

Chemical Analysis Report

CEN-DIST-2020-02-19-01

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

Event Description: **Hidden / Deaton / Okahumpka**
Request ID: **RQ-2020-02-17-45**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 10-MAR-2020 16:09

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: Lake Okahumpka at center

Collection Date/Time: 02/18/2020 10:15

Field ID: G4CE0159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2158938	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P379328	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P379719	
		Sulfate	0.20	U	mg SO4/L	P379722	
	SM 2120 B-2011	Color (true)	25	A	PCU	P379229	
	SM 2320 B-2011	Total Alkalinity	77		mg CaCO3/L	P379786	
	SM 2540 C-2011	TDS	160	A	mg/L	P379822	
	SM 2540 D-2011	TSS	3	IA	mg/L	P379602	
	SM 4500 F-C-2011	Fluoride	0.29		mg F/L	P379747	
2158941	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P379564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P379646	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P379854	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P379804	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P379431	
2158944	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P379213	

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 Deaton @ Center

Collection Date/Time: 02/18/2020 11:00

Field ID: G4CE0160

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2158939	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P379328	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P379719	
		Sulfate	1.9		mg SO4/L	P379722	
	SM 2120 B-2011	Color (true)	39		PCU	P379229	
	SM 2320 B-2011	Total Alkalinity	31	A	mg CaCO3/L	P379786	
	SM 2540 C-2011	TDS	110		mg/L	P379822	
	SM 2540 D-2011	TSS	4	I	mg/L	P379602	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P379747	
2158942	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P379564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P379646	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P379854	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P379804	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P379432	
2158945	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P379214	

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: Hidden Lake @ Center

Collection Date/Time: 02/18/2020 11:45

Field ID: G4CE0158

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2158940	EPA 180.1 Rev. 2.0	Turbidity	30		NTU	P379328	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P379719	
		Sulfate	1.7		mg SO4/L	P379722	
		Color (true)	90	A	PCU	P379234	
	SM 2320 B-2011	Total Alkalinity	124		mg CaCO3/L	P379786	
	SM 2540 C-2011	TDS	197		mg/L	P379822	
	SM 2540 D-2011	TSS	16		mg/L	P379602	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P379747	
2158943	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P379565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P379646	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P379855	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P379804	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P379432	
2158946	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P379214	

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: EPA 180.1 Rev. 2.0
Batch ID: P379328

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379719

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379722

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379564

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379565

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379646

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379854

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379855

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379804

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: P379213

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379214

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

Reference Method: SM 2120 B-2011
Batch ID: P379229

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P379234

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P379786

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

Reference Method: SM 2540 C-2011
Batch ID: P379822

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P379602

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P379747

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P379431

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

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P379432

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: P379719

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379722

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379564

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: P379565

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: P379646

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: P379854

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: P379855

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379804

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379213

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379214

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

Reference Method: SM 2120 B-2011
Batch ID: P379229

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

Reference Method: SM 2120 B-2011
Batch ID: P379234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P379786

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

Reference Method: SM 4500 F-C-2011
Batch ID: P379747

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P379431

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

Reference Method: SM 5310 B-2011
Batch ID: P379432

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158743	Chloride	102		P	90 - 110
2158907	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158743	Sulfate	101		P	90 - 110
2158907	Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158754	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379565

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158964	Ammonia-N	98.2	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158964	Kjeldahl Nitrogen	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158942	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158943	NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158673	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379213

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158944	O-Phosphate-P	96.3	96.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158922	O-Phosphate-P	93.8	96.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P379747

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158939	Fluoride	97.9	99.2	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P379431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158941	Organic Carbon	95.5	95.0	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P379432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158942	Organic Carbon	104	105	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158750	Turbidity	1.27	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158743	Chloride	0.812	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158743	Sulfate	0.720	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158754	Ammonia-N	0.208	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158964	Ammonia-N	1.92	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158964	Kjeldahl Nitrogen	1.27	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158942	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158943	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158673	Total-P	1.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379213

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158944	O-Phosphate-P	0.207	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158922	O-Phosphate-P	2.26	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P379229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158938	Color (true)	0.00805	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P379234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158940	Color (true)	0.775	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P379786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158939	Total Alkalinity	0.243	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P379822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158938	TDS	5.64	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P379747

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158939	Fluoride	0.979	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P379431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158941	Organic Carbon	0.318	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P379432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158942	Organic Carbon	0.480	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: A97656

Included Lab Sample IDs: 2158944, 2158945, 2158946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.3	96.7	P/P	90 - 110
O-Phosphate-P	97.9	96.4	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A97663

Included Lab Sample IDs: 2158938, 2158939, 2158940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97703

Included Lab Sample IDs: 2158938, 2158939, 2158940

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: A97742

Included Lab Sample IDs: 2158941, 2158942, 2158943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	99.1	P/P	90 - 110
Organic Carbon	97.0	97.3	P/P	90 - 110
Organic Carbon	99.6	103	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97771

Included Lab Sample IDs: 2158938, 2158939, 2158940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.1	99.2	P/P	90 - 110
Chloride	99.2	99.5	P/P	90 - 110
Sulfate	99.1	99.4	P/P	90 - 110
Sulfate	99.4	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97793

Included Lab Sample IDs: 2158941, 2158942, 2158943

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

Reference Method: SM 4500 F-C-2011

Run ID: A97845

Included Lab Sample IDs: 2158938, 2158939, 2158940

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97848

Included Lab Sample IDs: 2158941, 2158942, 2158943

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97864

Included Lab Sample IDs: 2158941, 2158942, 2158943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	99.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97872

Included Lab Sample IDs: 2158938, 2158939, 2158940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.1	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97954

Included Lab Sample IDs: 2158943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97962

Included Lab Sample IDs: 2158941, 2158942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	101	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				1.27	
EPA 300.0 Rev. 2.1	Chloride	98.8	102	102	0.812	
	Sulfate	99.3	101	98.6	0.720	
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	102		0.208
	Ammonia-N	101	98.2	100		1.92
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	100	101		1.27
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.5	100		0.501
	NO2NO3-N	102	98.0	98.0		0.0
EPA 365.1 Rev. 2.0	Total-P	107	107	106		1.02
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	96.3	96.5		0.207
	O-Phosphate-P	105	93.8	96.4		2.26
SM 2120 B-2011	Color (true)	101			0.0080	
	Color (true)	99.8			0.775	
SM 2320 B-2011	Total Alkalinity	101			0.243	
SM 2540 C-2011	TDS				5.64	
SM 4500 F-C-2011	Fluoride	98.1	97.9	99.2		0.979
SM 5310 B-2011	Organic Carbon	96.2	95.5	95.0		0.318
	Organic Carbon	97.9	104	105		0.480

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2158938, 2158939, 2158940
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2158938, 2158939, 2158940
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2158938, 2158939, 2158940
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2158941, 2158942, 2158943
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2158941, 2158942, 2158943
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2158941, 2158942, 2158943
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2158941, 2158942, 2158943
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2158944, 2158945, 2158946
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2158938, 2158939, 2158940
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2158938, 2158939, 2158940
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2158938, 2158939, 2158940
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2158938, 2158939, 2158940
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2158938, 2158939, 2158940
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2158941, 2158942, 2158943

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	02/19/2020			02/19/2020 17:56	Yen Ta	2158938, 2158939, 2158940
EPA 300.0 Rev. 2.1	02/19/2020			02/26/2020 22:49	Elliott Rodriguez	2158938
	02/19/2020			02/26/2020 23:01	Elliott Rodriguez	2158939
	02/19/2020			02/26/2020 23:38	Elliott Rodriguez	2158940
EPA 350.1 Rev. 2.0	02/19/2020			02/24/2020 13:09	Ping Hua	2158941
	02/19/2020			02/24/2020 13:10	Ping Hua	2158942
	02/19/2020			02/24/2020 13:28	Ping Hua	2158943
EPA 351.2 Rev. 2.0	02/19/2020	02/26/2020 11:30	Sima Feizi	02/27/2020 16:32	Jhamieka S. Greenwood	2158941
	02/19/2020	02/26/2020 11:30	Sima Feizi	02/27/2020 16:34	Jhamieka S. Greenwood	2158942
	02/19/2020	02/26/2020 11:30	Sima Feizi	02/27/2020 16:35	Jhamieka S. Greenwood	2158943
EPA 353.2 Rev. 2.0	02/19/2020			02/27/2020 11:26	Beverly Y. Sanders	2158943
	02/19/2020			02/27/2020 12:11	Beverly Y. Sanders	2158942
	02/19/2020			02/27/2020 12:23	Beverly Y. Sanders	2158941
EPA 365.1 Rev. 2.0	02/19/2020	02/28/2020 14:20	Yen Ta	03/02/2020 16:38	Lipi Saha	2158943
	02/19/2020	02/28/2020 14:20	Yen Ta	03/03/2020 12:54	Benjamin T. Nordmann	2158941
	02/19/2020	02/28/2020 14:20	Yen Ta	03/03/2020 12:55	Benjamin T. Nordmann	2158942
EPA 365.1 Rev. 2.0 dissolved	02/19/2020			02/19/2020 17:39	Carlos Miranda	2158944
	02/19/2020			02/19/2020 18:07	Carlos Miranda	2158945, 2158946
SM 2120 B-2011	02/19/2020			02/19/2020 17:13	Madeline Funaro	2158938
	02/19/2020			02/19/2020 17:14	Madeline Funaro	2158939
	02/19/2020			02/19/2020 18:00	Madeline Funaro	2158940
SM 2320 B-2011	02/19/2020			02/27/2020 14:46	Dale L. Simmons	2158939
	02/19/2020			02/27/2020 14:56	Dale L. Simmons	2158938
	02/19/2020			02/27/2020 15:07	Dale L. Simmons	2158940
SM 2540 C-2011	02/19/2020			02/21/2020 15:21	Yijie Li	2158938, 2158939, 2158940
SM 2540 D-2011	02/19/2020			02/21/2020 15:21	Yijie Li	2158938, 2158939, 2158940
SM 4500 F-C-2011	02/19/2020			02/26/2020 03:43	Dale L. Simmons	2158939
	02/19/2020			02/26/2020 04:12	Dale L. Simmons	2158938
	02/19/2020			02/26/2020 04:24	Dale L. Simmons	2158940
SM 5310 B-2011	02/19/2020			02/21/2020 15:38	Madeline Funaro	2158941
	02/19/2020			02/21/2020 22:22	Madeline Funaro	2158942
	02/19/2020			02/21/2020 23:39	Madeline Funaro	2158943