

Chemical Analysis Report

NE-DIST-2019-01-10-01

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

Event Description: **Melrose Lakes**
Request ID: **RQ-2019-01-07-43**
Customer: **NE-DIST**
Project ID: **SMP**

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

Date Certified: 29-JAN-2019 12:14

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 groups are included in this report: Metals and 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: GOOSE LAKE

Collection Date/Time: 01/09/2019 10:20

Field ID: 20030980

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2053380	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P357111	
	EPA 300.0 Rev. 2.1	Chloride	8.1		mg Cl/L	P357264	
		Sulfate	0.43	I	mg SO4/L	P357266	
	SM 2120 B	Color (true)	570		PCU	P357098	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P357545	
	SM 2540 C-97	TDS	94		mg/L	P357353	
	SM 2540 D-97	TSS	2	U	mg/L	P357356	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P357519	
2053382	EPA 350.1 Rev. 2.0	Ammonia-N	0.65		mg N/L	P357250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P357277	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P357209	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P357279	
	SM 5310 B-00	Organic Carbon	36		mg C/L	P357253	
2053384	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P357094	

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: ROSS LAKE CENTER

Collection Date/Time: 01/09/2019 10:50

Field ID: 20030454

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2053374	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P357111	
	EPA 300.0 Rev. 2.1	Chloride	8.5		mg Cl/L	P357264	
		Sulfate	0.62		mg SO4/L	P357266	
	SM 2120 B	Color (true)	520		PCU	P357098	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P357544	
	SM 2540 C-97	TDS	57		mg/L	P357353	
	SM 2540 D-97	TSS	2	U	mg/L	P357356	
2053376	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P357518	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.54		mg N/L	P357250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P357276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P357209	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P357267	
2053378	SM 5310 B-00	Organic Carbon	37		mg C/L	P357253	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P357093	
2053412	EPA 200.7 Rev. 4.4	Barium	7.7		ug/L	P357312	
		Calcium	2.06		mg/L	P357312	
		Iron	600		ug/L	P357312	
		Magnesium	1.40		mg/L	P357312	
		Potassium	1.8		mg/L	P357312	
		Sodium	4.9		mg/L	P357312	
		Zinc	5.1	I	ug/L	P357312	
	EPA 200.8 Rev. 5.4	Aluminum	434		ug/L	P357312	
		Antimony	0.050	U	ug/L	P357312	
		Arsenic	0.74		ug/L	P357312	
		Boron**	15.6		ug/L	P357312	
		Cadmium	0.020	U	ug/L	P357312	
		Chromium	0.62	I	ug/L	P357312	
		Copper	0.45	I	ug/L	P357789	
		Lead	0.36	I	ug/L	P357312	
		Nickel	1.2	I	ug/L	P357312	
		Selenium	0.20	U	ug/L	P357312	
		Silver	0.010	U	ug/L	P357312	
		Thallium	0.10	U	ug/L	P357312	

Ref. Method and Comment:

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

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, potassium and sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: LAKE SUGGS CTR

Collection Date/Time: 01/09/2019 11:20

Field ID: 20030922

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2053375	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P357111	
	EPA 300.0 Rev. 2.1	Chloride	7.4		mg Cl/L	P357264	
		Sulfate	0.42	I	mg SO4/L	P357266	
	SM 2120 B	Color (true)	720		PCU	P357098	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P357545	
	SM 2540 C-97	TDS	129		mg/L	P357353	
	SM 2540 D-97	TSS	2	U	mg/L	P357356	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P357519	
2053377	EPA 350.1 Rev. 2.0	Ammonia-N	1.6		mg N/L	P357250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.6		mg N/L	P357277	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P357209	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P357279	
	SM 5310 B-00	Organic Carbon	51		mg C/L	P357253	
2053379	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P357094	
2053413	EPA 200.7 Rev. 4.4	Barium	11.6		ug/L	P357312	
		Calcium	2.05		mg/L	P357312	
		Iron	770		ug/L	P357312	
		Magnesium	1.42		mg/L	P357312	
		Potassium	2.3		mg/L	P357312	
		Sodium	4.1		mg/L	P357312	
		Zinc	5.0	U	ug/L	P357312	
	EPA 200.8 Rev. 5.4	Aluminum	507		ug/L	P357312	
		Antimony	0.050	U	ug/L	P357312	
		Arsenic	0.84		ug/L	P357312	
		Boron**	16.3		ug/L	P357312	
		Cadmium	0.020	U	ug/L	P357312	
		Chromium	0.64	I	ug/L	P357312	
		Copper	0.40	U	ug/L	P357312	
		Lead	0.72		ug/L	P357312	
		Nickel	0.64	I	ug/L	P357312	
		Selenium	0.20	U	ug/L	P357312	
		Silver	0.010	U	ug/L	P357312	
		Thallium	0.10	U	ug/L	P357312	

Ref. Method and Comment:

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

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, potassium and sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample. The lead result was confirmed in the undigested sample on 01/23/2019.

Sample Location: LAKE ROSA CENTER

Collection Date/Time: 01/09/2019 12:10

Field ID: G2NE1130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2053381	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P357111	
	EPA 300.0 Rev. 2.1	Chloride	9.3		mg Cl/L	P357264	
		Sulfate	7.3		mg SO4/L	P357266	
	SM 2120 B	Color (true)	8.0		PCU	P357098	
	SM 2320 B-97	Total Alkalinity	3.9		mg CaCO3/L	P357545	
	SM 2540 C-97	TDS	27		mg/L	P357355	RPD
	SM 2540 D-97	TSS	2	U	mg/L	P357357	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P357519	
2053383	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P357364	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P357277	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P357209	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P357279	
	SM 5310 B-00	Organic Carbon	2.5		mg C/L	P357253	
2053385	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P357094	

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: P357111

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357312

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357312

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357789

Component	Result	Code	Units
Copper	0.40	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357264

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357266

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357250

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357364

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357276

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357277

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357209

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357267

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357279

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357093

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357094

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: P357098

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P357544

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

Reference Method: SM 2320 B-97
Batch ID: P357545

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

Reference Method: SM 2540 C-97
Batch ID: P357353

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P357355

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P357356

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P357357

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P357518

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P357519

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P357253

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	105		P	85 - 115
Iron	107		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	105		P	85 - 115
Sodium	109		P	85 - 115
Zinc	98.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	97.6		P	85 - 115
Arsenic	104		P	85 - 115
Boron	103		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	103		P	85 - 115
Copper	103		P	85 - 115
Lead	99.6		P	85 - 115
Nickel	103		P	85 - 115
Selenium	102		P	85 - 115
Silver	99.1		P	85 - 115
Thallium	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	98.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357264

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357266

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357250

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357276

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357277

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357209

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357267

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357279

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357093

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	95.9		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P357098

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P357544

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

Reference Method: SM 2320 B-97
Batch ID: P357545

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

Reference Method: SM 4500 F-C-97
Batch ID: P357518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P357519

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P357253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053668	Barium	98.7		P	80 - 120
2053668	Iron	103		P	80 - 120
2053668	Magnesium	102		P	80 - 120
2053668	Zinc	101		P	80 - 120
2054037	Barium	104	103	P/P	80 - 120
2054037	Calcium	108	107	P/P	80 - 120
2054037	Iron	110	108	P/P	80 - 120
2054037	Magnesium	113	111	P/P	80 - 120
2054037	Potassium	111	110	P/P	80 - 120
2054037	Sodium	107		P	80 - 120
2054037	Zinc	103	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053668	Aluminum	99.6		P	80 - 120
2053668	Antimony	102		P	80 - 120
2053668	Arsenic	108		P	80 - 120
2053668	Cadmium	103		P	80 - 120
2053668	Chromium	97.6		P	80 - 120
2053668	Copper	97.2		P	80 - 120
2053668	Lead	103		P	80 - 120
2053668	Nickel	97.5		P	80 - 120
2053668	Selenium	101		P	80 - 120
2053668	Silver	95.1		P	80 - 120
2053668	Thallium	104		P	80 - 120
2054037	Aluminum	98.0	99.6	P/P	80 - 120
2054037	Antimony	97.7	96.7	P/P	80 - 120
2054037	Arsenic	104	104	P/P	80 - 120
2054037	Boron	103	101	P/P	80 - 120
2054037	Cadmium	104	103	P/P	80 - 120
2054037	Chromium	105	104	P/P	80 - 120
2054037	Copper	106	105	P/P	80 - 120
2054037	Lead	100	99.7	P/P	80 - 120
2054037	Nickel	103	103	P/P	80 - 120
2054037	Selenium	102	101	P/P	80 - 120
2054037	Silver	99.5	98.5	P/P	80 - 120
2054037	Thallium	102	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2054090	Copper	100	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053262	Chloride	100		P	90 - 110
2053374	Chloride	100		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053262	Sulfate	99.7		P	90 - 110
2053374	Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053343	Ammonia-N	101	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053383	Ammonia-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053345	Kjeldahl Nitrogen	107	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053383	Kjeldahl Nitrogen	108	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053346	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053344	Total-P	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053383	Total-P	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053319	O-Phosphate-P	92.9	95.4	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053385	O-Phosphate-P	95.0	96.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P357518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053262	Fluoride	99.2	100	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P357519

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053643	Fluoride	99.3	100	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P357253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053343	Organic Carbon	98.0	98.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P357111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053418	Turbidity	11.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054037	Barium	1.51	Spike	P	0 - 20
2054037	Calcium	1.06	Spike	P	0 - 20
2054037	Iron	1.21	Spike	P	0 - 20
2054037	Magnesium	1.27	Spike	P	0 - 20
2054037	Potassium	1.03	Spike	P	0 - 20
2054037	Sodium	1.54	Spike	P	0 - 20
2054037	Zinc	1.56	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054037	Aluminum	0.979	Spike	P	0 - 20
2054037	Antimony	1.01	Spike	P	0 - 20
2054037	Arsenic	0.0539	Spike	P	0 - 20
2054037	Boron	1.63	Spike	P	0 - 20
2054037	Cadmium	0.375	Spike	P	0 - 20
2054037	Chromium	1.04	Spike	P	0 - 20
2054037	Copper	0.416	Spike	P	0 - 20
2054037	Lead	0.356	Spike	P	0 - 20
2054037	Nickel	0.371	Spike	P	0 - 20
2054037	Selenium	0.672	Spike	P	0 - 20
2054037	Silver	0.966	Spike	P	0 - 20
2054037	Thallium	0.714	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054090	Copper	1.74	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053262	Chloride	1.96	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053262	Sulfate	1.87	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053343	Ammonia-N	1.80	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053383	Ammonia-N	0.880	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053345	Kjeldahl Nitrogen	0.612	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053383	Kjeldahl Nitrogen	5.13	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053346	NO2NO3-N	0.250	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053344	Total-P	1.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053383	Total-P	1.83	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053319	O-Phosphate-P	2.24	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053385	O-Phosphate-P	1.15	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P357098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053341	Color (true)	0.934	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P357544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053262	Total Alkalinity	0.438	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P357545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053643	Total Alkalinity	0.393	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P357353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053340	TDS	3.94	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P357355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053418	TDS	13.1	Sample	F	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P357518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053262	Fluoride	0.509	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P357519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053643	Fluoride	0.983	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P357253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053343	Organic Carbon	0.704	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 365.1 Rev. 2.0 dissolved

Run ID: A88745

Included Lab Sample IDs: 2053378, 2053379, 2053384, 2053385

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.4	95.2	P/P	90 - 110
O-Phosphate-P	97.3	96.4	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A88746

Included Lab Sample IDs: 2053374, 2053375, 2053380, 2053381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	104	P/P	90 - 115
Color (true)	103	104	P/P	85 - 115
Color (true)	104	103	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A88752

Included Lab Sample IDs: 2053374, 2053375, 2053380, 2053381

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A88788

Included Lab Sample IDs: 2053374, 2053375, 2053380, 2053381

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88791

Included Lab Sample IDs: 2053376, 2053377, 2053382, 2053383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	101	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88802

Included Lab Sample IDs: 2053376, 2053377, 2053382

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

Reference Method: SM 5310 B-00

Run ID: A88804

Included Lab Sample IDs: 2053376, 2053377, 2053382, 2053383

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88850

Included Lab Sample IDs: 2053377, 2053382, 2053383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88851

Included Lab Sample IDs: 2053383

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88855

Included Lab Sample IDs: 2053376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88860

Included Lab Sample IDs: 2053376, 2053377, 2053382

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88877

Included Lab Sample IDs: 2053383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88888

Included Lab Sample IDs: 2053412, 2053413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	95 - 105
Barium	101	101	P/P	90 - 110
Calcium	101	102	P/P	95 - 105
Calcium	102	103	P/P	90 - 110
Iron	102	103	P/P	95 - 105
Iron	103	103	P/P	90 - 110
Magnesium	102	103	P/P	95 - 105
Magnesium	103	103	P/P	90 - 110
Potassium	101	100	P/P	90 - 110
Potassium	99.2	101	P/P	95 - 105
Sodium	104	108	P/P	95 - 105
Sodium	108	107	P/P	90 - 110
Zinc	101	100	P/P	95 - 105
Zinc	100	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88896

Included Lab Sample IDs: 2053412, 2053413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	100	P/P	90 - 110
Antimony	98.8	99.7	P/P	90 - 110
Arsenic	103	102	P/P	90 - 110
Cadmium	99.9	101	P/P	90 - 110
Chromium	103	103	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Lead	101	101	P/P	90 - 110
Nickel	103	103	P/P	90 - 110
Selenium	101	103	P/P	90 - 110
Thallium	92.7	94.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88901

Included Lab Sample IDs: 2053374, 2053375, 2053380, 2053381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	103	P/P	90 - 110
Fluoride	103	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A88906

Included Lab Sample IDs: 2053374, 2053375, 2053380, 2053381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.3	P/P	90 - 110
Total Alkalinity	102	98.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88956

Included Lab Sample IDs: 2053412, 2053413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	100	98.3	P/P	90 - 110
Silver	96.7	98.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89030

Included Lab Sample IDs: 2053412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	96.8	100	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						11.0	
EPA 200.7 Rev. 4.4	Barium	101	98.7	104	103			1.51
	Calcium	105	108	107				1.06
	Iron	107	103	110	108			1.21
	Magnesium	109	102	113	111			1.27
	Potassium	105	111	110				1.03
	Sodium	109	107					1.54
	Zinc	98.5	101	103	102			1.56
EPA 200.8 Rev. 5.4	Aluminum	101	99.6	98.0	99.6			0.979
	Antimony	97.6	102	97.7	96.7			1.01
	Arsenic	104	108	104	104			0.0539
	Boron	103	103	101				1.63
	Cadmium	103	103	104	103			0.375
	Chromium	103	97.6	105	104			1.04
	Copper	103	97.2	106	105			0.416
	Copper	98.1	100	102				1.74
	Lead	99.6	103	100	99.7			0.356
	Nickel	103	97.5	103	103			0.371
	Selenium	102	101	102	101			0.672
	Silver	99.1	95.1	99.5	98.5			0.966
	Thallium	98.4	104	102	103			0.714
EPA 300.0 Rev. 2.1	Chloride	100	100	100			1.96	
	Sulfate	100	99.7	99.6			1.87	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	98.6				1.80
	Ammonia-N	98.0	98.0	99.0				0.880
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	107	108				0.612
	Kjeldahl Nitrogen	101	108	102				5.13
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	102	102				0.250
EPA 365.1 Rev. 2.0	Total-P	99.4	100	102				1.39
	Total-P	102	100	102				1.83
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9	92.9	95.4				2.24
	O-Phosphate-P	95.9	95.0	96.1				1.15
SM 2120 B	Color (true)	103					0.934	
SM 2320 B-97	Total Alkalinity	101					0.438	
	Total Alkalinity	101					0.393	
SM 2540 C-97	TDS						3.94	
	TDS						13.1	
SM 4500 F-C-97	Fluoride	98.8	99.2	100				0.509
	Fluoride	100	99.3	100				0.983
SM 5310 B-00	Organic Carbon	98.6	98.0	98.8				0.704

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2053374, 2053375, 2053380, 2053381
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2053412, 2053413
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2053412, 2053413
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2053374, 2053375, 2053380, 2053381
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2053374, 2053375, 2053380, 2053381

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2053376, 2053377, 2053382, 2053383
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2053376, 2053377, 2053382, 2053383
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2053376, 2053377, 2053382, 2053383
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2053376, 2053377, 2053382, 2053383
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2053378, 2053379, 2053384, 2053385
SM 2120 B / E31780	True Color measured at 450 nm	2053374, 2053375, 2053380, 2053381
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2053374, 2053375, 2053380, 2053381
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2053374, 2053375, 2053380, 2053381
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2053374, 2053375, 2053380, 2053381
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2053374, 2053375, 2053380, 2053381
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2053376, 2053377, 2053382, 2053383

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	01/10/2019			01/10/2019 15:52	Megan Treadwell	2053374, 2053375, 2053380, 2053381
EPA 200.7 Rev. 4.4	01/10/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 14:30	Betina Topolski	2053412
	01/10/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 14:58	Betina Topolski	2053413
EPA 200.8 Rev. 5.4	01/10/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 21:20	Allison Taylor	2053412
	01/10/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 21:30	Allison Taylor	2053413
	01/10/2019	01/15/2019 18:15	Elliott D. Healy	01/22/2019 16:24	Allison Taylor	2053412
	01/10/2019	01/15/2019 18:15	Elliott D. Healy	01/22/2019 16:33	Allison Taylor	2053413
	01/10/2019	01/24/2019 15:20	Elliott D. Healy	01/25/2019 15:36	Allison Taylor	2053412
EPA 300.0 Rev. 2.1	01/10/2019			01/14/2019 21:16	Lipi Saha	2053374
	01/10/2019			01/15/2019 00:17	Lipi Saha	2053375
	01/10/2019			01/15/2019 00:29	Lipi Saha	2053380
	01/10/2019			01/15/2019 00:41	Lipi Saha	2053381
EPA 350.1 Rev. 2.0	01/10/2019			01/14/2019 15:25	Ping Hua	2053376
	01/10/2019			01/14/2019 15:26	Ping Hua	2053377
	01/10/2019			01/14/2019 15:28	Ping Hua	2053382
	01/10/2019			01/16/2019 11:14	Ping Hua	2053383
EPA 351.2 Rev. 2.0	01/10/2019	01/15/2019 11:30	Adrian Shelby	01/16/2019 11:55	Joseph Suarez	2053377
	01/10/2019	01/15/2019 11:30	Adrian Shelby	01/16/2019 11:57	Joseph Suarez	2053382
	01/10/2019	01/15/2019 11:30	Adrian Shelby	01/16/2019 12:01	Joseph Suarez	2053383
	01/10/2019	01/15/2019 11:30	Adrian Shelby	01/16/2019 15:46	Joseph Suarez	2053376
EPA 353.2 Rev. 2.0	01/10/2019			01/14/2019 09:26	Beverly Y. Sanders	2053376
	01/10/2019			01/14/2019 09:28	Beverly Y. Sanders	2053377
	01/10/2019			01/14/2019 09:30	Beverly Y. Sanders	2053383
	01/10/2019			01/14/2019 10:49	Beverly Y. Sanders	2053382
EPA 365.1 Rev. 2.0	01/10/2019	01/15/2019 12:00	Sima Feizi	01/16/2019 16:32	Rosalyn Ballman	2053376
	01/10/2019	01/15/2019 12:00	Sima Feizi	01/16/2019 16:39	Rosalyn Ballman	2053377
	01/10/2019	01/15/2019 12:00	Sima Feizi	01/16/2019 16:40	Rosalyn Ballman	2053382
	01/10/2019	01/15/2019 12:00	Sima Feizi	01/17/2019 12:53	Rosalyn Ballman	2053383
EPA 365.1 Rev. 2.0 dissolved	01/10/2019			01/10/2019 15:18	Jhamieka S. Greenwood	2053385
	01/10/2019			01/10/2019 15:46	Jhamieka S. Greenwood	2053378
	01/10/2019			01/10/2019 15:47	Jhamieka S. Greenwood	2053379
	01/10/2019			01/10/2019 15:48	Jhamieka S. Greenwood	2053384
SM 2120 B	01/10/2019			01/10/2019 15:02	Chelsea Hernandez	2053381
	01/10/2019			01/10/2019 15:24	Chelsea Hernandez	2053374
	01/10/2019			01/10/2019 15:25	Chelsea Hernandez	2053375
	01/10/2019			01/10/2019 15:27	Chelsea Hernandez	2053380
SM 2320 B-97	01/10/2019			01/18/2019 05:24	Dale L. Simmons	2053374
	01/10/2019			01/18/2019 12:05	Dale L. Simmons	2053375
	01/10/2019			01/18/2019 12:11	Dale L. Simmons	2053380
	01/10/2019			01/18/2019 12:21	Dale L. Simmons	2053381

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 C-97	01/10/2019			01/11/2019 14:55	Mariam Hanna	2053374, 2053375, 2053380, 2053381
SM 2540 D-97	01/10/2019			01/11/2019 14:55	Mariam Hanna	2053374, 2053375, 2053380, 2053381
SM 4500 F-C-97	01/10/2019			01/17/2019 11:47	Dale L. Simmons	2053374
	01/10/2019			01/17/2019 14:49	Dale L. Simmons	2053375
	01/10/2019			01/17/2019 14:59	Dale L. Simmons	2053380
	01/10/2019			01/17/2019 15:12	Dale L. Simmons	2053381
SM 5310 B-00	01/10/2019			01/14/2019 23:44	Megan Treadwell	2053376
	01/10/2019			01/14/2019 23:56	Megan Treadwell	2053377
	01/10/2019			01/15/2019 00:33	Megan Treadwell	2053382
	01/10/2019			01/15/2019 00:45	Megan Treadwell	2053383