Chemical Analysis Report

SE-DIST-2016-05-24-01

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

Event Description: **SMP-Biscayne bay Run**
Request ID: **RQ-2016-05-23-23**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

For additional information please contact
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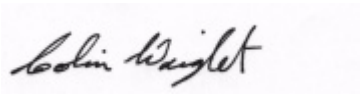
Certified by: Colin Wright, Environmental Administrator

Date Certified: 20-JUN-2016 12:14



NON-CONFORMANCE REPORT INCLUDED

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: Biscayne Bay (BB-32 Miami Dade) **Collection Date/Time: 05/23/2016 13:15**

Field ID: G4SEBB32 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801375	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P305004	
	SM 2320 B-97	Total Alkalinity	119		mg CaCO3/L	P305295	
	SM 2540 D-97	TSS	3	U	mg/L	P305166	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P305298	
1801380	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P305496	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P305236	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P305354	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P305615	
	SM 5310 B-00	Organic Carbon	3.4		mg C/L	P305728	
1801385	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P304924	

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: ENRG7-8090 **Collection Date/Time: 05/23/2016 13:40**

Field ID: G5SE0033 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801376	EPA 180.1 Rev. 2.0	Turbidity	0.35		NTU	P305004	
	SM 2320 B-97	Total Alkalinity	112		mg CaCO3/L	P305295	
	SM 2540 D-97	TSS	3	U	mg/L	P305166	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P305298	
1801381	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P305496	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	U	mg N/L	P305236	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305354	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P305615	
	SM 5310 B-00	Organic Carbon	2.0	I	mg C/L	P305495	
1801386	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P304924	

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: ENRG7-8090-DUP **Collection Date/Time: 05/23/2016 13:45**

Field ID: G5SE0033-Duplicate Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801377	EPA 180.1 Rev. 2.0	Turbidity	0.35		NTU	P305004	
	SM 2320 B-97	Total Alkalinity	112		mg CaCO3/L	P305295	
	SM 2540 D-97	TSS	3	U	mg/L	P305166	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P305298	
1801382	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P305496	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	U	mg N/L	P305236	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305354	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P306153	
	SM 5310 B-00	Organic Carbon	1.9	I	mg C/L	P305495	
1801387	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P304924	

Field ID: G5SE0033-Duplicate Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes

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: ENRG7-Atlantic Ocean **Collection Date/Time: 05/23/2016 17:15**

Field ID: G5SE0034 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801378	EPA 180.1 Rev. 2.0	Turbidity	0.40		NTU	P305004	
	SM 2320 B-97	Total Alkalinity	116		mg CaCO3/L	P305295	
	SM 2540 D-97	TSS	3	U	mg/L	P305166	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P305298	
1801383	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P305496	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P305236	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305354	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P305615	
	SM 5310 B-00	Organic Carbon	1.6	I	mg C/L	P305495	
1801388	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P304924	

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: ENRG7-Anglefish Creek **Collection Date/Time: 05/23/2016 17:35**

Field ID: 28040375 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801379	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P305004	
	SM 2320 B-97	Total Alkalinity	115		mg CaCO3/L	P305295	
	SM 2540 D-97	TSS	3	U	mg/L	P305166	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P305298	
1801384	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P305496	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P305314	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P305354	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P305615	
	SM 5310 B-00	Organic Carbon	1.2		mg C/L	P305495	
1801389	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P304924	

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: Florida City Canal @ SW 117th St Blank **Collection Date/Time: 05/23/2016 16:00**

Field ID: Field Blank Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801390	EPA 180.1 Rev. 2.0	Turbidity	0.20		NTU	P305004	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P305250	
		Sulfate	0.20	U	mg SO4/L	P305252	
	SM 2120 B	Color (true)	2.5	U	PCU	P304933	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P305450	
	SM 2540 C-97	TDS	15	U	mg/L	P305268	

Field ID: Field Blank Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801390	SM 2540 D-97	TSS	2	U	mg/L	P305159	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P305457	
1801391	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P305310	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P305312	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P304993	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P305614	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P305515	
1801392	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P304924	
1801398	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P304986	
		Iron	30	U	ug/L	P304986	
		Magnesium	0.040	U	mg/L	P304986	
		Potassium	0.30	U	mg/L	P304986	
		Sodium	0.50	U	mg/L	P304986	
		Zinc	5.0	U	ug/L	P304986	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P304986	
		Cadmium	0.020	U	ug/L	P304986	
		Chromium	0.050	U	ug/L	P304986	
		Copper	0.10	U	ug/L	P304986	
		Lead	0.050	U	ug/L	P304986	
		Nickel	0.050	U	ug/L	P304986	
		Silver	0.0050	U	ug/L	P304986	

Ref. Method and Comment:
EPA 180.1 Rev. 2.0: The result was confirmed on 05/25/2016.
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: The magnesium, potassium, and sodium matrix spike recoveries are unavailable due to high analyte concentration in the QC sample.

Sample Location: Biscayne Bay (BB-32 MiamiDade) **Collection Date/Time: 05/23/2016 13:15**

Field ID: G4SEBB32 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801495	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P304986	
		Zinc	20	U	ug/L	P304986	
	EPA 200.8 Rev. 5.4	Arsenic	1.94		ug/L	P304986	
		Chromium	0.15	U	ug/L	P304986	
		Copper	0.36	I	ug/L	P304986	
		Lead	0.15	U	ug/L	P304986	
		Silver	0.015	U	ug/L	P304986	

Sample Location: Florida City Canal (FL-09) **Collection Date/Time: 05/23/2016 15:30**

Field ID: G4SEFC09 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801642	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P305036	
	EPA 300.0 Rev. 2.1	Chloride	44		mg Cl/L	P305471	
		Sulfate	22		mg SO4/L	P305474	
	SM 2120 B	Color (true)	2.5	U	PCU	P305046	

Field ID: G4SEFC09 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801642	SM 2320 B-97	Total Alkalinity	202		mg CaCO3/L	P305451	
	SM 2540 C-97	TDS	318		mg/L	P305629	
	SM 2540 D-97	TSS	2	I	mg/L	P305820	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P305458	
1801645	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P305500	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P305316	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.66		mg N/L	P305107	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P305617	
	SM 5310 B-00	Organic Carbon	1.8		mg C/L	P305727	
1801648	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305024	
1801654	EPA 200.7 Rev. 4.4	Calcium	80.1		mg/L	P305121	
		Iron	30	U	ug/L	P305121	
		Magnesium	4.83		mg/L	P305121	
		Potassium	6.9		mg/L	P305121	
		Sodium	28.3		mg/L	P305121	
		Zinc	5.0	U	ug/L	P305121	
	EPA 200.8 Rev. 5.4	Arsenic	0.57		ug/L	P305121	
		Cadmium	0.020	U	ug/L	P305121	
		Chromium	0.050	U	ug/L	P305121	
		Copper	0.74		ug/L	P305121	
		Lead	0.050	U	ug/L	P305121	
		Nickel	0.73		ug/L	P305121	
		Silver	0.0050	U	ug/L	P305121	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low 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: Florida City Canal @ SW 117th St **Collection Date/Time: 05/23/2016 15:45**

Field ID: 28040076 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801643	EPA 180.1 Rev. 2.0	Turbidity	0.35		NTU	P305036	
	EPA 300.0 Rev. 2.1	Chloride	45		mg Cl/L	P305471	
		Sulfate	21		mg SO4/L	P305474	
	SM 2120 B	Color (true)	5.1	I	PCU	P305046	
	SM 2320 B-97	Total Alkalinity	204		mg CaCO3/L	P305451	
	SM 2540 C-97	TDS	323		mg/L	P305629	
	SM 2540 D-97	TSS	2	I	mg/L	P305820	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P305458	
1801646	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P305500	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P305316	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.59		mg N/L	P305107	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P305618	
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P305727	
1801649	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305024	

Field ID: 28040076 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801655	EPA 200.7 Rev. 4.4	Calcium	82.2		mg/L	P305121	
		Iron	30	U	ug/L	P305121	
		Magnesium	4.94		mg/L	P305121	
		Potassium	7.0		mg/L	P305121	
		Sodium	29.4		mg/L	P305121	
		Zinc	5.0	U	ug/L	P305121	
	EPA 200.8 Rev. 5.4	Arsenic	0.82		ug/L	P305121	
		Cadmium	0.020	U	ug/L	P305121	
		Chromium	0.050	U	ug/L	P305121	
		Copper	0.82		ug/L	P305813	
		Lead	0.055	I	ug/L	P305121	
		Nickel	0.74		ug/L	P305813	
		Silver	0.0050	U	ug/L	P305121	

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: Florida City Canal @ SW 117th St dup **Collection Date/Time: 05/23/2016 15:50**

Field ID: 28040076 dup Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801644	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P305036	
	EPA 300.0 Rev. 2.1	Chloride	46		mg Cl/L	P305471	
		Sulfate	21		mg SO4/L	P305474	
	SM 2120 B	Color (true)	3.0	I	PCU	P305046	
	SM 2320 B-97	Total Alkalinity	203		mg CaCO3/L	P305451	
	SM 2540 C-97	TDS	316		mg/L	P305629	
	SM 2540 D-97	TSS	3	I	mg/L	P305820	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P305458	
1801647	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P305500	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P305317	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.59		mg N/L	P305107	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P305618	
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P305727	
1801650	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305024	
1801656	EPA 200.7 Rev. 4.4	Calcium	81.5		mg/L	P305121	
		Iron	30	U	ug/L	P305121	
		Magnesium	4.86		mg/L	P305121	
		Potassium	6.7		mg/L	P305121	
		Sodium	28.9		mg/L	P305121	
		Zinc	5.0	U	ug/L	P305121	
	EPA 200.8 Rev. 5.4	Arsenic	0.78		ug/L	P305121	
		Cadmium	0.020	U	ug/L	P305121	
		Chromium	0.050	U	ug/L	P305121	
		Copper	0.70		ug/L	P305121	
		Lead	0.050	U	ug/L	P305121	

Field ID: 28040076 dup Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801656	EPA 200.8 Rev. 5.4	Nickel	0.72		ug/L	P305121	
		Silver	0.0050	U	ug/L	P305121	

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

Non-Conformance Report

NCR ID: 5881

Event(s)	Job(s)	Sample(s)	Test(s)
SE-DIST-2016-05-24-01			

NCR Type: SHIPPING/RECEIVING **NCR Category: Samples arrived late**

Observation: FedEx code:8099 4719 4649
Samples arrived 1 day late by FedEx.
1) Customer shipped 3 coolers on 05/23/2016 and lab received 2 coolers on 05/24/2016.
Samples received (G4SEBB32, G5SE0033, G5SE0033-DUP, 28040375 and 28040076 Blank)
2) Missing cooler arrived on 05/25/2016 @ 10:00 with temp:4.1c.

Resolution: All samples were logged in within holding time.

Authorised by/Date: Kathryn Holland 6/6/2016

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Tim Fitzpatrick (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305004

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305036

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304986

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305121

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: P304986

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 200.8 Rev. 5.4
Batch ID: P305121

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 200.8 Rev. 5.4
Batch ID: P305813

Component	Result	Code	Units
Copper	0.10	U	ug/L
Nickel	0.050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305250

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305252

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: P305471

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305474

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305310

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305496

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305500

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305236

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305312

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305314

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305316

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305317

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304993

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305107

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305354

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305614

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305615

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305617

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305618

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306153

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304924

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305024

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

Reference Method: SM 2120 B
Batch ID: P304933

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P305046

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P305295

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

Reference Method: SM 2320 B-97
Batch ID: P305450

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

Reference Method: SM 2320 B-97
Batch ID: P305451

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

Reference Method: SM 2540 C-97
Batch ID: P305268

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P305629

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P305159

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305166

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305820

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P305298

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P305457

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P305458

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P305495

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P305515

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P305727

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P305728

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: P304986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	104		P	85 - 115
Magnesium	99.1		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	103		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	105		P	85 - 115
Sodium	94.9		P	85 - 115
Zinc	97.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P304986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	96.5		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	100		P	85 - 115
Copper	94.3		P	85 - 115
Lead	100		P	85 - 115
Nickel	96.5		P	85 - 115
Silver	94.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P305121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	96.4		P	85 - 115
Cadmium	97.9		P	85 - 115
Chromium	97.7		P	85 - 115
Copper	96.0		P	85 - 115
Lead	96.8		P	85 - 115
Nickel	97.0		P	85 - 115
Silver	93.9		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P305813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	98.6		P	85 - 115
Nickel	100		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305250

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305252

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305471

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305474

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305310

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305496

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305500

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305236

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305312

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305314

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305316

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305317

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304993

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305107

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305354

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305615

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305617

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305618

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306153

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304924

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305024

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

Reference Method: SM 2320 B-97
Batch ID: P305295

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

Reference Method: SM 2320 B-97
Batch ID: P305450

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P305451

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

Reference Method: SM 4500 F-C-97
Batch ID: P305298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P305457

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

Reference Method: SM 4500 F-C-97
Batch ID: P305458

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P305495

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

Reference Method: SM 5310 B-00
Batch ID: P305515

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

Reference Method: SM 5310 B-00
Batch ID: P305727

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P305728

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.3		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801523	Calcium	92.3		P	70 - 130
1801523	Iron	102	101	P/P	70 - 130
1801523	Zinc	103	104	P/P	70 - 130

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801459	Calcium	101		P	80 - 120
1801459	Iron	99.3		P	80 - 120
1801459	Magnesium	102		P	80 - 120
1801459	Potassium	106		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801459	Sodium	103		P	80 - 120
1801459	Zinc	94.6		P	80 - 120
1801542	Calcium	97.5		P	80 - 120
1801542	Iron	102	103	P/P	80 - 120
1801542	Magnesium	98.1		P	80 - 120
1801542	Potassium	105	105	P/P	80 - 120
1801542	Sodium	97.7	99.5	P/P	80 - 120
1801542	Zinc	94.9	94.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P304986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801523	Arsenic	100	98.4	P/P	80 - 120
1801523	Cadmium	100	96.3	P/P	80 - 120
1801523	Chromium	90.5	88.3	P/P	80 - 120
1801523	Copper	89.9	88.8	P/P	80 - 120
1801523	Lead	105	104	P/P	80 - 120
1801523	Nickel	94.9	93.7	P/P	80 - 120
1801523	Silver	89.3	88.4	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P305121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801459	Arsenic	100		P	80 - 120
1801459	Cadmium	98.3		P	80 - 120
1801459	Chromium	97.4		P	80 - 120
1801459	Copper	95.0		P	80 - 120
1801459	Lead	98.1		P	80 - 120
1801459	Nickel	97.2		P	80 - 120
1801459	Silver	95.6		P	80 - 120
1801542	Arsenic	96.2	96.2	P/P	80 - 120
1801542	Cadmium	97.5	98.7	P/P	80 - 120
1801542	Chromium	96.7	96.9	P/P	80 - 120
1801542	Copper	92.4	91.8	P/P	80 - 120
1801542	Lead	95.1	95.4	P/P	80 - 120
1801542	Nickel	95.4	94.0	P/P	80 - 120
1801542	Silver	93.0	93.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P305813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806283	Copper	95.2	94.2	P/P	80 - 120
1806283	Nickel	95.5	94.7	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801212	Chloride	97.1		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801213	Chloride	97.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801212	Sulfate	96.8		P	90 - 110
1801213	Sulfate	97.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801568	Chloride	101		P	90 - 110
1801707	Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801568	Sulfate	100		P	90 - 110
1801707	Sulfate	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801451	Ammonia-N	99.2	97.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801380	Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305500

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801623	Ammonia-N	97.8	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800948	Kjeldahl Nitrogen	93.3	93.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801345	Kjeldahl Nitrogen	100	97.6	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801505	Kjeldahl Nitrogen	105	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801645	Kjeldahl Nitrogen	98.7	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801670	Kjeldahl Nitrogen	106	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801344	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801710	NO2NO3-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801380	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801345	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801382	Total-P	95.0	90.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305618

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801710	Total-P	102	98.9	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806503	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801386	O-Phosphate-P	98.7	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801648	O-Phosphate-P	98.0	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P305298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801498	Fluoride	95.9	95.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P305457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801533	Fluoride	98.6	98.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P305458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801534	Fluoride	98.9	97.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P305495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801381	Organic Carbon	96.9	99.3	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P305515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801344	Organic Carbon	94.8	95.3	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P305727

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801570	Organic Carbon	99.2	97.9	P/P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P305728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1799272	Organic Carbon	94.2	94.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801406	Turbidity	3.16	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801667	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801523	Calcium	2.86	Spike	P	0 - 20
1801523	Iron	0.746	Spike	P	0 - 20
1801523	Magnesium	3.12	Spike	P	0 - 20
1801523	Potassium	3.58	Spike	P	0 - 20
1801523	Sodium	3.43	Spike	P	0 - 20
1801523	Zinc	0.901	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801542	Calcium	1.24	Spike	P	0 - 20
1801542	Iron	0.644	Spike	P	0 - 20
1801542	Magnesium	0.619	Spike	P	0 - 20
1801542	Potassium	0.0474	Spike	P	0 - 20
1801542	Sodium	1.02	Spike	P	0 - 20
1801542	Zinc	0.0362	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P304986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801523	Arsenic	1.79	Spike	P	0 - 20
1801523	Cadmium	3.83	Spike	P	0 - 20
1801523	Chromium	2.45	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P304986

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801523	Copper	1.22	Spike	P	0 - 20
1801523	Lead	1.53	Spike	P	0 - 20
1801523	Nickel	1.21	Spike	P	0 - 20
1801523	Silver	1.09	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P305121

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801542	Arsenic	0.0280	Spike	P	0 - 20
1801542	Cadmium	1.24	Spike	P	0 - 20
1801542	Chromium	0.132	Spike	P	0 - 20
1801542	Copper	0.565	Spike	P	0 - 20
1801542	Lead	0.330	Spike	P	0 - 20
1801542	Nickel	1.43	Spike	P	0 - 20
1801542	Silver	0.733	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P305813

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806283	Copper	1.08	Spike	P	0 - 20
1806283	Nickel	0.881	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305250

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801213	Chloride	0.0305	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305252

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801213	Sulfate	0.427	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305471

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801707	Chloride	0.0724	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801707	Sulfate	0.275	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801451	Ammonia-N	0.814	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801380	Ammonia-N	1.27	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801623	Ammonia-N	4.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800948	Kjeldahl Nitrogen	0.0883	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801345	Kjeldahl Nitrogen	1.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801505	Kjeldahl Nitrogen	1.82	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801645	Kjeldahl Nitrogen	2.93	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801670	Kjeldahl Nitrogen	4.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801344	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801710	NO2NO3-N	1.02	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801380	NO2NO3-N	0.893	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801345	Total-P	0.189	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801382	Total-P	4.74	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801615	Total-P	3.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801710	Total-P	2.54	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806503	Total-P	0.946	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801386	O-Phosphate-P	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801648	O-Phosphate-P	1.12	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P304933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801342	Color (true)	7.70	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801567	Color (true)	0.0821	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P305295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801498	Total Alkalinity	0.0258	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P305450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801533	Total Alkalinity	0.678	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P305451

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801534	Total Alkalinity	0.506	Sample	P	0 - 4.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P305268

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800794	TDS	1.03	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P305629

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801752	TDS	6.26	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P305298

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801498	Fluoride	0.483	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P305457

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801533	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P305458

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801534	Fluoride	0.959	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P305495

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801381	Organic Carbon	2.28	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P305515

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801344	Organic Carbon	0.442	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P305727

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801570	Organic Carbon	1.03	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P305728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799272	Organic Carbon	0.0451	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: A69666
Included Lab Sample IDs: 1801385, 1801386, 1801387, 1801388, 1801389, 1801392

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

Reference Method: SM 2120 B
Run ID: A69671
Included Lab Sample IDs: 1801390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.4	99.6	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A69676
Included Lab Sample IDs: 1801390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	97.3	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69684
Included Lab Sample IDs: 1801391

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A69691
Included Lab Sample IDs: 1801375, 1801376, 1801377, 1801378, 1801379, 1801390

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A69693
Included Lab Sample IDs: 1801648, 1801649, 1801650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	102	101	P/P	90 - 110
O-Phosphate-P	99.7	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A69695
Included Lab Sample IDs: 1801642, 1801643, 1801644

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	101	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A69698
Included Lab Sample IDs: 1801642, 1801643, 1801644

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.8	96.1	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69717
Included Lab Sample IDs: 1801645, 1801646, 1801647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A69726
Included Lab Sample IDs: 1801398, 1801495

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	96.2	96.2	P/P	90 - 110
Iron	98.1	98.2	P/P	90 - 110
Iron	98.7	99.5	P/P	90 - 110
Magnesium	95.5	95.4	P/P	90 - 110
Potassium	98.0	97.7	P/P	90 - 110
Sodium	98.0	99.2	P/P	90 - 110
Zinc	100	99.5	P/P	90 - 110
Zinc	102	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A69752
Included Lab Sample IDs: 1801398, 1801495

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.0	96.3	P/P	90 - 110
Arsenic	97.9	99.1	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	100	99.3	P/P	90 - 110
Chromium	99.4	97.4	P/P	90 - 110
Copper	95.0	94.7	P/P	90 - 110
Copper	96.2	98.0	P/P	90 - 110
Lead	97.6	96.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A69752
Included Lab Sample IDs: 1801398, 1801495

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	97.6	97.3	P/P	90 - 110
Nickel	96.4	95.8	P/P	90 - 110
Silver	95.8	96.0	P/P	90 - 110
Silver	96.6	96.3	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A69766
Included Lab Sample IDs: 1801375, 1801376, 1801377, 1801378, 1801379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A69766
Included Lab Sample IDs: 1801375, 1801376, 1801377, 1801378, 1801379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	P/P	90 - 110
Fluoride	100	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A69768
Included Lab Sample IDs: 1801391

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A69771
Included Lab Sample IDs: 1801654, 1801655, 1801656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.6	98.4	P/P	90 - 110
Iron	97.8	99.0	P/P	90 - 110
Magnesium	97.2	98.7	P/P	90 - 110
Potassium	98.3	98.2	P/P	90 - 110
Sodium	99.2	99.3	P/P	90 - 110
Zinc	96.8	98.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69782
Included Lab Sample IDs: 1801380, 1801381, 1801382, 1801383, 1801384

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A69799
Included Lab Sample IDs: 1801654, 1801655, 1801656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A69799
Included Lab Sample IDs: 1801654, 1801655, 1801656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.3	97.0	P/P	90 - 110
Cadmium	98.7	96.5	P/P	90 - 110
Chromium	98.3	98.4	P/P	90 - 110
Copper	97.0	95.4	P/P	90 - 110
Lead	95.4	93.5	P/P	90 - 110
Nickel	96.9	95.4	P/P	90 - 110
Silver	96.1	94.3	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A69805
Included Lab Sample IDs: 1801390, 1801642, 1801643, 1801644

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.6	P/P	90 - 110
Total Alkalinity	99.6	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A69805
Included Lab Sample IDs: 1801390, 1801642, 1801643, 1801644

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110
Fluoride	98.5	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A69814
Included Lab Sample IDs: 1801642, 1801643, 1801644

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Sulfate	99.8	96.7	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A69819
Included Lab Sample IDs: 1801381, 1801382, 1801383, 1801384

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	91.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A69820
Included Lab Sample IDs: 1801380, 1801381, 1801382, 1801383, 1801384, 1801645, 1801646, 1801647

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A69823
Included Lab Sample IDs: 1801380, 1801381, 1801382, 1801383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A69824
Included Lab Sample IDs: 1801384, 1801391, 1801645, 1801646, 1801647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	102	P/P	90 - 110
Kjeldahl Nitrogen	107	101	P/P	90 - 110
Kjeldahl Nitrogen	94.8	104	P/P	90 - 110
Kjeldahl Nitrogen	97.4	103	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A69826
Included Lab Sample IDs: 1801391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	98.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A69879
Included Lab Sample IDs: 1801654, 1801656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	96.2	96.1	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A69893
Included Lab Sample IDs: 1801380, 1801645, 1801646, 1801647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	94.2	P/P	90 - 110
Organic Carbon	97.8	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A69920
Included Lab Sample IDs: 1801380, 1801381, 1801383, 1801384, 1801391, 1801645, 1801646, 1801647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110
Total-P	99.5	99.8	P/P	90 - 110
Total-P	99.8	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A69966
Included Lab Sample IDs: 1801655

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A70061
Included Lab Sample IDs: 1801382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	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		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.16	
	Turbidity						0.0	
EPA 200.7 Rev. 4.4	Calcium	100	92.3					2.86
	Calcium	101	101	97.5				1.24
	Iron	104	102	101				0.746
	Iron	103	99.3	102	103			0.644
	Magnesium	99.1						3.12
	Magnesium	101	102	98.1				0.619
	Potassium	101						3.58
	Potassium	105	106	105	105			0.0474
	Sodium	101						3.43
	Sodium	94.9	103	97.7	99.5			1.02
	Zinc	101	103	104				0.901
	Zinc	97.9	94.6	94.9	94.9			0.0362
EPA 200.8 Rev. 5.4	Arsenic	96.5	100	98.4				1.79
	Arsenic	96.4	100	96.2	96.2			0.0280
	Cadmium	101	100	96.3				3.83
	Cadmium	97.9	98.3	97.5	98.7			1.24
	Chromium	100	90.5	88.3				2.45
	Chromium	97.7	97.4	96.7	96.9			0.132
	Copper	94.3	89.9	88.8				1.22
	Copper	96.0	95.0	92.4	91.8			0.565
	Copper	98.6	95.2	94.2				1.08
	Lead	100	105	104				1.53
	Lead	96.8	98.1	95.1	95.4			0.330
	Nickel	96.5	94.9	93.7				1.21
	Nickel	97.0	97.2	95.4	94.0			1.43
	Nickel	100	95.5	94.7				0.881
	Silver	94.1	89.3	88.4				1.09
	Silver	93.9	95.6	93.0	93.7			0.733
EPA 300.0 Rev. 2.1	Chloride	99.5	97.1	97.1			0.0305	
	Chloride	100	98.4	101			0.0724	
	Sulfate	99.0	97.0	96.8			0.427	
	Sulfate	98.9	100	97.4			0.275	
EPA 350.1 Rev. 2.0	Ammonia-N	100	99.2	97.9				0.814
	Ammonia-N	99.9	103	105				1.27
	Ammonia-N	101	97.8	102				4.37
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	93.3	93.4				0.0883
	Kjeldahl Nitrogen	107	100	97.6				1.97

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	105	102			1.82
	Kjeldahl Nitrogen	100	98.7	102			2.93
	Kjeldahl Nitrogen	106	106	97.2			4.16
EPA 353.2 Rev. 2.0	NO2NO3-N	103	102	102			0.491
	NO2NO3-N	100	98.0	99.0			1.02
	NO2NO3-N	100	102	103			0.893
EPA 365.1 Rev. 2.0	Total-P	108	101	101			0.189
	Total-P	97.6	95.0	90.6			4.74
	Total-P	107					3.32
	Total-P	102	102	98.9			2.54
	Total-P	99.3	102	101			0.946
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.7	99.7			1.01
	O-Phosphate-P	102	98.0	99.1			1.12
SM 2120 B	Color (true)					7.70	
	Color (true)					0.0821	
SM 2320 B-97	Total Alkalinity	102				0.0258	
	Total Alkalinity	101				0.678	
	Total Alkalinity	102				0.506	
SM 2540 C-97	TDS					1.03	
	TDS					6.26	
SM 4500 F-C-97	Fluoride	98.5	95.9	95.2			0.483
	Fluoride	97.8	98.6	98.6			0.0
	Fluoride	98.3	98.9	97.6			0.959
SM 5310 B-00	Organic Carbon	101	96.9	99.3			2.28
	Organic Carbon	100	94.8	95.3			0.442
	Organic Carbon	99.6	99.2	97.9			1.03
	Organic Carbon	99.3	94.2	94.2			0.0451

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1801375, 1801376, 1801377, 1801378, 1801379, 1801390, 1801642, 1801643, 1801644
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1801398, 1801495, 1801654, 1801655, 1801656
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1801398, 1801495, 1801654, 1801655, 1801656
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1801390, 1801642, 1801643, 1801644
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1801390, 1801642, 1801643, 1801644
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1801380, 1801381, 1801382, 1801383, 1801384, 1801391, 1801645, 1801646, 1801647
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1801380, 1801381, 1801382, 1801383, 1801384, 1801391, 1801645, 1801646, 1801647
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1801380, 1801381, 1801382, 1801383, 1801384, 1801391, 1801645, 1801646, 1801647
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1801380, 1801381, 1801382, 1801383, 1801384, 1801391, 1801645, 1801646, 1801647

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1801385, 1801386, 1801387, 1801388, 1801389, 1801392, 1801648, 1801649, 1801650
SM 2120 B / E31780	True Color measured at 450 nm	1801390, 1801642, 1801643, 1801644
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1801375, 1801376, 1801377, 1801378, 1801379, 1801390, 1801642, 1801643, 1801644
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1801390, 1801642, 1801643, 1801644
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1801375, 1801376, 1801377, 1801378, 1801379, 1801390, 1801642, 1801643, 1801644
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1801375, 1801376, 1801377, 1801378, 1801379, 1801390, 1801642, 1801643, 1801644
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1801380, 1801381, 1801382, 1801383, 1801384, 1801391, 1801645, 1801646, 1801647

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	05/24/2016			05/25/2016 11:39	Rochelle Y Jackson	1801375, 1801376, 1801377, 1801378, 1801379, 1801390
	05/25/2016			05/25/2016 13:58	Sima Feizi	1801642
	05/25/2016			05/25/2016 13:59	Sima Feizi	1801643
	05/25/2016			05/25/2016 14:00	Sima Feizi	1801644
EPA 200.7 Rev. 4.4	05/24/2016	05/25/2016	Elliott D. Healy	05/26/2016	Joshua Ayres	1801398, 1801495
	05/25/2016	05/26/2016	Elliott D. Healy	05/31/2016	Joshua Ayres	1801654, 1801655, 1801656
EPA 200.8 Rev. 5.4	05/24/2016	05/25/2016	Elliott D. Healy	05/27/2016	Charles J. Peterson	1801398
	05/24/2016	05/25/2016	Elliott D. Healy	05/28/2016	Charles J. Peterson	1801495
	05/25/2016	05/26/2016	Elliott D. Healy	06/01/2016	Charles J. Peterson	1801654, 1801655, 1801656
	05/25/2016	05/26/2016	Elliott D. Healy	06/03/2016	Charles J. Peterson	1801654, 1801656
	05/25/2016	06/08/2016	Elliott D. Healy	06/09/2016	Charles J. Peterson	1801655
EPA 300.0 Rev. 2.1	05/24/2016			05/28/2016	Ping Hua	1801390
	05/25/2016			06/01/2016	Elisa J Lutz	1801642, 1801643, 1801644
EPA 350.1 Rev. 2.0	05/24/2016			05/31/2016	Diana M. Turner	1801391
	05/24/2016			06/02/2016	Diana M. Turner	1801380, 1801381, 1801382, 1801383, 1801384
	05/25/2016			06/02/2016	Diana M. Turner	1801645, 1801646, 1801647
EPA 351.2 Rev. 2.0	05/24/2016	05/31/2016	Sofia Elnemr	06/02/2016	Christopher Armour	1801380, 1801381, 1801382, 1801383
	05/24/2016	06/01/2016	Sofia Elnemr	06/02/2016	Christopher Armour	1801384, 1801391
	05/25/2016	06/01/2016	Sofia Elnemr	06/02/2016	Christopher Armour	1801645, 1801646, 1801647
EPA 353.2 Rev. 2.0	05/24/2016			05/25/2016	Peter D. Kaus	1801391
	05/24/2016			06/01/2016	Peter D. Kaus	1801380, 1801381, 1801382, 1801383, 1801384
	05/25/2016			05/26/2016	Peter D. Kaus	1801645, 1801646, 1801647
EPA 365.1 Rev. 2.0	05/24/2016	06/06/2016	Vijayalakshmi Reddy	06/08/2016	Virginia P. Brown	1801380, 1801381, 1801383, 1801384, 1801391
	05/24/2016	06/14/2016	Vijayalakshmi Reddy	06/15/2016	Lipi Saha	1801382
	05/25/2016	06/06/2016	Vijayalakshmi Reddy	06/08/2016	Virginia P. Brown	1801645, 1801646, 1801647
EPA 365.1 Rev. 2.0 dissolved	05/24/2016			05/24/2016 14:49	Julia Storbeck	1801386
	05/24/2016			05/24/2016 15:02	Julia Storbeck	1801392
	05/24/2016			05/24/2016 15:40	Julia Storbeck	1801385
	05/24/2016			05/24/2016 15:41	Julia Storbeck	1801387, 1801388
	05/24/2016			05/24/2016 15:42	Julia Storbeck	1801389
	05/25/2016			05/25/2016 13:35	Julia Storbeck	1801648
	05/25/2016			05/25/2016 13:46	Julia Storbeck	1801649
	05/25/2016			05/25/2016 13:47	Julia Storbeck	1801650
SM 2120 B	05/24/2016			05/24/2016 16:54	Chrisoulla Rakowski	1801390
	05/25/2016			05/25/2016 14:29	Chrisoulla Rakowski	1801642, 1801643
	05/25/2016			05/25/2016 14:30	Chrisoulla Rakowski	1801644

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	05/24/2016			05/28/2016	Dale L. Simmons	1801375, 1801376, 1801377, 1801378, 1801379
	05/24/2016			06/01/2016	Dale L. Simmons	1801390
	05/25/2016			06/01/2016	Dale L. Simmons	1801642, 1801643, 1801644
SM 2540 C-97	05/24/2016			05/25/2016	Yijie Li	1801390
	05/25/2016			05/27/2016	Yijie Li	1801642, 1801643, 1801644
SM 2540 D-97	05/24/2016			05/25/2016	Yijie Li	1801375, 1801376, 1801377, 1801378, 1801379, 1801390
	05/25/2016			05/27/2016	Yijie Li	1801642, 1801643, 1801644
SM 4500 F-C-97	05/24/2016			05/28/2016	Dale L. Simmons	1801375, 1801376, 1801377, 1801378, 1801379
	05/24/2016			06/01/2016	Dale L. Simmons	1801390
	05/25/2016			06/01/2016	Dale L. Simmons	1801642, 1801643, 1801644
SM 5310 B-00	05/24/2016			06/02/2016	Diana M. Turner	1801381, 1801382, 1801383, 1801384
	05/24/2016			06/03/2016	Diana M. Turner	1801391
	05/24/2016			06/07/2016	Diana M. Turner	1801380
	05/25/2016			06/07/2016	Diana M. Turner	1801645, 1801646, 1801647