	0.009	0.086	0.001	0.012
Phosphorus, Total	mg/L	168	0.035	0.042	0.180	0.001	0.024
Salinity	ppth	145	27.4576	29.7000	36.4000	11.3000	5.8874
Specific Conductivity	umho/cm	187	41274	45280	65170	3117	9650
Temperature	deg C	188	26.1	26.9	233.0	13.0	15.7
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	153	7.8	8.0	65.0	1.0	7.9
Turbidity	NTU	187	3.7	4.6	29.5	0.1	3.5
Zinc	mg/L	14	0.0054	0.0055	0.0110	0.0034	0.0024

ICWW-S Watershed

SITE LWL-13		Date Range: 04/05/04 - 09/17/24 Samples: 183					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	15	0.0034	0.0034	0.0095	0.0017	0.0024
Cadmium	mg/L	15	0.0003	0.0003	0.0016	0.0002	0.0004
Chlorophyll-a (corrected)	ug/L	148	4.9	4.3	39.5	1.6	5.4
Copper	mg/L	39	0.0017	0.0017	0.0050	0.0009	0.0008
Dissolved Oxygen	mg/L	56	83.9	92.8	141.8	29.3	21.4
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	15	0.0032	0.0025	0.0230	0.0005	0.0074
Nitrogen, Ammonia	mg/L	176	0.013	0.010	0.500	0.002	0.052
Nitrogen, nitrate + nitrite	mg/L	165	0.010	0.005	0.200	0.003	0.042
Nitrogen, Total	mg/L	157	0.37	0.36	1.72	0.00	0.27
Nitrogen, Total Kjeldahl	mg/L	95	0.39	0.35	1.40	0.16	0.26
pH	None	179	8.0	8.0	9.2	7.0	0.2
Phosphorus, orthophosphate	mg/L	171	0.006	0.006	0.067	0.001	0.011
Phosphorus, Total	mg/L	163	0.032	0.030	0.170	0.013	0.019
Salinity	ppth	143	29.1097	31.3000	37.2000	14.4000	5.3762
Specific Conductivity	umho/cm	181	44306	47430	385822	3532	26758
Temperature	deg C	181	25.7	26.7	33.3	11.7	4.3
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	148	5.9	6.0	28.0	1.0	4.9
Turbidity	NTU	170	2.8	2.8	12.0	0.7	1.8
Zinc	mg/L	14	0.0054	0.0055	0.0110	0.0034	0.0024

SITE LWL-18		Date Range: 05/11/00 - 09/17/24 Samples: 190					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	16	0.0039	0.0025	0.0170	0.0017	0.0039
Cadmium	mg/L	24	0.0014	0.0006	0.0050	0.0002	0.0019
Chlorophyll-a (corrected)	ug/L	149	8.1	5.2	58.1	0.0	8.1
Copper	mg/L	46	0.0055	0.0033	0.0500	0.0013	0.0076
Dissolved Oxygen	mg/L	61	83.6	87.5	131.9	0.0	24.3
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	23	0.0048	0.0025	0.0250	0.0008	0.0058
Nitrogen, Ammonia	mg/L	179	0.032	0.020	0.410	0.003	0.042
Nitrogen, nitrate + nitrite	mg/L	171	0.032	0.016	0.210	-0.005	0.040
Nitrogen, Total	mg/L	162	0.48	0.41	1.51	0.00	0.25
Nitrogen, Total Kjeldahl	mg/L	106	0.86	0.44	39.00	0.07	3.75
pH	None	184	7.9	7.9	9.1	6.5	0.3
Phosphorus, orthophosphate	mg/L	176	0.021	0.014	0.160	0.001	0.023
Phosphorus, Total	mg/L	171	0.049	0.042	0.230	0.001	0.031
Salinity	ppth	142	28.5463	30.2500	36.7000	9.3700	5.9880
Specific Conductivity	umho/cm	186	43495	45725	64472	3790	9357
Temperature	deg C	185	26.8	27.0	33.6	16.3	4.0
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	155	9.8	8.0	56.0	1.0	7.9
Turbidity	NTU	176	3.9	3.4	17.0	0.7	2.1
Zinc	mg/L	23	0.0170	0.0055	0.1160	0.0019	0.0253

Hillsboro Watershed

SITE 1		Date Range: 02/22/06 - 05/20/24 Samples: 70					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	58	5.4	5.6	27.1	1.2	4.3
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	21	58.9	64.8	83.9	34.6	15.7
Enterococci	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	17	0.044	0.066	0.143	0.008	0.038
Nitrogen, nitrate + nitrite	mg/L	19	0.037	0.057	0.488	0.001	0.108
Nitrogen, Total	mg/L	56	0.65	0.68	1.75	0.05	0.40
Nitrogen, Total Kjeldahl	mg/L	19	0.47	0.58	1.65	0.04	0.51
pH	None	16	7.5	7.5	7.7	7.1	0.1
Phosphorus, orthophosphate	mg/L	11	0.029	0.054	0.267	0.003	0.074
Phosphorus, Total	mg/L	52	0.094	0.102	0.542	0.013	0.076
Salinity	ppth	67	9.9158	17.5000	33.7000	0.1810	9.6904
Specific Conductivity	umho/cm	64	17270	28400	49200	532	14843
Temperature	deg C	16	26.7	27.9	31.6	20.1	3.6
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	3	1.0	1.0	1.0	1.0	0.0
Turbidity	NTU	30	1.3	1.7	4.7	0.1	1.1
Zinc	mg/L	0	None	None	None	None	None

SITE 2		Date Range: 02/22/06 - 09/10/24 Samples: 77					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	72	6.0	6.0	37.2	0.8	7.8
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	30	67.4	76.6	100.3	34.8	20.5
Enterococci	cfu/100mL	11	10	22	168	1	49
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	24	0.037	0.041	0.159	0.004	0.039
Nitrogen, nitrate + nitrite	mg/L	26	0.034	0.036	0.315	0.004	0.076
Nitrogen, Total	mg/L	64	0.86	1.17	1.68	0.04	0.42
Nitrogen, Total Kjeldahl	mg/L	26	0.48	0.67	1.53	0.04	0.48
pH	None	25	7.7	7.7	8.0	7.1	0.3
Phosphorus, orthophosphate	mg/L	18	0.044	0.079	0.278	0.003	0.077
Phosphorus, Total	mg/L	57	0.078	0.096	0.270	0.013	0.058
Salinity	ppth	47	0.7480	0.3200	29.8500	0.2000	9.7899
Specific Conductivity	umho/cm	72	1013	640	46400	66	12778
Temperature	deg C	25	25.9	26.9	32.3	17.7	4.3
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	3	1.0	1.0	1.0	1.0	0.0
Turbidity	NTU	36	1.0	1.4	3.1	0.1	0.7
Zinc	mg/L	0	None	None	None	None	None

Hillsboro Watershed

SITE 3		Date Range: 02/22/06 - 05/22/24 Samples: 69					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	62	6.9	8.0	33.2	0.8	7.9
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	21	46.3	47.9	91.0	17.0	20.3
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	15	0.051	0.065	0.282	0.004	0.079
Nitrogen, nitrate + nitrite	mg/L	17	0.039	0.036	0.172	0.004	0.061
Nitrogen, Total	mg/L	53	1.13	1.35	1.79	0.04	0.36
Nitrogen, Total Kjeldahl	mg/L	17	0.66	1.06	1.67	0.04	0.53
pH	None	16	7.5	7.5	7.8	7.3	0.1
Phosphorus, orthophosphate	mg/L	9	0.014	0.012	0.128	0.003	0.048
Phosphorus, Total	mg/L	48	0.078	0.090	0.257	0.013	0.056
Salinity	ppth	40	0.3188	0.3100	2.0000	0.2100	0.2721
Specific Conductivity	umho/cm	63	638	666	834	413	103
Temperature	deg C	16	26.8	27.8	31.6	20.4	3.3
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	27	0.8	1.0	4.2	0.1	0.9
Zinc	mg/L	0	None	None	None	None	None

SITE S39		Date Range: 01/03/00 - 09/03/24 Samples: 291					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	243	73	120	347	1	60
Arsenic	mg/L	2	2.9626	3.1535	4.2340	2.0730	1.5281
Cadmium	mg/L	2	0.1500	0.1500	0.1500	0.1500	0.0000
Chlorophyll-a (corrected)	ug/L	0	None	None	None	None	None
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	68	72.3	75.8	95.6	29.2	14.1
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	2	0.4000	0.4000	0.4000	0.4000	0.0000
Nitrogen, Ammonia	mg/L	247	0.015	0.017	0.167	0.003	0.020
Nitrogen, nitrate + nitrite	mg/L	289	0.010	0.009	0.875	0.002	0.078
Nitrogen, Total	mg/L	79	0.43	1.05	1.70	0.01	0.53
Nitrogen, Total Kjeldahl	mg/L	224	1.14	1.32	2.71	0.03	0.44
pH	None	290	7.7	7.7	8.5	6.4	0.3
Phosphorus, orthophosphate	mg/L	0	None	None	None	None	None
Phosphorus, Total	mg/L	290	0.016	0.016	0.169	0.001	0.018
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	0	None	None	None	None	None
Temperature	deg C	290	25.5	26.5	32.2	13.7	4.0
Total Hardness	mg/L	179	99	141	354	0	64
Total Suspended Solids	mg/L	130	1.9	1.5	11.0	0.5	1.5
Turbidity	NTU	264	1.1	1.0	11.3	0.1	1.5
Zinc	mg/L	2	2.0000	2.0000	2.0000	2.0000	0.0000

L-8 Watershed

SITE Culv10a		Date Range: 01/10/00 - 04/17/23 Samples: 268					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	265	116	113	375	1	51
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	12	2.3	3.1	10.3	0.5	3.5
Copper	mg/L	5	2.3733	3.0270	4.5710	0.6000	1.4254
Dissolved Oxygen	mg/L	257	9.6	7.7	101.6	0.5	28.6
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	5	0.8600	0.4000	4.7300	0.4000	1.8752
Nitrogen, Ammonia	mg/L	265	0.041	0.035	3.074	0.005	0.300
Nitrogen, nitrate + nitrite	mg/L	265	0.199	0.296	6.557	0.002	0.471
Nitrogen, Total	mg/L	58	2.00	1.78	4.95	0.89	0.85
Nitrogen, Total Kjeldahl	mg/L	209	1.52	1.48	4.78	0.03	0.70
pH	None	264	7.8	7.9	9.2	6.4	0.4
Phosphorus, orthophosphate	mg/L	265	0.049	0.054	0.177	0.002	0.026
Phosphorus, Total	mg/L	265	0.146	0.150	0.669	0.002	0.099
Salinity	ppth	3	0.1598	0.1600	0.1700	0.1500	0.0100
Specific Conductivity	umho/cm	264	503	458	3390	83	360
Temperature	deg C	264	24.2	25.7	31.7	9.0	4.6
Total Hardness	mg/L	89	156	144	774	46	99
Total Suspended Solids	mg/L	265	24.6	26.0	360.0	0.5	53.2
Turbidity	NTU	265	27.8	29.7	284.0	0.1	46.7
Zinc	mg/L	5	3.1486	2.0000	8.2950	2.0000	2.7690

S-2-6-7 Watershed

SITE S-2		Date Range: 01/25/99 - 09/16/24 Samples: 304					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	77	167	125	425	1	112
Arsenic	mg/L	13	0.0027	0.0040	0.0076	0.0008	0.0023
Cadmium	mg/L	12	0.0002	0.0002	0.0005	0.0002	0.0001
Chlorophyll-a (corrected)	ug/L	7	2.6	3.1	52.1	0.5	18.8
Copper	mg/L	13	0.0012	0.0012	0.0030	0.0006	0.0010
Dissolved Oxygen	% Saturation	66	65.1	76.4	115.4	2.2	20.9
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	13	0.0004	0.0004	0.0004	0.0004	0.0000
Nitrogen, Ammonia	mg/L	298	0.104	0.104	2.057	0.003	0.366
Nitrogen, nitrate + nitrite	mg/L	298	0.185	0.245	3.510	0.002	0.519
Nitrogen, Total	mg/L	75	1.87	1.80	5.80	0.03	1.22
Nitrogen, Total Kjeldahl	mg/L	218	1.62	1.60	12.81	0.03	1.65
pH	None	296	7.7	7.7	8.7	6.8	0.3
Phosphorus, orthophosphate	mg/L	298	0.035	0.046	0.317	0.001	0.049
Phosphorus, Total	mg/L	299	0.094	0.106	1.653	0.001	0.144
Salinity	ppth	2	0.7200	0.7500	0.9600	0.5400	0.2970
Specific Conductivity	umho/cm	296	740	633	2079	145	443
Temperature	deg C	296	24.9	25.8	33.1	13.0	4.3
Total Hardness	mg/L	27	239	272	552	125	147
Total Suspended Solids	mg/L	298	6.2	6.0	131.2	0.5	12.4
Turbidity	NTU	298	6.2	6.6	70.4	0.1	9.9
Zinc	mg/L	13	0.0022	0.0020	0.0066	0.0020	0.0013

SITE 39		Date Range: 04/18/17 - 09/25/24 Samples: 44					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	3	306	417	454	151	165
Arsenic	mg/L	42	0.0043	0.0036	2.2350	0.0007	0.4809
Cadmium	mg/L	42	0.0002	0.0002	0.1950	0.0001	0.0420
Chlorophyll-a (corrected)	ug/L	43	3.5	4.1	25.3	0.5	5.2
Copper	mg/L	42	0.0019	0.0013	0.9750	0.0003	0.2098
Dissolved Oxygen	% Saturation	44	50.5	67.1	84.6	2.2	22.7
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	42	0.0022	0.0023	2.1000	0.0001	0.4522
Nitrogen, Ammonia	mg/L	44	0.101	0.081	2.600	0.015	0.574
Nitrogen, nitrate + nitrite	mg/L	41	0.166	0.180	1.400	0.017	0.312
Nitrogen, Total	mg/L	34	1.37	1.56	4.82	0.06	1.24
Nitrogen, Total Kjeldahl	mg/L	44	1.00	1.20	4.80	0.03	1.08
pH	None	42	7.8	7.8	9.2	7.2	0.3
Phosphorus, orthophosphate	mg/L	43	0.054	0.069	0.340	0.002	0.072
Phosphorus, Total	mg/L	38	0.092	0.110	0.450	0.003	0.083
Salinity	ppth	3	31.8320	31.8000	34.5000	29.4000	2.5515
Specific Conductivity	umho/cm	44	923	764	52500	374	10501
Temperature	deg C	44	25.0	25.8	34.1	17.3	4.5
Total Hardness	mg/L	40	259	219	781	129	184
Total Suspended Solids	mg/L	41	6.6	5.5	43.6	2.5	10.1
Turbidity	NTU	44	5.6	5.7	45.0	0.5	9.7
Zinc	mg/L	42	0.0057	0.0055	0.0202	0.0015	0.0027

S-2-6-7 Watershed

SITE 43		Date Range: 04/18/17 - 09/25/24 Samples: 43					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	2	403	404	427	380	33
Arsenic	mg/L	41	0.0039	0.0036	2.2350	0.0007	0.3484
Cadmium	mg/L	41	0.0002	0.0002	0.1950	0.0001	0.0304
Chlorophyll-a (corrected)	ug/L	42	6.4	8.5	61.2	0.5	12.3
Copper	mg/L	41	0.0016	0.0013	0.9750	0.0003	0.1521
Dissolved Oxygen	% Saturation	43	62.2	70.1	166.2	15.4	30.9
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	41	0.0026	0.0023	2.1000	0.0007	0.4575
Nitrogen, Ammonia	mg/L	43	0.097	0.078	1.700	0.018	0.441
Nitrogen, nitrate + nitrite	mg/L	43	0.203	0.240	1.400	0.008	0.348
Nitrogen, Total	mg/L	37	1.80	1.49	4.10	0.75	1.02
Nitrogen, Total Kjeldahl	mg/L	43	1.55	1.30	3.60	0.73	0.77
pH	None	41	7.8	7.8	9.1	7.1	0.4
Phosphorus, orthophosphate	mg/L	42	0.049	0.051	0.200	0.002	0.057
Phosphorus, Total	mg/L	43	0.117	0.110	0.300	0.036	0.056
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	43	731	588	2272	395	594
Temperature	ECg C	43	25.0	25.5	32.8	17.6	4.5
Total Hardness	mg/L	40	260	212	630	138	163
Total SuspenECd Solids	mg/L	41	5.6	5.5	68.0	0.8	11.4
Turbidity	NTU	43	6.3	6.0	35.0	0.5	8.9
Zinc	mg/L	41	0.0057	0.0055	0.0200	0.0015	0.0030

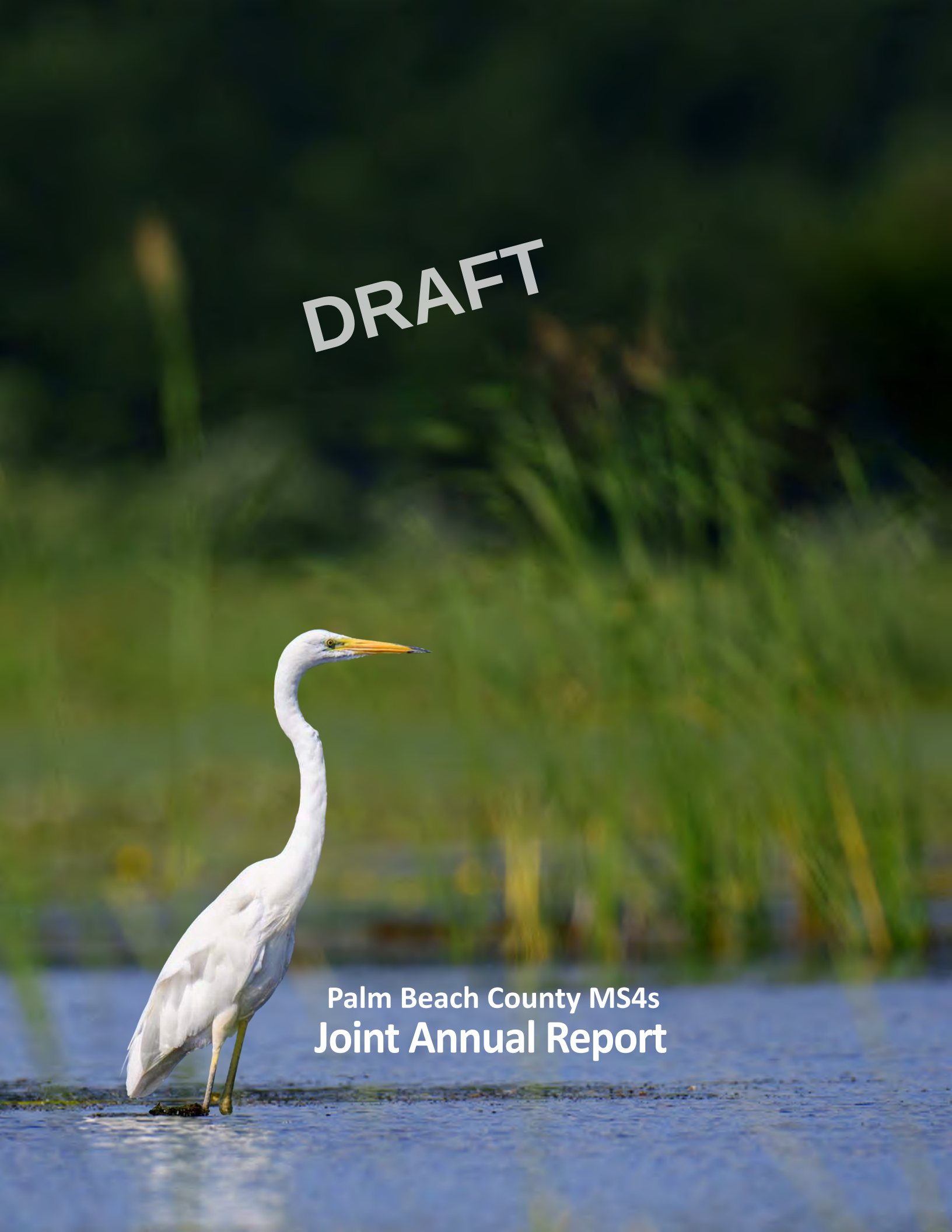
SITE M Canal		Date Range: 03/15/11 - 09/10/24 Samples: 118					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	58	3.5	4.4	24.3	0.5	4.8
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	5	96.6	96.6	118.5	78.0	14.7
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	0	None	None	None	None	None
Nitrogen, nitrate + nitrite	mg/L	65	0.115	0.170	3.600	0.005	0.582
Nitrogen, Total	mg/L	68	1.32	1.25	5.20	0.66	0.84
Nitrogen, Total Kjeldahl	mg/L	64	1.09	1.10	3.00	0.30	0.47
pH	None	69	7.8	7.8	8.6	6.8	0.3
Phosphorus, orthophosphate	mg/L	0	None	None	None	None	None
Phosphorus, Total	mg/L	66	0.092	0.093	0.600	0.018	0.094
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	0	None	None	None	None	None
Temperature	deg C	69	26.7	27.6	33.2	18.4	3.8
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	69	13.5	12.0	152.0	2.5	26.8
Zinc	mg/L	0	None	None	None	None	None

SITE Control 4		Date Range: 04/15/11 - 09/10/24 Samples: 148					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	79	2.3	2.1	18.7	0.5	4.0
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	135	12.1	5.9	122.7	0.1	35.9
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	0	None	None	None	None	None
Nitrogen, nitrate + nitrite	mg/L	89	0.052	0.030	0.530	0.008	0.156
Nitrogen, Total	mg/L	89	1.03	1.02	2.09	0.04	0.32
Nitrogen, Total Kjeldahl	mg/L	79	0.91	0.96	1.70	0.04	0.23
pH	None	148	7.5	7.5	8.7	6.2	0.4
Phosphorus, orthophosphate	mg/L	65	0.015	0.013	0.140	0.002	0.029
Phosphorus, Total	mg/L	82	0.055	0.050	0.210	0.015	0.043
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	102	382	397	1697	0	244
Temperature	deg C	148	26.0	26.6	34.1	18.3	3.5
Total Hardness	mg/L	67	141	142	252	76	40
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	146	5.7	5.1	48.4	0.9	10.1
Zinc	mg/L	0	None	None	None	None	None

WPBWS Watershed

SITE Lake Mangonia		Date Range: 03/15/11 - 09/10/24 Samples: 91					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	78	4.0	5.2	34.6	0.5	6.2
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	80	18.8	8.1	112.0	5.1	43.5
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	0	None	None	None	None	None
Nitrogen, nitrate + nitrite	mg/L	78	0.021	0.015	1.300	0.005	0.171
Nitrogen, Total	mg/L	81	0.84	0.80	2.40	0.60	0.26
Nitrogen, Total Kjeldahl	mg/L	80	0.80	0.78	1.20	0.56	0.14
pH	None	91	8.2	8.2	8.7	7.2	0.3
Phosphorus, orthophosphate	mg/L	48	0.005	0.004	0.180	0.002	0.026
Phosphorus, Total	mg/L	78	0.024	0.025	0.200	0.002	0.021
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	91	495	480	1226	274	171
Temperature	deg C	91	25.9	25.5	31.8	19.3	3.5
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	91	2.9	2.8	8.9	0.6	1.6
Zinc	mg/L	0	None	None	None	None	None

SITE Clear Lake		Date Range: 03/15/11 - 09/10/24 Samples: 91					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	11	1.9	1.4	8.8	0.5	3.4
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	21	7.9	7.8	10.0	6.6	0.8
E. Coli	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	0	None	None	None	None	None
Nitrogen, nitrate + nitrite	mg/L	18	0.053	0.061	1.800	0.013	0.439
Nitrogen, Total	mg/L	21	0.80	0.74	2.30	0.21	0.47
Nitrogen, Total Kjeldahl	mg/L	18	0.66	0.66	1.50	0.18	0.29
pH	None	21	8.3	8.3	8.7	7.9	0.2
Phosphorus, orthophosphate	mg/L	0	None	None	None	None	None
Phosphorus, Total	mg/L	21	0.012	0.012	0.025	0.001	0.009
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	21	495	496	850	304	152
Temperature	deg C	21	25.9	27.3	30.8	21.0	3.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	21	1.3	1.3	2.5	0.6	0.5
Zinc	mg/L	0	None	None	None	None	None



Palm Beach County MS4s

Joint Annual Report