

Chemical Analysis Report

NE-DIST-2019-03-08-02

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

Event Description: **LSJR Downtown Boat**

Request ID: **RQ-2019-03-04-13**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 29-MAR-2019 10:15

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" and a long horizontal stroke at the end.

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: ARLINGTON RIVER AT CARLTON OAKS

Collection Date/Time: 03/07/2019 13:20

Field ID: G2NE1152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068367	EPA 180.1 Rev. 2.0	Turbidity	7.1		NTU	P360147	
	EPA 300.0	Bromide	12		mg Br/L	P360483	
	SM 2320 B-97	Total Alkalinity	70		mg CaCO3/L	P360330	
	SM 2540 D-97	TSS	9	I	mg/L	P360658	
	SM 4500 F-C-97	Fluoride	0.27		mg F/L	P360336	
2068369	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P360422	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P360346	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P360547	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P360441	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P360634	
2068371	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.055		mg P/L	P360166	
2068379	EPA 200.7 Rev. 4.4	Iron	480		ug/L	P360388	
		Manganese	12	I	ug/L	P360388	
		Zinc	15	U	ug/L	P360388	
	EPA 200.8 Rev. 5.4	Aluminum	307		ug/L	P360388	
		Antimony	0.20	U	ug/L	P360388	
		Arsenic	1.65		ug/L	P360388	
		Cadmium	0.080	U	ug/L	P360388	
		Chromium	1.6	U	ug/L	P360388	
		Copper	1.6	U	ug/L	P360388	
		Lead	0.80	U	ug/L	P360388	
		Nickel	2.0	U	ug/L	P360388	
		Selenium	0.80	U	ug/L	P360388	
		Silver	0.040	U	ug/L	P360388	
		Thallium	0.40	U	ug/L	P360388	

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 POTTSBURG CREEK AT ATLANTIC BLVD

Collection Date/Time: 03/07/2019 12:55

Field ID: 20030679

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068368	EPA 180.1 Rev. 2.0	Turbidity	6.0		NTU	P360147	
	EPA 300.0	Bromide	0.56		mg Br/L	P360482	
	SM 2320 B-97	Total Alkalinity	74		mg CaCO3/L	P360330	
	SM 2540 D-97	TSS	7	I	mg/L	P360658	
	SM 4500 F-C-97	Fluoride	0.27		mg F/L	P360803	
2068370	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P360422	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P360346	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P360547	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P360441	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P360634	
2068372	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.057		mg P/L	P360166	
2068380	EPA 200.7 Rev. 4.4	Iron	420		ug/L	P360229	
		Manganese	14.3		ug/L	P360229	
		Zinc	5.0	U	ug/L	P360229	
	EPA 200.8 Rev. 5.4	Aluminum	316		ug/L	P360229	
		Antimony	0.11	I	ug/L	P360229	
		Arsenic	1.27		ug/L	P360229	
		Cadmium	0.020	U	ug/L	P360229	
		Chromium	0.45	I	ug/L	P360229	
		Copper	1.22		ug/L	P360229	
		Lead	0.66	I	ug/L	P360229	
		Nickel	0.50	U	ug/L	P360229	
		Selenium	0.25	I	ug/L	P360229	
		Silver	0.010	U	ug/L	P360229	
		Thallium	0.30	U	ug/L	P360229	

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: STRAWBERRY CREEK 0.5MI UPSTREAM OF MOUTH

Collection Date/Time: 03/07/2019 14:00

Field ID: G2NE1177

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068364	EPA 180.1 Rev. 2.0	Turbidity	6.8		NTU	P360147	
	EPA 300.0 Rev. 2.1	Chloride	630		mg Cl/L	P360813	
		Sulfate	120		mg SO4/L	P360815	
	SM 2120 B	Color (true)	60	A	PCU	P360156	
	SM 2320 B-97	Total Alkalinity	78		mg CaCO3/L	P360800	
	SM 2540 C-97	TDS	1.28E+03		mg/L	P360681	
	SM 2540 D-97	TSS	8	I	mg/L	P360654	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P360803	
2068365	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P360424	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P360391	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.42		mg N/L	P360358	
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P360439	
	SM 5310 B-00	Organic Carbon	9.2		mg C/L	P360634	
2068366	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P360165	

Ref. Method and Comment:

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

SM 2540 C-97: Batch relative percent difference is unavailable because of low 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.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360147

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360229

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360229

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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 200.8 Rev. 5.4
Batch ID: P360388

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0
Batch ID: P360482

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0
Batch ID: P360483

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360813

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360815

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360424

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360358

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360547

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360439

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360441

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360165

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360166

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

Reference Method: SM 2120 B
Batch ID: P360156

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P360330

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

Reference Method: SM 2320 B-97
Batch ID: P360800

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

Reference Method: SM 2540 C-97
Batch ID: P360681

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P360654

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P360658

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360336

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P360803

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360634

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: P360229

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	106		P	85 - 115
Manganese	103		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	109		P	85 - 115
Manganese	101		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360229

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	99.5		P	85 - 115
Arsenic	105		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	98.7		P	85 - 115
Copper	102		P	85 - 115
Lead	95.0		P	85 - 115
Nickel	101		P	85 - 115
Selenium	104		P	85 - 115
Silver	102		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.4		P	85 - 115
Antimony	95.6		P	85 - 115
Arsenic	100		P	85 - 115
Cadmium	98.7		P	85 - 115
Chromium	97.8		P	85 - 115
Copper	97.2		P	85 - 115
Lead	97.6		P	85 - 115
Nickel	97.5		P	85 - 115
Selenium	96.5		P	85 - 115
Silver	96.2		P	85 - 115
Thallium	96.4		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P360482

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P360483

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360813

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360815

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360424

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360391

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360358

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360547

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 365.1 Rev. 2.0
Batch ID: P360439

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360441

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: P360165

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360166

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

Reference Method: SM 2120 B
Batch ID: P360156

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

Reference Method: SM 2320 B-97
Batch ID: P360330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P360800

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360336

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.6		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P360803

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	91 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P360634

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067591	Iron	102		P	80 - 120
2067591	Manganese	99.8		P	80 - 120
2067591	Zinc	103		P	80 - 120
2067975	Iron	104	106	P/P	80 - 120
2067975	Manganese	102	106	P/P	80 - 120
2067975	Zinc	102	106	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068917	Iron	107	105	P/P	80 - 120
2068917	Manganese	95.1	97.0	P/P	80 - 120
2068917	Zinc	98.4	98.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067591	Aluminum	101		P	80 - 120
2067591	Antimony	103		P	80 - 120
2067591	Arsenic	105		P	80 - 120
2067591	Cadmium	103		P	80 - 120
2067591	Chromium	99.6		P	80 - 120
2067591	Copper	100		P	80 - 120
2067591	Lead	96.4		P	80 - 120
2067591	Nickel	99.4		P	80 - 120
2067591	Selenium	104		P	80 - 120
2067591	Silver	102		P	80 - 120
2067591	Thallium	105		P	80 - 120
2067975	Aluminum	102	102	P/P	80 - 120
2067975	Antimony	98.7	99.7	P/P	80 - 120
2067975	Arsenic	102	104	P/P	80 - 120
2067975	Cadmium	100	102	P/P	80 - 120
2067975	Chromium	99.8	99.2	P/P	80 - 120
2067975	Copper	102	102	P/P	80 - 120
2067975	Lead	95.4	97.1	P/P	80 - 120
2067975	Nickel	101	101	P/P	80 - 120
2067975	Selenium	101	104	P/P	80 - 120
2067975	Silver	101	101	P/P	80 - 120
2067975	Thallium	102	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068917	Aluminum	96.9	95.6	P/P	70 - 130
2068917	Antimony	101	99.8	P/P	70 - 130
2068917	Arsenic	110	109	P/P	70 - 130
2068917	Cadmium	98.7	98.5	P/P	70 - 130
2068917	Chromium	88.1	92.5	P/P	70 - 130
2068917	Copper	93.1	92.9	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068917	Lead	101	101	P/P	70 - 130
2068917	Nickel	94.0	93.2	P/P	70 - 130
2068917	Selenium	82.8	79.7	P/P	70 - 130
2068917	Silver	91.6	90.9	P/P	70 - 130
2068917	Thallium	95.1	94.1	P/P	70 - 130

Reference Method: EPA 300.0
Batch ID: P360482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067489	Bromide	97.9	99.1	P/P	90 - 110
2067490	Bromide	99.1		P	90 - 110

Reference Method: EPA 300.0
Batch ID: P360483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068367	Bromide	98.1	98.0	P/P	90 - 110
2068489	Bromide	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069257	Chloride	95.4		P	90 - 110
2069258	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069258	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068369	Ammonia-N	93.9	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360424

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068365	Ammonia-N	99.8	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068370	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068304	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068354	NO2NO3-N	100	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360439

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068493	Total-P	98.1	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068353	Total-P	96.8	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068288	O-Phosphate-P	93.9	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068388	O-Phosphate-P	94.2	94.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P360336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068489	Fluoride	92.4	93.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P360803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068696	Fluoride	96.1	96.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068286	Organic Carbon	97.2	97.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068275	Turbidity	11.2	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067975	Iron	1.02	Spike	P	0 - 20
2067975	Manganese	3.27	Spike	P	0 - 20
2067975	Zinc	3.68	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068917	Iron	1.82	Spike	P	0 - 20
2068917	Manganese	1.97	Spike	P	0 - 20
2068917	Zinc	0.428	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067975	Aluminum	0.0502	Spike	P	0 - 20
2067975	Antimony	1.02	Spike	P	0 - 20
2067975	Arsenic	1.42	Spike	P	0 - 20
2067975	Cadmium	2.14	Spike	P	0 - 20
2067975	Chromium	0.564	Spike	P	0 - 20
2067975	Copper	0.412	Spike	P	0 - 20
2067975	Lead	1.84	Spike	P	0 - 20
2067975	Nickel	0.352	Spike	P	0 - 20
2067975	Selenium	3.25	Spike	P	0 - 20
2067975	Silver	0.103	Spike	P	0 - 20
2067975	Thallium	2.61	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068917	Aluminum	1.36	Spike	P	0 - 20
2068917	Antimony	0.991	Spike	P	0 - 20
2068917	Arsenic	0.317	Spike	P	0 - 20
2068917	Cadmium	0.146	Spike	P	0 - 20
2068917	Chromium	4.86	Spike	P	0 - 20
2068917	Copper	0.227	Spike	P	0 - 20
2068917	Lead	0.122	Spike	P	0 - 20
2068917	Nickel	0.835	Spike	P	0 - 20
2068917	Selenium	3.80	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068917	Silver	0.770	Spike	P	0 - 20
2068917	Thallium	1.00	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P360482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067489	Bromide	0.902	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P360483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068367	Bromide	0.0893	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069257	Chloride	1.36	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069257	Sulfate	1.31	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068369	Ammonia-N	2.00	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068365	Ammonia-N	0.748	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068370	Kjeldahl Nitrogen	2.22	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068305	Kjeldahl Nitrogen	12.9	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068304	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068354	NO2NO3-N	1.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068493	Total-P	0.0303	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068353	Total-P	0.699	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068288	O-Phosphate-P	0.711	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068388	O-Phosphate-P	0.411	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P360156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068364	Color (true)	0.348	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P360330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068489	Total Alkalinity	0.0764	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P360800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068696	Total Alkalinity	0.611	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P360336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068489	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P360803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068696	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068286	Organic Carbon	0.137	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: A89903

Included Lab Sample IDs: 2068364, 2068367, 2068368

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A89906

Included Lab Sample IDs: 2068364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89909

Included Lab Sample IDs: 2068366, 2068371, 2068372

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	94.5	98.3	P/P	90 - 110
O-Phosphate-P	99.7	94.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89965

Included Lab Sample IDs: 2068380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	103	P/P	90 - 110
Antimony	97.4	96.7	P/P	90 - 110
Arsenic	98.4	99.5	P/P	90 - 110
Cadmium	97.6	97.5	P/P	90 - 110
Chromium	98.6	96.2	P/P	90 - 110
Copper	99.7	100	P/P	90 - 110
Nickel	98.6	98.9	P/P	90 - 110
Silver	102	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89966

Included Lab Sample IDs: 2068380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	104	104	P/P	90 - 110
Manganese	103	103	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89980

Included Lab Sample IDs: 2068367, 2068368

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A89980

Included Lab Sample IDs: 2068367

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89981

Included Lab Sample IDs: 2068365

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90009

Included Lab Sample IDs: 2068365, 2068369, 2068370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	106	P/P	90 - 110
Kjeldahl Nitrogen	105	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90011

Included Lab Sample IDs: 2068365, 2068369, 2068370

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

Reference Method: EPA 300.0

Run ID: A90025

Included Lab Sample IDs: 2068367, 2068368

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90026

Included Lab Sample IDs: 2068379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.7	97.6	P/P	90 - 110
Antimony	93.8	94.3	P/P	90 - 110
Arsenic	98.2	98.0	P/P	90 - 110
Cadmium	94.7	95.1	P/P	90 - 110
Copper	99.0	97.5	P/P	90 - 110
Lead	98.0	97.8	P/P	90 - 110
Nickel	97.6	96.1	P/P	90 - 110
Selenium	95.4	95.7	P/P	90 - 110
Silver	92.9	93.0	P/P	90 - 110
Thallium	91.1	90.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90027

Included Lab Sample IDs: 2068379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	102	101	P/P	95 - 105
Manganese	104	102	P/P	95 - 105
Zinc	101	99.6	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90032

Included Lab Sample IDs: 2068365

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90046

Included Lab Sample IDs: 2068369, 2068370

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90047

Included Lab Sample IDs: 2068369, 2068370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90052

Included Lab Sample IDs: 2068379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	90.9	96.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90071

Included Lab Sample IDs: 2068364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.5	97.1	P/P	90 - 110
Sulfate	99.2	97.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90073

Included Lab Sample IDs: 2068380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	95.1	96.0	P/P	90 - 110
Selenium	98.5	103	P/P	90 - 110
Thallium	93.9	94.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A90082

Included Lab Sample IDs: 2068365, 2068369, 2068370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	96.1	P/P	90 - 110
Organic Carbon	94.4	94.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90132

Included Lab Sample IDs: 2068364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.3	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90132

Included Lab Sample IDs: 2068364, 2068368

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						11.2	
EPA 200.7 Rev. 4.4	Iron	106	102	104	106			1.02
	Iron	109	107	105				1.82
	Manganese	103	99.8	102	106			3.27
	Manganese	101	95.1	97.0				1.97
	Zinc	103	103	102	106			3.68
	Zinc	100	98.4	98.8				0.428
EPA 200.8 Rev. 5.4	Aluminum	101	101	102	102			0.0502
	Aluminum	97.4	96.9	95.6				1.36
	Antimony	99.5	103	98.7	99.7			1.02
	Antimony	95.6	101	99.8				0.991
	Arsenic	105	105	102	104			1.42
	Arsenic	100	110	109				0.317
	Cadmium	101	103	100	102			2.14
	Cadmium	98.7	98.7	98.5				0.146
	Chromium	98.7	99.6	99.8	99.2			0.564
	Chromium	97.8	88.1	92.5				4.86
	Copper	102	100	102	102			0.412
	Copper	97.2	93.1	92.9				0.227
	Lead	95.0	96.4	95.4	97.1			1.84
	Lead	97.6	101	101				0.122
	Nickel	101	101	99.4	101			0.352
	Nickel	97.5	94.0	93.2				0.835
	Selenium	104	104	101	104			3.25
	Selenium	96.5	82.8	79.7				3.80
	Silver	102	102	101	101			0.103
	Silver	96.2	91.6	90.9				0.770
	Thallium	102	105	102	105			2.61
	Thallium	96.4	95.1	94.1				1.00
EPA 300.0	Bromide	103	97.9	99.1	99.1			0.902
	Bromide	104	98.1	98.0	101			0.0893
EPA 300.0 Rev. 2.1	Chloride	99.5	95.4	103			1.36	
	Sulfate	99.3	101				1.31	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	93.9	96.4				2.00
	Ammonia-N	97.8	99.8	98.6				0.748
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.1	107	104				2.22
	Kjeldahl Nitrogen	99.7						12.9
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	102				0.0
	NO2NO3-N	100	100	99.0				1.18
EPA 365.1 Rev. 2.0	Total-P	100	98.1	98.2				0.0303
	Total-P	105	96.8	96.2				0.699
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0	93.9	94.6				0.711
	O-Phosphate-P	98.0	94.2	94.7				0.411
SM 2120 B	Color (true)	102					0.348	
SM 2320 B-97	Total Alkalinity	103					0.0764	
	Total Alkalinity	101					0.611	
SM 4500 F-C-97	Fluoride	94.6	92.4	93.2				0.473
	Fluoride	96.0	96.1	96.1				0.0
SM 5310 B-00	Organic Carbon	100	97.2	97.1				0.137

Reference Method Descriptions

Method / DoH Cert #

Description

Associated Samples

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2068364, 2068367, 2068368
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2068379, 2068380
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2068379, 2068380
EPA 300.0 / E31780	Bromide in aqueous matrices	2068367, 2068368
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2068364
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2068364
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2068365, 2068369, 2068370
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2068365, 2068369, 2068370
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2068365, 2068369, 2068370
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2068365, 2068369, 2068370
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2068366, 2068371, 2068372
SM 2120 B / E31780	True Color measured at 450 nm	2068364
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2068364, 2068367, 2068368
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2068364
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2068364, 2068367, 2068368
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2068364, 2068367, 2068368
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2068365, 2068369, 2068370

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	03/08/2019			03/08/2019 14:48	Adrian Shelby	2068364, 2068367, 2068368
EPA 200.7 Rev. 4.4	03/08/2019	03/11/2019 17:45	Elliott D. Healy	03/12/2019 17:16	Betina Topolski	2068380
	03/08/2019	03/13/2019 17:30	Elliott D. Healy	03/14/2019 16:17	Vijayalakshmi Reddy	2068379
EPA 200.8 Rev. 5.4	03/08/2019	03/11/2019 17:45	Elliott D. Healy	03/13/2019 02:33	Robert K Palmer	2068380
	03/08/2019	03/11/2019 17:45	Elliott D. Healy	03/18/2019 15:27	Robert K Palmer	2068380
	03/08/2019	03/11/2019 17:45	Elliott D. Healy	03/18/2019 16:27	Robert K Palmer	2068380
	03/08/2019	03/13/2019 17:30	Elliott D. Healy	03/15/2019 01:30	Allison Taylor	2068379
	03/08/2019	03/13/2019 17:30	Elliott D. Healy	03/16/2019 00:36	Allison Taylor	2068379
EPA 300.0	03/08/2019			03/14/2019 16:08	Lipi Saha	2068368
	03/08/2019			03/14/2019 17:51	Lipi Saha	2068367
EPA 300.0 Rev. 2.1	03/08/2019			03/20/2019 23:45	Lipi Saha	2068364
EPA 350.1 Rev. 2.0	03/08/2019			03/13/2019 10:54	Ping Hua	2068369
	03/08/2019			03/13/2019 10:59	Ping Hua	2068370
	03/08/2019			03/13/2019 11:54	Ping Hua	2068365
EPA 351.2 Rev. 2.0	03/08/2019	03/13/2019 12:00	Adrian Shelby	03/14/2019 10:41	Joseph Suarez	2068365
	03/08/2019	03/13/2019 12:00	Adrian Shelby	03/14/2019 11:14	Joseph Suarez	2068369
	03/08/2019	03/13/2019 12:00	Adrian Shelby	03/14/2019 11:15	Joseph Suarez	2068370
EPA 353.2 Rev. 2.0	03/08/2019			03/13/2019 10:55	Beverly Y. Sanders	2068365
	03/08/2019			03/14/2019 12:15	Beverly Y. Sanders	2068369
	03/08/2019			03/14/2019 12:16	Beverly Y. Sanders	2068370
EPA 365.1 Rev. 2.0	03/08/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 12:32	Rosalyn Ballman	2068365
	03/08/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 17:10	Rosalyn Ballman	2068369
	03/08/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 17:17	Rosalyn Ballman	2068370
EPA 365.1 Rev. 2.0 dissolved	03/08/2019			03/08/2019 16:50	Jhamieka S. Greenwood	2068366
	03/08/2019			03/08/2019 16:57	Jhamieka S. Greenwood	2068371, 2068372
SM 2120 B	03/08/2019			03/08/2019 15:25	Blanca Fach	2068364
SM 2320 B-97	03/08/2019			03/12/2019 05:37	Dale L. Simmons	2068367
	03/08/2019			03/12/2019 05:49	Dale L. Simmons	2068368
	03/08/2019			03/20/2019 01:30	Dale L. Simmons	2068364
SM 2540 C-97	03/08/2019			03/13/2019 14:03	Yijie Li	2068364
SM 2540 D-97	03/08/2019			03/13/2019 14:03	Yijie Li	2068364, 2068367, 2068368
SM 4500 F-C-97	03/08/2019			03/12/2019 02:12	Dale L. Simmons	2068367
	03/08/2019			03/20/2019 01:30	Dale L. Simmons	2068364
	03/08/2019			03/20/2019 01:48	Dale L. Simmons	2068368
SM 5310 B-00	03/08/2019			03/18/2019 02:49	Julia Storbeck	2068365
	03/08/2019			03/18/2019 04:57	Julia Storbeck	2068369
	03/08/2019			03/18/2019 05:13	Julia Storbeck	2068370