

Chemical Analysis Report

WTRSHD-MGT-2012-04-05-01

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

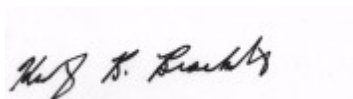
Event Description: **SPRG1204**
Request ID: **RQ-2012-04-02-41**
Customer: **WTRSHD-MGT**
Project ID: **SPG_QTR_WQ**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd.
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: Kathryn Brackett, Environmental Administrator

Date Certified: 26-APR-2012 16:16



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).

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-2012-04-05-70

Job: TLH-2012-04-05-71

Job: TLH-2012-04-05-72

Group: Nutrients

Group: Metals

Group: Pesticides

Sample Location: 010786**Collection Date/Time: 04/04/2012 03:25 PM****Field ID: MILL POND SPRING****Matrix: W-OTHER**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1420027	EPA 180.1 Rev. 2.0	Turbidity	0.40		NTU	P238171	
	EPA 300.0 Rev. 2.1	Chloride	9.1		mg Cl/L	P238572	
		Sulfate	35		mg SO4/L	P238573	
	SM 2120 B	Color (true)	2.5	U	PCU	P238190	
	SM 2320 B-97	Alkalinity	153		mg CaCO3/L	P238288	
	SM 2540 C-97	TDS	228		mg/L	P238600	
1420032	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P238334	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P238328	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P238339	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P238490	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P238501	
1420037	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.057		mg P/L	P238182	
1420042	EPA 200.7 Rev. 4.4	Boron	19	I	ug/L	P238592	
		Calcium	57.8		mg/L	P238592	
		Magnesium	11.1		mg/L	P238592	
		Potassium	0.65	I	mg/L	P238592	
		Sodium	5.8		mg/L	P238592	
1420047	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.0095	U	ug/L	P238434	

Ref. Method and Comment:

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

Sample Location: 9677**Collection Date/Time: 04/04/2012 06:15 PM****Field ID: DEVIL'S EAR SPRING****Matrix: W-OTHER**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1420029	EPA 180.1 Rev. 2.0	Turbidity	1.0	A	NTU	P238171	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P238572	
		Sulfate	15		mg SO4/L	P238573	
	SM 2120 B	Color (true)	9.7		PCU	P238190	
	SM 2320 B-97	Alkalinity	184		mg CaCO3/L	P238288	
	SM 2540 C-97	TDS	242		mg/L	P238600	
1420034	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P238334	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P238495	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.42		mg N/L	P238283	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P238490	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P238501	
1420039	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P238184	
1420044	EPA 200.7 Rev. 4.4	Boron	18	I	ug/L	P238592	
		Calcium	73.9		mg/L	P238592	
		Magnesium	7.49		mg/L	P238592	
		Potassium	0.51	I	mg/L	P238592	
		Sodium	4.3		mg/L	P238592	
1420049	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.034	I	ug/L	P238434	

Field ID: DEVIL'S EAR SPRING

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
-----------	-------------	-----------	--------	------	-------	----------	-------------

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low 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.

DEP SOP: LC-001-2 (based on EPA 8321B): Sucralose result confirmed in re-extraction.

Sample Location: 9713**Collection Date/Time: 04/04/2012 11:48 AM****Field ID: ICHETUCKNEE SPRING MAIN**

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
-----------	-------------	-----------	--------	------	-------	----------	-------------

1420025	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P238170	
	EPA 300.0 Rev. 2.1	Chloride	4.5		mg Cl/L	P238572	
		Sulfate	8.1		mg SO4/L	P238573	
	SM 2120 B	Color (true)	2.5	U	PCU	P238190	
	SM 2320 B-97	Alkalinity	155		mg CaCO3/L	P238288	
	SM 2540 C-97	TDS	181	A	mg/L	P238600	
1420030	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P238334	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P238328	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.88		mg N/L	P238283	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P238461	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P238501	
1420035	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P238182	
1420040	EPA 200.7 Rev. 4.4	Boron	15	U	ug/L	P238592	
		Calcium	56.1		mg/L	P238592	
		Magnesium	6.01		mg/L	P238592	
		Potassium	0.30	U	mg/L	P238592	
		Sodium	2.5		mg/L	P238592	
1420045	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.0095	U	ug/L	P238434	

Ref. Method and Comment:

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

Sample Location: 9714**Collection Date/Time: 04/04/2012 04:20 PM****Field ID: MISSION SPRING**

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
-----------	-------------	-----------	--------	------	-------	----------	-------------

1420028	EPA 180.1 Rev. 2.0	Turbidity	0.20		NTU	P238171	
	EPA 300.0 Rev. 2.1	Chloride	6.9		mg Cl/L	P238572	
		Sulfate	12		mg SO4/L	P238573	
	SM 2120 B	Color (true)	2.5	U	PCU	P238190	
	SM 2320 B-97	Alkalinity	153	A	mg CaCO3/L	P238288	
	SM 2540 C-97	TDS	199		mg/L	P238600	
1420033	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P238334	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P238328	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P238283	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P238490	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P238501	
1420038	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P238182	

Field ID: MISSION SPRING

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1420043	EPA 200.7 Rev. 4.4	Boron	17	I	ug/L	P238592	
		Calcium	53.4		mg/L	P238592	
		Magnesium	7.81		mg/L	P238592	
		Potassium	0.58	I	mg/L	P238592	
		Sodium	4.6		mg/L	P238592	
1420048	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.0095	U	ug/L	P238434	

Ref. Method and Comment:

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

Sample Location: 9743**Collection Date/Time: 04/04/2012 01:02 PM****Field ID: BLUE HOLE SPRING VENT**

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1420026	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P238170	
	EPA 300.0 Rev. 2.1	Chloride	5.4		mg Cl/L	P238572	
		Sulfate	5.7		mg SO4/L	P238573	
		Color (true)	2.5	U	PCU	P238190	
	SM 2320 B-97	Alkalinity	147		mg CaCO3/L	P238288	
	SM 2540 C-97	TDS	186		mg/L	P238600	
1420031	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P238334	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.10	I	mg N/L	P238328	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.61		mg N/L	P238283	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P238461	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P238501	
1420036	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P238182	
1420041	EPA 200.7 Rev. 4.4	Boron	16	I	ug/L	P238592	
		Calcium	52.4		mg/L	P238592	
		Magnesium	5.72		mg/L	P238592	
		Potassium	0.42	I	mg/L	P238592	
		Sodium	3.3		mg/L	P238592	
1420046	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.0095	U	ug/L	P238434	

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

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

Batch ID: P238434

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P238170

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P238171

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P238592

Component	Result	Code	Units
Boron	15	U	ug/L
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 300.0 Rev. 2.1

Batch ID: P238572

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238573

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P238334

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238328

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238495

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238283

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238339

Component	Result	Code	Units
-----------	--------	------	-------

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238339

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238461

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238490

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238182

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238184

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

Reference Method: SM 2120 B

Batch ID: P238190

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P238288

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97

Batch ID: P238600

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 5310 B-00

Batch ID: P238501

Component	Result	Code	Units
Organic Carbon	1.8	I	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

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

Batch ID: P238434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	73.7	96.6	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P238592

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Boron	97.1		P	85 - 115
Calcium	101		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	102		P	85 - 115
Sodium	100		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238572

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238573

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P238334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238328

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: P238495

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238283

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238339

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238339

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: P238461

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238490

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: P238182

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238184

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

Reference Method: SM 2320 B-97

Batch ID: P238288

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Alkalinity	98.1		P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P238501

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

Quality Assurance Report Matrix Spike Accuracy

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

Batch ID: P238434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1420350	Sucralose	64.2	70.5	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P238592

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
---------------	-----------	---------	---------	-----------	----------------

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P238592

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419279	Boron	101	100	P/P	80 - 120
1419279	Calcium	102		P	80 - 120
1419279	Magnesium	102		P	80 - 120
1419279	Potassium	102	103	P/P	80 - 120
1419279	Sodium	101		P	80 - 120
1420043	Boron	101		P	80 - 120
1420043	Calcium	102		P	80 - 120
1420043	Magnesium	102		P	80 - 120
1420043	Potassium	100		P	80 - 120
1420043	Sodium	101		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1420026	Chloride	101		P	90 - 110
1420268	Chloride	99.2	99.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1420026	Sulfate	97.7		P	90 - 110
1420268	Sulfate	96.3	96.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P238334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1420271	Ammonia-N	97.1	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419980	Kjeldahl Nitrogen	107	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419997	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1420269	NO2NO3-N	104	104	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238461

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1420032	Total-P	106	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1420032	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238182

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419942	O-Phosphate-P	92.8	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1420039	O-Phosphate-P	98.3	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Batch ID: P238501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419980	Organic Carbon	102	104	P/P	85 - 115

Quality Assurance Report

Precision

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

Batch ID: P238434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420350	Sucralose	9.35	Spike	P	0 - 40
LFB	Sucralose	26.9	LCS	P	0 - 40

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P238170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419938	Turbidity	2.56	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P238171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420029	Turbidity	5.77	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P238592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419279	Boron	1.35	Spike	P	0 - 20
1419279	Calcium	0.772	Sample	P	0 - 20
1419279	Magnesium	0.927	Sample	P	0 - 20
1419279	Potassium	1.09	Spike	P	0 - 20
1419279	Sodium	0.219	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420268	Chloride	0.220	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420268	Sulfate	0.285	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P238334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420271	Ammonia-N	1.64	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419980	Kjeldahl Nitrogen	1.90	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420269	Kjeldahl Nitrogen	2.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419997	NO2NO3-N	1.58	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238339

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420269	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238461

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420032	Total-P	2.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238490

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420032	Total-P	0.824	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238182

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419942	O-Phosphate-P	2.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238184

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420039	O-Phosphate-P	1.32	Spike	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P238288

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419979	Alkalinity	0.112	Sample	P	0 - 20
1420028	Alkalinity	0.126	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P238600

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1420025	TDS	7.73	Sample	P	0 - 10

Reference Method: SM 5310 B-00

Batch ID: P238501

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419980	Organic Carbon	1.70	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: 1420045

Field Sample ID: ICHETUCKNEE SPRING MAIN

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	70.4	P	40 - 150

Lab Sample ID: 1420046

Field Sample ID: BLUE HOLE SPRING VENT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	84.9	P	40 - 150

Lab Sample ID: 1420047

Field Sample ID: MILL POND SPRING

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	78.2	P	40 - 150

Lab Sample ID: 1420048

Field Sample ID: MISSION SPRING

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	81.5	P	40 - 150

Lab Sample ID: 1420049

Field Sample ID: DEVIL'S EAR SPRING

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	76.9	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A44434

Included Lab Sample IDs: 1420025, 1420026, 1420027, 1420028, 1420029

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A44440

Included Lab Sample IDs: 1420035, 1420036, 1420037, 1420038, 1420039

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.7	95.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A44443

Included Lab Sample IDs: 1420025, 1420026, 1420027, 1420028, 1420029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	101	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A44475

Included Lab Sample IDs: 1420030, 1420031, 1420033, 1420034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.4	97.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A44478

Included Lab Sample IDs: 1420025, 1420026, 1420027, 1420028, 1420029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	96.4	98.4	P/P	85 - 115

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A44487

Included Lab Sample IDs: 1420030, 1420031, 1420032, 1420033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	94.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A44493

Included Lab Sample IDs: 1420030, 1420031, 1420032, 1420033, 1420034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.4	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A44494

Included Lab Sample IDs: 1420032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	105	P/P	90 - 110

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

Run ID: A44536

Included Lab Sample IDs: 1420045, 1420046, 1420047, 1420048, 1420049

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	127	P/P	70 - 140
Sucralose	119	127	P/P	70 - 140
Sucralose	127	119	P/P	70 - 140

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A44546

Included Lab Sample IDs: 1420030, 1420031

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A44546

Included Lab Sample IDs: 1420030, 1420031

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.6	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A44555

Included Lab Sample IDs: 1420032, 1420033, 1420034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.1	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A44557

Included Lab Sample IDs: 1420034

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

Reference Method: SM 5310 B-00

Run ID: A44562

Included Lab Sample IDs: 1420030, 1420031, 1420032, 1420033, 1420034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.8	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A44589

Included Lab Sample IDs: 1420025, 1420026, 1420027, 1420028, 1420029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	99.0	99.2	P/P	90 - 110
Sulfate	99.2	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A44598

Included Lab Sample IDs: 1420040, 1420041, 1420042, 1420043, 1420044

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	97.6	98.5	P/P	90 - 110
Boron	97.8	97.6	P/P	90 - 110
Calcium	100	101	P/P	90 - 110
Calcium	101	102	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Potassium	100	101	P/P	90 - 110
Potassium	102	100	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Sodium	101	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

* 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	MS
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose	73.7	96.6	64.2	70.5	26.9		
EPA 180.1 Rev. 2.0	Turbidity						2.56	
	Turbidity						5.77	
EPA 200.7 Rev. 4.4	Boron	97.1		101	100	101		1.35
	Calcium	101		102	102		0.772	
	Magnesium	102		102	102		0.927	
	Potassium	102		102	103	100		1.09
	Sodium	100		101	101		0.219	
EPA 300.0 Rev. 2.1	Chloride	101		99.2	99.6	101		0.220
	Sulfate	98.4		96.3	96.7	97.7		0.285
EPA 350.1 Rev. 2.0	Ammonia-N	97.4		97.1	98.8			1.64
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100		107	109			1.90
	Kjeldahl Nitrogen	105						2.76
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101		98.2				1.58
	NO ₂ NO ₃ -N	102		104	104			0.0
EPA 365.1 Rev. 2.0	Total-P	102		106	110			2.23
	Total-P	104		103	104			0.824
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		92.8	96.2			2.93
	O-Phosphate-P	101		98.3	100			1.32
SM 2320 B-97	Alkalinity	98.1					0.112	
							0.126	
SM 2540 C-97	TDS						7.73	
SM 5310 B-00	Organic Carbon	98.4		102	104			1.70

Reference Method Descriptions

Method / NELAC Cert. #	Description
DEP SOP: LC-001-2 (based on EPA 8321B) / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices

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)	04/05/2012	04/10/2012	Fe-Val Siddell	04/10/2012	S. M. Reddy	1420045, 1420046, 1420047, 1420048
	04/05/2012	04/10/2012	Fe-Val Siddell	04/11/2012	S. M. Reddy	1420049
EPA 180.1 Rev. 2.0	04/05/2012			04/05/2012 17:14	Bryan A. Werth	1420025, 1420026, 1420027, 1420028, 1420029
EPA 200.7 Rev. 4.4	04/05/2012	04/09/2012	Elliott D. Healy	04/13/2012	Joshua Ayres	1420040, 1420041, 1420042, 1420043, 1420044
EPA 300.0 Rev. 2.1	04/05/2012			04/12/2012	Gary Dearman	1420025, 1420026, 1420027, 1420028, 1420029
EPA 350.1 Rev. 2.0	04/05/2012			04/10/2012	Diana M. Dunbar	1420030, 1420031, 1420032, 1420033, 1420034
EPA 351.2 Rev. 2.0	04/05/2012	04/09/2012	Bryan A. Werth	04/10/2012	Bryan A. Werth	1420030, 1420031, 1420032, 1420033
	04/05/2012	04/11/2012	Christopher Armour	04/12/2012	Christopher Armour	1420034
EPA 353.2 Rev. 2.0	04/05/2012			04/09/2012	Sima Feizi	1420030, 1420031, 1420033, 1420034
	04/05/2012			04/10/2012	Sima Feizi	1420032
EPA 365.1 Rev. 2.0	04/05/2012	04/11/2012	Megan E. Faircloth	04/12/2012	Christopher Armour	1420032, 1420033, 1420034
	04/05/2012	04/11/2012	Megan E. Faircloth	04/12/2012	Pallavi R. Gadwal	1420030, 1420031
EPA 365.1 Rev. 2.0 dissolved	04/05/2012			04/05/2012 16:13	Pallavi R. Gadwal	1420035, 1420036
	04/05/2012			04/05/2012 16:14	Pallavi R. Gadwal	1420037
	04/05/2012			04/05/2012 16:15	Pallavi R. Gadwal	1420038
	04/05/2012			04/05/2012 16:17	Pallavi R. Gadwal	1420039
SM 2120 B	04/05/2012			04/06/2012 07:43	Rochelle Y Jackson	1420025
	04/05/2012			04/06/2012 07:44	Rochelle Y Jackson	1420026
	04/05/2012			04/06/2012 07:45	Rochelle Y Jackson	1420027
	04/05/2012			04/06/2012 07:46	Rochelle Y Jackson	1420028
	04/05/2012			04/06/2012 07:47	Rochelle Y Jackson	1420029
SM 2320 B-97	04/05/2012			04/10/2012	Dale L. Simmons	1420025, 1420026, 1420027, 1420028, 1420029
SM 2540 C-97	04/05/2012			04/11/2012	Sima Feizi	1420025, 1420026, 1420027, 1420028, 1420029
SM 5310 B-00	04/05/2012			04/11/2012	Rochelle Y Jackson	1420030, 1420031, 1420032, 1420033, 1420034