

Chemical Analysis Report

SW-DIST-2018-06-14-01

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

Event Description: **LVI Lakes**
Request ID: **RQ-2018-06-11-10**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 03-JUL-2018 12:58



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 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: Brant Lake @ Center

Collection Date/Time: 06/13/2018 11:15

Field ID: G1SW0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2000974	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P346931	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P347396	
		Sulfate	4.5		mg SO4/L	P347399	
	SM 2120 B	Color (true)	84		PCU	P346914	
	SM 2320 B-97	Total Alkalinity	24	AJ	mg CaCO3/L	P347268	RPD
	SM 2540 C-97	TDS	112		mg/L	P347171	
	SM 2540 D-97	TSS	4	I	mg/L	P347175	
	SM 4500 F-C-97	Fluoride	0.098	I	mg F/L	P347272	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P347346	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P347666	MS
2000976	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347308	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P347255	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P347526	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P346928	
	dissolved						

Ref. Method and Comment:

SM 2320 B-97: Refer to the narrative for an explanation of QC Codes.

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Wilson Lake

Collection Date/Time: 06/13/2018 13:10

Field ID: G1SW0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2000975	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P346931	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P347396	
		Sulfate	4.4		mg SO4/L	P347399	
	SM 2120 B	Color (true)	34		PCU	P346914	
	SM 2320 B-97	Total Alkalinity	55		mg CaCO3/L	P347268	RPD
	SM 2540 C-97	TDS	122	A	mg/L	P347171	
	SM 2540 D-97	TSS	2	UA	mg/L	P347175	
	SM 4500 F-C-97	Fluoride	0.072	I	mg F/L	P347272	
2000977	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P347346	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P347666	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347308	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P347255	
	SM 5310 B-00	Organic Carbon	7.8		mg C/L	P347526	
2000979	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346928	

Ref. Method and Comment:

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346931

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347396

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347399

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347346

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347666

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347308

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347255

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346928

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

Reference Method: SM 2120 B
Batch ID: P346914

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P347268

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

Reference Method: SM 2540 C-97
Batch ID: P347171

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347175

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P347272

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P347526

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: P347396

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P347399

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P347346

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P347666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P347308

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P347255

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P346928

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

Reference Method: SM 2320 B-97
 Batch ID: P347268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
 Batch ID: P347272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	91 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P347526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347396

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000771	Chloride	97.8		P	90 - 110
2001110	Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000771	Sulfate	101		P	90 - 110
2001110	Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000977	Ammonia-N	96.2	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2001115	Kjeldahl Nitrogen	107	111	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000889	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000977	Total-P	96.8	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000978	O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P347272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000974	Fluoride	97.0	95.9	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000937	Turbidity	0.656	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000771	Chloride	3.48	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000771	Sulfate	4.43	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000977	Ammonia-N	3.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2001115	Kjeldahl Nitrogen	3.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000889	NO2NO3-N	0.628	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000977	Total-P	1.64	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000978	O-Phosphate-P	0.599	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P346914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000954	Color (true)	0.470	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P347268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000974	Total Alkalinity	2.09	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P347171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000975	TDS	9.84	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P347272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000974	Fluoride	0.953	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P347526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000125	Organic Carbon	0.857	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: SM 2120 B

Run ID: A84589

Included Lab Sample IDs: 2000974, 2000975

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84591

Included Lab Sample IDs: 2000978, 2000979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.4	P/P	90 - 110
O-Phosphate-P	99.9	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84592

Included Lab Sample IDs: 2000974, 2000975

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84742

Included Lab Sample IDs: 2000974, 2000975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	101	P/P	90 - 110
Sulfate	104	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84747

Included Lab Sample IDs: 2000976, 2000977

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

Reference Method: SM 2320 B-97

Run ID: A84752

Included Lab Sample IDs: 2000974, 2000975

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

Reference Method: SM 4500 F-C-97

Run ID: A84752

Included Lab Sample IDs: 2000974, 2000975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	P/P	90 - 110
Fluoride	101	97.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84777

Included Lab Sample IDs: 2000976, 2000977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	103	P/P	90 - 110
Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84829

Included Lab Sample IDs: 2000977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A84844

Included Lab Sample IDs: 2000976, 2000977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.3	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84870

Included Lab Sample IDs: 2000976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A84950

Included Lab Sample IDs: 2000976, 2000977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.5	94.8	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					0.656	
EPA 300.0 Rev. 2.1	Chloride	99.9	97.8	96.9		3.48	
	Sulfate	101	101	97.1		4.43	
EPA 350.1 Rev. 2.0	Ammonia-N	99.9	96.2	99.5			3.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.1	107	111			3.34
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	99.5	100			0.628
EPA 365.1 Rev. 2.0	Total-P	97.4	96.8	98.5			1.64
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.9	100			0.599
SM 2120 B	Color (true)					0.470	
SM 2320 B-97	Total Alkalinity	101				2.09	
SM 2540 C-97	TDS					9.84	
SM 4500 F-C-97	Fluoride	96.2	97.0	95.9			0.953
SM 5310 B-00	Organic Carbon	94.7					0.857

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2000974, 2000975
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2000974, 2000975
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2000974, 2000975
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2000976, 2000977
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2000976, 2000977
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2000976, 2000977
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2000976, 2000977
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2000978, 2000979
SM 2120 B / E31780	True Color measured at 450 nm	2000974, 2000975
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2000974, 2000975
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2000974, 2000975
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2000974, 2000975
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2000974, 2000975
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2000976, 2000977

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	06/14/2018			06/14/2018 17:30	William L. Brown IV	2000974, 2000975
EPA 300.0 Rev. 2.1	06/14/2018			06/22/2018 17:35	Lipi Saha	2000974
	06/14/2018			06/22/2018 17:47	Lipi Saha	2000975
EPA 350.1 Rev. 2.0	06/14/2018			06/22/2018 08:59	Ping Hua	2000977
	06/14/2018			06/22/2018 09:17	Ping Hua	2000976
EPA 351.2 Rev. 2.0	06/14/2018	06/28/2018 10:50	Adrian Shelby	06/29/2018 15:16	Joseph Suarez	2000976
	06/14/2018	06/28/2018 10:50	Adrian Shelby	06/29/2018 15:17	Joseph Suarez	2000977
EPA 353.2 Rev. 2.0	06/14/2018			06/21/2018 10:22	Beverly Y. Sanders	2000976
	06/14/2018			06/21/2018 10:23	Beverly Y. Sanders	2000977
EPA 365.1 Rev. 2.0	06/14/2018	06/21/2018 12:42	Sima Feizi	06/26/2018 10:32	Beverly Y. Sanders	2000977
	06/14/2018	06/21/2018 12:42	Sima Feizi	06/27/2018 13:06	Beverly Y. Sanders	2000976
EPA 365.1 Rev. 2.0 dissolved	06/14/2018			06/14/2018 14:58	Megan Treadwell	2000978
	06/14/2018			06/14/2018 15:44	Megan Treadwell	2000979
SM 2120 B	06/14/2018			06/14/2018 15:36	Tanya Welborn	2000974
	06/14/2018			06/14/2018 15:37	Tanya Welborn	2000975
SM 2320 B-97	06/14/2018			06/21/2018 09:57	Lauren Bottorf	2000974
	06/14/2018			06/21/2018 12:46	Lauren Bottorf	2000975
SM 2540 C-97	06/14/2018			06/15/2018 15:30	William L. Brown IV	2000974, 2000975
SM 2540 D-97	06/14/2018			06/15/2018 15:30	William L. Brown IV	2000974, 2000975
SM 4500 F-C-97	06/14/2018			06/21/2018 09:50	Lauren Bottorf	2000974
	06/14/2018			06/21/2018 12:46	Lauren Bottorf	2000975
SM 5310 B-00	06/14/2018			06/25/2018 20:36	Megan Treadwell	2000976
	06/14/2018			06/25/2018 20:51	Megan Treadwell	2000977