

Chemical Analysis Report

TLH-ROC-2019-07-30-01

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

Event Description: **Run 10**
Request ID: **RQ-2019-07-22-22**
Customer: **TLH-ROC**
Project ID: **SMP**

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Date Certified: 13-AUG-2019 14:04



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: EAGLE NEST BAYOU @ MOUTH

Collection Date/Time: 07/30/2019 11:15

Field ID: G3TLHR0041

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2107146	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P368243	
	EPA 300.0	Bromide	25		mg Br/L	P368407	
	SM 2320 B-97	Total Alkalinity	55		mg CaCO3/L	P368720	
	SM 2540 D-97	TSS	5	I	mg/L	P368481	
	SM 4500 F-C-97	Fluoride	0.42	I	mg F/L	P368723	
2107147	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P368786	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P368368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P368298	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P368269	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P368350	
2107148	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368253	

Ref. Method and Comment:

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

Sample Location: LITTLE SANDY CREEK @ MOUTH

Collection Date/Time: 07/30/2019 11:50

Field ID: G3TLHR0039

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2107134	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P368243	
	EPA 300.0 Rev. 2.1	Chloride	2.1E+03		mg Cl/L	P368429	
		Sulfate	300		mg SO4/L	P368431	
	SM 2120 B	Color (true)	77		PCU	P368241	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P368719	
	SM 2540 C-97	TDS	3.99E+03		mg/L	P368652	
	SM 2540 D-97	TSS	4	I	mg/L	P368478	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P368828	
2107138	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P368747	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P368366	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P368297	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P368269	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P368348	
2107142	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368253	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 7230 umhos/cm.

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

Sample Location: MULE CREEK @ MOUTH

Collection Date/Time: 07/30/2019 12:05

Field ID: G3TLHR0038

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2107135	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P368243	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P368429	
		Sulfate	5.7		mg SO4/L	P368431	
	SM 2120 B	Color (true)	74	A	PCU	P368241	
	SM 2320 B-97	Total Alkalinity	6.1		mg CaCO3/L	P368560	
	SM 2540 C-97	TDS	90		mg/L	P368652	
	SM 2540 D-97	TSS	4	I	mg/L	P368478	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368563	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P368746	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P368368	
2107139	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P368381	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P368271	
	SM 5310 B-00	Organic Carbon	7.3		mg C/L	P368348	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	I	mg P/L	P368252	
	dissolved						

Ref. Method and Comment:

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

Sample Location: SANDY CREEK N OF BOAT RAMP

Collection Date/Time: 07/30/2019 12:15

Field ID: G3TLHR0037

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2107136	EPA 180.1 Rev. 2.0	Turbidity	8.6		NTU	P368243	
	EPA 300.0 Rev. 2.1	Chloride	190		mg Cl/L	P368429	
		Sulfate	27		mg SO4/L	P368431	
	SM 2120 B	Color (true)	100		PCU	P368241	
	SM 2320 B-97	Total Alkalinity	4.9		mg CaCO3/L	P368560	
	SM 2540 C-97	TDS	402		mg/L	P368652	
	SM 2540 D-97	TSS	7	I	mg/L	P368478	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368563	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P368746	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P368368	
2107140	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P368381	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P368271	
	SM 5310 B-00	Organic Carbon	9.0		mg C/L	P368348	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P368252	
	dissolved						

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 769 umhos/cm.

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

Sample Location: Sandy Creek Not Boat Ramp

Collection Date/Time: 07/30/2019 12:25

Field ID: G3TLHR0037_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2107137	EPA 180.1 Rev. 2.0	Turbidity	8.7		NTU	P368243	
	EPA 300.0 Rev. 2.1	Chloride	190		mg Cl/L	P368429	
		Sulfate	27		mg SO4/L	P368431	
	SM 2120 B	Color (true)	100		PCU	P368241	
	SM 2320 B-97	Total Alkalinity	4.5		mg CaCO3/L	P368838	
	SM 2540 C-97	TDS	392		mg/L	P368652	
	SM 2540 D-97	TSS	8	I	mg/L	P368478	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368841	
2107141	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P368746	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P368368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P368381	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P368271	
	SM 5310 B-00	Organic Carbon	9.0		mg C/L	P368348	
2107145	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368252	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 760 umhos/cm.

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

Sample Location: Sandy Creek Upstream Boat Ramp

Collection Date/Time: 07/30/2019 12:35

Field ID: FB_07302019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2107149	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P368243	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P368429	
		Sulfate	0.20	U	mg SO4/L	P368431	
	SM 2120 B	Color (true)	2.5	U	PCU	P368241	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P368838	
	SM 2540 C-97	TDS	15	U	mg/L	P368652	
	SM 2540 D-97	TSS	2	U	mg/L	P368478	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368841	
2107150	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P368746	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P368368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P368381	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P368271	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P368348	
2107151	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368252	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368243

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P368407

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368429

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368431

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368746

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368747

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368786

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368366

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368368

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368297

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368298

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368381

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368269

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368271

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368252

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368253

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

Reference Method: SM 2120 B
Batch ID: P368241

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P368560

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P368719

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

Reference Method: SM 2320 B-97
Batch ID: P368720

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

Reference Method: SM 2320 B-97
Batch ID: P368838

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

Reference Method: SM 2540 C-97
Batch ID: P368652

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P368478

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P368481

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P368563

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P368723

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P368828

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P368841

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P368348

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

Reference Method: SM 5310 B-00
Batch ID: P368350

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P368407

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368429

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368431

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368746

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: P368747

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368786

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368366

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368368

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368298

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368381

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368269

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368271

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: P368252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368253

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

Reference Method: SM 2120 B
Batch ID: P368241

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

Reference Method: SM 2320 B-97
Batch ID: P368560

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

Reference Method: SM 2320 B-97
Batch ID: P368719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P368720

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

Reference Method: SM 2320 B-97
Batch ID: P368838

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

Reference Method: SM 4500 F-C-97
Batch ID: P368563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P368723

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P368828

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P368841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P368348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P368350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P368407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106858	Bromide	99.5	101	P/P	90 - 110
2106859	Bromide	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107124	Chloride	98.9		P	90 - 110
2107167	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107124	Sulfate	102		P	90 - 110
2107167	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107139	Ammonia-N	99.0	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368747

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106758	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107427	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368366

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106844	Kjeldahl Nitrogen	110	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107126	Kjeldahl Nitrogen	96.1	94.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106758	NO2NO3-N	96.8	96.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P368298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107147	NO2NO3-N	99.7	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P368381

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106826	NO2NO3-N	97.5	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P368269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107428	Total-P	93.5	91.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P368271

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107127	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P368252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107143	O-Phosphate-P	93.8	94.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P368253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107434	O-Phosphate-P	95.8	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P368563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107125	Fluoride	96.8	96.3	P/P	89 - 106

Reference Method: SM 4500 F-C-97
 Batch ID: P368723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107517	Fluoride	92.6	92.6	P/P	89 - 106

Reference Method: SM 4500 F-C-97
 Batch ID: P368828

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2108513	Fluoride	99.2	98.6	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P368841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107167	Fluoride	97.5	95.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P368348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107139	Organic Carbon	101	98.5	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P368350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107255	Organic Carbon	98.2	97.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107166	Turbidity	0.221	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P368407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106858	Bromide	1.21	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107167	Chloride	0.344	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107167	Sulfate	2.98	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107139	Ammonia-N	1.39	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368747

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106758	Ammonia-N	1.03	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107427	Ammonia-N	0.539	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106844	Kjeldahl Nitrogen	1.44	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107126	Kjeldahl Nitrogen	1.04	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106758	NO2NO3-N	0.518	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107147	NO2NO3-N	0.922	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106826	NO2NO3-N	0.443	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107428	Total-P	2.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107127	Total-P	0.651	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107143	O-Phosphate-P	0.407	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107434	O-Phosphate-P	1.45	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P368241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107135	Color (true)	1.55	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P368560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107125	Total Alkalinity	0.400	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P368719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106700	Total Alkalinity	0.294	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P368720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107517	Total Alkalinity	0.197	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P368838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107167	Total Alkalinity	0.297	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P368652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107167	TDS	4.65	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P368563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107125	Fluoride	0.482	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P368723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107517	Fluoride	0.0	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P368828

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2108513	Fluoride	0.477	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P368841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107167	Fluoride	1.48	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P368348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107139	Organic Carbon	1.69	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P368350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107255	Organic Carbon	0.614	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 300.0 Rev. 2.1

Run ID: A93147

Included Lab Sample IDs: 2107134, 2107135, 2107136, 2107137, 2107149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.7	98.3	P/P	90 - 110
Chloride	96.9	96.7	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A93172

Included Lab Sample IDs: 2107134, 2107135, 2107136, 2107137, 2107149

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93173

Included Lab Sample IDs: 2107134, 2107135, 2107136, 2107137, 2107146, 2107149

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A93174

Included Lab Sample IDs: 2107142, 2107143, 2107144, 2107145, 2107148, 2107151

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93194

Included Lab Sample IDs: 2107138, 2107147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110
NO2NO3-N	101	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A93216

Included Lab Sample IDs: 2107138, 2107139, 2107140, 2107141, 2107147, 2107150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.5	P/P	90 - 110
Organic Carbon	98.5	98.6	P/P	90 - 110
Organic Carbon	99.4	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93231

Included Lab Sample IDs: 2107139, 2107140, 2107141, 2107150

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93233

Included Lab Sample IDs: 2107138, 2107139, 2107140, 2107141, 2107147, 2107150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	100	P/P	90 - 110
Total-P	99.5	99.0	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A93239

Included Lab Sample IDs: 2107146

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93275

Included Lab Sample IDs: 2107138, 2107139, 2107140, 2107141, 2107147, 2107150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	104	P/P	90 - 110
Kjeldahl Nitrogen	104	107	P/P	90 - 110
Kjeldahl Nitrogen	97.4	99.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93315

Included Lab Sample IDs: 2107135, 2107136

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	107	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93315

Included Lab Sample IDs: 2107135, 2107136

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	98.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93367

Included Lab Sample IDs: 2107134, 2107146

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110
Total Alkalinity	105	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93367

Included Lab Sample IDs: 2107146

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93374

Included Lab Sample IDs: 2107138, 2107139, 2107140, 2107141, 2107150

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93398

Included Lab Sample IDs: 2107147

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

Reference Method: SM 4500 F-C-97

Run ID: A93413

Included Lab Sample IDs: 2107134

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	98.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93419

Included Lab Sample IDs: 2107137, 2107149

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

Reference Method: SM 4500 F-C-97

Run ID: A93419

Included Lab Sample IDs: 2107137, 2107149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.0	P/P	90 - 110
Fluoride	99.5	99.1	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	
						LCS	MS
EPA 180.1 Rev. 2.0	Turbidity					0.221	
EPA 300.0	Bromide	100	99.5	101	100		1.21
EPA 300.0 Rev. 2.1	Chloride	97.7	98.0	98.9		0.344	
	Sulfate	102	101	102		2.98	
EPA 350.1 Rev. 2.0	Ammonia-N	102	99.0	101			1.39
	Ammonia-N	101	101	102			1.03
	Ammonia-N	101	102	101			0.539
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	110	108			1.44
	Kjeldahl Nitrogen	106	96.1	94.9			1.04
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.8	96.3			0.518
	NO2NO3-N	102	99.7	98.7			0.922
	NO2NO3-N	99.5	97.5	97.0			0.443
EPA 365.1 Rev. 2.0	Total-P	103	93.5	91.1			2.65
	Total-P	101	102	102			0.651
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	93.8	94.2			0.407
	O-Phosphate-P	101	95.8	97.2			1.45
SM 2120 B	Color (true)	103				1.55	
SM 2320 B-97	Total Alkalinity	104				0.400	
	Total Alkalinity	105				0.294	
	Total Alkalinity	106				0.197	
	Total Alkalinity	104				0.297	
SM 2540 C-97	TDS					4.65	
SM 4500 F-C-97	Fluoride	95.9	96.8	96.3			0.482
	Fluoride	97.9	92.6	92.6			0.0
	Fluoride	97.0	99.2	98.6			0.477
	Fluoride	100	97.5	95.8			1.48
SM 5310 B-00	Organic Carbon	100	101	98.5			1.69
	Organic Carbon	102	98.2	97.5			0.614

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2107134, 2107135, 2107136, 2107137, 2107146, 2107149
EPA 300.0 / E31780	Bromide in aqueous matrices	2107146
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2107134, 2107135, 2107136, 2107137, 2107149
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2107134, 2107135, 2107136, 2107137, 2107149
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2107138, 2107139, 2107140, 2107141, 2107147, 2107150
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2107138, 2107139, 2107140, 2107141, 2107147, 2107150
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2107138, 2107139, 2107140, 2107141, 2107147, 2107150
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2107138, 2107139, 2107140, 2107141, 2107147, 2107150
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2107142, 2107143, 2107144, 2107145, 2107148, 2107151
SM 2120 B / E31780	True Color measured at 450 nm	2107134, 2107135, 2107136, 2107137, 2107149
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2107134, 2107135, 2107136, 2107137, 2107146, 2107149
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2107134, 2107135, 2107136, 2107137, 2107149

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2107134, 2107135, 2107136, 2107137, 2107146, 2107149
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2107134, 2107135, 2107136, 2107137, 2107146, 2107149
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2107138, 2107139, 2107140, 2107141, 2107147, 2107150

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	07/30/2019			07/31/2019 16:21	Samantha Davila	2107134, 2107135, 2107136, 2107137, 2107146, 2107149
EPA 300.0	07/30/2019			08/02/2019 08:42	Jhamieka S. Greenwood	2107146
EPA 300.0 Rev. 2.1	07/30/2019			08/02/2019 18:50	Jhamieka S. Greenwood	2107134
	07/30/2019			08/02/2019 19:02	Jhamieka S. Greenwood	2107135
	07/30/2019			08/02/2019 19:39	Jhamieka S. Greenwood	2107136
	07/30/2019			08/02/2019 19:51	Jhamieka S. Greenwood	2107137
	07/30/2019			08/02/2019 20:03	Jhamieka S. Greenwood	2107149
EPA 350.1 Rev. 2.0	07/30/2019			08/08/2019 11:49	Ping Hua	2107139
	07/30/2019			08/08/2019 11:58	Ping Hua	2107140
	07/30/2019			08/08/2019 11:59	Ping Hua	2107141
	07/30/2019			08/08/2019 12:11	Ping Hua	2107150
	07/30/2019			08/08/2019 12:38	Ping Hua	2107138
	07/30/2019			08/09/2019 13:00	Ping Hua	2107147
EPA 351.2 Rev. 2.0	07/30/2019	08/02/2019 12:30	Adrian Shelby	08/05/2019 14:23	Joseph Suarez	2107138
	07/30/2019	08/02/2019 12:30	Adrian Shelby	08/05/2019 15:08	Joseph Suarez	2107139
	07/30/2019	08/02/2019 12:30	Adrian Shelby	08/05/2019 15:09	Joseph Suarez	2107140
	07/30/2019	08/02/2019 12:30	Adrian Shelby	08/05/2019 15:11	Joseph Suarez	2107141
	07/30/2019	08/02/2019 12:30	Adrian Shelby	08/05/2019 15:16	Joseph Suarez	2107147
	07/30/2019	08/02/2019 12:30	Adrian Shelby	08/05/2019 15:17	Joseph Suarez	2107150
EPA 353.2 Rev. 2.0	07/30/2019			08/01/2019 09:51	Beverly Y. Sanders	2107138
	07/30/2019			08/01/2019 09:58	Beverly Y. Sanders	2107147
	07/30/2019			08/02/2019 11:00	Beverly Y. Sanders	2107139
	07/30/2019			08/02/2019 11:02	Beverly Y. Sanders	2107140
	07/30/2019			08/02/2019 11:03	Beverly Y. Sanders	2107141
	07/30/2019			08/02/2019 11:04	Beverly Y. Sanders	2107150
EPA 365.1 Rev. 2.0	07/30/2019	08/01/2019 11:17	Vijayalakshmi Reddy	08/02/2019 13:27	Lipi Saha	2107138
	07/30/2019	08/01/2019 11:17	Vijayalakshmi Reddy	08/02/2019 13:28	Lipi Saha	2107147
	07/30/2019	08/01/2019 11:17	Vijayalakshmi Reddy	08/02/2019 14:00	Lipi Saha	2107139
	07/30/2019	08/01/2019 11:17	Vijayalakshmi Reddy	08/02/2019 14:01	Lipi Saha	2107140
	07/30/2019	08/01/2019 11:17	Vijayalakshmi Reddy	08/02/2019 14:02	Lipi Saha	2107141
	07/30/2019	08/01/2019 11:17	Vijayalakshmi Reddy	08/02/2019 14:03	Lipi Saha	2107150
EPA 365.1 Rev. 2.0 dissolved	07/30/2019			07/31/2019 16:16	Jhamieka S. Greenwood	2107143
	07/30/2019			07/31/2019 16:39	Jhamieka S. Greenwood	2107151
	07/30/2019			07/31/2019 16:40	Jhamieka S. Greenwood	2107144
	07/30/2019			07/31/2019 16:41	Jhamieka S. Greenwood	2107145
	07/30/2019			07/31/2019 16:52	Jhamieka S. Greenwood	2107142
	07/30/2019			07/31/2019 16:53	Jhamieka S. Greenwood	2107148
SM 2120 B	07/30/2019			07/31/2019 15:01	Madeline Funaro	2107134
	07/30/2019			07/31/2019 15:03	Madeline Funaro	2107135

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	07/30/2019			07/31/2019 15:04	Madeline Funaro	2107136, 2107137
	07/30/2019			07/31/2019 15:05	Madeline Funaro	2107149
SM 2320 B-97	07/30/2019			08/06/2019 10:01	Dale L. Simmons	2107135
	07/30/2019			08/06/2019 10:27	Dale L. Simmons	2107136
	07/30/2019			08/06/2019 21:12	Dale L. Simmons	2107134
	07/30/2019			08/07/2019 06:37	Dale L. Simmons	2107146
	07/30/2019			08/09/2019 08:11	Dale L. Simmons	2107149
	07/30/2019			08/09/2019 11:22	Dale L. Simmons	2107137
	07/30/2019			08/01/2019 14:10	Sima Feizi	2107134, 2107135, 2107136, 2107137, 2107149
SM 2540 D-97	07/30/2019			08/01/2019 14:10	Sima Feizi	2107134, 2107135, 2107136, 2107137, 2107146, 2107149
SM 4500 F-C-97	07/30/2019			08/06/2019 10:01	Dale L. Simmons	2107135
	07/30/2019			08/06/2019 10:27	Dale L. Simmons	2107136
	07/30/2019			08/07/2019 02:51	Dale L. Simmons	2107146
	07/30/2019			08/09/2019 08:11	Dale L. Simmons	2107149
	07/30/2019			08/09/2019 11:22	Dale L. Simmons	2107137
	07/30/2019			08/10/2019 03:25	Dale L. Simmons	2107134
	07/30/2019			08/01/2019 14:06	Madeline Funaro	2107139
SM 5310 B-00	07/30/2019			08/01/2019 17:42	Madeline Funaro	2107138
	07/30/2019			08/01/2019 17:56	Madeline Funaro	2107140
	07/30/2019			08/01/2019 18:08	Madeline Funaro	2107141
	07/30/2019			08/01/2019 18:21	Madeline Funaro	2107150
	07/30/2019			08/02/2019 02:19	Madeline Funaro	2107147