

Chemical Analysis Report

SO-DIST-2019-04-11-01

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

Event Description: **SMP:Highland Lakes (county)**

Request ID: **RQ-2019-04-01-14**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:

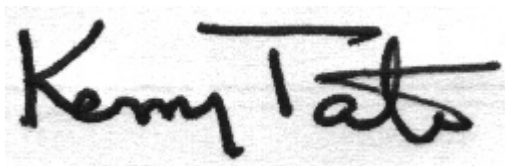
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 01-MAY-2019 11:15

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Bonnet Lake

Collection Date/Time: 04/10/2019 12:30

Field ID: G4SD0170

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077403	EPA 180.1 Rev. 2.0	Turbidity	22	A	NTU	P362002	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P362298	
		Sulfate	38		mg SO4/L	P362301	
	SM 2120 B	Color (true)	13		PCU	P362033	
	SM 2320 B-97	Total Alkalinity	36		mg CaCO3/L	P362275	
	SM 2540 C-97	TDS	151		mg/L	P362629	
	SM 2540 D-97	TSS	16		mg/L	P362203	
	SM 4500 F-C-97	Fluoride	0.088	I	mg F/L	P362278	
2077406	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P362407	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P362546	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P362492	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P362349	
	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P362200	
2077409	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362016	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Huckleberry

Collection Date/Time: 04/10/2019 10:40

Field ID: G4SD0166

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077404	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P362002	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P362298	
		Sulfate	3.3		mg SO4/L	P362301	
	SM 2120 B	Color (true)	83		PCU	P362029	
	SM 2320 B-97	Total Alkalinity	24		mg CaCO3/L	P362275	
	SM 2540 C-97	TDS	95		mg/L	P362629	
	SM 2540 D-97	TSS	13		mg/L	P362203	
	SM 4500 F-C-97	Fluoride	0.085	I	mg F/L	P362278	
2077407	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P362407	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P362698	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P362492	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P362349	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P362200	
2077410	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362016	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Little Bonnet Lake

Collection Date/Time: 04/10/2019 11:40

Field ID: G4SD0169

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077405	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P362002	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P362298	
		Sulfate	29		mg SO4/L	P362301	
	SM 2120 B	Color (true)	13		PCU	P362029	
	SM 2320 B-97	Total Alkalinity	37		mg CaCO3/L	P362275	
	SM 2540 C-97	TDS	128		mg/L	P362629	
	SM 2540 D-97	TSS	5	I	mg/L	P362203	
	SM 4500 F-C-97	Fluoride	0.080	I	mg F/L	P362278	
2077408	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P362407	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P362546	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.56		mg N/L	P362492	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P362349	
	SM 5310 B-00	Organic Carbon	5.8		mg C/L	P362200	
2077411	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362016	

Ref. Method and Comment:

SM 2540 D-97: 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: P362002

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362298

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362301

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362407

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362546

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362698

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362492

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362349

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362016

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P362029

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P362033

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P362275

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

Reference Method: SM 2540 C-97
Batch ID: P362629

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362203

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362278

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362200

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: P362298

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362301

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362407

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362546

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362698

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: P362492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362349

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: P362016

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

Reference Method: SM 2120 B
Batch ID: P362029

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P362033

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

Reference Method: SM 2320 B-97
Batch ID: P362275

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362200

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077293	Chloride	103		P	90 - 110
2077354	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362301

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077293	Sulfate	104		P	90 - 110
2077354	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077390	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077384	Kjeldahl Nitrogen	115	104	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078452	Kjeldahl Nitrogen	110	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077406	NO2NO3-N	99.3	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077390	Total-P	102	94.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077410	O-Phosphate-P	99.0	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P362278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077450	Fluoride	99.0	99.6	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P362200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077325	Organic Carbon	97.9	98.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077403	Turbidity	1.83	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077293	Chloride	0.0416	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077293	Sulfate	0.114	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077390	Ammonia-N	0.408	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077384	Kjeldahl Nitrogen	5.85	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078452	Kjeldahl Nitrogen	2.90	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077406	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077390	Total-P	7.05	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P362016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077410	O-Phosphate-P	1.20	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P362029

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077353	Color (true)	0.745	Sample	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P362033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077352	Color (true)	9.57	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P362275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077450	Total Alkalinity	0.356	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P362629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077389	TDS	1.51	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P362278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077450	Fluoride	0.527	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P362200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077325	Organic Carbon	0.868	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
 Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90636

Included Lab Sample IDs: 2077403, 2077404, 2077405

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90643

Included Lab Sample IDs: 2077409, 2077410, 2077411

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.3	P/P	90 - 110
O-Phosphate-P	99.6	99.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A90648

Included Lab Sample IDs: 2077403, 2077404, 2077405

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115
Color (true)	103	103	P/P	85 - 115

Reference Method: SM 5310 B-00

Run ID: A90738

Included Lab Sample IDs: 2077406, 2077407, 2077408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	98.7	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90759

Included Lab Sample IDs: 2077403, 2077404, 2077405

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

Reference Method: SM 4500 F-C-97

Run ID: A90759

Included Lab Sample IDs: 2077403, 2077404, 2077405

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90760

Included Lab Sample IDs: 2077403, 2077404, 2077405

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110
Sulfate	104	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90813

Included Lab Sample IDs: 2077406, 2077407, 2077408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90819

Included Lab Sample IDs: 2077407

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90837

Included Lab Sample IDs: 2077406, 2077408

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90845

Included Lab Sample IDs: 2077406, 2077407, 2077408

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90881

Included Lab Sample IDs: 2077406, 2077408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	99.1	P/P	90 - 110
Kjeldahl Nitrogen	99.2	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90992

Included Lab Sample IDs: 2077407

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.9	93.6	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.83	
EPA 300.0 Rev. 2.1	Chloride	102	103	100		0.0416	
	Sulfate	102	104	103		0.114	
EPA 350.1 Rev. 2.0	Ammonia-N	103	101	101			0.408
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	115	104			5.85
	Kjeldahl Nitrogen	100	110	107			2.90
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	99.3	99.3			0.0
EPA 365.1 Rev. 2.0	Total-P	101	102	94.4			7.05
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.0	100			1.20
SM 2120 B	Color (true)	102				0.745	
	Color (true)	101				9.57	
SM 2320 B-97	Total Alkalinity	101				0.356	
SM 2540 C-97	TDS					1.51	
SM 4500 F-C-97	Fluoride	97.6	99.0	99.6			0.527
SM 5310 B-00	Organic Carbon	99.2	97.9	98.9			0.868

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2077403, 2077404, 2077405
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2077403, 2077404, 2077405
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2077403, 2077404, 2077405
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2077406, 2077407, 2077408
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2077406, 2077407, 2077408
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2077406, 2077407, 2077408
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2077406, 2077407, 2077408
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2077409, 2077410, 2077411
SM 2120 B / E31780	True Color measured at 450 nm	2077403, 2077404, 2077405
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2077403, 2077404, 2077405
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2077403, 2077404, 2077405
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2077403, 2077404, 2077405
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2077403, 2077404, 2077405
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2077406, 2077407, 2077408

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	04/11/2019			04/11/2019 16:15	Adrian Shelby	2077403, 2077404, 2077405
EPA 300.0 Rev. 2.1	04/11/2019			04/17/2019 01:11	Lipi Saha	2077403
	04/11/2019			04/17/2019 01:24	Lipi Saha	2077404
	04/11/2019			04/17/2019 01:36	Lipi Saha	2077405
EPA 350.1 Rev. 2.0	04/11/2019			04/17/2019 14:10	Ping Hua	2077406
	04/11/2019			04/17/2019 14:12	Ping Hua	2077407
	04/11/2019			04/17/2019 14:13	Ping Hua	2077408
EPA 351.2 Rev. 2.0	04/11/2019	04/18/2019 12:15	Adrian Shelby	04/22/2019 12:20	Joseph Suarez	2077406
	04/11/2019	04/18/2019 12:15	Adrian Shelby	04/22/2019 12:26	Joseph Suarez	2077408
	04/11/2019	04/23/2019 12:00	Adrian Shelby	04/25/2019 10:30	Joseph Suarez	2077407
EPA 353.2 Rev. 2.0	04/11/2019			04/19/2019 09:37	Beverly Y. Sanders	2077406
	04/11/2019			04/19/2019 09:38	Beverly Y. Sanders	2077407
	04/11/2019			04/19/2019 09:39	Beverly Y. Sanders	2077408
EPA 365.1 Rev. 2.0	04/11/2019	04/17/2019 12:40	Sima Feizi	04/18/2019 11:21	Rosalyn Ballman	2077407
	04/11/2019	04/17/2019 12:40	Sima Feizi	04/18/2019 17:08	Rosalyn Ballman	2077406
	04/11/2019	04/17/2019 12:40	Sima Feizi	04/18/2019 17:09	Rosalyn Ballman	2077408
EPA 365.1 Rev. 2.0 dissolved	04/11/2019			04/11/2019 14:31	Jhamieka S. Greenwood	2077410
	04/11/2019			04/11/2019 15:26	Jhamieka S. Greenwood	2077409
	04/11/2019			04/11/2019 15:27	Jhamieka S. Greenwood	2077411
SM 2120 B	04/11/2019			04/11/2019 15:39	Mariam Hanna	2077404
	04/11/2019			04/11/2019 15:40	Mariam Hanna	2077405
	04/11/2019			04/11/2019 16:22	Mariam Hanna	2077403
SM 2320 B-97	04/11/2019			04/16/2019 11:19	Samantha Davila	2077403
	04/11/2019			04/16/2019 11:31	Samantha Davila	2077404
	04/11/2019			04/16/2019 11:43	Samantha Davila	2077405
SM 2540 C-97	04/11/2019			04/12/2019 18:11	Mariam Hanna	2077403, 2077404, 2077405
SM 2540 D-97	04/11/2019			04/12/2019 18:23	Mariam Hanna	2077403, 2077404, 2077405
SM 4500 F-C-97	04/11/2019			04/16/2019 11:19	Samantha Davila	2077403
	04/11/2019			04/16/2019 11:31	Samantha Davila	2077404
	04/11/2019			04/16/2019 11:43	Samantha Davila	2077405
SM 5310 B-00	04/11/2019			04/16/2019 01:39	Julia Storbeck	2077406
	04/11/2019			04/16/2019 01:52	Julia Storbeck	2077407
	04/11/2019			04/16/2019 02:04	Julia Storbeck	2077408