

Chemical Analysis Report

SW-DIST-2016-11-17-01

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

Event Description: **Ref SCI**
Request ID: **RQ-2016-11-14-42**
Customer: **SW-DIST**
Project ID: **SCIREF**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 13-DEC-2016 11:47



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: FISHHAWK Creek Ref Site

Collection Date/Time: 11/16/2016 12:00

Field ID: FISHWKREF

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1851092	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P315419	
	EPA 300.0	Bromide**	0.35		mg Br/L	P316406	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P315657	
		Sulfate	37		mg SO4/L	P315658	
	SM 2120 B	Color (true)	47		PCU	P315395	
	SM 2320 B-97	Total Alkalinity	44		mg CaCO3/L	P315673	
	SM 2540 C-97	TDS	179		mg/L	P316003	
	SM 2540 D-97	TSS	2	I	mg/L	P315755	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P315676	
1851093	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P315786	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P316146	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P315841	
	EPA 365.1 Rev. 2.0	Total-P	0.39		mg P/L	P315908	
	SM 5310 B-00	Organic Carbon	8.7		mg C/L	P315408	
1851112	EPA 200.7 Rev. 4.4	Calcium	21.8		mg/L	P315540	
		Magnesium	9.49		mg/L	P315540	
		Potassium	4.5		mg/L	P315540	
		Sodium	7.9		mg/L	P315540	
1851113	EPA 8321B	Sucralose**	0.062		ug/L	P315252	
	USGS O-2060-01	Diuron	0.0095	I	ug/L	P315252	
		Fenuron	0.0080	U	ug/L	P315252	
		Imidacloprid	0.072		ug/L	P315252	
		Linuron	0.0040	U	ug/L	P315252	
		Acetaminophen**	0.0040	U	ug/L	P315252	
		Carbamazepine**	4.0E-04	U	ug/L	P315252	
		Primidone**	0.0080	U	ug/L	P315252	
		Fluridone**	4.0E-04	U	ug/L	P315252	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P315419

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P315540

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P315540

Component	Result	Code	Units
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L

Reference Method: EPA 300.0
Batch ID: P316406

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315657

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315658

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315786

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316146

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315841

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315908

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

Reference Method: EPA 8321B
Batch ID: P315252

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P315395

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P315673

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

Reference Method: SM 2540 C-97
Batch ID: P316003

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P315755

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P315676

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P315408

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

Reference Method: USGS O-2060-01
Batch ID: P315252

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	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

Quality Assurance Report
Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P315540

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	99.7		P	85 - 115
Sodium	101		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P316406

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315657

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315658

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315786

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316146

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: P315841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315908

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.3		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P315252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	85.6		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P315673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P315676

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P315408

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

Reference Method: USGS O-2060-01
Batch ID: P315252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	65.6		P	40 - 140
Carbamazepine	111		P	40 - 140
Diuron	96.0		P	40 - 140
Fenuron	101		P	40 - 140
Fluridone	102		P	40 - 140
Imidacloprid	89.2		P	40 - 160
Linuron	103		P	40 - 140
Primidone	87.6		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P315540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850225	Calcium	104		P	80 - 120
1850225	Magnesium	102		P	80 - 120
1850225	Potassium	101		P	80 - 120
1850225	Sodium	104		P	80 - 120
1850865	Calcium	101	103	P/P	80 - 120
1850865	Magnesium	98.4	101	P/P	80 - 120
1850865	Potassium	99.0	100	P/P	80 - 120
1850865	Sodium	101	103	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P316406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851092	Bromide	100	99.9	P/P	90 - 110
1851273	Bromide	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850164	Chloride	100		P	90 - 110
1851092	Chloride	102	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315658

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850164	Sulfate	94.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850629	Ammonia-N	97.6	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850951	Kjeldahl Nitrogen	103	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850630	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P315252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850602	Sucralose	78.9	80.3	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P315676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851136	Fluoride	100	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P315408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850840	Organic Carbon	97.2	99.7	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P315252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850602	Acetaminophen	74.8	75.2	P/P	40 - 140
1850602	Carbamazepine	83.1	80.3	P/P	40 - 140
1850602	Diuron	68.0	57.6	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P315252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850602	Fenuron	77.6	76.8	P/P	40 - 140
1850602	Fluridone	72.7	65.9	P/P	40 - 140
1850602	Imidacloprid	128	130	P/P	40 - 160
1850602	Linuron	79.6	60.4	P/P	40 - 140
1850602	Primidone	86.4	84.0	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P315419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851072	Turbidity	3.34	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P315540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850865	Calcium	1.79	Spike	P	0 - 20
1850865	Magnesium	2.31	Spike	P	0 - 20
1850865	Potassium	1.12	Spike	P	0 - 20
1850865	Sodium	1.94	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P316406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851092	Bromide	0.278	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851092	Chloride	1.00	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851092	Sulfate	1.33	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850629	Ammonia-N	2.17	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850951	Kjeldahl Nitrogen	2.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850630	NO2NO3-N	1.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851121	Total-P	1.16	Sample	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P315252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850602	Sucralose	1.47	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P315395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851130	Color (true)	0.514	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P315673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851136	Total Alkalinity	0.452	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P316003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850879	TDS	2.14	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
 Batch ID: P315676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851136	Fluoride	0.494	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P315408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850840	Organic Carbon	2.45	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P315252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850602	Acetaminophen	0.533	Spike	P	0 - 30
1850602	Carbamazepine	3.41	Spike	P	0 - 30
1850602	Diuron	16.6	Spike	P	0 - 30
1850602	Fenuron	1.04	Spike	P	0 - 30
1850602	Fluridone	9.37	Spike	P	0 - 30
1850602	Imidacloprid	1.56	Spike	P	0 - 30
1850602	Linuron	27.4	Spike	P	0 - 30
1850602	Primidone	2.82	Spike	P	0 - 30

* 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: 1851113
 Field Sample ID: FISHWKREF

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	84.6	P	30 - 150
EPA 8321B	Carbamazepine-d10	122	P	40 - 160
EPA 8321B	Diuron-d6	77.8	P	40 - 150
EPA 8321B	Primidone-d5	115	P	40 - 150
EPA 8321B	Sucralose-d6	114	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	84.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	122	P	40 - 160
USGS O-2060-01	Diuron-d6	77.8	P	40 - 150
USGS O-2060-01	Primidone-d5	115	P	40 - 150
USGS O-2060-01	Sucralose-d6	114	P	40 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A72873
Included Lab Sample IDs: 1851092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115

Reference Method: SM 5310 B-00
Run ID: A72882
Included Lab Sample IDs: 1851093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A72884
Included Lab Sample IDs: 1851092

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

Reference Method: USGS O-2060-01
Run ID: A72928
Included Lab Sample IDs: 1851113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	94.8	110	P/P	60 - 150
Carbamazepine	138	137	P/P	60 - 150
Diuron	113	111	P/P	60 - 150
Fenuron	113	126	P/P	60 - 150
Fluridone	104	113	P/P	60 - 150
Imidacloprid	93.2	101	P/P	60 - 150
Linuron	123	127	P/P	60 - 150
Primidone	97.2	115	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A72942
Included Lab Sample IDs: 1851113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	107	127	P/P	60 - 150

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A72975
Included Lab Sample IDs: 1851092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	98.2	98.0	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A72982
Included Lab Sample IDs: 1851092

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A72982
Included Lab Sample IDs: 1851092

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A73012
Included Lab Sample IDs: 1851112

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A73030
Included Lab Sample IDs: 1851093

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A73050
Included Lab Sample IDs: 1851093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A73099
Included Lab Sample IDs: 1851093

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A73212
Included Lab Sample IDs: 1851093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.1	P/P	90 - 110

Reference Method: EPA 300.0
Run ID: A73219
Included Lab Sample IDs: 1851092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	99.5	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						3.34	
EPA 200.7 Rev. 4.4	Calcium	103	104	101	103			1.79
	Magnesium	101	102	98.4	101			2.31
	Potassium	99.7	101	99.0	100			1.12
	Sodium	101	104	101	103			1.94
EPA 300.0	Bromide	105	100	99.9	102			0.278
EPA 300.0 Rev. 2.1	Chloride	102	102	100	100			1.00
	Sulfate	98.9	94.0					1.33
EPA 350.1 Rev. 2.0	Ammonia-N	103	97.6	104				2.17
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	103	100				2.61
EPA 353.2 Rev. 2.0	NO2NO3-N	103	103	104				1.41
EPA 365.1 Rev. 2.0	Total-P	95.3					1.16	
EPA 8321B	Sucralose	85.6	78.9	80.3				1.47
SM 2120 B	Color (true)						0.514	
SM 2320 B-97	Total Alkalinity	102					0.452	
SM 2540 C-97	TDS						2.14	
SM 4500 F-C-97	Fluoride	97.3	100	101				0.494
SM 5310 B-00	Organic Carbon	103	97.2	99.7				2.45
USGS O-2060-01	Acetaminophen	65.6	74.8	75.2				0.533
	Carbamazepine	111	83.1	80.3				3.41
	Diuron	96.0	68.0	57.6				16.6
	Fenuron	101	77.6	76.8				1.04
	Fluridone	102	72.7	65.9				9.37
	Imidacloprid	89.2	128	130				1.56
	Linuron	103	79.6	60.4				27.4
	Primidone	87.6	86.4	84.0				2.82

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1851092
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1851112
EPA 300.0 / E31780	Bromide in aqueous matrices	1851092
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1851092
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1851092
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1851093
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1851093
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1851093
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1851093
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1851113
SM 2120 B / E31780	True Color measured at 450 nm	1851092
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1851092
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1851092
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1851092
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1851092
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1851093
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1851113

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	11/17/2016			11/17/2016 16:41	Sima Feizi	1851092
EPA 200.7 Rev. 4.4	11/17/2016	11/21/2016	Elliott D. Healy	11/22/2016	Joshua Ayres	1851112
EPA 300.0	11/17/2016			12/07/2016	Ping Hua	1851092
EPA 300.0 Rev. 2.1	11/17/2016			11/22/2016	Ping Hua	1851092
EPA 350.1 Rev. 2.0	11/17/2016			11/28/2016	Sofia Elnemr	1851093
EPA 351.2 Rev. 2.0	11/17/2016	12/05/2016	Martin Acosta	12/06/2016	Joseph Suarez	1851093
EPA 353.2 Rev. 2.0	11/17/2016			11/29/2016	Beverly Y. Sanders	1851093
EPA 365.1 Rev. 2.0	11/17/2016	11/30/2016	Adrian Shelby	11/30/2016	Lipi Saha	1851093
EPA 8321B	11/17/2016	11/18/2016	Hoor Shaik	11/21/2016	Mohammad Ghaffari	1851113
SM 2120 B	11/17/2016			11/17/2016 16:09	Jared I. Manley	1851092
SM 2320 B-97	11/17/2016			11/23/2016	Dale L. Simmons	1851092
SM 2540 C-97	11/17/2016			11/21/2016	Sima Feizi	1851092
SM 2540 D-97	11/17/2016			11/21/2016	Sima Feizi	1851092
SM 4500 F-C-97	11/17/2016			11/23/2016	Dale L. Simmons	1851092
SM 5310 B-00	11/17/2016			11/17/2016	Julie Michelle Frank	1851093
USGS O-2060-01	11/17/2016	11/18/2016	Hoor Shaik	11/19/2016	Juyoung Kim	1851113