

Chemical Analysis Report

WAS-SECT-2022-01-25-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Pinellas Lake Tarpon Canal**

Request ID: **RQ-2022-01-24-47**

Customer: **WAS-SECT**

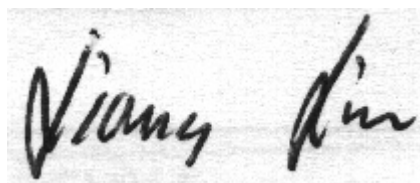
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 17-FEB-2022 14:50

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Harbor Palms Nature Park, Oldsmar FL

Collection Date/Time: 01/24/2022 10:36

Field ID: 11-06-22-01

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2301486	DEP SOP: NU-094-1	Color (true)**	11		PCU	P408923	
	EPA 180.1 Rev. 2.0	Turbidity	3.2	A	NTU	P408927	
	EPA 300.0 Rev. 2.1	Chloride	1.2E+04		mg Cl/L	P409287	
		Sulfate	1.7E+03		mg SO4/L	P409290	
	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P409144	
	SM 2540 C-2011	TDS	1.99E+04		mg/L	P409503	
	SM 2540 D-2011	TSS	4	IA	mg/L	P409498	
	SM 4500 F-C-2011	Fluoride	0.85		mg F/L	P409147	
2301487	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P409474	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P409190	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P409317	
	EPA 365.1 Rev. 2.0	Total-P	0.083		mg P/L	P408938	
	SM 5310 B-2011	Organic Carbon	6.3	J	mg C/L	P409916	CCV

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 5310 B-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Harbor Palms Nature Park, Oldsmar FL

Collection Date/Time: 01/24/2022 10:45

Field ID: 11-06-FB-22-01

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2301488	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P408923	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P408927	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P409287	
		Sulfate	0.20	U	mg SO4/L	P409290	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P409054	
	SM 2540 C-2011	TDS	15	U	mg/L	P409499	
	SM 2540 D-2011	TSS	2	U	mg/L	P409491	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P409057	
2301489	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P409404	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P409135	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P409207	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P409036	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P409520	

Ref. Method and Comment:

SM 2540 D-2011: 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: P408923

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408927

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409287

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409290

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409404

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409474

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409135

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409190

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409207

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409317

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408938

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409036

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

Reference Method: SM 2320 B-2011
Batch ID: P409054

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2320 B-2011
Batch ID: P409144

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-2011
Batch ID: P409499

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P409503

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409491

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409498

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P409057

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409147

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P409520

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

Reference Method: SM 5310 B-2011
Batch ID: P409916

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: P408923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409287

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409404

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409474

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409190

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409207

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: P409317

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409036

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

Reference Method: SM 2320 B-2011
Batch ID: P409054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P409144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.9		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P409057

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P409147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P409520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P409916

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301449	Chloride	96.9		P	90 - 110
2301575	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301449	Sulfate	95.2		P	90 - 110
2301575	Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301510	Ammonia-N	93.6	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301487	Ammonia-N	97.4	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301347	Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301487	Kjeldahl Nitrogen	95.2	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301429	NO2NO3-N	94.8	95.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301487	NO2NO3-N	98.3	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300731	Total-P	95.5	95.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301822	Total-P	106	106	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P409057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301449	Fluoride	99.2	99.2	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P409147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300966	Fluoride	95.5	96.3	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P409520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300871	Organic Carbon	97.2	99.9	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P409916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302142	Organic Carbon	89.8	90.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P408923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301512	Color (true)	1.73	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301486	Turbidity	4.33	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301449	Chloride	0.102	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301449	Sulfate	0.142	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301510	Ammonia-N	2.29	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301487	Ammonia-N	0.321	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301347	Kjeldahl Nitrogen	3.08	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301487	Kjeldahl Nitrogen	3.99	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301429	NO2NO3-N	0.707	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301487	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300731	Total-P	0.248	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301822	Total-P	0.518	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P409054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301449	Total Alkalinity	0.123	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P409144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300966	Total Alkalinity	1.27	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P409499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301248	TDS	2.96	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P409503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301821	TDS	6.29	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P409057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301449	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P409147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300966	Fluoride	0.480	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P409520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300871	Organic Carbon	1.54	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P409916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302142	Organic Carbon	0.953	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A110033

Included Lab Sample IDs: 2301486, 2301488

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110034

Included Lab Sample IDs: 2301486, 2301488

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A110068

Included Lab Sample IDs: 2301488

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110068

Included Lab Sample IDs: 2301488

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

Reference Method: SM 2320 B-2011

Run ID: A110099

Included Lab Sample IDs: 2301486

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110099

Included Lab Sample IDs: 2301486

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110109

Included Lab Sample IDs: 2301487

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110125

Included Lab Sample IDs: 2301489

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110154

Included Lab Sample IDs: 2301486, 2301488

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	101	P/P	90 - 110
Sulfate	98.8	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110171

Included Lab Sample IDs: 2301487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110173

Included Lab Sample IDs: 2301489

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110188

Included Lab Sample IDs: 2301489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.9	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110212

Included Lab Sample IDs: 2301489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110228

Included Lab Sample IDs: 2301487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.4	98.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110252

Included Lab Sample IDs: 2301487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	95.4	96.9	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110267

Included Lab Sample IDs: 2301489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	103	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A110436

Included Lab Sample IDs: 2301487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	89.4*	89.8*	F/F	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)	101			1.73	
EPA 180.1 Rev. 2.0	Turbidity				4.33	
EPA 300.0 Rev. 2.1	Chloride	102	96.9	100	0.102	
	Sulfate	99.0	95.2	98.4	0.142	
EPA 350.1 Rev. 2.0	Ammonia-N	100	93.6	96.4		2.29
	Ammonia-N	96.2	97.4	97.0		0.321
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.2	104	108		3.08
	Kjeldahl Nitrogen	100	95.2	100		3.99
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	94.8	95.8		0.707
	NO2NO3-N	100	98.3	98.8		0.494
EPA 365.1 Rev. 2.0	Total-P	105	95.5	95.2		0.248
	Total-P	102	106	106		0.518
SM 2320 B-2011	Total Alkalinity	101			0.123	
	Total Alkalinity	96.9			1.27	
SM 2540 C-2011	TDS				2.96	
	TDS				6.29	
SM 4500 F-C-2011	Fluoride	99.3	99.2	99.2		0.0
	Fluoride	98.4	95.5	96.3		0.480
SM 5310 B-2011	Organic Carbon	96.4	97.2	99.9		1.54
	Organic Carbon	95.1	89.8	90.8		0.953

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2301486, 2301488
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2301486, 2301488
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2301486, 2301488
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2301486, 2301488
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2301487, 2301489
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2301487, 2301489
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2301487, 2301489
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2301487, 2301489
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2301486, 2301488
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2301486, 2301488
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2301486, 2301488
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2301486, 2301488
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2301487, 2301489

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	01/25/2022			01/25/2022 15:36	Blanca Fach	2301488
	01/25/2022			01/25/2022 15:38	Blanca Fach	2301486
EPA 180.1 Rev. 2.0	01/25/2022			01/25/2022 15:03	Khloe J Berg	2301486, 2301488
EPA 300.0 Rev. 2.1	01/25/2022			02/02/2022 05:09	James L Waggeberby	2301486
	01/25/2022			02/02/2022 05:22	James L Waggeberby	2301488
EPA 350.1 Rev. 2.0	01/25/2022			02/03/2022 15:18	Ping Hua	2301489
	01/25/2022			02/04/2022 15:38	Ping Hua	2301487
EPA 351.2 Rev. 2.0	01/25/2022	01/31/2022 10:51	Samantha L Bates	02/02/2022 12:31	Alexandra J Mattheus	2301489
	01/25/2022	02/01/2022 09:14	Samantha L Bates	02/03/2022 10:49	Alexandra J Mattheus	2301487
EPA 353.2 Rev. 2.0	01/25/2022			01/31/2022 09:51	Beverly Y. Sanders	2301489
	01/25/2022			02/02/2022 09:47	Beverly Y. Sanders	2301487
EPA 365.1 Rev. 2.0	01/25/2022	01/26/2022 17:15	Simonne.V. Calhoun	01/28/2022 15:41	Shengyu Ding	2301487
	01/25/2022	01/27/2022 17:15	Simonne.V. Calhoun	01/31/2022 16:28	Sarah A Nixon	2301489
SM 2320 B-2011	01/25/2022			01/27/2022 07:19	Dale L. Simmons	2301488
	01/25/2022			01/28/2022 05:13	Dale L. Simmons	2301486
SM 2540 C-2011	01/25/2022			01/28/2022 14:02	Yijie Li	2301486, 2301488
SM 2540 D-2011	01/25/2022			01/28/2022 14:02	Yijie Li	2301486, 2301488
SM 4500 F-C-2011	01/25/2022			01/27/2022 07:19	Dale L. Simmons	2301488
	01/25/2022			01/28/2022 04:24	Dale L. Simmons	2301486
SM 5310 B-2011	01/25/2022			02/05/2022 07:31	Nathaniel J Jones	2301489
	01/25/2022			02/15/2022 13:10	Khloe J Berg	2301487