

Chemical Analysis Report

NW-DIST-2021-12-02-01

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

Event Description: **Perdido Bayou Run**
Request ID: **RQ-2021-11-15-39**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 29-DEC-2021 11:13

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: Bayou Garcon

Collection Date/Time: 12/01/2021 11:15

Field ID: G5NW0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2292428	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P406968	
	SM 2320 B-2011	Total Alkalinity	67		mg CaCO3/L	P407162	
	SM 2540 D-2011	TSS	3	U	mg/L	P407132	
	SM 4500 F-C-2011	Fluoride	0.64		mg F/L	P407166	
2292429	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P407576	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P407798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P407093	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P407044	
	SM 5310 B-2011	Organic Carbon	4.0		mg C/L	P407555	
2292430	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P406962	

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: FB

Collection Date/Time: 12/01/2021 11:25

Field ID: FB_12012021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2292431	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P406968	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P407160	
	SM 2540 D-2011	TSS	2	U	mg/L	P407130	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P407165	
2292432	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P407583	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P407456	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P407057	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P407040	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P407554	
2292433	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P406961	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: The result was confirmed on 12/17/2021.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P406968

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407576

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407583

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407456

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407798

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407057

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407093

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P407040

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P407044

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: P406961

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406962

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

Reference Method: SM 2320 B-2011
Batch ID: P407160

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

Reference Method: SM 2320 B-2011
Batch ID: P407162

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

Reference Method: SM 2540 D-2011
Batch ID: P407130

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P407132

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P407165

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P407166

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P407554

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P407555

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407576

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407583

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407456

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407798

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407057

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407093

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P407040

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P407044

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406961

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406962

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

Reference Method: SM 2320 B-2011
Batch ID: P407160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.8		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P407162

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.1		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P407165

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

Reference Method: SM 4500 F-C-2011
Batch ID: P407166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P407554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P407555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292429	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292550	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292764	Kjeldahl Nitrogen	117	99.0	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292602	Kjeldahl Nitrogen	93.1	90.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292442	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292429	NO2NO3-N	99.4	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P407040

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292380	Total-P	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P407044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292467	Total-P	97.9	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406961

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292551	O-Phosphate-P	92.1	93.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292460	O-Phosphate-P	98.3	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P407166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2293021	Fluoride	98.2	99.6	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P407554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292006	Organic Carbon	97.2	97.4	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P407555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2293304	Organic Carbon	94.8	94.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P406968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292446	Turbidity	2.86	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292429	Ammonia-N	0.545	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292550	Ammonia-N	0.327	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292764	Kjeldahl Nitrogen	17.1	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292602	Kjeldahl Nitrogen	2.66	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292442	NO2NO3-N	0.905	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292429	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P407040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292380	Total-P	1.25	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P407044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292467	Total-P	1.43	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P406961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292551	O-Phosphate-P	1.51	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P406962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292460	O-Phosphate-P	0.896	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P407160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292610	Total Alkalinity	0.950	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011

Batch ID: P407162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2293021	Total Alkalinity	0.867	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011

Batch ID: P407165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292610	Fluoride	0.472	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011

Batch ID: P407166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2293021	Fluoride	1.01	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011

Batch ID: P407554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292006	Organic Carbon	0.0944	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P407555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2293304	Organic Carbon	0.550	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: A109178

Included Lab Sample IDs: 2292430, 2292433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	99.9	P/P	90 - 110
O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A109180

Included Lab Sample IDs: 2292428, 2292431

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A109216

Included Lab Sample IDs: 2292432

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A109233

Included Lab Sample IDs: 2292429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A109252

Included Lab Sample IDs: 2292428, 2292431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	101	P/P	90 - 110
Total Alkalinity	97.8	99.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A109252

Included Lab Sample IDs: 2292428, 2292431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	103	P/P	90 - 110
Fluoride	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A109274

Included Lab Sample IDs: 2292429, 2292432

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A109430

Included Lab Sample IDs: 2292429, 2292432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.6	P/P	90 - 110
Organic Carbon	96.4	96.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109440

Included Lab Sample IDs: 2292429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.7	98.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109444

Included Lab Sample IDs: 2292432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109450

Included Lab Sample IDs: 2292432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109562

Included Lab Sample IDs: 2292429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.1	98.7	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	
EPA 180.1 Rev. 2.0	Turbidity					2.86	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	101	100			0.545
	Ammonia-N	98.6	101	102			0.327
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.5	117	99.0			17.1
	Kjeldahl Nitrogen	98.1	93.1	90.4			2.66
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	102			0.905
	NO2NO3-N	98.0	99.4	99.4			0.0
EPA 365.1 Rev. 2.0	Total-P	108	106	105			1.25
	Total-P	107	97.9	99.4			1.43
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	92.1	93.5			1.51
	O-Phosphate-P	99.5	98.3	99.4			0.896
SM 2320 B-2011	Total Alkalinity	97.8				0.950	
	Total Alkalinity	97.1				0.867	
SM 4500 F-C-2011	Fluoride	99.9					0.472
	Fluoride	100	98.2	99.6			1.01
SM 5310 B-2011	Organic Carbon	94.5	97.2	97.4			0.0944
	Organic Carbon	96.0	94.8	94.2			0.550

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2292428, 2292431
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2292429, 2292432
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2292429, 2292432
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2292429, 2292432
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2292429, 2292432
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2292430, 2292433
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2292428, 2292431
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2292428, 2292431
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2292428, 2292431
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2292429, 2292432

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	12/02/2021			12/02/2021 16:14	Khloe J Berg	2292428, 2292431
EPA 350.1 Rev. 2.0	12/02/2021			12/14/2021 12:10	Ping Hua	2292432
	12/02/2021			12/16/2021 13:51	Ping Hua	2292429
EPA 351.2 Rev. 2.0	12/02/2021	12/15/2021 10:04	Alexandra J Mattheus	12/16/2021 13:26	Alexandra J Mattheus	2292432
	12/02/2021	12/22/2021 12:07	Samantha L Bates	12/27/2021 11:15	Alexandra J Mattheus	2292429
EPA 353.2 Rev. 2.0	12/02/2021			12/06/2021 09:53	Beverly Y. Sanders	2292432
	12/02/2021			12/07/2021 09:12	Beverly Y. Sanders	2292429
EPA 365.1 Rev. 2.0	12/02/2021	12/07/2021 16:30	Simonne.V. Calhoun	12/08/2021 13:31	Shengyu Ding	2292432
	12/02/2021	12/07/2021 16:30	Simonne.V. Calhoun	12/08/2021 13:50	Shengyu Ding	2292429
EPA 365.1 Rev. 2.0 dissolved	12/02/2021			12/02/2021 14:48	James L Waggeberby	2292433
	12/02/2021			12/02/2021 15:03	James L Waggeberby	2292430
SM 2320 B-2011	12/02/2021			12/07/2021 19:54	Dale L. Simmons	2292431
	12/02/2021			12/08/2021 03:44	Dale L. Simmons	2292428
SM 2540 D-2011	12/02/2021			12/03/2021 13:15	Simonne.V. Calhoun	2292428, 2292431
SM 4500 F-C-2011	12/02/2021			12/07/2021 19:54	Dale L. Simmons	2292431
	12/02/2021			12/08/2021 00:16	Dale L. Simmons	2292428
SM 5310 B-2011	12/02/2021			12/15/2021 23:03	Khloe J Berg	2292432
	12/02/2021			12/16/2021 04:40	Khloe J Berg	2292429