

Chemical Analysis Report

NE-DIST-2019-08-15-01

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

Event Description: **LSJR South West Boat**

Request ID: **RQ-2019-08-12-15**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 12-SEP-2019 08:59

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: South fork Black Creek upstream of North Fork Black CR **Collection Date/Time:** 08/14/2019 11:35

Field ID: G2NE1127

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111871	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P369129	
	EPA 300.0 Rev. 2.1	Chloride	7.0		mg Cl/L	P369533	
		Sulfate	3.3		mg SO4/L	P369536	
	SM 2120 B	Color (true)	360		PCU	P369151	
	SM 2320 B-97	Total Alkalinity	2.2	I	mg CaCO3/L	P369587	
	SM 2540 C-97	TDS	93		mg/L	P369422	
	SM 2540 D-97	TSS	2	U	mg/L	P369268	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P369590	
2111874	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P369692	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P369365	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P369327	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P369184	
	SM 5310 B-00	Organic Carbon	32		mg C/L	P369285	
2111877	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.069		mg P/L	P369131	

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: Grog Branch 150m above mouth

Collection Date/Time: 08/14/2019 11:20

Field ID: G2NE1185

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111865	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P369129	
	EPA 300.0 Rev. 2.1	Chloride	7.7	A	mg Cl/L	P369533	
		Sulfate	6.9	A	mg SO4/L	P369536	
	SM 2120 B	Color (true)	340		PCU	P369151	
	SM 2320 B-97	Total Alkalinity	5.8		mg CaCO3/L	P369586	
	SM 2540 C-97	TDS	106		mg/L	P369422	
	SM 2540 D-97	TSS	3	I	mg/L	P369268	
	SM 4500 F-C-97	Fluoride	0.052	I	mg F/L	P369589	
2111867	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P369692	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P369365	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P369327	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P369184	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P369285	
2111869	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.051		mg P/L	P369131	
2111890	EPA 200.7 Rev. 4.4	Barium	16.4		ug/L	P369358	
		Calcium	7.72		mg/L	P369358	
		Iron	860		ug/L	P369358	
		Magnesium	1.51		mg/L	P369358	
		Potassium	0.60	I	mg/L	P369358	
		Sodium	5.5		mg/L	P369358	
		Zinc	5.0	U	ug/L	P369358	
	EPA 200.8 Rev. 5.4	Aluminum	622		ug/L	P369358	
		Antimony	0.069	I	ug/L	P369358	
		Arsenic	0.74		ug/L	P369358	
		Boron**	19.0		ug/L	P369358	
		Cadmium	0.022	I	ug/L	P369358	
		Chromium	0.74	I	ug/L	P369358	
		Copper	0.81		ug/L	P369358	
		Lead	0.60		ug/L	P369358	
		Nickel	0.70	I	ug/L	P369358	
		Selenium	0.20	U	ug/L	P369358	
		Silver	0.010	U	ug/L	P369358	
		Thallium	0.10	U	ug/L	P369358	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 09/11/2019.

Sample Location: Little Black Creek 200m above mouth

Collection Date/Time: 08/14/2019 10:50

Field ID: G2NE1184

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111866	EPA 180.1 Rev. 2.0	Turbidity	6.2	A	NTU	P369129	
	EPA 300.0 Rev. 2.1	Chloride	9.4		mg Cl/L	P369533	
		Sulfate	5.9		mg SO4/L	P369536	
	SM 2120 B	Color (true)	300		PCU	P369151	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P369587	
	SM 2540 C-97	TDS	103		mg/L	P369422	
	SM 2540 D-97	TSS	3	I	mg/L	P369268	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P369590	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P369692	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P369365	MS
2111868	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P369327	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P369184	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P369285	
2111870	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P369131	
2111891	EPA 200.7 Rev. 4.4	Barium	15.6		ug/L	P369358	
		Calcium	8.75		mg/L	P369358	
		Iron	800		ug/L	P369358	
		Magnesium	1.91		mg/L	P369358	
		Potassium	0.76	I	mg/L	P369358	
		Sodium	7.1		mg/L	P369358	
		Zinc	5.0	I	ug/L	P369358	
		Aluminum	556		ug/L	P369358	
		Antimony	0.061	I	ug/L	P369358	
		Arsenic	0.99		ug/L	P369358	
	EPA 200.8 Rev. 5.4	Boron**	20.8		ug/L	P369358	
		Cadmium	0.020	U	ug/L	P369358	
		Chromium	0.74	I	ug/L	P369358	
		Copper	0.87		ug/L	P369358	
		Lead	0.57		ug/L	P369358	
		Nickel	0.65	I	ug/L	P369358	
		Selenium	0.20	U	ug/L	P369358	
		Silver	0.010	U	ug/L	P369358	
		Thallium	0.10	U	ug/L	P369358	

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: Mill Log Cr Downstream of Test Site

Collection Date/Time: 08/14/2019 10:15

Field ID: 20030304

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111872	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P369129	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P369533	
		Sulfate	8.2		mg SO4/L	P369536	
	SM 2120 B	Color (true)	310		PCU	P369151	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P369587	
	SM 2540 C-97	TDS	150		mg/L	P369422	
	SM 2540 D-97	TSS	2	U	mg/L	P369268	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P369590	
2111875	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P369692	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1	J	mg N/L	P369365	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P369327	
	EPA 365.1 Rev. 2.0	Total-P	0.50		mg P/L	P369184	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P369285	
2111878	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.36		mg P/L	P369131	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Sample Location: Black CR @ RR Bridge Below Mill Log CR

Collection Date/Time: 08/14/2019 10:35

Field ID: 20030204

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111873	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P369129	
	EPA 300.0 Rev. 2.1	Chloride	8.9		mg Cl/L	P369533	
		Sulfate	6.5		mg SO4/L	P369536	
	SM 2120 B	Color (true)	290		PCU	P369151	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P369587	
	SM 2540 C-97	TDS	80		mg/L	P369423	
	SM 2540 D-97	TSS	2	U	mg/L	P369269	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P369590	
2111876	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P369692	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P369426	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P369327	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P369303	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P369285	
2111879	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.053		mg P/L	P369131	

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: P369129

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369358

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: P369358

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: P369533

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369536

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369692

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369365

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369426

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369327

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369184

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369303

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369131

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

Reference Method: SM 2120 B
Batch ID: P369151

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P369586

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

Reference Method: SM 2320 B-97
Batch ID: P369587

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P369422

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P369423

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P369268

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P369269

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P369589

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P369590

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P369285

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: P369358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	110		P	85 - 115
Iron	106		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	108		P	85 - 115
Sodium	113		P	85 - 115
Zinc	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	97.3		P	85 - 115
Arsenic	102		P	85 - 115
Boron	103		P	85 - 115
Cadmium	99.3		P	85 - 115
Chromium	96.5		P	85 - 115
Copper	98.5		P	85 - 115
Lead	96.6		P	85 - 115
Nickel	97.9		P	85 - 115
Selenium	103		P	85 - 115
Silver	98.6		P	85 - 115
Thallium	99.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369536

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369692

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369365

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369327

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369184

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369303

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369131

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

Reference Method: SM 2120 B
Batch ID: P369151

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.9		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P369586

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

Reference Method: SM 2320 B-97
Batch ID: P369587

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

Reference Method: SM 4500 F-C-97
Batch ID: P369589

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P369590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P369285

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111951	Barium	101		P	80 - 120
2111951	Calcium	109		P	80 - 120
2111951	Iron	106		P	80 - 120
2111951	Magnesium	111		P	80 - 120
2111951	Potassium	108		P	80 - 120
2111951	Sodium	103		P	80 - 120
2111951	Zinc	97.4		P	80 - 120
2112383	Barium	101	102	P/P	80 - 120
2112383	Calcium	109	109	P/P	80 - 120
2112383	Iron	105	105	P/P	80 - 120
2112383	Magnesium	110	110	P/P	80 - 120
2112383	Potassium	112	111	P/P	80 - 120
2112383	Sodium	102	102	P/P	80 - 120
2112383	Zinc	99.5	98.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111951	Aluminum	103		P	80 - 120
2111951	Antimony	98.1		P	80 - 120
2111951	Arsenic	102		P	80 - 120
2111951	Boron	102		P	80 - 120
2111951	Cadmium	99.0		P	80 - 120
2111951	Chromium	99.0		P	80 - 120
2111951	Copper	99.4		P	80 - 120
2111951	Lead	99.1		P	80 - 120
2111951	Nickel	96.5		P	80 - 120
2111951	Selenium	100		P	80 - 120
2111951	Silver	99.2		P	80 - 120
2111951	Thallium	101		P	80 - 120
2112383	Aluminum	101	102	P/P	80 - 120
2112383	Antimony	96.4	97.6	P/P	80 - 120
2112383	Arsenic	101	101	P/P	80 - 120
2112383	Boron	102	104	P/P	80 - 120
2112383	Cadmium	98.0	99.1	P/P	80 - 120
2112383	Chromium	98.4	99.9	P/P	80 - 120
2112383	Copper	98.8	98.9	P/P	80 - 120
2112383	Lead	97.9	98.7	P/P	80 - 120
2112383	Nickel	98.4	99.3	P/P	80 - 120
2112383	Selenium	99.0	100	P/P	80 - 120
2112383	Silver	97.6	99.2	P/P	80 - 120
2112383	Thallium	99.4	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111865	Chloride	95.6		P	90 - 110
2111936	Chloride	96.0		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111865	Sulfate	99.2		P	90 - 110
2111936	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369692

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111839	Ammonia-N	97.8	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111875	Kjeldahl Nitrogen	103	89.2	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111900	Kjeldahl Nitrogen	101	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111867	NO2NO3-N	95.0	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111838	Total-P	106	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111876	Total-P	109	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111903	O-Phosphate-P	96.5	97.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P369589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111832	Fluoride	94.1	94.6	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P369590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112156	Fluoride	94.9	96.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P369285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112038	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P369129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111866	Turbidity	1.94	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112383	Barium	0.0122	Spike	P	0 - 20
2112383	Calcium	0.0511	Spike	P	0 - 20
2112383	Iron	0.172	Spike	P	0 - 20
2112383	Magnesium	0.0475	Spike	P	0 - 20
2112383	Potassium	0.298	Spike	P	0 - 20
2112383	Sodium	0.0534	Spike	P	0 - 20
2112383	Zinc	1.54	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112383	Aluminum	0.921	Spike	P	0 - 20
2112383	Antimony	1.25	Spike	P	0 - 20
2112383	Arsenic	0.231	Spike	P	0 - 20
2112383	Boron	1.94	Spike	P	0 - 20
2112383	Cadmium	1.07	Spike	P	0 - 20
2112383	Chromium	1.51	Spike	P	0 - 20
2112383	Copper	0.0758	Spike	P	0 - 20
2112383	Lead	0.773	Spike	P	0 - 20
2112383	Nickel	0.921	Spike	P	0 - 20
2112383	Selenium	1.01	Spike	P	0 - 20
2112383	Silver	1.66	Spike	P	0 - 20
2112383	Thallium	2.81	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111865	Chloride	0.933	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111865	Sulfate	0.712	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369692

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111839	Ammonia-N	1.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111875	Kjeldahl Nitrogen	7.24	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111900	Kjeldahl Nitrogen	2.30	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111867	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111838	Total-P	3.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111876	Total-P	2.79	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111903	O-Phosphate-P	0.545	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P369151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111834	Color (true)	2.87	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P369586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111832	Total Alkalinity	0.127	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
 Batch ID: P369587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112156	Total Alkalinity	0.0854	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P369422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111833	TDS	6.83	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P369423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111935	TDS	0.939	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P369589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111832	Fluoride	0.477	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P369590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112156	Fluoride	1.47	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P369285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112038	Organic Carbon	0.0744	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
 Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93540

Included Lab Sample IDs: 2111865, 2111866, 2111871, 2111872, 2111873

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: A93541

Included Lab Sample IDs: 2111869, 2111870, 2111877, 2111878, 2111879

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	99.3	P/P	90 - 110
O-Phosphate-P	99.2	98.5	P/P	90 - 110
O-Phosphate-P	99.3	98.1	P/P	90 - 110
O-Phosphate-P	99.3	99.3	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A93551

Included Lab Sample IDs: 2111865, 2111866, 2111871, 2111872, 2111873

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93591

Included Lab Sample IDs: 2111867, 2111868, 2111874, 2111875

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

Reference Method: SM 5310 B-00

Run ID: A93620

Included Lab Sample IDs: 2111867, 2111868, 2111874, 2111875, 2111876

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93635

Included Lab Sample IDs: 2111867, 2111868, 2111874, 2111875, 2111876

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93674

Included Lab Sample IDs: 2111876

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93681

Included Lab Sample IDs: 2111867, 2111868, 2111874, 2111875

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	108	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93697

Included Lab Sample IDs: 2111890, 2111891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	95 - 105
Barium	101	101	P/P	90 - 110
Calcium	100	102	P/P	95 - 105
Calcium	102	102	P/P	90 - 110
Iron	102	102	P/P	95 - 105
Iron	102	102	P/P	90 - 110
Magnesium	103	103	P/P	95 - 105
Magnesium	103	102	P/P	90 - 110
Potassium	100	101	P/P	90 - 110
Potassium	101	100	P/P	95 - 105
Sodium	101	103	P/P	95 - 105
Sodium	103	104	P/P	90 - 110
Zinc	97.8	98.5	P/P	95 - 105
Zinc	98.5	97.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A93717

Included Lab Sample IDs: 2111865, 2111866, 2111871, 2111872, 2111873

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.4	97.2	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93722

Included Lab Sample IDs: 2111876

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.9	99.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93749

Included Lab Sample IDs: 2111865, 2111866, 2111871, 2111872, 2111873

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93749

Included Lab Sample IDs: 2111865, 2111866, 2111871, 2111872, 2111873

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.1	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93798

Included Lab Sample IDs: 2111867, 2111868, 2111874, 2111875, 2111876

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93990

Included Lab Sample IDs: 2111890, 2111891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	101	P/P	90 - 110
Antimony	93.9	94.3	P/P	90 - 110
Arsenic	102	99.9	P/P	90 - 110
Boron	101	102	P/P	90 - 110
Cadmium	96.8	97.6	P/P	90 - 110
Chromium	95.0	97.5	P/P	90 - 110
Copper	100	99.3	P/P	90 - 110
Lead	98.2	98.0	P/P	90 - 110
Selenium	99.3	98.7	P/P	90 - 110
Thallium	95.7	95.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94047

Included Lab Sample IDs: 2111890, 2111891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	97.2	97.3	P/P	90 - 110
Silver	99.0	99.2	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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.94	
EPA 200.7 Rev. 4.4	Barium	102	101	101	102			0.0122
	Calcium	110	109	109	109			0.0511
	Iron	106	106	105	105			0.172
	Magnesium	112	111	110	110			0.0475
	Potassium	108	108	112	111			0.298
	Sodium	113	103	102	102			0.0534
	Zinc	98.4	97.4	99.5	98.0			1.54
EPA 200.8 Rev. 5.4	Aluminum	103	103	101	102			0.921
	Antimony	97.3	98.1	96.4	97.6			1.25
	Arsenic	102	102	101	101			0.231
	Boron	103	102	102	104			1.94
	Cadmium	99.3	99.0	98.0	99.1			1.07
	Chromium	96.5	99.0	98.4	99.9			1.51
	Copper	98.5	99.4	98.8	98.9			0.0758
	Lead	96.6	99.1	97.9	98.7			0.773
	Nickel	97.9	96.5	98.4	99.3			0.921
	Selenium	103	100	99.0	100			1.01
	Silver	98.6	99.2	97.6	99.2			1.66
	Thallium	99.1	101	99.4	102			2.81
EPA 300.0 Rev. 2.1	Chloride	96.7	95.6	96.0			0.933	
	Sulfate	100	99.2	100			0.712	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	97.8	99.8				1.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	103	89.2				7.24
	Kjeldahl Nitrogen	94.0	101	98.0				2.30
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	95.0	95.0				0.0
EPA 365.1 Rev. 2.0	Total-P	105	106	110				3.00
	Total-P	105	109	106				2.79
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	96.5	97.1				0.545
SM 2120 B	Color (true)	99.9					2.87	
SM 2320 B-97	Total Alkalinity	103					0.127	
	Total Alkalinity	103					0.0854	
SM 2540 C-97	TDS						6.83	
	TDS						0.939	
SM 4500 F-C-97	Fluoride	95.3	94.1	94.6				0.477
	Fluoride	95.3	94.9	96.5				1.47
SM 5310 B-00	Organic Carbon	101	103					0.0744

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2111865, 2111866, 2111871, 2111872, 2111873
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2111890, 2111891
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2111890, 2111891
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2111865, 2111866, 2111871, 2111872, 2111873
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2111865, 2111866, 2111871, 2111872, 2111873
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2111867, 2111868, 2111874, 2111875, 2111876

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2111867, 2111868, 2111874, 2111875, 2111876
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2111867, 2111868, 2111874, 2111875, 2111876
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2111867, 2111868, 2111874, 2111875, 2111876
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2111869, 2111870, 2111877, 2111878, 2111879
SM 2120 B / E31780	True Color measured at 450 nm	2111865, 2111866, 2111871, 2111872, 2111873
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2111865, 2111866, 2111871, 2111872, 2111873
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2111865, 2111866, 2111871, 2111872, 2111873
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2111865, 2111866, 2111871, 2111872, 2111873
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2111865, 2111866, 2111871, 2111872, 2111873
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2111867, 2111868, 2111874, 2111875, 2111876

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	08/15/2019			08/15/2019 16:59	Rosalyn Ballman	2111865, 2111866, 2111871, 2111872, 2111873
EPA 200.7 Rev. 4.4	08/15/2019	08/20/2019 16:10	Elliott D. Healy	08/21/2019 15:18	Alexander Thompson	2111890
	08/15/2019	08/20/2019 16:10	Elliott D. Healy	08/21/2019 15:48	Alexander Thompson	2111891
EPA 200.8 Rev. 5.4	08/15/2019	08/20/2019 16:10	Elliott D. Healy	09/04/2019 20:29	Robert K Palmer	2111890
	08/15/2019	08/20/2019 16:10	Elliott D. Healy	09/04/2019 20:38	Robert K Palmer	2111891
	08/15/2019	08/20/2019 16:10	Elliott D. Healy	09/06/2019 23:52	Robert K Palmer	2111890
	08/15/2019	08/20/2019 16:10	Elliott D. Healy	09/06/2019 23:59	Robert K Palmer	2111891
EPA 300.0 Rev. 2.1	08/15/2019			08/21/2019 20:19	Julia Storbeck	2111865
	08/15/2019			08/21/2019 21:07	Julia Storbeck	2111866
	08/15/2019			08/21/2019 21:19	Julia Storbeck	2111871
	08/15/2019			08/21/2019 21:31	Julia Storbeck	2111872
	08/15/2019			08/21/2019 21:43	Julia Storbeck	2111873
EPA 350.1 Rev. 2.0	08/15/2019			08/26/2019 11:42	Ping Hua	2111876
	08/15/2019			08/26/2019 11:43	Ping Hua	2111867
	08/15/2019			08/26/2019 11:45	Ping Hua	2111868
	08/15/2019			08/26/2019 11:46	Ping Hua	2111874
	08/15/2019			08/26/2019 11:48	Ping Hua	2111875
EPA 351.2 Rev. 2.0	08/15/2019	08/20/2019 12:45	Sima Feizi	08/21/2019 13:17	Joseph Suarez	2111867
	08/15/2019	08/20/2019 12:45	Sima Feizi	08/21/2019 13:19	Joseph Suarez	2111868
	08/15/2019	08/20/2019 12:45	Sima Feizi	08/21/2019 13:21	Joseph Suarez	2111874
	08/15/2019	08/20/2019 12:45	Sima Feizi	08/21/2019 13:22	Joseph Suarez	2111875
	08/15/2019	08/21/2019 13:20	Jhamieka S. Greenwood	08/22/2019 11:22	Joseph Suarez	2111876
EPA 353.2 Rev. 2.0	08/15/2019			08/20/2019 11:24	Beverly Y. Sanders	2111867
	08/15/2019			08/20/2019 11:25	Beverly Y. Sanders	2111868
	08/15/2019			08/20/2019 11:26	Beverly Y. Sanders	2111874
	08/15/2019			08/20/2019 11:27	Beverly Y. Sanders	2111875
	08/15/2019			08/20/2019 11:29	Beverly Y. Sanders	2111876
EPA 365.1 Rev. 2.0	08/15/2019	08/16/2019 13:30	Vijayalakshmi Reddy	08/19/2019 11:16	Lipi Saha	2111867
	08/15/2019	08/16/2019 13:30	Vijayalakshmi Reddy	08/19/2019 11:17	Lipi Saha	2111868
	08/15/2019	08/16/2019 13:30	Vijayalakshmi Reddy	08/19/2019 11:18	Lipi Saha	2111874
	08/15/2019	08/16/2019 13:30	Vijayalakshmi Reddy	08/19/2019 11:19	Lipi Saha	2111875
	08/15/2019	08/20/2019 12:45	Lipi Saha	08/21/2019 10:25	Lipi Saha	2111876
EPA 365.1 Rev. 2.0 dissolved	08/15/2019			08/15/2019 14:33	Jhamieka S. Greenwood	2111869
	08/15/2019			08/15/2019 14:34	Jhamieka S. Greenwood	2111870
	08/15/2019			08/15/2019 14:42	Jhamieka S. Greenwood	2111879
	08/15/2019			08/15/2019 14:58	Jhamieka S. Greenwood	2111877
	08/15/2019			08/15/2019 15:05	Jhamieka S. Greenwood	2111878
SM 2120 B	08/15/2019			08/15/2019 16:43	Madeline Funaro	2111865
	08/15/2019			08/15/2019 16:44	Madeline Funaro	2111866, 2111871

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	08/15/2019			08/15/2019 16:45	Madeline Funaro	2111872
	08/15/2019			08/15/2019 16:46	Madeline Funaro	2111873
SM 2320 B-97	08/15/2019			08/22/2019 22:16	Dale L. Simmons	2111865
	08/15/2019			08/22/2019 23:30	Dale L. Simmons	2111866
	08/15/2019			08/22/2019 23:42	Dale L. Simmons	2111871
	08/15/2019			08/22/2019 23:55	Dale L. Simmons	2111872
	08/15/2019			08/23/2019 00:06	Dale L. Simmons	2111873
SM 2540 C-97	08/15/2019			08/16/2019 17:15	Rosalyn Ballman	2111865, 2111866, 2111871, 2111872, 2111873
SM 2540 D-97	08/15/2019			08/16/2019 17:15	Rosalyn Ballman	2111865, 2111866, 2111871, 2111872, 2111873
SM 4500 F-C-97	08/15/2019			08/22/2019 22:16	Dale L. Simmons	2111865
	08/15/2019			08/22/2019 23:30	Dale L. Simmons	2111866
	08/15/2019			08/22/2019 23:42	Dale L. Simmons	2111871
	08/15/2019			08/22/2019 23:55	Dale L. Simmons	2111872
	08/15/2019			08/23/2019 00:06	Dale L. Simmons	2111873
SM 5310 B-00	08/15/2019			08/19/2019 21:19	Madeline Funaro	2111867
	08/15/2019			08/19/2019 21:31	Madeline Funaro	2111868
	08/15/2019			08/19/2019 21:43	Madeline Funaro	2111874
	08/15/2019			08/19/2019 21:56	Madeline Funaro	2111875
	08/15/2019			08/19/2019 22:08	Madeline Funaro	2111876