

Chemical Analysis Report

NE-DIST-2017-02-09-01

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-2017-01-30-13**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 01-MAR-2017 13:32

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular 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: OYSTER CRK @ S. DIXIE HWY

Collection Date/Time: 02/08/2017 10:50

Field ID: G5NE0075 02022017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871106	EPA 180.1 Rev. 2.0	Turbidity	24		NTU	P319622	
	EPA 300.0 Rev. 2.1	Chloride	1.8E+04		mg Cl/L	P320122	
		Sulfate	2.4E+03		mg SO4/L	P320123	
	SM 2120 B	Color (true)	7.0		PCU	P319626	
	SM 2320 B-97	Total Alkalinity	129		mg CaCO3/L	P319869	
	SM 2540 C-97	TDS	3.10E+04		mg/L	P320289	
	SM 2540 D-97	TSS	41		mg/L	P320156	
1871110	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P319874	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P319937	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P319710	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P319972	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P319785	MS
1871114	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P319675	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P319611	

Ref. Method and Comment:

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

Sample Location: LAKE VEDRA @ SOLANA RD.

Collection Date/Time: 02/08/2017 08:40

Field ID: G5NE0186 02022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871118	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P319622	
	SM 2320 B-97	Total Alkalinity	140		mg CaCO3/L	P320109	
	SM 2540 D-97	TSS	13		mg/L	P320151	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P319956	
1871119	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P319938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P319711	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P320132	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P319784	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P319674	
1871120	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P319609	

Ref. Method and Comment:

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

Sample Location: WILDWOOD CRK @ WILDWOOD RD.

Collection Date/Time: 02/08/2017 11:15

Field ID: G5NE0194 02022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871107	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P319622	
	EPA 300.0 Rev. 2.1	Chloride	50		mg Cl/L	P320122	
		Sulfate	12		mg SO4/L	P320123	
	SM 2120 B	Color (true)	110		PCU	P319626	
	SM 2320 B-97	Total Alkalinity	69		mg CaCO3/L	P320109	
	SM 2540 C-97	TDS	219		mg/L	P320289	
	SM 2540 D-97	TSS	2	U	mg/L	P320151	

Field ID: G5NE0194 02022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871107	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P319956	
1871111	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P319938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P319709	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P320132	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P319784	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P319674	
1871115	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.075		mg P/L	P319609	

Ref. Method and Comment:

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

Sample Location: DEEP CREEK 1.25 MI. N OF PINE ISLAND RD **Collection Date/Time: 02/08/2017 10:00**

Field ID: G5NE0017 02022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871108	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P319622	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P320122	
		Sulfate	1.9		mg SO4/L	P320123	
	SM 2120 B	Color (true)	160		PCU	P319626	
	SM 2320 B-97	Total Alkalinity	141		mg CaCO3/L	P320109	
	SM 2540 C-97	TDS	241		mg/L	P320289	
	SM 2540 D-97	TSS	2	U	mg/L	P320151	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P319956	
1871112	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P319938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P319709	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P320132	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P319784	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P319674	
1871116	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.054		mg P/L	P319609	

Ref. Method and Comment:

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: 02/08/2017 09:05**

Field ID: G5NE0188 02022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871109	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P319622	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P320122	
		Sulfate	90		mg SO4/L	P320123	
	SM 2120 B	Color (true)	52		PCU	P319626	
	SM 2320 B-97	Total Alkalinity	150		mg CaCO3/L	P320109	
	SM 2540 C-97	TDS	503		mg/L	P320289	
	SM 2540 D-97	TSS	2	U	mg/L	P320151	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P319956	
1871113	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P319938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P319709	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.053		mg N/L	P320132	

Field ID: G5NE0188 02022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871113	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P319784	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P319674	
1871117	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P319609	

Ref. Method and Comment:

SM 2540 D-97: 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: P319622

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P320122

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P320123

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P319937

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P319938

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P319709

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P319710

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P319711

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319711

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319972

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320132

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319784

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319785

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319609

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319611

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

Reference Method: SM 2120 B
Batch ID: P319626

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P319869

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P320109

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

Reference Method: SM 2540 C-97
Batch ID: P320289

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P320151

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P320156

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P319874

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P319956

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P319674

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

Reference Method: SM 5310 B-00
Batch ID: P319675

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: P320122

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320122

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320123

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319709

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319710

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: P319711

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319784

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319785

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319609

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319611

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

Reference Method: SM 2320 B-97
Batch ID: P319869

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P320109

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P319874

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P319956

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

Reference Method: SM 5310 B-00
Batch ID: P319674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P319675

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871711	Chloride	104		P	90 - 110
1871713	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871711	Sulfate	102		P	90 - 110
1871713	Sulfate	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871110	Ammonia-N	97.0	94.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871042	Ammonia-N	97.9	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870868	Kjeldahl Nitrogen	103	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871070	Kjeldahl Nitrogen	106	95.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871198	Kjeldahl Nitrogen	97.1	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871110	NO2NO3-N	103	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871111	NO2NO3-N	99.5	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319784

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871111	Total-P	100	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871070	Total-P	90.2	89.0	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871093	O-Phosphate-P	98.4	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871099	O-Phosphate-P	101	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P319874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870554	Fluoride	93.0	94.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P319956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870833	Fluoride	101	99.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P319674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870819	Organic Carbon	92.2	93.2	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P319675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870679	Organic Carbon	92.5	93.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871039	Turbidity	0.228	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871711	Chloride	0.0518	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871711	Sulfate	0.201	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871110	Ammonia-N	1.71	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871042	Ammonia-N	1.93	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870868	Kjeldahl Nitrogen	4.24	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871070	Kjeldahl Nitrogen	8.88	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871198	Kjeldahl Nitrogen	3.69	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871110	NO2NO3-N	2.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871111	NO2NO3-N	3.46	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871111	Total-P	3.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871070	Total-P	1.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871093	O-Phosphate-P	0.203	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871099	O-Phosphate-P	1.69	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P319626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871147	Color (true)	3.51	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P319869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870554	Total Alkalinity	0.615	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P320109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870833	Total Alkalinity	0.623	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P320289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871039	TDS	0.837	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P319874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870554	Fluoride	0.987	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P319956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870833	Fluoride	1.04	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P319674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870819	Organic Carbon	0.940	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P319675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870679	Organic Carbon	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

* 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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A74375

Included Lab Sample IDs: 1871114, 1871115, 1871116, 1871117, 1871120

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A74381

Included Lab Sample IDs: 1871106, 1871107, 1871108, 1871109, 1871118

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	98.5	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A74382

Included Lab Sample IDs: 1871106, 1871107, 1871108, 1871109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	85 - 115
Color (true)	96.7	99.0	P/P	85 - 115

Reference Method: SM 5310 B-00

Run ID: A74405

Included Lab Sample IDs: 1871110, 1871111, 1871112, 1871113, 1871119

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	99.8	P/P	90 - 110
Organic Carbon	97.8	100	P/P	90 - 110
Organic Carbon	98.2	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74454

Included Lab Sample IDs: 1871110, 1871119

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74459

Included Lab Sample IDs: 1871111, 1871112, 1871113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A74479
Included Lab Sample IDs: 1871106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A74479
Included Lab Sample IDs: 1871106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	94.2	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A74498
Included Lab Sample IDs: 1871110, 1871111, 1871112, 1871113, 1871119

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A74506
Included Lab Sample IDs: 1871110, 1871111, 1871112, 1871113, 1871119

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.8	P/P	90 - 110
Ammonia-N	101	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A74518
Included Lab Sample IDs: 1871107, 1871108, 1871109, 1871118

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	106	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A74523
Included Lab Sample IDs: 1871110

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A74527
Included Lab Sample IDs: 1871106, 1871107, 1871108, 1871109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	102	P/P	90 - 110
Sulfate	97.3	98.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A74571

Included Lab Sample IDs: 1871107, 1871108, 1871109, 1871118

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74580

Included Lab Sample IDs: 1871111, 1871112, 1871113, 1871119

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	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		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.228	
EPA 300.0 Rev. 2.1	Chloride	102	104	101		0.0518	
	Sulfate	99.1	102	97.2		0.201	
EPA 350.1 Rev. 2.0	Ammonia-N	95.9	97.0	94.7			1.71
	Ammonia-N	97.2	97.9	94.7			1.93
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	103	108			4.24
	Kjeldahl Nitrogen	101	106	95.6			8.88
	Kjeldahl Nitrogen	105	97.1	103			3.69
EPA 353.2 Rev. 2.0	NO2NO3-N	106	103	105			2.34
	NO2NO3-N	102	99.5	103			3.46
EPA 365.1 Rev. 2.0	Total-P	99.8	100	96.1			3.36
	Total-P	103	90.2	89.0			1.36
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	98.4	98.6			0.203
	O-Phosphate-P	104	101	98.9			1.69
SM 2120 B	Color (true)					3.51	
SM 2320 B-97	Total Alkalinity	103				0.615	
	Total Alkalinity	104				0.623	
SM 2540 C-97	TDS					0.837	
SM 4500 F-C-97	Fluoride	98.6	93.0	94.2			0.987
	Fluoride	103	101	99.6			1.04
SM 5310 B-00	Organic Carbon	95.8	92.2	93.2			0.940
	Organic Carbon	97.3	92.5	93.0			0.491

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1871106, 1871107, 1871108, 1871109, 1871118
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1871106, 1871107, 1871108, 1871109
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1871106, 1871107, 1871108, 1871109

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1871110, 1871111, 1871112, 1871113, 1871119
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1871110, 1871111, 1871112, 1871113, 1871119
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1871110, 1871111, 1871112, 1871113, 1871119
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1871110, 1871111, 1871112, 1871113, 1871119
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1871114, 1871115, 1871116, 1871117, 1871120
SM 2120 B / E31780	True Color measured at 450 nm	1871106, 1871107, 1871108, 1871109
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1871106, 1871107, 1871108, 1871109, 1871118
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1871106, 1871107, 1871108, 1871109
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1871106, 1871107, 1871108, 1871109, 1871118
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1871106, 1871107, 1871108, 1871109, 1871118
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1871110, 1871111, 1871112, 1871113, 1871119

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	02/09/2017			02/09/2017 16:21	Julie Michelle Frank	1871106, 1871107, 1871108, 1871109, 1871118
EPA 300.0 Rev. 2.1	02/09/2017			02/16/2017	Ping Hua	1871106, 1871107, 1871108, 1871109
EPA 350.1 Rev. 2.0	02/09/2017			02/15/2017	Sofia Elnemr	1871110, 1871111, 1871112, 1871113, 1871119
EPA 351.2 Rev. 2.0	02/09/2017	02/13/2017	Adrian Shelby	02/14/2017	Joseph Suarez	1871110, 1871111, 1871112, 1871113, 1871119
EPA 353.2 Rev. 2.0	02/09/2017			02/16/2017	Beverly Y. Sanders	1871110
	02/09/2017			02/20/2017	Beverly Y. Sanders	1871111, 1871112, 1871113, 1871119
EPA 365.1 Rev. 2.0	02/09/2017	02/14/2017	Adrian Shelby	02/15/2017	Lipi Saha	1871110, 1871111, 1871112, 1871113, 1871119
EPA 365.1 Rev. 2.0 dissolved	02/09/2017			02/09/2017 14:17	Lipi Saha	1871115
	02/09/2017			02/09/2017 14:18	Lipi Saha	1871116
	02/09/2017			02/09/2017 14:19	Lipi Saha	1871117, 1871120
	02/09/2017			02/09/2017 14:32	Lipi Saha	1871114
SM 2120 B	02/09/2017			02/09/2017 17:23	Julie Michelle Frank	1871106, 1871107
	02/09/2017			02/09/2017 17:25	Julie Michelle Frank	1871109
	02/09/2017			02/09/2017 17:43	Julie Michelle Frank	1871108
SM 2320 B-97	02/09/2017			02/15/2017	Dale L. Simmons	1871106
	02/09/2017			02/19/2017	Dale L. Simmons	1871107, 1871108, 1871109, 1871118
SM 2540 C-97	02/09/2017			02/14/2017	Sima Feizi	1871106, 1871107, 1871108, 1871109
SM 2540 D-97	02/09/2017			02/14/2017	Sima Feizi	1871106, 1871107, 1871108, 1871109, 1871118
SM 4500 F-C-97	02/09/2017			02/15/2017	Dale L. Simmons	1871106, 1871107
	02/09/2017			02/16/2017	Dale L. Simmons	1871108, 1871109, 1871118
SM 5310 B-00	02/09/2017			02/10/2017	Julie Michelle Frank	1871110, 1871111, 1871112, 1871113, 1871119