

Chemical Analysis Report

SE-DIST-2016-08-18-01

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

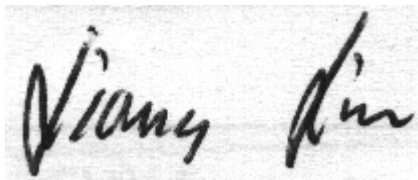
Event Description: **SMP-Everglades**
Request ID: **RQ-2016-08-15-82**
Customer: **SE-DIST**
Project ID: **SMP**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 13-SEP-2016 17:05

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: WCA1 North G-301

Collection Date/Time: 08/17/2016 10:20

Field ID: G5SE0046

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824640	EPA 180.1 Rev. 2.0	Turbidity	1.6	A	NTU	P310012	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P310538	
		Sulfate	43		mg SO4/L	P310541	
	SM 2120 B	Color (true)	120		PCU	P309986	
	SM 2320 B-97	Total Alkalinity	186		mg CaCO3/L	P310236	
	SM 2540 C-97	TDS	521		mg/L	P310610	
	SM 2540 D-97	TSS	3	I	mg/L	P310500	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P310241	
1824642	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P310091	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P310079	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P310346	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P310037	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P310348	
1824644	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P309982	
1824653	EPA 200.7 Rev. 4.4	Calcium	69.5		mg/L	P310115	
		Iron	34	I	ug/L	P310115	
		Magnesium	17.0		mg/L	P310115	
		Potassium	7.4		mg/L	P310115	
		Sodium	77.4		mg/L	P310115	
		Zinc	5.0	U	ug/L	P310115	
	EPA 200.8 Rev. 5.4	Arsenic	1.69		ug/L	P310115	
		Beryllium	0.010	U	ug/L	P310115	
		Cadmium	0.020	U	ug/L	P310115	
		Chromium	0.16	I	ug/L	P310115	
		Copper	0.31	I	ug/L	P310115	
		Lead	0.062	I	ug/L	P310115	
		Nickel	0.27		ug/L	P310115	
		Silver	0.0050	U	ug/L	P310115	

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: West Palm Beach Canal @ ENR Supply Canal

Collection Date/Time: 08/17/2016 10:40

Field ID: G5SE0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824634	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P310011	
	EPA 300.0 Rev. 2.1	Chloride	160		mg Cl/L	P310538	
		Sulfate	95		mg SO4/L	P310541	
	SM 2120 B	Color (true)	180		PCU	P309986	
	SM 2320 B-97	Total Alkalinity	303		mg CaCO3/L	P310234	
	SM 2540 C-97	TDS	830		mg/L	P310610	
	SM 2540 D-97	TSS	8	I	mg/L	P310500	
	SM 4500 F-C-97	Fluoride	0.58		mg F/L	P310240	
1824636	EPA 350.1 Rev. 2.0	Ammonia-N	0.37		mg N/L	P310061	

Field ID: G5SE0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824636	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.2		mg N/L	P310079	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.61		mg N/L	P310346	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P310035	
	SM 5310 B-00	Organic Carbon	41		mg C/L	P310348	
1824638	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.081		mg P/L	P309982	

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: West Palm Beach Canal @ ENR Supply Canal **Collection Date/Time: 08/17/2016 10:50**

Field ID: G5SE0012_Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824646	EPA 180.1 Rev. 2.0	Turbidity	0.20		NTU	P310012	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P310538	
		Sulfate	0.20	U	mg SO4/L	P310541	
		Color (true)	2.5	U	PCU	P309987	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P310236	
	SM 2540 C-97	TDS	15	U	mg/L	P310610	
	SM 2540 D-97	TSS	2	U	mg/L	P310500	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P310241	
1824647	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P310091	MS
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P310080	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P310347	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P310037	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P310348	
1824648	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P309983	
1824655	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P310115	
		Iron	30	U	ug/L	P310115	
		Magnesium	0.040	U	mg/L	P310115	
		Potassium	0.30	U	mg/L	P310115	
		Sodium	0.50	U	mg/L	P310115	
		Zinc	5.0	U	ug/L	P310115	
		Arsenic	0.050	U	ug/L	P310115	
	EPA 200.8 Rev. 5.4	Beryllium	0.010	U	ug/L	P310115	
		Cadmium	0.020	U	ug/L	P310115	
		Chromium	0.050	U	ug/L	P310115	
		Copper	0.10	U	ug/L	P310115	
		Lead	0.050	U	ug/L	P310115	
		Nickel	0.050	U	ug/L	P310115	
		Silver	0.0050	U	ug/L	P310115	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 08/18/2016.

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

Sample Location: Hilscan 0.25m South of L-16 Canal

Collection Date/Time: 08/17/2016 10:20

Field ID: G5SE0005

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824635	EPA 180.1 Rev. 2.0	Turbidity	9.7		NTU	P310011	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P310538	
		Sulfate	130		mg SO4/L	P310541	
	SM 2120 B	Color (true)	160		PCU	P309986	
	SM 2320 B-97	Total Alkalinity	336		mg CaCO3/L	P310234	
	SM 2540 C-97	TDS	860		mg/L	P310610	
	SM 2540 D-97	TSS	12		mg/L	P310500	
	SM 4500 F-C-97	Fluoride	0.75		mg F/L	P310240	
1824637	EPA 350.1 Rev. 2.0	Ammonia-N	0.30		mg N/L	P310061	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.9		mg N/L	P310079	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.63		mg N/L	P310346	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P310037	
	SM 5310 B-00	Organic Carbon	37		mg C/L	P310348	
1824639	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P309982	

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: WCA1 South

Collection Date/Time: 08/17/2016 12:25

Field ID: G5SE0047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824641	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P310012	
	EPA 300.0 Rev. 2.1	Chloride	97		mg Cl/L	P310538	
		Sulfate	33		mg SO4/L	P310541	
	SM 2120 B	Color (true)	84		PCU	P309987	
	SM 2320 B-97	Total Alkalinity	132		mg CaCO3/L	P310236	
	SM 2540 C-97	TDS	399		mg/L	P310610	
	SM 2540 D-97	TSS	6	I	mg/L	P310500	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P310241	
1824643	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P310091	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P310079	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P310346	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P310037	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P310348	
1824645	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P309983	
1824654	EPA 200.7 Rev. 4.4	Calcium	47.7		mg/L	P310115	
		Iron	100	I	ug/L	P310115	
		Magnesium	12.9		mg/L	P310115	
		Potassium	5.7		mg/L	P310115	
		Sodium	65.8		mg/L	P310115	
		Zinc	5.0	U	ug/L	P310115	
	EPA 200.8 Rev. 5.4	Arsenic	1.09		ug/L	P310115	
		Beryllium	0.011	I	ug/L	P310115	
		Cadmium	0.020	U	ug/L	P310115	
		Chromium	0.38		ug/L	P310115	

Field ID: G5SE0047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824654	EPA 200.8 Rev. 5.4	Copper	0.55		ug/L	P310115	
		Lead	0.15	I	ug/L	P310115	
		Nickel	0.18	I	ug/L	P310115	
		Silver	0.0050	U	ug/L	P310115	

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: P310011

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P310012

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P310115

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: P310115

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L
Copper	0.10	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.050	U	ug/L
Silver	0.0050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P310538

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P310541

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310061

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310091

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310079

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310080

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310346

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310347

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310035

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310037

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: P309982

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309983

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

Reference Method: SM 2120 B
Batch ID: P309986

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P309987

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P310234

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

Reference Method: SM 2320 B-97
Batch ID: P310236

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

Reference Method: SM 2540 C-97
Batch ID: P310610

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P310500

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P310240

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: P310241

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P310348

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: P310115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	107		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	101		P	85 - 115
Sodium	102		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P310115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	100		P	85 - 115
Beryllium	96.7		P	85 - 115
Cadmium	98.9		P	85 - 115
Chromium	103		P	85 - 115
Copper	96.0		P	85 - 115
Lead	98.7		P	85 - 115
Nickel	97.2		P	85 - 115
Silver	98.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P310538

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P310541

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310061

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310061

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310091

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: P310079

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: P310080

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310346

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310347

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310035

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310037

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: P309982

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309983

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

Reference Method: SM 2320 B-97
Batch ID: P310234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P310236

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

Reference Method: SM 4500 F-C-97
Batch ID: P310240

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

Reference Method: SM 4500 F-C-97
Batch ID: P310241

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P310348

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P310115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824544	Calcium	105		P	80 - 120
1824544	Iron	107	108	P/P	80 - 120
1824544	Magnesium	104		P	80 - 120
1824544	Potassium	102	104	P/P	80 - 120
1824544	Sodium	105		P	80 - 120
1824544	Zinc	101	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P310115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824544	Arsenic	101	101	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P310115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824544	Beryllium	99.0	101	P/P	80 - 120
1824544	Cadmium	99.9	103	P/P	80 - 120
1824544	Chromium	101	102	P/P	80 - 120
1824544	Copper	92.3	92.1	P/P	80 - 120
1824544	Lead	98.0	99.0	P/P	80 - 120
1824544	Nickel	93.4	93.4	P/P	80 - 120
1824544	Silver	98.7	95.0	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P310538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826916	Chloride	101	100	P/P	90 - 110
1826917	Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P310541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826916	Sulfate	101	100	P/P	90 - 110
1826917	Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1825234	Ammonia-N	99.8	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824559	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824624	Kjeldahl Nitrogen	86.4	109	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310080

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824693	Kjeldahl Nitrogen	110	114	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824611	NO2NO3-N	94.4	93.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823812	NO2NO3-N	92.2	93.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824624	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824693	Total-P	100	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824538	O-Phosphate-P	98.8	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824699	O-Phosphate-P	101	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P310240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824610	Fluoride	98.6	100	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P310241

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824689	Fluoride	98.8	99.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P310348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824642	Organic Carbon	102		P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P310011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824557	Turbidity	3.57	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P310012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824640	Turbidity	3.70	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P310115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824544	Calcium	0.238	Spike	P	0 - 20
1824544	Iron	1.05	Spike	P	0 - 20
1824544	Magnesium	0.580	Spike	P	0 - 20
1824544	Potassium	1.63	Spike	P	0 - 20
1824544	Sodium	1.50	Spike	P	0 - 20
1824544	Zinc	0.781	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P310115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824544	Arsenic	0.244	Spike	P	0 - 20
1824544	Beryllium	2.43	Spike	P	0 - 20
1824544	Cadmium	3.15	Spike	P	0 - 20
1824544	Chromium	0.646	Spike	P	0 - 20
1824544	Copper	0.285	Spike	P	0 - 20
1824544	Lead	0.983	Spike	P	0 - 20
1824544	Nickel	0.0365	Spike	P	0 - 20
1824544	Silver	3.89	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P310538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826916	Chloride	1.10	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P310541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826916	Sulfate	0.856	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1825234	Ammonia-N	0.757	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824559	Ammonia-N	1.07	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824624	Kjeldahl Nitrogen	12.1	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824693	Kjeldahl Nitrogen	2.27	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824611	NO2NO3-N	0.517	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823812	NO2NO3-N	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824624	Total-P	0.536	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824693	Total-P	1.66	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824538	O-Phosphate-P	0.159	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824699	O-Phosphate-P	0.886	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P309986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824622	Color (true)	1.40	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P309987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824685	Color (true)	0.511	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P310234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824610	Total Alkalinity	0.616	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P310236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824689	Total Alkalinity	0.233	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P310610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824622	TDS	0.325	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P310240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824610	Fluoride	1.46	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P310241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824689	Fluoride	0.474	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P310348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824642	Organic Carbon	0.601	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: A71210
Included Lab Sample IDs: 1824638, 1824639, 1824644, 1824645, 1824648

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

Reference Method: SM 2120 B
Run ID: A71211
Included Lab Sample IDs: 1824634, 1824635, 1824640, 1824641, 1824646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	98.9	P/P	90 - 115
Color (true)	98.9	98.6	P/P	90 - 115
Color (true)	99.4	99.9	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A71225
Included Lab Sample IDs: 1824634, 1824635, 1824640, 1824641, 1824646

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A71238
Included Lab Sample IDs: 1824636, 1824637

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A71249

Included Lab Sample IDs: 1824642, 1824643, 1824647

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71251

Included Lab Sample IDs: 1824636, 1824637

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71263

Included Lab Sample IDs: 1824642, 1824643, 1824647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A71276

Included Lab Sample IDs: 1824636, 1824637, 1824642, 1824643, 1824647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	109	107	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A71291

Included Lab Sample IDs: 1824634, 1824635, 1824640, 1824641, 1824646

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

Reference Method: SM 4500 F-C-97

Run ID: A71291

Included Lab Sample IDs: 1824634, 1824635, 1824640, 1824641, 1824646

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A71309

Included Lab Sample IDs: 1824653, 1824654, 1824655

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	102	P/P	90 - 110
Calcium	103	102	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Potassium	101	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A71309

Included Lab Sample IDs: 1824653, 1824654, 1824655

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Potassium	102	101	P/P	90 - 110
Sodium	100	100	P/P	90 - 110
Sodium	103	100	P/P	90 - 110
Zinc	101	102	P/P	90 - 110
Zinc	103	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A71314

Included Lab Sample IDs: 1824653, 1824654, 1824655

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	99.3	P/P	90 - 110
Arsenic	99.3	98.9	P/P	90 - 110
Beryllium	99.2	97.8	P/P	90 - 110
Beryllium	99.7	99.2	P/P	90 - 110
Cadmium	99.3	99.3	P/P	90 - 110
Cadmium	100	99.3	P/P	90 - 110
Chromium	103	104	P/P	90 - 110
Chromium	104	103	P/P	90 - 110
Lead	97.2	96.9	P/P	90 - 110
Lead	97.3	97.2	P/P	90 - 110
Nickel	97.4	95.6	P/P	90 - 110
Nickel	98.3	97.4	P/P	90 - 110
Silver	98.3	97.8	P/P	90 - 110
Silver	98.7	98.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A71323

Included Lab Sample IDs: 1824636, 1824637, 1824642, 1824643, 1824647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	94.5	P/P	90 - 110
NO2NO3-N	96.0	96.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A71324

Included Lab Sample IDs: 1824636, 1824637, 1824642, 1824643, 1824647

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A71337

Included Lab Sample IDs: 1824634, 1824635, 1824640, 1824641, 1824646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.4	P/P	90 - 110
Chloride	99.4	101	P/P	90 - 110
Sulfate	98.0	101	P/P	90 - 110
Sulfate	99.6	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A71367

Included Lab Sample IDs: 1824653, 1824654, 1824655

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	97.8	95.5	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				3.57	
	Turbidity				3.70	
EPA 200.7 Rev. 4.4	Calcium	105	105			0.238
	Iron	107	107	108		1.05
	Magnesium	103	104			0.580
	Potassium	101	102	104		1.63
	Sodium	102	105			1.50
	Zinc	104	101	102		0.781
EPA 200.8 Rev. 5.4	Arsenic	100	101	101		0.244
	Beryllium	96.7	99.0	101		2.43
	Cadmium	98.9	99.9	103		3.15
	Chromium	103	101	102		0.646
	Copper	96.0	92.3	92.1		0.285
	Lead	98.7	98.0	99.0		0.983
	Nickel	97.2	93.4	93.4		0.0365
	Silver	98.8	98.7	95.0		3.89
EPA 300.0 Rev. 2.1	Chloride	99.8	101	100	99.6	1.10
	Sulfate	98.6	101	100	99.8	0.856
EPA 350.1 Rev. 2.0	Ammonia-N	104	99.8	99.0		0.757
	Ammonia-N	102	102	104		1.07
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	86.4	109		12.1
	Kjeldahl Nitrogen	102	110	114		2.27
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0	94.4	93.8		0.517
	NO2NO3-N	97.5	92.2	93.8		1.49
EPA 365.1 Rev. 2.0	Total-P	98.9	101	102		0.536
	Total-P	99.3	100	98.7		1.66
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	98.8	99.0		0.159
	O-Phosphate-P	100	101	102		0.886
SM 2120 B	Color (true)				1.40	
	Color (true)				0.511	
SM 2320 B-97	Total Alkalinity	104			0.616	
	Total Alkalinity	103			0.233	
SM 2540 C-97	TDS				0.325	
SM 4500 F-C-97	Fluoride	97.8	98.6	100		1.46
	Fluoride	99.7	98.8	99.4		0.474
SM 5310 B-00	Organic Carbon	98.2	102			0.601

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1824634, 1824635, 1824640, 1824641, 1824646
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1824653, 1824654, 1824655
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1824653, 1824654, 1824655
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1824634, 1824635, 1824640, 1824641, 1824646
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1824634, 1824635, 1824640, 1824641, 1824646
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1824636, 1824637, 1824642, 1824643, 1824647
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1824636, 1824637, 1824642, 1824643, 1824647
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1824636, 1824637, 1824642, 1824643, 1824647
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1824636, 1824637, 1824642, 1824643, 1824647
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1824638, 1824639, 1824644, 1824645, 1824648
SM 2120 B / E31780	True Color measured at 450 nm	1824634, 1824635, 1824640, 1824641, 1824646
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1824634, 1824635, 1824640, 1824641, 1824646
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1824634, 1824635, 1824640, 1824641, 1824646
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1824634, 1824635, 1824640, 1824641, 1824646
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1824634, 1824635, 1824640, 1824641, 1824646
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1824636, 1824637, 1824642, 1824643, 1824647

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	08/18/2016			08/18/2016 16:04	Blanca Fach	1824634, 1824635, 1824640, 1824641, 1824646
EPA 200.7 Rev. 4.4	08/18/2016	08/22/2016	Elliott D. Healy	08/24/2016	Joshua Ayres	1824653, 1824654, 1824655
EPA 200.8 Rev. 5.4	08/18/2016	08/22/2016	Elliott D. Healy	08/24/2016	Charles J. Peterson	1824653, 1824654, 1824655
	08/18/2016	08/22/2016	Elliott D. Healy	08/26/2016	Charles J. Peterson	1824653, 1824654, 1824655
EPA 300.0 Rev. 2.1	08/18/2016			08/26/2016	Ping Hua	1824634, 1824635, 1824640, 1824641, 1824646
EPA 350.1 Rev. 2.0	08/18/2016			08/19/2016	Joseph Suarez	1824642, 1824643, 1824647
	08/18/2016			08/21/2016	Julie Michelle Frank	1824636, 1824637
EPA 351.2 Rev. 2.0	08/18/2016	08/22/2016	Adrian Shelby	08/23/2016	Christopher Armour	1824636, 1824637, 1824642, 1824643, 1824647
EPA 353.2 Rev. 2.0	08/18/2016			08/25/2016	Beverly Y. Sanders	1824636, 1824637, 1824642, 1824643, 1824647
EPA 365.1 Rev. 2.0	08/18/2016	08/19/2016	Vijayalakshmi Reddy	08/22/2016	Lipi Saha	1824636, 1824637
	08/18/2016	08/19/2016	Vijayalakshmi Reddy	08/23/2016	Lipi Saha	1824642, 1824643, 1824647
EPA 365.1 Rev. 2.0 dissolved	08/18/2016			08/18/2016 15:30	Julia Storbeck	1824648
	08/18/2016			08/18/2016 15:44	Julia Storbeck	1824638
	08/18/2016			08/18/2016 15:45	Julia Storbeck	1824639
	08/18/2016			08/18/2016 15:56	Julia Storbeck	1824644
	08/18/2016			08/18/2016 15:57	Julia Storbeck	1824645
SM 2120 B	08/18/2016			08/18/2016 16:03	Rochelle Y Jackson	1824640
	08/18/2016			08/18/2016 16:06	Rochelle Y Jackson	1824641, 1824646
	08/18/2016			08/18/2016 16:25	Rochelle Y Jackson	1824634, 1824635
SM 2320 B-97	08/18/2016			08/23/2016	Dale L. Simmons	1824634, 1824635
	08/18/2016			08/24/2016	Dale L. Simmons	1824640, 1824641, 1824646
SM 2540 C-97	08/18/2016			08/22/2016	Sima Feizi	1824634, 1824635, 1824640, 1824641, 1824646
SM 2540 D-97	08/18/2016			08/22/2016	Sima Feizi	1824634, 1824635, 1824640, 1824641, 1824646
SM 4500 F-C-97	08/18/2016			08/23/2016	Dale L. Simmons	1824634, 1824635
	08/18/2016			08/24/2016	Dale L. Simmons	1824640, 1824641, 1824646
SM 5310 B-00	08/18/2016			08/24/2016	Sofia Elnemr	1824636, 1824637, 1824642, 1824643, 1824647