

Chemical Analysis Report

CEN-DIST-2021-04-14-02

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

Event Description: **Long Branch**
Request ID: **RQ-2021-04-12-03**
Customer: **CEN-DIST**
Project ID: **BMAP**

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Report Comment: The BOD sample 2239478 was received at Eurofins TestAmerica Tampa 04/14/2021 at 08:50.

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 06-MAY-2021 10:45



Case Narrative

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

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Long Branch @ 0.7 mi DS of CR 13

Collection Date/Time: 04/13/2021 09:47

Field ID: G2CE0036

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2239473	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P396561	
	EPA 300.0 Rev. 2.1	Chloride	31	A	mg Cl/L	P396882	
		Sulfate	29	A	mg SO4/L	P396884	
	SM 2120 B-2011	Color (true)	60		PCU	P396549	
	SM 2320 B-2011	Total Alkalinity	77		mg CaCO3/L	P396665	
	SM 2540 C-2011	TDS	194		mg/L	P396988	
	SM 2540 D-2011	TSS	2	I	mg/L	P396814	
	SM 4500 F-C-2011	Fluoride	0.084	I	mg F/L	P396667	
2239474	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P397018	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P397233	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.096		mg N/L	P396841	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P396695	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P396953	
2239475	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P396535	
2239479	EPA 8321B	Sucralose	0.34		ug/L	P397375	
2239480	EPA 200.7 Rev. 4.4	Calcium	45.4		mg/L	P396845	
		Iron	360		ug/L	P396845	
		Magnesium	2.47		mg/L	P396845	
		Potassium	2.5		mg/L	P396845	
		Sodium	18.8		mg/L	P396845	
		Zinc	5.0	U	ug/L	P396845	
		Arsenic	0.99		ug/L	P396845	
	EPA 200.8 Rev. 5.4	Cadmium	0.020	U	ug/L	P396845	
		Chromium	0.49	I	ug/L	P396845	
		Copper	1.00		ug/L	P396845	
		Lead	0.27	I	ug/L	P396845	
		Nickel	0.50	U	ug/L	P396845	
		Silver	0.010	U	ug/L	P396845	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396561

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P396845

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P396845

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396882

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396884

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397018

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397233

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396841

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396695

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396535

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

Reference Method: EPA 8321B
Batch ID: P397375

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P396549

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P396665

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

Reference Method: SM 2540 C-2011
Batch ID: P396988

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P396814

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396667

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P396953

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P396845

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	96.3		P	85 - 115
Magnesium	100		P	85 - 115
Potassium	92.7		P	85 - 115
Sodium	102		P	85 - 115
Zinc	97.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P396845

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	94.8		P	85 - 115
Cadmium	95.0		P	85 - 115
Chromium	91.8		P	85 - 115
Copper	92.7		P	85 - 115
Lead	93.8		P	85 - 115
Nickel	92.2		P	85 - 115
Silver	93.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396882

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396884

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397018

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397233

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396841

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396695

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396535

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

Reference Method: EPA 8321B
Batch ID: P397375

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	98.3		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P396549

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P396665

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P396667

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.1		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P396953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P396845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239635	Calcium	106		P	80 - 120
2239635	Iron	104	105	P/P	80 - 120
2239635	Magnesium	100		P	80 - 120
2239635	Potassium	101	99.8	P/P	80 - 120
2239635	Sodium	103		P	80 - 120
2239635	Zinc	104	105	P/P	80 - 120
2239675	Calcium	102		P	80 - 120
2239675	Iron	106		P	80 - 120
2239675	Magnesium	95.8		P	80 - 120
2239675	Potassium	96.5		P	80 - 120
2239675	Sodium	101		P	80 - 120
2239675	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P396845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239635	Arsenic	93.7	95.9	P/P	80 - 120
2239635	Cadmium	94.7	98.2	P/P	80 - 120
2239635	Chromium	91.0	93.6	P/P	80 - 120
2239635	Copper	89.4	92.2	P/P	80 - 120
2239635	Lead	92.2	94.0	P/P	80 - 120
2239635	Nickel	90.0	92.5	P/P	80 - 120
2239635	Silver	92.1	94.3	P/P	80 - 120
2239675	Arsenic	92.9		P	80 - 120
2239675	Cadmium	92.1		P	80 - 120
2239675	Chromium	88.8		P	80 - 120
2239675	Copper	89.8		P	80 - 120
2239675	Lead	91.3		P	80 - 120
2239675	Nickel	88.6		P	80 - 120
2239675	Silver	91.1		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P396882

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239473	Chloride	98.0		P	90 - 110
2239755	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P396884

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239473	Sulfate	96.2		P	90 - 110
2239755	Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P397018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239599	Ammonia-N	94.8	95.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241154	Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239474	NO2NO3-N	98.1	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239408	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239267	O-Phosphate-P	98.1	96.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P397375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239479	Sucralose	84.6	89.8	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P396667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239754	Fluoride	104	104	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P396953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239209	Organic Carbon	99.6	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P396561

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239312	Turbidity	1.11	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P396845

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239635	Calcium	1.63	Spike	P	0 - 20
2239635	Iron	1.07	Spike	P	0 - 20
2239635	Magnesium	0.906	Spike	P	0 - 20
2239635	Potassium	0.793	Spike	P	0 - 20
2239635	Sodium	0.517	Spike	P	0 - 20
2239635	Zinc	0.511	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P396845

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239635	Arsenic	2.30	Spike	P	0 - 20
2239635	Cadmium	3.58	Spike	P	0 - 20
2239635	Chromium	2.75	Spike	P	0 - 20
2239635	Copper	3.01	Spike	P	0 - 20
2239635	Lead	1.98	Spike	P	0 - 20
2239635	Nickel	2.80	Spike	P	0 - 20
2239635	Silver	2.41	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P396882

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239473	Chloride	0.691	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P396884

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239473	Sulfate	0.218	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P397018

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239599	Ammonia-N	0.168	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241154	Kjeldahl Nitrogen	0.935	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239474	NO2NO3-N	4.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239408	Total-P	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239267	O-Phosphate-P	1.32	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P397375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239479	Sucralose	5.17	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P396549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239312	Color (true)	0.335	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P396665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239754	Total Alkalinity	0.960	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P396988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239054	TDS	6.50	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P396667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239754	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P396953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239209	Organic Carbon	0.150	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2239479
Field Sample ID: G2CE0036

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	99.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104725

Included Lab Sample IDs: 2239475

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.2	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A104730

Included Lab Sample IDs: 2239473

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104732

Included Lab Sample IDs: 2239473

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A104779

Included Lab Sample IDs: 2239473

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.3	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104779

Included Lab Sample IDs: 2239473

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104810

Included Lab Sample IDs: 2239474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.4	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104844

Included Lab Sample IDs: 2239474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104869

Included Lab Sample IDs: 2239473

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	99.3	P/P	90 - 110
Sulfate	98.7	98.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A104901

Included Lab Sample IDs: 2239474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	98.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104919

Included Lab Sample IDs: 2239474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A104922

Included Lab Sample IDs: 2239480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	99.7	P/P	90 - 110
Iron	100	97.5	P/P	90 - 110
Magnesium	99.3	96.5	P/P	90 - 110
Potassium	98.4	97.1	P/P	90 - 110
Sodium	98.7	97.4	P/P	90 - 110
Zinc	98.5	97.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104925

Included Lab Sample IDs: 2239480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.6	98.4	P/P	90 - 110
Cadmium	95.2	97.5	P/P	90 - 110
Chromium	95.2	95.5	P/P	90 - 110
Copper	95.5	94.7	P/P	90 - 110
Lead	97.1	99.0	P/P	90 - 110
Nickel	95.6	94.5	P/P	90 - 110
Silver	94.9	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105060

Included Lab Sample IDs: 2239474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	94.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A105138

Included Lab Sample IDs: 2239479

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	97.8	P/P	60 - 160

* 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				
EPA 180.1 Rev. 2.0	Turbidity					1.11	
EPA 200.7 Rev. 4.4	Calcium	105	106	102			1.63
	Iron	96.3	104	105	106		1.07
	Magnesium	100	100	95.8			0.906
	Potassium	92.7	101	99.8	96.5		0.793
	Sodium	102	103	101			0.517
	Zinc	97.2	104	105	105		0.511
EPA 200.8 Rev. 5.4	Arsenic	94.8	93.7	95.9	92.9		2.30
	Cadmium	95.0	94.7	98.2	92.1		3.58
	Chromium	91.8	91.0	93.6	88.8		2.75
	Copper	92.7	89.4	92.2	89.8		3.01
	Lead	93.8	92.2	94.0	91.3		1.98
	Nickel	92.2	90.0	92.5	88.6		2.80
	Silver	93.6	92.1	94.3	91.1		2.41
EPA 300.0 Rev. 2.1	Chloride	102	98.0	101		0.691	
	Sulfate	100	96.2	99.6		0.218	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	94.8	95.0			0.168
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110	104	103			0.935
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	97.5	98.1	105			4.68
EPA 365.1 Rev. 2.0	Total-P	105	103	101			1.15
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.1	96.6			1.32
EPA 8321B	Sucralose	98.3	84.6	89.8			5.17
SM 2120 B-2011	Color (true)	100				0.335	
SM 2320 B-2011	Total Alkalinity	99.9				0.960	
SM 2540 C-2011	TDS					6.50	
SM 4500 F-C-2011	Fluoride	99.1	104	104			0.0
SM 5310 B-2011	Organic Carbon	97.8	99.6	99.8			0.150

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2239473
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2239480
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2239480
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2239473
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2239473
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2239474
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2239474
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2239474
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2239474
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2239475
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2239479
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2239473
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2239473
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2239473
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2239473
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2239473
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2239474

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	04/14/2021			04/14/2021 15:46	Yen Ta	2239473
EPA 200.7 Rev. 4.4	04/14/2021	04/21/2021 17:00	Elliott D. Healy	04/22/2021 17:56	Betina Topolski	2239480
EPA 200.8 Rev. 5.4	04/14/2021	04/21/2021 17:00	Elliott D. Healy	04/22/2021 22:29	Alexander Thompson	2239480
EPA 300.0 Rev. 2.1	04/14/2021			04/19/2021 20:09	Lipi Saha	2239473
EPA 350.1 Rev. 2.0	04/14/2021			04/22/2021 17:02	Ping Hua	2239474
EPA 351.2 Rev. 2.0	04/14/2021	04/27/2021 13:45	Benjamin T. Nordmann	04/28/2021 16:07	Virginia P. Brown	2239474
EPA 353.2 Rev. 2.0	04/14/2021			04/19/2021 14:37	Touraj Touran	2239474
EPA 365.1 Rev. 2.0	04/14/2021	04/16/2021 13:47	Yen Ta	04/16/2021 17:16	Shengyu Ding	2239474
EPA 365.1 Rev. 2.0 dissolved	04/14/2021			04/14/2021 14:04	Lipi Saha	2239475
EPA 8321B	04/14/2021	04/29/2021 11:30	Rebecca Ware	04/29/2021 16:03	Rebecca Ware	2239479
SM 2120 B-2011	04/14/2021			04/14/2021 15:45	Benjamin T. Nordmann	2239473
SM 2320 B-2011	04/14/2021			04/15/2021 20:57	Dale L. Simmons	2239473
SM 2540 C-2011	04/14/2021			04/16/2021 15:12	Yijie Li	2239473
SM 2540 D-2011	04/14/2021			04/16/2021 15:36	Yijie Li	2239473
SM 4500 F-C-2011	04/14/2021			04/15/2021 20:57	Dale L. Simmons	2239473
SM 5310 B-2011	04/14/2021			04/21/2021 19:45	Lauren Lees	2239474