

Chemical Analysis Report

SW-DIST-2016-05-20-01

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

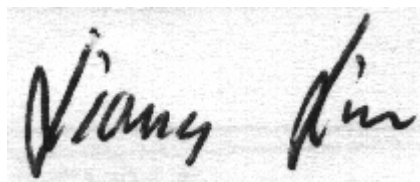
Event Description: **1819 FRYEUNK**
Request ID: **RQ-2016-05-16-46**
Customer: **SW-DIST**
Project ID: **SCIREF**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 15-JUN-2016 14:14

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

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.

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.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- 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 and/or the analysis did not meet established quality control criteria.
- 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).

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.

Sample Location: HILLSBOROUGH R. REF. SITE IN STATE PARK Collection Date/Time: 05/19/2016 11:50

Field ID: HILSTP5REF

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1800934	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P304730	
	EPA 300.0	Bromide**	0.11		mg Br/L	P305053	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P305099	
		Sulfate	16		mg SO4/L	P305470	
	SM 2120 B	Color (true)	14		PCU	P304734	
	SM 2320 B-97	Total Alkalinity	159		mg CaCO3/L	P305294	
	SM 2540 C-97	TDS	244		mg/L	P305270	
	SM 2540 D-97	TSS	2	I	mg/L	P305161	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P305297	
1800935	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P305263	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P305227	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.2		mg N/L	P304988	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P305541	
	SM 5310 B-00	Organic Carbon	3.0		mg C/L	P305289	
1800940	EPA 200.7 Rev. 4.4	Calcium	62.1		mg/L	P304919	
		Magnesium	5.31		mg/L	P304919	
		Potassium	1.7		mg/L	P304919	
		Sodium	13.0		mg/L	P304919	
1800954	EPA 8321B	Diuron	0.0074	I	ug/L	P304518	
		Fenuron	0.0080	U	ug/L	P304518	
		Imidacloprid	0.0040	U	ug/L	P304518	
		Linuron	0.0040	U	ug/L	P304518	
		Sucralose**	1.6		ug/L	P304517	
		Acetaminophen**	0.0040	U	ug/L	P304518	
		Carbamazepine**	0.0064		ug/L	P304518	
		Primidone**	0.0080	U	ug/L	P304518	
		Fluridone**	0.018		ug/L	P304518	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Matrix spike recovery data for one of two spiked samples is unavailable due to high 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: EPA 180.1 Rev. 2.0

Batch ID: P304730

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P304919

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304919

Component	Result	Code	Units
Sodium	0.50	U	mg/L

Reference Method: EPA 300.0
Batch ID: P305053

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305099

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305470

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305263

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305227

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304988

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305541

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

Reference Method: EPA 8321B
Batch ID: P304517

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P304518

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L

Reference Method: SM 2120 B
Batch ID: P304734

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P305294

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P305270

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305161

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P305297

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P305289

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

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304919

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Magnesium	97.6		P	85 - 115
Potassium	97.9		P	85 - 115
Sodium	98.1		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P305053

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305099

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: P305470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305263

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305227

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304988

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305541

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

Reference Method: EPA 8321B
Batch ID: P304517

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	99.6		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P304518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	84.4		P	40 - 140
Carbamazepine	99.2		P	40 - 140
Diuron	80.0		P	40 - 140
Fenuron	102		P	40 - 140
Fluridone	88.0		P	40 - 140
Imidacloprid	92.0		P	40 - 160
Linuron	67.6		P	40 - 140
Primidone	89.2		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P305294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P305297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P305289

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800874	Calcium	102		P	80 - 120
1800874	Magnesium	95.0		P	80 - 120
1800874	Potassium	96.1		P	80 - 120
1800874	Sodium	96.4		P	80 - 120
1800940	Calcium	105	101	P/P	80 - 120
1800940	Magnesium	95.3	93.5	P/P	80 - 120
1800940	Potassium	98.3	97.0	P/P	80 - 120
1800940	Sodium	98.7	97.5	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P305053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1799838	Bromide	101	102	P/P	90 - 110
1800687	Bromide	103		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1799838	Chloride	98.7	98.7	P/P	90 - 110
1800687	Chloride	96.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800934	Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800850	Ammonia-N	98.1	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800850	Kjeldahl Nitrogen	94.4	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800856	NO2NO3-N	97.6	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800849	Total-P	106	102	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P304517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1799902	Sucralose	49.5	51.5	P/P	40 - 140

Reference Method: EPA 8321B
Batch ID: P304518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1799902	Acetaminophen	72.4	73.2	P/P	40 - 140
1799902	Carbamazepine	76.1	81.7	P/P	40 - 140
1799902	Diuron	76.0	77.6	P/P	40 - 140
1799902	Fenuron	68.0	72.8	P/P	40 - 140
1799902	Fluridone	77.9	87.1	P/P	40 - 140
1799902	Imidacloprid	118	124	P/P	40 - 160
1799902	Linuron	62.4	73.2	P/P	40 - 140
1799902	Primidone	78.0	88.4	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P305297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801212	Fluoride	96.7	96.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P305289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800849	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P304730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800897	Turbidity	1.93	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800940	Calcium	2.25	Spike	P	0 - 20
1800940	Magnesium	1.70	Spike	P	0 - 20
1800940	Potassium	1.12	Spike	P	0 - 20
1800940	Sodium	1.07	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P305053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799838	Bromide	0.255	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799838	Chloride	0.00136	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800699	Sulfate	1.25	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800850	Ammonia-N	1.78	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800850	Kjeldahl Nitrogen	0.945	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800856	NO2NO3-N	0.741	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800849	Total-P	3.36	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P304517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799902	Sucralose	1.42	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P304518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799902	Acetaminophen	1.10	Spike	P	0 - 30
1799902	Carbamazepine	7.00	Spike	P	0 - 30
1799902	Diuron	2.08	Spike	P	0 - 30
1799902	Fenuron	6.82	Spike	P	0 - 30
1799902	Fluridone	10.4	Spike	P	0 - 30
1799902	Imidacloprid	4.64	Spike	P	0 - 30
1799902	Linuron	15.9	Spike	P	0 - 30
1799902	Primidone	12.5	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P304734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800897	Color (true)	0.988	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P305294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801212	Total Alkalinity	0.969	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P305270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800848	TDS	9.63	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P305297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801212	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P305289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800849	Organic Carbon	0.129	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: 1800954
Field Sample ID: HILSTP5REF

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	79.4	P	30 - 150
EPA 8321B	Acetaminophen-d4	79.4	P	30 - 150
EPA 8321B	Carbamazepine-d10	98.4	P	40 - 160
EPA 8321B	Carbamazepine-d10	98.4	P	40 - 160
EPA 8321B	Diuron-d6	68.0	P	40 - 150
EPA 8321B	Diuron-d6	68.0	P	40 - 150
EPA 8321B	Primidone-d5	88.8	P	40 - 150
EPA 8321B	Primidone-d5	88.8	P	40 - 150
EPA 8321B	Sucralose-d6	96.5	P	40 - 150
EPA 8321B	Sucralose-d6	96.5	P	40 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69605

Included Lab Sample IDs: 1800934

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

Reference Method: SM 2120 B

Run ID: A69606

Included Lab Sample IDs: 1800934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.6	100	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A69672

Included Lab Sample IDs: 1800954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	100	94.5	P/P	70 - 150

Reference Method: EPA 300.0

Run ID: A69676

Included Lab Sample IDs: 1800934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	95.2	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69676

Included Lab Sample IDs: 1800934

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

Reference Method: EPA 8321B

Run ID: A69679

Included Lab Sample IDs: 1800954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	100	102	P/P	60 - 150
Carbamazepine	120	114	P/P	60 - 150
Diuron	92.4	106	P/P	60 - 150
Fenuron	108	110	P/P	60 - 150
Fluridone	95.6	100	P/P	60 - 150
Imidacloprid	92.0	88.4	P/P	60 - 150
Linuron	102	98.4	P/P	60 - 150
Primidone	89.2	94.4	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69684

Included Lab Sample IDs: 1800935

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A69726

Included Lab Sample IDs: 1800940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.3	96.2	P/P	90 - 110
Magnesium	97.9	95.5	P/P	90 - 110
Potassium	98.2	98.0	P/P	90 - 110
Sodium	97.6	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69751

Included Lab Sample IDs: 1800935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A69765

Included Lab Sample IDs: 1800935

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

Reference Method: SM 2320 B-97

Run ID: A69766

Included Lab Sample IDs: 1800934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69766

Included Lab Sample IDs: 1800934

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69796

Included Lab Sample IDs: 1800935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.0	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69814

Included Lab Sample IDs: 1800934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	98.5	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69885

Included Lab Sample IDs: 1800935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	103	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
EPA 180.1 Rev. 2.0	Turbidity				1.93	
EPA 200.7 Rev. 4.4	Calcium	104	102 105 101			2.25
	Magnesium	97.6	95.0 95.3 93.5			1.70
	Potassium	97.9	96.1 98.3 97.0			1.12
	Sodium	98.1	96.4 98.7 97.5			1.07
EPA 300.0	Bromide	102	101 102 103			0.255
EPA 300.0 Rev. 2.1	Chloride	99.1	98.7 98.7 96.7			0.0013
	Sulfate	99.6	97.1		1.25	
EPA 350.1 Rev. 2.0	Ammonia-N	99.5	98.1 101			1.78
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	94.4 95.6			0.945
EPA 353.2 Rev. 2.0	NO2NO3-N	101	97.6 96.6			0.741
EPA 365.1 Rev. 2.0	Total-P	100	106 102			3.36
EPA 8321B	Acetaminophen	84.4	72.4 73.2			1.10
	Carbamazepine	99.2	76.1 81.7			7.00
	Diuron	80.0	76.0 77.6			2.08
	Fenuron	102	68.0 72.8			6.82
	Fluridone	88.0	77.9 87.1			10.4
	Imidacloprid	92.0	118 124			4.64
	Linuron	67.6	62.4 73.2			15.9
	Primidone	89.2	78.0 88.4			12.5
	Sucralose	99.6	49.5 51.5			1.42
SM 2120 B	Color (true)				0.988	
SM 2320 B-97	Total Alkalinity	102			0.969	
SM 2540 C-97	TDS				9.63	
SM 4500 F-C-97	Fluoride	96.1	96.7 96.7			0.0
SM 5310 B-00	Organic Carbon	101	100 101			0.129

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1800934
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1800940
EPA 300.0 / E31780	Bromide in aqueous matrices	1800934
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1800934
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1800934

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1800935
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1800935
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1800935
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1800935
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1800954
EPA 8321B / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1800954
SM 2120 B / E31780	True Color measured at 450 nm	1800934
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1800934
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1800934
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1800934
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1800934
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1800935

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	05/20/2016			05/20/2016 15:55	Sima Feizi	1800934
EPA 200.7 Rev. 4.4	05/20/2016	05/24/2016	Elliott D. Healy	05/26/2016	Joshua Ayres	1800940
EPA 300.0	05/20/2016			05/25/2016	Ping Hua	1800934
EPA 300.0 Rev. 2.1	05/20/2016			05/25/2016	Ping Hua	1800934
	05/20/2016			05/31/2016	Elisa J Lutz	1800934
EPA 350.1 Rev. 2.0	05/20/2016			05/27/2016	Diana M. Turner	1800935
EPA 351.2 Rev. 2.0	05/20/2016	05/31/2016	Sofia Elnemr	06/01/2016	Christopher Armour	1800935
EPA 353.2 Rev. 2.0	05/20/2016			05/25/2016	Peter D. Kaus	1800935
EPA 365.1 Rev. 2.0	05/20/2016	06/03/2016	Vijayalakshmi Reddy	06/06/2016	Rochelle Y Jackson	1800935
EPA 8321B	05/20/2016	05/23/2016	Hoor Shaik	05/24/2016	Juyoung Kim	1800954
	05/20/2016	05/23/2016	Hoor Shaik	05/25/2016	Mohammad Ghaffari	1800954
SM 2120 B	05/20/2016			05/20/2016 15:56	Rochelle Y Jackson	1800934
SM 2320 B-97	05/20/2016			05/28/2016	Dale L. Simmons	1800934
SM 2540 C-97	05/20/2016			05/25/2016	Yijie Li	1800934
SM 2540 D-97	05/20/2016			05/25/2016	Yijie Li	1800934
SM 4500 F-C-97	05/20/2016			05/28/2016	Dale L. Simmons	1800934
SM 5310 B-00	05/20/2016			05/28/2016	Diana M. Turner	1800935