

Chemical Analysis Report

SE-DIST-2017-04-18-01

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

Event Description: **SMP-IRL Run**
Request ID: **RQ-2017-04-10-51**
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, PhD, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 15-MAY-2017 11:29



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: SOUTH IRL @ MELODY LANE PIER

Collection Date/Time: 04/17/2017 12:00

Field ID: G2SE0028

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889535	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P323592	
	SM 2320 B-97	Total Alkalinity	132		mg CaCO3/L	P324010	
	SM 2540 D-97	TSS	6	I	mg/L	P324586	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P324406	
1889536	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P323773	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P323601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323811	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P323647	
	SM 5310 B-00	Organic Carbon	2.4		mg C/L	P323622	
1889537	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P323585	

Sample Location: INDIAN RIVER LAGOON @ ROYAL PALM POINTE

Collection Date/Time: 04/17/2017 13:10

Field ID: G5SE0051

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889538	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P323592	
	SM 2320 B-97	Total Alkalinity	140		mg CaCO3/L	P324010	
	SM 2540 D-97	TSS	6	I	mg/L	P324586	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P324406	
1889539	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P323773	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P323722	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P323811	
	EPA 365.1 Rev. 2.0	Total-P	0.070		mg P/L	P323648	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P323622	
1889540	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P323585	
1889548	EPA 200.7 Rev. 4.4	Iron	160	I	ug/L	P323748	
	EPA 200.8 Rev. 5.4	Arsenic	1.99		ug/L	P323748	
		Cadmium	0.080	U	ug/L	P323748	
		Chromium	1.6	U	ug/L	P323748	
		Copper	3.3		ug/L	P323748	
		Lead	0.35	I	ug/L	P323748	
		Nickel	0.80	U	ug/L	P323748	
		Silver	0.040	U	ug/L	P323748	
		Zinc	5.4	I	ug/L	P323748	

Sample Location: INDIAN RIVER LAGOON @ ROYAL PALM POINTE

Collection Date/Time: 04/17/2017 13:15

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889541	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P323593	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P324109	
		Sulfate	0.20	U	mg SO4/L	P323862	

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889541	SM 2120 B	Color (true)	2.5	U	PCU	P323596	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P324161	
	SM 2540 C-97	TDS	15	U	mg/L	P323870	
	SM 2540 D-97	TSS	2	U	mg/L	P324581	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P324681	
1889542	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P323677	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P323603	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323729	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P323645	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P323620	
1889543	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P323584	
1889549	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P323973	
		Iron	30	U	ug/L	P323973	
		Magnesium	0.040	U	mg/L	P323973	
		Potassium	0.30	U	mg/L	P323973	
		Sodium	0.50	U	mg/L	P323973	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P323973	
		Cadmium	0.020	U	ug/L	P323973	
		Chromium	0.40	U	ug/L	P323973	
		Copper	0.20	U	ug/L	P323973	
		Lead	0.050	U	ug/L	P323973	
		Nickel	0.20	U	ug/L	P323973	
		Silver	0.010	U	ug/L	P323973	
		Zinc	1.0	U	ug/L	P323973	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P323592

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P323593

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P323748

Component	Result	Code	Units
Iron	30	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323973

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

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: P323973

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 300.0 Rev. 2.1
Batch ID: P323862

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324109

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323677

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: P323773

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323601

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323603

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323722

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323729

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323811

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323645

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323647

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323648

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: P323584

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323585

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

Reference Method: SM 2120 B
Batch ID: P323596

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P324010

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

Reference Method: SM 2320 B-97
Batch ID: P324161

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

Reference Method: SM 2540 C-97
Batch ID: P323870

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324581

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324586

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P324681

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P323620

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

Reference Method: SM 5310 B-00
Batch ID: P323622

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: P323748

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323973

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	103		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	99.9		P	85 - 115
Sodium	98.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.0		P	85 - 115
Cadmium	96.0		P	85 - 115
Chromium	96.7		P	85 - 115
Copper	96.8		P	85 - 115
Lead	94.9		P	85 - 115
Nickel	97.5		P	85 - 115
Silver	96.1		P	85 - 115
Zinc	97.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323973

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323973

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323862

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324109

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323677

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323773

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323601

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323603

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323722

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323729

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323811

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: P323645

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: P323647

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323648

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323584

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323585

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

Reference Method: SM 2320 B-97
Batch ID: P324010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P324161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P324681

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

Reference Method: SM 5310 B-00
Batch ID: P323620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P323622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887121	Iron	102		P	70 - 130
1887254	Iron	94.1	93.5	P/P	70 - 130

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889278	Calcium	101		P	80 - 120
1889278	Iron	109		P	80 - 120
1889278	Magnesium	103		P	80 - 120
1889278	Potassium	104		P	80 - 120
1889278	Sodium	99.4		P	80 - 120
1889443	Calcium	106	105	P/P	80 - 120
1889443	Iron	106	103	P/P	80 - 120
1889443	Magnesium	107	105	P/P	80 - 120
1889443	Potassium	109	109	P/P	80 - 120
1889443	Sodium	100	97.5	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887121	Arsenic	110		P	70 - 130
1887121	Cadmium	99.9		P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887121	Chromium	94.6		P	70 - 130
1887121	Copper	98.3		P	70 - 130
1887121	Lead	103		P	70 - 130
1887121	Nickel	102		P	70 - 130
1887121	Silver	96.1		P	70 - 130
1887121	Zinc	100		P	70 - 130
1887254	Arsenic	108	107	P/P	70 - 130
1887254	Cadmium	101	101	P/P	70 - 130
1887254	Chromium	91.4	91.1	P/P	70 - 130
1887254	Copper	93.7	93.9	P/P	70 - 130
1887254	Lead	103	103	P/P	70 - 130
1887254	Nickel	99.8	99.2	P/P	70 - 130
1887254	Silver	93.9	94.3	P/P	70 - 130
1887254	Zinc	94.8	92.6	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889278	Arsenic	107		P	80 - 120
1889278	Cadmium	103		P	80 - 120
1889278	Chromium	103		P	80 - 120
1889278	Copper	100		P	80 - 120
1889278	Lead	101		P	80 - 120
1889278	Nickel	102		P	80 - 120
1889278	Silver	100		P	80 - 120
1889278	Zinc	105		P	80 - 120
1889443	Arsenic	104	101	P/P	80 - 120
1889443	Cadmium	102	98.8	P/P	80 - 120
1889443	Chromium	104	102	P/P	80 - 120
1889443	Copper	103	101	P/P	80 - 120
1889443	Lead	104	101	P/P	80 - 120
1889443	Nickel	104	101	P/P	80 - 120
1889443	Silver	101	100	P/P	80 - 120
1889443	Zinc	103	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889382	Sulfate	108		P	90 - 110
1889480	Sulfate	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324109

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889382	Chloride	100		P	90 - 110
1889480	Chloride	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889512	Ammonia-N	107	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889514	Ammonia-N	101	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889536	Kjeldahl Nitrogen	96.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889688	Kjeldahl Nitrogen	105	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889706	Kjeldahl Nitrogen	95.5	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889587	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889325	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889585	Total-P	102	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889321	Total-P	102	107	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889564	Total-P	98.2	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889531	O-Phosphate-P	98.0	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889537	O-Phosphate-P	97.1	96.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889318	Fluoride	103	102	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P324681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889584	Fluoride	98.9	100	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P323620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889481	Organic Carbon	100	97.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P323622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889536	Organic Carbon	94.5	92.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889480	Turbidity	0.801	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889582	Turbidity	3.21	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887254	Iron	0.612	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889443	Calcium	0.563	Spike	P	0 - 20
1889443	Iron	2.78	Spike	P	0 - 20
1889443	Magnesium	2.27	Spike	P	0 - 20
1889443	Potassium	0.0950	Spike	P	0 - 20
1889443	Sodium	2.09	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887254	Arsenic	0.373	Spike	P	0 - 20
1887254	Cadmium	0.600	Spike	P	0 - 20
1887254	Chromium	0.363	Spike	P	0 - 20
1887254	Copper	0.185	Spike	P	0 - 20
1887254	Lead	0.141	Spike	P	0 - 20
1887254	Nickel	0.590	Spike	P	0 - 20
1887254	Silver	0.400	Spike	P	0 - 20
1887254	Zinc	1.73	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889443	Arsenic	2.15	Spike	P	0 - 20
1889443	Cadmium	3.02	Spike	P	0 - 20
1889443	Chromium	2.05	Spike	P	0 - 20
1889443	Copper	2.61	Spike	P	0 - 20
1889443	Lead	2.63	Spike	P	0 - 20
1889443	Nickel	2.47	Spike	P	0 - 20
1889443	Silver	0.233	Spike	P	0 - 20
1889443	Zinc	1.88	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889480	Sulfate	0.0628	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889480	Chloride	0.290	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889512	Ammonia-N	0.686	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889514	Ammonia-N	2.17	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889536	Kjeldahl Nitrogen	3.99	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889688	Kjeldahl Nitrogen	2.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889706	Kjeldahl Nitrogen	0.370	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889587	NO2NO3-N	1.45	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889325	NO2NO3-N	1.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889585	Total-P	3.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889321	Total-P	4.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889564	Total-P	2.26	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889531	O-Phosphate-P	0.129	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889537	O-Phosphate-P	0.458	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P323596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889583	Color (true)	1.59	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P324010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888852	Total Alkalinity	1.11	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P324161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889584	Total Alkalinity	0.0800	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P323870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889031	TDS	7.63	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P324586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889088	TSS	2.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889318	Fluoride	0.464	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P324681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889584	Fluoride	0.974	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P323620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889481	Organic Carbon	1.57	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P323622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889536	Organic Carbon	1.91	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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75846

Included Lab Sample IDs: 1889537, 1889540, 1889543

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	98.8	P/P	90 - 110
O-Phosphate-P	98.4	98.0	P/P	90 - 110
O-Phosphate-P	98.8	98.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75851

Included Lab Sample IDs: 1889535, 1889538, 1889541

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	98.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A75852

Included Lab Sample IDs: 1889541

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.8	101	P/P	85 - 115

Reference Method: SM 5310 B-00

Run ID: A75860

Included Lab Sample IDs: 1889536, 1889539, 1889542

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.7	94.4	P/P	90 - 110
Organic Carbon	96.4	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75888

Included Lab Sample IDs: 1889542

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75896

Included Lab Sample IDs: 1889536

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75902

Included Lab Sample IDs: 1889542

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75903

Included Lab Sample IDs: 1889541

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	101	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75904

Included Lab Sample IDs: 1889542

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	108	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75905

Included Lab Sample IDs: 1889536, 1889539, 1889542

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75919

Included Lab Sample IDs: 1889536, 1889539

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75926

Included Lab Sample IDs: 1889536, 1889539

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75928

Included Lab Sample IDs: 1889539

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A75972

Included Lab Sample IDs: 1889548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	94.9	93.8	P/P	90 - 110
Cadmium	97.0	95.1	P/P	90 - 110
Chromium	97.6	95.3	P/P	90 - 110
Copper	92.0	91.0	P/P	90 - 110
Lead	95.8	94.4	P/P	90 - 110
Nickel	91.3	90.8	P/P	90 - 110
Silver	95.2	94.0	P/P	90 - 110
Zinc	93.9	92.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A75991

Included Lab Sample IDs: 1889548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	96.7	95.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A75995

Included Lab Sample IDs: 1889535, 1889538

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75999

Included Lab Sample IDs: 1889541

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76017

Included Lab Sample IDs: 1889549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.0	97.9	P/P	90 - 110
Cadmium	96.0	95.7	P/P	90 - 110
Chromium	99.2	99.1	P/P	90 - 110
Copper	99.4	99.9	P/P	90 - 110
Lead	99.5	100	P/P	90 - 110
Nickel	98.4	98.8	P/P	90 - 110
Zinc	98.7	99.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76045

Included Lab Sample IDs: 1889541

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76083

Included Lab Sample IDs: 1889549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	105	98.6	P/P	90 - 110
Iron	105	99.2	P/P	90 - 110
Magnesium	106	100	P/P	90 - 110
Potassium	103	99.3	P/P	90 - 110
Sodium	101	95.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A76126

Included Lab Sample IDs: 1889535, 1889538

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76180

Included Lab Sample IDs: 1889549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	90.7	95.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76201

Included Lab Sample IDs: 1889541

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				0.801	
	Turbidity				3.21	
EPA 200.7 Rev. 4.4	Calcium	102	101 106 105			0.563
	Iron	100	94.1 93.5 102			0.612
	Iron	103	109 106 103			2.78
	Magnesium	105	103 107 105			2.27
	Potassium	99.9	104 109 109			0.0950
	Sodium	98.3	99.4 100 97.5			2.09
EPA 200.8 Rev. 5.4	Arsenic	98.0	110 108 107			0.373
	Arsenic	103	107 104 101			2.15
	Cadmium	96.0	99.9 101 101			0.600
	Cadmium	99.4	103 102 98.8			3.02
	Chromium	96.7	94.6 91.4 91.1			0.363
	Chromium	103	103 104 102			2.05
	Copper	96.8	98.3 93.7 93.9			0.185
	Copper	101	100 103 101			2.61
	Lead	94.9	103 103 103			0.141
	Lead	101	101 104 101			2.63
	Nickel	97.5	102 99.8 99.2			0.590
	Nickel	102	102 104 101			2.47
	Silver	96.1	96.1 93.9 94.3			0.400
	Silver	100	100 101 100			0.233
	Zinc	97.2	100 94.8 92.6			1.73
	Zinc	102	105 103 101			1.88
EPA 300.0 Rev. 2.1	Chloride	102	101 100		0.290	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 300.0 Rev. 2.1	Sulfate	107	107	108	0.0628	
EPA 350.1 Rev. 2.0	Ammonia-N	106	107	106		0.686
	Ammonia-N	102	101	104		2.17
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	96.2	101		3.99
	Kjeldahl Nitrogen	101	105	108		2.34
	Kjeldahl Nitrogen	102	95.5	95.0		0.370
EPA 353.2 Rev. 2.0	NO2NO3-N	105	104	102		1.45
	NO2NO3-N	102	104	102		1.93
EPA 365.1 Rev. 2.0	Total-P	107	102	106		3.02
	Total-P	101	102	107		4.15
	Total-P	104	98.2	95.9		2.26
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	98.0	97.7		0.129
	O-Phosphate-P	99.1	97.1	96.6		0.458
SM 2120 B	Color (true)				1.59	
SM 2320 B-97	Total Alkalinity	102			1.11	
	Total Alkalinity	102			0.0800	
SM 2540 C-97	TDS				7.63	
SM 2540 D-97	TSS				2.67	
SM 4500 F-C-97	Fluoride	97.7	103	102		0.464
	Fluoride	98.1	98.9	100		0.974
SM 5310 B-00	Organic Carbon	97.4	100	97.6		1.57
	Organic Carbon	95.8	94.5	92.6		1.91

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1889535, 1889538, 1889541
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1889548, 1889549
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1889548, 1889549
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1889541
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1889541
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1889536, 1889539, 1889542
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1889536, 1889539, 1889542
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1889536, 1889539, 1889542
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1889536, 1889539, 1889542
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1889537, 1889540, 1889543
SM 2120 B / E31780	True Color measured at 450 nm	1889541
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1889535, 1889538, 1889541
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1889541
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1889535, 1889538, 1889541
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1889535, 1889538, 1889541
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1889536, 1889539, 1889542

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	04/18/2017			04/18/2017 15:15	Sima Feizi	1889535, 1889538, 1889541
EPA 200.7 Rev. 4.4	04/18/2017	04/20/2017	Elliott D. Healy	04/25/2017	Martin Acosta	1889548
	04/18/2017	04/25/2017	Elliott D. Healy	04/28/2017	Martin Acosta	1889549
EPA 200.8 Rev. 5.4	04/18/2017	04/20/2017	Elliott D. Healy	04/24/2017	Betina Topolski	1889548
	04/18/2017	04/25/2017	Elliott D. Healy	04/26/2017	Betina Topolski	1889549
	04/18/2017	04/25/2017	Elliott D. Healy	05/04/2017	Betina Topolski	1889549
EPA 300.0 Rev. 2.1	04/18/2017			04/21/2017	Ping Hua	1889541
	04/18/2017			04/27/2017	Ping Hua	1889541
EPA 350.1 Rev. 2.0	04/18/2017			04/19/2017	Julie Michelle Frank	1889542
	04/18/2017			04/20/2017	Julie Michelle Frank	1889536, 1889539
EPA 351.2 Rev. 2.0	04/18/2017	04/19/2017	Adrian Shelby	04/20/2017	Joseph Suarez	1889536, 1889542
	04/18/2017	04/20/2017	Adrian Shelby	04/21/2017	Joseph Suarez	1889539
EPA 353.2 Rev. 2.0	04/18/2017			04/20/2017	Beverly Y. Sanders	1889542
	04/18/2017			04/21/2017	Beverly Y. Sanders	1889536, 1889539
EPA 365.1 Rev. 2.0	04/18/2017	04/19/2017	Vijayalakshmi Reddy	04/20/2017	Lipi Saha	1889536, 1889539, 1889542
EPA 365.1 Rev. 2.0 dissolved	04/18/2017			04/18/2017 13:35	Lipi Saha	1889537
	04/18/2017			04/18/2017 13:43	Lipi Saha	1889543
	04/18/2017			04/18/2017 13:58	Lipi Saha	1889540
SM 2120 B	04/18/2017			04/18/2017 15:57	Julia Storbeck	1889541
SM 2320 B-97	04/18/2017			04/26/2017	Dale L. Simmons	1889535, 1889538
	04/18/2017			04/27/2017	Dale L. Simmons	1889541
SM 2540 C-97	04/18/2017			04/19/2017	Yijie Li	1889541
SM 2540 D-97	04/18/2017			04/19/2017	Yijie Li	1889535, 1889538, 1889541
SM 4500 F-C-97	04/18/2017			05/02/2017	Dale L. Simmons	1889535, 1889538
	04/18/2017			05/03/2017	Dale L. Simmons	1889541
SM 5310 B-00	04/18/2017			04/18/2017	Julie Michelle Frank	1889536, 1889542
	04/18/2017			04/19/2017	Julie Michelle Frank	1889539