Chemical Analysis Report

WQAP-2017-03-22-09

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

Event Description: **SMP 2017 Freshwater Kit C**
Request ID: **RQ-2017-02-20-29**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
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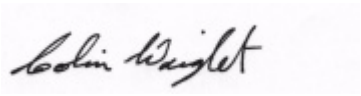
Certified by: Colin Wright, Program Administrator

Date Certified: 14-APR-2017 14:59



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

A - Value reported is the mean of two or more determinations.
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value and/or the analysis did not meet established quality control criteria.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Aucilla River @ Lamont Tract **Collection Date/Time: 03/22/2017 15:10**

Field ID: G1TLHR0019-2017-01 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1882321	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P322101	
	EPA 300.0 Rev. 2.1	Chloride	6.3		mg Cl/L	P322488	
	SM 2120 B	Color (true)	210		PCU	P322021	
	SM 2320 B-97	Total Alkalinity	53		mg CaCO3/L	P322416	
	SM 2540 C-97	TDS	102		mg/L	P322646	
	SM 2540 D-97	TSS	3	I	mg/L	P322625	
	SM 4500 F-C-97	Fluoride	0.075	I	mg F/L	P322419	
1882322	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P322186	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P322076	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P322233	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P322131	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P322059	
1882323	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P322053	
1882325	EPA 200.7 Rev. 4.4	Iron	670		ug/L	P322260	
		Zinc	5.0	U	ug/L	P322260	
	EPA 200.8 Rev. 5.4	Arsenic	0.32		ug/L	P322260	
		Cadmium	0.020	U	ug/L	P322260	
		Chromium	0.55	I	ug/L	P322260	
		Copper	0.20	U	ug/L	P322260	
		Lead	0.13	I	ug/L	P322260	
		Nickel	0.33	I	ug/L	P322260	
		Silver	0.010	U	ug/L	P322260	

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: P322101

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P322260

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P322260

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P322260

Component	Result	Code	Units
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322488

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322186

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322076

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322233

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322131

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322053

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

Reference Method: SM 2120 B
Batch ID: P322021

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P322416

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P322646

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P322625

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P322419

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P322059

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: P322260

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	105		P	85 - 115
Zinc	99.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P322260

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	96.5		P	85 - 115
Cadmium	96.6		P	85 - 115
Chromium	102		P	85 - 115
Copper	96.0		P	85 - 115
Lead	98.4		P	85 - 115
Nickel	96.0		P	85 - 115
Silver	98.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322488

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322186

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322233

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322131

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: P322053

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

Reference Method: SM 2320 B-97
Batch ID: P322416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P322419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P322059

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P322260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P322260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882636	Iron	105		P	80 - 120
1882636	Zinc	97.2		P	80 - 120
1882931	Iron	106	107	P/P	80 - 120
1882931	Zinc	96.8	98.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P322260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882636	Arsenic	98.3		P	80 - 120
1882636	Cadmium	100		P	80 - 120
1882636	Chromium	98.8		P	80 - 120
1882636	Copper	96.1		P	80 - 120
1882636	Lead	98.7		P	80 - 120
1882636	Nickel	91.6		P	80 - 120
1882636	Silver	99.4		P	80 - 120
1882931	Arsenic	98.6	99.1	P/P	80 - 120
1882931	Cadmium	98.9	99.6	P/P	80 - 120
1882931	Chromium	101	102	P/P	80 - 120
1882931	Copper	96.1	94.3	P/P	80 - 120
1882931	Lead	100	100	P/P	80 - 120
1882931	Nickel	95.2	94.1	P/P	80 - 120
1882931	Silver	99.8	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882521	Chloride	105		P	90 - 110
1882522	Chloride	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882689	Ammonia-N	98.7	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882348	Kjeldahl Nitrogen	99.3	96.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882306	NO2NO3-N	103	103	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882349	Total-P	109	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882358	O-Phosphate-P	95.4	97.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P322419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882329	Fluoride	100	100	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P322059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881931	Organic Carbon	98.2	98.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882339	Turbidity	0.519	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P322260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882931	Iron	0.787	Spike	P	0 - 20
1882931	Zinc	2.16	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P322260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882931	Arsenic	0.538	Spike	P	0 - 20
1882931	Cadmium	0.694	Spike	P	0 - 20
1882931	Chromium	1.07	Spike	P	0 - 20
1882931	Copper	1.84	Spike	P	0 - 20
1882931	Lead	0.296	Spike	P	0 - 20
1882931	Nickel	1.16	Spike	P	0 - 20
1882931	Silver	0.783	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882521	Chloride	0.309	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882689	Ammonia-N	0.868	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882348	Kjeldahl Nitrogen	2.89	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882306	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882349	Total-P	2.24	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882358	O-Phosphate-P	1.33	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P322021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882327	Color (true)	5.77	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P322416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882329	Total Alkalinity	1.50	Sample	P	0 - 4.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P322646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882303	TDS	3.72	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P322419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882329	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P322059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881931	Organic Carbon	0.334	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: SM 2120 B
Run ID: A75291
Included Lab Sample IDs: 1882321

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75303
Included Lab Sample IDs: 1882323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	98.7	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A75305
Included Lab Sample IDs: 1882322

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	92.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A75322
Included Lab Sample IDs: 1882321

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A75351
Included Lab Sample IDs: 1882322

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A75366
Included Lab Sample IDs: 1882322

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A75372
Included Lab Sample IDs: 1882322

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A75375
Included Lab Sample IDs: 1882322

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

Reference Method: SM 2320 B-97
Run ID: A75433
Included Lab Sample IDs: 1882321

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A75433
Included Lab Sample IDs: 1882321

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A75446
Included Lab Sample IDs: 1882325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	94.7	93.1	P/P	90 - 110
Cadmium	92.9	92.4	P/P	90 - 110
Chromium	97.9	97.3	P/P	90 - 110
Copper	95.3	94.5	P/P	90 - 110
Lead	94.3	93.4	P/P	90 - 110
Silver	94.9	94.6	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A75467
Included Lab Sample IDs: 1882321

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A75478
Included Lab Sample IDs: 1882325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	97.3	97.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A75546
Included Lab Sample IDs: 1882325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	103	102	P/P	90 - 110
Zinc	97.4	98.1	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.519	
EPA 200.7 Rev. 4.4	Iron	105	105	106	107			0.787
	Zinc	99.3	97.2	96.8	98.9			2.16
EPA 200.8 Rev. 5.4	Arsenic	96.5	98.3	98.6	99.1			0.538
	Cadmium	96.6	100	98.9	99.6			0.694
	Chromium	102	98.8	101	102			1.07
	Copper	96.0	96.1	96.1	94.3			1.84
	Lead	98.4	98.7	100	100			0.296
	Nickel	96.0	91.6	95.2	94.1			1.16
	Silver	98.8	99.4	99.8	101			0.783
EPA 300.0 Rev. 2.1	Chloride	105	105	103			0.309	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.7	99.7				0.868
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.2	99.3	96.1				2.89
EPA 353.2 Rev. 2.0	NO2NO3-N	103	103	103				0.0
EPA 365.1 Rev. 2.0	Total-P	104	109	106				2.24
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	95.4	97.7				1.33
SM 2120 B	Color (true)						5.77	
SM 2320 B-97	Total Alkalinity	105					1.50	
SM 2540 C-97	TDS						3.72	
SM 4500 F-C-97	Fluoride	94.2	100	100				0.0
SM 5310 B-00	Organic Carbon	98.6	98.2	98.8				0.334

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1882321
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1882325
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1882325
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1882321
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1882322
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1882322
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1882322
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1882322
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1882323
SM 2120 B / E31780	True Color measured at 450 nm	1882321
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1882321
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1882321
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1882321
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1882321
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1882322

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	03/22/2017			03/23/2017 17:09	Sima Feizi	1882321
EPA 200.7 Rev. 4.4	03/22/2017	03/27/2017	Elliott D. Healy	04/03/2017	Joshua Ayres	1882325
EPA 200.8 Rev. 5.4	03/22/2017	03/27/2017	Elliott D. Healy	03/29/2017	Robert K Palmer	1882325
	03/22/2017	03/27/2017	Elliott D. Healy	03/30/2017	Betina Topolski	1882325
EPA 300.0 Rev. 2.1	03/22/2017			03/30/2017	Ping Hua	1882321
EPA 350.1 Rev. 2.0	03/22/2017			03/24/2017	Julie Michelle Frank	1882322
EPA 351.2 Rev. 2.0	03/22/2017	03/24/2017	Adrian Shelby	03/27/2017	Joseph Suarez	1882322
EPA 353.2 Rev. 2.0	03/22/2017			03/27/2017	Beverly Y. Sanders	1882322
EPA 365.1 Rev. 2.0	03/22/2017	03/24/2017	Vijayalakshmi Reddy	03/27/2017	Lipi Saha	1882322
EPA 365.1 Rev. 2.0 dissolved	03/22/2017			03/23/2017 11:41	Anthony C. Onicha	1882323
SM 2120 B	03/22/2017			03/23/2017 10:48	Julia Storbeck	1882321
SM 2320 B-97	03/22/2017			03/29/2017	Dale L. Simmons	1882321
SM 2540 C-97	03/22/2017			03/24/2017	Yijie Li	1882321
SM 2540 D-97	03/22/2017			03/24/2017	Yijie Li	1882321
SM 4500 F-C-97	03/22/2017			03/29/2017	Dale L. Simmons	1882321
SM 5310 B-00	03/22/2017			03/23/2017	Julie Michelle Frank	1882322