

Chemical Analysis Report

WQAP-2017-10-03-03

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

Event Description: **kit C (3310 Aucilla River) , (3573B Steinhatchee River)**

Request ID: **RQ-2017-08-14-45**

Customer: **WQAP**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
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Tallahassee, FL 32399-2400
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 24-OCT-2017 11:33



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: Steinhatchee River @ 40m N of SE Yearling Rd Collection Date/Time: 10/03/2017 12:05

Field ID: G1TLHR0065-2017-06

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1933676	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P332682	
	EPA 300.0 Rev. 2.1	Chloride	6.5		mg Cl/L	P332902	
	SM 2120 B	Color (true)	480		PCU	P332659	
	SM 2320 B-97	Total Alkalinity	81		mg CaCO3/L	P333034	
	SM 2540 C-97	TDS	185		mg/L	P333042	
	SM 2540 D-97	TSS	4	I	mg/L	P333088	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P333149	
1933677	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P333176	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P332830	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P332968	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P332805	
	SM 5310 B-00	Organic Carbon	42		mg C/L	P332961	
1933678	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P332729	
1933684	EPA 200.7 Rev. 4.4	Iron	1.06E+03		ug/L	P332818	
		Zinc	5.0	U	ug/L	P332818	
	EPA 200.8 Rev. 5.4	Arsenic	0.33		ug/L	P332818	
		Cadmium	0.020	U	ug/L	P332818	
		Chromium	0.49	I	ug/L	P332818	
		Copper	0.20	U	ug/L	P332818	
		Lead	0.082	I	ug/L	P332818	
		Nickel	0.27	I	ug/L	P332818	
		Silver	0.010	U	ug/L	P332818	

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: P332682

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P332818

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: P332818

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: P332818

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: P332902

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333176

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332830

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332968

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332805

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332729

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

Reference Method: SM 2120 B
Batch ID: P332659

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P333034

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: P333042

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333088

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P333149

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P332961

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: P332818

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	106		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P332818

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.3		P	85 - 115
Cadmium	98.4		P	85 - 115
Chromium	94.5		P	85 - 115
Copper	94.5		P	85 - 115
Lead	93.0		P	85 - 115
Nickel	96.7		P	85 - 115
Silver	93.9		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332902

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333176

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: P332830

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332805

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332729

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

Reference Method: SM 2320 B-97
Batch ID: P333034

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

Reference Method: SM 4500 F-C-97
Batch ID: P333149

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P332961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P332818

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P332818

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933720	Iron	103		P	80 - 120
1933720	Zinc	104		P	80 - 120
1933903	Iron	101	103	P/P	80 - 120
1933903	Zinc	104	106	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P332818

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933720	Arsenic	97.8		P	80 - 120
1933720	Cadmium	97.2		P	80 - 120
1933720	Chromium	92.7		P	80 - 120
1933720	Copper	93.8		P	80 - 120
1933720	Lead	93.6		P	80 - 120
1933720	Nickel	93.9		P	80 - 120
1933720	Silver	92.9		P	80 - 120
1933903	Arsenic	97.3	97.4	P/P	80 - 120
1933903	Cadmium	100	99.6	P/P	80 - 120
1933903	Chromium	94.3	93.3	P/P	80 - 120
1933903	Copper	94.1	93.2	P/P	80 - 120
1933903	Lead	94.2	93.5	P/P	80 - 120
1933903	Nickel	95.3	94.9	P/P	80 - 120
1933903	Silver	94.0	94.7	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933597	Chloride	102		P	90 - 110
1933599	Chloride	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333176

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933677	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933707	Kjeldahl Nitrogen	89.9	92.4	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933601	NO2NO3-N	108	109	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933643	Total-P	100	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933645	O-Phosphate-P	97.8	106	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P333149

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933774	Fluoride	98.4	99.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P332961

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933601	Organic Carbon	95.0	95.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933662	Turbidity	2.41	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P332818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933903	Iron	1.36	Spike	P	0 - 20
1933903	Zinc	1.39	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P332818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933903	Arsenic	0.0930	Spike	P	0 - 20
1933903	Cadmium	0.489	Spike	P	0 - 20
1933903	Chromium	1.09	Spike	P	0 - 20
1933903	Copper	0.893	Spike	P	0 - 20
1933903	Lead	0.706	Spike	P	0 - 20
1933903	Nickel	0.342	Spike	P	0 - 20
1933903	Silver	0.703	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933599	Chloride	0.362	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933677	Ammonia-N	0.597	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933707	Kjeldahl Nitrogen	2.19	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933601	NO2NO3-N	0.341	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933643	Total-P	3.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933645	O-Phosphate-P	4.62	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P332659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933661	Color (true)	1.02	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P333034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933774	Total Alkalinity	0.403	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P333042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933642	TDS	2.85	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P333149

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933774	Fluoride	0.993	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P332961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933601	Organic Carbon	0.923	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: A79312
Included Lab Sample IDs: 1933676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79320
Included Lab Sample IDs: 1933676

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A79336
Included Lab Sample IDs: 1933678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	102	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A79396
Included Lab Sample IDs: 1933677

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79401

Included Lab Sample IDs: 1933676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	108	107	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A79408

Included Lab Sample IDs: 1933684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	101	P/P	90 - 110
Cadmium	98.4	98.6	P/P	90 - 110
Chromium	94.6	95.9	P/P	90 - 110
Copper	99.1	98.5	P/P	90 - 110
Lead	95.2	95.1	P/P	90 - 110
Nickel	98.4	98.5	P/P	90 - 110
Silver	94.2	94.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79419

Included Lab Sample IDs: 1933677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	97.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79421

Included Lab Sample IDs: 1933677

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A79440

Included Lab Sample IDs: 1933684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	97.8	96.4	P/P	90 - 110
Zinc	98.9	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79441

Included Lab Sample IDs: 1933677

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

Reference Method: SM 2320 B-97

Run ID: A79442

Included Lab Sample IDs: 1933676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A79482
Included Lab Sample IDs: 1933676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A79489
Included Lab Sample IDs: 1933677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	102	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						2.41	
EPA 200.7 Rev. 4.4	Iron	106	103	101	103			1.36
	Zinc	102	104	104	106			1.39
EPA 200.8 Rev. 5.4	Arsenic	98.3	97.8	97.3	97.4			0.0930
	Cadmium	98.4	97.2	100	99.6			0.489
	Chromium	94.5	92.7	94.3	93.3			1.09
	Copper	94.5	93.8	94.1	93.2			0.893
	Lead	93.0	93.6	94.2	93.5			0.706
	Nickel	96.7	93.9	95.3	94.9			0.342
	Silver	93.9	92.9	94.0	94.7			0.703
EPA 300.0 Rev. 2.1	Chloride	103	101	102			0.362	
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	101				0.597
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	89.9	92.4				2.19
EPA 353.2 Rev. 2.0	NO2NO3-N	107	108	109				0.341
EPA 365.1 Rev. 2.0	Total-P	99.9	100	96.4				3.04
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.8	106				4.62
SM 2120 B	Color (true)						1.02	
SM 2320 B-97	Total Alkalinity	103					0.403	
SM 2540 C-97	TDS						2.85	
SM 4500 F-C-97	Fluoride	98.6	98.4	99.6				0.993
SM 5310 B-00	Organic Carbon	95.6	95.0	95.9				0.923

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1933676
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1933684
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1933684

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1933676
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1933677
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1933677
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1933677
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1933677
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1933678
SM 2120 B / E31780	True Color measured at 450 nm	1933676
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1933676
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1933676
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1933676
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1933676
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1933677

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	10/03/2017			10/03/2017 15:52	DeAsia Armster	1933676
EPA 200.7 Rev. 4.4	10/03/2017	10/05/2017	Elliott D. Healy	10/06/2017	Betina Topolski	1933684
EPA 200.8 Rev. 5.4	10/03/2017	10/05/2017	Elliott D. Healy	10/06/2017	Nadine Brooks	1933684
EPA 300.0 Rev. 2.1	10/03/2017			10/06/2017	Julia Storbeck	1933676
EPA 350.1 Rev. 2.0	10/03/2017			10/10/2017	Sofia Elnemr	1933677
EPA 351.2 Rev. 2.0	10/03/2017	10/06/2017	Adrian Shelby	10/09/2017	Virginia P. Brown	1933677
EPA 353.2 Rev. 2.0	10/03/2017			10/09/2017	Beverly Y. Sanders	1933677
EPA 365.1 Rev. 2.0	10/03/2017	10/05/2017	Sima Feizi	10/06/2017	Lipi Saha	1933677
EPA 365.1 Rev. 2.0 dissolved	10/03/2017			10/04/2017 12:13	Megan Treadwell	1933678
SM 2120 B	10/03/2017			10/03/2017 16:40	Tanya Welborn	1933676
SM 2320 B-97	10/03/2017			10/07/2017	Dale L. Simmons	1933676
SM 2540 C-97	10/03/2017			10/06/2017	Yijie Li	1933676
SM 2540 D-97	10/03/2017			10/06/2017	Yijie Li	1933676
SM 4500 F-C-97	10/03/2017			10/10/2017	Dale L. Simmons	1933676
SM 5310 B-00	10/03/2017			10/07/2017	Ping Hua	1933677