

Chemical Analysis Report

NE-DIST-2017-04-14-01

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

Event Description: **UEC North**
Request ID: **RQ-2017-03-27-04**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way w
Suite 100
Jacksonville, FL 32256-7577
Attn: Nicole Frederick

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-MAY-2017 12:06

A handwritten signature in black ink, appearing to read "Liang Lin", 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 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: LAKE VEDRA @ SOLANA RD

Collection Date/Time: 04/13/2017 10:50

Field ID: G5NE0186 04132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889082	EPA 180.1 Rev. 2.0	Turbidity	9.4		NTU	P323514	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P324108	
		Sulfate	110		mg SO4/L	P323863	
	SM 2120 B	Color (true)	56		PCU	P323439	
	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P324011	
	SM 2540 C-97	TDS	508		mg/L	P323871	
	SM 2540 D-97	TSS	19		mg/L	P324582	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P324404	
1889084	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P323430	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P323559	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323721	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P323562	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P323467	
1889086	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P323443	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: PONTE VEDRA LK @ SAWGRASS DR

Collection Date/Time: 04/13/2017 10:30

Field ID: G5NE0188 04132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889083	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P323514	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P324108	
		Sulfate	92		mg SO4/L	P323863	
	SM 2120 B	Color (true)	83		PCU	P323440	
	SM 2320 B-97	Total Alkalinity	147		mg CaCO3/L	P324011	
	SM 2540 C-97	TDS	496		mg/L	P323871	
	SM 2540 D-97	TSS	3	I	mg/L	P324582	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P324404	
1889085	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P323430	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P323599	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P323723	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P323562	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P323467	
1889087	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P323443	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: OYSTER CRK @ S. DIXIE HWY

Collection Date/Time: 04/13/2017 09:35

Field ID: G5NE0075 04132017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
-----------	-------------	-----------	--------	------	-------	----------	----------

Field ID: G5NE0075 04132017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889088	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P323514	
	SM 2320 B-97	Total Alkalinity	151		mg CaCO3/L	P324010	
	SM 2540 D-97	TSS	15	A	mg/L	P324586	
	SM 4500 F-C-97	Fluoride	0.74		mg F/L	P324406	
1889089	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P323432	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P323560	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P323810	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P323564	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P323468	
1889090	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.084		mg P/L	P323445	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P323514

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323863

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324108

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P323430

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P323432

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P323559

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323560

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323599

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323721

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323723

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323810

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323562

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323564

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323443

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323445

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P323439

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P323440

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P324010

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

Reference Method: SM 2320 B-97
Batch ID: P324011

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

Reference Method: SM 2540 C-97
Batch ID: P323871

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324582

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324586

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P324404

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P323467

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

Reference Method: SM 5310 B-00
Batch ID: P323468

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323863

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324108

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323430

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323432

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323559

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323560

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323599

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323599

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323721

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323723

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323810

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323562

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323564

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323443

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323445

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

Reference Method: SM 2320 B-97
Batch ID: P324010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P324011

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P324404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P323467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P323468

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888893	Sulfate	107		P	90 - 110
1889031	Sulfate	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888893	Chloride	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888988	Ammonia-N	102	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889321	Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888988	Kjeldahl Nitrogen	95.5	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889072	Kjeldahl Nitrogen	92.8	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323599

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889168	Kjeldahl Nitrogen	98.3	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323721

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889032	NO2NO3-N	98.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888759	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889140	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889098	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889071	Total-P	93.6	93.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323443

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889086	O-Phosphate-P	96.0	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889327	O-Phosphate-P	96.1	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P324404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889030	Fluoride	101	102	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889318	Fluoride	103	102	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P323467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888966	Organic Carbon	97.8	98.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P323468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888879	Organic Carbon	98.5	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889031	Turbidity	2.83	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889031	Sulfate	0.451	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889031	Chloride	0.258	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888988	Ammonia-N	1.50	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889321	Ammonia-N	0.0752	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888988	Kjeldahl Nitrogen	0.832	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889072	Kjeldahl Nitrogen	2.69	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323599

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889168	Kjeldahl Nitrogen	0.995	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889032	NO2NO3-N	2.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888759	NO2NO3-N	1.47	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889140	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889098	Total-P	0.442	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889071	Total-P	0.0801	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889086	O-Phosphate-P	0.184	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889327	O-Phosphate-P	1.14	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P323439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889031	Color (true)	1.68	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P323440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889097	Color (true)	7.27	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P324010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888852	Total Alkalinity	1.11	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P324011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889036	Total Alkalinity	0.750	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P323871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889036	TDS	4.95	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P324586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889088	TSS	2.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P324404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889030	Fluoride	1.03	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889318	Fluoride	0.464	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P323467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888966	Organic Carbon	0.687	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P323468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888879	Organic Carbon	1.20	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75792

Included Lab Sample IDs: 1889084, 1889085, 1889089

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

Reference Method: SM 2120 B

Run ID: A75794

Included Lab Sample IDs: 1889082, 1889083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.2	98.7	P/P	85 - 115
Color (true)	98.7	98.8	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75795

Included Lab Sample IDs: 1889086, 1889087, 1889090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	97.2	P/P	90 - 110
O-Phosphate-P	97.2	98.3	P/P	90 - 110
O-Phosphate-P	98.3	97.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A75801

Included Lab Sample IDs: 1889084, 1889085, 1889089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	101	P/P	90 - 110
Organic Carbon	93.6	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75823

Included Lab Sample IDs: 1889082, 1889083, 1889088

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75870

Included Lab Sample IDs: 1889084, 1889085, 1889089

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75877

Included Lab Sample IDs: 1889084, 1889089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	96.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75896

Included Lab Sample IDs: 1889085

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75902

Included Lab Sample IDs: 1889084, 1889085

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	98.5	P/P	90 - 110
NO2NO3-N	98.5	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75903

Included Lab Sample IDs: 1889082, 1889083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	108	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75926

Included Lab Sample IDs: 1889089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A75995

Included Lab Sample IDs: 1889082, 1889083, 1889088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	100	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75999

Included Lab Sample IDs: 1889082, 1889083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76126

Included Lab Sample IDs: 1889082, 1889083, 1889088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	P/P	90 - 110
Fluoride	98.6	99.0	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	MS
EPA 180.1 Rev. 2.0	Turbidity				2.83	
EPA 300.0 Rev. 2.1	Chloride	102	102		0.258	
	Sulfate	103	107	107	0.451	
EPA 350.1 Rev. 2.0	Ammonia-N	96.7	102	101		1.50
	Ammonia-N	99.7	104	104		0.0752
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.0	95.5	96.4		0.832
	Kjeldahl Nitrogen	101	92.8	96.0		2.69
	Kjeldahl Nitrogen	100	98.3	97.3		0.995
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	98.5	100		2.01
	NO2NO3-N	101	103	102		1.47
	NO2NO3-N	101	103	103		0.0
EPA 365.1 Rev. 2.0	Total-P	100	103	102		0.442
	Total-P	101	93.6	93.7		0.0801
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.2	96.0	96.2		0.184
	O-Phosphate-P	96.9	96.1	97.2		1.14
SM 2120 B	Color (true)				1.68	
	Color (true)				7.27	
SM 2320 B-97	Total Alkalinity	102			1.11	
	Total Alkalinity	102			0.750	
SM 2540 C-97	TDS				4.95	
SM 2540 D-97	TSS				2.67	
SM 4500 F-C-97	Fluoride	96.2	101	102		1.03
	Fluoride	97.7	103	102		0.464
SM 5310 B-00	Organic Carbon	100	97.8	98.6		0.687
	Organic Carbon	101	98.5	99.8		1.20

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1889082, 1889083, 1889088
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1889082, 1889083
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1889082, 1889083
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1889084, 1889085, 1889089
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1889084, 1889085, 1889089
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1889084, 1889085, 1889089
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1889084, 1889085, 1889089
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1889086, 1889087, 1889090
SM 2120 B / E31780	True Color measured at 450 nm	1889082, 1889083
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1889082, 1889083, 1889088
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1889082, 1889083
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1889082, 1889083, 1889088
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1889082, 1889083, 1889088
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1889084, 1889085, 1889089

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/14/2017			04/14/2017 16:52	Blanca Fach	1889082, 1889083, 1889088
EPA 300.0 Rev. 2.1	04/14/2017			04/21/2017	Ping Hua	1889082, 1889083
	04/14/2017			04/27/2017	Ping Hua	1889082, 1889083
EPA 350.1 Rev. 2.0	04/14/2017			04/14/2017	Julie Michelle Frank	1889084, 1889085, 1889089
EPA 351.2 Rev. 2.0	04/14/2017	04/18/2017	Adrian Shelby	04/19/2017	Joseph Suarez	1889084, 1889089
	04/14/2017	04/19/2017	Adrian Shelby	04/20/2017	Joseph Suarez	1889085
EPA 353.2 Rev. 2.0	04/14/2017			04/20/2017	Beverly Y. Sanders	1889084, 1889085
	04/14/2017			04/21/2017	Beverly Y. Sanders	1889089
EPA 365.1 Rev. 2.0	04/14/2017	04/18/2017	Adrian Shelby	04/19/2017	Lipi Saha	1889084, 1889085, 1889089
EPA 365.1 Rev. 2.0 dissolved	04/14/2017			04/14/2017 15:14	Anthony C. Onicha	1889086
	04/14/2017			04/14/2017 15:33	Anthony C. Onicha	1889087
	04/14/2017			04/14/2017 15:38	Anthony C. Onicha	1889090
SM 2120 B	04/14/2017			04/14/2017 15:52	Julia Storbeck	1889082
	04/14/2017			04/14/2017 15:57	Julia Storbeck	1889083
SM 2320 B-97	04/14/2017			04/26/2017	Dale L. Simmons	1889082, 1889083, 1889088
SM 2540 C-97	04/14/2017			04/19/2017	Yijie Li	1889082, 1889083
SM 2540 D-97	04/14/2017			04/19/2017	Yijie Li	1889082, 1889083, 1889088
SM 4500 F-C-97	04/14/2017			05/02/2017	Dale L. Simmons	1889082, 1889083, 1889088
SM 5310 B-00	04/14/2017			04/14/2017	Julie Michelle Frank	1889084, 1889085
	04/14/2017			04/15/2017	Julie Michelle Frank	1889089