

Chemical Analysis Report

SW-DIST-2017-11-17-01

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-2017-11-13-63**
Customer: **SW-DIST**
Project ID: **SCIREF**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-DEC-2017 13:46

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: Manatee R Below SR64

Collection Date/Time: 11/16/2017 11:05

Field ID: MANAREF

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947553	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P335565	
	EPA 300.0	Bromide**	0.15		mg Br/L	P336383	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P336016	
		Sulfate	41		mg SO4/L	P336018	
	SM 2120 B	Color (true)	70	A	PCU	P335552	
	SM 2320 B-97	Total Alkalinity	75	A	mg CaCO3/L	P335850	
	SM 2540 C-97	TDS	185		mg/L	P335834	
	SM 2540 D-97	TSS	2	I	mg/L	P335841	
	SM 4500 F-C-97	Fluoride	0.43	J	mg F/L	P335853	RPD
1947554	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P336255	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P336128	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P335940	
	EPA 365.1 Rev. 2.0	Total-P	0.41		mg P/L	P335977	
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P336099	
1947563	EPA 8321B	Sucralose**	0.010	U	ug/L	P335633	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P336263	
		Bentazon	0.077	Q	ug/L	P336263	
		Acetaminophen**	0.0080	U	ug/L	P335693	
		MCP	0.0020	UQ	ug/L	P336263	
		Carbamazepine**	4.0E-04	U	ug/L	P335693	
		Triclopyr**	0.0040	UQ	ug/L	P336263	
1947566	EPA 200.7 Rev. 4.4	Calcium	29.1		mg/L	P335643	
		Magnesium	12.1		mg/L	P335643	
		Potassium	4.5		mg/L	P335643	
		Sodium	8.6		mg/L	P335643	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample. Refer to the narrative for an explanation of QC Codes.

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P335565

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P335643

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0
Batch ID: P336383

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336016

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336018

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336255

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336128

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335940

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335977

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

Reference Method: EPA 8321B
Batch ID: P335633

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P335552

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
 Batch ID: P335850

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

Reference Method: SM 2540 C-97
 Batch ID: P335834

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P335841

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P335853

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P336099

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

Reference Method: USGS O-2060-01
 Batch ID: P335693

Component	Result	Code	Units
Acetaminophen	0.0080	U	ug/L
Carbamazepine	4.0E-04	U	ug/L

Reference Method: USGS O-2060-01
 Batch ID: P336263

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCP	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P335643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Magnesium	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P335643

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

Reference Method: EPA 300.0
 Batch ID: P336383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	94.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336016

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336018

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P336255

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P336128

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: P335940

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P335977

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

Reference Method: EPA 8321B
 Batch ID: P335633

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	100		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
 Batch ID: P335850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P335853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P336099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P335693

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	105		P	30 - 150
Carbamazepine	100		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P336263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
Bentazon	83.2		P	30 - 150
MCP	111		P	40 - 150
Triclopyr	107		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P335643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946576	Calcium	99.6	99.4	P/P	80 - 120
1946576	Magnesium	101	102	P/P	80 - 120
1946576	Potassium	103	103	P/P	80 - 120
1946576	Sodium	99.7	100	P/P	80 - 120
1947356	Calcium	102		P	80 - 120
1947356	Magnesium	103		P	80 - 120
1947356	Potassium	101		P	80 - 120
1947356	Sodium	100		P	80 - 120

Reference Method: EPA 300.0
 Batch ID: P336383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947553	Bromide	93.3	93.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947744	Chloride	94.2		P	90 - 110
1947759	Chloride	94.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947744	Sulfate	95.0		P	90 - 110
1947759	Sulfate	94.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947554	Ammonia-N	99.3	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947516	Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947554	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335977

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947502	Total-P	101	99.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P335633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947274	Sucralose	55.4	114	P/P	40 - 150

Reference Method: SM 5310 B-00
Batch ID: P336099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947596	Organic Carbon	94.2	96.0	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P335693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947629	Acetaminophen	99.0	107	P/P	30 - 150
1947629	Carbamazepine	71.7	72.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P336263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947129	2,4-D	75.9	83.8	P/P	40 - 150
1947129	Bentazon	49.7	57.0	P/P	30 - 150
1947129	MCCP	64.8	68.5	P/P	40 - 150
1947129	Triclopyr	54.0	68.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947497	Turbidity	1.58	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P335643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946576	Calcium	0.114	Spike	P	0 - 20
1946576	Magnesium	0.353	Spike	P	0 - 20
1946576	Potassium	0.697	Spike	P	0 - 20
1946576	Sodium	0.576	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P336383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947553	Bromide	0.489	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947759	Chloride	1.75	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947759	Sulfate	1.66	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947554	Ammonia-N	0.592	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947516	Kjeldahl Nitrogen	1.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947554	NO2NO3-N	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947502	Total-P	1.40	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P335633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947274	Sucralose	27.9	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P335552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947553	Color (true)	4.05	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P335850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947553	Total Alkalinity	0.418	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P335834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947501	TDS	3.02	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
 Batch ID: P335853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947553	Fluoride	11.5	Spike	F	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P336099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947596	Organic Carbon	0.939	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P335693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947629	Acetaminophen	7.80	Spike	P	0 - 30
1947629	Carbamazepine	1.45	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P336263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947129	2,4-D	9.89	Spike	P	0 - 30
1947129	Bentazon	13.7	Spike	P	0 - 30
1947129	MCP	5.52	Spike	P	0 - 30
1947129	Triclopyr	24.0	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: 1947563
 Field Sample ID: MANAREF

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	95.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.0	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	40 - 160
USGS O-2060-01	2,4-D-d3	65.9	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	95.6	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	88.0	P	30 - 160
USGS O-2060-01	Sucralose-d6	127	P	40 - 160

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A80364
Included Lab Sample IDs: 1947553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	105	105	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A80367
Included Lab Sample IDs: 1947553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A80448
Included Lab Sample IDs: 1947566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	102	P/P	90 - 110
Magnesium	101	100	P/P	90 - 110
Potassium	99.1	97.9	P/P	90 - 110
Sodium	98.9	98.2	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A80493
Included Lab Sample IDs: 1947553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.8	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A80493
Included Lab Sample IDs: 1947553

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

Reference Method: USGS O-2060-01
Run ID: A80505
Included Lab Sample IDs: 1947563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	111	111	P/P	60 - 150
Carbamazepine	105	108	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A80537
Included Lab Sample IDs: 1947554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A80566

Included Lab Sample IDs: 1947553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A80568

Included Lab Sample IDs: 1947563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	117	150	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80579

Included Lab Sample IDs: 1947554

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

Reference Method: SM 5310 B-00

Run ID: A80598

Included Lab Sample IDs: 1947554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80655

Included Lab Sample IDs: 1947554

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80675

Included Lab Sample IDs: 1947554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.2	95.7	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80693

Included Lab Sample IDs: 1947563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.3	91.6	P/P	50 - 150
Bentazon	110	102	P/P	50 - 150
MCPP	103	95.4	P/P	50 - 150
Triclopyr	92.6	93.3	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0
 Run ID: A80706
 Included Lab Sample IDs: 1947553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	100	101	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				1.58	
EPA 200.7 Rev. 4.4	Calcium	104	99.6 99.4 102			0.114
	Magnesium	103	101 102 103			0.353
	Potassium	101	103 103 101			0.697
	Sodium	101	99.7 100 100			0.576
EPA 300.0	Bromide	94.5	93.3 93.9			0.489
EPA 300.0 Rev. 2.1	Chloride	93.2	94.3 94.2		1.75	
	Sulfate	93.6	94.7 95.0		1.66	
EPA 350.1 Rev. 2.0	Ammonia-N	101	99.3 98.5			0.592
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.5	104 103			1.16
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104 102			1.15
EPA 365.1 Rev. 2.0	Total-P	105	101 99.5			1.40
EPA 8321B	Sucralose	100	55.4 114			27.9
SM 2120 B	Color (true)				4.05	
SM 2320 B-97	Total Alkalinity	103			0.418	
SM 2540 C-97	TDS				3.02	
SM 4500 F-C-97	Fluoride	97.5				11.5
SM 5310 B-00	Organic Carbon	95.4	94.2 96.0			0.939
USGS O-2060-01	2,4-D	113	75.9 83.8			9.89
	Acetaminophen	105	99.0 107			7.80
	Bentazon	83.2	49.7 57.0			13.7
	Carbamazepine	100	71.7 72.7			1.45
	MCP	111	64.8 68.5			5.52
	Triclopyr	107	54.0 68.8			24.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1947553
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1947566
EPA 300.0 / E31780	Bromide in aqueous matrices	1947553
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1947553
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1947553
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1947554

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1947554
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1947554
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1947554
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1947563
SM 2120 B / E31780	True Color measured at 450 nm	1947553
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1947553
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1947553
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1947553
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1947553
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1947554
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1947563
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1947563

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	11/17/2017			11/17/2017 16:59	Tanya Welborn	1947553
EPA 200.7 Rev. 4.4	11/17/2017	11/20/2017	Elliott D. Healy	11/21/2017	Betina Topolski	1947566
EPA 300.0	11/17/2017			12/04/2017	Julia Storbeck	1947553
EPA 300.0 Rev. 2.1	11/17/2017			11/28/2017	Julia Storbeck	1947553
EPA 350.1 Rev. 2.0	11/17/2017			12/01/2017	Sofia Elnemr	1947554
EPA 351.2 Rev. 2.0	11/17/2017	11/30/2017	Adrian Shelby	12/04/2017	Tanya Welborn	1947554
EPA 353.2 Rev. 2.0	11/17/2017			11/28/2017	Beverly Y. Sanders	1947554
EPA 365.1 Rev. 2.0	11/17/2017	11/28/2017	Sima Feizi	11/29/2017	Lipi Saha	1947554
EPA 8321B	11/17/2017	11/22/2017	Mohammad Ghaffari	11/29/2017	Mohammad Ghaffari	1947563
SM 2120 B	11/17/2017			11/17/2017 15:35	Tanya Welborn	1947553
SM 2320 B-97	11/17/2017			11/23/2017	Dale L. Simmons	1947553
SM 2540 C-97	11/17/2017			11/20/2017	Yijie Li	1947553
SM 2540 D-97	11/17/2017			11/20/2017	Yijie Li	1947553
SM 4500 F-C-97	11/17/2017			11/23/2017	Dale L. Simmons	1947553
SM 5310 B-00	11/17/2017			11/29/2017	Ping Hua	1947554
USGS O-2060-01	11/17/2017	11/22/2017	Hoor Shaik	11/23/2017	Julie Michelle Frank	1947563
	11/17/2017	12/04/2017	Hoor Shaik	12/04/2017	Julie Michelle Frank	1947563