

Chemical Analysis Report

WTRSHD-MGT-2012-05-11-01

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

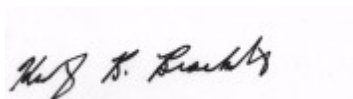
Event Description: **SPRG1204**
Request ID: **RQ-2012-05-07-38**
Customer: **WTRSHD-MGT**
Project ID: **SPG_QTR_WQ**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400
Attn: Gary Maddox

For additional information please contact
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Certified by: Kathryn Brackett, Environmental Administrator

Date Certified: 29-MAY-2012 13:34



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-2012-05-11-45

Group: Nutrients

Job: TLH-2012-05-11-46

Group: Metals

Job: TLH-2012-05-11-47

Group: Pesticides

Sample Location: 011463**Collection Date/Time: 05/09/2012 03:54 PM****Field ID: JUNIPER SPRING****Matrix: W-OTHER**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1428659	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P239691	
	EPA 300.0 Rev. 2.1	Chloride	4.5		mg Cl/L	P239965	
		Sulfate	5.6		mg SO4/L	P239970	
	SM 2120 B	Color (true)	2.5	U	PCU	P239688	
	SM 2320 B-97	Alkalinity	46		mg CaCO3/L	P239805	
	SM 2540 C-97	TDS	65		mg/L	P240009	
1428663	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P239760	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P239884	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.097		mg N/L	P239821	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P239831	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P239947	
1428667	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P239686	
1428671	EPA 200.7 Rev. 4.4	Boron	15	U	ug/L	P239903	
		Calcium	14.0		mg/L	P239903	
		Magnesium	4.99		mg/L	P239903	
		Potassium	0.30	U	mg/L	P239903	
		Sodium	2.8		mg/L	P239903	
1428675	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.0097	U	ug/L	P239864	

Ref. Method and Comment:

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

Sample Location: 6989**Collection Date/Time: 05/09/2012 10:20 AM****Field ID: APOPKA (GOURDNECK) SPRING****Matrix: W-OTHER**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1428657	EPA 180.1 Rev. 2.0	Turbidity	1.1	AQ	NTU	P239691	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P239965	
		Sulfate	12		mg SO4/L	P239970	
	SM 2120 B	Color (true)	2.5	UQ	PCU	P239688	
	SM 2320 B-97	Alkalinity	85	A	mg CaCO3/L	P239805	
	SM 2540 C-97	TDS	139		mg/L	P240009	
1428661	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P239759	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P239884	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.9		mg N/L	P239821	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P239831	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P239947	
1428665	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033	Q	mg P/L	P239686	
1428669	EPA 200.7 Rev. 4.4	Boron	22	I	ug/L	P239903	
		Calcium	34.5		mg/L	P239903	
		Magnesium	9.14		mg/L	P239903	
		Potassium	1.7		mg/L	P239903	
		Sodium	7.3		mg/L	P239903	
1428673	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.028	I	ug/L	P239864	

Field ID: APOPKA (GOURDNECK) SPRING

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
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Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Sample expired upon receipt.

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

SM 2120 B: Sample expired prior to or upon receipt.

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

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

Sample Location: 9670**Collection Date/Time: 05/09/2012 02:39 PM****Field ID: ALEXANDER SPRINGS**

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
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1428658	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P239691	
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	EPA 300.0 Rev. 2.1	Chloride	260		mg Cl/L	P239965	
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		Sulfate	67		mg SO4/L	P239970	
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	SM 2120 B	Color (true)	2.5	U	PCU	P239688	
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	SM 2320 B-97	Alkalinity	82		mg CaCO3/L	P239805	
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	SM 2540 C-97	TDS	551		mg/L	P240009	
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1428662	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P239760	
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	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.11	I	mg N/L	P239884	
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	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P239821	
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	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P239831	
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	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P239947	
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1428666	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.047		mg P/L	P239686	
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dissolved

1428670	EPA 200.7 Rev. 4.4	Boron	51	I	ug/L	P239903	
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		Calcium	48.8		mg/L	P239903	
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		Magnesium	22.3		mg/L	P239903	
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		Potassium	4.4		mg/L	P239903	
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		Sodium	146		mg/L	P239903	
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1428674	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.0097	U	ug/L	P239864	
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Ref. Method and Comment:

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

Sample Location: 9687**Collection Date/Time: 05/09/2012 05:05 PM****Field ID: SILVER GLEN SPRINGS**

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
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1428660	EPA 180.1 Rev. 2.0	Turbidity	0.35		NTU	P239691	
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	EPA 300.0 Rev. 2.1	Chloride	460		mg Cl/L	P239965	
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		Sulfate	180		mg SO4/L	P239970	
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	SM 2120 B	Color (true)	2.5	U	PCU	P239688	
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	SM 2320 B-97	Alkalinity	68		mg CaCO3/L	P239805	
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	SM 2540 C-97	TDS	993	A	mg/L	P240010	
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1428664	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	I	mg N/L	P239760	
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	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.11	I	mg N/L	P239884	
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	EPA 353.2 Rev. 2.0	NO2NO3-N	0.054		mg N/L	P239821	
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	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P239831	
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	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P239947	
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Field ID: SILVER GLEN SPRINGS

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1428668	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P239686	
1428672	EPA 200.7 Rev. 4.4	Boron	98		ug/L	P239903	
		Calcium	77.4		mg/L	P239903	
		Magnesium	37.9		mg/L	P239903	
		Potassium	9.0		mg/L	P239903	
		Sodium	270		mg/L	P239903	
1428676	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.0095	U	ug/L	P239864	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 4142

Event(s)

WTRSHD-MGT-2012-05-11-01

Job(s)

TLH-2012-05-11-45

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: Samples were collected on the 9th and received on the 11th. The short hold analyses for one site expired upon receipt.

TURBIDITY

W-COLOR

W-PO4-F

Site: Apopka (Gourdneck) Spring at 1020am

Resolution: Nutrient supervisor notified about expiring samples. Customer notified, Edgar Wade.

Authorised by/Date: Kathryn Brackett 5/16/2012

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: P239864

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P239691

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

Component	Result	Code	Units
Boron	15	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

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 300.0 Rev. 2.1

Batch ID: P239965

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239970

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239759

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239760

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239884

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P239821

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P239831

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P239686

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B

Batch ID: P239688

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P239805

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97

Batch ID: P240009

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97

Batch ID: P240010

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 5310 B-00

Batch ID: P239947

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: P239864

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	65.2	61.2	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Boron	102		P	85 - 115
Calcium	105		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	107		P	85 - 115
Sodium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239965

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239970

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239759

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239760

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239884

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P239821

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P239831

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: P239686

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

Reference Method: SM 2320 B-97

Batch ID: P239805

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

Reference Method: SM 5310 B-00

Batch ID: P239947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

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

Batch ID: P239864

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428431	Sucralose	45.3	43.9	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1426780	Boron	108	109	P/P	80 - 120
1426780	Calcium	106		P	80 - 120
1426780	Magnesium	104		P	80 - 120
1426780	Potassium	107	110	P/P	80 - 120
1426780	Sodium	107		P	80 - 120
1428671	Boron	110		P	80 - 120
1428671	Calcium	106		P	80 - 120
1428671	Magnesium	106		P	80 - 120
1428671	Potassium	116		P	80 - 120
1428671	Sodium	109		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428900	Chloride	99.9	101	P/P	90 - 110
1428923	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428900	Sulfate	93.3	94.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239759

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428569	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428766	Ammonia-N	103	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239884

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428619	Kjeldahl Nitrogen	98.5	94.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P239821

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: P239821

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428635	NO2NO3-N	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P239831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428635	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P239686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428648	O-Phosphate-P	95.7	98.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Batch ID: P239947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1428661	Organic Carbon	99.0	99.7	P/P	85 - 115

Quality Assurance Report

Precision

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

Batch ID: P239864

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428431	Sucralose	1.36	Spike	P	0 - 30
LFB	Sucralose	6.33	LCS	P	0 - 30

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P239691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428657	Turbidity	3.60	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P239903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1426780	Boron	1.12	Spike	P	0 - 20
1426780	Calcium	1.21	Sample	P	0 - 20
1426780	Magnesium	0.0926	Sample	P	0 - 20
1426780	Potassium	1.72	Spike	P	0 - 20
1426780	Sodium	1.37	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239965

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428900	Chloride	0.774	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P239970

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428900	Sulfate	0.865	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239759

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428569	Ammonia-N	0.932	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P239760

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428766	Ammonia-N	2.67	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P239884

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428619	Kjeldahl Nitrogen	3.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P239821

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428635	NO2NO3-N	1.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P239831

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428635	Total-P	1.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P239686

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428648	O-Phosphate-P	2.37	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B

Batch ID: P239688

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428565	Color (true)	6.79	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P239805

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428385	Alkalinity	0.360	Sample	P	0 - 20
1428657	Alkalinity	0.146	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P240009

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428632	TDS	4.18	Sample	P	0 - 10

Reference Method: SM 2540 C-97

Batch ID: P240010

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428660	TDS	2.22	Sample	P	0 - 10

Reference Method: SM 5310 B-00

Batch ID: P239947

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1428661	Organic Carbon	0.755	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: 1428673

Field Sample ID: AOPKA (GOURDNECK) SPRING

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	54.1	P	40 - 150

Lab Sample ID: 1428674

Field Sample ID: ALEXANDER SPRINGS

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

Quality Assurance Report Surrogates

Lab Sample ID: 1428675

Field Sample ID: JUNIPER SPRING

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	56.6	P	40 - 150

Lab Sample ID: 1428676

Field Sample ID: SILVER GLEN SPRINGS

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	52.4	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A45056

Included Lab Sample IDs: 1428665, 1428666, 1428667, 1428668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	97.3	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A45057

Included Lab Sample IDs: 1428657, 1428658, 1428659, 1428660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.1	90.8	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A45058

Included Lab Sample IDs: 1428657, 1428658, 1428659, 1428660

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A45091

Included Lab Sample IDs: 1428661, 1428662, 1428663, 1428664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	103	P/P	90 - 110
Ammonia-N	103	104	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A45108

Included Lab Sample IDs: 1428657, 1428658, 1428659, 1428660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	97.0	95.7	P/P	85 - 115
Alkalinity	98.1	97.0	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A45117

Included Lab Sample IDs: 1428661, 1428662, 1428663, 1428664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A45120

Included Lab Sample IDs: 1428661, 1428662, 1428663, 1428664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.1	98.2	P/P	90 - 110

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

Run ID: A45139

Included Lab Sample IDs: 1428673, 1428674, 1428675, 1428676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	117	111	P/P	70 - 140

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A45149

Included Lab Sample IDs: 1428661, 1428662, 1428663, 1428664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	106	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A45155

Included Lab Sample IDs: 1428669, 1428670, 1428671, 1428672

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	101	105	P/P	90 - 110
Boron	102	101	P/P	90 - 110
Calcium	105	107	P/P	90 - 110
Calcium	105	105	P/P	90 - 110
Magnesium	105	107	P/P	90 - 110
Magnesium	106	105	P/P	90 - 110
Potassium	105	106	P/P	90 - 110
Potassium	106	105	P/P	90 - 110
Sodium	103	104	P/P	90 - 110
Sodium	104	106	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A45179

Included Lab Sample IDs: 1428661, 1428662, 1428663, 1428664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.9	89.6	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A45189

Included Lab Sample IDs: 1428657, 1428658, 1428659, 1428660

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A45189

Included Lab Sample IDs: 1428657, 1428658, 1428659, 1428660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	97.9	98.2	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	65.2	61.2	45.3	43.9		6.33		1.36
EPA 180.1 Rev. 2.0	Turbidity							3.60	
EPA 200.7 Rev. 4.4	Boron	102		108	109	110			1.12
	Calcium	105		106	106			1.21	
	Magnesium	104		104	106			0.0926	
	Potassium	107		107	110	116			1.72
	Sodium	103		107	109			1.37	
EPA 300.0 Rev. 2.1	Chloride	102		99.9	101	100			0.774
	Sulfate	96.6		93.3	94.7				0.865
EPA 350.1 Rev. 2.0	Ammonia-N	99.1		100	101				0.932
	Ammonia-N	99.0		103	98.4				2.67
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.5		98.5	94.5				3.39
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	106		107	108				1.39
EPA 365.1 Rev. 2.0	Total-P	104		105	103				1.62
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		95.7	98.0				2.37
SM 2120 B	Color (true)							6.79	
SM 2320 B-97	Alkalinity	98.5						0.360	
								0.146	
SM 2540 C-97	TDS							4.18	
	TDS							2.22	
SM 5310 B-00	Organic Carbon	98.6		99.0	99.7				0.755

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	1428673, 1428674, 1428675, 1428676
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1428657, 1428658, 1428659, 1428660
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1428669, 1428670, 1428671, 1428672
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1428657, 1428658, 1428659, 1428660
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1428657, 1428658, 1428659, 1428660
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1428661, 1428662, 1428663, 1428664

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1428661, 1428662, 1428663, 1428664
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1428661, 1428662, 1428663, 1428664
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1428661, 1428662, 1428663, 1428664
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1428665, 1428666, 1428667, 1428668
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color	1428657, 1428658, 1428659, 1428660
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1428657, 1428658, 1428659, 1428660
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1428657, 1428658, 1428659, 1428660
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1428661, 1428662, 1428663, 1428664

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: LC-001-2 (based on EPA 8321B)	05/11/2012	05/14/2012	Hoor Shaik	05/15/2012	S. M. Reddy	1428673, 1428674, 1428675, 1428676
EPA 180.1 Rev. 2.0	05/11/2012			05/11/2012 13:03	Bryan A. Werth	1428657
	05/11/2012			05/11/2012 13:04	Bryan A. Werth	1428658
	05/11/2012			05/11/2012 15:34	Bryan A. Werth	1428659, 1428660
EPA 200.7 Rev. 4.4	05/11/2012	05/14/2012	Elliott D. Healy	05/17/2012	Joshua Ayres	1428669, 1428670, 1428671, 1428672
EPA 300.0 Rev. 2.1	05/11/2012			05/16/2012	Ping Hua	1428657, 1428658, 1428659, 1428660
EPA 350.1 Rev. 2.0	05/11/2012			05/15/2012	Peter D. Kaus	1428661, 1428662, 1428663, 1428664
EPA 351.2 Rev. 2.0	05/11/2012	05/15/2012	Bryan A. Werth	05/17/2012	Christopher Armour	1428661, 1428662, 1428663, 1428664
EPA 353.2 Rev. 2.0	05/11/2012			05/16/2012	Peter D. Kaus	1428661, 1428662, 1428663, 1428664
EPA 365.1 Rev. 2.0	05/11/2012	05/15/2012	Megan E. Faircloth	05/16/2012	Pallavi R. Gadwal	1428661, 1428662, 1428663, 1428664
EPA 365.1 Rev. 2.0 dissolved	05/11/2012			05/11/2012 13:43	Megan E. Faircloth	1428665
	05/11/2012			05/11/2012 13:44	Megan E. Faircloth	1428666
	05/11/2012			05/11/2012 13:45	Megan E. Faircloth	1428667
	05/11/2012			05/11/2012 13:46	Megan E. Faircloth	1428668
SM 2120 B	05/11/2012			05/11/2012 13:17	Blanca Fach	1428657
	05/11/2012			05/11/2012 13:18	Blanca Fach	1428658
	05/11/2012			05/11/2012 13:19	Blanca Fach	1428659
	05/11/2012			05/11/2012 13:20	Blanca Fach	1428660
SM 2320 B-97	05/11/2012			05/16/2012	Dale L. Simmons	1428657, 1428658, 1428659, 1428660
SM 2540 C-97	05/11/2012			05/16/2012	Yijie Li	1428657, 1428658, 1428659, 1428660
SM 5310 B-00	05/11/2012			05/17/2012	Dale L. Simmons	1428661, 1428662, 1428663, 1428664