

Chemical Analysis Report

NW-DIST-2016-04-26-01

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

Event Description: **WBID 71 118 7 111**

Request ID: **RQ-2016-04-25-70**

Customer: **NW-DIST**

Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 18-MAY-2016 15:43



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 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: Mitchell Creek @ HWY 29

Collection Date/Time: 04/25/2016 10:25

Field ID: G4NW0116

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792509	EPA 180.1 Rev. 2.0	Turbidity	1.9	A	NTU	P303004	
	EPA 300.0 Rev. 2.1	Chloride	3.2		mg Cl/L	P303320	
		Sulfate	0.90		mg SO4/L	P303323	
	SM 2120 B	Color (true)	39		PCU	P303011	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	15	U	mg/L	P303442	
	SM 2540 D-97	TSS	4	I	mg/L	P303309	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792518	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P303597	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P304143	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P303528	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P303615	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P304037	
1792527	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302983	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Canoe Creek Above Hwy 29

Collection Date/Time: 04/25/2016 10:55

Field ID: G4NW0201

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792510	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P303004	
	EPA 300.0 Rev. 2.1	Chloride	4.6		mg Cl/L	P303320	
		Sulfate	0.83		mg SO4/L	P303323	
	SM 2120 B	Color (true)	34	A	PCU	P303011	
	SM 2320 B-97	Total Alkalinity	2.4	I	mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	20	I	mg/L	P303442	
	SM 2540 D-97	TSS	6	I	mg/L	P303309	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792519	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P303597	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P304143	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.77		mg N/L	P303528	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P303615	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P304037	
1792528	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302983	
1792555	EPA 200.7 Rev. 4.4	Calcium	1.60		mg/L	P303173	
		Iron	960		ug/L	P303173	
		Magnesium	1.42		mg/L	P303173	
		Potassium	0.67	I	mg/L	P303173	
		Sodium	2.4		mg/L	P303173	
		Zinc	5.0	U	ug/L	P303173	
	EPA 200.8 Rev. 5.4	Arsenic	0.37		ug/L	P303173	
		Cadmium	0.020	U	ug/L	P303173	
		Chromium	0.37		ug/L	P303173	

Field ID: G4NW0201

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792555	EPA 200.8 Rev. 5.4	Copper	0.23	I	ug/L	P303173	
		Lead	0.25		ug/L	P303173	
		Nickel	0.47		ug/L	P303173	
		Silver	0.0050	U	ug/L	P303173	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Mitchell Creek @ Camp Rd

Collection Date/Time: 04/25/2016 11:25

Field ID: G4NW0114

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792511	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P303004	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P303320	
		Sulfate	1.2		mg SO4/L	P303323	
	SM 2120 B	Color (true)	42		PCU	P303011	
	SM 2320 B-97	Total Alkalinity	1.7	I	mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	15	U	mg/L	P303442	
	SM 2540 D-97	TSS	2	I	mg/L	P303309	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792520	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P303597	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P304143	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.088		mg N/L	P303528	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P303615	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P304037	
1792529	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302983	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Canoe Creek Above Bratt Rd

Collection Date/Time: 04/25/2016 11:55

Field ID: G4NW0202

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792512	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P303004	
	EPA 300.0 Rev. 2.1	Chloride	4.7		mg Cl/L	P303320	
		Sulfate	0.79		mg SO4/L	P303323	
	SM 2120 B	Color (true)	29		PCU	P303011	
	SM 2320 B-97	Total Alkalinity	2.8		mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	19	I	mg/L	P303442	
	SM 2540 D-97	TSS	4	I	mg/L	P303309	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792521	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P303682	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P304143	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.78		mg N/L	P303528	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P303615	
	SM 5310 B-00	Organic Carbon	2.5		mg C/L	P304037	
1792530	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302983	

Field ID: G4NW0202

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792557	EPA 200.7 Rev. 4.4	Calcium	1.61		mg/L	P303173	
		Iron	820		ug/L	P303173	
		Magnesium	1.40		mg/L	P303173	
		Potassium	0.67	I	mg/L	P303173	
		Sodium	2.3		mg/L	P303173	
		Zinc	5.0	U	ug/L	P303173	
	EPA 200.8 Rev. 5.4	Arsenic	0.37		ug/L	P303173	
		Cadmium	0.020	U	ug/L	P303173	
		Chromium	0.28		ug/L	P303173	
		Copper	0.21	I	ug/L	P303173	
		Lead	0.19	I	ug/L	P303173	
		Nickel	0.47		ug/L	P303173	
		Silver	0.0050	U	ug/L	P303173	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Canoe Creek CR-4

Collection Date/Time: 04/25/2016 12:30

Field ID: g4nw0280

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
1792513	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P303004		
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P303320		
		Sulfate	0.75		mg SO4/L	P303323		
		Color (true)	27		PCU	P303011		
	SM 2320 B-97	Total Alkalinity	2.9		mg CaCO3/L	P303266		
	SM 2540 C-97	TDS	23	I	mg/L	P303443		
	SM 2540 D-97	TSS	4	I	mg/L	P303310		
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270		
1792522	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P303682		
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P304143		
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.91		mg N/L	P303528		
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P303615		
	SM 5310 B-00	Organic Carbon	2.4		mg C/L	P304037		
1792531	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302983		
1792558	EPA 200.7 Rev. 4.4	Calcium	1.79		mg/L	P303173		
		Iron	810		ug/L	P303173		
		Magnesium	1.53		mg/L	P303173		
		Potassium	0.72	I	mg/L	P303173		
		Sodium	2.4		mg/L	P303173		
		Zinc	5.0	U	ug/L	P303173		
	EPA 200.8 Rev. 5.4	Arsenic	0.36		ug/L	P303173		
		Cadmium	0.020	U	ug/L	P303173		
		Chromium	0.25		ug/L	P303173		
		Copper	0.21	I	ug/L	P303173		
		Lead	0.20	I	ug/L	P303173		

Field ID: g4nw0280

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792558	EPA 200.8 Rev. 5.4	Nickel	0.47		ug/L	P303173	
		Silver	0.0050	U	ug/L	P303173	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Canoe Creek CR-168

Collection Date/Time: 04/25/2016 12:55

Field ID: G4NW0282

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792514	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P303004	
	EPA 300.0 Rev. 2.1	Chloride	6.8		mg Cl/L	P303320	
		Sulfate	0.96		mg SO4/L	P303323	
	SM 2120 B	Color (true)	15		PCU	P303011	
	SM 2320 B-97	Total Alkalinity	4.2		mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	31		mg/L	P303443	
	SM 2540 D-97	TSS	2	U	mg/L	P303310	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P303270	
1792523	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P303682	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P304143	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.8		mg N/L	P303528	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P303697	
	SM 5310 B-00	Organic Carbon	1.5		mg C/L	P304037	
1792532	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P302983	
1792559	EPA 200.7 Rev. 4.4	Calcium	2.84		mg/L	P303173	
		Iron	550		ug/L	P303173	
		Magnesium	2.50		mg/L	P303173	
		Potassium	1.1	I	mg/L	P303173	
		Sodium	2.7		mg/L	P303173	
		Zinc	5.0	U	ug/L	P303173	
	EPA 200.8 Rev. 5.4	Arsenic	0.34		ug/L	P303173	
		Cadmium	0.020	U	ug/L	P303173	
		Chromium	0.15	I	ug/L	P303173	
		Copper	0.17	I	ug/L	P303173	
		Lead	0.17	I	ug/L	P303173	
		Nickel	0.52		ug/L	P303173	
		Silver	0.0050	U	ug/L	P303173	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: McCostill Mill Creek Ebenezer Rd

Collection Date/Time: 04/25/2016 14:00

Field ID: G4NW0320

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792515	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P303004	
	EPA 300.0 Rev. 2.1	Chloride	5.7		mg Cl/L	P303320	
		Sulfate	0.88		mg SO4/L	P303323	

Field ID: G4NW0320

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792515	SM 2120 B	Color (true)	12		PCU	P303011	
	SM 2320 B-97	Total Alkalinity	0.77	I	mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	22	I	mg/L	P303443	
	SM 2540 D-97	TSS	2	I	mg/L	P303310	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792524	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P303682	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P303877	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.7		mg N/L	P303528	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P303697	
	SM 5310 B-00	Organic Carbon	1.6		mg C/L	P304037	
1792533	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302983	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Moore Creek S R 197

Collection Date/Time: 04/25/2016 14:35

Field ID: G4NW0318

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792516	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P303004	
	EPA 300.0 Rev. 2.1	Chloride	6.7		mg Cl/L	P303320	
		Sulfate	0.38	I	mg SO4/L	P303323	
	SM 2120 B	Color (true)	16		PCU	P303011	
	SM 2320 B-97	Total Alkalinity	5.1		mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	42		mg/L	P303443	
	SM 2540 D-97	TSS	2	I	mg/L	P303310	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P303682	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21	J	mg N/L	P303877	MS
1792525	EPA 353.2 Rev. 2.0	NO2NO3-N	2.3		mg N/L	P303528	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P303697	
	SM 5310 B-00	Organic Carbon	1.8		mg C/L	P304037	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302983	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: Moore Creek above Mineral Springs Rd

Collection Date/Time: 04/25/2016 15:00

Field ID: G4NW0355

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792517	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P303004	
	EPA 300.0 Rev. 2.1	Chloride	5.6		mg Cl/L	P303320	
		Sulfate	0.73		mg SO4/L	P303323	
	SM 2120 B	Color (true)	19		PCU	P303011	
	SM 2320 B-97	Total Alkalinity	2.5		mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	37		mg/L	P303443	

Field ID: G4NW0355

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792517	SM 2540 D-97	TSS	6	I	mg/L	P303310	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792526	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P303682	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P303877	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.0		mg N/L	P303528	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P303697	
	SM 5310 B-00	Organic Carbon	1.8		mg C/L	P304037	
1792535	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302983	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303004

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303173

Component	Result	Code	Units
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: P303173

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L
Copper	0.10	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.050	U	ug/L
Silver	0.0050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303597

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303682

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303877

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304143

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303528

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303615

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303697

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302983

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P303011

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P303266

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

Reference Method: SM 2540 C-97
Batch ID: P303442

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P303443

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303309

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303310

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P303270

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P304037

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: P303173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	109		P	85 - 115
Iron	105		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	103		P	85 - 115
Sodium	108		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P303173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	100		P	85 - 115
Cadmium	98.3		P	85 - 115
Chromium	100		P	85 - 115
Copper	99.6		P	85 - 115
Lead	100		P	85 - 115
Nickel	102		P	85 - 115
Silver	96.3		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303597

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303682

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303877

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304143

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: P303528

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303615

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302983

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

Reference Method: SM 2320 B-97
Batch ID: P303266

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

Reference Method: SM 4500 F-C-97
Batch ID: P303270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P304037

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792559	Calcium	106	108	P/P	80 - 120
1792559	Iron	105	106	P/P	80 - 120
1792559	Magnesium	109	110	P/P	80 - 120
1792559	Potassium	101	101	P/P	80 - 120
1792559	Sodium	100	99.5	P/P	80 - 120
1792559	Zinc	101	101	P/P	80 - 120
1792863	Calcium	106		P	80 - 120
1792863	Iron	104		P	80 - 120
1792863	Magnesium	106		P	80 - 120
1792863	Potassium	98.7		P	80 - 120
1792863	Sodium	98.1		P	80 - 120
1792863	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P303173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792559	Arsenic	96.4	99.0	P/P	80 - 120
1792559	Cadmium	98.5	97.8	P/P	80 - 120
1792559	Chromium	119	99.6	P/P	80 - 120
1792559	Copper	96.1	97.1	P/P	80 - 120
1792559	Lead	98.8	99.7	P/P	80 - 120
1792559	Nickel	98.2	99.0	P/P	80 - 120
1792559	Silver	95.5	96.1	P/P	80 - 120
1792863	Arsenic	102		P	80 - 120
1792863	Cadmium	101		P	80 - 120
1792863	Chromium	100		P	80 - 120
1792863	Copper	97.3		P	80 - 120
1792863	Lead	101		P	80 - 120
1792863	Nickel	99.3		P	80 - 120
1792863	Silver	94.7		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792546	Chloride	97.7		P	90 - 110
1792604	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792546	Sulfate	94.2		P	90 - 110
1792604	Sulfate	94.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792473	Ammonia-N	100	99.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303682

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792521	Ammonia-N	97.8	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792525	Kjeldahl Nitrogen	89.8	86.9	F/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792478	Kjeldahl Nitrogen	105	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303528

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792518	NO2NO3-N	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792477	Total-P	101	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792523	Total-P	96.9	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792527	O-Phosphate-P	102	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P303270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792546	Fluoride	97.0	97.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P304037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792519	Organic Carbon	94.8	93.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792509	Turbidity	1.03	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792559	Calcium	1.01	Spike	P	0 - 20
1792559	Iron	0.466	Spike	P	0 - 20
1792559	Magnesium	0.997	Spike	P	0 - 20
1792559	Potassium	0.0699	Spike	P	0 - 20
1792559	Sodium	0.320	Spike	P	0 - 20
1792559	Zinc	0.194	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P303173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792559	Arsenic	2.62	Spike	P	0 - 20
1792559	Cadmium	0.737	Spike	P	0 - 20
1792559	Chromium	17.7	Spike	P	0 - 20
1792559	Copper	1.08	Spike	P	0 - 20
1792559	Lead	0.966	Spike	P	0 - 20
1792559	Nickel	0.824	Spike	P	0 - 20
1792559	Silver	0.613	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Chloride	0.459	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Sulfate	0.0185	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792473	Ammonia-N	0.449	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792521	Ammonia-N	0.746	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792525	Kjeldahl Nitrogen	2.67	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792478	Kjeldahl Nitrogen	3.32	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792518	NO2NO3-N	1.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792477	Total-P	5.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792523	Total-P	0.301	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792527	O-Phosphate-P	0.784	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P303011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792510	Color (true)	3.03	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P303266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Total Alkalinity	2.54	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P303442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792321	TDS	4.58	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P303443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792545	TDS	8.84	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P303270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P304037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792519	Organic Carbon	1.45	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 365.1 Rev. 2.0 dissolved
Run ID: A69106
Included Lab Sample IDs: 1792527, 1792528, 1792529, 1792530, 1792531, 1792532, 1792533, 1792534, 1792535

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	100	99.2	P/P	90 - 110
O-Phosphate-P	101	99.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A69112
Included Lab Sample IDs: 1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69112

Included Lab Sample IDs: 1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A69115

Included Lab Sample IDs: 1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69144

Included Lab Sample IDs: 1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	94.8	99.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A69186

Included Lab Sample IDs: 1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	97.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69186

Included Lab Sample IDs: 1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A69210

Included Lab Sample IDs: 1792555, 1792557, 1792558, 1792559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	102	P/P	90 - 110
Calcium	101	101	P/P	90 - 110
Iron	100	99.6	P/P	90 - 110
Iron	99.6	100	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	100	101	P/P	90 - 110
Potassium	100	100	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Sodium	101	100	P/P	90 - 110
Zinc	100	100	P/P	90 - 110
Zinc	99.3	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A69214

Included Lab Sample IDs: 1792555, 1792557, 1792558, 1792559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	99.6	P/P	90 - 110
Cadmium	97.4	97.8	P/P	90 - 110
Chromium	97.7	99.7	P/P	90 - 110
Copper	101	99.1	P/P	90 - 110
Lead	96.9	96.2	P/P	90 - 110
Nickel	102	99.5	P/P	90 - 110
Silver	96.4	95.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69271

Included Lab Sample IDs: 1792518, 1792519, 1792520, 1792521, 1792522, 1792523, 1792524, 1792525, 1792526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	104	P/P	90 - 110
NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69277

Included Lab Sample IDs: 1792518, 1792519, 1792520

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69311

Included Lab Sample IDs: 1792521, 1792522, 1792523, 1792524, 1792525, 1792526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.9	P/P	90 - 110
Ammonia-N	99.9	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69319

Included Lab Sample IDs: 1792518, 1792519, 1792520, 1792521, 1792522

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69361

Included Lab Sample IDs: 1792523, 1792524, 1792525, 1792526

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69419

Included Lab Sample IDs: 1792524, 1792525, 1792526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	93.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69419

Included Lab Sample IDs: 1792524, 1792525, 1792526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	97.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A69421

Included Lab Sample IDs: 1792518, 1792519, 1792520, 1792521, 1792522, 1792523, 1792524, 1792525, 1792526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.2	96.2	P/P	90 - 110
Organic Carbon	95.5	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69486

Included Lab Sample IDs: 1792518, 1792519, 1792520, 1792521, 1792522, 1792523

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	95.6	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.03	
EPA 200.7 Rev. 4.4	Calcium	109	106	108	106			1.01
	Iron	105	105	106	104			0.466
	Magnesium	112	109	110	106			0.997
	Potassium	103	101	101	98.7			0.0699
	Sodium	108	100	99.5	98.1			0.320
	Zinc	101	101	101	101			0.194
EPA 200.8 Rev. 5.4	Arsenic	100	96.4	99.0	102			2.62
	Cadmium	98.3	98.5	97.8	101			0.737
	Chromium	100	119	99.6	100			17.7
	Copper	99.6	96.1	97.1	97.3			1.08
	Lead	100	98.8	99.7	101			0.966
	Nickel	102	98.2	99.0	99.3			0.824
	Silver	96.3	95.5	96.1	94.7			0.613
EPA 300.0 Rev. 2.1	Chloride	98.9	97.7	97.8			0.459	
	Sulfate	95.6	94.2	94.1			0.0185	
EPA 350.1 Rev. 2.0	Ammonia-N	102	100	99.7				0.449
	Ammonia-N	98.3	97.8	98.7				0.746
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	89.8	86.9				2.67
	Kjeldahl Nitrogen	104	105	98.9				3.32
EPA 353.2 Rev. 2.0	NO2NO3-N	105	100	103				1.52
EPA 365.1 Rev. 2.0	Total-P	98.0	101	95.4				5.37
	Total-P	98.4	96.9	96.6				0.301
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	102	102				0.784

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 2120 B	Color (true)				3.03	
SM 2320 B-97	Total Alkalinity	100			2.54	
SM 2540 C-97	TDS				4.58	
	TDS				8.84	
SM 4500 F-C-97	Fluoride	98.1	97.0 97.0			0.0
SM 5310 B-00	Organic Carbon	98.2	94.8 93.2			1.45

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1792555, 1792557, 1792558, 1792559
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1792555, 1792557, 1792558, 1792559
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1792518, 1792519, 1792520, 1792521, 1792522, 1792523, 1792524, 1792525, 1792526
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1792518, 1792519, 1792520, 1792521, 1792522, 1792523, 1792524, 1792525, 1792526
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1792518, 1792519, 1792520, 1792521, 1792522, 1792523, 1792524, 1792525, 1792526
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1792518, 1792519, 1792520, 1792521, 1792522, 1792523, 1792524, 1792525, 1792526
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1792527, 1792528, 1792529, 1792530, 1792531, 1792532, 1792533, 1792534, 1792535
SM 2120 B / E31780	True Color measured at 450 nm	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1792518, 1792519, 1792520, 1792521, 1792522, 1792523, 1792524, 1792525, 1792526

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	04/26/2016			04/26/2016 16:05	Blanca Fach	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
EPA 200.7 Rev. 4.4	04/26/2016	04/28/2016	Elliott D. Healy	05/02/2016	Joshua Ayres	1792555, 1792557, 1792558, 1792559
EPA 200.8 Rev. 5.4	04/26/2016	04/28/2016	Elliott D. Healy	05/02/2016	Charles J. Peterson	1792555, 1792557, 1792558, 1792559
EPA 300.0 Rev. 2.1	04/26/2016			04/30/2016	Elisa J Lutz	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
EPA 350.1 Rev. 2.0	04/26/2016			05/04/2016	Diana M. Turner	1792518, 1792519, 1792520
	04/26/2016			05/05/2016	Diana M. Turner	1792521, 1792522, 1792523, 1792524, 1792525, 1792526
EPA 351.2 Rev. 2.0	04/26/2016	05/10/2016	Sofia Elnemr	05/11/2016	Christopher Armour	1792524, 1792525, 1792526
	04/26/2016	05/12/2016	Christopher Armour	05/16/2016	Christopher Armour	1792518, 1792519, 1792520, 1792521, 1792522, 1792523
EPA 353.2 Rev. 2.0	04/26/2016			05/04/2016	Peter D. Kaus	1792518, 1792519, 1792520, 1792521, 1792522, 1792523, 1792524, 1792525, 1792526
EPA 365.1 Rev. 2.0	04/26/2016	05/05/2016	Vijayalakshmi Reddy	05/06/2016	Lipi Saha	1792518, 1792519, 1792520, 1792521, 1792522
	04/26/2016	05/06/2016	Vijayalakshmi Reddy	05/09/2016	Lipi Saha	1792523, 1792524, 1792525, 1792526
EPA 365.1 Rev. 2.0 dissolved	04/26/2016			04/26/2016 14:42	Julia Storbeck	1792527
	04/26/2016			04/26/2016 15:19	Julia Storbeck	1792529
	04/26/2016			04/26/2016 15:20	Julia Storbeck	1792530
	04/26/2016			04/26/2016 15:21	Julia Storbeck	1792531
	04/26/2016			04/26/2016 15:22	Julia Storbeck	1792532, 1792533
	04/26/2016			04/26/2016 15:23	Julia Storbeck	1792534
	04/26/2016			04/26/2016 15:24	Julia Storbeck	1792535
	04/26/2016			04/26/2016 15:48	Julia Storbeck	1792528
SM 2120 B	04/26/2016			04/26/2016 16:09	Chrisoulla Rakowski	1792509
	04/26/2016			04/26/2016 16:10	Chrisoulla Rakowski	1792510
	04/26/2016			04/26/2016 16:11	Chrisoulla Rakowski	1792511
	04/26/2016			04/26/2016 16:12	Chrisoulla Rakowski	1792512
	04/26/2016			04/26/2016 16:13	Chrisoulla Rakowski	1792513, 1792514
	04/26/2016			04/26/2016 16:14	Chrisoulla Rakowski	1792515
	04/26/2016			04/26/2016 16:15	Chrisoulla Rakowski	1792516
	04/26/2016			04/26/2016 16:16	Chrisoulla Rakowski	1792517
SM 2320 B-97	04/26/2016			04/29/2016	Dale L. Simmons	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
SM 2540 C-97	04/26/2016			04/27/2016	Yijie Li	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-97	04/26/2016			04/27/2016	Yijie Li	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
SM 4500 F-C-97	04/26/2016			04/29/2016	Dale L. Simmons	1792509, 1792510, 1792511, 1792512, 1792513, 1792514, 1792515, 1792516, 1792517
SM 5310 B-00	04/26/2016			05/10/2016	Diana M. Turner	1792518, 1792519, 1792520, 1792521, 1792522, 1792523, 1792524, 1792525, 1792526