

Chemical Analysis Report

WTRSHD-MGT-2012-08-15-01

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

Event Description: **SPRG1207**
Request ID: **RQ-2012-08-13-33**
Customer: **WTRSHD-MGT**
Project ID: **SPG_QTR_WQ**

Send Reports to:
FDEP Ground Water Management Section
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Attn: Gary Maddox

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Kathryn Brackett
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 05-SEP-2012 10:09



NON-CONFORMANCE REPORT INCLUDED

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.

SUR – Surrogate; in the QC Failures column, this notation indicates a recovery failure for the associated surrogate.

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-2012-08-15-101

Job: TLH-2012-08-15-102

Job: TLH-2012-08-15-103

Group: Nutrients

Group: Metals

Group: Pesticides

Sample Location: 9717**Collection Date/Time: 08/15/2012 11:11 AM****Field ID: BIG SPRING****Matrix: W-SURF-FRH**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1448483	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P243215	
	EPA 300.0 Rev. 2.1	Chloride	5.6		mg Cl/L	P243333	
		Sulfate	6.0		mg SO4/L	P243340	
		Color (true)	10		PCU	P243211	
	SM 2320 B-97	Alkalinity	166		mg CaCO3/L	P243352	
	SM 2540 C-97	TDS	194		mg/L	P243413	
1448485	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243235	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.092	I	mg N/L	P243371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P243380	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P243301	
	SM 5310 B-00	Organic Carbon	1.0	I	mg C/L	P243254	
1448487	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P243167	
1448489	EPA 200.7 Rev. 4.4	Calcium	58.3		mg/L	P243361	
		Magnesium	8.29		mg/L	P243361	
		Potassium	0.47	I	mg/L	P243361	
		Sodium	3.1		mg/L	P243361	
	EPA 200.8 Rev. 5.4	Boron**	13.6		ug/L	P243319	
1448491	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P243173	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: One of the matrix spike recoveries is unavailable due to high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: 9719**Collection Date/Time: 08/15/2012 10:08 AM****Field ID: WACISSA HEAD/SPRING #2****Matrix: W-SURF-FRH**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1448482	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P243215	
	EPA 300.0 Rev. 2.1	Chloride	5.4		mg Cl/L	P243333	
		Sulfate	4.9		mg SO4/L	P243340	
		Color (true)	8.6		PCU	P243211	
	SM 2320 B-97	Alkalinity	131		mg CaCO3/L	P243352	
	SM 2540 C-97	TDS	159		mg/L	P243413	
1448484	EPA 350.1 Rev. 2.0	Ammonia-N		O	mg N/L	P243751	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen		O	mg N/L	P243670	
	EPA 353.2 Rev. 2.0	NO2NO3-N		O	mg N/L	P243730	
	EPA 365.1 Rev. 2.0	Total-P		O	mg P/L	P243535	
	SM 5310 B-00	Organic Carbon		O	mg C/L	P243776	
1448486	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033		mg P/L	P243167	
1448488	EPA 200.7 Rev. 4.4	Calcium	43.6		mg/L	P243361	
		Magnesium	8.32		mg/L	P243361	
		Potassium	0.53	I	mg/L	P243361	
		Sodium	3.0		mg/L	P243361	
	EPA 200.8 Rev. 5.4	Boron**	11.6		ug/L	P243319	

Field ID: WACISSA HEAD/SPRING #2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1448490	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P243173	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: One of the matrix spike recoveries is unavailable due to high analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Sample was mistakenly discarded prior to analysis. See NCR.

EPA 351.2 Rev. 2.0: Sample was mistakenly discarded prior to analysis. See NCR.

EPA 353.2 Rev. 2.0: Sample was mistakenly discarded prior to analysis. See NCR.

EPA 365.1 Rev. 2.0: Total-P: Sample was mistakenly discarded prior to analysis. See NCR.

SM 5310 B-00: Sample was mistakenly discarded prior to analysis. See NCR.

Non-Conformance Report

NCR ID: 4248

Event(s)

WTRSHD-MGT-2012-08-15-01

Job(s)

TLH-2012-08-15-101

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: The acid preserved container for nutrients analysis for the Wacissa Head/Spring 2 was mistakenly discarded prior to analysis.

Resolution: Results will be reported with an O qualifier. Customer was notified, Gary Maddox.

Authorised by/Date: Kathryn Brackett 9/4/2012

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

Chemistry Tim Fitzpatrick (850) 245-8085
Biology David D. Whiting (850) 245-8177

Quality Assurance Report Method Blank Results

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

Batch ID: P243173

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P243215

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243361

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243319

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243319

Component	Result	Code	Units
Boron	2.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243333

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243340

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243235

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243751

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243371

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243670

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243380

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243730

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243301

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243535

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243167

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

Reference Method: SM 2120 B

Batch ID: P243211

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P243352

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97

Batch ID: P243413

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 5310 B-00

Batch ID: P243254

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

Reference Method: SM 5310 B-00

Batch ID: P243776

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: P243173

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

Laboratory Control Sample Accuracy

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

Batch ID: P243173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	59.2	60.4	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Magnesium	99.9		P	85 - 115
Potassium	105		P	85 - 115
Sodium	97.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Boron	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243333

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243340

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243235

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243751

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243371

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243670

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243380

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: P243730

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243301

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243535

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243167

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

Reference Method: SM 2320 B-97

Batch ID: P243352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Alkalinity	98.4		P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P243254

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.5		P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P243776

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

Quality Assurance Report Matrix Spike Accuracy

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

Batch ID: P243173

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

Matrix Spike Accuracy

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

Batch ID: P243173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448285	Sucralose	64.8	70.0	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448400	Calcium	101		P	80 - 120
1448400	Magnesium	102		P	80 - 120
1448400	Potassium	105	106	P/P	80 - 120
1448400	Sodium	110	109	P/P	80 - 120
1448488	Calcium	103		P	80 - 120
1448488	Magnesium	101		P	80 - 120
1448488	Potassium	100		P	80 - 120
1448488	Sodium	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448400	Boron	99.0	100	P/P	80 - 120
1448488	Boron	104		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448562	Chloride	95.7	97.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448562	Sulfate	93.6	95.0	P/P	90 - 110
1448582	Sulfate	93.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243235

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448498	Ammonia-N	98.2	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450267	Ammonia-N	90.6	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243380

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448397	NO2NO3-N	95.2		P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450017	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1449224	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448486	O-Phosphate-P	96.6	97.3	P/P	90 - 110

Reference Method: SM 5310 B-00

Batch ID: P243254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448396	Organic Carbon	97.6	97.0	P/P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P243776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450353	Organic Carbon	103	106	P/P	85 - 115

Quality Assurance Report

Precision

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

Batch ID: P243173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448285	Sucralose	7.72	Spike	P	0 - 30
LFB	Sucralose	2.01	LCS	P	0 - 30

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P243215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448523	Turbidity	1.75	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448400	Calcium	0.546	Sample	P	0 - 20
1448400	Magnesium	0.311	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448400	Potassium	0.981	Spike	P	0 - 20
1448400	Sodium	0.951	Sample	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448400	Boron	0.278	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448562	Chloride	1.07	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448562	Sulfate	1.14	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448498	Ammonia-N	1.24	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450267	Ammonia-N	8.79	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448457	Kjeldahl Nitrogen	2.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449940	Kjeldahl Nitrogen	1.38	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243380

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448397	NO2NO3-N	0.176	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243730

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450017	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243301

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448526	Total-P	0.455	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243535

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449224	Total-P	0.440	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243167

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448486	O-Phosphate-P	0.539	Spike	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P243211

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448523	Color (true)	1.12	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P243352

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448392	Alkalinity	0.852	Sample	P	0 - 20
1448562	Alkalinity	1.15	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P243413

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448392	TDS	7.23	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 5310 B-00

Batch ID: P243254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448396	Organic Carbon	0.377	Spike	P	0 - 20

Reference Method: SM 5310 B-00

Batch ID: P243776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450353	Organic Carbon	2.05	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: 1448490

Field Sample ID: WACISSA HEAD/SPRING #2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	42.0	P	40 - 150

Lab Sample ID: 1448491

Field Sample ID: BIG SPRING

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	47.8	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A46556

Included Lab Sample IDs: 1448486, 1448487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.8	98.7	P/P	90 - 110
O-Phosphate-P	98.1	96.3	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A46576

Included Lab Sample IDs: 1448482, 1448483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	99.6	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A46577

Included Lab Sample IDs: 1448482, 1448483

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

Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A46577

Included Lab Sample IDs: 1448482, 1448483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A46585

Included Lab Sample IDs: 1448485

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

Reference Method: SM 5310 B-00

Run ID: A46594

Included Lab Sample IDs: 1448485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	96.0	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A46618

Included Lab Sample IDs: 1448485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	96.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A46623

Included Lab Sample IDs: 1448488, 1448489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	96.9	96.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A46628

Included Lab Sample IDs: 1448482, 1448483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	96.2	95.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A46634

Included Lab Sample IDs: 1448482, 1448483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	96.3	97.5	P/P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A46636

Included Lab Sample IDs: 1448488, 1448489

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A46636

Included Lab Sample IDs: 1448488, 1448489

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

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

Run ID: A46643

Included Lab Sample IDs: 1448490, 1448491

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	114	P/P	70 - 140

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A46645

Included Lab Sample IDs: 1448485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.6	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A46648

Included Lab Sample IDs: 1448485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.2	98.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A46691

Included Lab Sample IDs: 1448488, 1448489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	97.8	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A46697

Included Lab Sample IDs: 1448484

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: A46754

Included Lab Sample IDs: 1448484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A46774

Included Lab Sample IDs: 1448484

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A46783

Included Lab Sample IDs: 1448484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A46795

Included Lab Sample IDs: 1448484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	106	P/P	85 - 115

* 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	
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose	59.2	60.4	64.8	70.0	2.01		7.72
EPA 180.1 Rev. 2.0	Turbidity						1.75	
EPA 200.7 Rev. 4.4	Calcium	101		101	103		0.546	
	Magnesium	99.9		102	101		0.311	
	Potassium	105		105	106	100		0.981
	Sodium	97.0		110	109	102	0.951	
EPA 200.8 Rev. 5.4	Boron	104		99.0	100	104	0.278	
EPA 300.0 Rev. 2.1	Chloride	98.6		95.7	97.3			1.07
	Sulfate	95.4		93.6	95.0	93.1		1.14
EPA 350.1 Rev. 2.0	Ammonia-N	98.4		98.2	99.6			1.24
	Ammonia-N	102		90.6	99.5			8.79
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107						2.27
	Kjeldahl Nitrogen	107						1.38
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100		95.2				0.176
	NO ₂ NO ₃ -N	100		102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	101						0.455
	Total-P	104		102	102			0.440
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		96.6	97.3			0.539
SM 2120 B	Color (true)						1.12	
SM 2320 B-97	Alkalinity	98.4					1.15	
							0.852	
SM 2540 C-97	TDS						7.23	
SM 5310 B-00	Organic Carbon	95.5		97.6	97.0			0.377
	Organic Carbon	104		103	106			2.05

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	1448490, 1448491

Reference Method Descriptions

Method / NELAC Cert. #	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1448482, 1448483
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1448488, 1448489
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1448488, 1448489
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1448482, 1448483
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1448482, 1448483
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1448484, 1448485
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1448484, 1448485
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1448484, 1448485
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1448484, 1448485
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1448486, 1448487
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color	1448482, 1448483
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1448482, 1448483
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1448482, 1448483
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1448484, 1448485

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)	08/15/2012	08/15/2012	Hoor Shaik	08/20/2012	S. M. Reddy	1448490, 1448491
EPA 180.1 Rev. 2.0	08/15/2012			08/16/2012 16:03	Bryan A. Werth	1448482, 1448483
EPA 200.7 Rev. 4.4	08/15/2012	08/16/2012	Elliott D. Healy	08/21/2012	Joshua Ayres	1448488, 1448489
	08/15/2012	08/16/2012	Elliott D. Healy	08/23/2012	Joshua Ayres	1448488, 1448489
EPA 200.8 Rev. 5.4	08/15/2012	08/16/2012	Elliott D. Healy	08/18/2012	Charles J. Peterson	1448488, 1448489
EPA 300.0 Rev. 2.1	08/15/2012			08/17/2012	Ping Hua	1448482, 1448483
EPA 350.1 Rev. 2.0	08/15/2012			08/16/2012	Peter D. Kaus	1448485
	08/15/2012			08/30/2012	Peter D. Kaus	1448484
EPA 351.2 Rev. 2.0	08/15/2012	08/17/2012	Christopher Armour	08/21/2012	Christopher Armour	1448485
	08/15/2012	08/29/2012	Christopher Armour	08/29/2012	Bryan A. Werth	1448484
EPA 353.2 Rev. 2.0	08/15/2012			08/21/2012	Sima Feizi	1448485
	08/15/2012			08/29/2012	Sima Feizi	1448484
EPA 365.1 Rev. 2.0	08/15/2012	08/17/2012	Megan E. Faircloth	08/20/2012	Pallavi R. Gadwal	1448485
	08/15/2012	08/23/2012	Megan E. Faircloth	08/24/2012	Christopher Armour	1448484
EPA 365.1 Rev. 2.0 dissolved	08/15/2012			08/15/2012 17:20	Pallavi R. Gadwal	1448486
	08/15/2012			08/15/2012 17:43	Pallavi R. Gadwal	1448487
SM 2120 B	08/15/2012			08/16/2012 15:17	Rochelle Y Jackson	1448482
	08/15/2012			08/16/2012 15:18	Rochelle Y Jackson	1448483
SM 2320 B-97	08/15/2012			08/21/2012	Dale L. Simmons	1448482, 1448483
SM 2540 C-97	08/15/2012			08/17/2012	Yijie Li	1448482, 1448483
SM 5310 B-00	08/15/2012			08/18/2012	Peter D. Kaus	1448485
	08/15/2012			08/31/2012	Rochelle Y Jackson	1448484