

Chemical Analysis Report

NE-DIST-2017-01-12-01

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

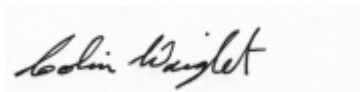
Event Description: **Gainesville 3**
Request ID: **RQ-2017-01-09-18**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Colin Wright, Program Administrator

Date Certified: 07-FEB-2017 17:09

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: LAKE KANAPAHA 300M N OF 56TH

Collection Date/Time: 01/11/2017 10:00

Field ID: G2NE0933 01112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1863458	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P318179	
	EPA 300.0 Rev. 2.1	Chloride	48		mg Cl/L	P318666	
		Sulfate	5.9		mg SO4/L	P318668	
	SM 2120 B	Color (true)	130		PCU	P318183	
	SM 2320 B-97	Total Alkalinity	90		mg CaCO3/L	P318453	
	SM 2540 C-97	TDS	253		mg/L	P318748	
	SM 2540 D-97	TSS	4	I	mg/L	P318595	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P318457	
1863463	EPA 350.1 Rev. 2.0	Ammonia-N	0.20		mg N/L	P318270	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P318198	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P318606	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P318352	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P318261	
1863468	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.34		mg P/L	P318189	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low 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: LAKE ALICE-CENTER FROM BRIDGE

Collection Date/Time: 01/11/2017 10:40

Field ID: G1NE0038 01112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1863459	EPA 180.1 Rev. 2.0	Turbidity	1.7	A	NTU	P318181	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P318666	
		Sulfate	37		mg SO4/L	P318668	
	SM 2120 B	Color (true)	30		PCU	P318183	
	SM 2320 B-97	Total Alkalinity	84		mg CaCO3/L	P318453	
	SM 2540 C-97	TDS	222	A	mg/L	P318748	
	SM 2540 D-97	TSS	3	I	mg/L	P318595	
	SM 4500 F-C-97	Fluoride	0.32		mg F/L	P318457	
1863464	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P318270	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P318198	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P318606	
	EPA 365.1 Rev. 2.0	Total-P	0.45		mg P/L	P318353	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P318261	
1863469	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.40		mg P/L	P318189	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low 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.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: BIVENS ARM OUTLET @ SR 331

Collection Date/Time: 01/11/2017 11:05

Field ID: G1NE0208 01112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1863460	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P318181	

Field ID: G1NE0208 01112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1863460	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P318666	
		Sulfate	6.3		mg SO4/L	P318668	
	SM 2120 B	Color (true)	49		PCU	P318183	
	SM 2320 B-97	Total Alkalinity	87		mg CaCO3/L	P318453	
	SM 2540 C-97	TDS	146		mg/L	P318748	
	SM 2540 D-97	TSS	2	I	mg/L	P318595	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P318457	
1863465	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P318270	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P318198	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P318606	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P318353	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P318261	
1863470	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P318189	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low 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.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: CALF POND- CENTER

Collection Date/Time: 01/11/2017 12:00

Field ID: G1NE0862 01112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1863461	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P318181	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P318666	
		Sulfate	8.3		mg SO4/L	P318668	
	SM 2120 B	Color (true)	110	A	PCU	P318184	
	SM 2320 B-97	Total Alkalinity	75		mg CaCO3/L	P318453	
	SM 2540 C-97	TDS	149		mg/L	P318748	
	SM 2540 D-97	TSS	2	U	mg/L	P318595	
1863466	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P318457	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P318270	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P318198	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P318606	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P318353	
1863471	SM 5310 B-00	Organic Carbon	19		mg C/L	P318261	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P318189	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low 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.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: FIELD BLANK

Collection Date/Time: 01/11/2017 12:25

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1863462	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P318181	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P318666	

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1863462	EPA 300.0 Rev. 2.1	Sulfate	0.20	U	mg SO4/L	P318668	
	SM 2120 B	Color (true)	2.5	U	PCU	P318184	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P318453	
	SM 2540 C-97	TDS	15	U	mg/L	P318748	
	SM 2540 D-97	TSS	2	U	mg/L	P318595	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P318457	
1863467	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P318269	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P318197	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P318606	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P318353	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P318261	
1863472	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P318189	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low 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.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P318179

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P318181

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P318666

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P318668

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P318269

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P318270

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318197

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318198

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P318606

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318352

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318353

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318189

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

Reference Method: SM 2120 B
Batch ID: P318183

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P318184

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P318453

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

Reference Method: SM 2540 C-97
Batch ID: P318748

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P318595

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P318457

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P318261

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: P318666

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P318668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P318269

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P318270

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P318270

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P318197

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P318198

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P318606

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P318352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P318353

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P318189

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

Reference Method: SM 2320 B-97
 Batch ID: P318453

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

Reference Method: SM 4500 F-C-97
 Batch ID: P318457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P318261

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P318666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863460	Chloride	99.6		P	90 - 110
1864020	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P318668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863460	Sulfate	92.4		P	90 - 110
1864020	Sulfate	94.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P318269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863371	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P318270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863464	Ammonia-N	104	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318197

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863320	Kjeldahl Nitrogen	96.3	92.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863396	Kjeldahl Nitrogen	89.4	92.0	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P318606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863463	NO2NO3-N	102	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863386	Total-P	90.9	93.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863471	O-Phosphate-P	97.7	96.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P318457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863363	Fluoride	96.4	96.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P318261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863078	Organic Carbon	97.8	96.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P318179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863385	Turbidity	2.57	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P318181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863459	Turbidity	0.573	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P318666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1864020	Chloride	0.569	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P318269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863371	Ammonia-N	0.517	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P318270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863464	Ammonia-N	2.68	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863320	Kjeldahl Nitrogen	3.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863396	Kjeldahl Nitrogen	2.57	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P318606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863463	NO2NO3-N	1.97	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863386	Total-P	2.22	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863464	Total-P	0.586	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863471	O-Phosphate-P	0.666	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P318183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863404	Color (true)	0.212	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P318184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863461	Color (true)	1.00	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P318453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863363	Total Alkalinity	0.625	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P318748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863459	TDS	2.26	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P318457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863363	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P318261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863078	Organic Carbon	1.13	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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A73906
Included Lab Sample IDs: 1863458, 1863459, 1863460, 1863461, 1863462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105
Turbidity	101	100	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A73908
Included Lab Sample IDs: 1863458, 1863459, 1863460, 1863461, 1863462

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A73908

Included Lab Sample IDs: 1863458, 1863459, 1863460, 1863461, 1863462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.7	102	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A73910

Included Lab Sample IDs: 1863468, 1863469, 1863470, 1863471, 1863472

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.7	98.6	P/P	90 - 110
O-Phosphate-P	98.6	98.7	P/P	90 - 110
O-Phosphate-P	99.9	96.7	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A73931

Included Lab Sample IDs: 1863463, 1863464, 1863465, 1863466, 1863467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.5	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73934

Included Lab Sample IDs: 1863463, 1863464, 1863465, 1863466, 1863467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	96.1	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73954

Included Lab Sample IDs: 1863463, 1863464, 1863465, 1863466, 1863467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.7	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74007

Included Lab Sample IDs: 1863463, 1863464, 1863465, 1863466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.4	99.4	P/P	90 - 110
Total-P	99.9	97.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74010

Included Lab Sample IDs: 1863458, 1863459, 1863460, 1863461, 1863462

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A74010

Included Lab Sample IDs: 1863458, 1863459, 1863460, 1863461, 1863462

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74055

Included Lab Sample IDs: 1863467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74070

Included Lab Sample IDs: 1863463, 1863464, 1863465, 1863466, 1863467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74088

Included Lab Sample IDs: 1863458, 1863459, 1863460, 1863461, 1863462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	103	97.8	P/P	90 - 110
Sulfate	94.7	98.1	P/P	90 - 110
Sulfate	97.8	94.7	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				2.57	
	Turbidity				0.573	
EPA 300.0 Rev. 2.1	Chloride	100	101	99.6	0.569	
	Sulfate	93.5	94.8	92.4		
EPA 350.1 Rev. 2.0	Ammonia-N	107	103	104		0.517
	Ammonia-N	108	104	99.1		2.68
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.4	96.3	92.5		3.18
	Kjeldahl Nitrogen	99.4	89.4	92.0		2.57
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102	100		1.97
EPA 365.1 Rev. 2.0	Total-P	92.7	90.9	93.4		2.22
	Total-P	92.9				0.586
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.7	96.9		0.666
SM 2120 B	Color (true)				0.212	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 2120 B	Color (true)				1.00	
SM 2320 B-97	Total Alkalinity	103			0.625	
SM 2540 C-97	TDS				2.26	
SM 4500 F-C-97	Fluoride	96.0	96.4	96.4		0.0
SM 5310 B-00	Organic Carbon	99.4	97.8	96.6		1.13

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1863458, 1863459, 1863460, 1863461, 1863462
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1863458, 1863459, 1863460, 1863461, 1863462
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1863458, 1863459, 1863460, 1863461, 1863462
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1863463, 1863464, 1863465, 1863466, 1863467
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1863463, 1863464, 1863465, 1863466, 1863467
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1863463, 1863464, 1863465, 1863466, 1863467
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1863463, 1863464, 1863465, 1863466, 1863467
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1863468, 1863469, 1863470, 1863471, 1863472
SM 2120 B / E31780	True Color measured at 450 nm	1863458, 1863459, 1863460, 1863461, 1863462
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1863458, 1863459, 1863460, 1863461, 1863462
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1863458, 1863459, 1863460, 1863461, 1863462
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1863458, 1863459, 1863460, 1863461, 1863462
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1863458, 1863459, 1863460, 1863461, 1863462
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1863463, 1863464, 1863465, 1863466, 1863467

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	01/12/2017			01/12/2017 14:52	Sima Feizi	1863458, 1863459, 1863460, 1863461, 1863462
EPA 300.0 Rev. 2.1	01/12/2017			01/24/2017	Ping Hua	1863458, 1863459, 1863460, 1863461, 1863462
EPA 350.1 Rev. 2.0	01/12/2017			01/13/2017	Sofia Elnemr	1863463, 1863464, 1863465, 1863466, 1863467
EPA 351.2 Rev. 2.0	01/12/2017	01/13/2017	Adrian Shelby	01/17/2017	Joseph Suarez	1863463, 1863464, 1863465, 1863466, 1863467
EPA 353.2 Rev. 2.0	01/12/2017			01/24/2017	Beverly Y. Sanders	1863463, 1863464, 1863465, 1863466, 1863467
EPA 365.1 Rev. 2.0	01/12/2017	01/18/2017	Vijayalakshmi Reddy	01/19/2017	Lipi Saha	1863463, 1863464, 1863465, 1863466
	01/12/2017	01/18/2017	Vijayalakshmi Reddy	01/23/2017	Lipi Saha	1863467
EPA 365.1 Rev. 2.0 dissolved	01/12/2017			01/12/2017 14:44	Julia Storbeck	1863471
	01/12/2017			01/12/2017 14:55	Julia Storbeck	1863468
	01/12/2017			01/12/2017 14:56	Julia Storbeck	1863469
	01/12/2017			01/12/2017 14:57	Julia Storbeck	1863470
	01/12/2017			01/12/2017 15:03	Julia Storbeck	1863472
SM 2120 B	01/12/2017			01/12/2017 15:16	Jared I. Manley	1863458
	01/12/2017			01/12/2017 15:17	Jared I. Manley	1863459
	01/12/2017			01/12/2017 15:18	Jared I. Manley	1863460
	01/12/2017			01/12/2017 15:21	Jared I. Manley	1863461
	01/12/2017			01/12/2017 15:22	Jared I. Manley	1863462
SM 2320 B-97	01/12/2017			01/19/2017	Dale L. Simmons	1863458, 1863459, 1863460, 1863461, 1863462
SM 2540 C-97	01/12/2017			01/17/2017	Sima Feizi	1863458, 1863459, 1863460, 1863461, 1863462
SM 2540 D-97	01/12/2017			01/17/2017	Sima Feizi	1863458, 1863459, 1863460, 1863461, 1863462
SM 4500 F-C-97	01/12/2017			01/19/2017	Dale L. Simmons	1863458, 1863459, 1863460, 1863461, 1863462
SM 5310 B-00	01/12/2017			01/13/2017	Julie Michelle Frank	1863463, 1863464, 1863465, 1863466, 1863467