

Chemical Analysis Report

WTRSHD-MGT-2012-08-10-01

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

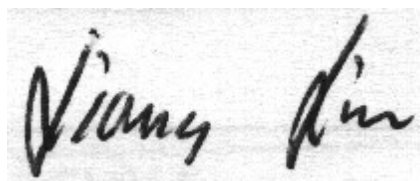
Event Description: **SPRG1207**
Request ID: **RQ-2012-08-06-22**
Customer: **WTRSHD-MGT**
Project ID: **SPG_QTR_WQ**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 27-AUG-2012 11:39

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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.

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-2012-08-10-42

Group: Nutrients

Job: TLH-2012-08-10-43

Group: Metals

Job: TLH-2012-08-10-44

Group: Pesticides

Sample Location: 11390**Collection Date/Time: 08/09/2012 12:11 PM****Field ID: DELEON SPRING (VOLUSIA) SIPQ****Matrix: W-SURF-FRH**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1447561	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P242992	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P243330	
		Sulfate	25		mg SO4/L	P243338	
	SM 2120 B	Color (true)	3.0	I	PCU	P242994	
	SM 2320 B-97	Alkalinity	131		mg CaCO3/L	P243163	
	SM 2540 C-97	TDS	338		mg/L	P243279	
1447566	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P243090	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P243199	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.1		mg N/L	P243208	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P243219	
	SM 5310 B-00	Organic Carbon	1.1	I	mg C/L	P243185	
1447571	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.054		mg P/L	P243029	
1447576	EPA 200.7 Rev. 4.4	Calcium	52.6		mg/L	P243225	
		Magnesium	11.9		mg/L	P243225	
		Potassium	3.8		mg/L	P243225	
		Sodium	64.1		mg/L	P243225	
	EPA 200.8 Rev. 5.4	Boron**	43.2		ug/L	P243318	
1447581	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.041	I	ug/L	P243172	RPD

Ref. Method and Comment:

DEP SOP: LC-001-2 (based on EPA 8321B): Matrix spike accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked sample. Sucralose result confirmed in re-extraction.

Sample Location: 11395**Collection Date/Time: 08/07/2012 05:43 PM****Field ID: ROCK SPRINGS (ORANGE) SIPQ****Matrix: W-SURF-FRH**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1447558	EPA 180.1 Rev. 2.0	Turbidity	0.65	Q	NTU	P242992	
	EPA 300.0 Rev. 2.1	Chloride	9.8		mg Cl/L	P243330	
		Sulfate	19		mg SO4/L	P243338	
	SM 2120 B	Color (true)	2.5	UQ	PCU	P242994	
	SM 2320 B-97	Alkalinity	102		mg CaCO3/L	P243162	
	SM 2540 C-97	TDS	161		mg/L	P243278	
1447563	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243090	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P243133	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.2		mg N/L	P243208	
	EPA 365.1 Rev. 2.0	Total-P	0.079		mg P/L	P243219	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P243185	
1447568	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.077	Q	mg P/L	P243029	
1447573	EPA 200.7 Rev. 4.4	Calcium	34.0		mg/L	P243225	
		Magnesium	10.4		mg/L	P243225	
		Potassium	1.3		mg/L	P243225	
		Sodium	5.9		mg/L	P243225	
	EPA 200.8 Rev. 5.4	Boron**	20.2		ug/L	P243318	

Field ID: ROCK SPRINGS (ORANGE) SIPQ

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1447578	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.025	I	ug/L	P243172	RPD

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Sample expired prior to receipt.

SM 2120 B: Sample expired prior to receipt.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt.

DEP SOP: LC-001-2 (based on EPA 8321B): Matrix spike accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked sample. Sucralose result confirmed in re-extraction.

Sample Location: 11403**Collection Date/Time: 08/07/2012 04:45 PM****Field ID: WEKIWA SPRING (ORANGE) SIPQ**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1447557	EPA 180.1 Rev. 2.0	Turbidity	1.6	Q	NTU	P242992	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P243330	
		Sulfate	22		mg SO4/L	P243338	
	SM 2120 B	Color (true)	2.5	UQ	PCU	P242994	
	SM 2320 B-97	Alkalinity	135		mg CaCO3/L	P243162	
	SM 2540 C-97	TDS	194	A	mg/L	P243279	
1447562	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P243090	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.12	I	mg N/L	P243133	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.0		mg N/L	P243207	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P243219	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P243185	
1447567	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11	Q	mg P/L	P243029	
1447572	EPA 200.7 Rev. 4.4	Calcium	44.2		mg/L	P243225	
		Magnesium	12.5		mg/L	P243225	
		Potassium	1.7		mg/L	P243225	
		Sodium	10.7		mg/L	P243225	
	EPA 200.8 Rev. 5.4	Boron**	32.9		ug/L	P243318	
1447577	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.16		ug/L	P243172	RPD

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Sample expired prior to receipt.

SM 2120 B: Sample expired prior to receipt.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt.

DEP SOP: LC-001-2 (based on EPA 8321B): Matrix spike accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked sample. Sucralose result confirmed in re-extraction.

Sample Location: 6989**Collection Date/Time: 08/08/2012 10:30 AM****Field ID: APOPKA SPRING SIPQ**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1447559	EPA 180.1 Rev. 2.0	Turbidity	0.30	Q	NTU	P242992	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P243330	
		Sulfate	12		mg SO4/L	P243338	
	SM 2120 B	Color (true)	2.5	UQ	PCU	P242994	
	SM 2320 B-97	Alkalinity	87		mg CaCO3/L	P243163	
	SM 2540 C-97	TDS	151		mg/L	P243278	
1447564	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243090	

Field ID: APOPKA SPRING SIPQ

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1447564	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.090	I	mg N/L	P243133	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.9		mg N/L	P243208	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P243219	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P243185	
1447569	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034	Q	mg P/L	P243029	
1447574	EPA 200.7 Rev. 4.4	Calcium	33.3	A	mg/L	P243225	
		Magnesium	8.70	A	mg/L	P243225	
		Potassium	1.5	A	mg/L	P243225	
		Sodium	7.0	A	mg/L	P243225	
	EPA 200.8 Rev. 5.4	Boron**	21.1	A	ug/L	P243318	
1447579	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.029	I	ug/L	P243172	RPD

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Sample expired prior to receipt.

SM 2120 B: Sample expired prior to receipt.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt.

DEP SOP: LC-001-2 (based on EPA 8321B): Matrix spike accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked sample. Sucralose result confirmed in re-extraction.

Sample Location: 9673**Collection Date/Time: 08/08/2012 03:36 PM****Field ID: VOLUSIA BLUE SPRING SIPQ**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1447560	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P242992	
	EPA 300.0 Rev. 2.1	Chloride	570		mg Cl/L	P243330	
		Sulfate	87		mg SO4/L	P243338	
	SM 2120 B	Color (true)	3.3	I	PCU	P242994	
	SM 2320 B-97	Alkalinity	158		mg CaCO3/L	P243163	
	SM 2540 C-97	TDS	1.11E+03		mg/L	P243278	
1447565	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P243090	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P243133	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P243208	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P243219	
	SM 5310 B-00	Organic Carbon	1.7	I	mg C/L	P243185	
1447570	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P243029	
1447575	EPA 200.7 Rev. 4.4	Calcium	81.7		mg/L	P243225	
		Magnesium	38.9		mg/L	P243225	
		Potassium	11.1		mg/L	P243225	
		Sodium	314		mg/L	P243225	
	EPA 200.8 Rev. 5.4	Boron**	121		ug/L	P243318	
1447580	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.12		ug/L	P243172	RPD

Ref. Method and Comment:

DEP SOP: LC-001-2 (based on EPA 8321B): Matrix spike accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked 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: P243172

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P242992

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243225

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: P243318

Component	Result	Code	Units
Boron	2.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243330

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243338

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243090

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243133

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243199

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: P243207

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243208

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243219

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243029

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

Reference Method: SM 2120 B

Batch ID: P242994

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P243162

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2320 B-97

Batch ID: P243163

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97

Batch ID: P243278

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97

Batch ID: P243279

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00

Batch ID: P243185

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: P243172

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	70.8	74.8	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Magnesium	99.0		P	85 - 115
Potassium	100		P	85 - 115
Sodium	98.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243318

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Boron	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243090

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243133

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243199

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243207

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: P243208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243219

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243029

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

Reference Method: SM 2320 B-97

Batch ID: P243162

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

Reference Method: SM 2320 B-97

Batch ID: P243163

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

Reference Method: SM 5310 B-00

Batch ID: P243185

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243225

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

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447394	Calcium	104		P	80 - 120
1447394	Magnesium	102		P	80 - 120
1447394	Potassium	104		P	80 - 120
1447394	Sodium	105		P	80 - 120
1447574	Calcium	103		P	80 - 120
1447574	Magnesium	101		P	80 - 120
1447574	Potassium	101	99.4	P/P	80 - 120
1447574	Sodium	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447394	Boron	103		P	80 - 120
1447574	Boron	101	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447438	Chloride	97.8		P	90 - 110
1447557	Chloride	97.3	98.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447438	Sulfate	95.2		P	90 - 110
1447557	Sulfate	93.6	94.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447519	Ammonia-N	105	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447480	Kjeldahl Nitrogen	101	93.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447566	Kjeldahl Nitrogen	96.0	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243207

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

Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447443	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447911	NO2NO3-N	97.2	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447911	Total-P	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243029

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447522	O-Phosphate-P	94.2	95.6	P/P	90 - 110

Reference Method: SM 5310 B-00

Batch ID: P243185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1447406	Organic Carbon	106	109	P/P	85 - 115

Quality Assurance Report

Precision

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

Batch ID: P243172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447540	Sucralose	41.1	Spike	F	0 - 30
LFB	Sucralose	5.49	LCS	P	0 - 30

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P242992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447478	Turbidity	2.30	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447574	Calcium	1.59	Sample	P	0 - 20
1447574	Magnesium	4.89	Sample	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243225

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447574	Potassium	0.561	Sample	P	0 - 20
1447574	Sodium	1.69	Sample	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243318

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447574	Boron	1.80	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243330

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447557	Chloride	0.675	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243338

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447557	Sulfate	0.770	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243090

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447519	Ammonia-N	3.87	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243133

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447480	Kjeldahl Nitrogen	4.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243199

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447566	Kjeldahl Nitrogen	9.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243207

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447443	NO ₂ NO ₃ -N	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243208

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447911	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243219

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447911	Total-P	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243029

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447522	O-Phosphate-P	1.35	Spike	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P242994

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447478	Color (true)	1.94	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P243162

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447183	Alkalinity	0.878	Sample	P	0 - 20
1447213	Alkalinity	0.786	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P243163

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447438	Alkalinity	0.0616	Sample	P	0 - 20
1447439	Alkalinity	0.375	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P243278

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447477	TDS	1.84	Sample	P	0 - 10

Reference Method: SM 2540 C-97

Batch ID: P243279

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 2540 C-97

Batch ID: P243279

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447557	TDS	1.55	Sample	P	0 - 10

Reference Method: SM 5310 B-00

Batch ID: P243185

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1447406	Organic Carbon	1.64	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: 1447577

Field Sample ID: WEKIWA SPRING (ORANGE) SIPQ

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	43.7	P	40 - 150

Lab Sample ID: 1447578

Field Sample ID: ROCK SPRINGS (ORANGE) SIPQ

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	50.9	P	40 - 150

Lab Sample ID: 1447579

Field Sample ID: APOPKA SPRING SIPQ

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	54.8	P	40 - 150

Lab Sample ID: 1447580

Field Sample ID: VOLUSIA BLUE SPRING SIPQ

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	47.7	P	40 - 150

Lab Sample ID: 1447581

Field Sample ID: DELEON SPRING (VOLUSIA) SIPQ

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	49.8	P	40 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report

Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A46484

Included Lab Sample IDs: 1447557, 1447558, 1447559, 1447560, 1447561

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

Reference Method: SM 2120 B

Run ID: A46485

Included Lab Sample IDs: 1447557, 1447558, 1447559, 1447560, 1447561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.9	96.7	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A46493

Included Lab Sample IDs: 1447567, 1447568, 1447569, 1447570, 1447571

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.1	96.0	P/P	90 - 110
O-Phosphate-P	97.3	98.1	P/P	90 - 110
O-Phosphate-P	98.1	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A46522

Included Lab Sample IDs: 1447562, 1447563, 1447564, 1447565, 1447566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A46543

Included Lab Sample IDs: 1447562, 1447563, 1447564, 1447565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.7	P/P	90 - 110
Kjeldahl Nitrogen	98.9	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A46555

Included Lab Sample IDs: 1447557, 1447558, 1447559, 1447560, 1447561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	100	102	P/P	85 - 115
Alkalinity	102	100	P/P	85 - 115
Alkalinity	98.9	102	P/P	85 - 115

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

Run ID: A46560

Included Lab Sample IDs: 1447577, 1447578, 1447579, 1447580, 1447581

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	117	102	P/P	70 - 140
Sucralose	122	108	P/P	70 - 140
Sucralose	126	117	P/P	70 - 140

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A46568

Included Lab Sample IDs: 1447562, 1447563, 1447564, 1447565, 1447566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	114	114	P/P	85 - 115

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A46571

Included Lab Sample IDs: 1447566

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A46572

Included Lab Sample IDs: 1447562, 1447563, 1447564, 1447565, 1447566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A46578

Included Lab Sample IDs: 1447562, 1447563, 1447564, 1447565, 1447566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.1	92.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A46579

Included Lab Sample IDs: 1447572, 1447573, 1447574, 1447575, 1447576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	99.1	P/P	90 - 110
Calcium	99.1	102	P/P	90 - 110
Magnesium	100	99.9	P/P	90 - 110
Magnesium	101	100	P/P	90 - 110
Potassium	97.3	98.9	P/P	90 - 110
Potassium	98.9	98.5	P/P	90 - 110
Sodium	100	97.9	P/P	90 - 110
Sodium	97.9	99.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A46623

Included Lab Sample IDs: 1447572, 1447573, 1447574, 1447575, 1447576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	96.9	98.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A46628

Included Lab Sample IDs: 1447557, 1447558, 1447559, 1447560, 1447561

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A46628

Included Lab Sample IDs: 1447557, 1447558, 1447559, 1447560, 1447561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	101	96.8	P/P	90 - 110
Sulfate	96.8	97.6	P/P	90 - 110
Sulfate	97.6	94.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose	70.8	74.8				5.49		41.1
EPA 180.1 Rev. 2.0	Turbidity							2.30	
EPA 200.7 Rev. 4.4	Calcium	101		104	103			1.59	
	Magnesium	99.0		102	101			4.89	
	Potassium	100		104	101	99.4		0.561	
	Sodium	98.6		105	101			1.69	
EPA 200.8 Rev. 5.4	Boron	101		103	101	104		1.80	
EPA 300.0 Rev. 2.1	Chloride	99.1		97.3	98.3	97.8			0.675
	Sulfate	96.1		93.6	94.9	95.2			0.770
EPA 350.1 Rev. 2.0	Ammonia-N	96.9		105	98.2				3.87
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		101	93.7				4.02
	Kjeldahl Nitrogen	108		96.0	108				9.83
EPA 353.2 Rev. 2.0	NO2NO3-N	100		102	102				0.491
	NO2NO3-N	98.5		97.2	97.6				0.475
EPA 365.1 Rev. 2.0	Total-P	102		102	104				1.49
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101		94.2	95.6				1.35
SM 2120 B	Color (true)							1.94	
SM 2320 B-97	Alkalinity	102						0.878	
								0.786	
	Alkalinity	102						0.0616	
								0.375	
SM 2540 C-97	TDS							1.84	
	TDS							1.55	
SM 5310 B-00	Organic Carbon	103		106	109				1.64

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	1447577, 1447578, 1447579, 1447580, 1447581
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1447557, 1447558, 1447559, 1447560, 1447561
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1447572, 1447573, 1447574, 1447575, 1447576

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1447572, 1447573, 1447574, 1447575, 1447576
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1447557, 1447558, 1447559, 1447560, 1447561
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1447557, 1447558, 1447559, 1447560, 1447561
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1447562, 1447563, 1447564, 1447565, 1447566
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1447562, 1447563, 1447564, 1447565, 1447566
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1447562, 1447563, 1447564, 1447565, 1447566
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1447562, 1447563, 1447564, 1447565, 1447566
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1447567, 1447568, 1447569, 1447570, 1447571
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color	1447557, 1447558, 1447559, 1447560, 1447561
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1447557, 1447558, 1447559, 1447560, 1447561
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1447557, 1447558, 1447559, 1447560, 1447561
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1447562, 1447563, 1447564, 1447565, 1447566

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)	08/10/2012	08/14/2012	Hoor Shaik	08/15/2012	S. M. Reddy	1447577, 1447578, 1447579, 1447580, 1447581
EPA 180.1 Rev. 2.0	08/10/2012			08/10/2012 14:54	Bryan A. Werth	1447557, 1447558, 1447559, 1447560, 1447561
EPA 200.7 Rev. 4.4	08/10/2012	08/13/2012	Elliott D. Healy	08/16/2012	Joshua Ayres	1447572, 1447573, 1447574, 1447575, 1447576
EPA 200.8 Rev. 5.4	08/10/2012	08/13/2012	Elliott D. Healy	08/17/2012	Charles J. Peterson	1447572, 1447573, 1447574, 1447575, 1447576
EPA 300.0 Rev. 2.1	08/10/2012			08/15/2012	Gary Dearman	1447557, 1447558, 1447559, 1447560, 1447561
EPA 350.1 Rev. 2.0	08/10/2012			08/14/2012	Peter D. Kaus	1447562, 1447563, 1447564, 1447565, 1447566
EPA 351.2 Rev. 2.0	08/10/2012	08/14/2012	Christopher Armour	08/15/2012	Bryan A. Werth	1447562, 1447563, 1447564, 1447565
	08/10/2012	08/15/2012	Christopher Armour	08/16/2012	Bryan A. Werth	1447566
EPA 353.2 Rev. 2.0	08/10/2012			08/15/2012	Sima Feizi	1447562, 1447563, 1447564, 1447565, 1447566
EPA 365.1 Rev. 2.0	08/10/2012	08/15/2012	Megan E. Faircloth	08/16/2012	Megan E. Faircloth	1447562, 1447563, 1447564, 1447565, 1447566
EPA 365.1 Rev. 2.0 dissolved	08/10/2012			08/10/2012 15:52	Megan E. Faircloth	1447570
	08/10/2012			08/10/2012 16:04	Megan E. Faircloth	1447567
	08/10/2012			08/10/2012 16:08	Megan E. Faircloth	1447568
	08/10/2012			08/10/2012 16:09	Megan E. Faircloth	1447569
	08/10/2012			08/10/2012 16:11	Megan E. Faircloth	1447571
SM 2120 B	08/10/2012			08/10/2012 14:27	Blanca Fach	1447560
	08/10/2012			08/10/2012 14:28	Blanca Fach	1447561
	08/10/2012			08/10/2012 14:29	Blanca Fach	1447557, 1447558
	08/10/2012			08/10/2012 14:30	Blanca Fach	1447559
SM 2320 B-97	08/10/2012			08/15/2012	Dale L. Simmons	1447557, 1447558, 1447559, 1447560, 1447561
SM 2540 C-97	08/10/2012			08/14/2012	Yijie Li	1447557, 1447558, 1447559, 1447560, 1447561
SM 5310 B-00	08/10/2012			08/15/2012	Rochelle Y Jackson	1447562
	08/10/2012			08/16/2012	Rochelle Y Jackson	1447563, 1447564, 1447565, 1447566