

Chemical Analysis Report

CEN-DIST-2018-08-14-01

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

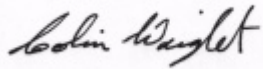
Event Description: **Noname / Yvonne / Ann / Lotus**
Request ID: **RQ-2018-07-23-38**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 30-AUG-2018 10:01



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: NONAME LAKE @ CENTER

Collection Date/Time: 08/13/2018 10:43

Field ID: G2CE0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2016758	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P350096	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P350216	
		Sulfate	9.4		mg SO4/L	P350218	
	SM 2120 B	Color (true)	21		PCU	P350086	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P350184	
	SM 2540 C-97	TDS	69		mg/L	P350514	
	SM 2540 D-97	TSS	3	I	mg/L	P350397	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P350187	
2016761	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P350595	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P350361	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P350433	
	SM 5310 B-00	Organic Carbon	5.8		mg C/L	P350386	
2016764	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350088	

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 LOTUS @ CENTER

Collection Date/Time: 08/13/2018 13:55

Field ID: G2CE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2016759	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P350096	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P350216	
		Sulfate	6.7		mg SO4/L	P350218	
	SM 2120 B	Color (true)	60		PCU	P350086	
	SM 2320 B-97	Total Alkalinity	56		mg CaCO3/L	P350184	
	SM 2540 C-97	TDS	112		mg/L	P350515	
	SM 2540 D-97	TSS	3	I	mg/L	P350398	
	SM 4500 F-C-97	Fluoride	0.076	I	mg F/L	P350187	
2016762	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P350441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P350595	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P350361	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P350433	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P350386	
2016765	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P350088	

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 YNONNE (LAKE VONNA) @ CENTER

Collection Date/Time: 08/13/2018 14:25

Field ID: G2CE0095

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2016760	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P350096	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P350216	
		Sulfate	6.9		mg SO4/L	P350218	
	SM 2120 B	Color (true)	46		PCU	P350086	
	SM 2320 B-97	Total Alkalinity	38		mg CaCO3/L	P350184	
	SM 2540 C-97	TDS	99.5	A	mg/L	P350515	
	SM 2540 D-97	TSS	5	IA	mg/L	P350398	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P350187	
2016763	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P350441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P350595	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P350362	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P350433	
	SM 5310 B-00	Organic Carbon	8.8		mg C/L	P350386	
2016766	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350088	

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: P350096

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350216

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350218

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350441

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350595

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350361

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: P350362

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: P350433

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350088

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: P350086

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P350184

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

Reference Method: SM 2540 C-97
Batch ID: P350514

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P350515

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P350397

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P350398

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P350187

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P350386

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: P350216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350218

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350441

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350595

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350361

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350362

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: P350433

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350088

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

Reference Method: SM 2120 B
Batch ID: P350086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	94.6		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P350184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P350187

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350386

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: P350216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016726	Chloride	103		P	90 - 110
2016782	Chloride	94.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016726	Sulfate	99.9		P	90 - 110
2016782	Sulfate	91.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016732	Ammonia-N	98.6	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016732	Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016714	NO2NO3-N	96.5	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016783	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016761	Total-P	95.5	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016764	O-Phosphate-P	95.9	97.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P350187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016665	Fluoride	97.2	96.7	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P350386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016729	Organic Carbon	98.0	94.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016723	Turbidity	6.27	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016726	Chloride	2.35	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016726	Sulfate	2.35	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016732	Ammonia-N	0.763	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016732	Kjeldahl Nitrogen	1.45	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016714	NO2NO3-N	1.07	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016783	NO2NO3-N	0.345	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016761	Total-P	2.19	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016764	O-Phosphate-P	1.45	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P350086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016723	Color (true)	2.12	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P350184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016665	Total Alkalinity	0.0595	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P350514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016389	TDS	2.31	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P350515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016760	TDS	5.03	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P350187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016665	Fluoride	0.479	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P350386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2016729	Organic Carbon	2.87	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 300.0 Rev. 2.1

Run ID: A85845

Included Lab Sample IDs: 2016758, 2016759, 2016760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.6	96.2	P/P	90 - 110
Sulfate	94.3	94.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A85864

Included Lab Sample IDs: 2016764, 2016765, 2016766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.6	P/P	90 - 110
O-Phosphate-P	99.6	98.9	P/P	90 - 110
O-Phosphate-P	99.7	100	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A85865

Included Lab Sample IDs: 2016758, 2016759, 2016760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.3	98.1	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A85866

Included Lab Sample IDs: 2016758, 2016759, 2016760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	102	P/P	95 - 105

Reference Method: SM 2320 B-97

Run ID: A85905

Included Lab Sample IDs: 2016758, 2016759, 2016760

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

Reference Method: SM 4500 F-C-97

Run ID: A85905

Included Lab Sample IDs: 2016758, 2016759, 2016760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A85973

Included Lab Sample IDs: 2016761, 2016762, 2016763

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A85977

Included Lab Sample IDs: 2016761, 2016762, 2016763

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	95.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86004

Included Lab Sample IDs: 2016761, 2016762, 2016763

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86028

Included Lab Sample IDs: 2016761, 2016762, 2016763

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86079

Included Lab Sample IDs: 2016761, 2016762, 2016763

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	99.2	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					6.27	
EPA 300.0 Rev. 2.1	Chloride	97.9	103	94.7		2.35	
	Sulfate	98.2	99.9	91.2		2.35	
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	98.6	97.8			0.763
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	101	103			1.45
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	96.5	98.5			1.07
	NO ₂ NO ₃ -N	101	101	101			0.345
EPA 365.1 Rev. 2.0	Total-P	100	95.5	97.7			2.19
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.8	95.9	97.3			1.45
SM 2120 B	Color (true)	94.6				2.12	
SM 2320 B-97	Total Alkalinity	103				0.0595	
SM 2540 C-97	TDS					2.31	
	TDS					5.03	
SM 4500 F-C-97	Fluoride	96.1	97.2	96.7			0.479
SM 5310 B-00	Organic Carbon	97.3	98.0	94.7			2.87

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2016758, 2016759, 2016760
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2016758, 2016759, 2016760
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2016758, 2016759, 2016760
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2016761, 2016762, 2016763
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2016761, 2016762, 2016763
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2016761, 2016762, 2016763
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2016761, 2016762, 2016763
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2016764, 2016765, 2016766
SM 2120 B / E31780	True Color measured at 450 nm	2016758, 2016759, 2016760
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2016758, 2016759, 2016760
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2016758, 2016759, 2016760
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2016758, 2016759, 2016760
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2016758, 2016759, 2016760
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2016761, 2016762, 2016763

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	08/14/2018			08/14/2018 15:06	William L. Brown IV	2016758, 2016759, 2016760
EPA 300.0 Rev. 2.1	08/14/2018			08/15/2018 23:57	Lipi Saha	2016758
	08/14/2018			08/16/2018 00:09	Lipi Saha	2016759
	08/14/2018			08/16/2018 00:21	Lipi Saha	2016760
EPA 350.1 Rev. 2.0	08/14/2018			08/17/2018 11:39	Ping Hua	2016761
	08/14/2018			08/17/2018 11:41	Ping Hua	2016762
	08/14/2018			08/17/2018 11:42	Ping Hua	2016763
EPA 351.2 Rev. 2.0	08/14/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 09:53	Joseph Suarez	2016761
	08/14/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 09:55	Joseph Suarez	2016762
	08/14/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 09:56	Joseph Suarez	2016763
EPA 353.2 Rev. 2.0	08/14/2018			08/17/2018 12:35	Lauren Bottorf	2016762
	08/14/2018			08/17/2018 12:50	Lauren Bottorf	2016763
	08/14/2018			08/17/2018 14:37	Lauren Bottorf	2016761
EPA 365.1 Rev. 2.0	08/14/2018	08/20/2018 12:57	Sima Feizi	08/21/2018 11:53	Beverly Y. Sanders	2016761
	08/14/2018	08/20/2018 12:57	Sima Feizi	08/21/2018 11:54	Beverly Y. Sanders	2016762
	08/14/2018	08/20/2018 12:57	Sima Feizi	08/21/2018 11:55	Beverly Y. Sanders	2016763
EPA 365.1 Rev. 2.0 dissolved	08/14/2018			08/14/2018 15:37	Julia Storbeck	2016764
	08/14/2018			08/14/2018 15:56	Julia Storbeck	2016765
	08/14/2018			08/14/2018 16:01	Julia Storbeck	2016766
SM 2120 B	08/14/2018			08/14/2018 15:47	Tanya Welborn	2016758, 2016759
	08/14/2018			08/14/2018 15:48	Tanya Welborn	2016760
SM 2320 B-97	08/14/2018			08/15/2018 21:17	Dale L. Simmons	2016758
	08/14/2018			08/15/2018 21:28	Dale L. Simmons	2016759
	08/14/2018			08/15/2018 21:39	Dale L. Simmons	2016760
SM 2540 C-97	08/14/2018			08/15/2018 15:06	Yijie Li	2016758, 2016759, 2016760
SM 2540 D-97	08/14/2018			08/15/2018 15:06	Yijie Li	2016758, 2016759, 2016760
SM 4500 F-C-97	08/14/2018			08/15/2018 21:17	Dale L. Simmons	2016758
	08/14/2018			08/15/2018 21:28	Dale L. Simmons	2016759
	08/14/2018			08/15/2018 21:39	Dale L. Simmons	2016760
SM 5310 B-00	08/14/2018			08/17/2018 07:35	Megan Treadwell	2016761
	08/14/2018			08/17/2018 07:48	Megan Treadwell	2016762
	08/14/2018			08/17/2018 08:02	Megan Treadwell	2016763