

Chemical Analysis Report

SE-DIST-2023-08-11-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Highlands Boat Run**
Request ID: **RQ-2023-08-07-54**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Jordan Skaggs

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Certified by: Colin Wright, Program Administrator

Date Certified: 01-SEP-2023 12:41

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: LAKE APTHORPE NEAR CENTER

Collection Date/Time: 08/10/2023 11:45

Field ID: G4SE0161

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430547	DEP SOP: NU-094-1	Color (true)	24		PCU	P433772	
	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P433780	
	EPA 300.0 Rev. 2.1	Chloride	22	A	mg Cl/L	P434070	
		Sulfate	30	A	mg SO4/L	P434073	
	SM 2320 B-2011	Total Alkalinity	21	A	mg CaCO3/L	P434014	
	SM 2540 C-2015	TDS	124		mg/L	P434221	
	SM 2540 D-2015	TSS	2	I	mg/L	P434222	
	SM 4500-F- C-2011	Fluoride	0.051	I	mg F/L	P434017	
2430550	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P434129	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P433818	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P434401	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P433845	
	SM 5310 B-2011	Organic Carbon	8.5		mg C/L	P433847	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LAKE FRANCIS NEAR CENTER

Collection Date/Time: 08/10/2023 12:30

Field ID: G4SE0165

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430548	DEP SOP: NU-094-1	Color (true)	9.1		PCU	P433772	
	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P433780	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P434070	
		Sulfate	23		mg SO4/L	P434073	
	SM 2320 B-2011	Total Alkalinity	25		mg CaCO3/L	P434014	
	SM 2540 C-2015	TDS	105		mg/L	P434221	
	SM 2540 D-2015	TSS	4	I	mg/L	P434222	
	SM 4500-F- C-2011	Fluoride	0.064	I	mg F/L	P434017	
2430551	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P434129	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P433818	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P434402	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P433845	
	SM 5310 B-2011	Organic Carbon	6.7		mg C/L	P433847	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LAKE CARRIE NEAR CENTER

Collection Date/Time: 08/10/2023 13:05

Field ID: G4SE0164

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430549	DEP SOP: NU-094-1	Color (true)	100		PCU	P433772	
	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P433780	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P434070	
		Sulfate	5.8		mg SO4/L	P434073	
	SM 2320 B-2011	Total Alkalinity	16		mg CaCO3/L	P434014	
	SM 2540 C-2015	TDS	95		mg/L	P434221	
	SM 2540 D-2015	TSS	2	I	mg/L	P434222	
2430552	SM 4500-F- C-2011	Fluoride	0.045	I	mg F/L	P434017	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P434129	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P433818	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P434422	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P433845	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P433847	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LITTLE RED WATER LAKE NEAR NORTHERN LOBE **Collection Date/Time: 08/10/2023 10:30**

Field ID: G4SE0159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430544	DEP SOP: NU-094-1	Color (true)	59	A	PCU	P433772	
	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P433780	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P434070	
		Sulfate	9.0		mg SO4/L	P434073	
	SM 2320 B-2011	Total Alkalinity	4.0		mg CaCO3/L	P434014	
	SM 2540 C-2015	TDS	64		mg/L	P434221	
	SM 2540 D-2015	TSS	2	I	mg/L	P434222	
	SM 4500-F- C-2011	Fluoride	0.062	I	mg F/L	P434017	
2430545	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P434129	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P433818	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P434401	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P433845	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P433847	
2430546	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P433765	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P433772

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433780

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434070

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434073

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434129

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433818

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434401

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434402

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434422

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433845

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433765

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P434014

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2015
Batch ID: P434221

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P434222

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P434017

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P433847

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P433772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433780

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434129

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433818

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434402

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	102		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433845

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	104		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P434014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.1		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P434221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.8		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P434222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	92.3		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P434017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P433847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430547	Chloride	96.0		P	90 - 110
2430706	Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430547	Sulfate	94.6		P	90 - 110
2430706	Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430511	Ammonia-N	101	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433818

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430550	Kjeldahl Nitrogen	103	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430465	NO2NO3-N	97.8	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430551	NO2NO3-N	96.4	96.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430552	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430551	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430622	O-Phosphate-P	102	103	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P434017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430547	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P433847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430625	Organic Carbon	93.8	96.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P433772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430544	Color (true)	0.0426	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430510	Turbidity	1.72	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430547	Chloride	0.622	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430547	Sulfate	0.0756	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430511	Ammonia-N	1.25	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430550	Kjeldahl Nitrogen	4.49	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430465	NO2NO3-N	1.69	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430551	NO2NO3-N	0.504	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430552	NO2NO3-N	0.976	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430551	Total-P	0.191	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430622	O-Phosphate-P	0.976	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P434014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430547	Total Alkalinity	1.31	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P434221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430405	TDS	7.73	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P434017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430547	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P433847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430625	Organic Carbon	1.72	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A120990

Included Lab Sample IDs: 2430546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	101	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A120994

Included Lab Sample IDs: 2430544, 2430547, 2430548, 2430549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A120999

Included Lab Sample IDs: 2430544, 2430547, 2430548, 2430549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A121033

Included Lab Sample IDs: 2430545, 2430550, 2430551, 2430552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	95.8	P/P	90 - 110
Organic Carbon	95.4	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121040

Included Lab Sample IDs: 2430545, 2430550, 2430551, 2430552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121052

Included Lab Sample IDs: 2430545, 2430550, 2430551, 2430552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	96.0	P/P	90 - 110
Kjeldahl Nitrogen	96.0	105	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121057

Included Lab Sample IDs: 2430544, 2430547, 2430548, 2430549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.9	97.0	P/P	90 - 110
Sulfate	96.0	95.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A121111

Included Lab Sample IDs: 2430544, 2430547, 2430548, 2430549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.1	96.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121111

Included Lab Sample IDs: 2430544, 2430547, 2430548, 2430549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121154

Included Lab Sample IDs: 2430545, 2430550, 2430551, 2430552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121266

Included Lab Sample IDs: 2430545, 2430550, 2430551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	98.0	P/P	90 - 110
NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121282

Included Lab Sample IDs: 2430552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
DEP SOP: NU-094-1	Color (true)	99.5			0.0426	
EPA 180.1 Rev. 2.0	Turbidity	99.5			1.72	
EPA 300.0 Rev. 2.1	Chloride	98.2	96.0	96.9	0.622	
	Sulfate	96.2	94.6	95.6	0.0756	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	101	99.4		1.25
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	103	109		4.49
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.8	99.8		1.69
	NO2NO3-N	99.5	96.4	96.9		0.504
	NO2NO3-N	102	102	103		0.976
EPA 365.1 Rev. 2.0	Total-P	103	102	102		0.191
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	102	103		0.976
SM 2320 B-2011	Total Alkalinity	98.1			1.31	
SM 2540 C-2015	TDS	94.8			7.73	
SM 2540 D-2015	TSS	92.3				
SM 4500-F- C-2011	Fluoride	102	101	101		0.0
SM 5310 B-2011	Organic Carbon	93.6	93.8	96.2		1.72

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2430544, 2430547, 2430548, 2430549
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2430544, 2430547, 2430548, 2430549
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2430544, 2430547, 2430548, 2430549
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2430544, 2430547, 2430548, 2430549
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2430545, 2430550, 2430551, 2430552
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2430545, 2430550, 2430551, 2430552
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2430545, 2430550, 2430551, 2430552
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2430545, 2430550, 2430551, 2430552
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2430546
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2430544, 2430547, 2430548, 2430549
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2430544, 2430547, 2430548, 2430549
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2430544, 2430547, 2430548, 2430549
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2430544, 2430547, 2430548, 2430549
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2430545, 2430550, 2430551, 2430552

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	08/11/2023			08/11/2023 14:28	Chandler E Cox	2430544, 2430547
	08/11/2023			08/11/2023 14:29	Chandler E Cox	2430548, 2430549
EPA 180.1 Rev. 2.0	08/11/2023			08/11/2023 13:31	Khloe J Berg	2430544
	08/11/2023			08/11/2023 13:32	Khloe J Berg	2430547
	08/11/2023			08/11/2023 13:33	Khloe J Berg	2430548
	08/11/2023			08/11/2023 13:34	Khloe J Berg	2430549
EPA 300.0 Rev. 2.1	08/11/2023			08/17/2023 12:37	James L Waggeberby	2430547
	08/11/2023			08/17/2023 14:07	James L Waggeberby	2430544
	08/11/2023			08/17/2023 14:22	James L Waggeberby	2430548
	08/11/2023			08/17/2023 14:37	James L Waggeberby	2430549
EPA 350.1 Rev. 2.0	08/11/2023			08/21/2023 14:07	Khloe J Berg	2430545
	08/11/2023			08/21/2023 14:08	Khloe J Berg	2430550
	08/11/2023			08/21/2023 14:10	Khloe J Berg	2430551
	08/11/2023			08/21/2023 14:11	Khloe J Berg	2430552
EPA 351.2 Rev. 2.0	08/11/2023	08/14/2023 13:41	Ping Hua	08/15/2023 17:13	Ping Hua	2430545
	08/11/2023	08/14/2023 13:41	Ping Hua	08/15/2023 17:15	Ping Hua	2430550
	08/11/2023	08/14/2023 13:41	Ping Hua	08/15/2023 17:23	Ping Hua	2430551
	08/11/2023	08/14/2023 13:41	Ping Hua	08/15/2023 17:25	Ping Hua	2430552
EPA 353.2 Rev. 2.0	08/11/2023			08/25/2023 14:28	Anna M. Plaviak	2430545
	08/11/2023			08/25/2023 14:29	Anna M. Plaviak	2430550
	08/11/2023			08/25/2023 14:36	Anna M. Plaviak	2430551
	08/11/2023			08/28/2023 10:20	Beverly Y. Sanders	2430552
EPA 365.1 Rev. 2.0	08/11/2023	08/14/2023 15:42	Adam P Silver	08/15/2023 11:41	James L Waggeberby	2430551
	08/11/2023	08/14/2023 15:42	Adam P Silver	08/15/2023 11:43	James L Waggeberby	2430545
	08/11/2023	08/14/2023 15:42	Adam P Silver	08/15/2023 11:44	James L Waggeberby	2430550
	08/11/2023	08/14/2023 15:42	Adam P Silver	08/15/2023 11:45	James L Waggeberby	2430552
EPA 365.1 Rev. 2.0 dissolved SM 2320 B-2011	08/11/2023			08/11/2023 13:53	Adam P Silver	2430546
	08/11/2023			08/17/2023 05:57	Dale L. Simmons	2430547
	08/11/2023			08/17/2023 06:41	Dale L. Simmons	2430544
	08/11/2023			08/17/2023 06:54	Dale L. Simmons	2430548
SM 2540 C-2015	08/11/2023			08/17/2023 07:06	Dale L. Simmons	2430549
	08/11/2023			08/15/2023 14:46	Yijie Li	2430544, 2430547, 2430548, 2430549
	08/11/2023			08/15/2023 14:46	Yijie Li	2430544, 2430547, 2430548, 2430549
	08/11/2023			08/17/2023 05:47	Dale L. Simmons	2430547
SM 4500-F- C-2011	08/11/2023			08/17/2023 06:41	Dale L. Simmons	2430544
	08/11/2023			08/17/2023 06:54	Dale L. Simmons	2430548
	08/11/2023			08/17/2023 07:06	Dale L. Simmons	2430549
	08/11/2023			08/15/2023 04:06	Elise M. Gillis	2430545
SM 5310 B-2011	08/11/2023			08/15/2023 04:20	Elise M. Gillis	2430550
	08/11/2023			08/15/2023 04:34	Elise M. Gillis	2430551

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	08/11/2023			08/15/2023 05:15	Elise M. Gillis	2430552