

Chemical Analysis Report

SE-DIST-2021-06-15-01

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

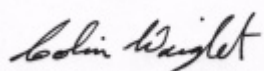
Event Description: **Southeast District CSIs for FL0345547 Spanish Lakes
Country Club Village RO WTP**
Request ID: **RQ-2021-05-31-12**
Customer: **SE-DIST**
Project ID: **CSI**

Send Reports to:
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3301 Gun Club Road
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Certified by: Colin Wright, Program Administrator

Date Certified: 09-JUL-2021 13:56



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: Spanish Lakes Country Club RO

Collection Date/Time: 06/14/2021 10:32

Field ID: EFF-A Grab

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2254892	EPA 200.7 Rev. 4.4	Calcium	490		mg/L	P399769	
		Iron	500		ug/L	P399769	
		Magnesium	19.4		mg/L	P399769	
		Potassium	4.2		mg/L	P399769	
		Sodium	146		mg/L	P399769	
	EPA 200.8 Rev. 5.4	Zinc	33		ug/L	P399769	
		Aluminum	18	I	ug/L	P399769	
		Arsenic	0.76		ug/L	P399769	
		Cadmium	0.020	U	ug/L	P399769	
		Chromium	4.5		ug/L	P399769	
		Copper	7.58		ug/L	P399769	
		Lead	1.22		ug/L	P399769	
		Nickel	1.0	I	ug/L	P399769	
		Selenium	0.26	I	ug/L	P399769	
		Silver	0.010	U	ug/L	P399769	
2254896	EPA 350.1 Rev. 2.0	Ammonia-N	2.6		mg N/L	P400227	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.5		mg N/L	P400318	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P399763	
	EPA 365.1 Rev. 2.0	Total-P	2.5		mg P/L	P399997	
	SM 5310 B-2011	Organic Carbon	39		mg C/L	P400250	
2254897	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	2.2		mg P/L	P399724	
2254898	SM 2540 D-2011	TSS	2	I	mg/L	P400048	

Ref. Method and Comment:

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

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

Sample Location: Spanish Lakes Country Club RO

Collection Date/Time: 06/14/2021 10:28

Field ID: Blank Grab

Matrix: DI-WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2254893	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P399769	
		Iron	30	U	ug/L	P399769	
		Magnesium	0.040	U	mg/L	P399769	
		Potassium	0.30	U	mg/L	P399769	
		Sodium	0.50	U	mg/L	P399769	
		Zinc	5.0	U	ug/L	P399769	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P399769	
		Arsenic	0.050	U	ug/L	P399769	
		Cadmium	0.020	U	ug/L	P399769	
		Chromium	0.40	U	ug/L	P399769	
		Copper	0.60	I	ug/L	P399769	
		Lead	0.20	U	ug/L	P399769	
		Nickel	0.50	U	ug/L	P399769	
		Selenium	0.20	U	ug/L	P399769	
		Silver	0.010	U	ug/L	P399769	
2254899	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P400286	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P399934	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P399763	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P399997	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P400250	
2254900	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P399724	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 07/09/2021.

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P399769

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: P399769

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
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
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400227

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400286

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399934

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400318

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399763

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399997

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399724

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

Reference Method: SM 2540 D-2011
Batch ID: P400048

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 5310 B-2011
Batch ID: P400250

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: P399769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	95.7		P	80 - 120
Iron	97.2		P	80 - 120
Magnesium	97.9		P	80 - 120
Potassium	93.0		P	80 - 120
Sodium	95.8		P	80 - 120
Zinc	91.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P399769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.9		P	85 - 115
Arsenic	104		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	97.5		P	85 - 115
Copper	104		P	85 - 115
Lead	109		P	85 - 115
Nickel	102		P	85 - 115
Selenium	103		P	85 - 115
Silver	101		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400227

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400286

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399934

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400318

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399763

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399997

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399724

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

Reference Method: SM 5310 B-2011
Batch ID: P400250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P399769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254909	Calcium	99.0		P	80 - 120
2254909	Iron	103		P	80 - 120
2254909	Magnesium	102		P	80 - 120
2254909	Potassium	99.0		P	80 - 120
2254909	Sodium	101		P	80 - 120
2254909	Zinc	96.0		P	80 - 120
2255047	Calcium	99.0		P	80 - 120
2255047	Iron	103	98.7	P/P	80 - 120
2255047	Magnesium	98.3	91.9	P/P	80 - 120
2255047	Potassium	97.6	95.4	P/P	80 - 120
2255047	Sodium	98.6	95.6	P/P	80 - 120
2255047	Zinc	91.0	88.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P399769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254909	Aluminum	97.7		P	80 - 120
2254909	Arsenic	103		P	80 - 120
2254909	Cadmium	108		P	80 - 120
2254909	Chromium	93.8		P	80 - 120
2254909	Copper	97.5		P	80 - 120
2254909	Lead	110		P	80 - 120
2254909	Nickel	95.9		P	80 - 120
2254909	Selenium	96.2		P	80 - 120
2254909	Silver	103		P	80 - 120
2255047	Aluminum	99.2	98.6	P/P	80 - 120
2255047	Arsenic	105	103	P/P	80 - 120
2255047	Cadmium	105	103	P/P	80 - 120
2255047	Chromium	102	98.3	P/P	80 - 120
2255047	Copper	102	100	P/P	80 - 120
2255047	Lead	109	108	P/P	80 - 120
2255047	Nickel	102	98.9	P/P	80 - 120
2255047	Selenium	102	99.3	P/P	80 - 120
2255047	Silver	102	99.2	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P400227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254646	Ammonia-N	97.6	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P400286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254899	Ammonia-N	99.2	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P399934

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254876	Kjeldahl Nitrogen	96.7	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254876	NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254931	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254900	O-Phosphate-P	100	100	P/P	90 - 110

Reference Method: SM 5310 B-2011
Batch ID: P400250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254932	Organic Carbon	93.9	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P399769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2255047	Calcium	1.98	Spike	P	0 - 20
2255047	Iron	3.74	Spike	P	0 - 20
2255047	Magnesium	3.74	Spike	P	0 - 20
2255047	Potassium	2.11	Spike	P	0 - 20
2255047	Sodium	2.12	Spike	P	0 - 20
2255047	Zinc	3.27	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P399769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2255047	Aluminum	0.577	Spike	P	0 - 20
2255047	Arsenic	1.46	Spike	P	0 - 20
2255047	Cadmium	1.97	Spike	P	0 - 20
2255047	Chromium	3.22	Spike	P	0 - 20
2255047	Copper	2.33	Spike	P	0 - 20
2255047	Lead	0.914	Spike	P	0 - 20
2255047	Nickel	3.40	Spike	P	0 - 20
2255047	Selenium	2.22	Spike	P	0 - 20
2255047	Silver	2.67	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P400227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254646	Ammonia-N	1.06	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P400286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254899	Ammonia-N	1.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P399934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254876	Kjeldahl Nitrogen	0.864	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P400318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254666	Kjeldahl Nitrogen	1.03	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254876	NO2NO3-N	0.509	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254931	Total-P	1.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254900	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P400250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254932	Organic Carbon	0.935	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: A106081

Included Lab Sample IDs: 2254897, 2254900

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106098

Included Lab Sample IDs: 2254896, 2254899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A106153

Included Lab Sample IDs: 2254892, 2254893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	100	P/P	90 - 110
Calcium	102	102	P/P	90 - 110
Iron	103	104	P/P	90 - 110
Iron	104	103	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Magnesium	103	102	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Potassium	102	101	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	100	101	P/P	90 - 110
Zinc	101	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106155

Included Lab Sample IDs: 2254892, 2254893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	102	P/P	90 - 110
Arsenic	106	105	P/P	90 - 110
Cadmium	102	105	P/P	90 - 110
Chromium	100	94.8	P/P	90 - 110
Copper	103	98.9	P/P	90 - 110
Nickel	103	98.0	P/P	90 - 110
Selenium	105	102	P/P	90 - 110
Silver	101	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106179

Included Lab Sample IDs: 2254892, 2254893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	105	107	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106209

Included Lab Sample IDs: 2254896

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106212

Included Lab Sample IDs: 2254899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106217

Included Lab Sample IDs: 2254899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106295

Included Lab Sample IDs: 2254896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A106304

Included Lab Sample IDs: 2254896, 2254899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106327

Included Lab Sample IDs: 2254899

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106393

Included Lab Sample IDs: 2254896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	101	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.7 Rev. 4.4	Calcium	95.7	99.0	99.0			1.98
	Iron	97.2	103	103	98.7		3.74
	Magnesium	97.9	102	98.3	91.9		3.74
	Potassium	93.0	99.0	97.6	95.4		2.11
	Sodium	95.8	101	98.6	95.6		2.12
	Zinc	91.7	96.0	91.0	88.0		3.27
EPA 200.8 Rev. 5.4	Aluminum	98.9	99.2	98.6	97.7		0.577
	Arsenic	104	105	103	103		1.46
	Cadmium	102	105	103	108		1.97
	Chromium	97.5	102	98.3	93.8		3.22
	Copper	104	102	100	97.5		2.33
	Lead	109	109	108	110		0.914
	Nickel	102	102	98.9	95.9		3.40
	Selenium	103	102	99.3	96.2		2.22
EPA 350.1 Rev. 2.0	Silver	101	102	99.2	103		2.67
	Ammonia-N	99.2	97.6	98.8			1.06
EPA 351.2 Rev. 2.0	Ammonia-N	101	99.2	100			1.20
	Kjeldahl Nitrogen	98.4	96.7	98.2			0.864
EPA 353.2 Rev. 2.0	Kjeldahl Nitrogen	108					1.03
	NO2NO3-N	99.0	98.5	98.0			0.509
EPA 365.1 Rev. 2.0	Total-P	102	103	104			1.06
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	100	100			0.0
SM 5310 B-2011	Organic Carbon	96.2	93.9	95.2			0.935

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2254892, 2254893
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2254892, 2254893
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2254896, 2254899
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2254896, 2254899
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2254896, 2254899
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2254896, 2254899
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2254897, 2254900
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2254898
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2254896, 2254899

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	06/15/2021	06/16/2021 12:15	Elliott D. Healy	06/17/2021 15:48	Betina Topolski	2254892
	06/15/2021	06/16/2021 12:15	Elliott D. Healy	06/17/2021 16:21	Betina Topolski	2254893
	06/15/2021	06/16/2021 12:15	Elliott D. Healy	06/17/2021 20:05	Betina Topolski	2254892
EPA 200.8 Rev. 5.4	06/15/2021	06/16/2021 12:15	Elliott D. Healy	06/17/2021 23:03	Alexander Thompson	2254892
	06/15/2021	06/16/2021 12:15	Elliott D. Healy	06/17/2021 23:13	Alexander Thompson	2254893
	06/15/2021	06/16/2021 12:15	Elliott D. Healy	06/18/2021 16:39	Alexander Thompson	2254892
	06/15/2021	06/16/2021 12:15	Elliott D. Healy	06/18/2021 16:46	Alexander Thompson	2254893
EPA 350.1 Rev. 2.0	06/15/2021			06/25/2021 13:24	Ping Hua	2254896
	06/15/2021			06/28/2021 12:05	Ping Hua	2254899
EPA 351.2 Rev. 2.0	06/15/2021	06/18/2021 14:20	Benjamin T. Nordmann	06/21/2021 12:46	Letuzia M De Oliveira	2254899
	06/15/2021	06/29/2021 12:54	Benjamin T. Nordmann	06/30/2021 12:48	Letuzia M De Oliveira	2254896
EPA 353.2 Rev. 2.0	06/15/2021			06/16/2021 09:14	Beverly Y. Sanders	2254896
	06/15/2021			06/16/2021 09:16	Beverly Y. Sanders	2254899
EPA 365.1 Rev. 2.0	06/15/2021	06/21/2021 16:53	Madeline Gruver	06/22/2021 12:41	Shengyu Ding	2254896
	06/15/2021	06/21/2021 16:53	Madeline Gruver	06/22/2021 14:20	Shengyu Ding	2254899
EPA 365.1 Rev. 2.0 dissolved	06/15/2021			06/15/2021 15:16	Ping Hua	2254900
	06/15/2021			06/15/2021 15:20	Ping Hua	2254897
SM 2540 D-2011	06/15/2021			06/18/2021 15:41	Yijie Li	2254898
SM 5310 B-2011	06/15/2021			06/24/2021 00:46	Madeline Gruver	2254896
	06/15/2021			06/24/2021 00:59	Madeline Gruver	2254899