

Chemical Analysis Report

SE-DIST-2017-04-27-03

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

Event Description: **SMP-Keys Run**
Request ID: **RQ-2017-04-24-29**
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
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 26-MAY-2017 16:42

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular background.

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: Barnes Sound

Collection Date/Time: 04/26/2017 12:40

Field ID: G5SE0053

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893710	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P324195	
	SM 2320 B-97	Total Alkalinity	138		mg CaCO3/L	P324858	
	SM 2540 D-97	TSS	3	U	mg/L	P324594	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P324861	
1893715	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P324260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P324290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324320	
	EPA 365.1 Rev. 2.0	Total-P	0.006	I	mg P/L	P324346	
	SM 5310 B-00	Organic Carbon	3.1		mg C/L	P324284	
1893720	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324186	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Route 1 Key A (Pirate Hat Marina)

Collection Date/Time: 04/26/2017 13:00

Field ID: G4SE0093

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893725	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P324195	
	SM 2320 B-97	Total Alkalinity	154		mg CaCO3/L	P324858	
	SM 2540 D-97	TSS	4	I	mg/L	P324594	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P324861	
1893726	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P324263	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P324290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324320	
	EPA 365.1 Rev. 2.0	Total-P	0.008	I	mg P/L	P324458	
	SM 5310 B-00	Organic Carbon	5.9		mg C/L	P324284	
1893727	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324188	
1893751	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P324521	
	EPA 200.8 Rev. 5.4	Arsenic	1.6		ug/L	P324521	
		Cadmium	0.10	U	ug/L	P324521	
		Chromium	1.6	U	ug/L	P324521	
		Copper	0.80	U	ug/L	P324521	
		Lead	0.30	U	ug/L	P324521	
		Nickel	0.80	U	ug/L	P324521	
		Silver	0.050	U	ug/L	P324521	
		Zinc	5.2	I	ug/L	P324521	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Pirate Hat Marina

Collection Date/Time: 04/26/2017 12:55

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893728	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P324195	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P325141	

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893728	SM 2540 D-97	TSS	2	U	mg/L	P324592	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P324831	
1893729	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P324261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P324287	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324390	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P324348	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P324283	
1893730	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324188	
1893752	EPA 200.7 Rev. 4.4	Iron	30	U	ug/L	P324493	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P324493	
		Cadmium	0.020	U	ug/L	P324493	
		Chromium	0.40	U	ug/L	P324493	
		Copper	0.20	U	ug/L	P324493	
		Lead	0.050	U	ug/L	P324493	
		Nickel	0.20	U	ug/L	P324493	
		Silver	0.010	U	ug/L	P324493	
		Zinc	1.0	U	ug/L	P324493	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Manatee Bay @ Center

Collection Date/Time: 04/26/2017 13:15

Field ID: G5SE0052

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893711	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P324195	
	SM 2320 B-97	Total Alkalinity	155		mg CaCO3/L	P324858	
	SM 2540 D-97	TSS	4	I	mg/L	P324594	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P324861	
1893716	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P324260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P324290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324320	
	EPA 365.1 Rev. 2.0	Total-P	0.006	I	mg P/L	P324346	
	SM 5310 B-00	Organic Carbon	5.2		mg C/L	P324284	
1893721	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324188	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Blackwater Sound

Collection Date/Time: 04/26/2017 13:40

Field ID: G5SE0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893712	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P324195	
	SM 2320 B-97	Total Alkalinity	149		mg CaCO3/L	P324858	
	SM 2540 D-97	TSS	4	I	mg/L	P324594	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P324861	
1893717	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P324260	

Field ID: G5SE0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893717	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P324290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P324320	
	EPA 365.1 Rev. 2.0	Total-P	0.006	I	mg P/L	P324346	
	SM 5310 B-00	Organic Carbon	4.5		mg C/L	P324284	
1893722	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324188	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Little Blackwater Sound

Collection Date/Time: 04/26/2017 13:55

Field ID: G5SE0055

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893713	EPA 180.1 Rev. 2.0	Turbidity	1.7	A	NTU	P324195	
	SM 2320 B-97	Total Alkalinity	155		mg CaCO3/L	P324858	
	SM 2540 D-97	TSS	4	I	mg/L	P324594	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P324861	
1893718	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P324260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P324290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324320	
	EPA 365.1 Rev. 2.0	Total-P	0.007	I	mg P/L	P324346	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P324284	
1893723	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324188	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Long Sound

Collection Date/Time: 04/26/2017 14:10

Field ID: G5SE0054

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893714	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P324195	
	SM 2320 B-97	Total Alkalinity	162		mg CaCO3/L	P324858	
	SM 2540 D-97	TSS	6	I	mg/L	P324594	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P324861	
1893719	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P324263	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P324290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P324320	
	EPA 365.1 Rev. 2.0	Total-P	0.008	I	mg P/L	P324346	
	SM 5310 B-00	Organic Carbon	6.3		mg C/L	P324284	
1893724	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324188	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324195

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324493

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324521

Component	Result	Code	Units
Iron	30.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324493

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L
Zinc	1.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324521

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L
Zinc	1.0	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324260

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324261

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324263

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324287

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324290

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324320

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324390

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324346

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324348

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324458

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324186

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324188

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

Reference Method: SM 2320 B-97
Batch ID: P324858

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

Reference Method: SM 2320 B-97
Batch ID: P325141

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

Reference Method: SM 2540 D-97
Batch ID: P324592

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324594

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P324831

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P324861

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P324283

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

Reference Method: SM 5310 B-00
Batch ID: P324284

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: P324493

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	102		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324521

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324493

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	97.8		P	85 - 115
Cadmium	107		P	85 - 115
Chromium	101		P	85 - 115
Copper	92.4		P	85 - 115
Lead	101		P	85 - 115
Nickel	94.1		P	85 - 115
Silver	97.0		P	85 - 115
Zinc	96.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	100		P	85 - 115
Copper	99.0		P	85 - 115
Lead	102		P	85 - 115
Nickel	102		P	85 - 115
Silver	99.4		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324260

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324261

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324263

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324287

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324290

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324320

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324390

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324346

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324348

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: P324458

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324186

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324188

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P324858

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P325141

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

Reference Method: SM 4500 F-C-97
Batch ID: P324831

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P324861

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

Reference Method: SM 5310 B-00
Batch ID: P324283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P324284

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324493

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893017	Iron	107	104	P/P	80 - 120
1893888	Iron	99.4		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895132	Iron	102	98.8	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324493

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893017	Arsenic	101	98.3	P/P	80 - 120
1893017	Cadmium	109	105	P/P	80 - 120
1893017	Chromium	105	102	P/P	80 - 120
1893017	Copper	94.8	92.3	P/P	80 - 120
1893017	Lead	103	101	P/P	80 - 120
1893017	Nickel	96.1	93.5	P/P	80 - 120
1893017	Silver	98.2	95.6	P/P	80 - 120
1893017	Zinc	98.8	96.8	P/P	80 - 120
1893888	Arsenic	104		P	80 - 120
1893888	Cadmium	100		P	80 - 120
1893888	Chromium	86.8		P	80 - 120
1893888	Copper	85.7		P	80 - 120
1893888	Lead	101		P	80 - 120
1893888	Nickel	90.7		P	80 - 120
1893888	Silver	96.0		P	80 - 120
1893888	Zinc	88.6		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895132	Arsenic	108	107	P/P	80 - 120
1895132	Cadmium	102	104	P/P	80 - 120
1895132	Chromium	88.1	88.5	P/P	80 - 120
1895132	Copper	93.0	91.3	P/P	80 - 120
1895132	Lead	106	106	P/P	80 - 120
1895132	Nickel	98.0	97.6	P/P	80 - 120
1895132	Silver	91.3	91.7	P/P	80 - 120
1895132	Zinc	90.3	91.1	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893591	Ammonia-N	106	107	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893635	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1894223	Ammonia-N	107	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324287

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893705	Kjeldahl Nitrogen	95.3	94.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893595	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893715	NO2NO3-N	106	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893776	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892147	Total-P	96.7	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893704	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893726	Total-P	91.8	90.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893599	O-Phosphate-P	94.8	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893721	O-Phosphate-P	96.8	97.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P324831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893545	Fluoride	96.8	96.1	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P324861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895081	Fluoride	98.1	98.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P324283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893581	Organic Carbon	103	103	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P324284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893517	Organic Carbon	102	104	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893713	Turbidity	4.06	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893017	Iron	3.65	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895132	Iron	2.92	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893017	Arsenic	2.51	Spike	P	0 - 20
1893017	Cadmium	3.59	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893017	Chromium	2.82	Spike	P	0 - 20
1893017	Copper	2.55	Spike	P	0 - 20
1893017	Lead	1.56	Spike	P	0 - 20
1893017	Nickel	2.73	Spike	P	0 - 20
1893017	Silver	2.64	Spike	P	0 - 20
1893017	Zinc	2.11	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895132	Arsenic	0.533	Spike	P	0 - 20
1895132	Cadmium	1.46	Spike	P	0 - 20
1895132	Chromium	0.491	Spike	P	0 - 20
1895132	Copper	1.78	Spike	P	0 - 20
1895132	Lead	0.0408	Spike	P	0 - 20
1895132	Nickel	0.404	Spike	P	0 - 20
1895132	Silver	0.409	Spike	P	0 - 20
1895132	Zinc	0.847	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893591	Ammonia-N	1.11	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893635	Ammonia-N	0.880	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1894223	Ammonia-N	0.00687	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893705	Kjeldahl Nitrogen	1.13	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893595	Kjeldahl Nitrogen	1.11	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893715	NO2NO3-N	1.41	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893776	NO2NO3-N	0.348	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892147	Total-P	2.58	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893704	Total-P	0.179	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893726	Total-P	1.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893599	O-Phosphate-P	0.906	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893721	O-Phosphate-P	0.823	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P324858

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895081	Total Alkalinity	0.811	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P325141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893545	Total Alkalinity	0.451	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P324831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893545	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P324861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895081	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P324283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893581	Organic Carbon	0.214	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P324284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893517	Organic Carbon	1.32	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: A76048
Included Lab Sample IDs: 1893720, 1893721, 1893722, 1893723, 1893724, 1893727, 1893730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	98.0	P/P	90 - 110
O-Phosphate-P	98.0	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A76048

Included Lab Sample IDs: 1893720, 1893721, 1893722, 1893723, 1893724, 1893727, 1893730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	97.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76055

Included Lab Sample IDs: 1893710, 1893711, 1893712, 1893713, 1893714, 1893725, 1893728

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76071

Included Lab Sample IDs: 1893715, 1893716, 1893717, 1893718, 1893719, 1893726, 1893729

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

Reference Method: SM 5310 B-00

Run ID: A76081

Included Lab Sample IDs: 1893715, 1893716, 1893717, 1893718, 1893719, 1893726, 1893729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.8	P/P	90 - 110
Organic Carbon	102	101	P/P	90 - 110
Organic Carbon	99.8	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76094

Included Lab Sample IDs: 1893715, 1893716, 1893717, 1893718, 1893719, 1893726

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76117

Included Lab Sample IDs: 1893729

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76133

Included Lab Sample IDs: 1893729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.4	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76141

Included Lab Sample IDs: 1893715, 1893716, 1893717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76146

Included Lab Sample IDs: 1893718, 1893719, 1893726

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76183

Included Lab Sample IDs: 1893715, 1893716, 1893717, 1893718, 1893719, 1893729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.0	P/P	90 - 110
Total-P	99.0	99.8	P/P	90 - 110
Total-P	99.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76191

Included Lab Sample IDs: 1893726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76229

Included Lab Sample IDs: 1893751, 1893752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.1	97.2	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Chromium	99.4	102	P/P	90 - 110
Copper	94.3	92.3	P/P	90 - 110
Lead	99.8	100	P/P	90 - 110
Nickel	102	95.0	P/P	90 - 110
Nickel	94.6	93.7	P/P	90 - 110
Silver	99.1	99.5	P/P	90 - 110
Zinc	102	97.0	P/P	90 - 110
Zinc	97.2	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76242

Included Lab Sample IDs: 1893728

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76252

Included Lab Sample IDs: 1893751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	98.3	98.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76258

Included Lab Sample IDs: 1893710, 1893711, 1893712, 1893713, 1893714, 1893725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76258

Included Lab Sample IDs: 1893710, 1893711, 1893712, 1893713, 1893714, 1893725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	99.5	P/P	90 - 110
Fluoride	99.5	98.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76346

Included Lab Sample IDs: 1893752

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

Reference Method: SM 2320 B-97

Run ID: A76363

Included Lab Sample IDs: 1893728

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76366

Included Lab Sample IDs: 1893751

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76490

Included Lab Sample IDs: 1893751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	98.0	P/P	90 - 110
Cadmium	98.7	98.6	P/P	90 - 110
Copper	101	93.1	P/P	90 - 110
Silver	97.3	95.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

* 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								4.06	
EPA 200.7 Rev. 4.4	Iron	102			107	104	99.4			3.65
	Iron	103			102	98.8				2.92
EPA 200.8 Rev. 5.4	Arsenic	97.8			101	98.3	104			2.51
	Arsenic	101			108	107				0.533
	Cadmium	107			109	105	100			3.59
	Cadmium	103			102	104				1.46
	Chromium	101			105	102	86.8			2.82
	Chromium	100			88.1	88.5				0.491
	Copper	92.4			94.8	92.3	85.7			2.55
	Copper	99.0			93.0	91.3				1.78
	Lead	101			101	103	101			1.56
	Lead	102			106	106				0.0408
	Nickel	94.1			96.1	93.5	90.7			2.73
	Nickel	102			98.0	97.6				0.404
	Silver	97.0			98.2	95.6	96.0			2.64
	Silver	99.4			91.3	91.7				0.409
	Zinc	96.3			98.8	96.8	88.6			2.11
	Zinc	100			90.3	91.1				0.847
EPA 350.1 Rev. 2.0	Ammonia-N	105			106	107				1.11
	Ammonia-N	101			102	103				0.880
	Ammonia-N	104			107	107				0.0068
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.9			95.3	94.0				1.13
	Kjeldahl Nitrogen	101			101	102				1.11
EPA 353.2 Rev. 2.0	NO2NO3-N	106			106	108				1.41
	NO2NO3-N	102			101					0.348
EPA 365.1 Rev. 2.0	Total-P	99.9			96.7	99.3				2.58
	Total-P	102			106	106				0.179
	Total-P	98.0			91.8	90.5				1.37
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101			94.8	95.7				0.906
	O-Phosphate-P	98.4			96.8	97.6				0.823
SM 2320 B-97	Total Alkalinity	103							0.811	
	Total Alkalinity	103							0.451	
SM 4500 F-C-97	Fluoride	97.0			96.8	96.1				0.477
	Fluoride	97.4			98.1	98.1				0.0
SM 5310 B-00	Organic Carbon	103			103	103				0.214
	Organic Carbon	104			102	104				1.32

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1893710, 1893711, 1893712, 1893713, 1893714, 1893725, 1893728
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1893751, 1893752

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1893751, 1893752
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1893715, 1893716, 1893717, 1893718, 1893719, 1893726, 1893729
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1893715, 1893716, 1893717, 1893718, 1893719, 1893726, 1893729
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1893715, 1893716, 1893717, 1893718, 1893719, 1893726, 1893729
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1893715, 1893716, 1893717, 1893718, 1893719, 1893726, 1893729
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1893720, 1893721, 1893722, 1893723, 1893724, 1893727, 1893730
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1893710, 1893711, 1893712, 1893713, 1893714, 1893725, 1893728
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1893710, 1893711, 1893712, 1893713, 1893714, 1893725, 1893728
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1893710, 1893711, 1893712, 1893713, 1893714, 1893725, 1893728
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1893715, 1893716, 1893717, 1893718, 1893719, 1893726, 1893729

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	04/27/2017			04/27/2017 16:59	Sima Feizi	1893710, 1893711, 1893712, 1893713, 1893714, 1893725, 1893728
EPA 200.7 Rev. 4.4	04/27/2017	05/03/2017	Elliott D. Healy	05/11/2017	Martin Acosta	1893751
	04/27/2017	05/03/2017	Robert K Palmer	05/10/2017	Martin Acosta	1893752
EPA 200.8 Rev. 5.4	04/27/2017	05/03/2017	Elliott D. Healy	05/05/2017	Betina Topolski	1893751
	04/27/2017	05/03/2017	Elliott D. Healy	05/08/2017	Betina Topolski	1893751
	04/27/2017	05/03/2017	Elliott D. Healy	05/16/2017	Betina Topolski	1893751
	04/27/2017	05/03/2017	Robert K Palmer	05/05/2017	Betina Topolski	1893752
EPA 350.1 Rev. 2.0	04/27/2017			04/28/2017	Julie Michelle Frank	1893715, 1893716, 1893717, 1893718, 1893719, 1893726, 1893729
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	04/27/2017	05/01/2017	Adrian Shelby	05/03/2017	Joseph Suarez	1893715, 1893716, 1893717, 1893718, 1893719, 1893726
EPA 353.2 Rev. 2.0	04/27/2017			05/01/2017	Beverly Y. Sanders	1893715, 1893716, 1893717, 1893718, 1893719, 1893726
	04/27/2017			05/02/2017	Beverly Y. Sanders	1893729
EPA 365.1 Rev. 2.0	04/27/2017	05/02/2017	Adrian Shelby	05/04/2017	Lipi Saha	1893715, 1893716, 1893717, 1893718, 1893719, 1893729
	04/27/2017	05/03/2017	Vijayalakshmi Reddy	05/04/2017	Lipi Saha	1893726
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