

Chemical Analysis Report

WTRSHD-MGT-2012-05-03-01

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

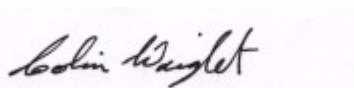
Event Description: **TMDL SW Sampling - Upper Wacissa Algal Study**
Request ID: **RQ-2012-04-30-39**
Customer: **WTRSHD-MGT**
Project ID: **TMDL**

Send Reports to:
FL Dept. of Environmental Protection
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Tallahassee, FL 32399-2400
Attn: Gary Maddox

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Certified by: Colin Wright, Environmental Administrator

Date Certified: 21-MAY-2012 16:39

A handwritten signature in black ink, appearing to read "Colin Wright", is written over a light blue rectangular background.

Abbreviations and data remark codes

CERT # - NELAP (National Environmental Laboratory Accreditation Program) Certification Number of the laboratory that performed the analysis.

LCS – Laboratory Control Sample; in the QC Failures column, this notation indicates a batch recovery failure.

MS – Matrix Spike; in the QC Failures column, this notation indicates a batch recovery failure.

RPD – Relative Percent Difference; in the QC Failures column, this notation indicates a batch failure for precision.

CCV – Continuing Calibration Verification; in the QC Failures column, this notation indicates a failure of the calibration verification check sample.

RSD – Relative Standard Deviation expressed as a percentage.

SMP – Sample.

** - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.

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

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).

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.

Precision is reported as relative percent difference unless otherwise noted.

Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published test performance acceptance criteria.

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.

All sample collection performed by Bureau of Laboratories staff followed the field Standard Operating Procedures adopted by reference in Rule 62-160 FAC unless otherwise noted.

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.

Results for NELAP accredited tests contained in this report meet the requirements specified by the National Environmental Laboratory Accreditation Conference (NELAC). All samples received were in acceptable condition and met NELAC requirements unless otherwise noted. Results generated in this report pertain to the samples collected and submitted for analysis.

Job: TLH-2012-05-03-04

Job: TLH-2012-05-03-05

Job: TLH-2012-05-03-06

Group: Nutrients

Group: Metals

Group: Pesticides

Sample Location: WR-1**Collection Date/Time: 05/02/2012 11:42 AM****Field ID: WR-1**

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1426306	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P239353	
	EPA 300.0 Rev. 2.1	Chloride	5.2		mg Cl/L	P239773	
		Sulfate	5.1		mg SO4/L	P239774	
	SM 2120 B	Color (true)	2.5	U	PCU	P239347	
	SM 2320 B-97	Alkalinity	139		mg CaCO3/L	P239617	
	SM 2540 C-97	TDS	158		mg/L	P239633	
1426310	EPA 350.1 Rev. 2.0	Ammonia-N	0.012	I	mg N/L	P239345	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P239482	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.37		mg N/L	P239442	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P239492	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P239647	
1426314	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P239361	
1426318	EPA 200.7 Rev. 4.4	Boron	15	U	ug/L	P239903	
		Potassium	0.35	I	mg/L	P239903	
1426322	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P239489	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: WR-2**Collection Date/Time: 05/02/2012 01:57 PM****Field ID: WR-2**

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1426307	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P239353	
	EPA 300.0 Rev. 2.1	Chloride	5.2		mg Cl/L	P239773	
		Sulfate	5.0		mg SO4/L	P239774	
	SM 2120 B	Color (true)	2.5	U	PCU	P239347	
	SM 2320 B-97	Alkalinity	135		mg CaCO3/L	P239617	
	SM 2540 C-97	TDS	145		mg/L	P239633	
1426311	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P239345	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P239482	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P239442	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P239492	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P239647	
1426315	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P239361	
1426319	EPA 200.7 Rev. 4.4	Boron	15	U	ug/L	P239903	
		Potassium	0.47	I	mg/L	P239903	
1426323	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P239489	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: WR-3**Collection Date/Time: 05/02/2012 02:52 PM****Field ID: WR-3**

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
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Field ID: WR-3

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1426308	EPA 180.1 Rev. 2.0	Turbidity	0.40		NTU	P239353	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P239773	
		Sulfate	5.5		mg SO4/L	P239774	
	SM 2120 B	Color (true)	2.5	U	PCU	P239347	
	SM 2320 B-97	Alkalinity	140		mg CaCO3/L	P239617	
	SM 2540 C-97	TDS	157		mg/L	P239633	
1426312	EPA 350.1 Rev. 2.0	Ammonia-N	0.011	I	mg N/L	P239346	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.087	I	mg N/L	P239482	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P239442	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P239492	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P239647	
1426316	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P239361	
1426320	EPA 200.7 Rev. 4.4	Boron	15	U	ug/L	P239903	
		Potassium	0.39	I	mg/L	P239903	
1426324	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P239489	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: WR-4

Collection Date/Time: 05/02/2012 03:33 PM

Field ID: WR-4

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1426309	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P239353	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P239773	
		Sulfate	5.8		mg SO4/L	P239774	
	SM 2120 B	Color (true)	2.5	U	PCU	P239347	
	SM 2320 B-97	Alkalinity	150		mg CaCO3/L	P239617	
	SM 2540 C-97	TDS	168		mg/L	P239633	
1426313	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P239346	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.088	I	mg N/L	P239483	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P239442	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P239492	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P239647	
1426317	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P239361	
1426321	EPA 200.7 Rev. 4.4	Boron	15	U	ug/L	P239903	
		Potassium	0.42	I	mg/L	P239903	
1426325	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P239489	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P239489

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P239353

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

Component	Result	Code	Units
Boron	15	U	ug/L
Potassium	0.30	U	mg/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239773

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239774

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239345

Component	Result	Code	Units
Ammonia-N	0.010	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239346

Component	Result	Code	Units
Ammonia-N	0.010	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239482

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239483

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P239442

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P239492

Component	Result	Code	Units
Total-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P239361

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

Reference Method: SM 2120 B

Batch ID: P239347

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P239617

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97

Batch ID: P239633

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 5310 B-00

Batch ID: P239647

Component	Result	Code	Units
Organic Carbon	1.0	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P239489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	56.8	54.4	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

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

Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Boron	102		P	85 - 115
Potassium	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239773

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239774

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239346

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239482

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239483

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: P239442

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: P239492

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P239361

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

Reference Method: SM 2320 B-97

Batch ID: P239617

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Alkalinity	98.5		P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P239647

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P239489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1425936	Sucralose	60.4	58.8	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426780	Boron	108	109	P/P	80 - 120
1426780	Potassium	107	110	P/P	80 - 120
1428671	Boron	110		P	80 - 120
1428671	Potassium	116		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426306	Chloride	99.7		P	90 - 110
1426424	Chloride	99.3	99.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426306	Sulfate	96.5		P	90 - 110
1426424	Sulfate	94.6	94.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426092	Ammonia-N	95.4	97.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426368	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426310	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426368	Kjeldahl Nitrogen	100	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P239442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426312	NO2NO3-N	102	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P239492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426310	Total-P	97.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P239361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426316	O-Phosphate-P	95.2	98.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Batch ID: P239647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426366	Organic Carbon	97.8	99.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P239489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1425936	Sucralose	3.69	Spike	P	0 - 30
LFB	Sucralose	4.32	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P239353

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426330	Turbidity	1.09	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426780	Boron	1.12	Spike	P	0 - 20
1426780	Potassium	1.72	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239773

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426424	Chloride	0.251	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239774

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426424	Sulfate	0.185	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239345

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426092	Ammonia-N	1.99	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239346

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426368	Ammonia-N	0.698	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239482

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426310	Kjeldahl Nitrogen	0.139	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239483

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426368	Kjeldahl Nitrogen	3.36	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P239442

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426312	NO2NO3-N	2.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P239492

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426310	Total-P	2.56	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P239361

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426316	O-Phosphate-P	2.26	Spike	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P239617

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426363	Alkalinity	1.48	Sample	P	0 - 20
1426365	Alkalinity	0.396	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P239633

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426090	TDS	2.41	Sample	P	0 - 10

Reference Method: SM 5310 B-00

Batch ID: P239647

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426366	Organic Carbon	1.72	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 Surrogates

Lab Sample ID: 1426322

Field Sample ID: WR-1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	53.1	P	40 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1426323

Field Sample ID: WR-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	56.3	P	40 - 150

Lab Sample ID: 1426324

Field Sample ID: WR-3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	50.6	P	40 - 150

Lab Sample ID: 1426325

Field Sample ID: WR-4

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	52.0	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A44916

Included Lab Sample IDs: 1426310, 1426311, 1426312, 1426313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	104	P/P	90 - 110
Ammonia-N	104	104	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A44917

Included Lab Sample IDs: 1426306, 1426307, 1426308, 1426309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	93.4	92.3	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A44919

Included Lab Sample IDs: 1426306, 1426307, 1426308, 1426309

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A44920

Included Lab Sample IDs: 1426314, 1426315, 1426316, 1426317

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.2	95.8	P/P	90 - 110
O-Phosphate-P	97.5	97.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A44948

Included Lab Sample IDs: 1426310, 1426311, 1426312, 1426313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A44967

Included Lab Sample IDs: 1426310, 1426311, 1426312, 1426313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	108	P/P	90 - 110
Kjeldahl Nitrogen	103	98.2	P/P	90 - 110

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Run ID: A44969

Included Lab Sample IDs: 1426322, 1426323, 1426324, 1426325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	108	P/P	70 - 140

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A44970

Included Lab Sample IDs: 1426310, 1426311, 1426312, 1426313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.9	98.2	P/P	90 - 110
Total-P	99.4	97.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A45026

Included Lab Sample IDs: 1426306, 1426307, 1426308, 1426309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	100	98.6	P/P	85 - 115
Alkalinity	98.6	99.0	P/P	85 - 115

Reference Method: SM 5310 B-00

Run ID: A45040

Included Lab Sample IDs: 1426310, 1426311, 1426312, 1426313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	99.3	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A45105

Included Lab Sample IDs: 1426306, 1426307, 1426308, 1426309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	100	101	P/P	90 - 110
Sulfate	100	98.8	P/P	90 - 110
Sulfate	98.8	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A45155

Included Lab Sample IDs: 1426318, 1426319, 1426320, 1426321

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	102	102	P/P	95 - 105
Potassium	101	106	P/P	95 - 105

* 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
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose	56.8	54.4	60.4	58.8		4.32		3.69
EPA 180.1 Rev. 2.0	Turbidity							1.09	
EPA 200.7 Rev. 4.4	Boron	102		108	109	110			1.12
	Potassium	107		107	110	116			1.72
EPA 300.0 Rev. 2.1	Chloride	100		99.3	99.7	99.7			0.251
	Sulfate	97.2		94.6	94.9	96.5			0.185
EPA 350.1 Rev. 2.0	Ammonia-N	99.6		95.4	97.5				1.99
	Ammonia-N	99.7		100	101				0.698
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100		102	102				0.139
	Kjeldahl Nitrogen	104		100	104				3.36
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102		102	98.0				2.77
EPA 365.1 Rev. 2.0	Total-P	104		97.4	101				2.56
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	108		95.2	98.0				2.26
SM 2320 B-97	Alkalinity	98.5						0.396 1.48	
SM 2540 C-97	TDS							2.41	
SM 5310 B-00	Organic Carbon	96.6		97.8	99.4				1.72

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
DEP SOP: LC-001-2 (based on EPA 8321B) / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1426322, 1426323, 1426324, 1426325
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1426306, 1426307, 1426308, 1426309
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1426318, 1426319, 1426320, 1426321
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1426306, 1426307, 1426308, 1426309
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1426306, 1426307, 1426308, 1426309
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1426310, 1426311, 1426312, 1426313
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1426310, 1426311, 1426312, 1426313
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1426310, 1426311, 1426312, 1426313
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1426310, 1426311, 1426312, 1426313

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1426314, 1426315, 1426316, 1426317
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color	1426306, 1426307, 1426308, 1426309
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1426306, 1426307, 1426308, 1426309
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1426306, 1426307, 1426308, 1426309
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1426310, 1426311, 1426312, 1426313

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: LC-001-2 (based on EPA 8321B)	05/03/2012	05/03/2012	Hoor Shaik	05/04/2012	S. M. Reddy	1426322, 1426323, 1426324, 1426325
EPA 180.1 Rev. 2.0	05/03/2012			05/03/2012 16:30	Bryan A. Werth	1426306, 1426307, 1426308, 1426309
EPA 200.7 Rev. 4.4	05/03/2012	05/14/2012	Elliott D. Healy	05/17/2012	Joshua Ayres	1426318, 1426319, 1426320, 1426321
EPA 300.0 Rev. 2.1	05/03/2012			05/09/2012	Gary Dearman	1426306, 1426307, 1426308, 1426309
EPA 350.1 Rev. 2.0	05/03/2012			05/03/2012	Peter D. Kaus	1426310, 1426311, 1426312, 1426313
EPA 351.2 Rev. 2.0	05/03/2012	05/04/2012	Bryan A. Werth	05/07/2012	Pallavi R. Gadwal	1426310, 1426311, 1426312, 1426313
EPA 353.2 Rev. 2.0	05/03/2012			05/04/2012	Sima Feizi	1426310, 1426311, 1426312, 1426313
EPA 365.1 Rev. 2.0	05/03/2012	05/04/2012	Pallavi R. Gadwal	05/07/2012	Megan E. Faircloth	1426310, 1426311, 1426312, 1426313
EPA 365.1 Rev. 2.0 dissolved	05/03/2012			05/03/2012 14:45	Megan E. Faircloth	1426316
	05/03/2012			05/03/2012 15:09	Megan E. Faircloth	1426314, 1426315
	05/03/2012			05/03/2012 15:10	Megan E. Faircloth	1426317
SM 2120 B	05/03/2012			05/03/2012 13:00	Blanca Fach	1426306
	05/03/2012			05/03/2012 13:01	Blanca Fach	1426307
	05/03/2012			05/03/2012 13:02	Blanca Fach	1426308
	05/03/2012			05/03/2012 13:03	Blanca Fach	1426309
SM 2320 B-97	05/03/2012			05/09/2012	Dale L. Simmons	1426306, 1426307, 1426308, 1426309
SM 2540 C-97	05/03/2012			05/04/2012	Yijie Li	1426306, 1426307, 1426308, 1426309
SM 5310 B-00	05/03/2012			05/09/2012	Diana M. Dunbar	1426310, 1426311, 1426312, 1426313