

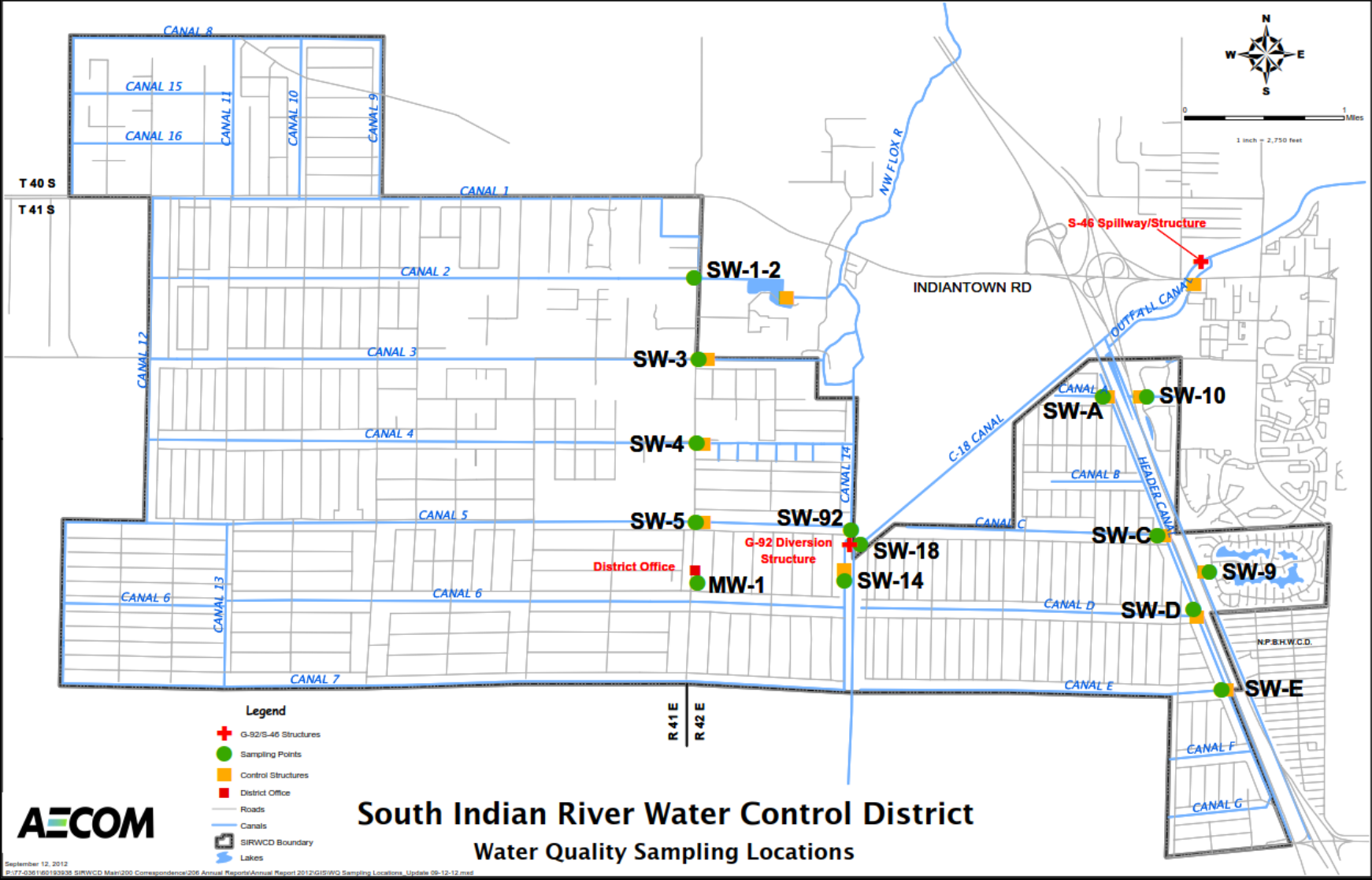
Water Quality Sampling

July 21, 2022

Agenda

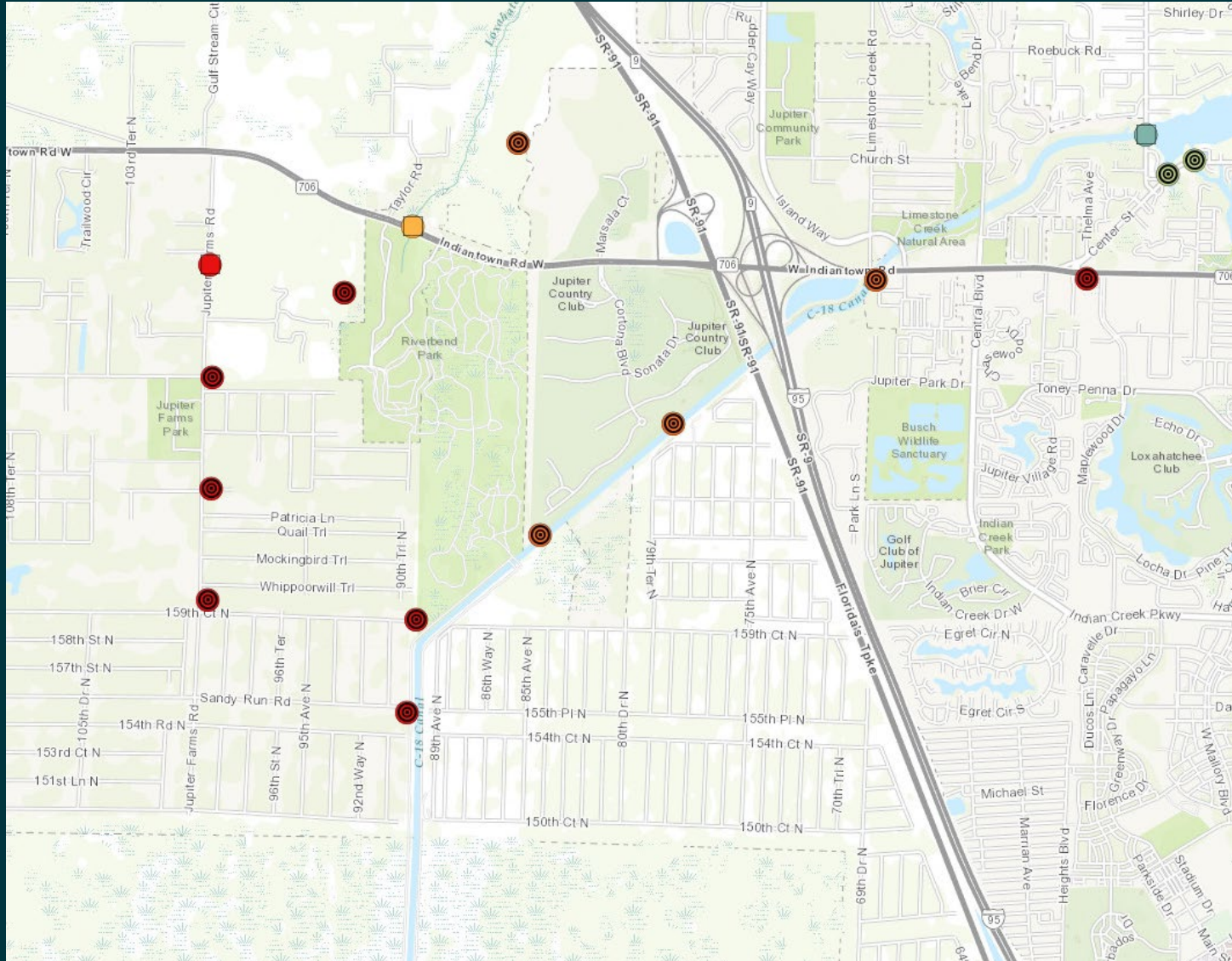
- SIRWCD Water Quality Monitoring
- Loxahatchee River District Water Quality Monitoring
- District and LRD Testing Parameter Comparison
- E. Coli vs Fecal Coliform Costs
- NPDES Permit/Water Quality Assessment

South Indian River Water Control District Water Quality Monitoring Locations



September 12, 2012
 0:177-036160183938 SIRWCD Map(200 Correspondence/206 Annual Report/Annual Report 2012/GIS/WQ Sampling Locations Update 09-12-12.mxd

Loxahatchee River District Water Quality Monitoring Locations



Legend

Oyster Restoration Sites

Seagrass Study Sites

WATER QUALITY SITES

BI-MONTHLY
 MONTHLY

RIVER SEGMENTS FOR WATER QUALITY

- MARINE
- POLYHALINE
- BRACKISH TRIBUTARIES
- MESO/OLIGOHALINE
- WILD AND SCENIC
- FRESHWATER TRIBUTARIES
- FRESHWATER CANAL

Loxahatchee River District Water Quality Monitoring - Results



Loxahatchee River District
WildPine Laboratory
www.loxahatcheeriver.org

RiverKeeper Water Quality Monitoring Program Monthly Average Stoplight Maps

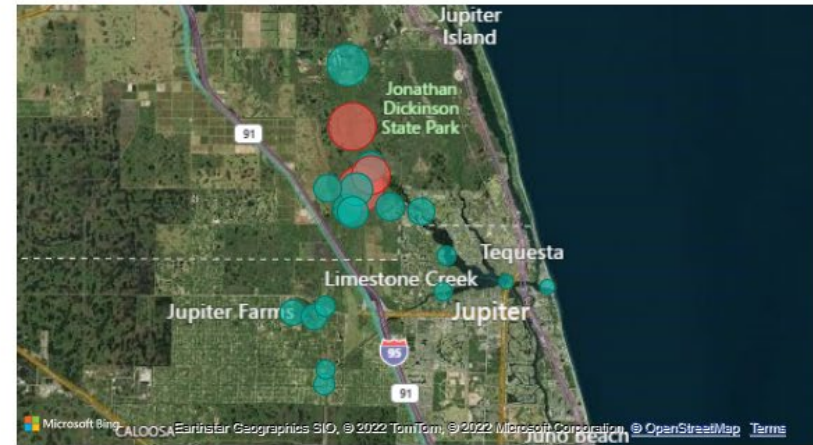
Nutrients - Total Nitrogen, Total Phosphorus, and Chlorophyll a
Scored to EPA/DEP Numeric Nutrient Criteria for each Site

Month-Year

- July 2022
- June 2022
- May 2022
- April 2022
- March 2022
- February 2022
- January 2022
- December 2021
- November 2021
- October 2021
- September 2021
- August 2021
- July 2021
- June 2021
- May 2021
- April 2021
- March 2021
- February 2021

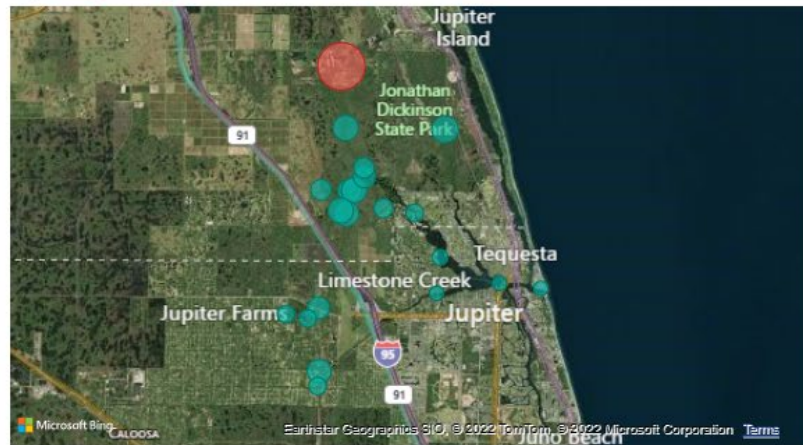
Total Phosphorus (mg/L)

TP_Score ● GOOD ● POOR



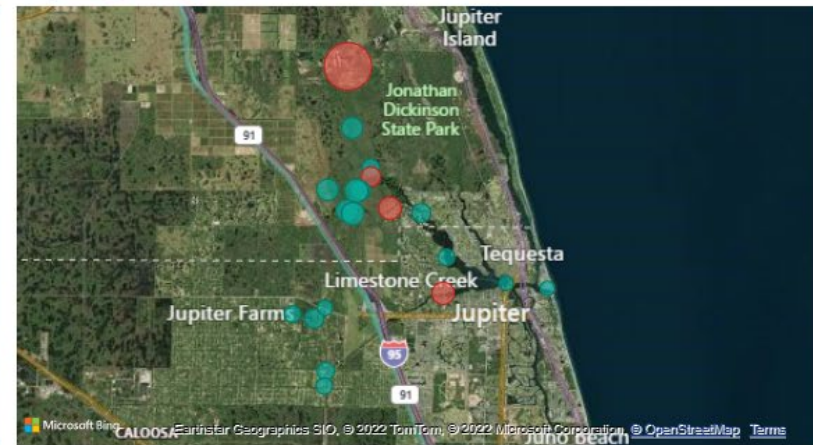
Total Nitrogen (mg/L)

TN_Score ● GOOD ● POOR



Chlorophyll a (ug/L)

CHL_Score ● GOOD ● POOR



Loxahatchee River District Water Quality Monitoring – Results 2



Loxahatchee River District
WildPine Laboratory
www.loxahatcheeriver.org

RiverKeeper Water Quality Monitoring Program Monthly Average Stoplight Maps

Bacteria - Enterococci, Fecal Coliform & E. coli

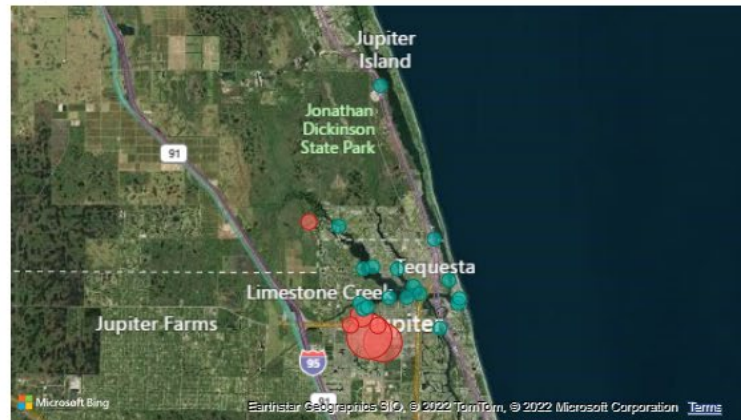
Scored to EPA/DEP Water Quality Criteria

Month-Year

- July 2022
- June 2022
- May 2022
- April 2022
- March 2022
- February 2022
- January 2022
- December 2021
- November 2021
- October 2021
- September 2021
- August 2021
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- March 2021
- February 2021

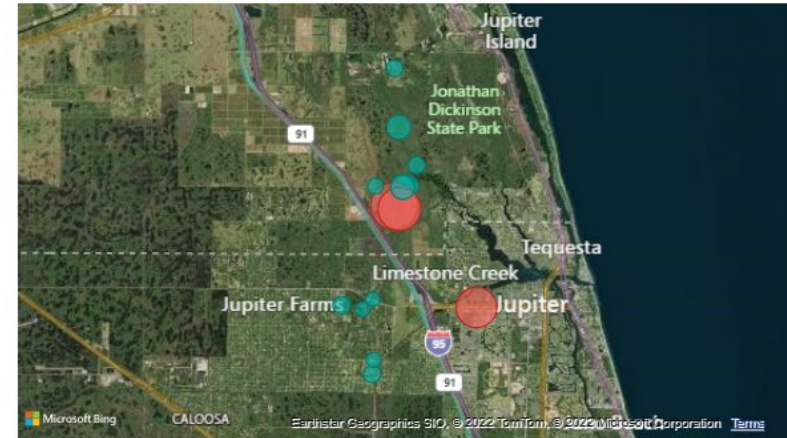
Enterococci Bacteria - Criteria: 130 MPN/100mL

ENT_Score ● GOOD ● POOR



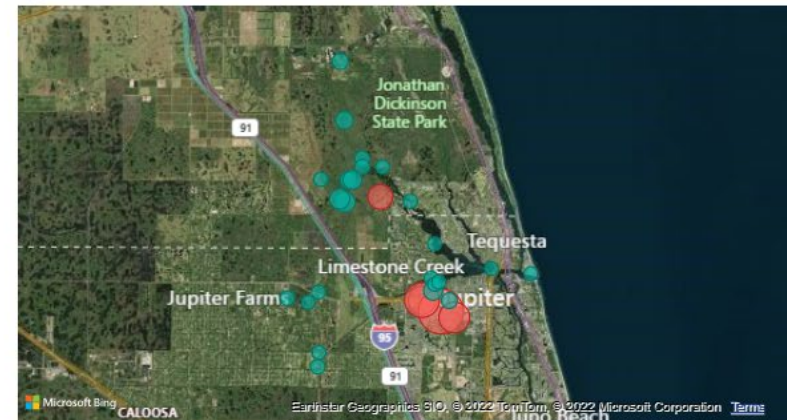
E. coli Bacteria - Criteria: 410 MPN/100mL

ECOL_Score ● GOOD ● POOR



Fecal Coliform Bacteria - Criteria: 800 MPN/100mL

FC_Score ● GOOD ● POOR



District Water Quality Testing Parameter Comparison

South Indian River Water Control District

Alkalinity	Magnesium
Ammonia	Nitrate-Nitrite
Arsenic	Orthophosphate
Cadmium	pH
Calcium	Specific Conductivity
Chlorophyll-A Corrected	Total Kjeldahl Nitrogen
Color	Total Nitrogen
Copper	Total Phosphorus
Disolved Oxygen	Total Suspended Solids
Fecal Coliform	Turbidity
Hardness	Water Temperature
Lead	Zinc

Loxahatchee River District

Alkalinity	Orthophosphate
Chlorophyll-A Corrected	pH
Chlorophyll-A Uncorrected	Salinity
Color	Water Temperature
Special Conductivity	Total Kjeldahl Nitrogen
Dissolved Oxygen	Total Organic Carbon
E Coli	Total Nitrogen
Fecal Coliform	Total Phosphorus
Nitrate	Total Suspended Solids
Nitrite-Nitrate	Turbidity
Organic Nitrogen	

E. Coli vs Fecal Coliform

The cost of E. Coli testing by Pace Analytical Labs is \$240 per month, the same as Fecal Coliform.

Product	Line-Item Description	Total-Price
Total Metals (water)	As, Cd, Ca, Cu, Pb, Mg, Zn	\$448.00
Hardness, Total (water) (Calculation Only)	Calculation	\$84.00
Color, True		\$120.00
Alkalinity, as CaCO3 (carbonate) (water)		\$120.00
Solids, Total Dissolved (TDS)		\$120.00
Phosphorus, Ortho (water)		\$144.00
Phosphorus, Total (water)		\$144.00
Bacteria, Fecal Coliforms (Membrane Filtration) (water)	8-hour hold time	\$240.00
Chlorophyll/ Pheophytin		\$440.00
Miscellaneous	E. Coli by SM9223/ Quanti-Tray method 8-hour hold time	\$240.00
Environmental Impact Fee (Per Invoice)		\$15.00
Sample Disposal	Per sample	\$24.00
Grand Total (with Surcharge)		\$2,301.23

Permit Fee Comparison

	SIRWCD	NPBCID	ITID	LWDD	NSLRWCD	EAA WCDs	Recommended SIRWCD Fees
Minor Activities Involving Single Family Lots up to 2.5 Acres	\$25	\$250	\$250	\$300 (irrigation)/ \$500 (drainage connection)	\$50	\$0	\$250
Activities Affecting Commercial Use or Parcels of Land larger than 2.5 Acres	\$75	\$500 (including gov. and utility companies)	\$500	\$300 (irrigation)/ \$500 (drainage connection)	see Review Deposits below	\$0	\$500
Underground or Overhead Utilities	\$250	\$500	Overhead Utility Permit - \$500; \$1,000 for first 1000 LF, 500 for each 1000 LF after	\$710 per pole or \$2-\$16/LF with \$300 min fee	\$500/\$200 each pole, guy wire/anchor units, valve boxes, MH in District R/W	\$0	see below
Culvert Connections, Culvert Crossings, Bridge Crossings, other Major Activities	\$300		see Review Deposits and Reimbursement below	\$300 to \$500	\$50-\$150	\$0	see below
Land Development Projects	Non-standard/ Reimbursement	see Reimb. below	see Review Deposits and Reimbursement below	\$500 per drainage connection	see Review Deposits below	\$0	see below
Resubmittal/Modification Fee	\$0	\$250	\$250	\$300		\$0	\$250
Permit Extensions	\$0			\$300	\$50/ 1-yr ext.	\$0	\$250
Expired Permits	\$0		\$500			\$0	\$500
Review Deposit	\$0	N/A	\$2,000 for Utility or R/W Easement Permit		<10 ac. -\$2,000 >10-40 acres - \$2500 Culvert Crossings \$2,000 Utility Construction - \$2000	\$0	\$0
Review Reimbursement	only for land dev. projects	100% (invoiced for actual amt if <\$2k or in \$2k increments, and inv'd prior to permit issuance)	Final fee based on actual engineering and/or legal costs; Interim invoices sent in \$1,000 increment			100% engineering fee reimbursement at time of permit issuance.	100% engineering fee reimbursement at time of permit issuance.
Inspection Fees	0	\$250 min. or 3% of the Engineer's Cost Estimate, whichever is greater; unused balance returned at project close				\$0	\$250 min. or 3% of the Engineer's Cost Estimate, whichever is greater; unused balance returned at project close

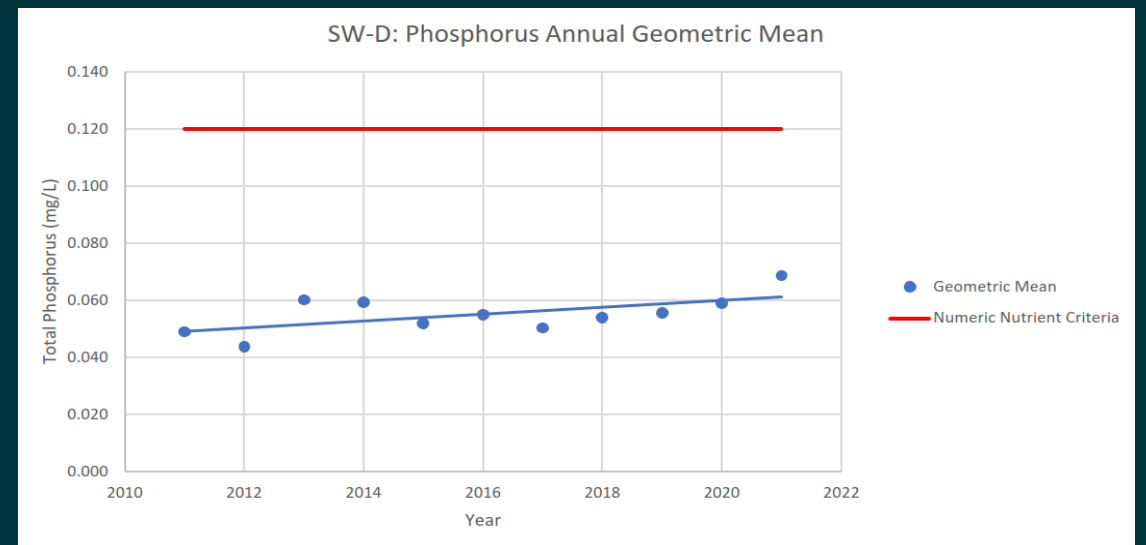
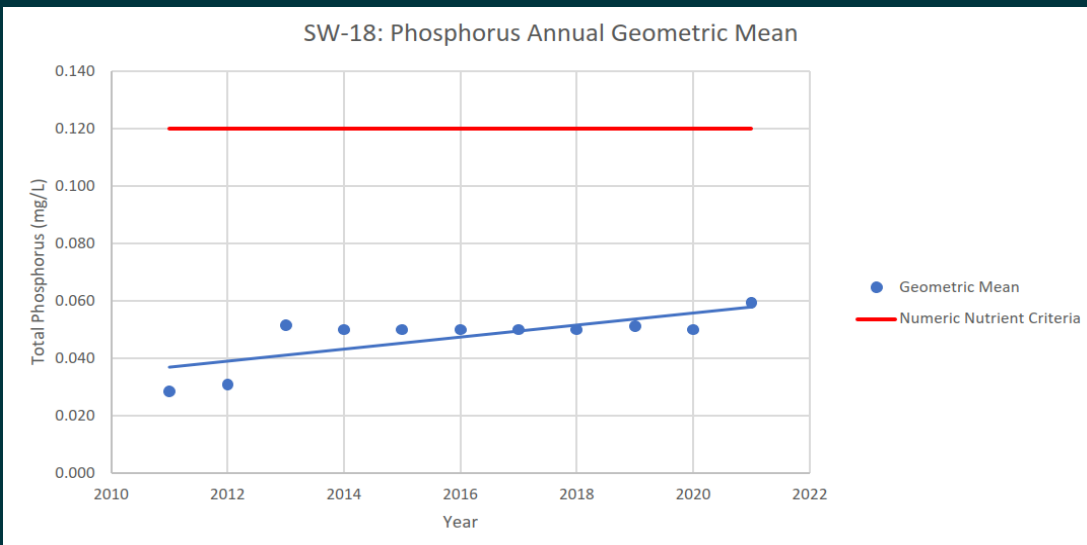
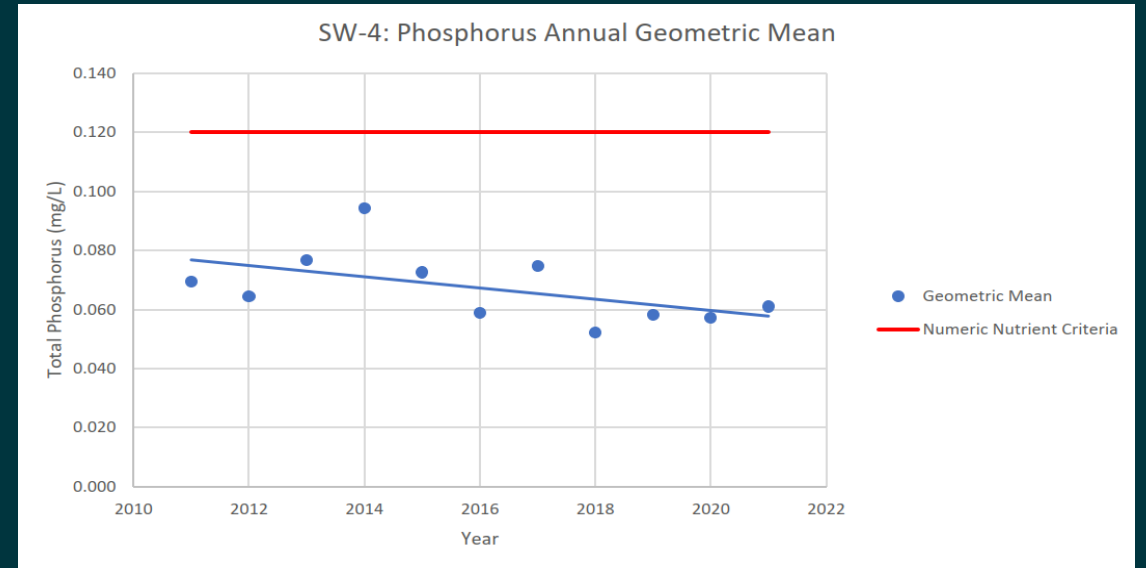
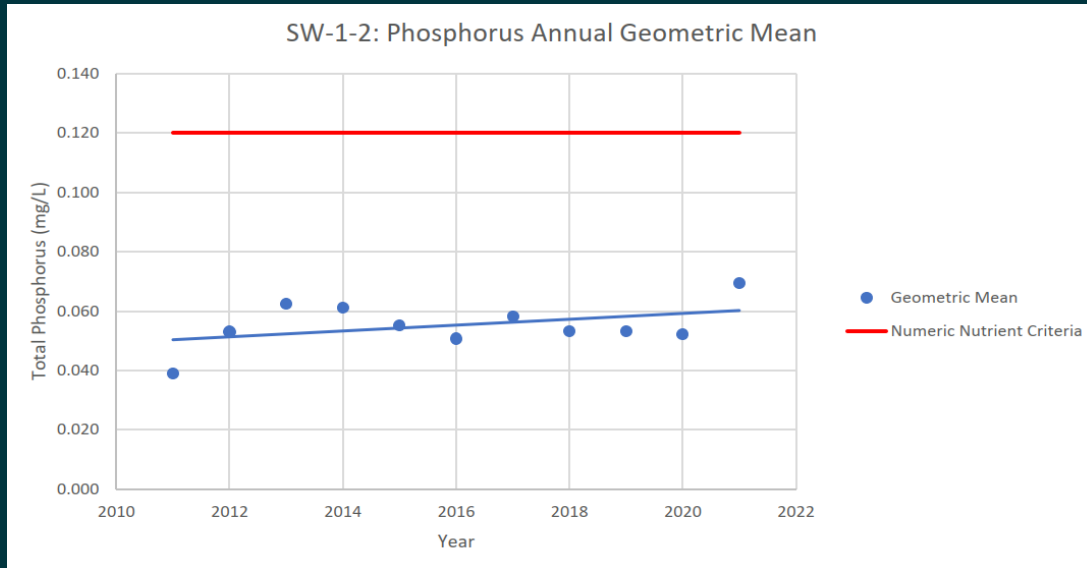
NPDES Municipal Separate Storm Sewer System (MS4) Permit

Stormwater Management Program:

- Structural Controls and SW Collection System Operation – system inventory and maintenance activities, documentation
- Litter Control – Volume and frequency of collection
- Waste Storage – Maintenance yard dumpster
- Pesticides, Herbicides and Fertilizer Application –Aquatic Weed Control
- Public Education – Newsletter and Palm Beach County NPDES Public Outreach Activities
- Illicit Discharges and Improper Disposal
- Construction Site Runoff – Inspections

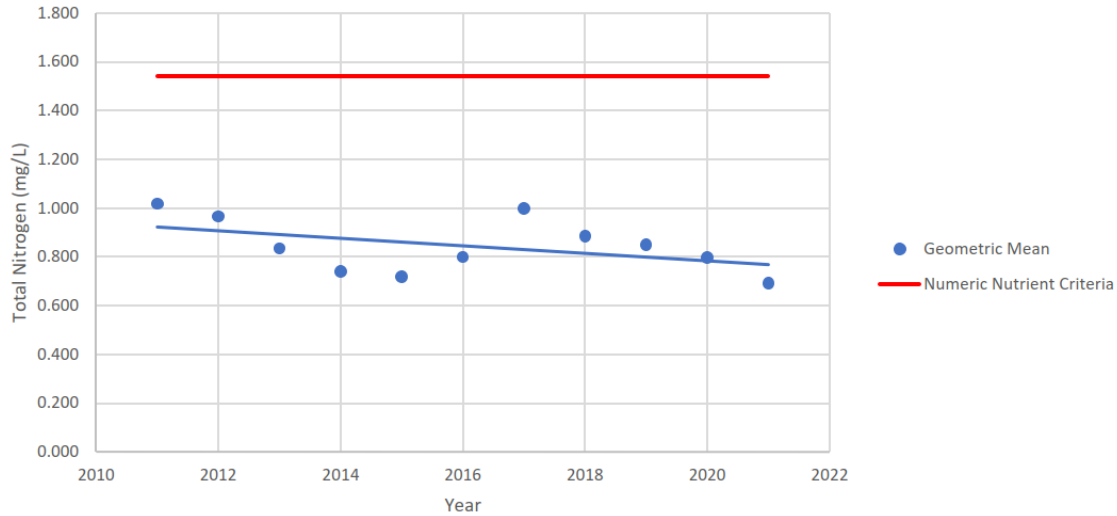
Water Quality Assessment Report

NPDES Water Quality Assessment – Phosphorus Annual Geometric Mean

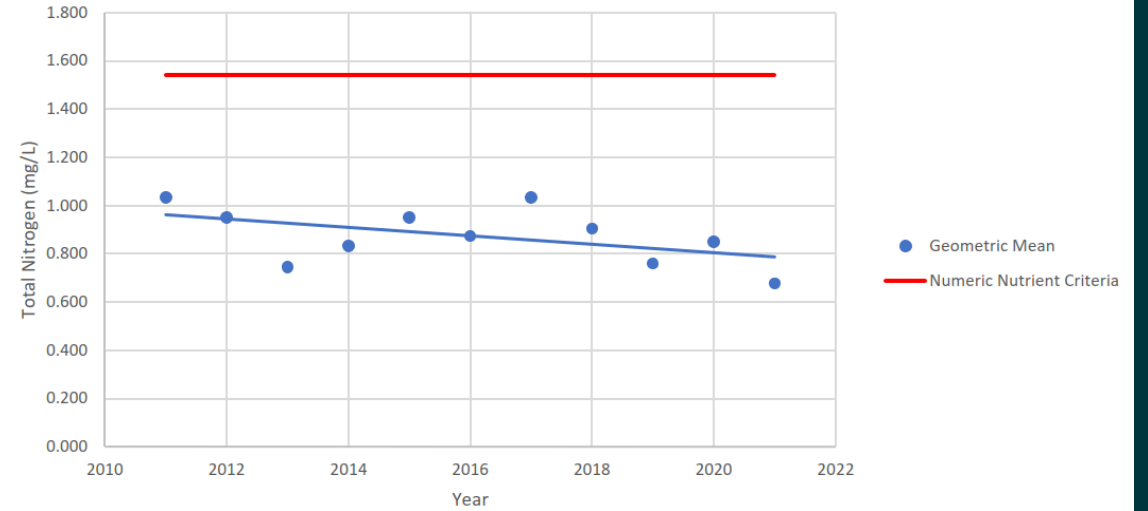


NPDES Water Quality Assessment – Nitrogen Annual Geometric Mean

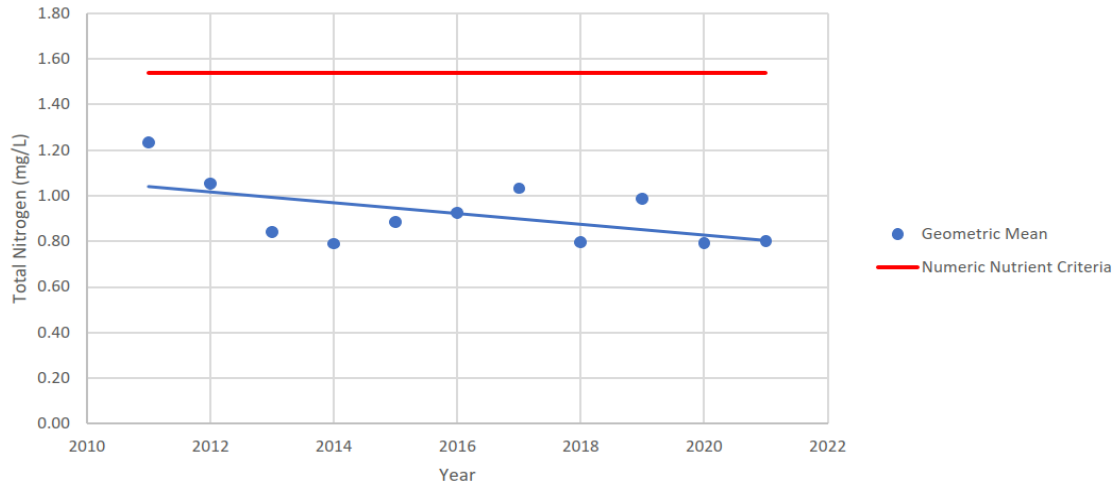
SW-1-2: Nitrogen Annual Geometric Mean



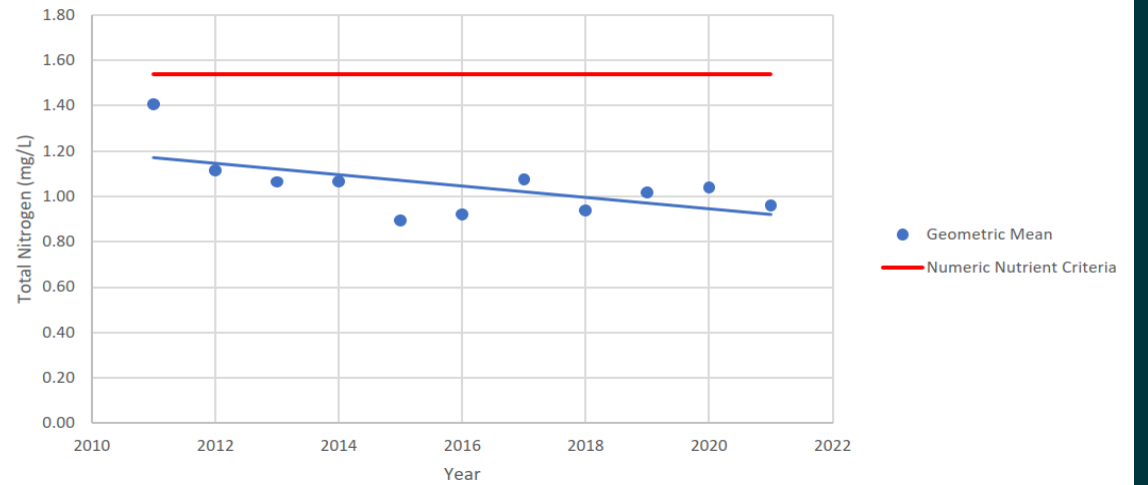
SW-4: Nitrogen Annual Geometric Mean



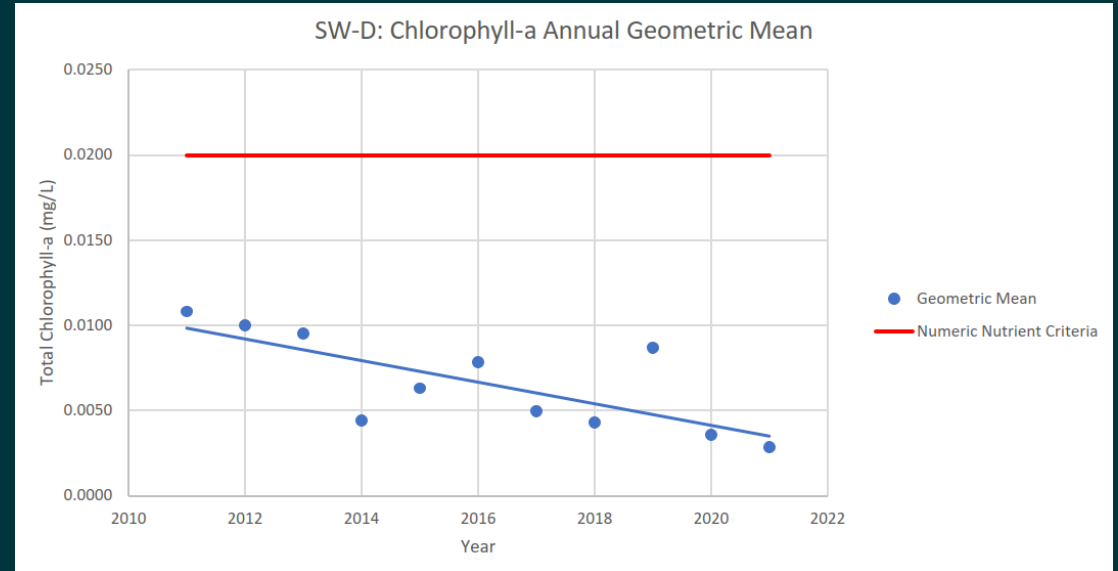
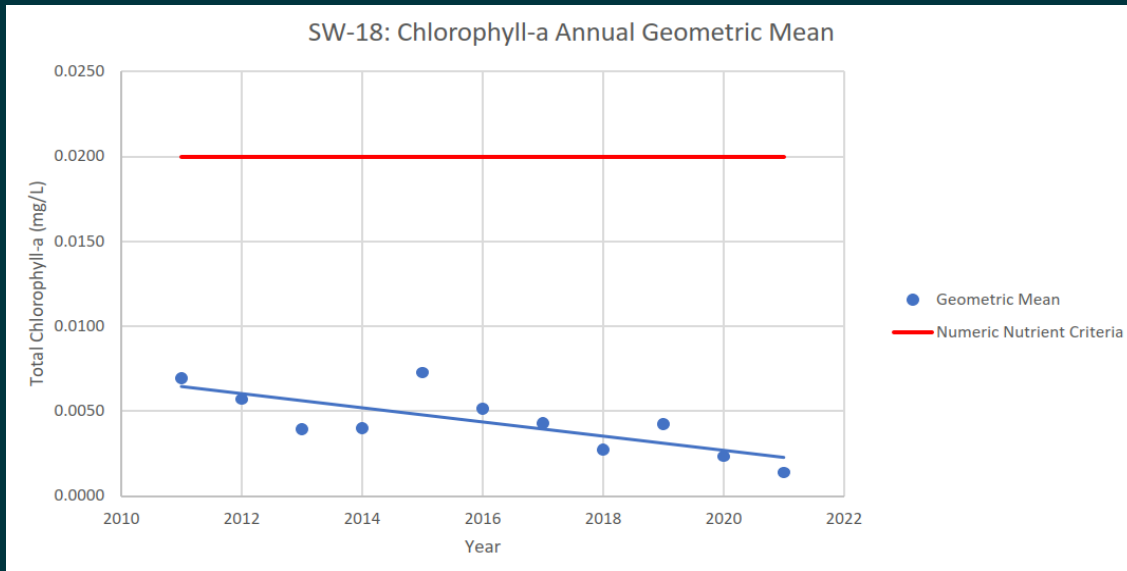
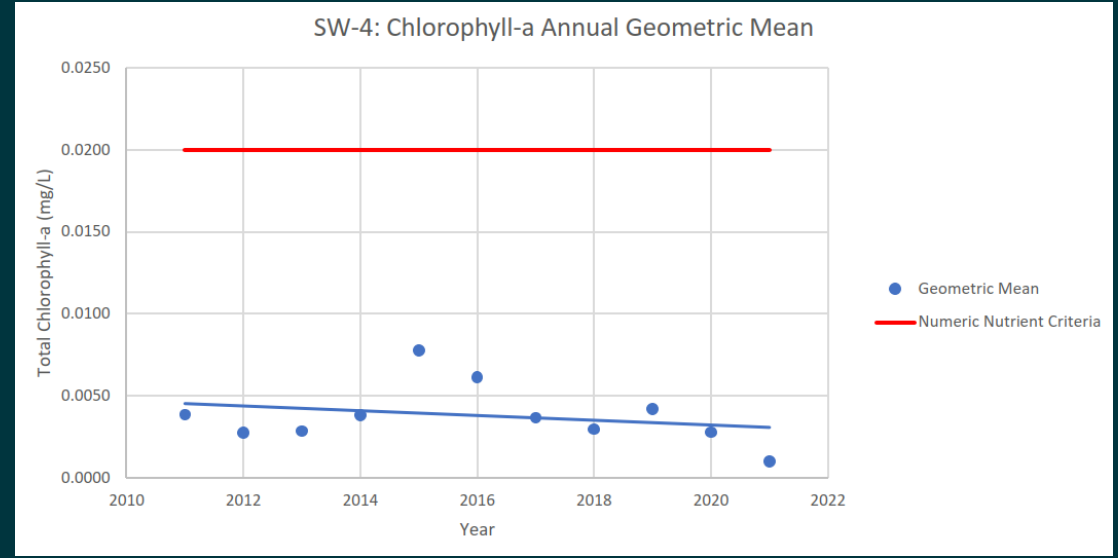
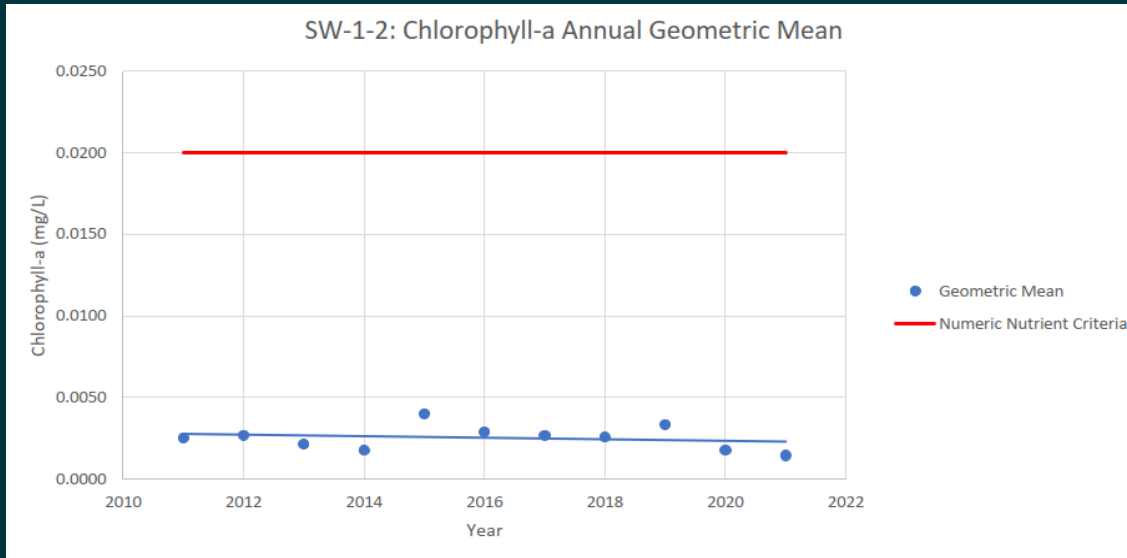
SW-18: Nitrogen Annual Geometric Mean



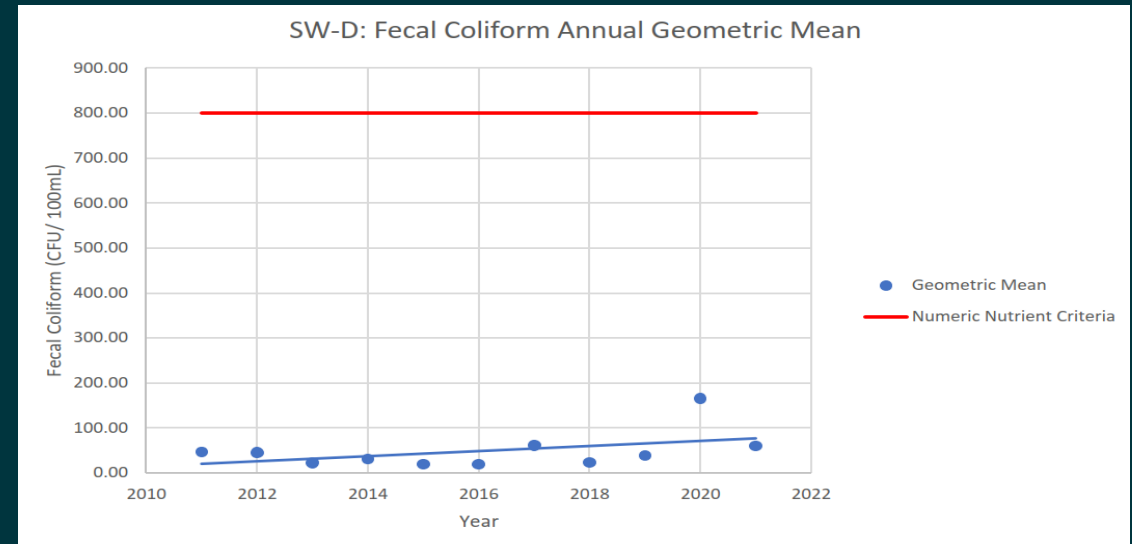
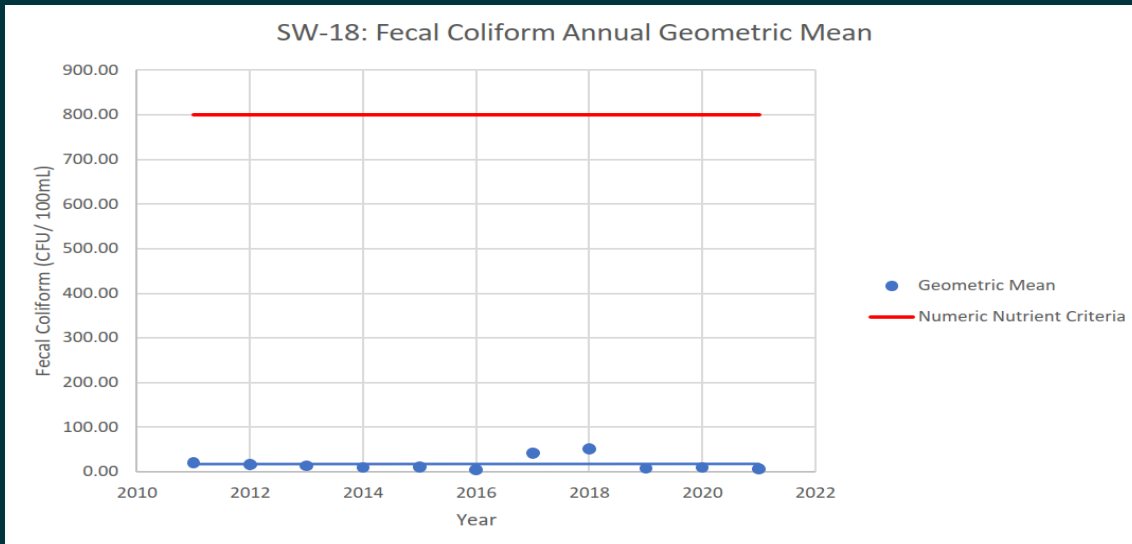
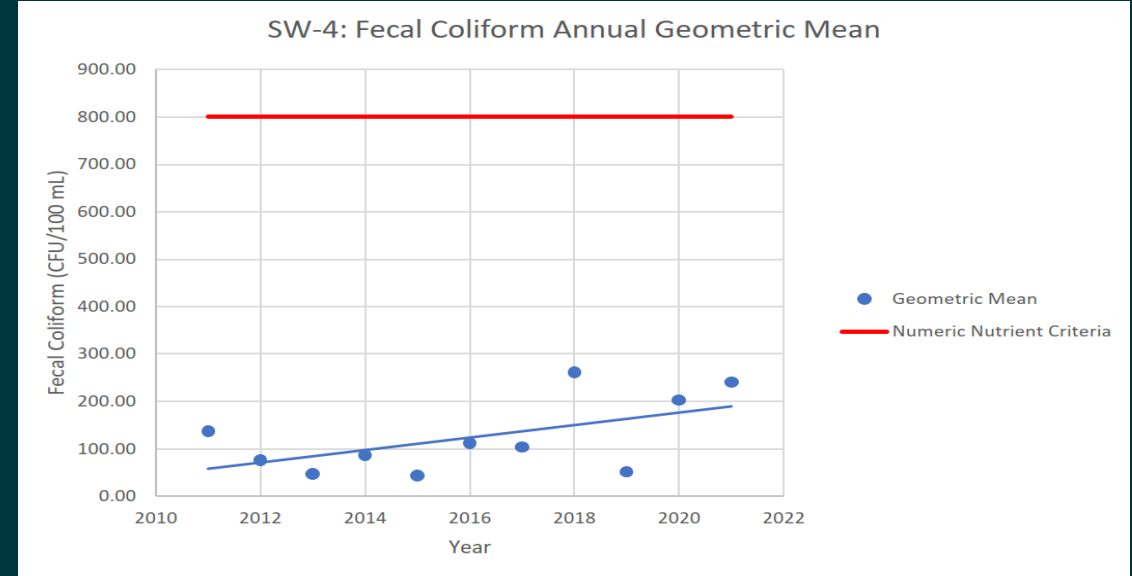
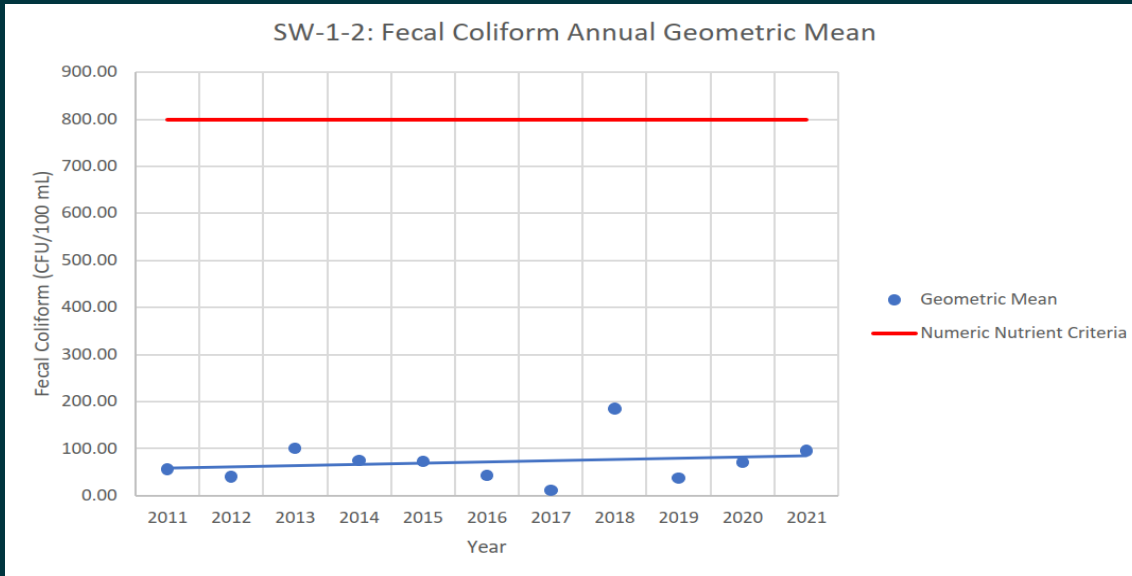
SW-D: Nitrogen Annual Geometric Mean



NPDES Water Quality Assessment – Chlorophyll-a Annual Geometric Mean



NPDES Water Quality Assessment – Fecal Coliform Annual Geometric Mean



Thank you.

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better world