Chemical Analysis Report

SO-DIST-2021-09-22-01

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

Event Description: **2021 SMP : Continuous Flopbuck**
Request ID: **RQ-2021-09-20-54**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 364
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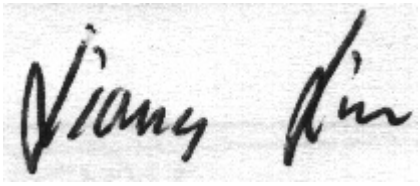
Date Certified: 13-OCT-2021 14:08



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: FlopbuckNearPearlSt **Collection Date/Time: 09/21/2021 11:00**

Field ID: G3SD0185 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2277441	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P404066	
	SM 2320 B-2011	Total Alkalinity	227		mg CaCO3/L	P404208	
	SM 2540 D-2011	TSS	3	I	mg/L	P404551	
	SM 4500 F-C-2011	Fluoride	0.43		mg F/L	P404211	
2277442	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P404168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P404123	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P404163	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P404185	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P404200	
2277443	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.097		mg P/L	P404058	
2277450	EPA 200.7 Rev. 4.4	Calcium	151		mg/L	P404252	
		Iron	180		ug/L	P404252	
		Magnesium	67.7		mg/L	P404252	
		Manganese	19.5		ug/L	P404252	
		Zinc	7.2	I	ug/L	P404252	
	EPA 200.8 Rev. 5.4	Aluminum	24		ug/L	P404252	
		Antimony	0.36		ug/L	P404252	
		Arsenic	1.93		ug/L	P404252	
		Beryllium	0.010	I	ug/L	P404252	
		Cadmium	0.020	U	ug/L	P404252	
		Chromium	0.40	U	ug/L	P404252	
		Copper	0.40	U	ug/L	P404252	
		Lead	0.20	U	ug/L	P404252	
		Nickel	0.87	I	ug/L	P404252	
		Selenium	0.38	I	ug/L	P404252	
		Silver	0.010	U	ug/L	P404252	
		Thallium	0.10	U	ug/L	P404252	

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: P404066

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404252

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404252

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
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
Thallium	0.10	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404123

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404163

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404185

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: P404058

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

Reference Method: SM 2320 B-2011
Batch ID: P404208

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

Reference Method: SM 2540 D-2011
Batch ID: P404551

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P404211

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P404200

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: P404252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	106		P	85 - 115
Magnesium	106		P	85 - 115
Manganese	101		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	80 - 120
Antimony	106		P	80 - 120
Arsenic	104		P	85 - 115
Beryllium	101		P	80 - 120
Cadmium	103		P	85 - 115
Chromium	97.9		P	80 - 120
Copper	98.8		P	80 - 120
Lead	105		P	80 - 120
Nickel	98.9		P	80 - 120
Selenium	103		P	80 - 120
Silver	105		P	80 - 120
Thallium	102		P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404123

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404163

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404185

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404058

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P404208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P404211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P404200

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.9		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277452	Calcium	106		P	80 - 120
2277452	Iron	110		P	80 - 120
2277452	Magnesium	110		P	80 - 120
2277452	Manganese	102		P	80 - 120
2277452	Zinc	103		P	80 - 120
2278063	Calcium	107	108	P/P	80 - 120
2278063	Iron	108	108	P/P	80 - 120
2278063	Magnesium	109	108	P/P	80 - 120
2278063	Manganese	101	104	P/P	80 - 120
2278063	Zinc	100	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277452	Aluminum	106		P	80 - 120
2277452	Antimony	106		P	80 - 120
2277452	Arsenic	96.5		P	80 - 120
2277452	Beryllium	97.9		P	80 - 120
2277452	Cadmium	98.0		P	80 - 120
2277452	Chromium	100		P	80 - 120
2277452	Copper	102		P	80 - 120
2277452	Lead	107		P	80 - 120
2277452	Nickel	98.9		P	80 - 120
2277452	Selenium	103		P	80 - 120
2277452	Silver	105		P	80 - 120
2277452	Thallium	103		P	80 - 120
2278063	Aluminum	103	99.0	P/P	80 - 120
2278063	Antimony	108	103	P/P	80 - 120
2278063	Arsenic	100	96.0	P/P	80 - 120
2278063	Beryllium	98.5	95.9	P/P	80 - 120
2278063	Cadmium	98.6	94.5	P/P	80 - 120
2278063	Chromium	99.7	96.8	P/P	80 - 120
2278063	Copper	91.8	88.8	P/P	80 - 120
2278063	Lead	101	95.9	P/P	80 - 120
2278063	Nickel	99.2	95.4	P/P	80 - 120
2278063	Selenium	104	101	P/P	80 - 120
2278063	Silver	106	101	P/P	80 - 120
2278063	Thallium	104	99.6	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277408	Ammonia-N	97.0	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277408	Kjeldahl Nitrogen	98.4	98.4	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277442	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277253	Total-P	108	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277420	O-Phosphate-P	97.7	97.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P404211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277537	Fluoride	98.8	99.8	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P404200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2276976	Organic Carbon	98.4	98.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P404066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277415	Turbidity	2.35	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278063	Calcium	0.393	Spike	P	0 - 20
2278063	Iron	0.261	Spike	P	0 - 20
2278063	Magnesium	0.700	Spike	P	0 - 20
2278063	Manganese	2.51	Spike	P	0 - 20
2278063	Zinc	3.85	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278063	Aluminum	3.90	Spike	P	0 - 20
2278063	Antimony	4.50	Spike	P	0 - 20
2278063	Arsenic	4.28	Spike	P	0 - 20
2278063	Beryllium	2.62	Spike	P	0 - 20
2278063	Cadmium	4.30	Spike	P	0 - 20
2278063	Chromium	2.93	Spike	P	0 - 20
2278063	Copper	3.11	Spike	P	0 - 20
2278063	Lead	5.34	Spike	P	0 - 20
2278063	Nickel	3.92	Spike	P	0 - 20
2278063	Selenium	2.51	Spike	P	0 - 20
2278063	Silver	4.52	Spike	P	0 - 20
2278063	Thallium	4.69	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277408	Ammonia-N	1.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277408	Kjeldahl Nitrogen	0.00777	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277442	NO2NO3-N	1.45	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277253	Total-P	1.47	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277420	O-Phosphate-P	0.0960	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P404208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277537	Total Alkalinity	2.94	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P404211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277537	Fluoride	0.948	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P404200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2276976	Organic Carbon	0.270	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: A107938
Included Lab Sample IDs: 2277443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A107944
Included Lab Sample IDs: 2277441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A107976
Included Lab Sample IDs: 2277442

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A107977
Included Lab Sample IDs: 2277442

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.2	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A107981
Included Lab Sample IDs: 2277442

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	99.0	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A107995
Included Lab Sample IDs: 2277442

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	98.8	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A107996
Included Lab Sample IDs: 2277441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A107996
Included Lab Sample IDs: 2277441

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A108018
Included Lab Sample IDs: 2277442

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A108048
Included Lab Sample IDs: 2277450

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	102	P/P	90 - 110
Antimony	108	107	P/P	90 - 110
Beryllium	99.2	96.7	P/P	90 - 110
Chromium	98.7	98.2	P/P	90 - 110
Copper	98.3	96.8	P/P	90 - 110
Lead	102	102	P/P	90 - 110
Nickel	97.9	96.4	P/P	90 - 110
Selenium	102	101	P/P	90 - 110
Silver	104	104	P/P	90 - 110
Thallium	104	104	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A108062
Included Lab Sample IDs: 2277450

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A108068
Included Lab Sample IDs: 2277450

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	103	98.1	P/P	90 - 110
Cadmium	102	98.5	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						2.35	
EPA 200.7 Rev. 4.4	Calcium	104	106	107	108			0.393
	Iron	106	110	108	108			0.261
	Magnesium	106	110	109	108			0.700
	Manganese	101	102	101	104			2.51
	Zinc	99.6	103	100	104			3.85
EPA 200.8 Rev. 5.4	Aluminum	102	103	99.0	106			3.90
	Antimony	106	108	103	106			4.50
	Arsenic	104	100	96.0	96.5			4.28
	Beryllium	101	98.5	95.9	97.9			2.62
	Cadmium	103	98.6	94.5	98.0			4.30
	Chromium	97.9	100	99.7	96.8			2.93
	Copper	98.8	91.8	88.8	102			3.11
	Lead	105	101	95.9	107			5.34
	Nickel	98.9	99.2	95.4	98.9			3.92
	Selenium	103	104	101	103			2.51
	Silver	105	106	101	105			4.52
	Thallium	102	104	99.6	103			4.69
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	97.0	98.2				1.18
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.9	98.4	98.4				0.0077
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	102				1.45
EPA 365.1 Rev. 2.0	Total-P	108	108	110				1.47
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	97.7	97.6				0.0960
SM 2320 B-2011	Total Alkalinity	102					2.94	
SM 4500 F-C-2011	Fluoride	97.8	98.8	99.8				0.948
SM 5310 B-2011	Organic Carbon	98.9	98.4	98.8				0.270

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2277441
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2277450
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2277450
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2277442
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2277442
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2277442
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2277442
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2277443
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2277441
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2277441
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2277441
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2277442

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	09/22/2021			09/22/2021 15:01	Khloe J Berg	2277441
EPA 200.7 Rev. 4.4	09/22/2021	09/28/2021 10:40	Emily M Philpot	09/29/2021 17:10	Josef B Mick	2277450
EPA 200.8 Rev. 5.4	09/22/2021	09/28/2021 10:40	Emily M Philpot	09/28/2021 18:46	McKinley C Carter	2277450
	09/22/2021	09/28/2021 10:40	Emily M Philpot	09/29/2021 18:53	McKinley C Carter	2277450
EPA 350.1 Rev. 2.0	09/22/2021			09/24/2021 11:40	Ping Hua	2277442
EPA 351.2 Rev. 2.0	09/22/2021	09/23/2021 12:39	Benjamin T. Nordmann	09/24/2021 10:56	Alexandra J Mattheus	2277442
EPA 353.2 Rev. 2.0	09/22/2021			09/24/2021 10:49	Beverly Y. Sanders	2277442
EPA 365.1 Rev. 2.0	09/22/2021	09/24/2021 16:21	Madeline Gruver	09/27/2021 14:37	Lipi Saha	2277442
EPA 365.1 Rev. 2.0 dissolved	09/22/2021			09/22/2021 14:09	James L Waggerby	2277443
SM 2320 B-2011	09/22/2021			09/23/2021 19:56	Dale L. Simmons	2277441
SM 2540 D-2011	09/22/2021			09/23/2021 14:36	Yijie Li	2277441
SM 4500 F-C-2011	09/22/2021			09/23/2021 19:56	Dale L. Simmons	2277441
SM 5310 B-2011	09/22/2021			09/24/2021 22:32	Khloe J Berg	2277442