

Chemical Analysis Report

CEN-DIST-2022-08-05-01

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

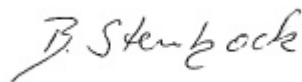
Event Description: **Lakes: Florida, Ellen, Asher, Alma**
Request ID: **RQ-2022-08-01-39**
Customer: **CEN-DIST**
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 29-AUG-2022 18:06



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 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: Lake Asher @ Center of Lake

Collection Date/Time: 08/04/2022 10:09

Field ID: G2CE0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346551	DEP SOP: NU-094-1	Color (true)	41		PCU	P417734	
	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P417742	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P418022	
		Sulfate	7.9		mg SO4/L	P418027	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P418047	
	SM 2540 C-2011	TDS	98		mg/L	P418184	
	SM 2540 D-2011	TSS	3	I	mg/L	P418228	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P418051	
2346552	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P417831	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P418180	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417877	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P417928	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P417899	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Alma NW of Center

Collection Date/Time: 08/04/2022 11:20

Field ID: G2CE0237

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346553	DEP SOP: NU-094-1	Color (true)	110	A	PCU	P417734	
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P417742	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P418209	
		Sulfate	0.20	U	mg SO4/L	P418212	
	SM 2320 B-2011	Total Alkalinity	22		mg CaCO3/L	P418047	
	SM 2540 C-2011	TDS	95		mg/L	P418184	
	SM 2540 D-2011	TSS	2	I	mg/L	P418228	
	SM 4500-F- C-2011	Fluoride	0.039	I	mg F/L	P418051	
2346554	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P417833	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P418180	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417877	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P417928	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P417899	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Ellen @ Center

Collection Date/Time: 08/04/2022 12:04

Field ID: G2CE0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346549	DEP SOP: NU-094-1	Color (true)	17		PCU	P417734	
	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P417742	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P418022	
		Sulfate	13		mg SO4/L	P418027	
	SM 2320 B-2011	Total Alkalinity	4.5		mg CaCO3/L	P418047	
	SM 2540 C-2011	TDS	64		mg/L	P418184	
	SM 2540 D-2011	TSS	4	I	mg/L	P418228	
2346550	SM 4500-F- C-2011	Fluoride	0.053	I	mg F/L	P418051	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P417831	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P418180	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417877	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P417927	
2346560	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P417899	
	EPA 200.7 Rev. 4.4	Calcium	3.53		mg/L	P417748	
		Iron	30	U	ug/L	P417748	
		Magnesium	2.17		mg/L	P417748	
		Potassium	2.8		mg/L	P417748	
		Sodium	8.9		mg/L	P417748	
		Strontium	19.3		ug/L	P417748	
		Tin	3.0	U	ug/L	P417748	
		Titanium	0.75	U	ug/L	P417748	
		Vanadium	2.0	U	ug/L	P417748	
		Zinc	5.0	U	ug/L	P417748	
		Aluminum	18	I	ug/L	P417748	
		Antimony	0.10	I	ug/L	P417748	
	EPA 200.8 Rev. 5.4	Arsenic	1.75		ug/L	P417748	
		Barium	7.56		ug/L	P417748	
		Beryllium	0.010	U	ug/L	P417748	
		Boron	44.6		ug/L	P417748	
		Cadmium	0.020	U	ug/L	P417748	
		Chromium	0.40	U	ug/L	P417748	
		Cobalt	0.020	U	ug/L	P417748	
		Copper	0.50	I	ug/L	P417748	
		Lead	0.20	U	ug/L	P417748	
		Manganese	1.45		ug/L	P417748	
		Molybdenum	0.15	U	ug/L	P417748	
		Nickel	0.50	U	ug/L	P417748	
		Selenium	0.20	U	ug/L	P417748	
		Silver	0.010	U	ug/L	P417748	
		Thallium	0.10	U	ug/L	P417748	
		Hardness	17.8		mg/L	P417748	
	SM 2340 B-2011						

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Florida @ Center of Lake

Collection Date/Time: 08/04/2022 12:38

Field ID: G2CE0150

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346546	DEP SOP: NU-094-1	Color (true)	52		PCU	P417734	
	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P417742	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P418022	
		Sulfate	3.4		mg SO4/L	P418027	
	SM 2320 B-2011	Total Alkalinity	40		mg CaCO3/L	P418047	
	SM 2540 C-2011	TDS	89		mg/L	P418184	
	SM 2540 D-2011	TSS	3	I	mg/L	P418228	
	SM 4500-F- C-2011	Fluoride	0.071	I	mg F/L	P418051	
2346547	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P417831	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P418180	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417877	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P417927	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P417899	
2346548	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P417729	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P417734

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417742

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P417748

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: P417748

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
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: P418022

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418027

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418209

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418212

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417831

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417833

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418180

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417877

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417927

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417928

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 dissolved
Batch ID: P417729

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

Reference Method: SM 2320 B-2011
Batch ID: P418047

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P418184

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P418228

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P418051

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417899

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: P417734

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417742

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.3		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P417748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	97.1		P	85 - 115
Iron	107		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	106		P	85 - 115
Sodium	105		P	85 - 115
Strontium	104		P	85 - 115
Tin	102		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	103		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P417748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.2		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	101		P	85 - 115
Barium	107		P	85 - 115
Beryllium	97.4		P	85 - 115
Boron	100		P	85 - 115
Cadmium	98.2		P	85 - 115
Chromium	98.8		P	85 - 115
Cobalt	95.9		P	85 - 115
Copper	98.0		P	85 - 115
Lead	92.7		P	85 - 115
Manganese	98.5		P	85 - 115
Molybdenum	97.0		P	85 - 115
Nickel	99.0		P	85 - 115
Selenium	98.9		P	85 - 115
Silver	97.5		P	85 - 115
Thallium	94.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418022

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418027

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418209

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418212

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417831

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417833

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418180

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417927

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417928

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P417729

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

Reference Method: SM 2320 B-2011
Batch ID: P418047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P418051

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P417748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346651	Calcium	108		P	80 - 120
2346651	Iron	102	109	P/P	80 - 120
2346651	Magnesium	103	113	P/P	80 - 120
2346651	Potassium	114	115	P/P	80 - 120
2346651	Sodium	100	108	P/P	80 - 120
2346651	Strontium	104	107	P/P	80 - 120
2346651	Tin	101	103	P/P	80 - 120
2346651	Titanium	103	105	P/P	80 - 120
2346651	Vanadium	104	106	P/P	80 - 120
2346651	Zinc	99.2	103	P/P	80 - 120
2346652	Calcium	106		P	80 - 120
2346652	Iron	109		P	80 - 120
2346652	Magnesium	108		P	80 - 120
2346652	Potassium	105		P	80 - 120
2346652	Sodium	106		P	80 - 120
2346652	Strontium	105		P	80 - 120
2346652	Tin	104		P	80 - 120
2346652	Titanium	107		P	80 - 120
2346652	Vanadium	106		P	80 - 120
2346652	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P417748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346651	Aluminum	98.5	96.8	P/P	80 - 120
2346651	Antimony	104	104	P/P	80 - 120
2346651	Arsenic	101	101	P/P	80 - 120
2346651	Barium	106	106	P/P	80 - 120
2346651	Beryllium	97.6	97.5	P/P	80 - 120
2346651	Boron	102	99.9	P/P	80 - 120
2346651	Cadmium	100	97.4	P/P	80 - 120
2346651	Chromium	103	99.9	P/P	80 - 120
2346651	Cobalt	94.2	92.1	P/P	80 - 120
2346651	Copper	95.2	94.1	P/P	80 - 120
2346651	Lead	91.4	91.2	P/P	80 - 120
2346651	Manganese	100	98.9	P/P	80 - 120
2346651	Molybdenum	97.9	97.6	P/P	80 - 120
2346651	Nickel	96.0	94.9	P/P	80 - 120
2346651	Selenium	97.3	97.1	P/P	80 - 120
2346651	Silver	96.7	96.3	P/P	80 - 120
2346651	Thallium	93.9	94.5	P/P	80 - 120
2346652	Aluminum	98.2		P	80 - 120
2346652	Antimony	101		P	80 - 120
2346652	Arsenic	98.3		P	80 - 120
2346652	Barium	107		P	80 - 120
2346652	Beryllium	90.8		P	80 - 120
2346652	Boron	104		P	80 - 120
2346652	Cadmium	99.1		P	80 - 120
2346652	Chromium	100		P	80 - 120
2346652	Cobalt	91.9		P	80 - 120
2346652	Copper	91.8		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P417748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346652	Lead	91.4		P	80 - 120
2346652	Manganese	99.7		P	80 - 120
2346652	Molybdenum	97.5		P	80 - 120
2346652	Nickel	93.9		P	80 - 120
2346652	Selenium	94.8		P	80 - 120
2346652	Silver	96.3		P	80 - 120
2346652	Thallium	90.7		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346464	Chloride	102		P	90 - 110
2346546	Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346464	Sulfate	96.8		P	90 - 110
2346546	Sulfate	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346641	Chloride	97.4		P	90 - 110
2346682	Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418212

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346641	Sulfate	96.9		P	90 - 110
2346682	Sulfate	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346366	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417833

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346589	Ammonia-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417877

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346550	NO2NO3-N	97.5	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346528	Total-P	107	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346571	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P417729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346548	O-Phosphate-P	100	99.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P418051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346639	Fluoride	100	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346547	Organic Carbon	99.8	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P417734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346553	Color (true)	0.0405	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346489	Turbidity	0.314	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P417748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346651	Calcium	3.65	Spike	P	0 - 20
2346651	Iron	6.50	Spike	P	0 - 20
2346651	Magnesium	5.41	Spike	P	0 - 20
2346651	Potassium	0.463	Spike	P	0 - 20
2346651	Sodium	5.15	Spike	P	0 - 20
2346651	Strontium	2.97	Spike	P	0 - 20
2346651	Tin	1.63	Spike	P	0 - 20
2346651	Titanium	2.61	Spike	P	0 - 20
2346651	Vanadium	2.00	Spike	P	0 - 20
2346651	Zinc	3.56	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P417748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346651	Aluminum	1.70	Spike	P	0 - 20
2346651	Antimony	0.401	Spike	P	0 - 20
2346651	Arsenic	0.436	Spike	P	0 - 20
2346651	Barium	0.423	Spike	P	0 - 20
2346651	Beryllium	0.164	Spike	P	0 - 20
2346651	Boron	1.72	Spike	P	0 - 20
2346651	Cadmium	2.72	Spike	P	0 - 20
2346651	Chromium	2.65	Spike	P	0 - 20
2346651	Cobalt	2.19	Spike	P	0 - 20
2346651	Copper	1.27	Spike	P	0 - 20
2346651	Lead	0.242	Spike	P	0 - 20
2346651	Manganese	1.33	Spike	P	0 - 20
2346651	Molybdenum	0.268	Spike	P	0 - 20
2346651	Nickel	1.18	Spike	P	0 - 20
2346651	Selenium	0.122	Spike	P	0 - 20
2346651	Silver	0.462	Spike	P	0 - 20
2346651	Thallium	0.709	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346464	Chloride	0.188	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346464	Sulfate	0.373	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346641	Chloride	0.430	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346641	Sulfate	2.77	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346366	Ammonia-N	0.655	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346589	Ammonia-N	0.802	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346554	Kjeldahl Nitrogen	1.43	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346550	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P417927

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346528	Total-P	2.70	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P417928

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346571	Total-P	0.514	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P417729

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346548	O-Phosphate-P	0.602	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P418047

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346639	Total Alkalinity	0.772	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011

Batch ID: P418184

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346363	TDS	0.980	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P418051

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346639	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P417899

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346547	Organic Carbon	0.0649	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A113934

Included Lab Sample IDs: 2346548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	101	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A113936

Included Lab Sample IDs: 2346546, 2346549, 2346551, 2346553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113940

Included Lab Sample IDs: 2346546, 2346549, 2346551, 2346553

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113987

Included Lab Sample IDs: 2346547, 2346550, 2346552, 2346554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	99.3	P/P	90 - 110
Ammonia-N	98.6	98.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114000

Included Lab Sample IDs: 2346560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.6	98.8	P/P	90 - 110
Antimony	99.5	98.9	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Beryllium	94.3	94.3	P/P	90 - 110
Boron	100	106	P/P	90 - 110
Cadmium	104	104	P/P	90 - 110
Chromium	99.9	101	P/P	90 - 110
Cobalt	93.3	92.8	P/P	90 - 110
Copper	96.9	96.5	P/P	90 - 110
Lead	90.1	90.4	P/P	90 - 110
Manganese	100	101	P/P	90 - 110
Molybdenum	96.1	95.6	P/P	90 - 110
Nickel	95.4	95.2	P/P	90 - 110
Selenium	102	103	P/P	90 - 110
Silver	96.4	96.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114001

Included Lab Sample IDs: 2346547, 2346550, 2346552, 2346554

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114001

Included Lab Sample IDs: 2346547, 2346550, 2346552, 2346554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	96.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114005

Included Lab Sample IDs: 2346547, 2346550, 2346552, 2346554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	97.4	P/P	90 - 110
Organic Carbon	98.4	97.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114015

Included Lab Sample IDs: 2346560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Thallium	95.7	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114036

Included Lab Sample IDs: 2346547, 2346550, 2346552, 2346554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114048

Included Lab Sample IDs: 2346546, 2346549, 2346551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	105	P/P	90 - 110
Chloride	105	102	P/P	90 - 110
Sulfate	102	99.2	P/P	90 - 110
Sulfate	99.5	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114059

Included Lab Sample IDs: 2346546, 2346549, 2346551, 2346553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	100	P/P	90 - 110
Total Alkalinity	100	97.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114059

Included Lab Sample IDs: 2346546, 2346549, 2346551, 2346553

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A114098

Included Lab Sample IDs: 2346560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	102	P/P	90 - 110
Iron	99.2	103	P/P	90 - 110
Magnesium	99.0	102	P/P	90 - 110
Potassium	100	103	P/P	90 - 110
Sodium	98.5	101	P/P	90 - 110
Strontium	99.2	102	P/P	90 - 110
Tin	98.5	101	P/P	90 - 110
Titanium	97.4	99.8	P/P	90 - 110
Vanadium	99.2	102	P/P	90 - 110
Zinc	98.7	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114142

Included Lab Sample IDs: 2346553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.0	101	P/P	90 - 110
Sulfate	99.3	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114226

Included Lab Sample IDs: 2346547, 2346550, 2346552, 2346554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	95.6	P/P	90 - 110
Kjeldahl Nitrogen	95.6	95.0	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
DEP SOP: NU-094-1	Color (true)	101					0.0405	
EPA 180.1 Rev. 2.0	Turbidity	96.3					0.314	
EPA 200.7 Rev. 4.4	Calcium	97.1	108	106				3.65
	Iron	107	102	109	109			6.50
	Magnesium	107	103	113	108			5.41
	Potassium	106	114	115	105			0.463
	Sodium	105	100	108	106			5.15
	Strontium	104	104	107	105			2.97
	Tin	102	101	103	104			1.63
	Titanium	104	103	105	107			2.61
	Vanadium	103	104	106	106			2.00
	Zinc	103	99.2	103	103			3.56
EPA 200.8 Rev. 5.4	Aluminum	98.2	98.5	96.8	98.2			1.70
	Antimony	101	104	104	101			0.401
	Arsenic	101	101	101	98.3			0.436
	Barium	107	106	106	107			0.423
	Beryllium	97.4	97.6	97.5	90.8			0.164
	Boron	100	102	99.9	104			1.72
	Cadmium	98.2	100	97.4	99.1			2.72
	Chromium	98.8	103	99.9	100			2.65
	Cobalt	95.9	94.2	92.1	91.9			2.19
	Copper	98.0	95.2	94.1	91.8			1.27
	Lead	92.7	91.4	91.2	91.4			0.242
	Manganese	98.5	100	98.9	99.7			1.33
	Molybdenum	97.0	97.9	97.6	97.5			0.268
	Nickel	99.0	96.0	94.9	93.9			1.18
	Selenium	98.9	97.3	97.1	94.8			0.122
	Silver	97.5	96.7	96.3	96.3			0.462
	Thallium	94.4	90.7	93.9	94.5			0.709
EPA 300.0 Rev. 2.1	Chloride	103	102	98.7			0.188	
	Chloride	98.6	97.4	98.3			0.430	
	Sulfate	99.7	96.8	98.3			0.373	
	Sulfate	98.4	96.9	99.0			2.77	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	99.8	101				0.655
	Ammonia-N	97.4	98.0	99.0				0.802
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102						1.43
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	97.5	97.5				0.0
EPA 365.1 Rev. 2.0	Total-P	105	107	104				2.70
	Total-P	105	104	104				0.514
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	100	99.4				0.602
SM 2320 B-2011	Total Alkalinity	100					0.772	
SM 2540 C-2011	TDS						0.980	
SM 4500-F- C-2011	Fluoride	101	100	100				0.0
SM 5310 B-2011	Organic Carbon	97.4	99.8	99.8				0.0649

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2346546, 2346549, 2346551, 2346553
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2346546, 2346549, 2346551, 2346553
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2346560

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2346560
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2346546, 2346549, 2346551, 2346553
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2346546, 2346549, 2346551, 2346553
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2346547, 2346550, 2346552, 2346554
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2346547, 2346550, 2346552, 2346554
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2346547, 2346550, 2346552, 2346554
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2346547, 2346550, 2346552, 2346554
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2346548
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2346546, 2346549, 2346551, 2346553
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2346560
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2346546, 2346549, 2346551, 2346553
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2346546, 2346549, 2346551, 2346553
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2346546, 2346549, 2346551, 2346553
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2346547, 2346550, 2346552, 2346554

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	08/05/2022			08/05/2022 13:43	Samantha L Bates	2346546, 2346549
	08/05/2022			08/05/2022 13:44	Samantha L Bates	2346551
	08/05/2022			08/05/2022 13:45	Samantha L Bates	2346553
	08/05/2022			08/05/2022 14:48	Khloe J Berg	2346546
EPA 180.1 Rev. 2.0	08/05/2022			08/05/2022 14:49	Khloe J Berg	2346549
	08/05/2022			08/05/2022 14:52	Khloe J Berg	2346551
	08/05/2022			08/05/2022 14:53	Khloe J Berg	2346553
	08/05/2022			08/05/2022 14:53	Khloe J Berg	2346553
EPA 200.7 Rev. 4.4	08/05/2022	08/08/2022 09:45	Mackenzie Hunt	08/12/2022 00:40	McKinley C Carter	2346560
EPA 200.8 Rev. 5.4	08/05/2022	08/08/2022 09:45	Mackenzie Hunt	08/09/2022 18:51	Emily M Philpot	2346560
	08/05/2022	08/08/2022 09:45	Mackenzie Hunt	08/10/2022 17:17	Alexander Thompson	2346560
EPA 300.0 Rev. 2.1	08/05/2022			08/12/2022 01:42	Anna M. Plaviak	2346546
	08/05/2022			08/12/2022 03:54	Anna M. Plaviak	2346549
	08/05/2022			08/12/2022 04:06	Anna M. Plaviak	2346551
	08/05/2022			08/16/2022 15:13	Anna M. Plaviak	2346553
EPA 350.1 Rev. 2.0	08/05/2022			08/09/2022 11:53	Judith K. Clark	2346547
	08/05/2022			08/09/2022 11:54	Judith K. Clark	2346550
	08/05/2022			08/09/2022 11:56	Judith K. Clark	2346552
	08/05/2022			08/09/2022 12:53	Judith K. Clark	2346554
EPA 351.2 Rev. 2.0	08/05/2022	08/17/2022 14:08	Samantha L Bates	08/19/2022 13:25	Alexandra J Mattheus	2346547
	08/05/2022	08/17/2022 14:08	Samantha L Bates	08/19/2022 13:29	Alexandra J Mattheus	2346550
	08/05/2022	08/17/2022 14:08	Samantha L Bates	08/19/2022 13:31	Alexandra J Mattheus	2346552
	08/05/2022	08/17/2022 14:08	Samantha L Bates	08/19/2022 13:33	Alexandra J Mattheus	2346554
EPA 353.2 Rev. 2.0	08/05/2022			08/10/2022 09:55	Beverly Y. Sanders	2346550
	08/05/2022			08/10/2022 10:01	Beverly Y. Sanders	2346547
	08/05/2022			08/10/2022 10:02	Beverly Y. Sanders	2346552
	08/05/2022			08/10/2022 10:03	Beverly Y. Sanders	2346554
EPA 365.1 Rev. 2.0	08/05/2022	08/10/2022 16:53	Adam P Silver	08/11/2022 13:31	Simonne.V. Calhoun	2346547
	08/05/2022	08/10/2022 16:53	Adam P Silver	08/11/2022 13:32	Simonne.V. Calhoun	2346550
	08/05/2022	08/10/2022 16:53	Adam P Silver	08/11/2022 13:35	Simonne.V. Calhoun	2346552
	08/05/2022	08/10/2022 16:53	Adam P Silver	08/11/2022 13:36	Simonne.V. Calhoun	2346554
EPA 365.1 Rev. 2.0 dissolved	08/05/2022			08/05/2022 14:32	Chandler E Cox	2346548
SM 2320 B-2011	08/05/2022			08/12/2022 08:10	Dale L. Simmons	2346546
	08/05/2022			08/12/2022 08:21	Dale L. Simmons	2346549
	08/05/2022			08/12/2022 08:33	Dale L. Simmons	2346551
	08/05/2022			08/12/2022 09:20	Dale L. Simmons	2346553
SM 2340 B-2011	08/05/2022			08/12/2022 00:40	McKinley C Carter	2346560
SM 2540 C-2011	08/05/2022			08/09/2022 15:22	Yijie Li	2346546, 2346549, 2346551, 2346553
SM 2540 D-2011	08/05/2022			08/09/2022 15:22	Yijie Li	2346546, 2346549, 2346551, 2346553
SM 4500-F- C-2011	08/05/2022			08/12/2022 08:10	Dale L. Simmons	2346546
	08/05/2022			08/12/2022 08:21	Dale L. Simmons	2346549

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500-F- C-2011	08/05/2022			08/12/2022 08:33	Dale L. Simmons	2346551
	08/05/2022			08/12/2022 09:20	Dale L. Simmons	2346553
SM 5310 B-2011	08/05/2022			08/09/2022 16:40	Khloe J Berg	2346547
	08/05/2022			08/09/2022 17:51	Khloe J Berg	2346554
	08/05/2022			08/09/2022 22:54	Khloe J Berg	2346550
	08/05/2022			08/09/2022 23:09	Khloe J Berg	2346552