

Chemical Analysis Report

CEN-DIST-2019-08-09-01

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

Event Description: **Belle / Felter / Ingram x2**
Request ID: **RQ-2019-08-05-97**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 04-SEP-2019 15:06

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: Lake Belle @ Center of W Lobe

Collection Date/Time: 08/08/2019 12:34

Field ID: G3CE0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2110431	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P368802	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P369215	
		Sulfate	38		mg SO4/L	P369218	
	SM 2120 B	Color (true)	16		PCU	P368788	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P369171	
	SM 2540 C-97	TDS	127		mg/L	P369331	
	SM 2540 D-97	TSS	3	I	mg/L	P369351	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P369174	
2110433	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P369246	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P369039	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P369033	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P368933	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P368983	
2110435	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368792	

Sample Location: Lake Ingram West

Collection Date/Time: 08/08/2019 10:55

Field ID: G4CE0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2110437	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P368802	
	EPA 300.0 Rev. 2.1	Chloride	7.7		mg Cl/L	P369216	
		Sulfate	2.3		mg SO4/L	P369219	
	SM 2120 B	Color (true)	30	A	PCU	P368789	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P369171	
	SM 2540 C-97	TDS	51		mg/L	P369331	
	SM 2540 D-97	TSS	2	I	mg/L	P369351	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P369174	
2110439	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P369246	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P369039	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P369033	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P368939	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P368983	
2110441	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368792	
2110452	EPA 200.7 Rev. 4.4	Barium	4.7		ug/L	P368852	
		Calcium	3.32		mg/L	P368852	
		Iron	91	I	ug/L	P368852	
		Magnesium	2.61		mg/L	P368852	
		Potassium	1.2		mg/L	P368852	
		Sodium	4.8		mg/L	P368852	
		Zinc	5.0	U	ug/L	P368852	
	EPA 200.8 Rev. 5.4	Aluminum	13	I	ug/L	P368852	
		Antimony	0.068	I	ug/L	P368852	
		Arsenic	1.21		ug/L	P368852	
		Boron**	24.3		ug/L	P368852	
		Cadmium	0.020	U	ug/L	P368852	
		Chromium	0.40	U	ug/L	P368852	
		Copper	0.45	I	ug/L	P368852	
		Lead	0.20	U	ug/L	P368852	
		Nickel	0.50	U	ug/L	P368852	
		Selenium	0.20	U	ug/L	P368852	
		Silver	0.010	U	ug/L	P368852	
		Thallium	0.10	U	ug/L	P368852	

Sample Location: Lake Ingram East

Collection Date/Time: 08/08/2019 10:48

Field ID: G4CE0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2110438	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P368803	
	EPA 300.0 Rev. 2.1	Chloride	7.9		mg Cl/L	P369216	
		Sulfate	2.5		mg SO4/L	P369219	
	SM 2120 B	Color (true)	30		PCU	P368789	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P369171	
	SM 2540 C-97	TDS	48		mg/L	P369331	
	SM 2540 D-97	TSS	2	I	mg/L	P369351	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P369174	
2110440	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P369247	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P369039	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P369033	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P368939	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P368983	
2110442	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368792	
2110453	EPA 200.7 Rev. 4.4	Barium	5.0		ug/L	P368852	
		Calcium	3.35		mg/L	P368852	
		Iron	110	I	ug/L	P368852	
		Magnesium	2.60		mg/L	P368852	
		Potassium	1.2	I	mg/L	P368852	
		Sodium	4.8		mg/L	P368852	
		Zinc	5.0	U	ug/L	P368852	
	EPA 200.8 Rev. 5.4	Aluminum	18	I	ug/L	P368852	
		Antimony	0.080	I	ug/L	P368852	
		Arsenic	1.22		ug/L	P368852	
		Boron**	25.2		ug/L	P368852	
		Cadmium	0.020	U	ug/L	P368852	
		Chromium	0.40	U	ug/L	P368852	
		Copper	0.42	I	ug/L	P368852	
		Lead	0.20	U	ug/L	P368852	
		Nickel	0.50	U	ug/L	P368852	
		Selenium	0.20	U	ug/L	P368852	
		Silver	0.010	U	ug/L	P368852	
		Thallium	0.10	U	ug/L	P368852	

Sample Location: Lake Felter @ Center

Collection Date/Time: 08/08/2019 09:39

Field ID: G1CE0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2110432	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P368802	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P369215	
		Sulfate	1.0		mg SO4/L	P369218	
	SM 2120 B	Color (true)	73		PCU	P368789	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P369171	
	SM 2540 C-97	TDS	81		mg/L	P369331	
	SM 2540 D-97	TSS	2	I	mg/L	P369351	
	SM 4500 F-C-97	Fluoride	0.071	I	mg F/L	P369174	
2110434	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P369246	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P369039	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P369033	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P368939	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P368983	
2110436	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368792	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368802

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368803

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P368852

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: P368852

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: P369215

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369216

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369218

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369219

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369246

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369247

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369039

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369033

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368933

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368939

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368792

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: P368788

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P368789

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P369171

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

Reference Method: SM 2540 C-97
Batch ID: P369331

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P369351

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P369174

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P368983

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: P368852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.8		P	85 - 115
Calcium	105		P	85 - 115
Iron	99.9		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	103		P	85 - 115
Sodium	112		P	85 - 115
Zinc	95.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P368852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	104		P	85 - 115
Boron	101		P	85 - 115
Cadmium	106		P	85 - 115
Chromium	105		P	85 - 115
Copper	101		P	85 - 115
Lead	105		P	85 - 115
Nickel	101		P	85 - 115
Selenium	105		P	85 - 115
Silver	106		P	85 - 115
Thallium	105		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369215

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369216

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369218

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369219

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369246

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369247

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369039

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369033

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: P368933

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368939

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368792

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

Reference Method: SM 2120 B
Batch ID: P368788

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

Reference Method: SM 2120 B
Batch ID: P368789

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: P369171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P369174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P368983

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P368852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109729	Barium	97.3	96.7	P/P	80 - 120
2109729	Calcium	102	104	P/P	80 - 120
2109729	Iron	97.4	98.0	P/P	80 - 120
2109729	Magnesium	102	103	P/P	80 - 120
2109729	Potassium	105	106	P/P	80 - 120
2109729	Sodium	104	103	P/P	80 - 120
2109729	Zinc	94.5	93.0	P/P	80 - 120
2110452	Barium	96.6		P	80 - 120
2110452	Calcium	97.8		P	80 - 120
2110452	Iron	98.1		P	80 - 120
2110452	Magnesium	98.6		P	80 - 120
2110452	Potassium	99.2		P	80 - 120
2110452	Sodium	105		P	80 - 120
2110452	Zinc	94.4		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P368852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109729	Aluminum	99.3	101	P/P	80 - 120
2109729	Antimony	103	103	P/P	80 - 120
2109729	Arsenic	105	104	P/P	80 - 120
2109729	Boron	99.4	101	P/P	80 - 120
2109729	Cadmium	105	107	P/P	80 - 120
2109729	Chromium	105	105	P/P	80 - 120
2109729	Copper	103	103	P/P	80 - 120
2109729	Lead	104	105	P/P	80 - 120
2109729	Nickel	101	100	P/P	80 - 120
2109729	Selenium	108	105	P/P	80 - 120
2109729	Silver	106	106	P/P	80 - 120
2109729	Thallium	105	105	P/P	80 - 120
2110452	Aluminum	100		P	80 - 120
2110452	Antimony	103		P	80 - 120
2110452	Arsenic	105		P	80 - 120
2110452	Boron	99.1		P	80 - 120
2110452	Cadmium	104		P	80 - 120
2110452	Chromium	104		P	80 - 120
2110452	Copper	104		P	80 - 120
2110452	Lead	105		P	80 - 120
2110452	Nickel	102		P	80 - 120
2110452	Selenium	105		P	80 - 120
2110452	Silver	106		P	80 - 120
2110452	Thallium	107		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369215

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109676	Chloride	97.4	97.6	P/P	90 - 110
2110277	Chloride	97.0		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110437	Chloride	99.4	98.9	P/P	90 - 110
2110840	Chloride	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109676	Sulfate	101	102	P/P	90 - 110
2110277	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110437	Sulfate	103	103	P/P	90 - 110
2110840	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110433	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369247

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110718	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110301	Kjeldahl Nitrogen	108	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369033

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110368	NO2NO3-N	96.8	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368933

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110292	Total-P	102	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368939

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110439	Total-P	99.8	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368792

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110442	O-Phosphate-P	95.0	94.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P369174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110769	Fluoride	97.7	97.2	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P368983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110298	Organic Carbon	101	99.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P368802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110351	Turbidity	0.191	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P368803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110330	Turbidity	1.02	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P368852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109729	Barium	0.607	Spike	P	0 - 20
2109729	Calcium	2.32	Spike	P	0 - 20
2109729	Iron	0.661	Spike	P	0 - 20
2109729	Magnesium	0.659	Spike	P	0 - 20
2109729	Potassium	0.435	Spike	P	0 - 20
2109729	Sodium	0.597	Spike	P	0 - 20
2109729	Zinc	1.62	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P368852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109729	Aluminum	1.27	Spike	P	0 - 20
2109729	Antimony	0.140	Spike	P	0 - 20
2109729	Arsenic	0.730	Spike	P	0 - 20
2109729	Boron	1.40	Spike	P	0 - 20
2109729	Cadmium	1.34	Spike	P	0 - 20
2109729	Chromium	0.179	Spike	P	0 - 20
2109729	Copper	0.0753	Spike	P	0 - 20
2109729	Lead	0.434	Spike	P	0 - 20
2109729	Nickel	0.861	Spike	P	0 - 20
2109729	Selenium	2.68	Spike	P	0 - 20
2109729	Silver	0.228	Spike	P	0 - 20
2109729	Thallium	0.712	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P369215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109676	Chloride	0.194	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110437	Chloride	0.415	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109676	Sulfate	0.544	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110437	Sulfate	0.101	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110433	Ammonia-N	0.655	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110718	Ammonia-N	0.710	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110301	Kjeldahl Nitrogen	1.20	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110368	NO2NO3-N	0.743	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110292	Total-P	3.77	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110439	Total-P	3.72	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110442	O-Phosphate-P	0.316	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P368788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110294	Color (true)	1.34	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P368789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110437	Color (true)	0.0911	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P369171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110769	Total Alkalinity	0.765	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P369331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110412	TDS	3.12	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P369351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110412	TSS	4.76	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P369174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110769	Fluoride	0.484	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P368983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110298	Organic Carbon	0.662	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: A93399

Included Lab Sample IDs: 2110431, 2110432, 2110437, 2110438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	90 - 115
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A93400

Included Lab Sample IDs: 2110435, 2110436, 2110441, 2110442

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.0	P/P	90 - 110
O-Phosphate-P	99.0	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93405

Included Lab Sample IDs: 2110431, 2110432, 2110437, 2110438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105
Turbidity	102	100	P/P	95 - 105

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93484

Included Lab Sample IDs: 2110452, 2110453

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	97.9	98.2	P/P	90 - 110
Calcium	98.1	98.8	P/P	90 - 110
Iron	97.9	98.6	P/P	90 - 110
Magnesium	97.0	97.6	P/P	90 - 110
Potassium	97.8	98.7	P/P	90 - 110
Sodium	106	107	P/P	90 - 110
Zinc	94.6	94.7	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A93485

Included Lab Sample IDs: 2110433, 2110434, 2110439, 2110440

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A93486

Included Lab Sample IDs: 2110431, 2110432, 2110437, 2110438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.4	97.7	P/P	90 - 110
Chloride	97.7	97.6	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93505

Included Lab Sample IDs: 2110433, 2110434, 2110439, 2110440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	99.0	P/P	90 - 110
Total-P	99.0	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93511

Included Lab Sample IDs: 2110433, 2110434, 2110439, 2110440

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: A93564

Included Lab Sample IDs: 2110431, 2110432, 2110437, 2110438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93564

Included Lab Sample IDs: 2110431, 2110432, 2110437, 2110438

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93572

Included Lab Sample IDs: 2110433, 2110434, 2110439, 2110440

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93593

Included Lab Sample IDs: 2110433, 2110434, 2110439, 2110440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	104	P/P	90 - 110
Ammonia-N	104	104	P/P	90 - 110
Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93758

Included Lab Sample IDs: 2110452, 2110453

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.1	97.7	P/P	90 - 110
Antimony	98.0	99.0	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Chromium	102	103	P/P	90 - 110
Copper	100	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93758

Included Lab Sample IDs: 2110452, 2110453

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	103	103	P/P	90 - 110
Nickel	100	99.1	P/P	90 - 110
Selenium	103	102	P/P	90 - 110
Silver	106	106	P/P	90 - 110
Thallium	98.2	97.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93935

Included Lab Sample IDs: 2110452, 2110453

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	99.0	94.2	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					0.191	
	Turbidity					1.02	
EPA 200.7 Rev. 4.4	Barium	98.8	97.3	96.7	96.6		0.607
	Calcium	105	102	104	97.8		2.32
	Iron	99.9	97.4	98.0	98.1		0.661
	Magnesium	106	102	103	98.6		0.659
	Potassium	103	105	106	99.2		0.435
	Sodium	112	104	103	105		0.597
	Zinc	95.3	94.5	93.0	94.4		1.62
EPA 200.8 Rev. 5.4	Aluminum	100	99.3	101	100		1.27
	Antimony	102	103	103	103		0.140
	Arsenic	104	105	104	105		0.730
	Boron	101	99.4	101	99.1		1.40
	Cadmium	106	105	107	104		1.34
	Chromium	105	105	105	104		0.179
	Copper	101	103	103	104		0.0753
	Lead	105	104	105	105		0.434
	Nickel	101	101	100	102		0.861
	Selenium	105	108	105	105		2.68
	Silver	106	106	106	106		0.228
	Thallium	105	105	105	107		0.712
EPA 300.0 Rev. 2.1	Chloride	97.2	97.4	97.6	97.0		0.194
	Chloride	98.5	99.4	98.9	99.0		0.415
	Sulfate	102	101	102	101		0.544
	Sulfate	103	103	103	103		0.101
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	102	101			0.655
	Ammonia-N	102	102	103			0.710
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	108	106			1.20
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	96.8	97.8			0.743
EPA 365.1 Rev. 2.0	Total-P	97.6	102	98.3			3.77
	Total-P	99.2	99.8	104			3.72
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	95.0	94.7			0.316
SM 2120 B	Color (true)	102				1.34	
	Color (true)	103				0.0911	
SM 2320 B-97	Total Alkalinity	104				0.765	
SM 2540 C-97	TDS					3.12	
SM 2540 D-97	TSS					4.76	
SM 4500 F-C-97	Fluoride	98.2	97.7	97.2			0.484
SM 5310 B-00	Organic Carbon	99.4	101	99.6			0.662

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2110431, 2110432, 2110437, 2110438
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2110452, 2110453
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2110452, 2110453
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2110431, 2110432, 2110437, 2110438
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2110431, 2110432, 2110437, 2110438

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2110433, 2110434, 2110439, 2110440
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2110433, 2110434, 2110439, 2110440
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2110433, 2110434, 2110439, 2110440
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2110433, 2110434, 2110439, 2110440
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2110435, 2110436, 2110441, 2110442
SM 2120 B / E31780	True Color measured at 450 nm	2110431, 2110432, 2110437, 2110438
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2110431, 2110432, 2110437, 2110438
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2110431, 2110432, 2110437, 2110438
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2110431, 2110432, 2110437, 2110438
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2110431, 2110432, 2110437, 2110438
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2110433, 2110434, 2110439, 2110440

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	08/09/2019			08/09/2019 17:04	Rosalyn Ballman	2110431, 2110432, 2110437, 2110438
EPA 200.7 Rev. 4.4	08/09/2019	08/12/2019 14:45	Elliott D. Healy	08/13/2019 16:36	Betina Topolski	2110452
	08/09/2019	08/12/2019 14:45	Elliott D. Healy	08/13/2019 16:55	Betina Topolski	2110453
EPA 200.8 Rev. 5.4	08/09/2019	08/12/2019 14:45	Elliott D. Healy	08/23/2019 08:54	Martin Acosta	2110452
	08/09/2019	08/12/2019 14:45	Elliott D. Healy	08/23/2019 09:13	Martin Acosta	2110453
	08/09/2019	08/12/2019 14:45	Elliott D. Healy	08/30/2019 17:40	Robert K Palmer	2110452
	08/09/2019	08/12/2019 14:45	Elliott D. Healy	08/30/2019 17:52	Robert K Palmer	2110453
EPA 300.0 Rev. 2.1	08/09/2019			08/16/2019 05:29	Jhamieka S. Greenwood	2110431
	08/09/2019			08/16/2019 05:41	Jhamieka S. Greenwood	2110432
	08/09/2019			08/16/2019 06:54	Jhamieka S. Greenwood	2110437
	08/09/2019			08/16/2019 07:54	Jhamieka S. Greenwood	2110438
EPA 350.1 Rev. 2.0	08/09/2019			08/16/2019 11:37	Ping Hua	2110433
	08/09/2019			08/16/2019 11:56	Ping Hua	2110434
	08/09/2019			08/16/2019 11:58	Ping Hua	2110439
	08/09/2019			08/16/2019 12:14	Ping Hua	2110440
EPA 351.2 Rev. 2.0	08/09/2019	08/14/2019 14:55	Sima Feizi	08/15/2019 17:39	Julia Storbeck	2110433
	08/09/2019	08/14/2019 14:55	Sima Feizi	08/15/2019 17:41	Julia Storbeck	2110434
	08/09/2019	08/14/2019 14:55	Sima Feizi	08/15/2019 17:42	Julia Storbeck	2110439
	08/09/2019	08/14/2019 14:55	Sima Feizi	08/15/2019 17:44	Julia Storbeck	2110440
EPA 353.2 Rev. 2.0	08/09/2019			08/14/2019 12:42	Beverly Y. Sanders	2110433
	08/09/2019			08/14/2019 12:43	Beverly Y. Sanders	2110434
	08/09/2019			08/14/2019 12:44	Beverly Y. Sanders	2110439
	08/09/2019			08/14/2019 12:45	Beverly Y. Sanders	2110440
EPA 365.1 Rev. 2.0	08/09/2019	08/13/2019 12:35	Vijayalakshmi Reddy	08/14/2019 13:19	Lipi Saha	2110433
	08/09/2019	08/13/2019 12:35	Vijayalakshmi Reddy	08/14/2019 13:28	Lipi Saha	2110439
	08/09/2019	08/13/2019 12:35	Vijayalakshmi Reddy	08/14/2019 13:29	Lipi Saha	2110434
	08/09/2019	08/13/2019 12:35	Vijayalakshmi Reddy	08/14/2019 13:30	Lipi Saha	2110440
EPA 365.1 Rev. 2.0 dissolved	08/09/2019			08/09/2019 15:08	Jhamieka S. Greenwood	2110442
	08/09/2019			08/09/2019 15:20	Jhamieka S. Greenwood	2110435, 2110436
	08/09/2019			08/09/2019 15:21	Jhamieka S. Greenwood	2110441
SM 2120 B	08/09/2019			08/09/2019 15:12	Madeline Funaro	2110431
	08/09/2019			08/09/2019 15:16	Madeline Funaro	2110432
	08/09/2019			08/09/2019 15:18	Madeline Funaro	2110437, 2110438
SM 2320 B-97	08/09/2019			08/15/2019 23:19	Dale L. Simmons	2110431
	08/09/2019			08/15/2019 23:31	Dale L. Simmons	2110432
	08/09/2019			08/15/2019 23:43	Dale L. Simmons	2110437
	08/09/2019			08/15/2019 23:54	Dale L. Simmons	2110438
SM 2540 C-97	08/09/2019			08/14/2019 15:01	Yijie Li	2110431, 2110432, 2110437, 2110438
SM 2540 D-97	08/09/2019			08/14/2019 15:01	Yijie Li	2110431, 2110432, 2110437, 2110438
SM 4500 F-C-97	08/09/2019			08/15/2019 23:19	Dale L. Simmons	2110431

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	08/09/2019			08/15/2019 23:31	Dale L. Simmons	2110432
	08/09/2019			08/15/2019 23:43	Dale L. Simmons	2110437
	08/09/2019			08/15/2019 23:54	Dale L. Simmons	2110438
SM 5310 B-00	08/09/2019			08/13/2019 17:29	Madeline Funaro	2110433
	08/09/2019			08/13/2019 17:41	Madeline Funaro	2110434
	08/09/2019			08/13/2019 17:53	Madeline Funaro	2110439
	08/09/2019			08/13/2019 18:30	Madeline Funaro	2110440