

Chemical Analysis Report

SO-DIST-2022-03-11-01

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

Event Description: **Caloosa Creeks**
Request ID: **RQ-2022-03-07-57**
Customer: **SO-DIST**
Project ID: **BMAP**

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FLDEP South District Office
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Date Certified: 01-APR-2022 17:57



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 group are included in this report: 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: Orange River @BoatRamp

Collection Date/Time: 03/10/2022 09:01

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2311961	DEP SOP: NU-094-1	Color (true)**	53		PCU	P411024	
	SM 2320 B-2011	Total Alkalinity	123		mg CaCO3/L	P411166	
	SM 2540 D-2011	TSS	4	I	mg/L	P411378	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P411168	
2311966	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P411154	
2311971	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P411121	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P411399	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P411091	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P411387	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P411154	
2311976	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P411022	

Ref. Method and Comment:

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

Sample Location: Roberts Canal @ SR 80

Collection Date/Time: 03/10/2022 09:50

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2311962	DEP SOP: NU-094-1	Color (true)**	58		PCU	P411024	
	SM 2320 B-2011	Total Alkalinity	242		mg CaCO3/L	P411166	
	SM 2540 D-2011	TSS	15		mg/L	P411378	
	SM 4500 F-C-2011	Fluoride	0.38		mg F/L	P411168	
2311967	SM 5310 B-2011 dissolved	Organic Carbon	15		mg C/L	P411154	
2311972	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P411123	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P411110	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P411091	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P411387	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P411154	
2311977	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P411022	

Ref. Method and Comment:

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

Sample Location: Nine Mile Canal @ SR 80

Collection Date/Time: 03/10/2022 10:38

Field ID: G3SD0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2311963	DEP SOP: NU-094-1	Color (true)**	56		PCU	P411024	
	SM 2320 B-2011	Total Alkalinity	103	A	mg CaCO3/L	P411166	
	SM 2540 D-2011	TSS	7	I	mg/L	P411378	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P411168	
2311968	SM 5310 B-2011 dissolved	Organic Carbon	16		mg C/L	P411154	
2311973	EPA 350.1 Rev. 2.0	Ammonia-N	0.050		mg N/L	P411123	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P411110	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.059		mg N/L	P411091	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P411388	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P411154	
2311978	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P411022	

Ref. Method and Comment:

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

Sample Location: Bee Branch @LoblollyBay

Collection Date/Time: 03/10/2022 11:25

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2311964	DEP SOP: NU-094-1	Color (true)**	95		PCU	P411024	
	SM 2320 B-2011	Total Alkalinity	46		mg CaCO3/L	P411166	
	SM 2540 D-2011	TSS	7	I	mg/L	P411377	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P411168	
2311969	SM 5310 B-2011 dissolved	Organic Carbon	15		mg C/L	P411217	
2311974	EPA 350.1 Rev. 2.0	Ammonia-N	0.097		mg N/L	P411123	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P411110	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P411091	
	EPA 365.1 Rev. 2.0	Total-P	0.38		mg P/L	P411388	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P411217	
2311979	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P411022	

Ref. Method and Comment:

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

Sample Location: Telegraph Creek @ USGS

Collection Date/Time: 03/10/2022 12:11

Field ID: G3SD0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2311965	DEP SOP: NU-094-1	Color (true)**	57		PCU	P411025	
	SM 2320 B-2011	Total Alkalinity	208		mg CaCO3/L	P411166	
	SM 2540 D-2011	TSS	6	I	mg/L	P411377	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P411168	
2311970	SM 5310 B-2011 dissolved	Organic Carbon	16		mg C/L	P411217	
2311975	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P411123	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P411110	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P411091	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P411388	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P411217	
2311980	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P411022	

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: DEP SOP: NU-094-1
Batch ID: P411024

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P411025

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411121

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411123

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411110

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411399

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411091

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411387

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411388

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: P411022

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

Reference Method: SM 2320 B-2011
Batch ID: P411166

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

Reference Method: SM 2540 D-2011
Batch ID: P411377

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P411378

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P411168

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P411154

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

Reference Method: SM 5310 B-2011
Batch ID: P411217

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P411154

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P411217

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P411024

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P411025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411123

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411110

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411091

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411387

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411388

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P411022

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

Reference Method: SM 2320 B-2011
Batch ID: P411166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.1		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P411168

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P411154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.9		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P411217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P411154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.9		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P411217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311942	Ammonia-N	97.6	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311975	Ammonia-N	97.0	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311907	Kjeldahl Nitrogen	98.0	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311607	Kjeldahl Nitrogen	100	92.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311941	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310107	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312163	Total-P	103	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P411022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311978	O-Phosphate-P	97.5	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P411168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311963	Fluoride	101	101	P/P	92 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P411154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311971	Organic Carbon	89.8	91.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P411217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311943	Organic Carbon	106		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P411154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311971	Organic Carbon	89.8	91.1	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P411217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311943	Organic Carbon	106		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P411024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311940	Color (true)	0.455	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P411025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312145	Color (true)	14.5	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311942	Ammonia-N	0.456	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311975	Ammonia-N	0.733	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311907	Kjeldahl Nitrogen	0.585	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311607	Kjeldahl Nitrogen	5.53	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311941	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310107	Total-P	0.289	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P411388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312163	Total-P	3.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P411022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311978	O-Phosphate-P	0.350	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P411166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311963	Total Alkalinity	0.661	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011

Batch ID: P411168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311963	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011

Batch ID: P411154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311971	Organic Carbon	0.802	Spike	P	0 - 20

Reference Method: SM 5310 B-2011

Batch ID: P411217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311943	Organic Carbon	0.730	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved

Batch ID: P411154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311971	Organic Carbon	0.802	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved

Batch ID: P411217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311943	Organic Carbon	0.730	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: A110892

Included Lab Sample IDs: 2311976, 2311977, 2311978, 2311979, 2311980

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

Reference Method: DEP SOP: NU-094-1

Run ID: A110894

Included Lab Sample IDs: 2311961, 2311962, 2311963, 2311964, 2311965

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115
Color (true)	101	101	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110932

Included Lab Sample IDs: 2311971, 2311972, 2311973, 2311974, 2311975

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110941

Included Lab Sample IDs: 2311971, 2311972, 2311973, 2311974, 2311975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	98.1	P/P	90 - 110
Ammonia-N	98.4	98.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110958

Included Lab Sample IDs: 2311971, 2311972, 2311973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.6	96.7	P/P	90 - 110
Organic Carbon	95.2	95.5	P/P	90 - 110
Organic Carbon	96.7	95.2	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A110958

Included Lab Sample IDs: 2311966, 2311967, 2311968

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.2	95.5	P/P	90 - 110
Organic Carbon	96.7	95.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110961

Included Lab Sample IDs: 2311961, 2311962, 2311963, 2311964, 2311965

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.6	96.9	P/P	90 - 110
Total Alkalinity	96.9	95.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A110961

Included Lab Sample IDs: 2311961, 2311962, 2311963, 2311964, 2311965

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

Reference Method: SM 5310 B-2011

Run ID: A110989

Included Lab Sample IDs: 2311974, 2311975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	97.9	P/P	90 - 110
Organic Carbon	99.9	96.4	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A110989

Included Lab Sample IDs: 2311969, 2311970

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.9	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111063

Included Lab Sample IDs: 2311972, 2311973, 2311974, 2311975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	105	P/P	90 - 110
Kjeldahl Nitrogen	97.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111110

Included Lab Sample IDs: 2311971, 2311973, 2311974, 2311975

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111120

Included Lab Sample IDs: 2311972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111154

Included Lab Sample IDs: 2311971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.9	94.3	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
DEP SOP: NU-094-1	Color (true)	100				0.455	
	Color (true)	101				14.5	
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	97.6	98.2			0.456
	Ammonia-N	97.8	97.0	97.8			0.733
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	98.0	98.8			0.585
	Kjeldahl Nitrogen	95.4	100	92.0			5.53
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	103	106	107			0.289
	Total-P	104	103	107			3.53
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	97.5	97.9			0.350
SM 2320 B-2011	Total Alkalinity	95.1				0.661	
SM 4500 F-C-2011	Fluoride	99.6	101	101			0.0
SM 5310 B-2011	Organic Carbon	94.9	89.8	91.1			0.802
	Organic Carbon	94.4	106				0.730
SM 5310 B-2011 dissolved	Organic Carbon	94.9	89.8	91.1			0.802
	Organic Carbon	94.4	106				0.730

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2311961, 2311962, 2311963, 2311964, 2311965
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2311971, 2311972, 2311973, 2311974, 2311975
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2311971, 2311972, 2311973, 2311974, 2311975
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2311971, 2311972, 2311973, 2311974, 2311975
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2311971, 2311972, 2311973, 2311974, 2311975
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2311976, 2311977, 2311978, 2311979, 2311980
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2311961, 2311962, 2311963, 2311964, 2311965
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2311961, 2311962, 2311963, 2311964, 2311965
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2311961, 2311962, 2311963, 2311964, 2311965
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2311971, 2311972, 2311973, 2311974, 2311975
SM 5310 B-2011 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2311966, 2311967, 2311968, 2311969, 2311970

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	03/11/2022			03/11/2022 15:14	Samantha L Bates	2311961
	03/11/2022			03/11/2022 15:15	Samantha L Bates	2311962, 2311963
	03/11/2022			03/11/2022 15:16	Samantha L Bates	2311964
	03/11/2022			03/11/2022 15:20	Samantha L Bates	2311965
EPA 350.1 Rev. 2.0	03/11/2022			03/15/2022 13:05	Ping Hua	2311971
	03/11/2022			03/15/2022 13:45	Ping Hua	2311975
	03/11/2022			03/15/2022 13:49	Ping Hua	2311972
	03/11/2022			03/15/2022 13:50	Ping Hua	2311973
EPA 351.2 Rev. 2.0	03/11/2022			03/15/2022 13:51	Ping Hua	2311974
	03/11/2022	03/17/2022 10:56	Samantha L Bates	03/21/2022 12:33	Alexandra J Mattheus	2311972
	03/11/2022	03/17/2022 10:56	Samantha L Bates	03/21/2022 12:34	Alexandra J Mattheus	2311973
	03/11/2022	03/17/2022 10:56	Samantha L Bates	03/21/2022 12:38	Alexandra J Mattheus	2311974
EPA 353.2 Rev. 2.0	03/11/2022	03/17/2022 10:56	Samantha L Bates	03/21/2022 12:40	Alexandra J Mattheus	2311975
	03/11/2022	03/23/2022 10:26	Samantha L Bates	03/25/2022 12:47	Alexandra J Mattheus	2311971
	03/11/2022			03/15/2022 09:59	Beverly Y. Sanders	2311971
	03/11/2022			03/15/2022 10:00	Beverly Y. Sanders	2311972
EPA 365.1 Rev. 2.0	03/11/2022			03/15/2022 10:01	Beverly Y. Sanders	2311973
	03/11/2022			03/15/2022 10:02	Beverly Y. Sanders	2311974
	03/11/2022			03/15/2022 10:03	Beverly Y. Sanders	2311975
	03/11/2022	03/22/2022 17:15	Simonne.V. Calhoun	03/23/2022 11:49	Sarah A Nixon	2311971
EPA 365.1 Rev. 2.0 dissolved	03/11/2022	03/22/2022 17:15	Simonne.V. Calhoun	03/23/2022 11:58	Sarah A Nixon	2311973
	03/11/2022	03/22/2022 17:15	Simonne.V. Calhoun	03/23/2022 11:59	Sarah A Nixon	2311974
	03/11/2022	03/22/2022 17:15	Simonne.V. Calhoun	03/23/2022 12:00	Sarah A Nixon	2311975
	03/11/2022	03/22/2022 17:15	Simonne.V. Calhoun	03/23/2022 14:50	James L Waggeberby	2311972
SM 2320 B-2011	03/11/2022			03/11/2022 14:56	James L Waggeberby	2311978
	03/11/2022			03/11/2022 14:59	James L Waggeberby	2311976, 2311977
	03/11/2022			03/11/2022 15:00	James L Waggeberby	2311979
	03/11/2022			03/11/2022 15:02	James L Waggeberby	2311980
SM 2540 D-2011	03/11/2022			03/15/2022 23:47	Dale L. Simmons	2311963
	03/11/2022			03/16/2022 02:26	Dale L. Simmons	2311961
	03/11/2022			03/16/2022 02:41	Dale L. Simmons	2311962
	03/11/2022			03/16/2022 02:55	Dale L. Simmons	2311964
SM 4500 F-C-2011	03/11/2022			03/16/2022 03:09	Dale L. Simmons	2311965
	03/11/2022			03/14/2022 15:03	Yijie Li	2311961, 2311962, 2311963, 2311964, 2311965
	03/11/2022			03/15/2022 23:35	Dale L. Simmons	2311963
	03/11/2022			03/16/2022 02:26	Dale L. Simmons	2311961
	03/11/2022			03/16/2022 02:41	Dale L. Simmons	2311962
	03/11/2022			03/16/2022 02:55	Dale L. Simmons	2311964
	03/11/2022			03/16/2022 03:09	Dale L. Simmons	2311965

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	03/11/2022			03/15/2022 15:31	Khloe J Berg	2311971
	03/11/2022			03/15/2022 20:32	Khloe J Berg	2311972
	03/11/2022			03/15/2022 21:49	Khloe J Berg	2311973
	03/11/2022			03/16/2022 15:58	Khloe J Berg	2311974
	03/11/2022			03/16/2022 17:36	Khloe J Berg	2311975
SM 5310 B-2011 dissolved	03/11/2022			03/15/2022 19:16	Khloe J Berg	2311966
	03/11/2022			03/15/2022 20:17	Khloe J Berg	2311967
	03/11/2022			03/15/2022 21:33	Khloe J Berg	2311968
	03/11/2022			03/16/2022 16:31	Khloe J Berg	2311969
	03/11/2022			03/16/2022 16:48	Khloe J Berg	2311970