

Chemical Analysis Report

SW-DIST-2019-01-29-02

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

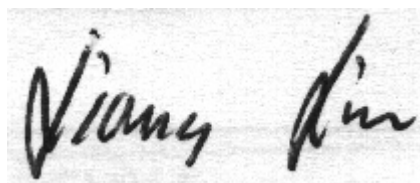
Event Description: **Flint Creek sites**
Request ID: **RQ-2019-01-28-29**
Customer: **SW-DIST**
Project ID: **SMP**

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 15-FEB-2019 14:19

A handwritten signature in black ink, appearing to read "Liang Lin", 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 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 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: FLINT CREEK @ US 301

Collection Date/Time: 01/28/2019 09:45

Field ID: G2SW0004

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2057842	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P357998	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P358372	
		Sulfate	9.1		mg SO ₄ /L	P358373	
	SM 2120 B	Color (true)	120		PCU	P358003	
	SM 2320 B-97	Total Alkalinity	39		mg CaCO ₃ /L	P358553	
	SM 2540 C-97	TDS	108		mg/L	P358345	
	SM 2540 D-97	TSS	9	I	mg/L	P358334	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P358556	
2057845	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P358206	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P358184	
	EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	0.022		mg N/L	P358303	
	EPA 365.1 Rev. 2.0	Total-P	0.32		mg P/L	P358158	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P358265	
2057848	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P358011	
2057858	EPA 200.7 Rev. 4.4	Barium	4.0		ug/L	P358142	
		Calcium	19.6		mg/L	P358142	
		Iron	280		ug/L	P358142	
		Magnesium	3.36		mg/L	P358142	
		Potassium	3.8		mg/L	P358142	
		Sodium	11.5		mg/L	P358142	
		Zinc	5.0	U	ug/L	P358142	
		Aluminum	124		ug/L	P358142	
		Antimony	0.13	I	ug/L	P358142	
		Arsenic	1.47		ug/L	P358142	
	EPA 200.8 Rev. 5.4	Boron**	33.1		ug/L	P358142	
		Cadmium	0.020	U	ug/L	P358142	
		Chromium	0.67	I	ug/L	P358142	
		Copper	1.40		ug/L	P358142	
		Lead	0.27	I	ug/L	P358142	
		Nickel	0.63	I	ug/L	P358142	
		Selenium	0.20	U	ug/L	P358142	
		Silver	0.010	U	ug/L	P358142	
		Thallium	0.10	U	ug/L	P358142	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high 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: FLINT CREEK @ US 301

Collection Date/Time: 01/28/2019 09:50

Field ID: G2SW0004_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2057843	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P357998	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P358372	
		Sulfate	9.1		mg SO4/L	P358373	
	SM 2120 B	Color (true)	120		PCU	P358003	
	SM 2320 B-97	Total Alkalinity	40		mg CaCO3/L	P358553	
	SM 2540 C-97	TDS	104		mg/L	P358345	
	SM 2540 D-97	TSS	9	I	mg/L	P358334	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P358556	
2057846	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P358206	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P358184	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P358303	
	EPA 365.1 Rev. 2.0	Total-P	0.32		mg P/L	P358158	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P358265	
2057849	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P358011	
2057859	EPA 200.7 Rev. 4.4	Barium	4.1		ug/L	P358142	
		Calcium	19.5		mg/L	P358142	
		Iron	280		ug/L	P358142	
		Magnesium	3.33		mg/L	P358142	
		Potassium	3.8		mg/L	P358142	
		Sodium	11.4		mg/L	P358142	
		Zinc	5.0	U	ug/L	P358142	
		Aluminum	134		ug/L	P358142	
		Antimony	0.14	I	ug/L	P358142	
		Arsenic	1.53		ug/L	P358142	
	EPA 200.8 Rev. 5.4	Boron**	32.0		ug/L	P358142	
		Cadmium	0.020	U	ug/L	P358142	
		Chromium	0.64	I	ug/L	P358142	
		Copper	1.38		ug/L	P358142	
		Lead	0.27	I	ug/L	P358142	
		Nickel	0.63	I	ug/L	P358142	
		Selenium	0.20	U	ug/L	P358142	
		Silver	0.010	U	ug/L	P358142	
		Thallium	0.10	U	ug/L	P358142	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high 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: FIELD BLANK_01/28/19

Collection Date/Time: 01/28/2019 10:10

Field ID: blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2057844	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P357998	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P358372	
		Sulfate	0.20	U	mg SO4/L	P358373	
		Color (true)	2.5	U	PCU	P358003	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P358553	
	SM 2540 C-97	TDS	15	U	mg/L	P358342	
	SM 2540 D-97	TSS	2	U	mg/L	P358331	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P358556	
2057847	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P358206	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P358184	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P358303	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P358158	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P358265	
2057850	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P358011	
2057860	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P358142	
		Calcium	0.075	U	mg/L	P358142	
		Iron	30	U	ug/L	P358142	
		Magnesium	0.040	U	mg/L	P358142	
		Potassium	0.30	U	mg/L	P358142	
		Sodium	0.50	U	mg/L	P358142	
		Zinc	5.0	U	ug/L	P358142	
		Aluminum	5.0	U	ug/L	P358142	
		Antimony	0.050	U	ug/L	P358142	
		Arsenic	0.050	U	ug/L	P358142	
		Boron**	2.0	U	ug/L	P358142	
		Cadmium	0.020	U	ug/L	P358142	
		Chromium	0.40	U	ug/L	P358142	
	EPA 200.8 Rev. 5.4	Copper	0.40	U	ug/L	P358142	
		Lead	0.20	U	ug/L	P358142	
		Nickel	0.50	U	ug/L	P358142	
		Selenium	0.20	U	ug/L	P358142	
		Silver	0.010	U	ug/L	P358142	
		Thallium	0.10	U	ug/L	P358142	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 353.2 Rev. 2.0: The result was confirmed on 02/04/2019.

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: FLINT CREEK @ KNIGHTS GRIFFIN RD

Collection Date/Time: 01/28/2019 10:25

Field ID: G2SW0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2057851	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P357998	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P358372	
		Sulfate	8.5		mg SO4/L	P358373	
	SM 2120 B	Color (true)	130		PCU	P358003	
	SM 2320 B-97	Total Alkalinity	40		mg CaCO3/L	P358553	
	SM 2540 C-97	TDS	106		mg/L	P358345	
	SM 2540 D-97	TSS	14	I	mg/L	P358334	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P358556	
2057852	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P358206	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P358184	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P358303	
	EPA 365.1 Rev. 2.0	Total-P	0.42		mg P/L	P358158	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P358265	
2057853	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P358011	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.

EPA 351.2 Rev. 2.0: 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: P357998

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358142

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: P358142

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 300.0 Rev. 2.1
Batch ID: P358372

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358373

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358206

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358184

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358303

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358158

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358011

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

Reference Method: SM 2120 B
Batch ID: P358003

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P358553

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P358342

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P358345

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358331

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P358334

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P358556

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P358265

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: P358142

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	104		P	85 - 115
Iron	105		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	103		P	85 - 115
Sodium	101		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358142

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	105		P	85 - 115
Boron	104		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	98.5		P	85 - 115
Copper	103		P	85 - 115
Lead	106		P	85 - 115
Nickel	103		P	85 - 115
Selenium	99.7		P	85 - 115
Silver	102		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358372

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358373

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358206

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358184

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358303

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358158

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: P358011

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

Reference Method: SM 2120 B
Batch ID: P358003

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

Reference Method: SM 2320 B-97
Batch ID: P358553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P358556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P358265

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057518	Barium	102		P	80 - 120
2057518	Iron	107		P	80 - 120
2057518	Magnesium	103		P	80 - 120
2057518	Potassium	102		P	80 - 120
2057518	Sodium	97.4		P	80 - 120
2057518	Zinc	105		P	80 - 120
2057636	Barium	109	109	P/P	80 - 120
2057636	Calcium	115		P	80 - 120
2057636	Iron	114	119	P/P	80 - 120
2057636	Magnesium	114		P	80 - 120
2057636	Zinc	113	114	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057518	Aluminum	98.5		P	80 - 120
2057518	Antimony	104		P	80 - 120
2057518	Arsenic	107		P	80 - 120
2057518	Boron	102		P	80 - 120
2057518	Cadmium	103		P	80 - 120
2057518	Chromium	99.5		P	80 - 120
2057518	Copper	101		P	80 - 120
2057518	Lead	107		P	80 - 120
2057518	Nickel	102		P	80 - 120
2057518	Selenium	101		P	80 - 120
2057518	Silver	101		P	80 - 120
2057518	Thallium	111		P	80 - 120
2057636	Aluminum	98.1	98.2	P/P	80 - 120
2057636	Antimony	104	104	P/P	80 - 120
2057636	Arsenic	108	109	P/P	80 - 120
2057636	Cadmium	105	104	P/P	80 - 120
2057636	Chromium	100	99.5	P/P	80 - 120
2057636	Copper	100	101	P/P	80 - 120
2057636	Lead	106	106	P/P	80 - 120
2057636	Nickel	99.6	100	P/P	80 - 120
2057636	Selenium	101	101	P/P	80 - 120
2057636	Silver	101	101	P/P	80 - 120
2057636	Thallium	110	110	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057693	Chloride	97.8		P	90 - 110
2057955	Chloride	95.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057693	Sulfate	97.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057955	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358206

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057845	Ammonia-N	100	91.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057845	NO2NO3-N	98.8	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057752	Total-P	99.9	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057676	O-Phosphate-P	96.5	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P358556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057985	Fluoride	98.0	98.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P358265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057898	Organic Carbon	97.1	98.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P357998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057659	Turbidity	0.393	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057636	Barium	0.442	Spike	P	0 - 20
2057636	Calcium	3.10	Spike	P	0 - 20
2057636	Iron	4.06	Spike	P	0 - 20
2057636	Magnesium	2.43	Spike	P	0 - 20
2057636	Potassium	3.72	Spike	P	0 - 20
2057636	Sodium	3.75	Spike	P	0 - 20
2057636	Zinc	0.789	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057636	Aluminum	0.0599	Spike	P	0 - 20
2057636	Antimony	0.127	Spike	P	0 - 20
2057636	Arsenic	0.806	Spike	P	0 - 20
2057636	Boron	1.17	Spike	P	0 - 20
2057636	Cadmium	1.08	Spike	P	0 - 20
2057636	Chromium	0.910	Spike	P	0 - 20
2057636	Copper	0.0913	Spike	P	0 - 20
2057636	Lead	0.247	Spike	P	0 - 20
2057636	Nickel	0.610	Spike	P	0 - 20
2057636	Selenium	0.450	Spike	P	0 - 20
2057636	Silver	0.179	Spike	P	0 - 20
2057636	Thallium	0.534	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057693	Chloride	0.188	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057693	Sulfate	0.321	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057845	Ammonia-N	7.59	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057846	Kjeldahl Nitrogen	0.752	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057845	NO2NO3-N	0.905	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057752	Total-P	2.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057676	O-Phosphate-P	2.46	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P358003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057751	Color (true)	0.235	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P358553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057985	Total Alkalinity	0.250	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P358342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057455	TDS	1.40	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P358345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057751	TDS	6.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P358556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057985	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P358265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057898	Organic Carbon	0.836	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: A89074

Included Lab Sample IDs: 2057842, 2057843, 2057844, 2057851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.0	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A89075

Included Lab Sample IDs: 2057842, 2057843, 2057844, 2057851

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89077

Included Lab Sample IDs: 2057848, 2057849, 2057850, 2057853

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.8	P/P	90 - 110
O-Phosphate-P	99.1	99.6	P/P	90 - 110
O-Phosphate-P	99.6	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89145

Included Lab Sample IDs: 2057845, 2057846, 2057852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89146

Included Lab Sample IDs: 2057845, 2057846, 2057847, 2057852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	92.9	P/P	90 - 110
Ammonia-N	92.9	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89161

Included Lab Sample IDs: 2057847

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

Reference Method: SM 5310 B-00

Run ID: A89165

Included Lab Sample IDs: 2057845, 2057846, 2057847, 2057852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	97.2	P/P	90 - 110
Organic Carbon	97.4	97.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89167

Included Lab Sample IDs: 2057845, 2057846, 2057847, 2057852

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89169

Included Lab Sample IDs: 2057845, 2057846, 2057847, 2057852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	99.8	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89178

Included Lab Sample IDs: 2057858, 2057859, 2057860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	108	105	P/P	90 - 110
Barium	99.7	101	P/P	95 - 105
Calcium	109	106	P/P	90 - 110
Calcium	99.5	101	P/P	95 - 105
Iron	105	105	P/P	90 - 110
Iron	99.3	101	P/P	95 - 105
Magnesium	100	102	P/P	95 - 105
Magnesium	106	106	P/P	90 - 110
Potassium	105	105	P/P	90 - 110
Potassium	98.5	100	P/P	95 - 105
Sodium	101	102	P/P	90 - 110
Sodium	97.3	99.7	P/P	95 - 105
Zinc	100	102	P/P	95 - 105
Zinc	109	107	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89205

Included Lab Sample IDs: 2057842, 2057843, 2057844, 2057851

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

Reference Method: SM 2320 B-97

Run ID: A89272

Included Lab Sample IDs: 2057842, 2057843, 2057844, 2057851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.9	P/P	90 - 110
Total Alkalinity	99.1	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A89272

Included Lab Sample IDs: 2057842, 2057843, 2057844, 2057851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110
Fluoride	98.6	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89274

Included Lab Sample IDs: 2057858, 2057859, 2057860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.4	97.9	P/P	90 - 110
Aluminum	97.9	101	P/P	90 - 110
Aluminum	99.8	102	P/P	90 - 110
Antimony	97.2	97.8	P/P	90 - 110
Antimony	97.7	97.8	P/P	90 - 110
Antimony	97.8	97.5	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Arsenic	99.4	99.6	P/P	90 - 110
Arsenic	99.6	99.3	P/P	90 - 110
Boron	98.3	103	P/P	90 - 110
Boron	99.5	99.5	P/P	90 - 110
Boron	99.5	98.5	P/P	90 - 110
Cadmium	97.5	97.1	P/P	90 - 110
Cadmium	97.6	97.7	P/P	90 - 110
Cadmium	97.7	96.3	P/P	90 - 110
Chromium	95.6	94.3	P/P	90 - 110
Chromium	97.0	91.1	P/P	90 - 110
Chromium	99.5	97.0	P/P	90 - 110
Copper	100	98.8	P/P	90 - 110
Copper	102	100	P/P	90 - 110
Copper	99.3	100	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Lead	104	102	P/P	90 - 110
Lead	105	104	P/P	90 - 110
Nickel	102	100	P/P	90 - 110
Nickel	99.2	99.6	P/P	90 - 110
Nickel	99.6	98.4	P/P	90 - 110
Selenium	95.5	96.1	P/P	90 - 110
Selenium	96.3	95.5	P/P	90 - 110
Selenium	97.9	97.0	P/P	90 - 110
Silver	98.4	98.0	P/P	90 - 110
Silver	98.7	98.4	P/P	90 - 110
Silver	99.1	99.3	P/P	90 - 110
Thallium	98.2	96.5	P/P	90 - 110
Thallium	98.5	98.2	P/P	90 - 110
Thallium	98.8	97.1	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.393	
EPA 200.7 Rev. 4.4	Barium	102	102	109	109		0.442
	Calcium	104	115				3.10
	Iron	105	107	114	119		4.06
	Magnesium	104	103	114			2.43
	Potassium	103	102				3.72
	Sodium	101	97.4				3.75
	Zinc	102	105	113	114		0.789
EPA 200.8 Rev. 5.4	Aluminum	102	98.5	98.1	98.2		0.0599
	Antimony	101	104	104	104		0.127
	Arsenic	105	107	108	109		0.806
	Boron	104	102				1.17
	Cadmium	103	103	105	104		1.08
	Chromium	98.5	99.5	100	99.5		0.910
	Copper	103	101	100	101		0.0913
	Lead	106	107	106	106		0.247
	Nickel	103	102	99.6	100		0.610
	Selenium	99.7	101	101	101		0.450
	Silver	102	101	101	101		0.179
	Thallium	104	111	110	110		0.534
EPA 300.0 Rev. 2.1	Chloride	100	97.8	95.6		0.188	
	Sulfate	100	97.8	101		0.321	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	100	91.9			7.59
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105					0.752
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	98.8	99.8			0.905
EPA 365.1 Rev. 2.0	Total-P	101	99.9	96.0			2.06
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	96.5	98.9			2.46
SM 2120 B	Color (true)	102				0.235	
SM 2320 B-97	Total Alkalinity	102				0.250	
SM 2540 C-97	TDS					1.40	
	TDS					6.06	
SM 4500 F-C-97	Fluoride	96.0	98.0	98.0			0.0
SM 5310 B-00	Organic Carbon	98.2	97.1	98.0			0.836

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2057842, 2057843, 2057844, 2057851
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2057858, 2057859, 2057860
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2057858, 2057859, 2057860
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2057842, 2057843, 2057844, 2057851
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2057842, 2057843, 2057844, 2057851
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2057845, 2057846, 2057847, 2057852
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2057845, 2057846, 2057847, 2057852
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2057845, 2057846, 2057847, 2057852
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2057845, 2057846, 2057847, 2057852

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2057848, 2057849, 2057850, 2057853
SM 2120 B / E31780	True Color measured at 450 nm	2057842, 2057843, 2057844, 2057851
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2057842, 2057843, 2057844, 2057851
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2057842, 2057843, 2057844, 2057851
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2057842, 2057843, 2057844, 2057851
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2057842, 2057843, 2057844, 2057851
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2057845, 2057846, 2057847, 2057852

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	01/29/2019			01/29/2019 16:31	Megan Treadwell	2057842, 2057843, 2057844, 2057851
EPA 200.7 Rev. 4.4	01/29/2019	01/31/2019 17:30	Elliott D. Healy	02/04/2019 12:16	Betina Topolski	2057860
	01/29/2019	01/31/2019 17:30	Elliott D. Healy	02/04/2019 14:51	Betina Topolski	2057858
	01/29/2019	01/31/2019 17:30	Elliott D. Healy	02/04/2019 14:55	Betina Topolski	2057859
EPA 200.8 Rev. 5.4	01/29/2019	01/31/2019 17:30	Elliott D. Healy	02/07/2019 20:28	Allison Taylor	2057860
	01/29/2019	01/31/2019 17:30	Elliott D. Healy	02/08/2019 00:35	Allison Taylor	2057858
	01/29/2019	01/31/2019 17:30	Elliott D. Healy	02/08/2019 01:13	Allison Taylor	2057859
EPA 300.0 Rev. 2.1	01/29/2019			02/04/2019 22:27	Lipi Saha	2057842
	01/29/2019			02/04/2019 23:12	Lipi Saha	2057843
	01/29/2019			02/04/2019 23:26	Lipi Saha	2057844
	01/29/2019			02/04/2019 23:41	Lipi Saha	2057851
EPA 350.1 Rev. 2.0	01/29/2019			02/01/2019 12:47	Ping Hua	2057845
	01/29/2019			02/01/2019 12:51	Ping Hua	2057847
	01/29/2019			02/01/2019 12:59	Ping Hua	2057846
	01/29/2019			02/01/2019 13:00	Ping Hua	2057852
EPA 351.2 Rev. 2.0	01/29/2019	02/01/2019 13:15	Adrian Shelby	02/04/2019 12:27	Joseph Suarez	2057845
	01/29/2019	02/01/2019 13:15	Adrian Shelby	02/04/2019 12:32	Joseph Suarez	2057846
	01/29/2019	02/01/2019 13:15	Adrian Shelby	02/04/2019 12:36	Joseph Suarez	2057847
	01/29/2019	02/01/2019 13:15	Adrian Shelby	02/04/2019 12:38	Joseph Suarez	2057852
EPA 353.2 Rev. 2.0	01/29/2019			02/04/2019 10:49	Beverly Y. Sanders	2057845
	01/29/2019			02/04/2019 10:54	Beverly Y. Sanders	2057846
	01/29/2019			02/04/2019 10:56	Beverly Y. Sanders	2057847
	01/29/2019			02/04/2019 10:57	Beverly Y. Sanders	2057852
EPA 365.1 Rev. 2.0	01/29/2019	01/31/2019 14:30	Sima Feizi	02/01/2019 12:41	Rosalyn Ballman	2057845
	01/29/2019	01/31/2019 14:30	Sima Feizi	02/01/2019 12:42	Rosalyn Ballman	2057846
	01/29/2019	01/31/2019 14:30	Sima Feizi	02/01/2019 12:43	Rosalyn Ballman	2057852
	01/29/2019	01/31/2019 14:30	Sima Feizi	02/01/2019 15:06	Rosalyn Ballman	2057847
EPA 365.1 Rev. 2.0 dissolved	01/29/2019			01/29/2019 15:39	Jhamieka S. Greenwood	2057850
	01/29/2019			01/29/2019 16:03	Jhamieka S. Greenwood	2057848
	01/29/2019			01/29/2019 16:09	Jhamieka S. Greenwood	2057849
	01/29/2019			01/29/2019 16:10	Jhamieka S. Greenwood	2057853
SM 2120 B	01/29/2019			01/29/2019 16:23	Chelsea Hernandez	2057842, 2057843
	01/29/2019			01/29/2019 16:24	Chelsea Hernandez	2057844
	01/29/2019			01/29/2019 16:25	Chelsea Hernandez	2057851
SM 2320 B-97	01/29/2019			02/07/2019 06:56	Dale L. Simmons	2057842
	01/29/2019			02/07/2019 07:08	Dale L. Simmons	2057843
	01/29/2019			02/07/2019 07:22	Dale L. Simmons	2057844
	01/29/2019			02/07/2019 08:18	Dale L. Simmons	2057851
SM 2540 C-97	01/29/2019			01/31/2019 14:21	Yijie Li	2057842, 2057843, 2057844, 2057851
SM 2540 D-97	01/29/2019			01/31/2019 14:21	Yijie Li	2057842, 2057843, 2057844, 2057851

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	01/29/2019			02/07/2019 06:56	Dale L. Simmons	2057842
	01/29/2019			02/07/2019 07:08	Dale L. Simmons	2057843
	01/29/2019			02/07/2019 07:22	Dale L. Simmons	2057844
	01/29/2019			02/07/2019 08:18	Dale L. Simmons	2057851
SM 5310 B-00	01/29/2019			02/01/2019 18:24	Julia Storbeck	2057847
	01/29/2019			02/01/2019 19:00	Julia Storbeck	2057845
	01/29/2019			02/01/2019 19:13	Julia Storbeck	2057846
	01/29/2019			02/01/2019 19:25	Julia Storbeck	2057852