

Chemical Analysis Report

CEN-DIST-2021-04-13-01

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

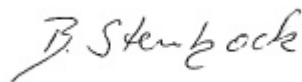
Event Description: **Lake Belle / Lake Leonore**
Request ID: **RQ-2021-03-15-06**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 03-MAY-2021 16:25



NON-CONFORMANCE REPORT INCLUDED

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 Belle East Cove

Collection Date/Time: 04/12/2021 11:19

Field ID: G3CE0045

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2238978	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P396482	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P396747	
		Sulfate	34		mg SO4/L	P396750	
		Color (true)	18		PCU	P396470	
	SM 2320 B-2011	Total Alkalinity	43		mg CaCO3/L	P396580	
	SM 2540 C-2011	TDS	154		mg/L	P396987	
	SM 2540 D-2011	TSS	3	I	mg/L	P396813	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P396583	
2238982	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P396773	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P396915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P396629	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P396639	
	SM 5310 B-2011	Organic Carbon	6.2		mg C/L	P396852	
2238986	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P396463	

Ref. Method and Comment:

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

Sample Location: Lake Belle North Cove

Collection Date/Time: 04/12/2021 11:34

Field ID: G3CE0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2238979	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P396482	
	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P396747	
		Sulfate	34		mg SO4/L	P396750	
	SM 2120 B-2011	Color (true)	14		PCU	P396470	
	SM 2320 B-2011	Total Alkalinity	39		mg CaCO3/L	P396580	
	SM 2540 C-2011	TDS	143		mg/L	P396987	
	SM 2540 D-2011	TSS	2	I	mg/L	P396813	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P396583	
2238983	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P396760	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P396915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P396629	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P396639	
	SM 5310 B-2011	Organic Carbon	5.4		mg C/L	P396852	
2238987	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P396463	

Ref. Method and Comment:

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

Sample Location: Tiger Lake near Center

Collection Date/Time: 04/12/2021 12:56

Field ID: G4CE0206

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2238980	EPA 180.1 Rev. 2.0	Turbidity	19	A	NTU	P396483	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P396747	
		Sulfate	13		mg SO4/L	P396750	
	SM 2120 B-2011	Color (true)	36	A	PCU	P396473	
	SM 2320 B-2011	Total Alkalinity	25		mg CaCO3/L	P396580	
	SM 2540 C-2011	TDS	96		mg/L	P396987	
	SM 2540 D-2011	TSS	28		mg/L	P396813	
	SM 4500 F-C-2011	Fluoride	0.090	I	mg F/L	P396583	
2238984	EPA 350.1 Rev. 2.0	Ammonia-N	0.008	Y	mg N/L	P396760	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0	Y	mg N/L	P396915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P396629	
	EPA 365.1 Rev. 2.0	Total-P	0.16	Y	mg P/L	P396639	
	SM 5310 B-2011	Organic Carbon	15	Y	mg C/L	P396852	
2238988	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P396464	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

SM 5310 B-2011: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Sample Location: Lake Belle near Peninsula Dr.

Collection Date/Time: 04/12/2021 11:46

Field ID: G3CE0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2238981	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P396483	
	EPA 300.0 Rev. 2.1	Chloride	34		mg Cl/L	P396747	
		Sulfate	34		mg SO4/L	P396750	
	SM 2120 B-2011	Color (true)	15		PCU	P396471	
	SM 2320 B-2011	Total Alkalinity	38		mg CaCO3/L	P396580	
	SM 2540 C-2011	TDS	137		mg/L	P396987	
	SM 2540 D-2011	TSS	2	I	mg/L	P396813	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P396583	
2238985	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P396760	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P396915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P396629	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P396639	
	SM 5310 B-2011	Organic Carbon	5.7		mg C/L	P396852	
2238989	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P396464	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 8773

Event(s)

CEN-DIST-2021-04-13-01

Job(s)

TLH-2021-04-13-01

Sample(s)

2238984

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Samples not preserved to pH < 2.

Resolution: Sample preserved in the laboratory.
H2SO4 Lot#120053 | Expiration Date:05-OCT-2021
Data will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 4/19/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396482

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396483

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396747

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396750

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396760

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396773

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396915

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396629

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396639

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396463

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396464

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

Reference Method: SM 2120 B-2011
Batch ID: P396470

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P396471

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P396473

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P396580

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

Reference Method: SM 2540 C-2011
Batch ID: P396987

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P396813

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396583

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P396852

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P396747

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P396750

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P396760

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P396773

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P396915

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P396629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P396639

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P396463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P396464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.1		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P396470

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

Reference Method: SM 2120 B-2011
Batch ID: P396471

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

Reference Method: SM 2120 B-2011
Batch ID: P396473

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

Reference Method: SM 2320 B-2011
Batch ID: P396580

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P396583

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P396852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396747

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238906	Chloride	103		P	90 - 110
2239205	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238906	Sulfate	103		P	90 - 110
2239205	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238983	Ammonia-N	96.4	94.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238982	Ammonia-N	97.8	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238908	Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238983	NO2NO3-N	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238908	Total-P	104	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238854	O-Phosphate-P	97.4	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238988	O-Phosphate-P	95.8	95.4	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P396583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239206	Fluoride	98.3	98.3	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P396852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238851	Organic Carbon	100	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238859	Turbidity	0.156	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238980	Turbidity	1.60	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396747

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238906	Chloride	0.0200	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238906	Sulfate	0.102	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238983	Ammonia-N	1.52	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238982	Ammonia-N	0.314	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238908	Kjeldahl Nitrogen	3.75	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238983	NO2NO3-N	1.50	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P396639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238908	Total-P	1.85	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P396463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238854	O-Phosphate-P	0.128	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P396464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238988	O-Phosphate-P	0.397	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P396470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238860	Color (true)	4.51	Sample	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P396471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239054	Color (true)	0.616	Sample	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P396473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238980	Color (true)	0.676	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P396580

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239206	Total Alkalinity	0.626	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011

Batch ID: P396987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238906	TDS	3.97	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P396583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239206	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P396852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238851	Organic Carbon	0.117	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104682

Included Lab Sample IDs: 2238978, 2238979, 2238980, 2238981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104702

Included Lab Sample IDs: 2238986, 2238987, 2238988, 2238989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	99.5	P/P	90 - 110
O-Phosphate-P	99.6	98.3	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A104703

Included Lab Sample IDs: 2238978, 2238979, 2238980, 2238981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	101	103	P/P	90 - 115
Color (true)	104	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104704

Included Lab Sample IDs: 2238978, 2238979, 2238980, 2238981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105
Turbidity	102	101	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A104740

Included Lab Sample IDs: 2238978, 2238979, 2238980, 2238981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	97.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104740

Included Lab Sample IDs: 2238978, 2238979, 2238980, 2238981

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104763

Included Lab Sample IDs: 2238982, 2238983, 2238984, 2238985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104782

Included Lab Sample IDs: 2238984

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104784

Included Lab Sample IDs: 2238982, 2238983, 2238985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104806

Included Lab Sample IDs: 2238983, 2238984, 2238985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.7	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104813

Included Lab Sample IDs: 2238982

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	98.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104856

Included Lab Sample IDs: 2238982, 2238983, 2238984, 2238985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	95.7	P/P	90 - 110
Organic Carbon	95.9	95.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104924

Included Lab Sample IDs: 2238982, 2238983, 2238984, 2238985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	99.2	P/P	90 - 110
Kjeldahl Nitrogen	99.2	105	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
EPA 180.1 Rev. 2.0	Turbidity				0.156	
	Turbidity				1.60	
EPA 300.0 Rev. 2.1	Chloride	104	103	104	0.0200	
	Sulfate	105	103	104	0.102	
EPA 350.1 Rev. 2.0	Ammonia-N	101	96.4	94.8		1.52
	Ammonia-N	101	97.8	97.4		0.314
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.2	101	106		3.75
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.0	100		1.50
EPA 365.1 Rev. 2.0	Total-P	101	104	101		1.85
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.1	97.4	97.6		0.128
	O-Phosphate-P	98.1	95.8	95.4		0.397
SM 2120 B-2011	Color (true)	101			4.51	
	Color (true)	102			0.616	
	Color (true)	102			0.676	
SM 2320 B-2011	Total Alkalinity	101			0.626	
SM 2540 C-2011	TDS				3.97	
SM 4500 F-C-2011	Fluoride	98.7	98.3	98.3		0.0
SM 5310 B-2011	Organic Carbon	97.6	100	100		0.117

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2238978, 2238979, 2238980, 2238981
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2238978, 2238979, 2238980, 2238981
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2238978, 2238979, 2238980, 2238981
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2238982, 2238983, 2238984, 2238985
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2238982, 2238983, 2238984, 2238985
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2238982, 2238983, 2238984, 2238985
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2238982, 2238983, 2238984, 2238985
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2238986, 2238987, 2238988, 2238989
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2238978, 2238979, 2238980, 2238981
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2238978, 2238979, 2238980, 2238981
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2238978, 2238979, 2238980, 2238981
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2238978, 2238979, 2238980, 2238981
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2238978, 2238979, 2238980, 2238981
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2238982, 2238983, 2238984, 2238985

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/13/2021			04/13/2021 16:17	Yen Ta	2238978, 2238979, 2238980, 2238981
EPA 300.0 Rev. 2.1	04/13/2021			04/17/2021 05:08	Lipi Saha	2238978
	04/13/2021			04/17/2021 05:20	Lipi Saha	2238979
	04/13/2021			04/17/2021 05:32	Lipi Saha	2238980
	04/13/2021			04/17/2021 05:44	Lipi Saha	2238981
EPA 350.1 Rev. 2.0	04/13/2021			04/18/2021 15:47	Ping Hua	2238983
	04/13/2021			04/18/2021 15:51	Ping Hua	2238984
	04/13/2021			04/18/2021 15:53	Ping Hua	2238985
	04/13/2021			04/18/2021 18:40	Ping Hua	2238982
EPA 351.2 Rev. 2.0	04/13/2021	04/21/2021 14:35	Benjamin T. Nordmann	04/22/2021 18:33	Virginia P. Brown	2238982
	04/13/2021	04/21/2021 14:35	Benjamin T. Nordmann	04/22/2021 18:38	Virginia P. Brown	2238983
	04/13/2021	04/21/2021 14:35	Benjamin T. Nordmann	04/22/2021 18:40	Virginia P. Brown	2238984
	04/13/2021	04/21/2021 14:35	Benjamin T. Nordmann	04/22/2021 18:41	Virginia P. Brown	2238985
EPA 353.2 Rev. 2.0	04/13/2021			04/15/2021 14:13	Lauren Lees	2238983
	04/13/2021			04/15/2021 14:24	Lauren Lees	2238982
	04/13/2021			04/15/2021 14:25	Lauren Lees	2238984
	04/13/2021			04/15/2021 14:26	Lauren Lees	2238985
EPA 365.1 Rev. 2.0	04/13/2021	04/15/2021 17:39	Madeline Gruver	04/16/2021 10:47	Shengyu Ding	2238984
	04/13/2021	04/15/2021 17:39	Madeline Gruver	04/16/2021 12:04	Shengyu Ding	2238982
	04/13/2021	04/15/2021 17:39	Madeline Gruver	04/16/2021 12:05	Shengyu Ding	2238983
	04/13/2021	04/15/2021 17:39	Madeline Gruver	04/16/2021 12:06	Shengyu Ding	2238985
EPA 365.1 Rev. 2.0 dissolved	04/13/2021			04/13/2021 13:58	Patrick M. Roche	2238986
	04/13/2021			04/13/2021 13:59	Patrick M. Roche	2238987
	04/13/2021			04/13/2021 14:01	Patrick M. Roche	2238988
	04/13/2021			04/13/2021 14:09	Patrick M. Roche	2238989
SM 2120 B-2011	04/13/2021			04/13/2021 15:53	Blanca Fach	2238978
	04/13/2021			04/13/2021 15:54	Blanca Fach	2238979
	04/13/2021			04/13/2021 16:00	Blanca Fach	2238981
	04/13/2021			04/13/2021 16:20	Blanca Fach	2238980
SM 2320 B-2011	04/13/2021			04/14/2021 23:04	Dale L. Simmons	2238978
	04/13/2021			04/14/2021 23:16	Dale L. Simmons	2238979
	04/13/2021			04/14/2021 23:30	Dale L. Simmons	2238980
	04/13/2021			04/14/2021 23:42	Dale L. Simmons	2238981
SM 2540 C-2011	04/13/2021			04/16/2021 15:12	Yijie Li	2238978, 2238979, 2238980, 2238981
SM 2540 D-2011	04/13/2021			04/16/2021 15:36	Yijie Li	2238978, 2238979, 2238980, 2238981
SM 4500 F-C-2011	04/13/2021			04/14/2021 23:04	Dale L. Simmons	2238978
	04/13/2021			04/14/2021 23:16	Dale L. Simmons	2238979
	04/13/2021			04/14/2021 23:30	Dale L. Simmons	2238980
	04/13/2021			04/14/2021 23:42	Dale L. Simmons	2238981
SM 5310 B-2011	04/13/2021			04/19/2021 18:22	Lauren Lees	2238982

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	04/13/2021			04/19/2021 18:56	Lauren Lees	2238983
	04/13/2021			04/19/2021 19:06	Lauren Lees	2238984
	04/13/2021			04/19/2021 19:17	Lauren Lees	2238985