Chemical Analysis Report

SO-DIST-2023-03-24-01

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

Event Description: **2023 SMP : Myakka Cricks**
Request ID: **RQ-2023-03-13-22**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
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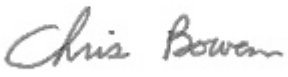
Certified by: Chris Bowen, Environmental Administrator

Date Certified: 12-APR-2023 11:30



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: LITTLE ALLIGATOR CREEK @ MIDWAY BLVD Collection Date/Time: 03/23/2023 08:50

Field ID: G3SD0071 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2396215	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P427643	
	SM 2320 B-2011	Total Alkalinity	122		mg CaCO3/L	P427710	
	SM 2540 D-2015	TSS	16		mg/L	P428171	
	SM 4500-F- C-2011	Fluoride	0.96		mg F/L	P427954	
2396217	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P427758	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P427743	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P427778	
	EPA 365.1 Rev. 2.0	Total-P	0.31		mg P/L	P427688	
	SM 5310 B-2011	Organic Carbon	8.9		mg C/L	P428061	
2396228	EPA 200.7 Rev. 4.4	Calcium	284		mg/L	P427684	
		Iron	650		ug/L	P427684	
		Magnesium	781		mg/L	P427684	
		Strontium	5.55E+03		ug/L	P427684	
		Tin	150	U	ug/L	P427684	
		Titanium	3.6	I	ug/L	P427684	
		Vanadium	6.0	U	ug/L	P427684	
		Zinc	15	U	ug/L	P427684	
	EPA 200.8 Rev. 5.4	Aluminum	618		ug/L	P427684	
		Antimony	0.34	I	ug/L	P427684	
		Arsenic	2.77		ug/L	P427684	
		Beryllium	0.040	U	ug/L	P427684	
		Cadmium	0.080	U	ug/L	P427684	
		Chromium	2.1	I	ug/L	P427684	
		Cobalt	0.23	I	ug/L	P427684	
		Copper	2.0	I	ug/L	P427684	
		Lead	5.7		ug/L	P427684	
		Manganese	14.2		ug/L	P427684	
		Molybdenum	9.7		ug/L	P427684	
		Nickel	2.0	U	ug/L	P427684	
		Selenium	0.80	U	ug/L	P427684	
		Silver	0.040	U	ug/L	P427684	
		Thallium	1.0	U	ug/L	P427684	

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 calcium, magnesium and strontium are unavailable because of high analyte concentration in the QC sample.

Sample Location: ROCK CREEK @ EISENHOWER DR **Collection Date/Time: 03/23/2023 09:30**

Field ID: G3SD0070 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2396216	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P427643	
	SM 2320 B-2011	Total Alkalinity	104		mg CaCO3/L	P427710	
	SM 2540 D-2015	TSS	6	I	mg/L	P428171	
	SM 4500-F- C-2011	Fluoride	0.81		mg F/L	P427954	
2396218	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P427758	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P427743	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P427778	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P427688	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P428061	
2396229	EPA 200.7 Rev. 4.4	Calcium	251		mg/L	P427684	
		Iron	320	I	ug/L	P427684	
		Magnesium	646		mg/L	P427684	
		Strontium	6.15E+03		ug/L	P427684	
		Tin	60	U	ug/L	P427684	
		Titanium	2.3	I	ug/L	P427684	
		Vanadium	6.0	U	ug/L	P427684	
		Zinc	15	U	ug/L	P427684	
	EPA 200.8 Rev. 5.4	Aluminum	282		ug/L	P427684	
		Antimony	0.25	I	ug/L	P427684	
		Arsenic	1.95		ug/L	P427684	
		Beryllium	0.040	U	ug/L	P427684	
		Cadmium	0.080	U	ug/L	P427684	
		Chromium	1.6	U	ug/L	P427684	
		Cobalt	0.17	I	ug/L	P427684	
		Copper	1.6	U	ug/L	P427684	
		Lead	0.80	U	ug/L	P427684	
		Manganese	10.8		ug/L	P427684	
		Molybdenum	7.0		ug/L	P427684	
		Nickel	2.0	U	ug/L	P427684	
		Selenium	0.80	U	ug/L	P427684	
		Silver	0.040	U	ug/L	P427684	
		Thallium	0.40	U	ug/L	P427684	

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 calcium, magnesium and strontium are unavailable because of high analyte concentration in the QC sample.

Sample Location: MYAKKA RIVER (TIDAL) @ US 41 **Collection Date/Time: 03/23/2023 09:55**

Field ID: G3SD0068 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2396219	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P427643	
	SM 2320 B-2011	Total Alkalinity	110	A	mg CaCO3/L	P427710	
	SM 2540 D-2015	TSS	4	I	mg/L	P428171	
	SM 4500-F- C-2011	Fluoride	0.71		mg F/L	P427954	
2396220	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P427758	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P427743	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P427778	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P427688	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P428061	

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: Big Slough Canal **Collection Date/Time: 03/23/2023 10:55**

Field ID: G3SD0161 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2396230	EPA 200.7 Rev. 4.4	Calcium	199		mg/L	P427684	
		Iron	180	I	ug/L	P427684	
		Magnesium	340		mg/L	P427684	
		Strontium	5.29E+03		ug/L	P427684	
		Tin	9.0	U	ug/L	P427684	
		Titanium	2.2	U	ug/L	P427684	
		Vanadium	6.0	U	ug/L	P427684	
		Zinc	15	U	ug/L	P427684	
	EPA 200.8 Rev. 5.4	Aluminum	59	I	ug/L	P427684	
		Antimony	0.23	I	ug/L	P427684	
		Arsenic	1.75		ug/L	P427684	
		Beryllium	0.040	U	ug/L	P427684	
		Cadmium	0.080	U	ug/L	P427684	
		Chromium	1.6	U	ug/L	P427684	
		Cobalt	0.24	I	ug/L	P427684	
		Copper	1.6	U	ug/L	P427684	
		Lead	0.80	U	ug/L	P427684	
		Manganese	15.2		ug/L	P427684	
		Molybdenum	5.3		ug/L	P427684	
		Nickel	2.0	U	ug/L	P427684	
		Selenium	0.80	U	ug/L	P427684	
		Silver	0.040	U	ug/L	P427684	
		Thallium	0.40	U	ug/L	P427684	

Ref. Method and Comment:
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium and strontium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Big Slough @ Butler Park **Collection Date/Time: 03/23/2023 11:20**

Field ID: G3SD0168 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2396231	EPA 200.7 Rev. 4.4	Calcium	131		mg/L	P427791	
		Iron	380		ug/L	P427791	
		Magnesium	13.4		mg/L	P427791	
		Potassium	1.5		mg/L	P427791	
		Sodium	77.7		mg/L	P427791	
		Strontium	1.31E+03		ug/L	P427791	
		Tin	3.0	U	ug/L	P427791	
		Titanium	0.75	U	ug/L	P427791	
		Vanadium	2.0	U	ug/L	P427791	
		Zinc	5.0	U	ug/L	P427791	
	EPA 200.8 Rev. 5.4	Aluminum	29		ug/L	P427791	
		Antimony	0.11	I	ug/L	P427791	
		Arsenic	1.02		ug/L	P427791	
		Barium	19.3		ug/L	P427791	
		Beryllium	0.010	U	ug/L	P427791	
		Boron	55.1		ug/L	P427791	
		Cadmium	0.020	U	ug/L	P427791	
		Chromium	0.59	I	ug/L	P427791	
		Cobalt	0.114		ug/L	P427791	
		Copper	0.40	U	ug/L	P427791	
		Lead	0.20	U	ug/L	P427791	
		Manganese	16.3		ug/L	P427791	
		Molybdenum	4.55		ug/L	P427791	
		Nickel	0.95	I	ug/L	P427791	
		Selenium	0.26	I	ug/L	P427791	
		Silver	0.010	U	ug/L	P427791	
		Thallium	0.10	U	ug/L	P427791	
	SM 2340 B-2011	Hardness	382		mg/L	P427791	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427643

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P427684

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	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 200.7 Rev. 4.4
Batch ID: P427791

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: P427684

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P427791

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 350.1 Rev. 2.0
Batch ID: P427758

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427743

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427778

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427688

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

Reference Method: SM 2320 B-2011
Batch ID: P427710

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

Reference Method: SM 2540 D-2015
Batch ID: P428171

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P428171

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P427954

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P428061

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427643

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P427684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	104		P	85 - 115
Magnesium	102		P	85 - 115
Strontium	97.5		P	85 - 115
Tin	101		P	85 - 115
Titanium	100		P	85 - 115
Vanadium	98.1		P	85 - 115
Zinc	94.8		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P427791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	108		P	80 - 120
Iron	107		P	80 - 120
Magnesium	104		P	80 - 120
Potassium	102		P	80 - 120
Sodium	102		P	80 - 120
Strontium	100		P	80 - 120
Tin	104		P	80 - 120
Titanium	103		P	80 - 120
Vanadium	101		P	80 - 120
Zinc	99.2		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P427684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	105		P	80 - 120
Antimony	104		P	80 - 120
Arsenic	103		P	80 - 120
Beryllium	94.2		P	80 - 120
Cadmium	104		P	80 - 120
Chromium	103		P	80 - 120
Cobalt	104		P	80 - 120
Copper	102		P	80 - 120
Lead	97.1		P	80 - 120
Manganese	103		P	80 - 120
Molybdenum	102		P	80 - 120
Nickel	104		P	80 - 120
Selenium	100		P	80 - 120
Silver	102		P	80 - 120
Thallium	106		P	80 - 120

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P427791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	107		P	85 - 115
Arsenic	102		P	85 - 115
Barium	104		P	85 - 115
Beryllium	93.3		P	85 - 115
Boron	102		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	101		P	85 - 115
Cobalt	104		P	85 - 115
Copper	103		P	85 - 115
Lead	103		P	85 - 115
Manganese	100		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	103		P	85 - 115
Selenium	100		P	85 - 115
Silver	106		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427758

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: P427743

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427688

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

Reference Method: SM 2320 B-2011
Batch ID: P427710

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.6		P	94 - 106

Reference Method: SM 2540 D-2015
Batch ID: P428171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P428171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	87.0		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P427954

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

Reference Method: SM 5310 B-2011
Batch ID: P428061

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P427684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396230	Iron	99.1	100	P/P	80 - 120
2396230	Tin	83.6	81.2	P/P	80 - 120
2396230	Titanium	102	102	P/P	80 - 120
2396230	Vanadium	101	99.5	P/P	80 - 120
2396230	Zinc	92.5	91.6	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P427791

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396455	Calcium	101		P	80 - 120
2396455	Iron	106	105	P/P	80 - 120
2396455	Magnesium	99.7		P	80 - 120
2396455	Potassium	101	99.4	P/P	80 - 120
2396455	Sodium	98.0		P	80 - 120
2396455	Strontium	99.8	98.7	P/P	80 - 120
2396455	Tin	103	102	P/P	80 - 120
2396455	Titanium	103	101	P/P	80 - 120
2396455	Vanadium	100	99.1	P/P	80 - 120
2396455	Zinc	95.5	92.9	P/P	80 - 120
2396470	Calcium	102		P	80 - 120
2396470	Iron	105		P	80 - 120
2396470	Magnesium	103		P	80 - 120
2396470	Potassium	100		P	80 - 120
2396470	Sodium	98.5		P	80 - 120
2396470	Strontium	98.8		P	80 - 120
2396470	Tin	104		P	80 - 120
2396470	Titanium	101		P	80 - 120
2396470	Vanadium	98.9		P	80 - 120
2396470	Zinc	94.0		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P427684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396230	Aluminum	109	111	P/P	80 - 120
2396230	Antimony	107	108	P/P	80 - 120
2396230	Arsenic	113	116	P/P	80 - 120
2396230	Beryllium	97.8	99.4	P/P	80 - 120
2396230	Cadmium	97.8	99.7	P/P	80 - 120
2396230	Chromium	99.9	101	P/P	80 - 120
2396230	Cobalt	115	117	P/P	80 - 120
2396230	Copper	111	111	P/P	80 - 120
2396230	Lead	104	106	P/P	80 - 120
2396230	Manganese	97.2	98.3	P/P	80 - 120
2396230	Molybdenum	118	120	P/P	80 - 120
2396230	Nickel	115	115	P/P	80 - 120
2396230	Selenium	100	104	P/P	80 - 120
2396230	Silver	93.1	93.7	P/P	80 - 120
2396230	Thallium	115	116	P/P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P427791

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396455	Aluminum	101	99.4	P/P	80 - 120
2396455	Antimony	107	105	P/P	80 - 120
2396455	Arsenic	101	100	P/P	80 - 120
2396455	Barium	103	101	P/P	80 - 120
2396455	Beryllium	94.5	94.3	P/P	80 - 120
2396455	Boron	106	105	P/P	80 - 120
2396455	Cadmium	105	104	P/P	80 - 120
2396455	Chromium	99.9	97.8	P/P	80 - 120
2396455	Cobalt	100	98.3	P/P	80 - 120
2396455	Copper	96.9	95.6	P/P	80 - 120
2396455	Lead	102	102	P/P	80 - 120
2396455	Manganese	101	99.4	P/P	80 - 120
2396455	Molybdenum	102	102	P/P	80 - 120
2396455	Nickel	98.9	96.3	P/P	80 - 120
2396455	Selenium	98.2	97.8	P/P	80 - 120
2396455	Silver	104	103	P/P	80 - 120
2396455	Thallium	102	102	P/P	80 - 120
2396470	Aluminum	101		P	80 - 120
2396470	Antimony	105		P	80 - 120
2396470	Arsenic	99.8		P	80 - 120
2396470	Barium	102		P	80 - 120
2396470	Beryllium	91.6		P	80 - 120
2396470	Boron	109		P	80 - 120
2396470	Cadmium	103		P	80 - 120
2396470	Chromium	97.6		P	80 - 120
2396470	Cobalt	97.8		P	80 - 120
2396470	Copper	94.8		P	80 - 120
2396470	Lead	102		P	80 - 120
2396470	Manganese	100		P	80 - 120
2396470	Molybdenum	101		P	80 - 120
2396470	Nickel	95.7		P	80 - 120
2396470	Selenium	96.4		P	80 - 120
2396470	Silver	104		P	80 - 120
2396470	Thallium	103		P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395976	Ammonia-N	101	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396217	Kjeldahl Nitrogen	98.8	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396218	NO2NO3-N	104	103	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395952	Total-P	95.8	96.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P427954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396528	Fluoride	102	102	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P428061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396533	Organic Carbon	89.6	89.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396188	Turbidity	4.58	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P427684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396230	Calcium	0.0182	Spike	P	0 - 20
2396230	Iron	0.792	Spike	P	0 - 20
2396230	Magnesium	0.174	Spike	P	0 - 20
2396230	Strontium	0.321	Spike	P	0 - 20
2396230	Tin	2.98	Spike	P	0 - 20
2396230	Titanium	0.469	Spike	P	0 - 20
2396230	Vanadium	1.60	Spike	P	0 - 20
2396230	Zinc	0.944	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P427791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396455	Calcium	1.14	Spike	P	0 - 20
2396455	Iron	0.888	Spike	P	0 - 20
2396455	Magnesium	0.804	Spike	P	0 - 20
2396455	Potassium	1.31	Spike	P	0 - 20
2396455	Sodium	1.17	Spike	P	0 - 20
2396455	Strontium	1.05	Spike	P	0 - 20
2396455	Tin	1.10	Spike	P	0 - 20
2396455	Titanium	1.65	Spike	P	0 - 20
2396455	Vanadium	1.26	Spike	P	0 - 20
2396455	Zinc	2.76	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P427684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396230	Aluminum	1.53	Spike	P	0 - 20
2396230	Antimony	0.813	Spike	P	0 - 20
2396230	Arsenic	1.80	Spike	P	0 - 20
2396230	Beryllium	1.58	Spike	P	0 - 20
2396230	Cadmium	1.90	Spike	P	0 - 20
2396230	Chromium	0.769	Spike	P	0 - 20
2396230	Cobalt	1.18	Spike	P	0 - 20
2396230	Copper	0.579	Spike	P	0 - 20
2396230	Lead	1.39	Spike	P	0 - 20
2396230	Manganese	0.908	Spike	P	0 - 20
2396230	Molybdenum	1.58	Spike	P	0 - 20
2396230	Nickel	0.310	Spike	P	0 - 20
2396230	Selenium	3.23	Spike	P	0 - 20
2396230	Silver	0.633	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P427684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396230	Thallium	0.989	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P427791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396455	Aluminum	1.48	Spike	P	0 - 20
2396455	Antimony	1.21	Spike	P	0 - 20
2396455	Arsenic	0.995	Spike	P	0 - 20
2396455	Barium	1.01	Spike	P	0 - 20
2396455	Beryllium	0.219	Spike	P	0 - 20
2396455	Boron	0.907	Spike	P	0 - 20
2396455	Cadmium	1.24	Spike	P	0 - 20
2396455	Chromium	2.06	Spike	P	0 - 20
2396455	Cobalt	2.02	Spike	P	0 - 20
2396455	Copper	1.30	Spike	P	0 - 20
2396455	Lead	0.134	Spike	P	0 - 20
2396455	Manganese	1.41	Spike	P	0 - 20
2396455	Molybdenum	0.191	Spike	P	0 - 20
2396455	Nickel	2.67	Spike	P	0 - 20
2396455	Selenium	0.421	Spike	P	0 - 20
2396455	Silver	1.58	Spike	P	0 - 20
2396455	Thallium	0.0645	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395976	Ammonia-N	1.89	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396217	Kjeldahl Nitrogen	2.78	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396218	NO2NO3-N	0.968	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395952	Total-P	0.579	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P427710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396219	Total Alkalinity	0.561	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P427954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396528	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P428061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396533	Organic Carbon	0.205	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A118188
Included Lab Sample IDs: 2396215, 2396216, 2396219

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

Reference Method: SM 2320 B-2011
Run ID: A118221
Included Lab Sample IDs: 2396215, 2396216, 2396219

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.4	97.5	P/P	90 - 110
Total Alkalinity	97.5	93.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118228
Included Lab Sample IDs: 2396217, 2396218, 2396220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A118236
Included Lab Sample IDs: 2396217, 2396218, 2396220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.2	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A118245
Included Lab Sample IDs: 2396217, 2396218, 2396220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A118250
Included Lab Sample IDs: 2396228, 2396229, 2396230

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	104	P/P	90 - 110
Aluminum	104	105	P/P	90 - 110
Antimony	102	102	P/P	90 - 110
Antimony	99.9	102	P/P	90 - 110
Arsenic	102	103	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Beryllium	100	100	P/P	90 - 110
Beryllium	99.8	100	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Cadmium	99.2	101	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Chromium	99.5	101	P/P	90 - 110
Cobalt	103	105	P/P	90 - 110
Cobalt	105	105	P/P	90 - 110
Copper	102	103	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A118250
Included Lab Sample IDs: 2396228, 2396229, 2396230

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	103	103	P/P	90 - 110
Lead	94.5	95.5	P/P	90 - 110
Lead	95.5	95.4	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Manganese	99.4	102	P/P	90 - 110
Molybdenum	100	101	P/P	90 - 110
Molybdenum	101	101	P/P	90 - 110
Nickel	103	106	P/P	90 - 110
Nickel	106	105	P/P	90 - 110
Selenium	101	99.7	P/P	90 - 110
Selenium	99.5	101	P/P	90 - 110
Silver	100	100	P/P	90 - 110
Silver	98.8	100	P/P	90 - 110
Thallium	103	104	P/P	90 - 110
Thallium	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A118258
Included Lab Sample IDs: 2396217, 2396218, 2396220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.7	99.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A118291
Included Lab Sample IDs: 2396228, 2396229, 2396230

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.8	98.4	P/P	90 - 110
Iron	102	98.8	P/P	90 - 110
Magnesium	101	98.1	P/P	90 - 110
Magnesium	98.1	97.9	P/P	90 - 110
Strontium	95.5	96.2	P/P	90 - 110
Tin	98.7	98.8	P/P	90 - 110
Titanium	99.8	99.6	P/P	90 - 110
Vanadium	98.7	98.4	P/P	90 - 110
Zinc	96.5	95.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A118307
Included Lab Sample IDs: 2396231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	101	P/P	90 - 110
Antimony	105	105	P/P	90 - 110
Arsenic	101	99.9	P/P	90 - 110
Barium	101	101	P/P	90 - 110
Beryllium	96.9	95.9	P/P	90 - 110
Boron	104	106	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	98.6	97.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A118307
Included Lab Sample IDs: 2396231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cobalt	101	99.2	P/P	90 - 110
Copper	98.6	97.1	P/P	90 - 110
Lead	103	102	P/P	90 - 110
Manganese	100	99.6	P/P	90 - 110
Molybdenum	99.6	99.2	P/P	90 - 110
Nickel	98.1	96.7	P/P	90 - 110
Selenium	101	101	P/P	90 - 110
Silver	103	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A118331
Included Lab Sample IDs: 2396215, 2396216, 2396219

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A118335
Included Lab Sample IDs: 2396231

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A118359
Included Lab Sample IDs: 2396231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	104	P/P	90 - 110
Iron	104	104	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	99.6	100	P/P	90 - 110
Sodium	98.7	98.8	P/P	90 - 110
Strontium	99.9	99.6	P/P	90 - 110
Tin	101	101	P/P	90 - 110
Titanium	101	101	P/P	90 - 110
Vanadium	99.6	100	P/P	90 - 110
Zinc	97.7	97.7	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A118386
Included Lab Sample IDs: 2396217, 2396218, 2396220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	98.0	P/P	90 - 110
Organic Carbon	98.8	94.0	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			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity	99.6					4.58	
EPA 200.7 Rev. 4.4	Calcium	100						0.0182
	Calcium	108	101	102				1.14
	Iron	104	100	99.1				0.792
	Iron	107	106	105	105			0.888
	Magnesium	102						0.174
	Magnesium	104	99.7	103				0.804
	Potassium	102	101	99.4	100			1.31
	Sodium	102	98.0	98.5				1.17
	Strontium	97.5						0.321
	Strontium	100	99.8	98.7	98.8			1.05
	Tin	101	83.6	81.2				2.98
	Tin	104	103	102	104			1.10
	Titanium	100	102	102				0.469
	Titanium	103	103	101	101			1.65
	Vanadium	98.1	101	99.5				1.60
	Vanadium	101	100	99.1	98.9			1.26
	Zinc	94.8	92.5	91.6				0.944
	Zinc	99.2	95.5	92.9	94.0			2.76
EPA 200.8 Rev. 5.4	Aluminum	105	109	111				1.53
	Aluminum	102	101	99.4	101			1.48
	Antimony	104	107	108				0.813
	Antimony	107	107	105	105			1.21
	Arsenic	103	113	116				1.80
	Arsenic	102	101	100	99.8			0.995
	Barium	104	103	101	102			1.01
	Beryllium	94.2	97.8	99.4				1.58
	Beryllium	93.3	94.5	94.3	91.6			0.219
	Boron	102	106	105	109			0.907
	Cadmium	104	97.8	99.7				1.90
	Cadmium	104	105	104	103			1.24
	Chromium	103	99.9	101				0.769
	Chromium	101	99.9	97.8	97.6			2.06
	Cobalt	104	115	117				1.18
	Cobalt	104	100	98.3	97.8			2.02
	Copper	102	111	111				0.579
	Copper	103	96.9	95.6	94.8			1.30
	Lead	97.1	104	106				1.39
	Lead	103	102	102	102			0.134
	Manganese	103	97.2	98.3				0.908
	Manganese	100	101	99.4	100			1.41
	Molybdenum	102	118	120				1.58
	Molybdenum	100	102	102	101			0.191
	Nickel	104	115	115				0.310
	Nickel	103	98.9	96.3	95.7			2.67
	Selenium	100	100	104				3.23
	Selenium	100	98.2	97.8	96.4			0.421
	Silver	102	93.1	93.7				0.633
	Silver	106	104	103	104			1.58
	Thallium	106	115	116				0.989
	Thallium	101	103	102	102			0.0645
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	101	104				1.89
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	98.8	102				2.78
EPA 353.2 Rev. 2.0	NO2NO3-N	103	104	103				0.968

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 365.1 Rev. 2.0	Total-P	97.8	95.8	96.5			0.579
SM 2320 B-2011	Total Alkalinity	95.6				0.561	
SM 2540 D-2015	TSS	87.0					
SM 4500-F- C-2011	Fluoride	101	102	102			0.0
SM 5310 B-2011	Organic Carbon	96.1	89.6	89.8			0.205

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2396215, 2396216, 2396219
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2396228, 2396229, 2396230, 2396231
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2396228, 2396229, 2396230, 2396231
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2396217, 2396218, 2396220
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2396217, 2396218, 2396220
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2396217, 2396218, 2396220
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2396217, 2396218, 2396220
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2396215, 2396216, 2396219
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2396231
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2396215, 2396216, 2396219
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2396215, 2396216, 2396219
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2396217, 2396218, 2396220

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/24/2023			03/24/2023 14:09	Khloe J Berg	2396215
	03/24/2023			03/24/2023 14:10	Khloe J Berg	2396216
	03/24/2023			03/24/2023 14:11	Khloe J Berg	2396219
EPA 200.7 Rev. 4.4	03/24/2023	03/27/2023 11:20	George D Taylor	03/30/2023 04:35	McKinley C Carter	2396228
	03/24/2023	03/27/2023 11:20	George D Taylor	03/30/2023 04:43	McKinley C Carter	2396228
	03/24/2023	03/27/2023 11:20	George D Taylor	03/30/2023 04:51	McKinley C Carter	2396229
	03/24/2023	03/27/2023 11:20	George D Taylor	03/30/2023 04:59	McKinley C Carter	2396229
	03/24/2023	03/27/2023 11:20	George D Taylor	03/30/2023 05:07	McKinley C Carter	2396230
	03/24/2023	03/27/2023 11:20	George D Taylor	03/30/2023 06:05	McKinley C Carter	2396230
	03/24/2023	03/29/2023 10:50	Vijayalakshmi Reddy	04/03/2023 20:06	McKinley C Carter	2396231
EPA 200.8 Rev. 5.4	03/24/2023	03/27/2023 11:20	George D Taylor	03/28/2023 18:54	Conrad Hartmann	2396228
	03/24/2023	03/27/2023 11:20	George D Taylor	03/28/2023 19:32	Conrad Hartmann	2396230
	03/24/2023	03/27/2023 11:20	George D Taylor	03/28/2023 20:48	Conrad Hartmann	2396228
	03/24/2023	03/27/2023 11:20	George D Taylor	03/28/2023 20:48	Emily M Philpot	2396228
	03/24/2023	03/27/2023 11:20	George D Taylor	03/28/2023 20:58	Conrad Hartmann	2396229
	03/24/2023	03/27/2023 11:20	George D Taylor	03/28/2023 20:58	Emily M Philpot	2396229
	03/24/2023	03/29/2023 10:50	Vijayalakshmi Reddy	03/30/2023 17:17	Conrad Hartmann	2396231
	03/24/2023	03/29/2023 10:50	Vijayalakshmi Reddy	03/31/2023 22:33	Conrad Hartmann	2396231
EPA 350.1 Rev. 2.0	03/24/2023			03/28/2023 11:51	Khloe J Berg	2396217
	03/24/2023			03/28/2023 11:52	Khloe J Berg	2396218
	03/24/2023			03/28/2023 11:54	Khloe J Berg	2396220
EPA 351.2 Rev. 2.0	03/24/2023	03/28/2023 11:05	Simonne.V. Calhoun	03/29/2023 10:06	Judith K. Clark	2396217
	03/24/2023	03/28/2023 11:05	Simonne.V. Calhoun	03/29/2023 10:08	Judith K. Clark	2396218
	03/24/2023	03/28/2023 11:05	Simonne.V. Calhoun	03/29/2023 10:10	Judith K. Clark	2396220
EPA 353.2 Rev. 2.0	03/24/2023			03/29/2023 07:43	Beverly Y. Sanders	2396218
	03/24/2023			03/29/2023 07:50	Beverly Y. Sanders	2396217
	03/24/2023			03/29/2023 07:51	Beverly Y. Sanders	2396220
EPA 365.1 Rev. 2.0	03/24/2023	03/27/2023 13:30	Alexis Price	03/28/2023 09:59	James L Waggerby	2396217
	03/24/2023	03/27/2023 13:30	Alexis Price	03/28/2023 10:00	James L Waggerby	2396218
	03/24/2023	03/27/2023 13:30	Alexis Price	03/28/2023 10:01	James L Waggerby	2396220
SM 2320 B-2011	03/24/2023			03/28/2023 06:52	Chandler E Cox	2396219
	03/24/2023			03/28/2023 07:06	Chandler E Cox	2396216
	03/24/2023			03/28/2023 07:55	Chandler E Cox	2396215
SM 2340 B-2011	03/24/2023			04/03/2023 20:06	McKinley C Carter	2396231
SM 2540 D-2015	03/24/2023			03/29/2023 16:02	Yijie Li	2396215, 2396216, 2396219
SM 4500-F- C-2011	03/24/2023			04/01/2023 01:30	Dale L. Simmons	2396215
	03/24/2023			04/01/2023 01:35	Dale L. Simmons	2396216
	03/24/2023			04/01/2023 01:40	Dale L. Simmons	2396219
SM 5310 B-2011	03/24/2023			04/04/2023 21:13	Elise M. Gillis	2396217
	03/24/2023			04/04/2023 21:32	Elise M. Gillis	2396218

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	03/24/2023			04/04/2023 22:14	Elise M. Gillis	2396220