

Chemical Analysis Report

NW-DIST-2019-12-04-02

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

Event Description: **Crestview/ Holmes Run**
Request ID: **RQ-2019-12-02-56**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-DEC-2019 17:01

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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: Gum Creek upstream of River Rd

Collection Date/Time: 12/03/2019 10:12

Field ID: G3NW0439

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140399	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P375263	
	EPA 300.0 Rev. 2.1	Chloride	3.2		mg Cl/L	P375474	
		Sulfate	2.7		mg SO4/L	P375476	
		Color (true)	65		PCU	P375294	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P375483	
	SM 2540 C-97	TDS	47		mg/L	P375774	
	SM 2540 D-97	TSS	3	I	mg/L	P375886	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P375486	
2140402	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P375582	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P375386	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375431	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P375449	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P375412	
2140405	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P375233	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Green Branch Upstream of Buck Tyner Rd

Collection Date/Time: 12/03/2019 12:46

Field ID: G4NW0207

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140400	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P375263	
	EPA 300.0 Rev. 2.1	Chloride	6.5		mg Cl/L	P375474	
		Sulfate	2.0		mg SO4/L	P375476	
	SM 2120 B	Color (true)	61		PCU	P375295	
	SM 2320 B-97	Total Alkalinity	4.7		mg CaCO3/L	P375483	
	SM 2540 C-97	TDS	44		mg/L	P375774	
	SM 2540 D-97	TSS	3	I	mg/L	P375886	
	SM 4500 F-C-97	Fluoride	0.036	I	mg F/L	P375486	
2140403	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P375668	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P375386	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375431	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P375449	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P375413	
2140406	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P375233	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Green Branch Upstream of Buck Tyner Rd

Collection Date/Time: 12/03/2019 12:50

Field ID: G4NW0207_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140401	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P375264	
	EPA 300.0 Rev. 2.1	Chloride	6.6		mg Cl/L	P375474	
		Sulfate	2.0		mg SO4/L	P375476	
	SM 2120 B	Color (true)	59		PCU	P375295	
	SM 2320 B-97	Total Alkalinity	4.5		mg CaCO3/L	P375483	
	SM 2540 C-97	TDS	48		mg/L	P375774	
	SM 2540 D-97	TSS	2	I	mg/L	P375886	
	SM 4500 F-C-97	Fluoride	0.038	I	mg F/L	P375486	
2140404	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P375668	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P375386	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375431	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P375449	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P375413	
2140407	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P375233	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Green Branch Upstream of Buck Tyner Rd

Collection Date/Time: 12/03/2019 12:55

Field ID: FB_12032019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140408	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P375264	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P375474	
		Sulfate	0.20	U	mg SO4/L	P375476	
		Color (true)	2.5	U	PCU	P375295	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P375483	
	SM 2540 C-97	TDS	15	U	mg/L	P375771	
	SM 2540 D-97	TSS	2	U	mg/L	P375883	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P375486	
2140409	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P375668	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P375386	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375431	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P375449	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P375412	
2140410	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P375234	
2140417	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P375281	
		Calcium	0.075	U	mg/L	P375281	
		Iron	30	U	ug/L	P375281	
		Magnesium	0.040	U	mg/L	P375281	
		Potassium	0.30	U	mg/L	P375281	
		Sodium	0.50	U	mg/L	P375281	
		Zinc	5.0	U	ug/L	P375281	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P375281	
		Antimony	0.050	U	ug/L	P375281	
		Arsenic	0.050	U	ug/L	P375281	
		Boron**	2.0	U	ug/L	P375281	
		Cadmium	0.020	U	ug/L	P375281	
		Chromium	0.40	U	ug/L	P375281	
		Copper	0.40	U	ug/L	P375281	
		Lead	0.20	U	ug/L	P375281	
		Nickel	0.50	U	ug/L	P375281	
		Selenium	0.20	U	ug/L	P375281	
		Silver	0.010	U	ug/L	P375281	
		Thallium	0.10	U	ug/L	P375281	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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: P375263

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375264

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375281

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: P375281

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: P375474

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375476

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: P375582

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375668

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375386

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375431

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375449

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375233

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375234

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

Reference Method: SM 2120 B
Batch ID: P375294

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P375295

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P375483

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

Reference Method: SM 2540 C-97
Batch ID: P375771

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P375774

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375883

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375886

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P375486

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P375412

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

Reference Method: SM 5310 B-00
Batch ID: P375413

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: P375281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	105		P	85 - 115
Calcium	104		P	85 - 115
Iron	110		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	110		P	85 - 115
Sodium	103		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	107		P	85 - 115
Arsenic	105		P	85 - 115
Boron	110		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	106		P	85 - 115
Copper	102		P	85 - 115
Lead	111		P	85 - 115
Nickel	102		P	85 - 115
Selenium	93.2		P	85 - 115
Silver	111		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375474

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375476

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375582

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.3		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375386

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375431

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: P375449

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: P375233

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375234

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

Reference Method: SM 2120 B
Batch ID: P375294

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

Reference Method: SM 2120 B
Batch ID: P375295

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

Reference Method: SM 2320 B-97
Batch ID: P375483

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P375486

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P375412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P375413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139769	Barium	102		P	80 - 120
2139769	Calcium	104		P	80 - 120
2139769	Iron	108		P	80 - 120
2139769	Magnesium	99.6		P	80 - 120
2139769	Potassium	106		P	80 - 120
2139769	Sodium	103		P	80 - 120
2139769	Zinc	99.2		P	80 - 120
2140626	Barium	102	102	P/P	80 - 120
2140626	Calcium	104		P	80 - 120
2140626	Iron	110	110	P/P	80 - 120
2140626	Magnesium	113	111	P/P	80 - 120
2140626	Potassium	110	108	P/P	80 - 120
2140626	Sodium	108	109	P/P	80 - 120
2140626	Zinc	99.1	99.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139769	Aluminum	98.1		P	80 - 120
2139769	Antimony	105		P	80 - 120
2139769	Arsenic	102		P	80 - 120
2139769	Boron	107		P	80 - 120
2139769	Cadmium	103		P	80 - 120
2139769	Chromium	101		P	80 - 120
2139769	Copper	95.1		P	80 - 120
2139769	Lead	104		P	80 - 120
2139769	Nickel	94.6		P	80 - 120
2139769	Selenium	87.1		P	80 - 120
2139769	Silver	106		P	80 - 120
2139769	Thallium	98.7		P	80 - 120
2140626	Aluminum	103	103	P/P	80 - 120
2140626	Antimony	107	107	P/P	80 - 120
2140626	Arsenic	103	102	P/P	80 - 120
2140626	Boron	110	110	P/P	80 - 120
2140626	Cadmium	105	104	P/P	80 - 120
2140626	Chromium	106	105	P/P	80 - 120
2140626	Copper	99.8	99.1	P/P	80 - 120
2140626	Lead	109	109	P/P	80 - 120
2140626	Nickel	99.3	98.4	P/P	80 - 120
2140626	Selenium	87.8	91.5	P/P	80 - 120
2140626	Silver	111	111	P/P	80 - 120
2140626	Thallium	100	100	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140401	Chloride	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140283	Sulfate	98.4		P	90 - 110
2140401	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139556	Ammonia-N	98.3	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140403	Ammonia-N	97.6	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140403	Kjeldahl Nitrogen	95.2	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140341	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140402	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140219	O-Phosphate-P	96.9	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140590	O-Phosphate-P	97.8	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P375486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2141040	Fluoride	95.3	96.7	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P375412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140341	Organic Carbon	98.2	98.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P375413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140433	Organic Carbon	95.2	97.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140283	Turbidity	6.32	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140445	Turbidity	7.42	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140626	Barium	0.245	Spike	P	0 - 20
2140626	Calcium	0.828	Spike	P	0 - 20
2140626	Iron	0.0227	Spike	P	0 - 20
2140626	Magnesium	1.02	Spike	P	0 - 20
2140626	Potassium	1.70	Spike	P	0 - 20
2140626	Sodium	0.574	Spike	P	0 - 20
2140626	Zinc	0.864	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140626	Aluminum	0.406	Spike	P	0 - 20
2140626	Antimony	0.123	Spike	P	0 - 20
2140626	Arsenic	0.534	Spike	P	0 - 20
2140626	Boron	0.561	Spike	P	0 - 20
2140626	Cadmium	0.550	Spike	P	0 - 20
2140626	Chromium	1.19	Spike	P	0 - 20
2140626	Copper	0.750	Spike	P	0 - 20
2140626	Lead	0.0615	Spike	P	0 - 20
2140626	Nickel	0.900	Spike	P	0 - 20
2140626	Selenium	4.10	Spike	P	0 - 20
2140626	Silver	0.336	Spike	P	0 - 20
2140626	Thallium	0.255	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140283	Chloride	0.173	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140283	Sulfate	0.00508	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139556	Ammonia-N	5.13	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140403	Ammonia-N	1.01	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140403	Kjeldahl Nitrogen	6.53	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140341	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140402	Total-P	0.447	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140219	O-Phosphate-P	0.0661	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140590	O-Phosphate-P	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P375294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140340	Color (true)	7.93	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P375295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140445	Color (true)	0.0206	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P375483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141040	Total Alkalinity	0.536	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P375771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139970	TDS	6.28	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P375774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140445	TDS	2.41	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P375486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141040	Fluoride	0.986	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P375412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140341	Organic Carbon	0.229	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P375413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140433	Organic Carbon	1.12	Spike	P	0 - 20

Quality Assurance Report Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96116

Included Lab Sample IDs: 2140405, 2140406, 2140407, 2140410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	96.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96120

Included Lab Sample IDs: 2140399, 2140400, 2140401, 2140408

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96122

Included Lab Sample IDs: 2140402, 2140403, 2140404, 2140409

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

Reference Method: SM 2120 B

Run ID: A96139

Included Lab Sample IDs: 2140399, 2140400, 2140401, 2140408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96180

Included Lab Sample IDs: 2140417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	95 - 105
Calcium	102	101	P/P	95 - 105
Iron	101	103	P/P	95 - 105
Potassium	102	102	P/P	95 - 105
Zinc	102	102	P/P	95 - 105

Reference Method: SM 5310 B-00

Run ID: A96190

Included Lab Sample IDs: 2140402, 2140403, 2140404, 2140409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	97.4	P/P	90 - 110
Organic Carbon	97.4	97.7	P/P	90 - 110
Organic Carbon	99.8	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96205

Included Lab Sample IDs: 2140399, 2140400, 2140401, 2140408

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96205

Included Lab Sample IDs: 2140399, 2140400, 2140401, 2140408

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

Reference Method: SM 2320 B-97

Run ID: A96207

Included Lab Sample IDs: 2140399, 2140400, 2140401, 2140408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A96207

Included Lab Sample IDs: 2140399, 2140400, 2140401, 2140408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.6	P/P	90 - 110
Fluoride	98.1	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96228

Included Lab Sample IDs: 2140402, 2140403, 2140404, 2140409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.2	98.0	P/P	90 - 110
Kjeldahl Nitrogen	98.0	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96233

Included Lab Sample IDs: 2140402, 2140403, 2140404, 2140409

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96246

Included Lab Sample IDs: 2140402

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96275

Included Lab Sample IDs: 2140403, 2140404, 2140409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.7	P/P	90 - 110
Ammonia-N	99.9	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96407

Included Lab Sample IDs: 2140417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.9	97.7	P/P	90 - 110
Antimony	97.4	98.8	P/P	90 - 110
Arsenic	99.8	99.9	P/P	90 - 110
Boron	101	101	P/P	90 - 110
Cadmium	98.6	99.3	P/P	90 - 110
Chromium	101	103	P/P	90 - 110
Copper	98.7	98.4	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Nickel	98.4	97.7	P/P	90 - 110
Silver	107	106	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96522

Included Lab Sample IDs: 2140417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	92.7	94.7	P/P	90 - 110
Thallium	91.0	91.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96617

Included Lab Sample IDs: 2140417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	103	103	P/P	95 - 105
Sodium	104	103	P/P	95 - 105

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision	MS
							SMP	
EPA 180.1 Rev. 2.0	Turbidity						6.32	
	Turbidity						7.42	
EPA 200.7 Rev. 4.4	Barium	105	102	102	102			0.245
	Calcium	104	104	104				0.828
	Iron	110	108	110	110			0.0227
	Magnesium	103	99.6	113	111			1.02
	Potassium	110	106	110	108			1.70
	Sodium	103	103	108	109			0.574
	Zinc	103	99.2	99.1	99.9			0.864
EPA 200.8 Rev. 5.4	Aluminum	104	98.1	103	103			0.406
	Antimony	107	105	107	107			0.123
	Arsenic	105	102	103	102			0.534
	Boron	110	107	110	110			0.561
	Cadmium	104	103	105	104			0.550
	Chromium	106	101	106	105			1.19
	Copper	102	95.1	99.8	99.1			0.750
	Lead	111	104	109	109			0.0615
	Nickel	102	94.6	99.3	98.4			0.900
	Selenium	93.2	87.8	91.5	87.1			4.10
	Silver	111	106	111	111			0.336
	Thallium	101	100	100	98.7			0.255
EPA 300.0 Rev. 2.1	Chloride	102	102				0.173	
	Sulfate	102	98.4	102			0.0050	
EPA 350.1 Rev. 2.0	Ammonia-N	102	98.3	106				5.13
	Ammonia-N	99.3	97.6	98.7				1.01
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	95.2	103				6.53
EPA 353.2 Rev. 2.0	NO2NO3-N	101	101	100				0.480
EPA 365.1 Rev. 2.0	Total-P	102	104	105				0.447
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	96.9	97.0				0.0661
	O-Phosphate-P	102	97.8	97.8				0.0
SM 2120 B	Color (true)	101					7.93	
	Color (true)	101					0.0206	
SM 2320 B-97	Total Alkalinity	103					0.536	
SM 2540 C-97	TDS						6.28	
	TDS						2.41	
SM 4500 F-C-97	Fluoride	95.6	95.3	96.7				0.986
SM 5310 B-00	Organic Carbon	99.0	98.2	98.6				0.229
	Organic Carbon	95.8	95.2	97.0				1.12

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2140399, 2140400, 2140401, 2140408
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2140417
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2140417
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2140399, 2140400, 2140401, 2140408
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2140399, 2140400, 2140401, 2140408
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2140402, 2140403, 2140404, 2140409

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2140402, 2140403, 2140404, 2140409
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2140402, 2140403, 2140404, 2140409
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2140402, 2140403, 2140404, 2140409
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2140405, 2140406, 2140407, 2140410
SM 2120 B / E31780	True Color measured at 450 nm	2140399, 2140400, 2140401, 2140408
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2140399, 2140400, 2140401, 2140408
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2140399, 2140400, 2140401, 2140408
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2140399, 2140400, 2140401, 2140408
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2140399, 2140400, 2140401, 2140408
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2140402, 2140403, 2140404, 2140409

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	12/04/2019			12/04/2019 16:05	Yen Ta	2140399, 2140400, 2140401, 2140408
EPA 200.7 Rev. 4.4	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 11:38	Vijayalakshmi Reddy	2140417
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 10:42	Vijayalakshmi Reddy	2140417
EPA 200.8 Rev. 5.4	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 14:03	Justin Cutchin	2140417
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 18:22	Alexander Thompson	2140417
EPA 300.0 Rev. 2.1	12/04/2019			12/09/2019 18:56	Lipi Saha	2140401
	12/04/2019			12/09/2019 21:09	Lipi Saha	2140399
	12/04/2019			12/09/2019 21:22	Lipi Saha	2140400
	12/04/2019			12/09/2019 21:34	Lipi Saha	2140408
EPA 350.1 Rev. 2.0	12/04/2019			12/10/2019 13:02	Ping Hua	2140402
	12/04/2019			12/11/2019 10:53	Ping Hua	2140403
	12/04/2019			12/11/2019 10:57	Ping Hua	2140404
	12/04/2019			12/11/2019 11:16	Ping Hua	2140409
EPA 351.2 Rev. 2.0	12/04/2019	12/09/2019 12:48	Sima Feizi	12/10/2019 12:45	Jhamieka S. Greenwood	2140403
	12/04/2019	12/09/2019 12:48	Sima Feizi	12/10/2019 13:03	Jhamieka S. Greenwood	2140402
	12/04/2019	12/09/2019 12:48	Sima Feizi	12/10/2019 13:04	Jhamieka S. Greenwood	2140404
	12/04/2019	12/09/2019 12:48	Sima Feizi	12/10/2019 13:06	Jhamieka S. Greenwood	2140409
EPA 353.2 Rev. 2.0	12/04/2019			12/05/2019 11:42	Beverly Y. Sanders	2140402
	12/04/2019			12/05/2019 11:43	Beverly Y. Sanders	2140403
	12/04/2019			12/05/2019 11:44	Beverly Y. Sanders	2140404
	12/04/2019			12/05/2019 11:45	Beverly Y. Sanders	2140409
EPA 365.1 Rev. 2.0	12/04/2019	12/09/2019 15:16	Yen Ta	12/10/2019 15:48	Benjamin T. Nordmann	2140402
	12/04/2019	12/09/2019 15:16	Yen Ta	12/10/2019 15:49	Benjamin T. Nordmann	2140403
	12/04/2019	12/09/2019 15:16	Yen Ta	12/10/2019 15:50	Benjamin T. Nordmann	2140404
	12/04/2019	12/09/2019 15:16	Yen Ta	12/10/2019 15:54	Benjamin T. Nordmann	2140409
EPA 365.1 Rev. 2.0 dissolved	12/04/2019			12/04/2019 16:37	Samantha Davila	2140406
	12/04/2019			12/04/2019 16:38	Samantha Davila	2140407
	12/04/2019			12/04/2019 16:41	Samantha Davila	2140405
	12/04/2019			12/04/2019 16:42	Samantha Davila	2140410
SM 2120 B	12/04/2019			12/04/2019 18:39	Madeline Funaro	2140399
	12/04/2019			12/04/2019 18:43	Madeline Funaro	2140400
	12/04/2019			12/04/2019 18:44	Madeline Funaro	2140401
	12/04/2019			12/04/2019 18:45	Madeline Funaro	2140408
SM 2320 B-97	12/04/2019			12/06/2019 23:35	Dale L. Simmons	2140399
	12/04/2019			12/06/2019 23:47	Dale L. Simmons	2140400
	12/04/2019			12/06/2019 23:59	Dale L. Simmons	2140401
	12/04/2019			12/07/2019 00:45	Dale L. Simmons	2140408
SM 2540 C-97	12/04/2019			12/05/2019 15:36	Yijie Li	2140399, 2140400, 2140401, 2140408
SM 2540 D-97	12/04/2019			12/05/2019 15:36	Yijie Li	2140399, 2140400, 2140401, 2140408
SM 4500 F-C-97	12/04/2019			12/06/2019 23:35	Dale L. Simmons	2140399

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	12/04/2019			12/06/2019 23:47	Dale L. Simmons	2140400
	12/04/2019			12/06/2019 23:59	Dale L. Simmons	2140401
	12/04/2019			12/07/2019 00:45	Dale L. Simmons	2140408
SM 5310 B-00	12/04/2019			12/06/2019 18:40	Madeline Funaro	2140402
	12/04/2019			12/06/2019 23:49	Madeline Funaro	2140409
	12/04/2019			12/07/2019 01:49	Madeline Funaro	2140403
	12/04/2019			12/07/2019 02:02	Madeline Funaro	2140404