

Chemical Analysis Report

SE-DIST-2016-04-05-01

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

Event Description: **SMP_Orange-4/4**
Request ID: **RQ-2016-04-04-56**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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2199 South Rock Road
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 28-APR-2016 13:59



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: NEW RIVER(NORTH FORK)@ NW 27TH AVE

Collection Date/Time: 04/04/2016 10:40

Field ID: G4SE0085-04042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786050	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P301662	
	EPA 300.0 Rev. 2.1	Chloride	41		mg Cl/L	P301850	
		Sulfate	11		mg SO4/L	P301854	
	SM 2120 B	Color (true)	28	A	PCU	P301625	
	SM 2320 B-97	Total Alkalinity	172		mg CaCO3/L	P301744	
	SM 2540 C-97	TDS	266		mg/L	P302202	
	SM 2540 D-97	TSS	5	I	mg/L	P302207	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P301746	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.25		mg N/L	P301895	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P302053	
1786056	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P301913	
	EPA 365.1 Rev. 2.0	Total-P	0.091		mg P/L	P301959	
	SM 5310 B-00	Organic Carbon	7.8		mg C/L	P301927	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P301604	
	EPA 200.7 Rev. 4.4	Calcium	70.6		mg/L	P301827	
1786062		Iron	420		ug/L	P301827	
		Magnesium	4.15		mg/L	P301827	
		Potassium	2.8		mg/L	P301827	
		Sodium	26.8		mg/L	P301827	
		Zinc	14	I	ug/L	P301827	
	EPA 200.8 Rev. 5.4	Arsenic	2.34		ug/L	P301827	
		Cadmium	0.020	U	ug/L	P301827	
		Chromium	0.39		ug/L	P301827	
		Copper	1.31		ug/L	P301827	
		Lead	0.56		ug/L	P301827	
		Nickel	0.52		ug/L	P301827	
		Silver	0.0050	U	ug/L	P301827	

Ref. Method and Comment:

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

SM 4500 F-C-97: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: NEW RIVER(NORTH FORK)@ NW 27TH AVE
DUP

Collection Date/Time: 04/04/2016 10:50

Field ID: G4SE0085-04042016-DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786068	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P301663	
	EPA 300.0 Rev. 2.1	Sulfate	11		mg SO4/L	P301855	
	SM 2320 B-97	Total Alkalinity	172		mg CaCO3/L	P301933	
	SM 2540 D-97	TSS	6	I	mg/L	P302210	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P301936	
1786069	EPA 350.1 Rev. 2.0	Ammonia-N	0.25		mg N/L	P301896	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96	J	mg N/L	P302335	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P301913	

Field ID: G4SE0085-04042016-DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786069	EPA 365.1 Rev. 2.0	Total-P	0.091		mg P/L	P301959	
	SM 5310 B-00	Organic Carbon	7.7		mg C/L	P301927	
1786070	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P301604	
1786183	EPA 200.7 Rev. 4.4	Iron	430		ug/L	P301827	
		Zinc	5.2	I	ug/L	P301827	
	EPA 200.8 Rev. 5.4	Arsenic	2.25		ug/L	P301827	
		Cadmium	0.020	U	ug/L	P301827	
		Chromium	0.39		ug/L	P301827	
		Copper	1.27		ug/L	P301827	
		Lead	0.67		ug/L	P301827	
		Silver	0.0050	U	ug/L	P301827	

Ref. Method and Comment:

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

SM 4500 F-C-97: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

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

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: C-9 @ NW 57TH AVE

Collection Date/Time: 04/04/2016 11:40

Field ID: G4SE0075-04042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786051	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P301663	
	EPA 300.0 Rev. 2.1	Chloride	72		mg Cl/L	P301850	
		Sulfate	4.0		mg SO4/L	P301854	
		Color (true)	44	A	PCU	P301626	
	SM 2320 B-97	Total Alkalinity	224		mg CaCO3/L	P301744	
	SM 2540 C-97	TDS	352		mg/L	P302202	
	SM 2540 D-97	TSS	2	U	mg/L	P302207	
1786057	SM 4500 F-C-97	Fluoride	0.27		mg F/L	P301746	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.72		mg N/L	P301896	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P302326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P301913	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P301959	
1786063	SM 5310 B-00	Organic Carbon	15		mg C/L	P301927	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301604	
1786178	EPA 200.7 Rev. 4.4	Calcium	73.9		mg/L	P301827	
		Iron	290		ug/L	P301827	
		Magnesium	12.1		mg/L	P301827	
		Potassium	3.5		mg/L	P301827	
		Sodium	49.1		mg/L	P301827	
		Zinc	5.0	U	ug/L	P301827	
	EPA 200.8 Rev. 5.4	Arsenic	0.91		ug/L	P301827	
		Cadmium	0.020	U	ug/L	P301827	
		Chromium	0.13	I	ug/L	P301827	
		Copper	0.19	I	ug/L	P301827	
		Lead	0.050	U	ug/L	P301827	

Field ID: G4SE0075-04042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786178	EPA 200.8 Rev. 5.4	Nickel	0.19	I	ug/L	P301827	
		Silver	0.0050	U	ug/L	P301827	

Ref. Method and Comment:

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

SM 4500 F-C-97: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: SNAKE CREEK & CANAL (EAST) C9-2

Collection Date/Time: 04/04/2016 12:00

Field ID: G4SE0017-04042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786052	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P301663	
	EPA 300.0 Rev. 2.1	Chloride	72		mg Cl/L	P301852	
		Sulfate	4.5		mg SO4/L	P301855	
	SM 2120 B	Color (true)	43		PCU	P301626	
	SM 2320 B-97	Total Alkalinity	219		mg CaCO3/L	P301744	
	SM 2540 C-97	TDS	376	A	mg/L	P302202	
	SM 2540 D-97	TSS	3	I	mg/L	P302207	
	SM 4500 F-C-97	Fluoride	0.27		mg F/L	P301746	
1786058	EPA 350.1 Rev. 2.0	Ammonia-N	0.22		mg N/L	P301896	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P302326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P301913	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P301959	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P301927	
1786064	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301604	
1786179	EPA 200.7 Rev. 4.4	Calcium	73.2		mg/L	P301827	
		Iron	280		ug/L	P301827	
		Magnesium	11.9		mg/L	P301827	
		Potassium	3.1		mg/L	P301827	
		Sodium	48.2		mg/L	P301827	
		Zinc	5.0	U	ug/L	P301827	
	EPA 200.8 Rev. 5.4	Arsenic	0.88		ug/L	P301827	
		Cadmium	0.020	U	ug/L	P301827	
		Chromium	0.096	I	ug/L	P301827	
		Copper	0.10	U	ug/L	P301827	
		Lead	0.050	U	ug/L	P301827	
		Nickel	0.23		ug/L	P301827	
		Silver	0.0050	U	ug/L	P301827	

Ref. Method and Comment:

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

SM 4500 F-C-97: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: G7 LITTLE RIVER (LR 08 MIAMI DADE)

Collection Date/Time: 04/04/2016 12:35

Field ID: G4SELR08-04042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786053	EPA 180.1 Rev. 2.0	Turbidity	1.0	A	NTU	P301663	
	EPA 300.0 Rev. 2.1	Chloride	73		mg Cl/L	P301852	
		Sulfate	15		mg SO4/L	P301855	
	SM 2120 B	Color (true)	59		PCU	P301626	
	SM 2320 B-97	Total Alkalinity	212		mg CaCO3/L	P301933	
	SM 2540 C-97	TDS	376		mg/L	P302202	
	SM 2540 D-97	TSS	4	I	mg/L	P302207	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P301936	
1786059	EPA 350.1 Rev. 2.0	Ammonia-N	0.39		mg N/L	P301896	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P302326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P301913	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P301959	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P301927	
1786065	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301604	
1786180	EPA 200.7 Rev. 4.4	Calcium	71.9		mg/L	P301827	
		Iron	110	I	ug/L	P301827	
		Magnesium	13.5		mg/L	P301827	
		Potassium	4.8		mg/L	P301827	
		Sodium	48.5		mg/L	P301827	
		Zinc	5.0	U	ug/L	P301827	
	EPA 200.8 Rev. 5.4	Arsenic	0.96		ug/L	P301827	
		Cadmium	0.020	U	ug/L	P301827	
		Chromium	0.14	I	ug/L	P301827	
		Copper	0.27	I	ug/L	P301827	
		Lead	0.11	I	ug/L	P301827	
		Nickel	0.25		ug/L	P301827	
		Silver	0.0050	U	ug/L	P301827	

Ref. Method and Comment:

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

SM 4500 F-C-97: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: C-7 LITTLE RIVER (LR- 10 MIAMI DADE)

Collection Date/Time: 04/04/2016 13:05

Field ID: G4SELR10-04042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786054	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P301663	
	EPA 300.0 Rev. 2.1	Chloride	70		mg Cl/L	P301852	
		Sulfate	12		mg SO4/L	P301855	
	SM 2120 B	Color (true)	54		PCU	P301626	
	SM 2320 B-97	Total Alkalinity	209		mg CaCO3/L	P301933	
	SM 2540 C-97	TDS	353		mg/L	P302203	
	SM 2540 D-97	TSS	2	I	mg/L	P302208	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P301936	
1786060	EPA 350.1 Rev. 2.0	Ammonia-N	2.0		mg N/L	P301896	

Field ID: G4SELR10-04042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786060	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.1		mg N/L	P302326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P301914	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P301959	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P301927	
1786066	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301604	
1786181	EPA 200.7 Rev. 4.4	Calcium	65.6		mg/L	P301827	
		Iron	61	I	ug/L	P301827	
		Magnesium	11.6		mg/L	P301827	
		Potassium	5.2		mg/L	P301827	
		Sodium	46.3		mg/L	P301827	
		Zinc	5.0	U	ug/L	P301827	
	EPA 200.8 Rev. 5.4	Arsenic	0.75		ug/L	P301827	
		Cadmium	0.020	U	ug/L	P301827	
		Chromium	0.23		ug/L	P301827	
		Copper	0.10	U	ug/L	P301827	
		Lead	0.050	U	ug/L	P301827	
		Nickel	0.38		ug/L	P301827	
		Silver	0.0050	U	ug/L	P301827	

Ref. Method and Comment:

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

SM 4500 F-C-97: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: TAMIAMI CAN & KROME AV.

Collection Date/Time: 04/04/2016 13:50

Field ID: G4SE0068_040416

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786055	EPA 180.1 Rev. 2.0	Turbidity	7.7		NTU	P301663	
	EPA 300.0 Rev. 2.1	Chloride	46		mg Cl/L	P301852	
		Sulfate	0.71		mg SO4/L	P301855	
		Color (true)	57		PCU	P301626	
	SM 2320 B-97	Total Alkalinity	230		mg CaCO3/L	P301933	
	SM 2540 C-97	TDS	340	A	mg/L	P302203	
	SM 2540 D-97	TSS	3	I	mg/L	P302208	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P301936	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.89		mg N/L	P301896	
		Kjeldahl Nitrogen	1.7		mg N/L	P302326	
1786061	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P301914	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P301959	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P301927	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301604	
	EPA 200.7 Rev. 4.4	Calcium	81.7		mg/L	P301827	
		Iron	1.03E+03		ug/L	P301827	
		Magnesium	7.08		mg/L	P301827	
		Potassium	1.5		mg/L	P301827	

Field ID: G4SE0068_040416

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786182	EPA 200.7 Rev. 4.4	Sodium	28.9		mg/L	P301827	
		Zinc	5.0	U	ug/L	P301827	
	EPA 200.8 Rev. 5.4	Arsenic	0.70		ug/L	P301827	
		Cadmium	0.020	U	ug/L	P301827	
		Chromium	0.086	I	ug/L	P301827	
		Copper	0.10	U	ug/L	P301827	
		Lead	0.050	U	ug/L	P301827	
		Nickel	0.074	I	ug/L	P301827	
		Silver	0.0050	U	ug/L	P301827	

Ref. Method and Comment:

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

SM 4500 F-C-97: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P301662

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P301663

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P301827

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: P301827

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301850

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301852

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301854

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301855

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301895

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301896

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302053

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302326

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302335

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301913

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301914

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301959

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301604

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

Reference Method: SM 2120 B
Batch ID: P301625

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P301626

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P301744

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

Reference Method: SM 2320 B-97
Batch ID: P301933

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

Reference Method: SM 2540 C-97
Batch ID: P302202

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P302203

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P302207

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P302208

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P302210

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P301746

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P301936

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P301927

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: P301827

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	108		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	104		P	85 - 115
Sodium	105		P	85 - 115
Zinc	102		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P301827

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	96.3		P	85 - 115
Cadmium	94.8		P	85 - 115
Chromium	94.4		P	85 - 115
Copper	93.6		P	85 - 115
Lead	89.0		P	85 - 115
Nickel	95.2		P	85 - 115
Silver	93.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301850

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301852

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301854

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301855

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: P301895

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301896

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302053

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302326

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302335

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301913

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	95.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301959

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301604

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

Reference Method: SM 2320 B-97
Batch ID: P301744

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P301933

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P301746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P301936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P301927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P301827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786177	Calcium	105		P	80 - 120
1786177	Iron	108		P	80 - 120
1786177	Magnesium	104		P	80 - 120
1786177	Potassium	102		P	80 - 120
1786177	Sodium	106		P	80 - 120
1786177	Zinc	99.1		P	80 - 120
1786577	Calcium	104		P	80 - 120
1786577	Iron	107	107	P/P	80 - 120
1786577	Magnesium	107	105	P/P	80 - 120
1786577	Potassium	104	101	P/P	80 - 120
1786577	Sodium	103		P	80 - 120
1786577	Zinc	102	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P301827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786177	Arsenic	97.8		P	80 - 120
1786177	Cadmium	97.5		P	80 - 120
1786177	Chromium	95.4		P	80 - 120
1786177	Copper	91.8		P	80 - 120
1786177	Lead	91.3		P	80 - 120
1786177	Nickel	93.6		P	80 - 120
1786177	Silver	95.3		P	80 - 120
1786577	Arsenic	100	102	P/P	80 - 120
1786577	Cadmium	97.7	101	P/P	80 - 120
1786577	Chromium	97.2	98.5	P/P	80 - 120
1786577	Copper	92.5	94.4	P/P	80 - 120
1786577	Lead	93.3	94.1	P/P	80 - 120
1786577	Nickel	95.8	97.3	P/P	80 - 120
1786577	Silver	95.7	96.9	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301850

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1785814	Chloride	99.9		P	90 - 110
1785895	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786383	Chloride	99.8		P	90 - 110
1786431	Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1785814	Sulfate	98.3		P	90 - 110
1785895	Sulfate	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786383	Sulfate	98.9		P	90 - 110
1786431	Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1785826	Ammonia-N	99.4	98.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786329	Ammonia-N	100	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1785827	Kjeldahl Nitrogen	97.8	94.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786069	Kjeldahl Nitrogen	88.9	84.8	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301913

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786058	NO2NO3-N	94.8	93.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786245	NO2NO3-N	90.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786062	O-Phosphate-P	101	103	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P301927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1785898	Organic Carbon	92.6	94.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P301662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1785817	Turbidity	2.49	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P301663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786053	Turbidity	4.78	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P301827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786577	Calcium	0.690	Spike	P	0 - 20
1786577	Iron	0.0269	Spike	P	0 - 20
1786577	Magnesium	0.736	Spike	P	0 - 20
1786577	Potassium	1.47	Spike	P	0 - 20
1786577	Sodium	1.06	Spike	P	0 - 20
1786577	Zinc	0.706	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P301827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786577	Arsenic	1.38	Spike	P	0 - 20
1786577	Cadmium	3.09	Spike	P	0 - 20
1786577	Chromium	1.34	Spike	P	0 - 20
1786577	Copper	1.91	Spike	P	0 - 20
1786577	Lead	0.818	Spike	P	0 - 20
1786577	Nickel	1.56	Spike	P	0 - 20
1786577	Silver	1.32	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1785814	Chloride	0.0743	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786383	Chloride	0.0281	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1785814	Sulfate	2.76	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786383	Sulfate	0.595	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1785826	Ammonia-N	0.385	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786329	Ammonia-N	1.88	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1785827	Kjeldahl Nitrogen	1.68	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786059	Kjeldahl Nitrogen	1.87	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786069	Kjeldahl Nitrogen	2.43	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786058	NO2NO3-N	1.43	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786245	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1785897	Total-P	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786062	O-Phosphate-P	1.20	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P301625

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786050	Color (true)	1.06	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P301626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786051	Color (true)	0.448	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P301744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1785896	Total Alkalinity	0.391	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P301933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786872	Total Alkalinity	0.606	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P302202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786052	TDS	1.33	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P302203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786055	TDS	2.64	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P301746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1785896	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P301936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786872	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P301927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1785898	Organic Carbon	1.77	Spike	P	0 - 20

Quality Assurance Report Precision

* 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 300.0 Rev. 2.1

Run ID: A68637

Included Lab Sample IDs: 1786050, 1786051, 1786052, 1786053, 1786054, 1786055

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	101	99.0	P/P	90 - 110
Sulfate	101	104	P/P	90 - 110
Sulfate	99.0	101	P/P	90 - 110
Sulfate	99.0	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A68657

Included Lab Sample IDs: 1786062, 1786063, 1786064, 1786065, 1786066, 1786067, 1786070

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.6	P/P	90 - 110
O-Phosphate-P	99.0	101	P/P	90 - 110
O-Phosphate-P	99.6	98.2	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A68667

Included Lab Sample IDs: 1786050, 1786051, 1786052, 1786053, 1786054, 1786055

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	104	P/P	85 - 115
Color (true)	97.5	100	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68679

Included Lab Sample IDs: 1786050, 1786051, 1786052, 1786053, 1786054, 1786055, 1786068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: SM 2320 B-97

Run ID: A68698

Included Lab Sample IDs: 1786050, 1786051, 1786052

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

Reference Method: SM 4500 F-C-97

Run ID: A68698

Included Lab Sample IDs: 1786050, 1786051, 1786052

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

Reference Method: SM 4500 F-C-97

Run ID: A68698

Included Lab Sample IDs: 1786050, 1786051, 1786052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68756

Included Lab Sample IDs: 1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68762

Included Lab Sample IDs: 1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	95.5	95.5	P/P	90 - 110
NO2NO3-N	96.0	95.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A68767

Included Lab Sample IDs: 1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	97.2	P/P	90 - 110
Organic Carbon	97.2	97.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A68768

Included Lab Sample IDs: 1786053, 1786054, 1786055, 1786068

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

Reference Method: SM 4500 F-C-97

Run ID: A68768

Included Lab Sample IDs: 1786053, 1786054, 1786055, 1786068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68801

Included Lab Sample IDs: 1786056, 1786069

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A68802

Included Lab Sample IDs: 1786177, 1786178, 1786179, 1786180, 1786181, 1786182, 1786183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Calcium	102	102	P/P	95 - 105
Iron	104	103	P/P	90 - 110
Iron	104	104	P/P	95 - 105
Magnesium	102	101	P/P	90 - 110
Magnesium	102	102	P/P	95 - 105
Potassium	101	102	P/P	95 - 105
Potassium	102	101	P/P	90 - 110
Sodium	101	103	P/P	90 - 110
Sodium	101	101	P/P	95 - 105
Zinc	102	99.9	P/P	95 - 105
Zinc	99.9	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A68810

Included Lab Sample IDs: 1786177, 1786178, 1786179, 1786180, 1786181, 1786182, 1786183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.1	99.1	P/P	90 - 110
Arsenic	99.9	99.1	P/P	90 - 110
Cadmium	96.6	97.7	P/P	90 - 110
Cadmium	96.8	96.6	P/P	90 - 110
Chromium	96.9	98.6	P/P	90 - 110
Chromium	98.6	98.8	P/P	90 - 110
Copper	99.2	98.2	P/P	90 - 110
Copper	99.3	99.2	P/P	90 - 110
Lead	94.9	94.9	P/P	90 - 110
Lead	95.4	94.9	P/P	90 - 110
Silver	94.5	95.0	P/P	90 - 110
Silver	94.7	94.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68815

Included Lab Sample IDs: 1786057, 1786058, 1786059, 1786060, 1786061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68850

Included Lab Sample IDs: 1786056

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	106	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A68903

Included Lab Sample IDs: 1786177, 1786178, 1786179, 1786180, 1786181, 1786182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	101	98.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68947

Included Lab Sample IDs: 1786057, 1786058, 1786059, 1786060, 1786061, 1786069

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.0	98.3	P/P	90 - 110
Kjeldahl Nitrogen	96.2	97.6	P/P	90 - 110
Kjeldahl Nitrogen	98.3	96.2	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				2.49	
	Turbidity				4.78	
EPA 200.7 Rev. 4.4	Calcium	104	105 104			0.690
	Iron	108	108 107 107			0.0269
	Magnesium	108	104 107 105			0.736
	Potassium	104	102 104 101			1.47
	Sodium	105	106 103			1.06
	Zinc	102	99.1 102 103			0.706
EPA 200.8 Rev. 5.4	Arsenic	96.3	97.8 100 102			1.38
	Cadmium	94.8	97.5 97.7 101			3.09
	Chromium	94.4	95.4 97.2 98.5			1.34
	Copper	93.6	91.8 92.5 94.4			1.91
	Lead	89.0	91.3 93.3 94.1			0.818
	Nickel	95.2	93.6 95.8 97.3			1.56
	Silver	93.4	95.3 95.7 96.9			1.32
EPA 300.0 Rev. 2.1	Chloride	101	99.9 101		0.0743	
	Chloride	101	99.8 98.7		0.0281	
	Sulfate	98.8	98.3 99.1		2.76	
	Sulfate	99.3	98.9 97.8		0.595	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	99.4 98.9			0.385
	Ammonia-N	99.1	100 98.2			1.88
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.6	97.8 94.9			1.68
	Kjeldahl Nitrogen	101				1.87
	Kjeldahl Nitrogen	95.7	88.9 84.8			2.43
EPA 353.2 Rev. 2.0	NO2NO3-N	95.5	94.8 93.2			1.43
	NO2NO3-N	96.5	90.5			0.0
EPA 365.1 Rev. 2.0	Total-P	95.0				0.0
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	101 103			1.20
SM 2120 B	Color (true)				1.06	
	Color (true)				0.448	
SM 2320 B-97	Total Alkalinity	103			0.391	
	Total Alkalinity	102			0.606	
SM 2540 C-97	TDS				1.33	
	TDS				2.64	
SM 4500 F-C-97	Fluoride	97.4				0.477
	Fluoride	97.8				0.0
SM 5310 B-00	Organic Carbon	93.5	92.6 94.3			1.77

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1786050, 1786051, 1786052, 1786053, 1786054, 1786055, 1786068
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1786177, 1786178, 1786179, 1786180, 1786181, 1786182, 1786183
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1786177, 1786178, 1786179, 1786180, 1786181, 1786182, 1786183
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1786050, 1786051, 1786052, 1786053, 1786054, 1786055
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1786050, 1786051, 1786052, 1786053, 1786054, 1786055, 1786068
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1786062, 1786063, 1786064, 1786065, 1786066, 1786067, 1786070
SM 2120 B / E31780	True Color measured at 450 nm	1786050, 1786051, 1786052, 1786053, 1786054, 1786055
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1786050, 1786051, 1786052, 1786053, 1786054, 1786055, 1786068
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1786050, 1786051, 1786052, 1786053, 1786054, 1786055
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1786050, 1786051, 1786052, 1786053, 1786054, 1786055, 1786068
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1786050, 1786051, 1786052, 1786053, 1786054, 1786055, 1786068
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069

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	04/05/2016			04/05/2016 18:39	Sima Feizi	1786050, 1786051, 1786052, 1786053, 1786054, 1786055, 1786068
EPA 200.7 Rev. 4.4	04/05/2016	04/07/2016	Elliott D. Healy	04/11/2016	Joshua Ayres	1786177, 1786178, 1786179, 1786180, 1786181, 1786182, 1786183
EPA 200.8 Rev. 5.4	04/05/2016	04/07/2016	Elliott D. Healy	04/11/2016	Charles J. Peterson	1786177, 1786178, 1786179, 1786180, 1786181, 1786182, 1786183
	04/05/2016	04/07/2016	Elliott D. Healy	04/14/2016	Charles J. Peterson	1786177, 1786178, 1786179, 1786180, 1786181, 1786182
EPA 300.0 Rev. 2.1	04/05/2016			04/07/2016	Julia Storbeck	1786050, 1786051, 1786052, 1786053, 1786054
	04/05/2016			04/08/2016	Julia Storbeck	1786055, 1786068
EPA 350.1 Rev. 2.0	04/05/2016			04/07/2016	Diana M. Turner	1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069
EPA 351.2 Rev. 2.0	04/05/2016	04/12/2016	Sofia Elnemr	04/13/2016	Christopher Armour	1786056
	04/05/2016	04/15/2016	Sofia Elnemr	04/18/2016	Virginia P. Brown	1786057, 1786058, 1786059, 1786060, 1786061, 1786069
EPA 353.2 Rev. 2.0	04/05/2016			04/08/2016	Diana M. Turner	1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069
EPA 365.1 Rev. 2.0	04/05/2016	04/11/2016	Christopher Armour	04/11/2016	Lipi Saha	1786056, 1786069
	04/05/2016	04/11/2016	Christopher Armour	04/12/2016	Lipi Saha	1786057, 1786058, 1786059, 1786060, 1786061
EPA 365.1 Rev. 2.0 dissolved	04/05/2016			04/05/2016 14:41	Ping Hua	1786062
	04/05/2016			04/05/2016 15:10	Ping Hua	1786063
	04/05/2016			04/05/2016 15:11	Ping Hua	1786064
	04/05/2016			04/05/2016 15:12	Ping Hua	1786065
	04/05/2016			04/05/2016 15:13	Ping Hua	1786066
	04/05/2016			04/05/2016 15:18	Ping Hua	1786067
	04/05/2016			04/05/2016 15:19	Ping Hua	1786070
SM 2120 B	04/05/2016			04/05/2016 13:25	Blanca Fach	1786050
	04/05/2016			04/05/2016 13:35	Blanca Fach	1786051
	04/05/2016			04/05/2016 13:36	Blanca Fach	1786052
	04/05/2016			04/05/2016 13:37	Blanca Fach	1786053
	04/05/2016			04/05/2016 13:38	Blanca Fach	1786054, 1786055
SM 2320 B-97	04/05/2016			04/07/2016	Dale L. Simmons	1786050, 1786051, 1786052
	04/05/2016			04/08/2016	Dale L. Simmons	1786053, 1786054, 1786055, 1786068
SM 2540 C-97	04/05/2016			04/07/2016	Yijie Li	1786050, 1786051, 1786052, 1786053, 1786054, 1786055
SM 2540 D-97	04/05/2016			04/07/2016	Yijie Li	1786050, 1786051, 1786052, 1786053, 1786054, 1786055, 1786068
SM 4500 F-C-97	04/05/2016			04/07/2016	Dale L. Simmons	1786050, 1786051, 1786052
	04/05/2016			04/08/2016	Dale L. Simmons	1786053, 1786054, 1786055, 1786068
SM 5310 B-00	04/05/2016			04/07/2016	Sofia Elnemr	1786056, 1786057, 1786058, 1786059, 1786060, 1786061, 1786069