Chemical Analysis Report

TLH-ROC-2018-07-19-02

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

Event Description: **Run 2**
Request ID: **RQ-2018-06-18-50**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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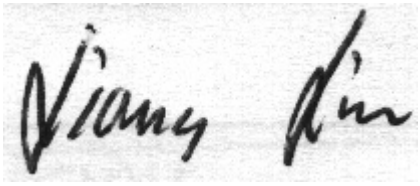
Certified by: Liang Lin, Environmental Administrator

Date Certified: 08-AUG-2018 17:00



NON-CONFORMANCE REPORT INCLUDED

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: ST MARKS RIVER DOWN STREAM FROM RISE Collection Date/Time: 07/19/2018 13:15

Field ID: BLANK_07192018 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2009369	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P348829	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P349259	
		Sulfate	0.20	U	mg SO4/L	P349263	
	SM 2120 B	Color (true)	2.5	U	PCU	P348783	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P349027	
	SM 2540 C-97	TDS	15	U	mg/L	P349196	
	SM 2540 D-97	TSS	2	U	mg/L	P349173	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P349031	
2009372	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	UY	mg N/L	P349159	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	UY	mg N/L	P349001	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P348974	
	EPA 365.1 Rev. 2.0	Total-P	0.002	UY	mg P/L	P349308	
	SM 5310 B-00	Organic Carbon	0.50	UY	mg C/L	P349005	
2009375	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P348788	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
SM 5310 B-00: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Sample Location: ST MARKS RIVER DOWN STREAM FROM RISE Collection Date/Time: 07/19/2018 13:00

Field ID: G1TLHR0044 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2009370	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P348829	
	EPA 300.0 Rev. 2.1	Chloride	5.2	A	mg Cl/L	P349259	
		Sulfate	6.2	A	mg SO4/L	P349263	
	SM 2120 B	Color (true)	47		PCU	P348783	
	SM 2320 B-97	Total Alkalinity	118		mg CaCO3/L	P349027	
	SM 2540 C-97	TDS	153		mg/L	P349197	
	SM 2540 D-97	TSS	2	U	mg/L	P349173	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P349031	
2009373	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P349159	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P349001	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P348974	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P349308	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P349005	
2009376	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P348788	

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: ST MARKS RIVER DOWN STREAM FROM RISE Collection Date/Time: 07/19/2018 13:05

Field ID: G1TLHR0044_DUP Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2009371	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P348829	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P349259	
		Sulfate	6.0		mg SO4/L	P349263	
	SM 2120 B	Color (true)	47		PCU	P348783	
	SM 2320 B-97	Total Alkalinity	119		mg CaCO3/L	P349027	
	SM 2540 C-97	TDS	151		mg/L	P349197	
	SM 2540 D-97	TSS	2	U	mg/L	P349173	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P349031	
2009374	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P349159	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P349001	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P348974	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P349308	
	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P349005	
2009377	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P348788	

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

Non-Conformance Report

NCR ID: 7140

Event(s)	Job(s)	Sample(s)	Test(s)
TLH-ROC-2018-07-19-02	TLH-2018-07-19-118	2009372	

NCR Type: SHIPPING/RECEIVING **NCR Category: Preservation Not Intact**

Observation: Sample not preserved to pH < 2.

Resolution: H2SO4 Lot# SA8085170 Expiration Date: 03/26/2019

Authorized by/Date: Joshua Ayres 7/24/2018

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P348829

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349259

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349263

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349159

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349001

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349308

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P348788

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

Reference Method: SM 2120 B
Batch ID: P348783

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P349027

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P349196

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P349197

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P349173

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P349031

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P349005

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: P349259

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349263

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349159

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349001

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349308

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: P348788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P348783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P349027

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	106		P	98 - 107

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P349031

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

Reference Method: SM 5310 B-00
Batch ID: P349005

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2009370	Chloride	102		P	90 - 110
2009396	Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2009370	Sulfate	100		P	90 - 110
2009396	Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2009373	Ammonia-N	98.5	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349001

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2009232	Kjeldahl Nitrogen	101	93.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2009232	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2009577	Total-P	97.3	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P348788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2009235	O-Phosphate-P	96.3	96.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P349031

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2009225	Fluoride	98.4	96.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P349005

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2009067	Organic Carbon	92.7	94.1	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P348829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009359	Turbidity	0.458	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009370	Chloride	9.03	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009370	Sulfate	7.80	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009373	Ammonia-N	0.348	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009232	Kjeldahl Nitrogen	4.94	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009232	NO2NO3-N	0.976	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009577	Total-P	0.326	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P348788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009235	O-Phosphate-P	0.0	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2120 B
Batch ID: P348783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009283	Color (true)	4.80	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P349027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009225	Total Alkalinity	0.239	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P349196

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009227	TDS	0.873	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P349197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009386	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P349031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009225	Fluoride	1.92	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P349005

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2009067	Organic Carbon	1.04	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: SM 2120 B
Run ID: A85347
Included Lab Sample IDs: 2009369, 2009370, 2009371

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	105	105	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A85348
Included Lab Sample IDs: 2009375, 2009376, 2009377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	97.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A85363
Included Lab Sample IDs: 2009369, 2009370, 2009371

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A85414
Included Lab Sample IDs: 2009372, 2009373, 2009374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A85417
Included Lab Sample IDs: 2009369, 2009370, 2009371

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	104	P/P	90 - 110
Chloride	104	106	P/P	90 - 110
Sulfate	101	104	P/P	90 - 110
Sulfate	104	107	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A85418
Included Lab Sample IDs: 2009372, 2009373, 2009374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.7	96.8	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A85430
Included Lab Sample IDs: 2009369, 2009370, 2009371

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A85430
Included Lab Sample IDs: 2009369, 2009370, 2009371

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85448
Included Lab Sample IDs: 2009372, 2009373, 2009374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.8	95.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A85474
Included Lab Sample IDs: 2009372, 2009373, 2009374

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85548
Included Lab Sample IDs: 2009373, 2009374

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85564
Included Lab Sample IDs: 2009372

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.458	
EPA 300.0 Rev. 2.1	Chloride	98.1	102	98.9		9.03	
	Sulfate	98.1	100	97.8		7.80	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.5	98.9			0.348
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	101	93.3			4.94
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	103			0.976
EPA 365.1 Rev. 2.0	Total-P	100	97.3	97.6			0.326
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	96.3	96.3			0.0
SM 2120 B	Color (true)	101				4.80	
SM 2320 B-97	Total Alkalinity	106				0.239	
SM 2540 C-97	TDS					0.873	
	TDS					0.0	
SM 4500 F-C-97	Fluoride	96.1	98.4	96.3			1.92
SM 5310 B-00	Organic Carbon	94.8	92.7	94.1			1.04

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2009369, 2009370, 2009371
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2009369, 2009370, 2009371
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2009369, 2009370, 2009371
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2009372, 2009373, 2009374
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2009372, 2009373, 2009374
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2009372, 2009373, 2009374
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2009372, 2009373, 2009374
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2009375, 2009376, 2009377
SM 2120 B / E31780	True Color measured at 450 nm	2009369, 2009370, 2009371
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2009369, 2009370, 2009371
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2009369, 2009370, 2009371
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2009369, 2009370, 2009371
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2009369, 2009370, 2009371
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2009372, 2009373, 2009374

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	07/19/2018			07/19/2018 15:51	Blanca Fach	2009369, 2009370, 2009371
EPA 300.0 Rev. 2.1	07/19/2018			07/25/2018 17:57	Lipi Saha	2009370
	07/19/2018			07/25/2018 20:45	Lipi Saha	2009369
	07/19/2018			07/25/2018 20:57	Lipi Saha	2009371
EPA 350.1 Rev. 2.0	07/19/2018			07/25/2018 13:32	Ping Hua	2009373
	07/19/2018			07/25/2018 13:37	Ping Hua	2009374
	07/19/2018			07/25/2018 13:50	Ping Hua	2009372
EPA 351.2 Rev. 2.0	07/19/2018	07/24/2018 08:13	Adrian Shelby	07/25/2018 09:38	Joseph Suarez	2009372
	07/19/2018	07/24/2018 08:13	Adrian Shelby	07/25/2018 09:39	Joseph Suarez	2009373
	07/19/2018	07/24/2018 08:13	Adrian Shelby	07/25/2018 09:41	Joseph Suarez	2009374
EPA 353.2 Rev. 2.0	07/19/2018			07/23/2018 13:25	Lauren Bottorf	2009372
	07/19/2018			07/23/2018 13:29	Lauren Bottorf	2009373
	07/19/2018			07/23/2018 13:31	Lauren Bottorf	2009374
EPA 365.1 Rev. 2.0	07/19/2018	07/27/2018 12:35	Sima Feizi	07/30/2018 09:22	Beverly Y. Sanders	2009373
	07/19/2018	07/27/2018 12:35	Sima Feizi	07/30/2018 09:23	Beverly Y. Sanders	2009374
	07/19/2018	07/27/2018 12:35	Sima Feizi	07/30/2018 12:53	Beverly Y. Sanders	2009372
EPA 365.1 Rev. 2.0 dissolved	07/19/2018			07/19/2018 16:01	Julia Storbeck	2009376
	07/19/2018			07/19/2018 16:02	Julia Storbeck	2009377
	07/19/2018			07/19/2018 16:03	Julia Storbeck	2009375
SM 2120 B	07/19/2018			07/19/2018 15:43	Tanya Welborn	2009369
	07/19/2018			07/19/2018 15:44	Tanya Welborn	2009370
	07/19/2018			07/19/2018 15:45	Tanya Welborn	2009371
SM 2320 B-97	07/19/2018			07/24/2018 02:27	Dale L. Simmons	2009369
	07/19/2018			07/24/2018 02:37	Dale L. Simmons	2009370
	07/19/2018			07/24/2018 02:48	Dale L. Simmons	2009371
SM 2540 C-97	07/19/2018			07/20/2018 16:46	William L. Brown IV	2009369, 2009370, 2009371
SM 2540 D-97	07/19/2018			07/20/2018 17:00	William L. Brown IV	2009369, 2009370, 2009371
SM 4500 F-C-97	07/19/2018			07/24/2018 02:27	Dale L. Simmons	2009369
	07/19/2018			07/24/2018 02:37	Dale L. Simmons	2009370
	07/19/2018			07/24/2018 02:48	Dale L. Simmons	2009371
SM 5310 B-00	07/19/2018			07/24/2018 01:50	Megan Treadwell	2009372
	07/19/2018			07/24/2018 02:03	Megan Treadwell	2009373
	07/19/2018			07/24/2018 02:16	Megan Treadwell	2009374