

Chemical Analysis Report

TLH-ROC-2018-06-04-01

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

Event Description: **kit A w/ bacteria**
Request ID: **RQ-2018-05-14-31**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Colin Wright, Program Administrator

Date Certified: 26-JUN-2018 12:15

A handwritten signature in black ink, appearing to read "Colin Wright", is written over a light blue 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: OWL CREEK

Collection Date/Time: 06/04/2018 12:35

Field ID: OWL CREEK

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996910	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P346428	
	EPA 300.0 Rev. 2.1	Chloride	8.3	A	mg Cl/L	P346586	
		Sulfate	0.36	IA	mg SO4/L	P346588	
	SM 2120 B	Color (true)	390		PCU	P346412	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P346614	
	SM 2540 C-97	TDS	143		mg/L	P346793	
	SM 2540 D-97	TSS	4	I	mg/L	P346732	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P346618	
1996913	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P346696	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P347041	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P346506	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P346656	
	SM 5310 B-00	Organic Carbon	39		mg C/L	P346677	
1996916	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P346405	

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: OWL CREEK_DUP

Collection Date/Time: 06/04/2018 12:40

Field ID: OWL CREEK_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996911	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P346428	
	EPA 300.0 Rev. 2.1	Chloride	8.4		mg Cl/L	P346586	
		Sulfate	0.40	I	mg SO4/L	P346588	
	SM 2120 B	Color (true)	390		PCU	P346412	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P346614	
	SM 2540 C-97	TDS	133		mg/L	P346793	
	SM 2540 D-97	TSS	4	I	mg/L	P346732	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P346618	
1996914	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P346696	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P347041	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P346506	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P346656	
	SM 5310 B-00	Organic Carbon	39		mg C/L	P346677	
1996917	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.049		mg P/L	P346405	

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: OWL CREEK

Collection Date/Time: 06/04/2018 12:30

Field ID: OWL CREEK_ BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996912	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P346428	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P346586	
		Sulfate	0.20	U	mg SO4/L	P346588	
	SM 2120 B	Color (true)	2.5	U	PCU	P346412	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P346614	
	SM 2540 C-97	TDS	15	U	mg/L	P346790	
	SM 2540 D-97	TSS	2	U	mg/L	P346729	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346618	
1996915	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P346696	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P347042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P346506	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P346656	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P346677	
1996918	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346405	

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.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346428

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346586

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346588

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346696

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347041

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347042

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346506

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346656

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346405

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: P346412

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P346614

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

Reference Method: SM 2540 C-97
Batch ID: P346790

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P346793

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P346729

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P346732

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P346677

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: P346586

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P346588

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P346696

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P347041

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P347042

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P346506

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P346656

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P346405

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

Reference Method: SM 2320 B-97
 Batch ID: P346614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996910	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996910	Sulfate	101		P	90 - 110
1996969	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996801	Ammonia-N	93.7	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996803	Kjeldahl Nitrogen	77.6	77.2	F/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996957	Kjeldahl Nitrogen	92.8	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996801	NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996803	Total-P	105	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996936	O-Phosphate-P	99.1	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996959	Fluoride	94.9	95.4	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P346677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996913	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996926	Turbidity	0.394	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996910	Chloride	0.538	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996910	Sulfate	1.25	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996801	Ammonia-N	1.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996803	Kjeldahl Nitrogen	0.417	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996957	Kjeldahl Nitrogen	2.05	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996801	NO2NO3-N	0.242	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996803	Total-P	2.67	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996936	O-Phosphate-P	0.791	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P346412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996927	Color (true)	0.166	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P346614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996959	Total Alkalinity	0.289	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P346790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996562	TDS	3.31	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P346793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996819	TDS	3.51	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996959	Fluoride	0.479	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P346677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996913	Organic Carbon	0.397	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: A84339

Included Lab Sample IDs: 1996910, 1996911, 1996912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	102	P/P	90 - 110
Sulfate	99.3	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84357

Included Lab Sample IDs: 1996916, 1996917, 1996918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	98.0	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A84360

Included Lab Sample IDs: 1996910, 1996911, 1996912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	99.7	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84364

Included Lab Sample IDs: 1996910, 1996911, 1996912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84398

Included Lab Sample IDs: 1996913, 1996914, 1996915

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

Reference Method: SM 2320 B-97

Run ID: A84458

Included Lab Sample IDs: 1996910, 1996911, 1996912

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

Reference Method: SM 4500 F-C-97

Run ID: A84458

Included Lab Sample IDs: 1996910, 1996911, 1996912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	98.6	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A84491

Included Lab Sample IDs: 1996913, 1996914, 1996915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A84491

Included Lab Sample IDs: 1996913, 1996914, 1996915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84494

Included Lab Sample IDs: 1996913, 1996914, 1996915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.8	99.4	P/P	90 - 110
Ammonia-N	99.4	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84521

Included Lab Sample IDs: 1996913, 1996914

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84553

Included Lab Sample IDs: 1996915

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: A84735

Included Lab Sample IDs: 1996913, 1996914, 1996915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.4	104	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					0.394	
EPA 300.0 Rev. 2.1	Chloride	104	101			0.538	
	Sulfate	104	101	104		1.25	
EPA 350.1 Rev. 2.0	Ammonia-N	100	93.7	97.0			1.91
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	77.6	77.2			0.417
	Kjeldahl Nitrogen	99.0	92.8	96.0			2.05
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	99.5				0.242
EPA 365.1 Rev. 2.0	Total-P	102	105	102			2.67
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	99.1	100			0.791
SM 2120 B	Color (true)					0.166	
SM 2320 B-97	Total Alkalinity	102				0.289	
SM 2540 C-97	TDS					3.31	
	TDS					3.51	
SM 4500 F-C-97	Fluoride	96.0	94.9	95.4			0.479
SM 5310 B-00	Organic Carbon	98.8	101				0.397

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1996910, 1996911, 1996912
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1996910, 1996911, 1996912
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1996910, 1996911, 1996912
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1996913, 1996914, 1996915
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1996913, 1996914, 1996915
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1996913, 1996914, 1996915
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1996913, 1996914, 1996915
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1996916, 1996917, 1996918
SM 2120 B / E31780	True Color measured at 450 nm	1996910, 1996911, 1996912
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1996910, 1996911, 1996912
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1996910, 1996911, 1996912
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1996910, 1996911, 1996912
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1996910, 1996911, 1996912
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1996913, 1996914, 1996915

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	06/04/2018			06/05/2018 17:06	William L. Brown IV	1996910, 1996911, 1996912
EPA 300.0 Rev. 2.1	06/04/2018			06/06/2018 12:50	Lipi Saha	1996910
	06/04/2018			06/06/2018 13:38	Lipi Saha	1996911
	06/04/2018			06/06/2018 13:50	Lipi Saha	1996912
EPA 350.1 Rev. 2.0	06/04/2018			06/11/2018 15:17	Julia Storbeck	1996915
	06/04/2018			06/11/2018 15:26	Julia Storbeck	1996913
	06/04/2018			06/11/2018 15:28	Julia Storbeck	1996914
EPA 351.2 Rev. 2.0	06/04/2018	06/18/2018 15:30	Adrian Shelby	06/20/2018 11:51	Joseph Suarez	1996913
	06/04/2018	06/18/2018 15:30	Adrian Shelby	06/20/2018 11:52	Joseph Suarez	1996914
	06/04/2018	06/18/2018 15:30	Adrian Shelby	06/20/2018 11:57	Joseph Suarez	1996915
EPA 353.2 Rev. 2.0	06/04/2018			06/06/2018 15:08	Lauren Bottorf	1996915
	06/04/2018			06/06/2018 15:09	Lauren Bottorf	1996913
	06/04/2018			06/06/2018 15:10	Lauren Bottorf	1996914
EPA 365.1 Rev. 2.0	06/04/2018	06/11/2018 12:30	Adrian Shelby	06/12/2018 11:32	Beverly Y. Sanders	1996913
	06/04/2018	06/11/2018 12:30	Adrian Shelby	06/12/2018 11:33	Beverly Y. Sanders	1996914
	06/04/2018	06/11/2018 12:30	Adrian Shelby	06/13/2018 12:29	Beverly Y. Sanders	1996915
EPA 365.1 Rev. 2.0 dissolved	06/04/2018			06/05/2018 14:43	Megan Treadwell	1996916
	06/04/2018			06/05/2018 14:44	Megan Treadwell	1996917
	06/04/2018			06/05/2018 14:45	Megan Treadwell	1996918
SM 2120 B	06/04/2018			06/05/2018 14:34	Tanya Welborn	1996912
	06/04/2018			06/05/2018 15:22	Tanya Welborn	1996910
	06/04/2018			06/05/2018 15:23	Tanya Welborn	1996911
SM 2320 B-97	06/04/2018			06/07/2018 07:13	Dale L. Simmons	1996910
	06/04/2018			06/07/2018 07:23	Dale L. Simmons	1996911
	06/04/2018			06/07/2018 07:34	Dale L. Simmons	1996912
SM 2540 C-97	06/04/2018			06/06/2018 15:03	Yijie Li	1996910, 1996911, 1996912
SM 2540 D-97	06/04/2018			06/06/2018 15:03	Yijie Li	1996910, 1996911, 1996912
SM 4500 F-C-97	06/04/2018			06/07/2018 07:13	Dale L. Simmons	1996910
	06/04/2018			06/07/2018 07:23	Dale L. Simmons	1996911
	06/04/2018			06/07/2018 07:34	Dale L. Simmons	1996912
SM 5310 B-00	06/04/2018			06/09/2018 02:31	Megan Treadwell	1996913
	06/04/2018			06/09/2018 03:22	Megan Treadwell	1996914
	06/04/2018			06/09/2018 03:34	Megan Treadwell	1996915