

Chemical Analysis Report

NE-DIST-2019-06-28-03

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

Event Description: **Suwannee Central**
Request ID: **RQ-2019-06-24-09**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 25-JUL-2019 17:14



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: Sunshine Lake Center

Collection Date/Time: 06/27/2019 12:05

Field ID: G1NE0857

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2099598	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P366500	
	EPA 300.0 Rev. 2.1	Chloride	8.4		mg Cl/L	P366762	
		Sulfate	8.3		mg SO4/L	P366764	
		Color (true)	69		PCU	P366495	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P366738	
	SM 2540 C-97	TDS	64		mg/L	P366895	
	SM 2540 D-97	TSS	2	U	mg/L	P366870	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P366745	
2099601	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P366776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P366771	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366730	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P366680	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P366726	
2099604	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P366506	
2099614	EPA 200.7 Rev. 4.4	Barium	2.4	I	ug/L	P366628	
		Calcium	5.58		mg/L	P366628	
		Iron	110	I	ug/L	P366628	
		Magnesium	1.26		mg/L	P366628	
		Potassium	0.69	I	mg/L	P366628	
		Sodium	3.8		mg/L	P366628	
		Zinc	5.0	U	ug/L	P366628	
	EPA 200.8 Rev. 5.4	Aluminum	46		ug/L	P366628	
		Antimony	0.050	U	ug/L	P366628	
		Arsenic	0.71		ug/L	P366628	
		Boron**	16.2		ug/L	P366628	
		Cadmium	0.020	U	ug/L	P366628	
		Chromium	0.40	U	ug/L	P366628	
		Copper	0.40	U	ug/L	P366628	
		Lead	0.20	U	ug/L	P366628	
		Nickel	0.50	U	ug/L	P366628	
		Selenium	0.20	U	ug/L	P366628	
		Silver	0.010	U	ug/L	P366628	
		Thallium	0.10	U	ug/L	P366628	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference and 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: Rocky Creek at 156th av.

Collection Date/Time: 06/27/2019 11:40

Field ID: G1NE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2099599	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P366500	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P366762	
		Sulfate	8.5		mg SO4/L	P366764	
		Color (true)	590		PCU	P366495	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P366738	
	SM 2540 C-97	TDS	192		mg/L	P366895	
	SM 2540 D-97	TSS	2	I	mg/L	P366870	
	SM 4500 F-C-97	Fluoride	0.098	I	mg F/L	P366745	
2099602	EPA 350.1 Rev. 2.0	Ammonia-N	0.079		mg N/L	P366776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P366771	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.045		mg N/L	P366730	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P366680	
	SM 5310 B-00	Organic Carbon	52		mg C/L	P366726	
2099605	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P366506	
2099615	EPA 200.7 Rev. 4.4	Barium	13.0		ug/L	P366628	
		Calcium	13.7		mg/L	P366628	
		Iron	1.35E+03		ug/L	P366628	
		Magnesium	4.17		mg/L	P366628	
		Potassium	1.5		mg/L	P366628	
		Sodium	6.9		mg/L	P366628	
		Zinc	7.1	I	ug/L	P367077	
	EPA 200.8 Rev. 5.4	Aluminum	733		ug/L	P366628	
		Antimony	0.12	I	ug/L	P366628	
		Arsenic	2.12		ug/L	P366628	
		Boron**	23.6		ug/L	P366628	
		Cadmium	0.036	I	ug/L	P366628	
		Chromium	2.2		ug/L	P366628	
		Copper	0.90		ug/L	P367077	
		Lead	0.44		ug/L	P367077	
		Nickel	1.3	I	ug/L	P367077	
		Selenium	0.26	I	ug/L	P366628	
		Silver	0.010	U	ug/L	P366628	
		Thallium	0.10	U	ug/L	P366628	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference and 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: Calf Creek at SE 27th st.

Collection Date/Time: 06/27/2019 10:00

Field ID: G1NE0931

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2099600	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P366500	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P366762	
		Sulfate	9.5		mg SO4/L	P366764	
		Color (true)	140		PCU	P366495	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P366738	
	SM 2540 C-97	TDS	185		mg/L	P366895	
	SM 2540 D-97	TSS	2	I	mg/L	P366870	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P366745	
2099603	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P366776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P366771	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P366826	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P366680	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P366726	
2099606	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.098		mg P/L	P366506	
2099616	EPA 200.7 Rev. 4.4	Barium	13.0		ug/L	P366628	
		Calcium	33.6		mg/L	P366628	
		Iron	570		ug/L	P366628	
		Magnesium	7.19		mg/L	P366628	
		Potassium	0.90	I	mg/L	P366628	
		Sodium	8.6		mg/L	P366628	
		Zinc	5.0	U	ug/L	P366628	
		Aluminum	229		ug/L	P366628	
		Antimony	0.096	I	ug/L	P366628	
		Arsenic	1.91		ug/L	P366628	
	EPA 200.8 Rev. 5.4	Boron**	34.0		ug/L	P366628	
		Cadmium	0.020	U	ug/L	P366628	
		Chromium	0.96	I	ug/L	P366628	
		Copper	0.47	I	ug/L	P366628	
		Lead	0.44		ug/L	P367077	
		Nickel	0.60	I	ug/L	P367077	
		Selenium	0.20	U	ug/L	P366628	
		Silver	0.010	U	ug/L	P366628	
		Thallium	0.10	U	ug/L	P366628	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference and 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: Turkey Creek at NW59th

Collection Date/Time: 06/27/2019 11:00

Field ID: G1NE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2099607	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P366500	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P366762	
		Sulfate	31		mg SO4/L	P366764	
	SM 2120 B	Color (true)	120		PCU	P366495	
	SM 2320 B-97	Total Alkalinity	68		mg CaCO3/L	P366738	
	SM 2540 C-97	TDS	172		mg/L	P366895	
	SM 2540 D-97	TSS	2	U	mg/L	P366870	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P366745	
2099608	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P366776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P366771	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P366826	
	EPA 365.1 Rev. 2.0	Total-P	0.39		mg P/L	P366680	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P366726	
2099609	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.32		mg P/L	P366506	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference and 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: P366500

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366628

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	36		ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367077

Component	Result	Code	Units
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366628

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	0.76		ug/L
Nickel	0.81	I	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367077

Component	Result	Code	Units
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366762

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366764

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366776

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366771

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366730

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366826

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366680

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366506

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

Reference Method: SM 2120 B
Batch ID: P366495

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P366738

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: P366895

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366870

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P366745

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P366726

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: P366628

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.9		P	85 - 115
Calcium	102		P	85 - 115
Iron	103		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	94.9		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367077

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366628

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	104		P	85 - 115
Boron	105		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	105		P	85 - 115
Copper	99.5		P	85 - 115
Lead	100		P	85 - 115
Nickel	101		P	85 - 115
Selenium	104		P	85 - 115
Silver	98.9		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367077

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	104		P	85 - 115
Lead	104		P	85 - 115
Nickel	105		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366762

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366764

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366776

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366771

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366730

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366826

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366680

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366506

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

Reference Method: SM 2120 B
Batch ID: P366495

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

Reference Method: SM 2320 B-97
Batch ID: P366738

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

Reference Method: SM 4500 F-C-97
Batch ID: P366745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P366726

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099614	Barium	98.8		P	80 - 120
2099614	Calcium	102		P	80 - 120
2099614	Iron	101		P	80 - 120
2099614	Magnesium	102		P	80 - 120
2099614	Potassium	100		P	80 - 120
2099614	Sodium	101		P	80 - 120
2099614	Zinc	96.3		P	80 - 120
2100039	Barium	99.1	99.3	P/P	80 - 120
2100039	Calcium	102		P	80 - 120
2100039	Iron	105	104	P/P	80 - 120
2100039	Magnesium	102		P	80 - 120
2100039	Potassium	101	100	P/P	80 - 120
2100039	Sodium	103		P	80 - 120
2100039	Zinc	94.0	94.4	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101041	Zinc	99.9	101	P/P	80 - 120
2101279	Zinc	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099614	Aluminum	99.9		P	80 - 120
2099614	Antimony	98.0		P	80 - 120
2099614	Arsenic	102		P	80 - 120
2099614	Boron	102		P	80 - 120
2099614	Cadmium	99.9		P	80 - 120
2099614	Chromium	104		P	80 - 120
2099614	Copper	99.4		P	80 - 120
2099614	Lead	98.7		P	80 - 120
2099614	Nickel	99.5		P	80 - 120
2099614	Selenium	101		P	80 - 120
2099614	Silver	97.0		P	80 - 120
2099614	Thallium	102		P	80 - 120
2100039	Aluminum	98.4	100	P/P	80 - 120
2100039	Antimony	101	102	P/P	80 - 120
2100039	Arsenic	104	106	P/P	80 - 120
2100039	Boron	102	101	P/P	80 - 120
2100039	Cadmium	103	105	P/P	80 - 120
2100039	Chromium	107	107	P/P	80 - 120
2100039	Copper	99.4	101	P/P	80 - 120
2100039	Lead	98.3	100	P/P	80 - 120
2100039	Nickel	100	101	P/P	80 - 120
2100039	Selenium	105	106	P/P	80 - 120
2100039	Silver	97.4	97.0	P/P	80 - 120
2100039	Thallium	101	104	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101041	Copper	104	106	P/P	80 - 120
2101041	Lead	106	105	P/P	80 - 120
2101041	Nickel	104	104	P/P	80 - 120
2101279	Copper	102		P	80 - 120
2101279	Lead	105		P	80 - 120
2101279	Nickel	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098885	Chloride	103		P	90 - 110
2099402	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099402	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099706	Ammonia-N	105	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099601	Kjeldahl Nitrogen	105	91.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099483	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366826

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099603	NO2NO3-N	97.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099560	Total-P	99.6	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099604	O-Phosphate-P	95.1	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P366745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099948	Fluoride	98.9	98.9	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099559	Organic Carbon	95.6	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P366500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099645	Turbidity	1.98	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P366628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100039	Barium	0.230	Spike	P	0 - 20
2100039	Calcium	0.134	Spike	P	0 - 20
2100039	Iron	0.945	Spike	P	0 - 20
2100039	Magnesium	0.196	Spike	P	0 - 20
2100039	Potassium	0.482	Spike	P	0 - 20
2100039	Sodium	0.540	Spike	P	0 - 20
2100039	Zinc	0.470	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P367077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101041	Zinc	0.642	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P366628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100039	Aluminum	1.81	Spike	P	0 - 20
2100039	Antimony	1.06	Spike	P	0 - 20
2100039	Arsenic	1.64	Spike	P	0 - 20
2100039	Boron	0.595	Spike	P	0 - 20
2100039	Cadmium	1.61	Spike	P	0 - 20
2100039	Chromium	0.0356	Spike	P	0 - 20
2100039	Copper	1.42	Spike	P	0 - 20
2100039	Lead	2.05	Spike	P	0 - 20
2100039	Nickel	0.905	Spike	P	0 - 20
2100039	Selenium	0.928	Spike	P	0 - 20
2100039	Silver	0.446	Spike	P	0 - 20
2100039	Thallium	3.35	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P367077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101041	Copper	1.24	Spike	P	0 - 20
2101041	Lead	0.344	Spike	P	0 - 20
2101041	Nickel	0.151	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098885	Chloride	0.123	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099706	Ammonia-N	1.35	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099601	Kjeldahl Nitrogen	8.50	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099483	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366826

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099603	NO2NO3-N	1.10	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099560	Total-P	1.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099604	O-Phosphate-P	1.27	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P366495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099405	Color (true)	1.45	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P366738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099948	Total Alkalinity	0.709	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P366895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099405	TDS	3.93	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P366745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099948	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P366726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099559	Organic Carbon	0.0738	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A92445

Included Lab Sample IDs: 2099598, 2099599, 2099600, 2099607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	99.5	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92446

Included Lab Sample IDs: 2099598, 2099599, 2099600, 2099607

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92447

Included Lab Sample IDs: 2099604, 2099605, 2099606, 2099609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.7	94.0	P/P	90 - 110
O-Phosphate-P	96.8	96.9	P/P	90 - 110
O-Phosphate-P	98.3	98.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92512

Included Lab Sample IDs: 2099598, 2099599, 2099600, 2099607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	104	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92556

Included Lab Sample IDs: 2099601, 2099602

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

Reference Method: SM 5310 B-00

Run ID: A92558

Included Lab Sample IDs: 2099601, 2099602, 2099603, 2099608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	96.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92563

Included Lab Sample IDs: 2099598, 2099599, 2099600, 2099607

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A92563

Included Lab Sample IDs: 2099598, 2099599, 2099600, 2099607

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92578

Included Lab Sample IDs: 2099601, 2099602, 2099603, 2099608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	106	107	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A92583

Included Lab Sample IDs: 2099614, 2099615, 2099616

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.2	99.7	P/P	90 - 110
Calcium	101	103	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	103	103	P/P	90 - 110
Sodium	102	103	P/P	90 - 110
Zinc	97.1	97.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92586

Included Lab Sample IDs: 2099614, 2099615, 2099616

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	99.5	P/P	90 - 110
Aluminum	97.8	98.6	P/P	90 - 110
Antimony	97.8	99.1	P/P	90 - 110
Antimony	98.1	97.9	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Arsenic	101	99.9	P/P	90 - 110
Boron	102	100	P/P	90 - 110
Boron	96.3	99.0	P/P	90 - 110
Cadmium	98.6	99.2	P/P	90 - 110
Cadmium	98.7	100	P/P	90 - 110
Chromium	101	102	P/P	90 - 110
Chromium	102	104	P/P	90 - 110
Copper	99.2	99.4	P/P	90 - 110
Copper	99.2	97.6	P/P	90 - 110
Lead	98.4	97.2	P/P	90 - 110
Nickel	99.3	98.2	P/P	90 - 110
Selenium	102	102	P/P	90 - 110
Silver	94.5	94.5	P/P	90 - 110
Silver	94.6	95.3	P/P	90 - 110
Thallium	92.8	95.4	P/P	90 - 110
Thallium	94.4	93.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92605

Included Lab Sample IDs: 2099603, 2099608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92606

Included Lab Sample IDs: 2099601, 2099602, 2099603, 2099608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.8	97.0	P/P	90 - 110
Kjeldahl Nitrogen	97.0	93.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92608

Included Lab Sample IDs: 2099601, 2099602, 2099603, 2099608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.3	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92663

Included Lab Sample IDs: 2099615, 2099616

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	101	99.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A92819

Included Lab Sample IDs: 2099615

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92868

Included Lab Sample IDs: 2099615, 2099616

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	104	102	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Nickel	104	103	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					1.98	
EPA 200.7 Rev. 4.4	Barium	98.9		98.8	99.1	99.3	0.230
	Calcium	102		102	102		0.134
	Iron	103		101	105	104	0.945
	Magnesium	102		102	102		0.196
	Potassium	101		100	101	100	0.482
	Sodium	101		101	103		0.540
	Zinc	94.9		96.3	94.0	94.4	0.470
	Zinc	101		99.9	101	100	0.642
EPA 200.8 Rev. 5.4	Aluminum	102		99.9	98.4	100	1.81
	Antimony	100		98.0	101	102	1.06
	Arsenic	104		102	104	106	1.64
	Boron	105		102	102	101	0.595
	Cadmium	101		99.9	103	105	1.61
	Chromium	105		104	107	107	0.0356
	Copper	99.5		99.4	99.4	101	1.42
	Copper	104		104	106	102	1.24
	Lead	100		98.7	98.3	100	2.05
	Lead	104		106	105	105	0.344
	Nickel	101		99.5	100	101	0.905
	Nickel	105		104	104	102	0.151
	Selenium	104		101	105	106	0.928
	Silver	98.9		97.0	97.4	97.0	0.446
	Thallium	103		102	101	104	3.35
EPA 300.0 Rev. 2.1	Chloride	100		103	102		0.123
	Sulfate	101		101			
EPA 350.1 Rev. 2.0	Ammonia-N	103		105	104		1.35
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103		105	91.0		8.50
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104		99.0	99.0		0.0
	NO ₂ NO ₃ -N	100		97.5	99.5		1.10
EPA 365.1 Rev. 2.0	Total-P	100		99.6	102		1.62
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6		95.1	96.7		1.27
SM 2120 B	Color (true)	102				1.45	
SM 2320 B-97	Total Alkalinity	104				0.709	
SM 2540 C-97	TDS					3.93	
SM 4500 F-C-97	Fluoride	101		98.9	98.9		0.0
SM 5310 B-00	Organic Carbon	97.0		95.6	95.5		0.0738

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2099598, 2099599, 2099600, 2099607
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2099614, 2099615, 2099616
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2099614, 2099615, 2099616
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2099598, 2099599, 2099600, 2099607
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2099598, 2099599, 2099600, 2099607
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2099601, 2099602, 2099603, 2099608

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2099601, 2099602, 2099603, 2099608
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2099601, 2099602, 2099603, 2099608
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2099601, 2099602, 2099603, 2099608
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2099604, 2099605, 2099606, 2099609
SM 2120 B / E31780	True Color measured at 450 nm	2099598, 2099599, 2099600, 2099607
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2099598, 2099599, 2099600, 2099607
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2099598, 2099599, 2099600, 2099607
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2099598, 2099599, 2099600, 2099607
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2099598, 2099599, 2099600, 2099607
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2099601, 2099602, 2099603, 2099608

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	06/28/2019			06/28/2019 16:42	Samantha Davila	2099598, 2099599, 2099600, 2099607
EPA 200.7 Rev. 4.4	06/28/2019	07/02/2019 16:55	Elliott D. Healy	07/05/2019 14:57	Betina Topolski	2099614
	06/28/2019	07/02/2019 16:55	Elliott D. Healy	07/05/2019 15:14	Betina Topolski	2099615
	06/28/2019	07/02/2019 16:55	Elliott D. Healy	07/05/2019 15:22	Betina Topolski	2099616
	06/28/2019	07/11/2019 15:55	Elliott D. Healy	07/16/2019 11:07	Betina Topolski	2099615
EPA 200.8 Rev. 5.4	06/28/2019	07/02/2019 16:55	Elliott D. Healy	07/04/2019 00:59	Robert K Palmer	2099614
	06/28/2019	07/02/2019 16:55	Elliott D. Healy	07/04/2019 03:13	Robert K Palmer	2099615
	06/28/2019	07/02/2019 16:55	Elliott D. Healy	07/04/2019 03:22	Robert K Palmer	2099616
	06/28/2019	07/02/2019 16:55	Elliott D. Healy	07/08/2019 16:25	Robert K Palmer	2099615
	06/28/2019	07/02/2019 16:55	Elliott D. Healy	07/08/2019 16:32	Robert K Palmer	2099616
	06/28/2019	07/11/2019 15:55	Elliott D. Healy	07/17/2019 14:53	Robert K Palmer	2099615
	06/28/2019	07/11/2019 15:55	Elliott D. Healy	07/17/2019 15:03	Robert K Palmer	2099616
EPA 300.0 Rev. 2.1	06/28/2019			07/03/2019 20:53	Jhamieka S. Greenwood	2099598
	06/28/2019			07/03/2019 21:05	Jhamieka S. Greenwood	2099599
	06/28/2019			07/03/2019 21:17	Jhamieka S. Greenwood	2099600
	06/28/2019			07/03/2019 21:30	Jhamieka S. Greenwood	2099607
EPA 350.1 Rev. 2.0	06/28/2019			07/06/2019 10:43	Ping Hua	2099601
	06/28/2019			07/06/2019 10:44	Ping Hua	2099602
	06/28/2019			07/06/2019 10:46	Ping Hua	2099603
	06/28/2019			07/06/2019 10:47	Ping Hua	2099608
EPA 351.2 Rev. 2.0	06/28/2019	07/05/2019 13:30	Adrian Shelby	07/08/2019 14:00	Virginia P. Brown	2099601
	06/28/2019	07/05/2019 13:30	Adrian Shelby	07/08/2019 14:07	Virginia P. Brown	2099602
	06/28/2019	07/05/2019 13:30	Adrian Shelby	07/08/2019 14:09	Virginia P. Brown	2099603
	06/28/2019	07/05/2019 13:30	Adrian Shelby	07/08/2019 14:11	Virginia P. Brown	2099608
EPA 353.2 Rev. 2.0	06/28/2019			07/03/2019 18:27	Lauren Lees	2099601
	06/28/2019			07/03/2019 18:28	Lauren Lees	2099602
	06/28/2019			07/08/2019 11:34	Lauren Lees	2099603
	06/28/2019			07/08/2019 11:40	Lauren Lees	2099608
EPA 365.1 Rev. 2.0	06/28/2019	07/03/2019 12:30	Lipi Saha	07/08/2019 14:54	Rosalyn Ballman	2099601
	06/28/2019	07/03/2019 12:30	Lipi Saha	07/08/2019 14:55	Rosalyn Ballman	2099602
	06/28/2019	07/03/2019 12:30	Lipi Saha	07/08/2019 14:56	Rosalyn Ballman	2099603
	06/28/2019	07/03/2019 12:30	Lipi Saha	07/08/2019 14:57	Rosalyn Ballman	2099608
EPA 365.1 Rev. 2.0 dissolved	06/28/2019			06/28/2019 16:02	Jhamieka S. Greenwood	2099604
	06/28/2019			06/28/2019 16:44	Jhamieka S. Greenwood	2099605
	06/28/2019			06/28/2019 17:17	Jhamieka S. Greenwood	2099606
	06/28/2019			06/28/2019 17:18	Jhamieka S. Greenwood	2099609
SM 2120 B	06/28/2019			06/28/2019 16:40	Madeline Funaro	2099598
	06/28/2019			06/28/2019 16:42	Madeline Funaro	2099600
	06/28/2019			06/28/2019 16:43	Madeline Funaro	2099607
	06/28/2019			06/28/2019 16:53	Madeline Funaro	2099599

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	06/28/2019			07/04/2019 14:26	Dale L. Simmons	2099598
	06/28/2019			07/04/2019 14:38	Dale L. Simmons	2099599
	06/28/2019			07/04/2019 14:51	Dale L. Simmons	2099600
	06/28/2019			07/04/2019 15:03	Dale L. Simmons	2099607
SM 2540 C-97	06/28/2019			07/03/2019 15:12	Yijie Li	2099598, 2099599, 2099600, 2099607
SM 2540 D-97	06/28/2019			07/03/2019 15:12	Yijie Li	2099598, 2099599, 2099600, 2099607
SM 4500 F-C-97	06/28/2019			07/04/2019 14:26	Dale L. Simmons	2099598
	06/28/2019			07/04/2019 14:38	Dale L. Simmons	2099599
	06/28/2019			07/04/2019 14:51	Dale L. Simmons	2099600
	06/28/2019			07/04/2019 15:03	Dale L. Simmons	2099607
SM 5310 B-00	06/28/2019			07/03/2019 06:19	Madeline Funaro	2099601
	06/28/2019			07/03/2019 06:35	Madeline Funaro	2099602
	06/28/2019			07/03/2019 06:55	Madeline Funaro	2099603
	06/28/2019			07/03/2019 07:09	Madeline Funaro	2099608