

Chemical Analysis Report

NE-DIST-2017-12-15-01

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

Event Description: **Little mills**
Request ID: **RQ-2017-12-11-44**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way W
Suite 100
Jacksonville, FL 32256-7577
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Certified by: Colin Wright, Program Administrator

Date Certified: 03-JAN-2018 12:58

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular 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: 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: Un-Named trib to Little Mills Creek @ US 1

Collection Date/Time: 12/14/2017 12:10

Field ID: G4NE026012142017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1954178	EPA 180.1 Rev. 2.0	Turbidity	4.0	A	NTU	P337067	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P337389	
		Sulfate	27		mg SO4/L	P337393	
	SM 2120 B	Color (true)	300		PCU	P337077	
	SM 2320 B-97	Total Alkalinity	60		mg CaCO3/L	P337160	
	SM 2540 C-97	TDS	214	A	mg/L	P337309	
	SM 2540 D-97	TSS	3	IA	mg/L	P337460	
	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P337161	
1954179	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P337635	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P337278	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P337169	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P337189	
	SM 5310 B-00	Organic Carbon	32		mg C/L	P337153	
1954180	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P337130	
1954186	EPA 8321B	Sucralose**	0.010	U	ug/L	P336877	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P337156	
		Diuron	8.0E-04	U	ug/L	P337156	
		Fenuron	0.0080	U	ug/L	P337156	
		Imidacloprid	8.0E-04	U	ug/L	P337156	
		Bentazon	8.0E-04	U	ug/L	P337156	
		Linuron	0.0040	U	ug/L	P337156	
		Acetaminophen**	0.0080	U	ug/L	P337156	
		MCP	0.0020	U	ug/L	P337156	
		Carbamazepine**	4.0E-04	U	ug/L	P337156	
		Triclopyr**	0.0040	U	ug/L	P337156	
		Primidone**	0.0040	U	ug/L	P337156	
		Fluridone**	4.0E-04	U	ug/L	P337156	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P337067

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P337389

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337393

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337635

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337278

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337169

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337189

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337130

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

Reference Method: EPA 8321B
Batch ID: P336877

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P337077

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P337160

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P337309

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P337460

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P337161

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P337153

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

Reference Method: USGS O-2060-01
Batch ID: P337156

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337389

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337393

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337635

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: P337278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337169

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337189

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337130

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

Reference Method: EPA 8321B
Batch ID: P336877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	87.8		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P337160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P337161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P337153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.4		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P337156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	40 - 150
Acetaminophen	95.0		P	30 - 150
Bentazon	94.6		P	30 - 150
Carbamazepine	98.5		P	40 - 150
Diuron	83.7		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	100		P	40 - 150
Imidacloprid	99.8		P	40 - 160
Linuron	90.5		P	40 - 150
MCPP	93.3		P	40 - 150
Primidone	107		P	40 - 150
Triclopyr	90.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954247	Chloride	99.7		P	90 - 110
1954722	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954247	Sulfate	97.1		P	90 - 110
1954722	Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337635

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954179	Ammonia-N	97.5	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954252	Kjeldahl Nitrogen	95.3	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954179	NO2NO3-N	97.0	97.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P337189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954252	Total-P	99.1	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P337130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954101	O-Phosphate-P	93.4	95.9	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P336877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1953431	Sucralose	64.2	64.3	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P337161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954248	Fluoride	98.5	99.1	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P337153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1953495	Organic Carbon	93.3	93.8	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P337156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954940	2,4-D	82.6	99.4	P/P	40 - 150
1954940	Acetaminophen	111	114	P/P	30 - 150
1954940	Bentazon	53.1	59.6	P/P	30 - 150
1954940	Carbamazepine	96.3	95.0	P/P	40 - 150
1954940	Diuron	80.0	76.1	P/P	40 - 150
1954940	Fenuron	88.8	90.0	P/P	40 - 150
1954940	Fluridone	79.9	77.0	P/P	40 - 150
1954940	Imidacloprid	157	155	P/P	40 - 160
1954940	Linuron	85.5	76.0	P/P	40 - 150
1954940	MCP	65.6	72.0	P/P	40 - 150
1954940	Primidone	101	110	P/P	40 - 150
1954940	Triclopyr	62.5	71.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P337067

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P337067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954178	Turbidity	2.03	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954247	Chloride	1.28	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954247	Sulfate	1.21	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954179	Ammonia-N	2.25	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954252	Kjeldahl Nitrogen	1.65	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954179	NO2NO3-N	0.442	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954252	Total-P	4.82	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954101	O-Phosphate-P	2.04	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P336877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1953431	Sucralose	0.230	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P337077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954247	Color (true)	1.26	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P337160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954248	Total Alkalinity	0.352	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P337309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954178	TDS	4.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P337161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954248	Fluoride	0.463	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P337153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1953495	Organic Carbon	0.515	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P337156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954940	2,4-D	12.8	Spike	P	0 - 30
1954940	Acetaminophen	2.56	Spike	P	0 - 30
1954940	Bentazon	7.08	Spike	P	0 - 30
1954940	Carbamazepine	1.30	Spike	P	0 - 30
1954940	Diuron	4.61	Spike	P	0 - 30
1954940	Fenuron	1.32	Spike	P	0 - 30
1954940	Fluridone	3.18	Spike	P	0 - 30
1954940	Imidacloprid	1.02	Spike	P	0 - 30
1954940	Linuron	11.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P337156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954940	MCP	9.42	Spike	P	0 - 30
1954940	Primidone	8.67	Spike	P	0 - 30
1954940	Triclopyr	14.0	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: 1954186
Field Sample ID: G4NE026012142017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	124	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.8	P	30 - 160
EPA 8321B	Diuron-d6	81.9	P	30 - 160
EPA 8321B	Primidone-d5	83.0	P	30 - 160
EPA 8321B	Sucralose-d6	71.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	91.8	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	124	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	91.8	P	30 - 160
USGS O-2060-01	Diuron-d6	81.9	P	30 - 160
USGS O-2060-01	Primidone-d5	83.0	P	30 - 160
USGS O-2060-01	Sucralose-d6	71.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A80945
Included Lab Sample IDs: 1954178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A80953
Included Lab Sample IDs: 1954178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	94.8	100	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A80971
Included Lab Sample IDs: 1954180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A80983
Included Lab Sample IDs: 1954179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	93.8	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A80987
Included Lab Sample IDs: 1954178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.6	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A80987
Included Lab Sample IDs: 1954178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A80992
Included Lab Sample IDs: 1954179

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: A81028
Included Lab Sample IDs: 1954179

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

Reference Method: EPA 8321B
Run ID: A81055
Included Lab Sample IDs: 1954186

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	77.8	90.1	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A81082
Included Lab Sample IDs: 1954179

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A81087
Included Lab Sample IDs: 1954178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	103	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A81093

Included Lab Sample IDs: 1954186

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.2	98.8	P/P	50 - 150
Acetaminophen	95.9	102	P/P	60 - 150
Bentazon	99.2	103	P/P	50 - 150
Carbamazepine	100	105	P/P	60 - 150
Diuron	98.6	101	P/P	60 - 150
Fenuron	96.6	105	P/P	60 - 150
Fluridone	99.0	106	P/P	60 - 160
Imidacloprid	97.7	102	P/P	60 - 150
Linuron	95.4	101	P/P	60 - 150
MCP	90.1	99.2	P/P	50 - 150
Primidone	93.2	95.0	P/P	60 - 150
Triclopyr	93.0	94.2	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81195

Included Lab Sample IDs: 1954179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	98.3	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				2.03	
EPA 300.0 Rev. 2.1	Chloride	102	99.7	102	1.28	
	Sulfate	98.8	97.1	98.8	1.21	
EPA 350.1 Rev. 2.0	Ammonia-N	101	97.5	101		2.25
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.7	95.3	97.0		1.65
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	97.0	97.6		0.442
EPA 365.1 Rev. 2.0	Total-P	99.3	99.1	104		4.82
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	93.4	95.9		2.04
EPA 8321B	Sucralose	87.8	64.2	64.3		0.230
SM 2120 B	Color (true)				1.26	
SM 2320 B-97	Total Alkalinity	101			0.352	
SM 2540 C-97	TDS				4.67	
SM 4500 F-C-97	Fluoride	95.8	98.5	99.1		0.463
SM 5310 B-00	Organic Carbon	93.4	93.3	93.8		0.515
USGS O-2060-01	2,4-D	103	99.4	82.6		12.8
	Acetaminophen	95.0	111	114		2.56
	Bentazon	94.6	59.6	53.1		7.08
	Carbamazepine	98.5	96.3	95.0		1.30
	Diuron	83.7	80.0	76.1		4.61
	Fenuron	103	88.8	90.0		1.32
	Fluridone	100	79.9	77.0		3.18

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
USGS O-2060-01	Imidacloprid	99.8	157	155		1.02
	Linuron	90.5	85.5	76.0		11.7
	MCPP	93.3	72.0	65.6		9.42
	Primidone	107	101	110		8.67
	Triclopyr	90.8	71.9	62.5		14.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1954178
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1954178
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1954178
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1954179
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1954179
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1954179
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1954179
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1954180
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1954186
SM 2120 B / E31780	True Color measured at 450 nm	1954178
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1954178
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1954178
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1954178
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1954178
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1954179
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1954186
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1954186

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	12/15/2017			12/15/2017 14:32	DeAsia Armster	1954178
EPA 300.0 Rev. 2.1	12/15/2017			12/20/2017	Julia Storbeck	1954178
EPA 350.1 Rev. 2.0	12/15/2017			12/28/2017	Sofia Elnemr	1954179
EPA 351.2 Rev. 2.0	12/15/2017	12/20/2017	Adrian Shelby	12/21/2017	Joseph Suarez	1954179
EPA 353.2 Rev. 2.0	12/15/2017			12/19/2017	Beverly Y. Sanders	1954179
EPA 365.1 Rev. 2.0	12/15/2017	12/19/2017	Sima Feizi	12/19/2017	Lipi Saha	1954179
EPA 365.1 Rev. 2.0 dissolved	12/15/2017			12/15/2017 15:19	Megan Treadwell	1954180
EPA 8321B	12/15/2017	12/20/2017	Juyoung Kim	12/21/2017	Juyoung Kim	1954186
SM 2120 B	12/15/2017			12/15/2017 17:14	DeAsia Armster	1954178
SM 2320 B-97	12/15/2017			12/18/2017	Dale L. Simmons	1954178
SM 2540 C-97	12/15/2017			12/19/2017	Yijie Li	1954178
SM 2540 D-97	12/15/2017			12/19/2017	Yijie Li	1954178
SM 4500 F-C-97	12/15/2017			12/18/2017	Dale L. Simmons	1954178
SM 5310 B-00	12/15/2017			12/18/2017	Megan Treadwell	1954179
USGS O-2060-01	12/15/2017	12/20/2017	Hoor Shaik	12/20/2017	Julie Michelle Frank	1954186
	12/15/2017	12/20/2017	Hoor Shaik	12/21/2017	Julie Michelle Frank	1954186