

Chemical Analysis Report

CEN-DIST-2023-02-14-02

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

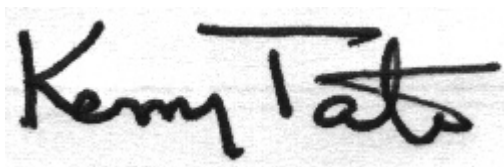
Event Description: **BMAP - Sweetwater, Salt and Long**
Request ID: **RQ-2023-02-13-17**
Customer: **CEN-DIST**
Project ID: **BMAP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 06-MAR-2023 11:14

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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, Nutrients and Pesticides.

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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Long Branch @ 0.7 mi DS OF CR 13

Collection Date/Time: 02/13/2023 10:38

Field ID: G2CE0036

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2387097	DEP SOP: NU-094-1	Color (true)	59		PCU	P425788	
	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P425794	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P426336	
		Sulfate	42		mg SO4/L	P426339	
	SM 2320 B-2011	Total Alkalinity	84		mg CaCO3/L	P426295	
	SM 2540 C-2015	TDS	198		mg/L	P426459	
	SM 2540 D-2015	TSS	3	I	mg/L	P426313	
	SM 4500-F- C-2011	Fluoride	0.088	I	mg F/L	P426438	
2387098	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P426243	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P426209	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P425944	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P425990	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P426023	
2387099	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.076		mg P/L	P425782	
2387107	EPA 8321B	Sucralose	0.12		ug/L	P425764	
2387108	EPA 200.7 Rev. 4.4	Calcium	48.8		mg/L	P425970	
		Iron	290		ug/L	P425970	
		Magnesium	2.58		mg/L	P425970	
		Potassium	1.3		mg/L	P425970	
		Sodium	12.4		mg/L	P425970	
		Zinc	5.0	U	ug/L	P425970	
		Arsenic	0.78		ug/L	P425970	
	EPA 200.8 Rev. 5.4	Cadmium	0.020	U	ug/L	P425970	
		Chromium	0.59	I	ug/L	P425970	
		Copper	0.41	I	ug/L	P425970	
		Lead	0.49		ug/L	P425970	
		Nickel	0.50	U	ug/L	P425970	
		Silver	0.010	U	ug/L	P426231	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Sweetwater Creek at Florida Avenue

Collection Date/Time: 02/13/2023 11:28

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2387091	DEP SOP: NU-094-1	Color (true)	59		PCU	P425788	
	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P425794	
	EPA 300.0 Rev. 2.1	Chloride	160		mg Cl/L	P426336	
		Sulfate	20		mg SO4/L	P426339	
	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P426295	
	SM 2540 C-2015	TDS	414		mg/L	P426459	
	SM 2540 D-2015	TSS	3	I	mg/L	P426313	
	SM 4500-F- C-2011	Fluoride	0.13		mg F/L	P426438	
2387093	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P426243	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P426209	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P425944	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P425932	
	SM 5310 B-2011	Organic Carbon	9.9		mg C/L	P426023	
2387095	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.089		mg P/L	P425782	

Ref. Method and Comment:

SM 2540 C-2015: The reported result is consistent with the conductivity measured in the laboratory, 821 umhos/cm.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Salt Creek @ Packard Ave

Collection Date/Time: 02/13/2023 11:46

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2387092	DEP SOP: NU-094-1	Color (true)	130		PCU	P425788	
	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P425794	
	EPA 300.0 Rev. 2.1	Chloride	1.2E+03		mg Cl/L	P426336	
		Sulfate	170		mg SO4/L	P426339	
	SM 2320 B-2011	Total Alkalinity	132		mg CaCO3/L	P426295	
	SM 2540 C-2015	TDS	2.04E+03		mg/L	P426459	
	SM 2540 D-2015	TSS	3	I	mg/L	P426313	
2387094	SM 4500-F- C-2011	Fluoride	0.12		mg F/L	P426438	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.074		mg N/L	P426243	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P426209	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P425944	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P425932	
2387096	SM 5310 B-2011	Organic Carbon	15		mg C/L	P426023	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P425782	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P425788

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425794

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P425970

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: P425970

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426231

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426336

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426339

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426243

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426243

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426209

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425944

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425932

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425990

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P425782

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

Reference Method: EPA 8321B
Batch ID: P425764

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P426295

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

Reference Method: SM 2540 C-2015
Batch ID: P426459

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P426313

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P426438

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P426023

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P425788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425794

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P425970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	102		P	85 - 115
Magnesium	100		P	85 - 115
Potassium	95.2		P	85 - 115
Sodium	98.5		P	85 - 115
Zinc	107		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P425970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	99.9		P	85 - 115
Cadmium	99.2		P	85 - 115
Chromium	102		P	85 - 115
Copper	99.9		P	85 - 115
Lead	100		P	85 - 115
Nickel	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	97.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426336

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426339

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426243

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: P426243

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426209

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425944

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425932

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425990

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P425782

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

Reference Method: EPA 8321B
Batch ID: P425764

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	104		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P426295

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P426459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	106		P	89 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P426313

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.3		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P426438

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426023

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P425970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386597	Calcium	97.2		P	80 - 120
2386597	Iron	101	99.1	P/P	80 - 120
2386597	Magnesium	97.0		P	80 - 120
2386597	Potassium	92.6	91.5	P/P	80 - 120
2386597	Sodium	98.3		P	80 - 120
2386597	Zinc	104	104	P/P	80 - 120
2387854	Calcium	103		P	80 - 120
2387854	Iron	102		P	80 - 120
2387854	Magnesium	101		P	80 - 120
2387854	Potassium	101		P	80 - 120
2387854	Sodium	101		P	80 - 120
2387854	Zinc	108		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P425970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386597	Arsenic	99.4	98.7	P/P	80 - 120
2386597	Cadmium	101	100	P/P	80 - 120
2386597	Chromium	103	103	P/P	80 - 120
2386597	Copper	95.6	95.3	P/P	80 - 120
2386597	Lead	101	99.6	P/P	80 - 120
2386597	Nickel	100	101	P/P	80 - 120
2387854	Arsenic	99.5		P	80 - 120
2387854	Cadmium	100		P	80 - 120
2387854	Chromium	101		P	80 - 120
2387854	Copper	97.5		P	80 - 120
2387854	Lead	101		P	80 - 120
2387854	Nickel	99.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P426231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386816	Silver	98.3	98.3	P/P	80 - 120
2387854	Silver	98.7		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P426336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386877	Chloride	104		P	90 - 110
2387009	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P426339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386877	Sulfate	94.3		P	90 - 110
2387009	Sulfate	109		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426243

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2387098	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2387098	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386921	NO2NO3-N	94.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2387087	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2387120	Total-P	98.7	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P425782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2387011	O-Phosphate-P	97.6	96.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P425764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386890	Sucralose	73.7	75.2	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P426438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386877	Fluoride	99.5	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2387115	Organic Carbon	95.0	96.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P425788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387009	Color (true)	0.0902	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387057	Turbidity	0.518	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P425970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386597	Calcium	0.345	Spike	P	0 - 20
2386597	Iron	1.46	Spike	P	0 - 20
2386597	Magnesium	1.68	Spike	P	0 - 20
2386597	Potassium	1.03	Spike	P	0 - 20
2386597	Sodium	0.0337	Spike	P	0 - 20
2386597	Zinc	0.263	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P425970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386597	Arsenic	0.691	Spike	P	0 - 20
2386597	Cadmium	1.32	Spike	P	0 - 20
2386597	Chromium	0.149	Spike	P	0 - 20
2386597	Copper	0.405	Spike	P	0 - 20
2386597	Lead	1.28	Spike	P	0 - 20
2386597	Nickel	0.696	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386816	Silver	0.0528	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386877	Chloride	1.94	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386877	Sulfate	3.03	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387098	Ammonia-N	0.456	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387098	Kjeldahl Nitrogen	2.31	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386921	NO2NO3-N	0.380	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387087	Total-P	0.0462	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387120	Total-P	0.976	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P425782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387011	O-Phosphate-P	0.822	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P425764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386890	Sucralose	1.80	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P426295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387118	Total Alkalinity	1.32	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P426459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386878	TDS	7.32	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P426438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386877	Fluoride	0.480	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P426023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387115	Organic Carbon	0.834	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2387107
Field Sample ID: G2CE0036

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	75.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A117433

Included Lab Sample IDs: 2387095, 2387096, 2387099

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	100	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A117435

Included Lab Sample IDs: 2387091, 2387092, 2387097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A117437

Included Lab Sample IDs: 2387091, 2387092, 2387097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117480

Included Lab Sample IDs: 2387093, 2387094, 2387098

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

Reference Method: SM 5310 B-2011

Run ID: A117520

Included Lab Sample IDs: 2387093, 2387094, 2387098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	98.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A117541

Included Lab Sample IDs: 2387107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	114	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117557

Included Lab Sample IDs: 2387108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.3	98.5	P/P	90 - 110
Cadmium	99.3	101	P/P	90 - 110
Chromium	99.9	98.7	P/P	90 - 110
Copper	96.1	99.7	P/P	90 - 110
Lead	99.9	101	P/P	90 - 110
Nickel	97.0	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117564

Included Lab Sample IDs: 2387098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117572

Included Lab Sample IDs: 2387093, 2387094

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117599

Included Lab Sample IDs: 2387093, 2387094, 2387098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A117607

Included Lab Sample IDs: 2387091, 2387092, 2387097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	105	102	P/P	90 - 110
Sulfate	108	104	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117613

Included Lab Sample IDs: 2387108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	98.5	P/P	90 - 110
Iron	99.7	98.4	P/P	90 - 110
Magnesium	100	98.5	P/P	90 - 110
Potassium	98.4	97.0	P/P	90 - 110
Sodium	99.4	97.3	P/P	90 - 110
Zinc	106	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A117622

Included Lab Sample IDs: 2387091, 2387092, 2387097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.3	99.0	P/P	90 - 110
Total Alkalinity	98.5	97.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117640

Included Lab Sample IDs: 2387108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	95.6	96.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A117689

Included Lab Sample IDs: 2387091, 2387092, 2387097

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117706

Included Lab Sample IDs: 2387093, 2387094, 2387098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	103	P/P	90 - 110
Kjeldahl Nitrogen	103	96.6	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 SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	102				0.0902	
EPA 180.1 Rev. 2.0	Turbidity	102				0.518	
EPA 200.7 Rev. 4.4	Calcium	100	97.2	103			0.345
	Iron	102	101	99.1	102		1.46
	Magnesium	100	97.0	101			1.68
	Potassium	95.2	92.6	91.5	101		1.03
	Sodium	98.5	98.3	101			0.0337
	Zinc	107	104	104	108		0.263
EPA 200.8 Rev. 5.4	Arsenic	99.9	99.4	98.7	99.5		0.691
	Cadmium	99.2	101	100	100		1.32
	Chromium	102	103	103	101		0.149
	Copper	99.9	95.6	95.3	97.5		0.405
	Lead	100	101	99.6	101		1.28
	Nickel	103	100	101	99.7		0.696
	Silver	97.5	98.3	98.3	98.7		0.0528
EPA 300.0 Rev. 2.1	Chloride	101	104	105		1.94	
	Sulfate	105	94.3	109		3.03	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	101	101			0.456
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.6	107	104			2.31
EPA 353.2 Rev. 2.0	NO2NO3-N	102	94.2				0.380
EPA 365.1 Rev. 2.0	Total-P	104	103	103			0.0462
	Total-P	99.4	98.7	99.8			0.976
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	97.6	96.6			0.822
EPA 8321B	Sucralose	104	73.7	75.2			1.80
SM 2320 B-2011	Total Alkalinity	98.9				1.32	
SM 2540 C-2015	TDS	106				7.32	
SM 2540 D-2015	TSS	94.3					
SM 4500-F- C-2011	Fluoride	97.7	99.5	100			0.480
SM 5310 B-2011	Organic Carbon	94.3	95.0	96.1			0.834

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2387091, 2387092, 2387097
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2387091, 2387092, 2387097
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2387108
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2387108
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2387091, 2387092, 2387097
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2387091, 2387092, 2387097
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2387093, 2387094, 2387098
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2387093, 2387094, 2387098
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2387093, 2387094, 2387098
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2387093, 2387094, 2387098
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2387095, 2387096, 2387099
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2387107
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2387091, 2387092, 2387097
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2387091, 2387092, 2387097
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2387091, 2387092, 2387097
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2387091, 2387092, 2387097
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2387093, 2387094, 2387098

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	02/14/2023			02/14/2023 14:52	Alexis Price	2387091
	02/14/2023			02/14/2023 14:53	Alexis Price	2387092, 2387097
EPA 180.1 Rev. 2.0	02/14/2023			02/14/2023 15:03	Anna M. Plaviak	2387091
	02/14/2023			02/14/2023 15:04	Anna M. Plaviak	2387092
	02/14/2023			02/14/2023 15:05	Anna M. Plaviak	2387097
EPA 200.7 Rev. 4.4	02/14/2023	02/17/2023 10:50	George D Taylor	02/22/2023 14:12	McKinley C Carter	2387108
EPA 200.8 Rev. 5.4	02/14/2023	02/17/2023 10:50	George D Taylor	02/20/2023 19:26	Conrad Hartmann	2387108
	02/14/2023	02/22/2023 13:20	George D Taylor	02/23/2023 14:51	Conrad Hartmann	2387108
EPA 300.0 Rev. 2.1	02/14/2023			02/24/2023 02:01	Anna M. Plaviak	2387091
	02/14/2023			02/24/2023 02:16	Anna M. Plaviak	2387092
	02/14/2023			02/24/2023 02:31	Anna M. Plaviak	2387097
EPA 350.1 Rev. 2.0	02/14/2023			02/22/2023 12:33	Khloe J Berg	2387098
	02/14/2023			02/22/2023 12:37	Khloe J Berg	2387093
	02/14/2023			02/22/2023 12:38	Khloe J Berg	2387094
EPA 351.2 Rev. 2.0	02/14/2023	02/22/2023 13:15	Simonne.V. Calhoun	02/28/2023 13:44	Samantha L Bates	2387093
	02/14/2023	02/22/2023 13:15	Simonne.V. Calhoun	02/28/2023 13:45	Samantha L Bates	2387094
	02/14/2023	02/22/2023 13:15	Simonne.V. Calhoun	02/28/2023 13:50	Samantha L Bates	2387098
EPA 353.2 Rev. 2.0	02/14/2023			02/16/2023 10:46	Beverly Y. Sanders	2387093
	02/14/2023			02/16/2023 10:48	Beverly Y. Sanders	2387094
	02/14/2023			02/16/2023 10:49	Beverly Y. Sanders	2387098
EPA 365.1 Rev. 2.0	02/14/2023	02/16/2023 16:29	Adam P Silver	02/17/2023 10:10	James L Waggeberby	2387093
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/17/2023 10:11	James L Waggeberby	2387094
	02/14/2023	02/17/2023 12:21	Adam P Silver	02/21/2023 09:39	James L Waggeberby	2387098
EPA 365.1 Rev. 2.0 dissolved	02/14/2023			02/14/2023 14:09	Elise M. Gillis	2387095, 2387096
	02/14/2023			02/14/2023 14:10	Elise M. Gillis	2387099
EPA 8321B	02/14/2023	02/16/2023 14:00	Manjita Shrestha	02/17/2023 12:55	Manjita Shrestha	2387107
SM 2320 B-2011	02/14/2023			02/23/2023 06:43	Chandler E Cox	2387097
	02/14/2023			02/23/2023 10:27	Chandler E Cox	2387091
	02/14/2023			02/23/2023 10:54	Chandler E Cox	2387092
SM 2540 C-2015	02/14/2023			02/17/2023 15:46	Yijie Li	2387091, 2387092, 2387097
SM 2540 D-2015	02/14/2023			02/17/2023 15:46	Yijie Li	2387091, 2387092, 2387097
SM 4500-F- C-2011	02/14/2023			02/28/2023 05:01	Chandler E Cox	2387097
	02/14/2023			02/28/2023 06:10	Chandler E Cox	2387091
	02/14/2023			02/28/2023 06:20	Chandler E Cox	2387092
SM 5310 B-2011	02/14/2023			02/17/2023 05:36	Elise M. Gillis	2387093
	02/14/2023			02/17/2023 05:52	Elise M. Gillis	2387094
	02/14/2023			02/17/2023 06:05	Elise M. Gillis	2387098