

Chemical Analysis Report

WTRSHD-MGT-2013-08-21-01

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

Event Description: **SPRS1305 - Santa Fe Springs/GW Restoration**
Request ID: **RQ-2013-08-19-37**
Customer: **WTRSHD-MGT**
Project ID: **TMDL**

Send Reports to:
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2600 Blair Stone Rd.
Tallahassee, FL 32399-2400
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Date Certified: 06-SEP-2013 15:32



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-2013-08-21-78

Group: Nutrients

Job: TLH-2013-08-21-81

Group: Metals

Job: TLH-2013-08-21-82

Group: Pesticides

Sample Location: DUPLICATE 1**Collection Date/Time: 08/20/2013 01:36 PM****Field ID: DUPLICATE 1**

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1527878	EPA 180.1 Rev. 2.0	Turbidity	0.35		NTU	P256720	
	EPA 300.0	Bromide**	0.038	I	mg Br/L	P256906	
	EPA 300.0 Rev. 2.1	Chloride	4.0		mg Cl/L	P256867	
		Sulfate	3.5		mg SO4/L	P256870	
	SM 2120 B	Color (true)	2.5	U	PCU	P256722	
	SM 2320 B-97	Alkalinity	64		mg CaCO3/L	P256765	
	SM 2540 C-97	TDS	87		mg/L	P256948	
	SM 2540 D-97	TSS	2	U	mg/L	P256955	
	SM 4500 F-C-97	Fluoride	0.066	I	mg F/L	P256768	
1527883	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P256883	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P256862	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.36		mg N/L	P257117	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P256908	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P256829	
1527888	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P256702	
1527909	EPA 200.7 Rev. 4.4	Calcium	25.4		mg/L	P256824	
		Magnesium	0.77		mg/L	P256824	
		Potassium	1.4		mg/L	P256824	
		Sodium	5.3		mg/L	P256824	
	EPA 200.8 Rev. 5.4	Boron**	9.5		ug/L	P256976	
1527914	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P256898	

Ref. Method and Comment:

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

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: MFS AS**Collection Date/Time: 08/20/2013 04:18 PM****Field ID: MFS MW # 6**

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1527879	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P256720	
	EPA 300.0	Bromide**	0.016	U	mg Br/L	P256906	
	EPA 300.0 Rev. 2.1	Chloride	3.2		mg Cl/L	P256867	
		Sulfate	2.7		mg SO4/L	P256870	
	SM 2120 B	Color (true)	2.5	U	PCU	P256722	
	SM 2320 B-97	Alkalinity	124		mg CaCO3/L	P256765	
	SM 2540 C-97	TDS	134		mg/L	P256948	
	SM 2540 D-97	TSS	2	I	mg/L	P256955	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P256768	
1527884	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P256883	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.10	I	mg N/L	P256862	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P257117	
	EPA 365.1 Rev. 2.0	Total-P	0.072		mg P/L	P256908	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P256829	
1527889	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.064		mg P/L	P256702	

Field ID: MFS MW # 6

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1527910	EPA 200.7 Rev. 4.4	Calcium	52.8		mg/L	P256824	
		Magnesium	0.98		mg/L	P256824	
		Potassium	0.30	U	mg/L	P256824	
		Sodium	2.1		mg/L	P256824	
	EPA 200.8 Rev. 5.4	Boron**	10.5		ug/L	P256976	
1527915	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P256898	

Ref. Method and Comment:

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

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: MFS NS**Collection Date/Time: 08/20/2013 02:53 PM****Field ID: MFS MW # 20**

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1527880	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P256720	
	EPA 300.0	Bromide**	0.016	U	mg Br/L	P256906	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P256867	
		Sulfate	1.8		mg SO4/L	P256870	
		Color (true)	2.5	U	PCU	P256722	
	SM 2320 B-97	Alkalinity	112		mg CaCO3/L	P256765	
	SM 2540 C-97	TDS	126		mg/L	P256948	
	SM 2540 D-97	TSS	2	U	mg/L	P256955	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P256768	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P256883	
1527885	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P256862	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P257117	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P256908	
	SM 5310 B-00	Organic Carbon	0.55	I	mg C/L	P256829	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P256702	
1527911	EPA 200.7 Rev. 4.4	Calcium	46.4		mg/L	P256824	
		Magnesium	1.31		mg/L	P256824	
		Potassium	0.30	U	mg/L	P256824	
		Sodium	2.2		mg/L	P256824	
	EPA 200.8 Rev. 5.4	Boron**	9.8		ug/L	P256976	
1527916	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P256898	

Ref. Method and Comment:

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

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: MSFMW2**Collection Date/Time: 08/20/2013 01:36 PM****Field ID: MSFMW2**

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1527877	EPA 180.1 Rev. 2.0	Turbidity	0.35		NTU	P256720	
	EPA 300.0	Bromide**	0.038	I	mg Br/L	P256906	
	EPA 300.0 Rev. 2.1	Chloride	4.0		mg Cl/L	P256867	

Field ID: MSFMW2

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1527877	EPA 300.0 Rev. 2.1	Sulfate	3.5		mg SO4/L	P256870	
	SM 2120 B	Color (true)	2.5	U	PCU	P256722	
	SM 2320 B-97	Alkalinity	64		mg CaCO3/L	P256765	
	SM 2540 C-97	TDS	89		mg/L	P256948	
	SM 2540 D-97	TSS	2	U	mg/L	P256955	
	SM 4500 F-C-97	Fluoride	0.066	I	mg F/L	P256768	
1527882	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P256883	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P256862	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.36		mg N/L	P257117	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P256908	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P256829	
1527887	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P256702	
1527908	EPA 200.7 Rev. 4.4	Calcium	25.2		mg/L	P256824	
		Magnesium	0.78		mg/L	P256824	
		Potassium	1.4		mg/L	P256824	
		Sodium	5.3		mg/L	P256824	
	EPA 200.8 Rev. 5.4	Boron**	9.7		ug/L	P256976	
1527913	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P256898	

Ref. Method and Comment:

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

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: MSFMW3**Collection Date/Time: 08/20/2013 11:49 AM****Field ID: MSFMW3**

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1527876	EPA 180.1 Rev. 2.0	Turbidity	0.15		NTU	P256720	
	EPA 300.0	Bromide**	0.068	A	mg Br/L	P256906	
	EPA 300.0 Rev. 2.1	Chloride	3.8	A	mg Cl/L	P256867	
		Sulfate	8.0	A	mg SO4/L	P256870	
	SM 2120 B	Color (true)	2.5	U	PCU	P256722	
	SM 2320 B-97	Alkalinity	44		mg CaCO3/L	P256765	
	SM 2540 C-97	TDS	80	A	mg/L	P256948	
	SM 2540 D-97	TSS	2	U	mg/L	P256955	
	SM 4500 F-C-97	Fluoride	0.050	I	mg F/L	P256768	
1527881	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P256883	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.10	I	mg N/L	P256862	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.8		mg N/L	P257117	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P256908	
	SM 5310 B-00	Organic Carbon	0.61	I	mg C/L	P256828	
1527886	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P256702	
1527907	EPA 200.7 Rev. 4.4	Calcium	27.7		mg/L	P256824	
		Magnesium	0.51		mg/L	P256824	
		Potassium	5.9		mg/L	P256824	
		Sodium	6.3		mg/L	P256824	

Field ID: MSFMW3

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1527907	EPA 200.8 Rev. 5.4	Boron**	14.2		ug/L	P256976	
1527912	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P256898	

Ref. Method and Comment:

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

SM 2540 D-97: 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: P256898

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P256720

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P256824

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: P256976

Component	Result	Code	Units
Boron	2.0	U	ug/L

Reference Method: EPA 300.0

Batch ID: P256906

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P256867

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P256870

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P256883

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P256862

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P257117

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: P256908

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P256702

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

Reference Method: SM 2120 B

Batch ID: P256722

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P256765

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

Reference Method: SM 2540 C-97

Batch ID: P256948

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97

Batch ID: P256955

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97

Batch ID: P256768

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00

Batch ID: P256828

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00

Batch ID: P256829

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

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

Batch ID: P256898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	57.6	48.4	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P256824

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	102		P	85 - 115
Sodium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P256976

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Boron	99.9		P	85 - 115

Reference Method: EPA 300.0

Batch ID: P256906

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P256867

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P256870

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P256883

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P256862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P257117

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: P256908

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P256702

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

Reference Method: SM 2320 B-97

Batch ID: P256765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Alkalinity	97.4		P	85 - 115

Reference Method: SM 4500 F-C-97

Batch ID: P256768

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P256828

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00

Batch ID: P256829

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

Quality Assurance Report Matrix Spike Accuracy

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

Batch ID: P256898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527609	Sucralose	55.6	66.8	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P256824

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527907	Calcium	99.8		P	80 - 120
1527907	Magnesium	104	105	P/P	80 - 120
1527907	Potassium	99.7		P	80 - 120
1527907	Sodium	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P256976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527907	Boron	97.2	101	P/P	80 - 120

Reference Method: EPA 300.0

Batch ID: P256906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527876	Bromide	98.8		P	90 - 110
1528299	Bromide	91.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P256867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527876	Chloride	97.6		P	90 - 110
1528299	Chloride	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P256870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527876	Sulfate	92.6		P	90 - 110
1528299	Sulfate	94.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P256883

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P256883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527869	Ammonia-N	98.5	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P256862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527881	Kjeldahl Nitrogen	92.5	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P257117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527768	NO2NO3-N	96.3	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P256908

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527952	Total-P	100	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P256702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527864	O-Phosphate-P	98.7	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Batch ID: P256768

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527536	Fluoride	100	101	P/P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P256828

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527562	Organic Carbon	99.9	98.2	P/P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P256829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1527882	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

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

Batch ID: P256898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527609	Sucralose	11.0	Spike	P	0 - 30
LFB	Sucralose	17.4	LCS	P	0 - 30

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P256720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527861	Turbidity	0.578	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P256824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527907	Calcium	0.373	Spike	P	0 - 20
1527907	Magnesium	0.833	Spike	P	0 - 20
1527907	Potassium	0.839	Spike	P	0 - 20
1527907	Sodium	0.204	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P256976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527907	Boron	3.24	Spike	P	0 - 20

Reference Method: EPA 300.0

Batch ID: P256906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527876	Bromide	1.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P256867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527876	Chloride	0.110	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P256870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527876	Sulfate	0.868	Sample	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P256883

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527869	Ammonia-N	0.427	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P256862

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527881	Kjeldahl Nitrogen	13.3	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P257117

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527768	NO2NO3-N	2.43	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P256908

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527952	Total-P	2.59	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P256702

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527864	O-Phosphate-P	0.412	Spike	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P256765

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527534	Alkalinity	2.08	Sample	P	0 - 20
1527536	Alkalinity	2.03	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P256948

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527876	TDS	6.29	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97

Batch ID: P256768

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527536	Fluoride	0.490	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00

Batch ID: P256828

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527562	Organic Carbon	1.07	Spike	P	0 - 20

Reference Method: SM 5310 B-00

Batch ID: P256829

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1527882	Organic Carbon	0.941	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: 1527912

Field Sample ID: MSFMW3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	61.9	P	40 - 150

Lab Sample ID: 1527913

Field Sample ID: MSFMW2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	50.0	P	40 - 150

Lab Sample ID: 1527914

Field Sample ID: DUPLICATE 1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	48.1	P	40 - 150

Lab Sample ID: 1527915

Field Sample ID: MFS MW # 6

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	55.9	P	40 - 150

Lab Sample ID: 1527916

Field Sample ID: MFS MW # 20

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	59.4	P	40 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report

Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A52040

Included Lab Sample IDs: 1527886, 1527887, 1527888, 1527889, 1527890

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.3	P/P	90 - 110
O-Phosphate-P	98.5	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A52047

Included Lab Sample IDs: 1527876, 1527877, 1527878, 1527879, 1527880

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

Reference Method: SM 2120 B

Run ID: A52048

Included Lab Sample IDs: 1527876, 1527877, 1527878, 1527879, 1527880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	97.1	P/P	85 - 115

Reference Method: SM 2320 B-97

Run ID: A52072

Included Lab Sample IDs: 1527876, 1527877, 1527878, 1527879, 1527880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	98.0	95.1	P/P	85 - 115

Reference Method: SM 4500 F-C-97

Run ID: A52072

Included Lab Sample IDs: 1527876, 1527877, 1527878, 1527879, 1527880

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A52091

Included Lab Sample IDs: 1527907, 1527908, 1527909, 1527910, 1527911

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

Reference Method: SM 5310 B-00

Run ID: A52093

Included Lab Sample IDs: 1527881, 1527882, 1527883, 1527884, 1527885

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	98.8	P/P	90 - 110
Organic Carbon	98.8	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A52106

Included Lab Sample IDs: 1527881, 1527882, 1527883, 1527884, 1527885

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	104	P/P	90 - 110
Kjeldahl Nitrogen	99.0	97.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A52109

Included Lab Sample IDs: 1527876, 1527877, 1527878, 1527879, 1527880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.1	99.5	P/P	90 - 110
Chloride	99.5	99.3	P/P	90 - 110
Sulfate	96.6	97.3	P/P	90 - 110
Sulfate	99.6	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A52115

Included Lab Sample IDs: 1527881, 1527882, 1527883, 1527884, 1527885

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

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

Run ID: A52122

Included Lab Sample IDs: 1527912, 1527913, 1527914, 1527915, 1527916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	94.0	P/P	70 - 150
Sucralose	94.0	109	P/P	70 - 150

Reference Method: EPA 300.0

Run ID: A52123

Included Lab Sample IDs: 1527876, 1527877, 1527878, 1527879, 1527880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	92.0	96.1	P/P	90 - 110
Bromide	96.1	93.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A52124

Included Lab Sample IDs: 1527884, 1527885

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A52133

Included Lab Sample IDs: 1527881, 1527882, 1527883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.2	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A52157

Included Lab Sample IDs: 1527907, 1527908, 1527909, 1527910, 1527911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	101	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A52220

Included Lab Sample IDs: 1527881, 1527882, 1527883, 1527884, 1527885

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	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		MS
							SMP		
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose	57.6	48.4	55.6	66.8	17.4			11.0
EPA 180.1 Rev. 2.0	Turbidity						0.578		
EPA 200.7 Rev. 4.4	Calcium	103		99.8					0.373
	Magnesium	106		104	105				0.833
	Potassium	102		99.7					0.839
	Sodium	103		102					0.204
EPA 200.8 Rev. 5.4	Boron	99.9		97.2	101				3.24
EPA 300.0	Bromide	100		98.8	91.7		1.11		
EPA 300.0 Rev. 2.1	Chloride	97.8		97.6	97.4		0.110		
	Sulfate	94.4		92.6	94.7		0.868		
EPA 350.1 Rev. 2.0	Ammonia-N	98.0		98.5	99.2				0.427
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.5		92.5	107				13.3
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5		96.3	98.8				2.43
EPA 365.1 Rev. 2.0	Total-P	107		100	105				2.59
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0		98.7	99.2				0.412
SM 2320 B-97	Alkalinity	97.4					2.03	2.08	
SM 2540 C-97	TDS						6.29		
SM 4500 F-C-97	Fluoride	100		100	101				0.490
SM 5310 B-00	Organic Carbon	99.2		99.9	98.2				1.07
	Organic Carbon	100		100	101				0.941

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	1527912, 1527913, 1527914, 1527915, 1527916
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1527876, 1527877, 1527878, 1527879, 1527880
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1527907, 1527908, 1527909, 1527910, 1527911

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	1527907, 1527908, 1527909, 1527910, 1527911
EPA 300.0 / E31780	Bromide in aqueous matrices	1527876, 1527877, 1527878, 1527879, 1527880
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1527876, 1527877, 1527878, 1527879, 1527880
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1527876, 1527877, 1527878, 1527879, 1527880
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1527881, 1527882, 1527883, 1527884, 1527885
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1527881, 1527882, 1527883, 1527884, 1527885
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1527881, 1527882, 1527883, 1527884, 1527885
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1527881, 1527882, 1527883, 1527884, 1527885
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1527886, 1527887, 1527888, 1527889, 1527890
SM 2120 B / E31780	True Color measured at 450 nm	1527876, 1527877, 1527878, 1527879, 1527880
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1527876, 1527877, 1527878, 1527879, 1527880
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1527876, 1527877, 1527878, 1527879, 1527880
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1527876, 1527877, 1527878, 1527879, 1527880
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1527876, 1527877, 1527878, 1527879, 1527880
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1527881, 1527882, 1527883, 1527884, 1527885

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)	08/21/2013	08/26/2013	Hoor Shaik	08/26/2013	S. M. Reddy	1527912, 1527913, 1527914, 1527915, 1527916
EPA 180.1 Rev. 2.0	08/21/2013			08/21/2013 16:43	Blanca Fach	1527876, 1527877, 1527878, 1527879, 1527880
EPA 200.7 Rev. 4.4	08/21/2013	08/22/2013	Elliott D. Healy	08/23/2013	Joshua Ayres	1527907, 1527908, 1527909, 1527910, 1527911
EPA 200.8 Rev. 5.4	08/21/2013	08/22/2013	Elliott D. Healy	08/26/2013	Charles J. Peterson	1527907, 1527908, 1527909, 1527910, 1527911
EPA 300.0	08/21/2013			08/23/2013	Gary Dearman	1527876, 1527877, 1527878, 1527879, 1527880
EPA 300.0 Rev. 2.1	08/21/2013			08/23/2013	Gary Dearman	1527876, 1527877, 1527878, 1527879, 1527880
EPA 350.1 Rev. 2.0	08/21/2013			08/26/2013	Diana M. Turner	1527881, 1527882, 1527883, 1527884, 1527885
EPA 351.2 Rev. 2.0	08/21/2013	08/23/2013	Christopher Armour	08/26/2013	Bryan A. Werth	1527881, 1527882, 1527883, 1527884, 1527885
EPA 353.2 Rev. 2.0	08/21/2013			08/30/2013	Sima Feizi	1527881, 1527882, 1527883, 1527884, 1527885
EPA 365.1 Rev. 2.0	08/21/2013	08/23/2013	Christopher Armour	08/26/2013	Pallavi R. Gadwal	1527884, 1527885
	08/21/2013	08/23/2013	Christopher Armour	08/27/2013	Pallavi R. Gadwal	1527881, 1527882, 1527883
EPA 365.1 Rev. 2.0 dissolved	08/21/2013			08/21/2013 15:50	Bryan A. Werth	1527886
	08/21/2013			08/21/2013 15:51	Bryan A. Werth	1527887
	08/21/2013			08/21/2013 15:52	Bryan A. Werth	1527888
	08/21/2013			08/21/2013 15:56	Bryan A. Werth	1527889
	08/21/2013			08/21/2013 15:57	Bryan A. Werth	1527890
SM 2120 B	08/21/2013			08/22/2013 09:34	Rochelle Y Jackson	1527876
	08/21/2013			08/22/2013 09:35	Rochelle Y Jackson	1527877
	08/21/2013			08/22/2013 09:36	Rochelle Y Jackson	1527878
	08/21/2013			08/22/2013 09:37	Rochelle Y Jackson	1527879
	08/21/2013			08/22/2013 09:38	Rochelle Y Jackson	1527880
SM 2320 B-97	08/21/2013			08/22/2013	Dale L. Simmons	1527876, 1527877, 1527878, 1527879, 1527880
SM 2540 C-97	08/21/2013			08/23/2013	Yijie Li	1527876, 1527877, 1527878, 1527879, 1527880
SM 2540 D-97	08/21/2013			08/23/2013	Yijie Li	1527876, 1527877, 1527878, 1527879, 1527880
SM 4500 F-C-97	08/21/2013			08/22/2013	Dale L. Simmons	1527876, 1527877, 1527878, 1527879, 1527880
SM 5310 B-00	08/21/2013			08/24/2013	Rochelle Y Jackson	1527881, 1527882, 1527883, 1527884, 1527885