

Chemical Analysis Report

CEN-DIST-2023-11-08-01

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

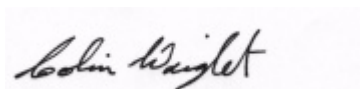
Event Description: **BMAP - Sweetwater, Salt and Long**
Request ID: **RQ-2023-11-06-24**
Customer: **CEN-DIST**
Project ID: **BMAP**

Send Reports to:
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FL Dept. of Environmental Protection
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Orlando, FL 32803-3767
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Certified by: Colin Wright, Program Administrator

Date Certified: 28-NOV-2023 09:26

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light blue rectangular background.

Case Narrative

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

Results for the following analytical groups are included in this report: Metals, 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 at 07 Mi DS of Cr 13

Collection Date/Time: 11/07/2023 10:03

Field ID: G2CE0036

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2450037	DEP SOP: NU-094-1	Color (true)	53		PCU	P437596	
	EPA 180.1 Rev. 2.0	Turbidity	27		NTU	P437589	
	EPA 300.0 Rev. 2.1	Chloride	21	A	mg Cl/L	P438146	
		Sulfate	40	A	mg SO4/L	P438150	
	SM 2320 B-2011	Total Alkalinity	95		mg CaCO3/L	P438022	
	SM 2540 C-2015	TDS	236		mg/L	P438106	
	SM 2540 D-2015	TSS	6	I	mg/L	P437819	
	SM 4500-F- C-2011	Fluoride	0.10		mg F/L	P438027	
2450038	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P437984	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P437673	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P437974	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P437793	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P437885	
2450039	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.090		mg P/L	P437597	
2450050	EPA 8321B	Sucralose	0.11		ug/L	P437555	
2450052	EPA 200.7 Rev. 4.4	Calcium	57.9		mg/L	P437629	
		Iron	470		ug/L	P437629	
		Magnesium	2.57		mg/L	P437629	
		Potassium	1.4		mg/L	P437629	
		Sodium	12.6		mg/L	P437629	
		Strontium	261		ug/L	P437629	
		Tin	3.0	U	ug/L	P437629	
		Titanium	18.0		ug/L	P437629	
		Vanadium	3.6	I	ug/L	P437629	
		Zinc	16	I	ug/L	P437629	
	EPA 200.8 Rev. 5.4	Aluminum	1.31E+03		ug/L	P437629	
		Antimony	0.29		ug/L	P437629	
		Arsenic	1.40		ug/L	P437629	
		Barium	29.6		ug/L	P437629	
		Beryllium	0.054		ug/L	P437629	
		Boron	24.8		ug/L	P437629	
		Cadmium	0.023	I	ug/L	P437629	
		Chromium	1.4	I	ug/L	P437629	
		Cobalt	0.188		ug/L	P437629	
		Copper	0.65	I	ug/L	P437629	
		Lead	0.99		ug/L	P437629	
		Manganese	4.87		ug/L	P437629	
		Molybdenum	0.71		ug/L	P437629	
		Nickel	0.66	I	ug/L	P437629	
		Selenium	0.84		ug/L	P437629	
		Silver	0.010	U	ug/L	P437629	
		Thallium	0.10	U	ug/L	P437629	
	SM 2340 B-2011	Hardness	155		mg/L	P437629	

Field ID: G2CE0036

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for titanium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: FB

Collection Date/Time: 11/07/2023 10:24

Field ID: FB_11072023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2450040	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437594	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P437589	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P438146	
		Sulfate	0.20	U	mg SO4/L	P438150	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P438022	
	SM 2540 C-2015	TDS	15	U	mg/L	P438106	
	SM 2540 D-2015	TSS	2	U	mg/L	P437819	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P438027	
2450041	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P437984	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P437673	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P437765	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P437713	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P437885	
2450042	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P437597	
2450051	EPA 8321B	Sucralose	0.010	U	ug/L	P437555	
2450053	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P437629	
		Iron	30	U	ug/L	P437629	
		Magnesium	0.040	U	mg/L	P437629	
		Potassium	0.30	U	mg/L	P437629	
		Sodium	0.50	U	mg/L	P437629	
		Strontium	2.0	U	ug/L	P437629	
		Tin	3.0	U	ug/L	P437629	
		Titanium	0.75	U	ug/L	P437629	
		Vanadium	2.0	U	ug/L	P437629	
		Zinc	5.0	U	ug/L	P437629	
		Aluminum	5.0	U	ug/L	P437629	
		Antimony	0.050	U	ug/L	P437629	
		Arsenic	0.050	U	ug/L	P437629	
	EPA 200.8 Rev. 5.4	Barium	0.20	U	ug/L	P437629	
		Beryllium	0.010	U	ug/L	P437629	
		Boron	2.0	U	ug/L	P437629	
		Cadmium	0.020	U	ug/L	P437629	
		Chromium	0.40	U	ug/L	P437629	
		Cobalt	0.020	U	ug/L	P437629	
		Copper	0.40	U	ug/L	P437629	
		Lead	0.20	U	ug/L	P437629	
		Manganese	0.10	U	ug/L	P437629	
		Molybdenum	0.15	U	ug/L	P437629	
		Nickel	0.50	U	ug/L	P437629	
		Selenium	0.20	U	ug/L	P437629	
		Silver	0.010	U	ug/L	P437629	
		Thallium	0.10	U	ug/L	P437629	

Field ID: FB_11072023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for titanium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Salt Creek at Packard Ave

Collection Date/Time: 11/07/2023 11:23

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2450031	DEP SOP: NU-094-1	Color (true)	58		PCU	P437593	
	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P437589	
	EPA 300.0 Rev. 2.1	Chloride	1.3E+03		mg Cl/L	P438146	
		Sulfate	190		mg SO4/L	P438150	
	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P437916	
	SM 2540 C-2015	TDS	2.51E+03		mg/L	P438106	
	SM 2540 D-2015	TSS	2	I	mg/L	P437819	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P437919	
2450033	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P437984	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P437668	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P437765	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P437793	
	SM 5310 B-2011	Organic Carbon	7.8		mg C/L	P437885	
2450035	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P437597	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: 11/07/2023 11:04

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2450032	DEP SOP: NU-094-1	Color (true)	39		PCU	P437593	
	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P437589	
	EPA 300.0 Rev. 2.1	Chloride	180		mg Cl/L	P438146	
		Sulfate	28		mg SO4/L	P438150	
	SM 2320 B-2011	Total Alkalinity	129		mg CaCO3/L	P437916	
	SM 2540 C-2015	TDS	475		mg/L	P438106	
	SM 2540 D-2015	TSS	2	I	mg/L	P437819	
2450034	SM 4500-F- C-2011	Fluoride	0.34		mg F/L	P437919	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P437984	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P437673	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P437765	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P437713	
2450036	SM 5310 B-2011	Organic Carbon	6.8		mg C/L	P437885	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P437597	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: P437593

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P437594

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P437596

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437589

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437629

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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Component	Result	Code	Units
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438146

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438150

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437984

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437668

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437673

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437765

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437713

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437793

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437597

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

Reference Method: EPA 8321B
Batch ID: P437555

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P437916

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

Reference Method: SM 2320 B-2011
Batch ID: P438022

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

Reference Method: SM 2540 C-2015
Batch ID: P438106

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437819

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P438027

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P437885

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: P437593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P437594

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P437596

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	106		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437589

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	111		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	102		P	85 - 115
Sodium	107		P	85 - 115
Strontium	99.2		P	85 - 115
Tin	97.9		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	99.4		P	85 - 115
Zinc	98.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	99.9		P	85 - 115
Arsenic	100		P	85 - 115
Barium	104		P	85 - 115
Beryllium	97.4		P	85 - 115
Boron	102		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	96.3		P	85 - 115
Cobalt	99.3		P	85 - 115
Copper	101		P	85 - 115
Lead	97.4		P	85 - 115
Manganese	106		P	85 - 115
Molybdenum	92.1		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Nickel	99.5		P	85 - 115
Selenium	101		P	85 - 115
Silver	101		P	85 - 115
Thallium	99.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438146

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438150

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437984

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437668

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437673

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437765

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437713

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437793

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437597

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

Reference Method: EPA 8321B
Batch ID: P437555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	100		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P437916

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P438022

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P438106

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.0		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P437819

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

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P438027

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P437885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P437629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449630	Calcium	101		P	80 - 120
2449630	Iron	107	106	P/P	80 - 120
2449630	Magnesium	100		P	80 - 120
2449630	Potassium	106	105	P/P	80 - 120
2449630	Sodium	106	103	P/P	80 - 120
2449630	Strontium	96.5	95.5	P/P	80 - 120
2449630	Tin	93.3	92.5	P/P	80 - 120
2449630	Vanadium	96.9	96.5	P/P	80 - 120
2449630	Zinc	94.5	95.0	P/P	80 - 120
2449954	Calcium	102		P	80 - 120
2449954	Iron	109		P	80 - 120
2449954	Magnesium	108		P	80 - 120
2449954	Potassium	100		P	80 - 120
2449954	Sodium	101		P	80 - 120
2449954	Strontium	97.0		P	80 - 120
2449954	Tin	93.3		P	80 - 120
2449954	Titanium	99.1		P	80 - 120
2449954	Vanadium	98.7		P	80 - 120
2449954	Zinc	97.8		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P437629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449630	Antimony	95.5	94.9	P/P	80 - 120
2449630	Arsenic	100	101	P/P	80 - 120
2449630	Barium	104	103	P/P	80 - 120
2449630	Beryllium	97.6	96.1	P/P	80 - 120
2449630	Boron	102	105	P/P	80 - 120
2449630	Cadmium	99.8	102	P/P	80 - 120
2449630	Chromium	99.7	94.7	P/P	80 - 120
2449630	Cobalt	97.6	98.7	P/P	80 - 120
2449630	Copper	98.6	99.1	P/P	80 - 120
2449630	Lead	100	100	P/P	80 - 120
2449630	Manganese	109	110	P/P	80 - 120
2449630	Molybdenum	93.0	93.6	P/P	80 - 120
2449630	Nickel	96.5	96.8	P/P	80 - 120
2449630	Selenium	98.2	101	P/P	80 - 120
2449630	Silver	102	103	P/P	80 - 120
2449630	Thallium	103	103	P/P	80 - 120
2449954	Aluminum	101		P	80 - 120
2449954	Antimony	102		P	80 - 120
2449954	Arsenic	101		P	80 - 120
2449954	Barium	103		P	80 - 120
2449954	Beryllium	99.4		P	80 - 120
2449954	Boron	102		P	80 - 120
2449954	Cadmium	103		P	80 - 120
2449954	Chromium	95.1		P	80 - 120
2449954	Cobalt	96.9		P	80 - 120
2449954	Copper	98.9		P	80 - 120
2449954	Lead	99.5		P	80 - 120
2449954	Manganese	108		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449954	Molybdenum	96.0		P	80 - 120
2449954	Nickel	96.9		P	80 - 120
2449954	Selenium	96.6		P	80 - 120
2449954	Silver	99.7		P	80 - 120
2449954	Thallium	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450037	Chloride	95.2		P	90 - 110
2450149	Chloride	96.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450037	Sulfate	96.5		P	90 - 110
2450149	Sulfate	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449890	Ammonia-N	97.6	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450024	Kjeldahl Nitrogen	111	111	F/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450054	Kjeldahl Nitrogen	105	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449972	NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449272	NO2NO3-N	99.0	98.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449709	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450132	Total-P	109	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450039	O-Phosphate-P	101	98.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P437555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449881	Sucralose	106	114	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449973	Fluoride	102	101	P/P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P438027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450379	Fluoride	103	102	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449972	Organic Carbon	93.9	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450149	Color (true)	7.85	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449971	Turbidity	6.00	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449630	Calcium	2.60	Spike	P	0 - 20
2449630	Iron	0.489	Spike	P	0 - 20
2449630	Magnesium	1.89	Spike	P	0 - 20
2449630	Potassium	0.905	Spike	P	0 - 20
2449630	Sodium	2.11	Spike	P	0 - 20
2449630	Strontium	1.03	Spike	P	0 - 20
2449630	Tin	0.816	Spike	P	0 - 20
2449630	Titanium	4.50	Spike	P	0 - 20
2449630	Vanadium	0.415	Spike	P	0 - 20
2449630	Zinc	0.466	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449630	Aluminum	4.67	Spike	P	0 - 20
2449630	Antimony	0.648	Spike	P	0 - 20
2449630	Arsenic	1.02	Spike	P	0 - 20
2449630	Barium	0.800	Spike	P	0 - 20
2449630	Beryllium	1.23	Spike	P	0 - 20
2449630	Boron	1.89	Spike	P	0 - 20
2449630	Cadmium	1.99	Spike	P	0 - 20
2449630	Chromium	3.76	Spike	P	0 - 20
2449630	Cobalt	1.03	Spike	P	0 - 20
2449630	Copper	0.426	Spike	P	0 - 20
2449630	Lead	0.180	Spike	P	0 - 20
2449630	Manganese	0.766	Spike	P	0 - 20
2449630	Molybdenum	0.528	Spike	P	0 - 20
2449630	Nickel	0.243	Spike	P	0 - 20
2449630	Selenium	3.19	Spike	P	0 - 20
2449630	Silver	0.760	Spike	P	0 - 20
2449630	Thallium	0.00546	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450037	Chloride	0.396	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450037	Sulfate	0.690	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449890	Ammonia-N	0.798	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450024	Kjeldahl Nitrogen	0.115	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450054	Kjeldahl Nitrogen	2.36	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449972	NO2NO3-N	1.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449272	NO2NO3-N	0.669	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449709	Total-P	1.67	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450132	Total-P	0.845	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450039	O-Phosphate-P	1.21	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P437555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449881	Sucralose	7.76	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P437916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449973	Total Alkalinity	0.00966	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011
Batch ID: P438022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450379	Total Alkalinity	0.242	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P438106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449420	TDS	6.99	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449973	Fluoride	0.467	Spike	P	0 - 1.9

Reference Method: SM 4500-F- C-2011
Batch ID: P438027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450379	Fluoride	0.467	Spike	P	0 - 1.9

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P437885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449972	Organic Carbon	1.01	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2450050
Field Sample ID: G2CE0036

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	60.6	P	30 - 160

Lab Sample ID: 2450051
Field Sample ID: FB_11072023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	104	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122634

Included Lab Sample IDs: 2450031, 2450032, 2450037, 2450040

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

Reference Method: DEP SOP: NU-094-1

Run ID: A122635

Included Lab Sample IDs: 2450031, 2450032, 2450037, 2450040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	98.6	P/P	90 - 110
Color (true)	98.3	101	P/P	90 - 110
Color (true)	99.1	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A122636

Included Lab Sample IDs: 2450035, 2450036, 2450039, 2450042

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122684

Included Lab Sample IDs: 2450050, 2450051

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A122698

Included Lab Sample IDs: 2450052, 2450053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	102	P/P	90 - 110
Calcium	102	99.6	P/P	90 - 110
Iron	101	99.0	P/P	90 - 110
Iron	99.5	101	P/P	90 - 110
Magnesium	101	99.3	P/P	90 - 110
Magnesium	99.6	101	P/P	90 - 110
Potassium	100	98.5	P/P	90 - 110
Potassium	98.7	100	P/P	90 - 110
Sodium	100	98.5	P/P	90 - 110
Sodium	98.7	99.7	P/P	90 - 110
Strontium	97.9	96.8	P/P	90 - 110
Strontium	99.0	99.5	P/P	90 - 110
Tin	98.7	98.8	P/P	90 - 110
Tin	99.3	99.7	P/P	90 - 110
Titanium	101	101	P/P	90 - 110
Titanium	100	100	P/P	90 - 110
Vanadium	98.8	99.0	P/P	90 - 110
Vanadium	99.4	99.3	P/P	90 - 110
Zinc	100	99.8	P/P	90 - 110
Zinc	99.8	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122699

Included Lab Sample IDs: 2450052, 2450053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	102	P/P	90 - 110
Aluminum	102	103	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Arsenic	98.6	100	P/P	90 - 110
Barium	100	101	P/P	90 - 110
Barium	101	100	P/P	90 - 110
Beryllium	101	100	P/P	90 - 110
Beryllium	103	101	P/P	90 - 110
Boron	103	102	P/P	90 - 110
Boron	98.8	98.6	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Cadmium	99.6	100	P/P	90 - 110
Chromium	95.8	98.4	P/P	90 - 110
Chromium	98.1	97.8	P/P	90 - 110
Cobalt	95.3	94.2	P/P	90 - 110
Cobalt	97.3	97.9	P/P	90 - 110
Copper	100	101	P/P	90 - 110
Copper	96.8	96.3	P/P	90 - 110
Lead	98.7	100	P/P	90 - 110
Lead	99.4	100	P/P	90 - 110
Manganese	104	108	P/P	90 - 110
Manganese	107	105	P/P	90 - 110
Molybdenum	93.1	93.5	P/P	90 - 110
Molybdenum	94.0	93.4	P/P	90 - 110
Nickel	100	102	P/P	90 - 110
Nickel	99.1	101	P/P	90 - 110
Selenium	101	102	P/P	90 - 110
Selenium	101	101	P/P	90 - 110
Silver	95.5	95.5	P/P	90 - 110
Silver	95.9	95.9	P/P	90 - 110
Thallium	96.5	97.2	P/P	90 - 110
Thallium	96.9	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122706

Included Lab Sample IDs: 2450033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122709

Included Lab Sample IDs: 2450033, 2450034, 2450041

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122713

Included Lab Sample IDs: 2450034, 2450038, 2450041

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122714

Included Lab Sample IDs: 2450034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.9	98.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122718

Included Lab Sample IDs: 2450052, 2450053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	97.5	98.1	P/P	90 - 110
Antimony	98.1	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122742

Included Lab Sample IDs: 2450041

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

Reference Method: SM 5310 B-2011

Run ID: A122760

Included Lab Sample IDs: 2450033, 2450034, 2450038, 2450041

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122761

Included Lab Sample IDs: 2450033, 2450038

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

Reference Method: SM 2320 B-2011

Run ID: A122774

Included Lab Sample IDs: 2450031, 2450032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	97.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122774

Included Lab Sample IDs: 2450031, 2450032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A122774

Included Lab Sample IDs: 2450031, 2450032

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122800

Included Lab Sample IDs: 2450038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122806

Included Lab Sample IDs: 2450033, 2450034, 2450038, 2450041

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	99.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A122818

Included Lab Sample IDs: 2450037, 2450040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	97.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122818

Included Lab Sample IDs: 2450037, 2450040

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122874

Included Lab Sample IDs: 2450031, 2450032, 2450037, 2450040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	105	P/P	90 - 110
Sulfate	100	100	P/P	90 - 110
Sulfate	100	103	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)	98.6					
	Color (true)	101				7.85	
	Color (true)	106					
EPA 180.1 Rev. 2.0	Turbidity	104				6.00	
EPA 200.7 Rev. 4.4	Calcium	105	101	102			2.60
	Iron	111	107	106	109		0.489
	Magnesium	105	100	108			1.89
	Potassium	102	106	105	100		0.905
	Sodium	107	106	103	101		2.11
	Strontium	99.2	96.5	95.5	97.0		1.03
	Tin	97.9	93.3	92.5	93.3		0.816
	Titanium	101	99.1				4.50
	Vanadium	99.4	96.9	96.5	98.7		0.415
	Zinc	98.1	94.5	95.0	97.8		0.466
EPA 200.8 Rev. 5.4	Aluminum	102	101				4.67
	Antimony	99.9	95.5	94.9	102		0.648
	Arsenic	100	100	101	101		1.02
	Barium	104	104	103	103		0.800
	Beryllium	97.4	97.6	96.1	99.4		1.23
	Boron	102	102	105	102		1.89
	Cadmium	100	99.8	102	103		1.99
	Chromium	96.3	99.7	94.7	95.1		3.76
	Cobalt	99.3	97.6	98.7	96.9		1.03
	Copper	101	98.9	98.6	99.1		0.426
	Lead	97.4	100	100	99.5		0.180
	Manganese	106	109	110	108		0.766
	Molybdenum	92.1	93.0	93.6	96.0		0.528
	Nickel	99.5	96.5	96.8	96.9		0.243
	Selenium	101	98.2	101	96.6		3.19
	Silver	101	102	103	99.7		0.760
	Thallium	99.6	103	103	102		0.0054
EPA 300.0 Rev. 2.1	Chloride	99.8	95.2	96.7		0.396	
	Sulfate	98.1	96.5	99.2		0.690	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	97.6	98.8			0.798
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	111	111			0.115
	Kjeldahl Nitrogen	104	105	100			2.36
EPA 353.2 Rev. 2.0	NO2NO3-N	100	98.0				1.15
	NO2NO3-N	99.5	99.0	98.0			0.669
EPA 365.1 Rev. 2.0	Total-P	100	104	106			1.67
	Total-P	107	109	108			0.845
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	101	98.7			1.21
EPA 8321B	Sucralose	100	106	114			7.76
SM 2320 B-2011	Total Alkalinity	101				0.0096	
	Total Alkalinity	99.8				0.242	
SM 2540 C-2015	TDS	94.0				6.99	
SM 2540 D-2015	TSS	102					
SM 4500-F- C-2011	Fluoride	103	102	101			0.467
	Fluoride	101	103	102			0.467
SM 5310 B-2011	Organic Carbon	94.5	93.9	95.2			1.01

Reference Method Descriptions

Method	Description	Associated Samples
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Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2450031, 2450032, 2450037, 2450040
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2450031, 2450032, 2450037, 2450040
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2450052, 2450053
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2450052, 2450053
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2450031, 2450032, 2450037, 2450040
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2450031, 2450032, 2450037, 2450040
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2450033, 2450034, 2450038, 2450041
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2450033, 2450034, 2450038, 2450041
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2450033, 2450034, 2450038, 2450041
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2450033, 2450034, 2450038, 2450041
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2450035, 2450036, 2450039, 2450042
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2450050, 2450051
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2450031, 2450032, 2450037, 2450040
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2450052
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2450031, 2450032, 2450037, 2450040
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2450031, 2450032, 2450037, 2450040
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2450031, 2450032, 2450037, 2450040
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2450033, 2450034, 2450038, 2450041

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	11/08/2023			11/08/2023 15:45	Anna M. Plaviak	2450031
	11/08/2023			11/08/2023 15:46	Anna M. Plaviak	2450032
	11/08/2023			11/08/2023 15:50	Anna M. Plaviak	2450040
	11/08/2023			11/08/2023 16:07	Anna M. Plaviak	2450037
EPA 180.1 Rev. 2.0	11/08/2023			11/08/2023 14:50	Samantha L Bates	2450031
	11/08/2023			11/08/2023 14:52	Samantha L Bates	2450032
	11/08/2023			11/08/2023 14:53	Samantha L Bates	2450037
	11/08/2023			11/08/2023 14:54	Samantha L Bates	2450040
EPA 200.7 Rev. 4.4	11/08/2023	11/09/2023 13:40	George D Taylor	11/13/2023 17:33	Chase Roberts	2450053
	11/08/2023	11/09/2023 13:40	George D Taylor	11/13/2023 20:54	Chase Roberts	2450052
EPA 200.8 Rev. 5.4	11/08/2023	11/09/2023 13:40	George D Taylor	11/13/2023 18:20	Emily M Philpot	2450053
	11/08/2023	11/09/2023 13:40	George D Taylor	11/13/2023 22:02	Emily M Philpot	2450052
	11/08/2023	11/09/2023 13:40	George D Taylor	11/14/2023 15:47	Emily M Philpot	2450053
	11/08/2023	11/09/2023 13:40	George D Taylor	11/14/2023 17:40	Emily M Philpot	2450052
EPA 300.0 Rev. 2.1	11/08/2023			11/21/2023 16:47	James L Waggeberby	2450037
	11/08/2023			11/21/2023 19:18	James L Waggeberby	2450031
	11/08/2023			11/21/2023 19:33	James L Waggeberby	2450032
	11/08/2023			11/21/2023 20:18	James L Waggeberby	2450040
EPA 350.1 Rev. 2.0	11/08/2023			11/17/2023 15:07	Khloe J Berg	2450033
	11/08/2023			11/17/2023 15:09	Khloe J Berg	2450034
	11/08/2023			11/17/2023 15:10	Khloe J Berg	2450038
	11/08/2023			11/17/2023 15:11	Khloe J Berg	2450041
EPA 351.2 Rev. 2.0	11/08/2023	11/13/2023 14:50	Simonne.V. Calhoun	11/14/2023 12:10	Samantha L Bates	2450033
	11/08/2023	11/13/2023 14:50	Simonne.V. Calhoun	11/14/2023 16:55	Samantha L Bates	2450034
	11/08/2023	11/13/2023 14:50	Simonne.V. Calhoun	11/14/2023 16:57	Samantha L Bates	2450038
	11/08/2023	11/13/2023 14:50	Simonne.V. Calhoun	11/14/2023 16:58	Samantha L Bates	2450041
EPA 353.2 Rev. 2.0	11/08/2023			11/14/2023 13:05	Fadila Guebre	2450033
	11/08/2023			11/14/2023 13:06	Fadila Guebre	2450034
	11/08/2023			11/14/2023 13:08	Fadila Guebre	2450041
	11/08/2023			11/17/2023 11:45	Fadila Guebre	2450038
EPA 365.1 Rev. 2.0	11/08/2023	11/14/2023 15:38	Adam P Silver	11/14/2023 19:25	James L Waggeberby	2450034
	11/08/2023	11/14/2023 15:38	Adam P Silver	11/15/2023 12:16	James L Waggeberby	2450041
	11/08/2023	11/15/2023 11:07	Adam P Silver	11/16/2023 10:25	James L Waggeberby	2450033
	11/08/2023	11/15/2023 11:07	Adam P Silver	11/16/2023 10:27	James L Waggeberby	2450038
EPA 365.1 Rev. 2.0 dissolved	11/08/2023			11/08/2023 15:04	Elise M. Gillis	2450039
	11/08/2023			11/08/2023 15:08	Elise M. Gillis	2450035
	11/08/2023			11/08/2023 15:09	Elise M. Gillis	2450042
	11/08/2023			11/08/2023 15:10	Elise M. Gillis	2450036
EPA 8321B	11/08/2023	11/08/2023 16:00	Hana Lee	11/09/2023 21:05	Tae K Lee	2450050
	11/08/2023	11/08/2023 16:00	Hana Lee	11/09/2023 21:19	Tae K Lee	2450051

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	11/08/2023			11/16/2023 00:47	Dale L. Simmons	2450032
	11/08/2023			11/16/2023 01:16	Dale L. Simmons	2450031
	11/08/2023			11/16/2023 20:16	Dale L. Simmons	2450037
	11/08/2023			11/16/2023 20:25	Dale L. Simmons	2450040
SM 2340 B-2011	11/08/2023			11/13/2023 20:54	Chase Roberts	2450052
SM 2540 C-2015	11/08/2023			11/09/2023 13:42	Yijie Li	2450031, 2450032, 2450037, 2450040
SM 2540 D-2015	11/08/2023			11/09/2023 13:42	Yijie Li	2450031, 2450032, 2450037, 2450040
SM 4500-F- C-2011	11/08/2023			11/16/2023 00:47	Dale L. Simmons	2450032
	11/08/2023			11/16/2023 01:16	Dale L. Simmons	2450031
	11/08/2023			11/16/2023 20:16	Dale L. Simmons	2450037
	11/08/2023			11/16/2023 20:25	Dale L. Simmons	2450040
SM 5310 B-2011	11/08/2023			11/15/2023 18:03	Khloe J Berg	2450033
	11/08/2023			11/15/2023 18:16	Khloe J Berg	2450034
	11/08/2023			11/15/2023 18:31	Khloe J Berg	2450038
	11/08/2023			11/15/2023 18:48	Khloe J Berg	2450041