

Chemical Analysis Report

WTRSHD-MGT-2012-04-03-02

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

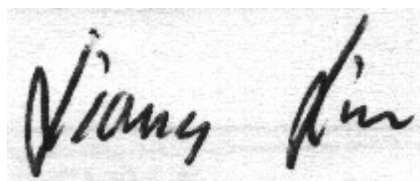
Event Description: **SPRG1201**
Request ID: **RQ-2012-03-26-06**
Customer: **WTRSHD-MGT**
Project ID: **SPG_QTR_WQ**

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

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: Liang Lin, Environmental Administrator

Date Certified: 19-APR-2012 15:51

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.

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-2012-04-03-131

Job: TLH-2012-04-03-132

Job: TLH-2012-04-03-133

Group: Nutrients

Group: Metals

Group: Pesticides

Sample Location: 020383**Collection Date/Time: 04/03/2012 01:23 PM****Field ID: WAKULLA TUBING B-TUNNEL****Matrix: W-SURF-FRH**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1419293	EPA 180.1 Rev. 2.0	Turbidity	0.20		NTU	P238108	
	EPA 300.0 Rev. 2.1	Chloride	8.9		mg Cl/L	P238315	
		Sulfate	12		mg SO4/L	P238316	
	SM 2120 B	Color (true)	2.5	U	PCU	P238095	
	SM 2320 B-97	Alkalinity	147		mg CaCO3/L	P238410	
	SM 2540 C-97	TDS	175		mg/L	P238480	
1419296	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P238185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P238293	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.81		mg N/L	P238225	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P238351	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P238173	
1419299	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P238120	
1419302	EPA 200.7 Rev. 4.4	Boron	24	I	ug/L	P238592	
		Calcium	47.5		mg/L	P238592	
		Magnesium	11.0		mg/L	P238592	
		Potassium	0.70	I	mg/L	P238592	
		Sodium	6.0		mg/L	P238592	
1419305	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.024	I	ug/L	P238402	

Ref. Method and Comment:

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

Sample Location: 020385**Collection Date/Time: 04/03/2012 01:11 PM****Field ID: WAKULLA TUBING C-TUNNEL****Matrix: W-SURF-FRH**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1419294	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P238108	
	EPA 300.0 Rev. 2.1	Chloride	8.8		mg Cl/L	P238315	
		Sulfate	12		mg SO4/L	P238316	
	SM 2120 B	Color (true)	2.5	U	PCU	P238097	
	SM 2320 B-97	Alkalinity	146		mg CaCO3/L	P238410	
	SM 2540 C-97	TDS	164		mg/L	P238480	
1419297	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P238185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P238293	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.77		mg N/L	P238225	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P238351	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P238173	
1419300	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P238120	
1419303	EPA 200.7 Rev. 4.4	Boron	26	I	ug/L	P238592	
		Calcium	46.8		mg/L	P238592	
		Magnesium	10.8		mg/L	P238592	
		Potassium	0.65	I	mg/L	P238592	
		Sodium	6.0		mg/L	P238592	
1419306	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.024	I	ug/L	P238402	

Sample Location: 9695**Collection Date/Time: 04/03/2012 12:10 PM****Field ID: WAKULLA SPRINGS****Matrix: W-SURF-FRH**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1419292	EPA 180.1 Rev. 2.0	Turbidity	0.15		NTU	P238108	
	EPA 300.0 Rev. 2.1	Chloride	8.5		mg Cl/L	P238315	
		Sulfate	11		mg SO4/L	P238316	
	SM 2120 B	Color (true)	2.5	U	PCU	P238095	
	SM 2320 B-97	Alkalinity	143	A	mg CaCO3/L	P238410	
	SM 2540 C-97	TDS	170		mg/L	P238480	
1419295	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P238185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P238293	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.69		mg N/L	P238225	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P238350	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P238173	
1419298	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P238120	
1419301	EPA 200.7 Rev. 4.4	Boron	23	I	ug/L	P238592	
		Calcium	46.6		mg/L	P238592	
		Magnesium	10.8		mg/L	P238592	
		Potassium	0.67	I	mg/L	P238592	
		Sodium	5.8		mg/L	P238592	
1419304	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.020	I	ug/L	P238402	

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: P238402**

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0**Batch ID: P238108**

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238315

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238316

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P238185

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238293

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238225

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238350

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238351

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238120

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

Reference Method: SM 2120 B

Batch ID: P238095

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B

Batch ID: P238097

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P238410

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97

Batch ID: P238480

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 5310 B-00

Batch ID: P238173

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: P238402

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	47.1		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: P238315

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: P238316

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.6		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P238185

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238293

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238225

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: P238350

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238351

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238120

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

Reference Method: SM 2320 B-97

Batch ID: P238410

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

Reference Method: SM 5310 B-00

Batch ID: P238173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

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

Batch ID: P238402

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

Quality Assurance Report

Matrix Spike Accuracy

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

Batch ID: P238402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419098	Sucralose	65.4	66.5	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
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: P238315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419196	Chloride	99.7		P	90 - 110
1419317	Chloride	99.2	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419196	Sulfate	97.7		P	90 - 110
1419317	Sulfate	98.0	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P238185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419321	Ammonia-N	97.4	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419296	Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419320	NO2NO3-N	100	100	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419263	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419322	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419269	O-Phosphate-P	96.4	98.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Batch ID: P238173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1419262	Organic Carbon	103	103	P/P	85 - 115

Quality Assurance Report

Precision

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

Batch ID: P238402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419098	Sucralose	2.64	Spike	P	0 - 40

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P238108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419317	Turbidity	6.62	Sample	P	0 - 20

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

Quality Assurance Report

Precision

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238315

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419317	Chloride	0.204	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P238316

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419317	Sulfate	0.175	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P238185

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419321	Ammonia-N	1.15	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P238293

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419296	Kjeldahl Nitrogen	0.644	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P238225

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419320	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238350

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419263	Total-P	0.219	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P238351

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419322	Total-P	1.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P238120

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419269	O-Phosphate-P	1.21	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B

Batch ID: P238097

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419317	Color (true)	5.45	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P238410

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419197	Alkalinity	0.0498	Sample	P	0 - 20
1419292	Alkalinity	1.07	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P238480

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419005	TDS	5.30	Sample	P	0 - 10

Reference Method: SM 5310 B-00

Batch ID: P238173

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1419262	Organic Carbon	0.680	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: 1419304

Field Sample ID: WAKULLA SPRINGS

Reference Method

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

Surrogate

Sucralose-d6

% Rec.

60.2

Pass/Fail

P

Control Limits

40 - 150

Lab Sample ID: 1419305

Field Sample ID: WAKULLA TUBING B-TUNNEL

Reference Method

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

Surrogate

Sucralose-d6

% Rec.

53.2

Pass/Fail

P

Control Limits

40 - 150

Lab Sample ID: 1419306

Field Sample ID: WAKULLA TUBING C-TUNNEL

Reference Method

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

Surrogate

Sucralose-d6

% Rec.

54.2

Pass/Fail

P

Control Limits

40 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A44411

Included Lab Sample IDs: 1419292, 1419293, 1419294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.3	97.5	P/P	85 - 115
Color (true)	97.5	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A44414

Included Lab Sample IDs: 1419292, 1419293, 1419294

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A44418

Included Lab Sample IDs: 1419298, 1419299, 1419300

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

Reference Method: SM 5310 B-00

Run ID: A44436

Included Lab Sample IDs: 1419295, 1419296, 1419297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	98.4	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A44442

Included Lab Sample IDs: 1419295, 1419296, 1419297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A44448

Included Lab Sample IDs: 1419295, 1419296, 1419297

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A44479

Included Lab Sample IDs: 1419295, 1419296, 1419297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	104	P/P	90 - 110
Kjeldahl Nitrogen	102	96.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A44488

Included Lab Sample IDs: 1419292, 1419293, 1419294

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A44488

Included Lab Sample IDs: 1419292, 1419293, 1419294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.4	P/P	90 - 110
Sulfate	97.1	93.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A44498

Included Lab Sample IDs: 1419295, 1419296, 1419297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	92.9	97.1	P/P	90 - 110
Total-P	98.5	92.9	P/P	90 - 110

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

Run ID: A44521

Included Lab Sample IDs: 1419304, 1419305, 1419306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	102	P/P	70 - 140

Reference Method: SM 2320 B-97

Run ID: A44523

Included Lab Sample IDs: 1419292, 1419293, 1419294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	97.7	98.2	P/P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A44598

Included Lab Sample IDs: 1419301, 1419302, 1419303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	97.8	97.6	P/P	90 - 110
Calcium	100	101	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	102	100	P/P	90 - 110
Sodium	101	100	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	47.1	65.4 66.5			2.64
EPA 180.1 Rev. 2.0	Turbidity				6.62	
EPA 200.7 Rev. 4.4	Boron	97.1	101 100 101			1.35
	Calcium	101	102 102		0.772	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	
			LCS	SMP	MS		
EPA 200.7 Rev. 4.4	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	99.1	99.2	99.5	99.7		0.204
	Sulfate	95.6	98.0	97.8	97.7		0.175
EPA 350.1 Rev. 2.0	Ammonia-N	97.1	97.4	96.2			1.15
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	104	103			0.644
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	107	103	104			0.219
	Total-P	105	104	102			1.27
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	96.4	98.0			1.21
SM 2120 B	Color (true)					5.45	
SM 2320 B-97	Alkalinity	96.4				0.0498	
						1.07	
SM 2540 C-97	TDS					5.30	
SM 5310 B-00	Organic Carbon	98.2	103	103			0.680

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)	04/03/2012	04/04/2012	Hoor Shaik	04/05/2012	S. M. Reddy	1419304, 1419305, 1419306
EPA 180.1 Rev. 2.0	04/03/2012			04/04/2012 16:30	Yijie Li	1419292, 1419293, 1419294
EPA 200.7 Rev. 4.4	04/03/2012	04/09/2012	Elliott D. Healy	04/13/2012	Joshua Ayres	1419301, 1419302, 1419303
EPA 300.0 Rev. 2.1	04/03/2012			04/06/2012	Gary Dearman	1419292, 1419293, 1419294
EPA 350.1 Rev. 2.0	04/03/2012			04/06/2012	Peter D. Kaus	1419295, 1419296, 1419297
EPA 351.2 Rev. 2.0	04/03/2012	04/06/2012	Bryan A. Werth	04/09/2012	Pallavi R. Gadwal	1419295, 1419296, 1419297
EPA 353.2 Rev. 2.0	04/03/2012			04/06/2012	Sima Feizi	1419295, 1419296, 1419297
EPA 365.1 Rev. 2.0	04/03/2012	04/09/2012	Megan E. Faircloth	04/10/2012	Megan E. Faircloth	1419295, 1419296, 1419297
EPA 365.1 Rev. 2.0 dissolved	04/03/2012			04/04/2012 15:10	Pallavi R. Gadwal	1419298, 1419299
	04/03/2012			04/04/2012 15:11	Pallavi R. Gadwal	1419300
SM 2120 B	04/03/2012			04/04/2012 12:56	Rochelle Y Jackson	1419292
	04/03/2012			04/04/2012 12:57	Rochelle Y Jackson	1419293
	04/03/2012			04/04/2012 13:01	Rochelle Y Jackson	1419294
SM 2320 B-97	04/03/2012			04/11/2012	Dale L. Simmons	1419292, 1419293, 1419294
SM 2540 C-97	04/03/2012			04/08/2012	Yijie Li	1419292, 1419293, 1419294
SM 5310 B-00	04/03/2012			04/05/2012	Dale L. Simmons	1419295, 1419296, 1419297