

Chemical Analysis Report

NW-DIST-2019-03-26-01

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

Event Description: **Defuniak Run**
Request ID: **RQ-2019-03-25-14**
Customer: **NW-DIST**
Project ID: **SMP**

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

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 15-APR-2019 09:54

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 first name.

Case Narrative

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

Results for the following analytical groups are included in this report: Metals and Nutrients.

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

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

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: GUM CREEK

Collection Date/Time: 03/25/2019 11:15

Field ID: G4NW0382

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072498	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P361085	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P361501	
		Sulfate	0.83		mg SO4/L	P361504	
	SM 2120 B	Color (true)	51		PCU	P361079	
	SM 2320 B-97	Total Alkalinity	1.6	I	mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	21	I	mg/L	P361414	
	SM 2540 D-97	TSS	3	I	mg/L	P361418	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361655	
2072501	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P361390	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P361276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.52		mg N/L	P361133	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P361268	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P361174	
2072504	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P361090	

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: TURKEY CREEK ABOVE WILLIAMS ROAD

Collection Date/Time: 03/25/2019 12:15

Field ID: G4NW0409

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072499	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P361085	
	EPA 300.0 Rev. 2.1	Chloride	4.6		mg Cl/L	P361501	
		Sulfate	1.2		mg SO4/L	P361504	
		Color (true)	27	A	PCU	P361080	
	SM 2320 B-97	Total Alkalinity	2.6		mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	20	I	mg/L	P361414	
	SM 2540 D-97	TSS	5	I	mg/L	P361418	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361655	
2072502	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P361390	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.14	I	mg N/L	P361276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.56		mg N/L	P361133	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P361268	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P361174	
2072505	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P361090	

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: CANEY CREEK ABOVE HWY 2A

Collection Date/Time: 03/25/2019 12:40

Field ID: G4NW0397

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072500	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P361085	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P361501	
		Sulfate	0.35	I	mg SO4/L	P361504	
	SM 2120 B	Color (true)	32		PCU	P361080	
	SM 2320 B-97	Total Alkalinity	6.8		mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	22	I	mg/L	P361414	
	SM 2540 D-97	TSS	2	I	mg/L	P361418	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361655	
2072503	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P361390	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P361276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P361133	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P361268	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P361174	
2072506	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P361090	

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: EIGHTMILE CREEK UPSTREAM OF CR 181

Collection Date/Time: 03/25/2019 13:15

Field ID: G3NW0136

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072489	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P361084	
	EPA 300.0 Rev. 2.1	Chloride	2.9		mg Cl/L	P361501	
		Sulfate	0.76		mg SO4/L	P361777	
		Color (true)	59		PCU	P361079	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	45		mg/L	P361414	
	SM 2540 D-97	TSS	2	U	mg/L	P361418	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361655	
2072492	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P361390	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P361276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P361133	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P361267	
	SM 5310 B-00	Organic Carbon	4.7		mg C/L	P361174	
2072495	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P361090	
2072522	EPA 200.7 Rev. 4.4	Barium	10.5		ug/L	P361160	
		Calcium	8.52		mg/L	P361160	
		Iron	280		ug/L	P361160	
		Magnesium	1.68		mg/L	P361160	
		Potassium	0.30	U	mg/L	P361160	
		Sodium	1.5	I	mg/L	P361160	
		Zinc	5.0	U	ug/L	P361160	
	EPA 200.8 Rev. 5.4	Aluminum	171		ug/L	P361160	
		Antimony	0.050	U	ug/L	P361160	
		Arsenic	0.27		ug/L	P361160	
		Boron**	6.9	I	ug/L	P361160	
		Cadmium	0.020	U	ug/L	P361160	
		Chromium	0.46	I	ug/L	P361160	
		Copper	0.40	U	ug/L	P361160	
		Lead	0.20	U	ug/L	P361160	
		Nickel	0.50	U	ug/L	P361160	
		Selenium	0.20	U	ug/L	P361160	
		Silver	0.010	U	ug/L	P361160	
		Thallium	0.10	U	ug/L	P361160	

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

Sample Location: HUCKLEBERRY CREEK

Collection Date/Time: 03/25/2019 13:50

Field ID: G3NW0135

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072490	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P361085	
	EPA 300.0 Rev. 2.1	Chloride	4.0		mg Cl/L	P361501	
		Sulfate	0.93		mg SO4/L	P361504	
		Color (true)	42		PCU	P361079	
	SM 2320 B-97	Total Alkalinity	4.4		mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	18	I	mg/L	P361414	
	SM 2540 D-97	TSS	2	I	mg/L	P361418	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361655	
2072493	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P361390	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P361276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P361133	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P361268	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P361174	
2072496	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P361090	
2072523	EPA 200.7 Rev. 4.4	Barium	10.5		ug/L	P361160	
		Calcium	1.88		mg/L	P361160	
		Iron	530		ug/L	P361160	
		Magnesium	0.89		mg/L	P361160	
		Potassium	0.75	I	mg/L	P361160	
		Sodium	2.0	I	mg/L	P361160	
		Zinc	5.0	U	ug/L	P361160	
	EPA 200.8 Rev. 5.4	Aluminum	105		ug/L	P361160	
		Antimony	0.050	U	ug/L	P361160	
		Arsenic	0.29		ug/L	P361160	
		Boron**	8.3		ug/L	P361160	
		Cadmium	0.020	U	ug/L	P361160	
		Chromium	0.40	U	ug/L	P361160	
		Copper	0.40	U	ug/L	P361160	
		Lead	0.20	U	ug/L	P361160	
		Nickel	0.50	U	ug/L	P361160	
		Selenium	0.20	U	ug/L	P361160	
		Silver	0.010	U	ug/L	P361160	
		Thallium	0.10	U	ug/L	P361160	

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: HUCKLEBERRY CREEK

Collection Date/Time: 03/25/2019 13:55

Field ID: G3NW0135_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072491	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P361085	
	EPA 300.0 Rev. 2.1	Chloride	4.0		mg Cl/L	P361501	
		Sulfate	0.90		mg SO4/L	P361504	
		Color (true)	41		PCU	P361079	
	SM 2120 B	Total Alkalinity	4.4		mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	20	I	mg/L	P361414	
	SM 2540 D-97	TSS	3	I	mg/L	P361418	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361655	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P361390	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P361276	
2072494	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P361133	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P361268	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P361174	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P361090	
	dissolved						
2072524	EPA 200.7 Rev. 4.4	Barium	10.3		ug/L	P361160	
		Calcium	1.90		mg/L	P361160	
		Iron	510		ug/L	P361160	
		Magnesium	0.91		mg/L	P361160	
		Potassium	0.75	I	mg/L	P361160	
		Sodium	1.9	I	mg/L	P361160	
		Zinc	5.0	U	ug/L	P361160	
		Aluminum	104		ug/L	P361160	
		Antimony	0.050	U	ug/L	P361160	
		Arsenic	0.27		ug/L	P361160	
	EPA 200.8 Rev. 5.4	Boron**	8.2		ug/L	P361160	
		Cadmium	0.020	U	ug/L	P361160	
		Chromium	0.40	U	ug/L	P361160	
		Copper	0.40	U	ug/L	P361160	
		Lead	0.20	U	ug/L	P361160	
		Nickel	0.50	U	ug/L	P361160	
		Selenium	0.20	U	ug/L	P361160	
		Silver	0.010	U	ug/L	P361160	
		Thallium	0.10	U	ug/L	P361160	

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: HUCKLEBERRY CREEK

Collection Date/Time: 03/25/2019 14:00

Field ID: FB_03252019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072507	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P361085	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P361501	
		Sulfate	0.20	U	mg SO4/L	P361504	
		Color (true)	2.5	U	PCU	P361080	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	15	U	mg/L	P361411	
	SM 2540 D-97	TSS	2	U	mg/L	P361415	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361655	
2072508	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P361390	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P361276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361133	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P361268	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P361174	
2072509	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P361090	
2072525	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P361160	
		Calcium	0.075	U	mg/L	P361160	
		Iron	30	U	ug/L	P361160	
		Magnesium	0.040	U	mg/L	P361160	
		Potassium	0.30	U	mg/L	P361160	
		Sodium	0.50	U	mg/L	P361160	
		Zinc	5.0	U	ug/L	P361160	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P361160	
		Antimony	0.050	U	ug/L	P361160	
		Arsenic	0.050	U	ug/L	P361160	
		Boron**	2.0	U	ug/L	P361160	
		Cadmium	0.020	U	ug/L	P361160	
		Chromium	0.40	U	ug/L	P361160	
		Copper	0.40	U	ug/L	P361160	
		Lead	0.20	U	ug/L	P361160	
		Nickel	0.50	U	ug/L	P361160	
		Selenium	0.20	U	ug/L	P361160	
		Silver	0.010	U	ug/L	P361160	
		Thallium	0.10	U	ug/L	P361160	

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: P361084

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361085

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361160

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: P361160

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: P361501

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361504

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361777

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361390

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361276

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361133

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361267

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361268

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361090

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

Reference Method: SM 2120 B
Batch ID: P361079

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P361080

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P361651

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

Reference Method: SM 2540 C-97
Batch ID: P361411

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P361414

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361415

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361418

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361174

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: P361160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	95.1		P	85 - 115
Calcium	96.5		P	85 - 115
Iron	99.1		P	85 - 115
Magnesium	97.1		P	85 - 115
Potassium	100		P	85 - 115
Sodium	95.4		P	85 - 115
Zinc	95.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.8		P	85 - 115
Antimony	97.7		P	85 - 115
Arsenic	100		P	85 - 115
Boron	106		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	97.5		P	85 - 115
Copper	99.9		P	85 - 115
Lead	100		P	85 - 115
Nickel	102		P	85 - 115
Selenium	98.1		P	85 - 115
Silver	102		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361501

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361504

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361777

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361276

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361133

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: P361267

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361268

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361090

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

Reference Method: SM 2120 B
Batch ID: P361079

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

Reference Method: SM 2120 B
Batch ID: P361080

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P361651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	91 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P361174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072482	Barium	92.1		P	80 - 120
2072482	Calcium	96.5		P	80 - 120
2072482	Iron	100		P	80 - 120
2072482	Magnesium	96.0		P	80 - 120
2072482	Potassium	94.2		P	80 - 120
2072482	Sodium	95.8		P	80 - 120
2072482	Zinc	94.4		P	80 - 120
2072801	Barium	94.3	93.8	P/P	80 - 120
2072801	Calcium	96.2		P	80 - 120
2072801	Iron	99.4	98.4	P/P	80 - 120
2072801	Magnesium	95.9		P	80 - 120
2072801	Potassium	97.3	96.8	P/P	80 - 120
2072801	Sodium	97.1		P	80 - 120
2072801	Zinc	94.0	94.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072482	Aluminum	95.9		P	80 - 120
2072482	Antimony	97.9		P	80 - 120
2072482	Arsenic	100		P	80 - 120
2072482	Boron	103		P	80 - 120
2072482	Cadmium	103		P	80 - 120
2072482	Chromium	95.0		P	80 - 120
2072482	Copper	97.6		P	80 - 120
2072482	Lead	100		P	80 - 120
2072482	Nickel	98.9		P	80 - 120
2072482	Selenium	96.9		P	80 - 120
2072482	Silver	101		P	80 - 120
2072482	Thallium	102		P	80 - 120
2072801	Aluminum	96.3	96.9	P/P	80 - 120
2072801	Antimony	97.8	97.3	P/P	80 - 120
2072801	Arsenic	101	99.8	P/P	80 - 120
2072801	Boron	106	105	P/P	80 - 120
2072801	Cadmium	103	104	P/P	80 - 120
2072801	Chromium	96.8	96.3	P/P	80 - 120
2072801	Copper	98.2	97.2	P/P	80 - 120
2072801	Lead	98.7	99.8	P/P	80 - 120
2072801	Nickel	100	99.0	P/P	80 - 120
2072801	Selenium	97.8	97.3	P/P	80 - 120
2072801	Silver	101	102	P/P	80 - 120
2072801	Thallium	101	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072574	Chloride	99.1		P	90 - 110
2072792	Chloride	98.2		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P361504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072574	Sulfate	101		P	90 - 110
2072792	Sulfate	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P361777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074157	Sulfate	95.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P361390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072492	Ammonia-N	97.5	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P361276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072456	Kjeldahl Nitrogen	97.8	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P361133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072449	NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P361267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072449	Total-P	98.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P361268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072493	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P361090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072505	O-Phosphate-P	97.8	99.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P361655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072446	Fluoride	99.5	99.5	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P361174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072448	Organic Carbon	96.7	97.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072444	Turbidity	2.40	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072349	Turbidity	2.53	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072801	Barium	0.562	Spike	P	0 - 20
2072801	Calcium	1.10	Spike	P	0 - 20
2072801	Iron	1.04	Spike	P	0 - 20
2072801	Magnesium	0.190	Spike	P	0 - 20
2072801	Potassium	0.491	Spike	P	0 - 20
2072801	Sodium	0.142	Spike	P	0 - 20
2072801	Zinc	0.0344	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072801	Aluminum	0.667	Spike	P	0 - 20
2072801	Antimony	0.469	Spike	P	0 - 20
2072801	Arsenic	1.47	Spike	P	0 - 20
2072801	Boron	0.786	Spike	P	0 - 20
2072801	Cadmium	0.285	Spike	P	0 - 20
2072801	Chromium	0.514	Spike	P	0 - 20
2072801	Copper	0.963	Spike	P	0 - 20
2072801	Lead	1.04	Spike	P	0 - 20
2072801	Nickel	0.959	Spike	P	0 - 20
2072801	Selenium	0.404	Spike	P	0 - 20
2072801	Silver	1.09	Spike	P	0 - 20
2072801	Thallium	1.06	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072792	Chloride	0.638	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072792	Sulfate	0.389	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074157	Sulfate	0.374	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072492	Ammonia-N	0.923	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072456	Kjeldahl Nitrogen	1.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072449	NO2NO3-N	0.203	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072449	Total-P	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072493	Total-P	0.0729	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072505	O-Phosphate-P	1.42	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P361079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072440	Color (true)	1.67	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072499	Color (true)	2.43	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P361651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072446	Total Alkalinity	0.791	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P361411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072024	TDS	6.06	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P361414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072455	TDS	6.00	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072446	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P361174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072448	Organic Carbon	0.275	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: A90241

Included Lab Sample IDs: 2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90242

Included Lab Sample IDs: 2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507

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: A90243

Included Lab Sample IDs: 2072495, 2072496, 2072497, 2072504, 2072505, 2072506, 2072509

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	99.4	P/P	90 - 110
O-Phosphate-P	99.1	98.4	P/P	90 - 110
O-Phosphate-P	99.4	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90262

Included Lab Sample IDs: 2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508

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: A90286

Included Lab Sample IDs: 2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	99.0	P/P	90 - 110
Organic Carbon	99.0	98.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90307

Included Lab Sample IDs: 2072522, 2072523, 2072524, 2072525

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	96.0	97.2	P/P	90 - 110
Barium	97.0	96.0	P/P	90 - 110
Calcium	98.1	97.9	P/P	90 - 110
Calcium	98.1	98.1	P/P	90 - 110
Iron	97.5	97.1	P/P	90 - 110
Iron	98.0	97.5	P/P	90 - 110
Magnesium	98.5	97.9	P/P	90 - 110
Magnesium	98.7	98.5	P/P	90 - 110
Potassium	96.2	96.1	P/P	90 - 110
Potassium	96.5	96.2	P/P	90 - 110
Sodium	97.3	97.8	P/P	90 - 110
Sodium	97.8	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90307

Included Lab Sample IDs: 2072522, 2072523, 2072524, 2072525

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	96.8	98.2	P/P	90 - 110
Zinc	97.8	96.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90333

Included Lab Sample IDs: 2072522, 2072523, 2072524, 2072525

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.1	98.4	P/P	90 - 110
Aluminum	99.5	98.1	P/P	90 - 110
Antimony	95.5	96.8	P/P	90 - 110
Antimony	96.8	95.7	P/P	90 - 110
Arsenic	97.1	98.5	P/P	90 - 110
Arsenic	97.8	97.1	P/P	90 - 110
Boron	101	102	P/P	90 - 110
Boron	104	101	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	100	103	P/P	90 - 110
Chromium	101	100	P/P	90 - 110
Copper	98.2	102	P/P	90 - 110
Copper	99.0	98.2	P/P	90 - 110
Lead	100	101	P/P	90 - 110
Lead	98.5	100	P/P	90 - 110
Nickel	98.4	102	P/P	90 - 110
Nickel	99.4	98.4	P/P	90 - 110
Selenium	97.4	98.7	P/P	90 - 110
Selenium	98.5	97.4	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	93.3	93.7	P/P	90 - 110
Thallium	93.7	95.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90350

Included Lab Sample IDs: 2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110
Total-P	101	102	P/P	90 - 110
Total-P	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90356

Included Lab Sample IDs: 2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	95.2	P/P	90 - 110
Kjeldahl Nitrogen	96.6	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90367

Included Lab Sample IDs: 2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.8	P/P	90 - 110
Ammonia-N	99.8	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90412

Included Lab Sample IDs: 2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	102	P/P	90 - 110
Chloride	99.1	101	P/P	90 - 110
Sulfate	100	102	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90475

Included Lab Sample IDs: 2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90475

Included Lab Sample IDs: 2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90538

Included Lab Sample IDs: 2072489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	101	102	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					2.40	
	Turbidity					2.53	
EPA 200.7 Rev. 4.4	Barium	95.1	92.1	94.3	93.8		0.562
	Calcium	96.5	96.5	96.2			1.10
	Iron	99.1	100	99.4	98.4		1.04
	Magnesium	97.1	96.0	95.9			0.190
	Potassium	100	94.2	97.3	96.8		0.491
	Sodium	95.4	95.8	97.1			0.142
	Zinc	95.0	94.4	94.0	94.0		0.0344
EPA 200.8 Rev. 5.4	Aluminum	98.8	95.9	96.3	96.9		0.667
	Antimony	97.7	97.9	97.8	97.3		0.469
	Arsenic	100	100	101	99.8		1.47
	Boron	106	103	106	105		0.786
	Cadmium	103	103	103	104		0.285
	Chromium	97.5	95.0	96.8	96.3		0.514
	Copper	99.9	97.6	98.2	97.2		0.963
	Lead	100	100	98.7	99.8		1.04
	Nickel	102	98.9	100	99.0		0.959
	Selenium	98.1	96.9	97.8	97.3		0.404
	Silver	102	101	101	102		1.09
	Thallium	102	102	101	102		1.06
EPA 300.0 Rev. 2.1	Chloride	97.6	98.2	99.1		0.638	
	Sulfate	99.5	97.3	101		0.389	
	Sulfate	93.8	95.5			0.374	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	97.5	98.6			0.923
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	97.8	95.6			1.76
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100				0.203
EPA 365.1 Rev. 2.0	Total-P	103	98.8	100			1.32
	Total-P	96.6	101	101			0.0729
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.8	99.3			1.42
SM 2120 B	Color (true)	101				1.67	
	Color (true)	100				2.43	
SM 2320 B-97	Total Alkalinity	99.1				0.791	
SM 2540 C-97	TDS					6.06	
	TDS					6.00	
SM 4500 F-C-97	Fluoride	99.3	99.5	99.5			0.0
SM 5310 B-00	Organic Carbon	99.4	96.7	97.1			0.275

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2072522, 2072523, 2072524, 2072525
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2072522, 2072523, 2072524, 2072525
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2072495, 2072496, 2072497, 2072504, 2072505, 2072506, 2072509
SM 2120 B / E31780	True Color measured at 450 nm	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2072492, 2072493, 2072494, 2072501, 2072502, 2072503, 2072508

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	03/26/2019			03/26/2019 16:32	Adrian Shelby	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
EPA 200.7 Rev. 4.4	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/28/2019 14:06	Betina Topolski	2072525
	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/28/2019 15:25	Betina Topolski	2072522
	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/28/2019 15:30	Betina Topolski	2072523
	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/28/2019 15:32	Betina Topolski	2072524
EPA 200.8 Rev. 5.4	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/29/2019 22:41	Robert K Palmer	2072525
	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/30/2019 00:47	Robert K Palmer	2072522
	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/30/2019 00:57	Robert K Palmer	2072523
	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/30/2019 01:07	Robert K Palmer	2072524
EPA 300.0 Rev. 2.1	03/26/2019			04/02/2019 16:41	Lipi Saha	2072489
	03/26/2019			04/02/2019 16:53	Lipi Saha	2072490
	03/26/2019			04/02/2019 17:05	Lipi Saha	2072491
	03/26/2019			04/02/2019 17:17	Lipi Saha	2072498
	03/26/2019			04/02/2019 17:53	Lipi Saha	2072499
	03/26/2019			04/02/2019 18:06	Lipi Saha	2072500
	03/26/2019			04/02/2019 20:42	Lipi Saha	2072507
	03/26/2019			04/08/2019 19:38	Lipi Saha	2072489
EPA 350.1 Rev. 2.0	03/26/2019			04/01/2019 11:15	Ping Hua	2072492
	03/26/2019			04/01/2019 11:30	Ping Hua	2072493
	03/26/2019			04/01/2019 11:32	Ping Hua	2072494
	03/26/2019			04/01/2019 11:33	Ping Hua	2072501
	03/26/2019			04/01/2019 11:35	Ping Hua	2072502
	03/26/2019			04/01/2019 11:36	Ping Hua	2072503
	03/26/2019			04/01/2019 11:38	Ping Hua	2072508
EPA 351.2 Rev. 2.0	03/26/2019	03/29/2019 13:30	Jhamieka S. Greenwood	04/01/2019 11:39	Joseph Suarez	2072492
	03/26/2019	03/29/2019 13:30	Jhamieka S. Greenwood	04/01/2019 11:43	Joseph Suarez	2072493
	03/26/2019	03/29/2019 13:30	Jhamieka S. Greenwood	04/01/2019 11:45	Joseph Suarez	2072494
	03/26/2019	03/29/2019 13:30	Jhamieka S. Greenwood	04/01/2019 11:46	Joseph Suarez	2072501
	03/26/2019	03/29/2019 13:30	Jhamieka S. Greenwood	04/01/2019 11:48	Joseph Suarez	2072502
	03/26/2019	03/29/2019 13:30	Jhamieka S. Greenwood	04/01/2019 11:49	Joseph Suarez	2072503
	03/26/2019	03/29/2019 13:30	Jhamieka S. Greenwood	04/01/2019 11:51	Joseph Suarez	2072508
EPA 353.2 Rev. 2.0	03/26/2019			03/27/2019 09:17	Beverly Y. Sanders	2072492
	03/26/2019			03/27/2019 09:18	Beverly Y. Sanders	2072493
	03/26/2019			03/27/2019 09:19	Beverly Y. Sanders	2072494
	03/26/2019			03/27/2019 09:21	Beverly Y. Sanders	2072501
	03/26/2019			03/27/2019 09:22	Beverly Y. Sanders	2072502
	03/26/2019			03/27/2019 09:23	Beverly Y. Sanders	2072503
	03/26/2019			03/27/2019 09:24	Beverly Y. Sanders	2072508
EPA 365.1 Rev. 2.0	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 16:36	Rosalyn Ballman	2072492

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 16:38	Rosalyn Ballman	2072493
	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 16:39	Rosalyn Ballman	2072494
	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 16:47	Rosalyn Ballman	2072502
	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 16:48	Rosalyn Ballman	2072503
	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 16:49	Rosalyn Ballman	2072508
	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 17:42	Rosalyn Ballman	2072501
EPA 365.1 Rev. 2.0 dissolved	03/26/2019			03/26/2019 15:42	Jhamieka S. Greenwood	2072505
	03/26/2019			03/26/2019 15:51	Jhamieka S. Greenwood	2072509
	03/26/2019			03/26/2019 16:18	Jhamieka S. Greenwood	2072495
	03/26/2019			03/26/2019 16:19	Jhamieka S. Greenwood	2072496
	03/26/2019			03/26/2019 16:20	Jhamieka S. Greenwood	2072497
	03/26/2019			03/26/2019 16:21	Jhamieka S. Greenwood	2072504, 2072506
SM 2120 B	03/26/2019			03/26/2019 16:18	Mariam Hanna	2072489
	03/26/2019			03/26/2019 16:19	Mariam Hanna	2072490
	03/26/2019			03/26/2019 16:20	Mariam Hanna	2072491
	03/26/2019			03/26/2019 16:21	Mariam Hanna	2072498
	03/26/2019			03/26/2019 16:25	Mariam Hanna	2072499
	03/26/2019			03/26/2019 16:26	Mariam Hanna	2072500
SM 2320 B-97	03/26/2019			03/26/2019 16:27	Mariam Hanna	2072507
	03/26/2019			04/04/2019 09:50	Dale L. Simmons	2072489
	03/26/2019			04/04/2019 10:03	Dale L. Simmons	2072490
	03/26/2019			04/04/2019 10:16	Dale L. Simmons	2072491
	03/26/2019			04/04/2019 10:29	Dale L. Simmons	2072498
	03/26/2019			04/04/2019 10:41	Dale L. Simmons	2072499
SM 2540 C-97	03/26/2019			04/04/2019 10:53	Dale L. Simmons	2072500
	03/26/2019			04/04/2019 11:06	Dale L. Simmons	2072507
	03/26/2019			03/27/2019 14:03	Yijie Li	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
	03/26/2019			03/27/2019 14:03	Yijie Li	2072489, 2072490, 2072491, 2072498, 2072499, 2072500, 2072507
	03/26/2019					
	03/26/2019					
SM 4500 F-C-97	03/26/2019			04/04/2019 09:50	Dale L. Simmons	2072489
	03/26/2019			04/04/2019 10:03	Dale L. Simmons	2072490
	03/26/2019			04/04/2019 10:16	Dale L. Simmons	2072491
	03/26/2019			04/04/2019 10:29	Dale L. Simmons	2072498
	03/26/2019			04/04/2019 10:41	Dale L. Simmons	2072499
	03/26/2019			04/04/2019 10:53	Dale L. Simmons	2072500
SM 5310 B-00	03/26/2019			04/04/2019 11:06	Dale L. Simmons	2072507
	03/26/2019			03/27/2019 23:29	Julia Storbeck	2072492
	03/26/2019			03/27/2019 23:41	Julia Storbeck	2072493
	03/26/2019			03/27/2019 23:53	Julia Storbeck	2072494

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	03/26/2019			03/28/2019 00:05	Julia Storbeck	2072501
	03/26/2019			03/28/2019 00:17	Julia Storbeck	2072502
	03/26/2019			03/28/2019 00:54	Julia Storbeck	2072503
	03/26/2019			03/28/2019 01:06	Julia Storbeck	2072508