

Chemical Analysis Report

SW-DIST-2017-07-19-01

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

Event Description: **Clear Lake-REF**
Request ID: **RQ-2017-07-17-30**
Customer: **SW-DIST**
Project ID: **LAKESREF**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 09-AUG-2017 14:17



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: Clear Lake Ref Lake

Collection Date/Time: 07/18/2017 11:00

Field ID: CLEARLK

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914469	EPA 300.0	Bromide**	0.038	I	mg Br/L	P329150	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P328865	
		Sulfate	11		mg SO4/L	P328867	
		Color (true)	7.1		PCU	P328803	
	SM 2320 B-97	Total Alkalinity	54		mg CaCO3/L	P328971	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P329084	
1914470	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P328954	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P328830	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P328981	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P328835	
1914471	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328788	
1914474	EPA 200.7 Rev. 4.4	Calcium	21.9		mg/L	P328878	
		Iron	30	U	ug/L	P328878	
		Magnesium	5.28		mg/L	P328878	
		Potassium	5.1		mg/L	P328878	
		Sodium	7.6		mg/L	P328878	
		Zinc	5.0	U	ug/L	P328878	
	EPA 200.8 Rev. 5.4	Arsenic	2.64		ug/L	P328878	
		Cadmium	0.020	U	ug/L	P328878	
		Chromium	0.40	U	ug/L	P328878	
		Copper	0.25	I	ug/L	P328878	
		Lead	0.057	I	ug/L	P328878	
		Nickel	0.20	U	ug/L	P328878	
		Silver	0.010	U	ug/L	P328878	

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P328878

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: P328878

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P328878

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

Reference Method: EPA 300.0
Batch ID: P329150

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328865

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328867

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328954

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328830

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328981

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328835

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328788

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P328803

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P328971

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

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P328878

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	110		P	85 - 115
Iron	111		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	101		P	85 - 115
Sodium	105		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P328878

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	99.9		P	85 - 115
Chromium	98.1		P	85 - 115
Copper	98.3		P	85 - 115
Lead	95.7		P	85 - 115
Nickel	99.6		P	85 - 115
Silver	99.2		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P329150

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	94.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328865

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328867

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328954

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328830

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328981

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328788

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

Reference Method: SM 2320 B-97
Batch ID: P328971

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

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P328878

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: P328878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914325	Calcium	112		P	80 - 120
1914325	Iron	113		P	80 - 120
1914325	Magnesium	115		P	80 - 120
1914325	Potassium	102		P	80 - 120
1914325	Sodium	108		P	80 - 120
1914325	Zinc	108		P	80 - 120
1914474	Calcium	106		P	80 - 120
1914474	Iron	113	111	P/P	80 - 120
1914474	Magnesium	106		P	80 - 120
1914474	Potassium	98.5		P	80 - 120
1914474	Sodium	103		P	80 - 120
1914474	Zinc	106	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P328878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914325	Arsenic	101		P	80 - 120
1914325	Cadmium	102		P	80 - 120
1914325	Chromium	100		P	80 - 120
1914325	Copper	98.9		P	80 - 120
1914325	Lead	96.2		P	80 - 120
1914325	Nickel	99.6		P	80 - 120
1914325	Silver	97.8		P	80 - 120
1914474	Arsenic	104	105	P/P	80 - 120
1914474	Cadmium	102	105	P/P	80 - 120
1914474	Chromium	97.7	98.8	P/P	80 - 120
1914474	Copper	100	101	P/P	80 - 120
1914474	Lead	98.0	98.9	P/P	80 - 120
1914474	Nickel	101	102	P/P	80 - 120
1914474	Silver	99.0	101	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P329150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915311	Bromide	101	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328865

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914489	Chloride	99.7		P	90 - 110
1914585	Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914489	Sulfate	97.1		P	90 - 110
1914585	Sulfate	98.6		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914470	Ammonia-N	96.6	97.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914493	Kjeldahl Nitrogen	107	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914491	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914470	Total-P	96.2	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914356	O-Phosphate-P	101	99.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914940	Fluoride	99.4	100	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P328878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914474	Calcium	1.44	Spike	P	0 - 20
1914474	Iron	2.46	Spike	P	0 - 20
1914474	Magnesium	2.47	Spike	P	0 - 20
1914474	Potassium	0.903	Spike	P	0 - 20
1914474	Sodium	1.07	Spike	P	0 - 20
1914474	Zinc	0.955	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P328878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914474	Arsenic	0.894	Spike	P	0 - 20
1914474	Cadmium	2.60	Spike	P	0 - 20
1914474	Chromium	1.16	Spike	P	0 - 20
1914474	Copper	0.664	Spike	P	0 - 20
1914474	Lead	0.873	Spike	P	0 - 20
1914474	Nickel	1.55	Spike	P	0 - 20
1914474	Silver	1.63	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P329150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915311	Bromide	0.929	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914585	Chloride	1.71	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914585	Sulfate	4.59	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914470	Ammonia-N	0.630	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914493	Kjeldahl Nitrogen	8.53	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914491	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914470	Total-P	0.770	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914356	O-Phosphate-P	0.696	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P328803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914484	Color (true)	3.54	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P328971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914940	Total Alkalinity	0.242	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914940	Fluoride	0.477	Spike	P	0 - 3.0

* 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 300.0 Rev. 2.1
Run ID: A77800
Included Lab Sample IDs: 1914469

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A77817
Included Lab Sample IDs: 1914471

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A77822
Included Lab Sample IDs: 1914469

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	109	106	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A77865
Included Lab Sample IDs: 1914470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77866
Included Lab Sample IDs: 1914470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.9	95.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A77874
Included Lab Sample IDs: 1914470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A77875
Included Lab Sample IDs: 1914474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	103	P/P	90 - 110
Cadmium	99.8	102	P/P	90 - 110
Chromium	97.2	100	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Lead	95.6	96.3	P/P	90 - 110
Nickel	99.9	102	P/P	90 - 110
Silver	96.4	97.6	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A77884
Included Lab Sample IDs: 1914469

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A77896
Included Lab Sample IDs: 1914470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	97.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77918

Included Lab Sample IDs: 1914474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	101	P/P	90 - 110
Iron	102	103	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	95.6	96.8	P/P	90 - 110
Sodium	97.8	99.5	P/P	90 - 110
Zinc	100	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77941

Included Lab Sample IDs: 1914469

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

Reference Method: EPA 300.0

Run ID: A77965

Included Lab Sample IDs: 1914469

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	102	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 200.7 Rev. 4.4	Calcium	110	112 106			1.44
	Iron	111	113 111			2.46
	Magnesium	109	115 106			2.47
	Potassium	101	102 98.5			0.903
	Sodium	105	108 103			1.07
	Zinc	104	108 106 105			0.955
	Arsenic	101	101 104 105			0.894
EPA 200.8 Rev. 5.4	Cadmium	99.9	102 102 105			2.60
	Chromium	98.1	100 97.7 98.8			1.16
	Copper	98.3	98.9 100 101			0.664
	Lead	95.7	96.2 98.0 98.9			0.873
	Nickel	99.6	99.6 101 102			1.55
	Silver	99.2	97.8 99.0 101			1.63
	Bromide	94.8	101 100			0.929
EPA 300.0						
EPA 300.0 Rev. 2.1	Chloride	98.4	96.9 99.7		1.71	
	Sulfate	99.4	98.6 97.1		4.59	
EPA 350.1 Rev. 2.0	Ammonia-N	98.9	96.6 97.3			0.630
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	107 97.8			8.53
EPA 353.2 Rev. 2.0	NO2NO3-N	101	102 102			0.0
EPA 365.1 Rev. 2.0	Total-P	94.4	96.2 97.0			0.770

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 365.1 Rev. 2.0 dissolved SM 2120 B	O-Phosphate-P Color (true)	97.5	101 99.5		3.54	0.696
SM 2320 B-97	Total Alkalinity	102			0.242	
SM 4500 F-C-97	Fluoride	96.7	99.4 100			0.477

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1914474
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1914474
EPA 300.0 / E31780	Bromide in aqueous matrices	1914469
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1914469
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1914469
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1914470
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1914470
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1914470
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1914470
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1914471
SM 2120 B / E31780	True Color measured at 450 nm	1914469
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1914469
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1914469

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	07/19/2017	07/20/2017	Elliott D. Healy	07/24/2017	Betina Topolski	1914474
EPA 200.8 Rev. 5.4	07/19/2017	07/20/2017	Elliott D. Healy	07/21/2017	Nadine Brooks	1914474
EPA 300.0	07/19/2017			07/27/2017	Julia Storbeck	1914469
EPA 300.0 Rev. 2.1	07/19/2017			07/20/2017	Julia Storbeck	1914469
EPA 350.1 Rev. 2.0	07/19/2017			07/21/2017	Sofia Elnemr	1914470
EPA 351.2 Rev. 2.0	07/19/2017	07/20/2017	Adrian Shelby	07/21/2017	Joseph Suarez	1914470
EPA 353.2 Rev. 2.0	07/19/2017			07/24/2017	Beverly Y. Sanders	1914470
EPA 365.1 Rev. 2.0	07/19/2017	07/20/2017	Adrian Shelby	07/21/2017	Lipi Saha	1914470
EPA 365.1 Rev. 2.0 dissolved	07/19/2017			07/19/2017 13:50	Lipi Saha	1914471
SM 2120 B	07/19/2017			07/19/2017 16:05	Tanya Welborn	1914469
SM 2320 B-97	07/19/2017			07/21/2017	Dale L. Simmons	1914469
SM 4500 F-C-97	07/19/2017			07/25/2017	Dale L. Simmons	1914469