

Chemical Analysis Report

TLH-ROC-2017-10-30-03

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

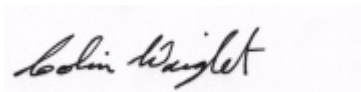
Event Description: **SMP 2017 kit A-b/t/m PCR-FILTER & PCR-HF183**
Request ID: **RQ-2017-10-30-55**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Colin Wright, Program Administrator

Date Certified: 01-DEC-2017 14:15



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: Sugar Creek @ Suwannee River

Collection Date/Time: 10/30/2017 11:25

Field ID: G1TLHR0047-2017-04

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941093	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P334413	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P334687	
	SM 2120 B	Color (true)	52	A	PCU	P334404	
	SM 2320 B-97	Total Alkalinity	50	A	mg CaCO3/L	P334548	
	SM 2540 C-97	TDS	106		mg/L	P334827	
	SM 2540 D-97	TSS	3	I	mg/L	P334837	
	SM 4500 F-C-97	Fluoride	0.44		mg F/L	P334551	
1941095	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P334769	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P334731	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.73		mg N/L	P334614	
	EPA 365.1 Rev. 2.0	Total-P	0.72		mg P/L	P334480	
	SM 5310 B-00	Organic Carbon	5.7		mg C/L	P334886	
1941097	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.64		mg P/L	P334399	
1941105	EPA 8321B	Sucralose**	0.043		ug/L	P334426	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335855	
		Diuron	0.0010	I	ug/L	P334232	
		Fenuron	0.0080	U	ug/L	P334232	
		Imidacloprid	0.011		ug/L	P334232	
		Bentazon	0.0025	IQ	ug/L	P335855	
		Linuron	0.0040	U	ug/L	P334232	
		Acetaminophen**	0.0080	U	ug/L	P334232	
		MCP	0.0020	UQ	ug/L	P335855	
		Carbamazepine**	4.0E-04	U	ug/L	P334232	
		Triclopyr**	0.0040	UQ	ug/L	P335855	
		Primidone**	0.0040	U	ug/L	P334232	
		Fluridone**	4.0E-04	U	ug/L	P334232	

Ref. Method and Comment:

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

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

Sample Location: Bethel Creek @ Mill Creek

Collection Date/Time: 10/30/2017 12:35

Field ID: G1TLHR0062-2017-05

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941094	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P334413	
	EPA 300.0 Rev. 2.1	Chloride	4.3		mg Cl/L	P334687	
	SM 2120 B	Color (true)	500		PCU	P334404	
	SM 2320 B-97	Total Alkalinity	83		mg CaCO3/L	P334548	
	SM 2540 C-97	TDS	151	A	mg/L	P334827	
	SM 2540 D-97	TSS	3	IA	mg/L	P334837	
	SM 4500 F-C-97	Fluoride	0.078	I	mg F/L	P334863	
1941096	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P334769	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P335202	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.047		mg N/L	P334614	

Field ID: G1TLHR0062-2017-05

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941096	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P334480	
	SM 5310 B-00	Organic Carbon	34		mg C/L	P334886	
1941098	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P334399	
1941106	EPA 8321B	Sucralose**	0.010	U	ug/L	P334426	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335855	
		Diuron	8.0E-04	U	ug/L	P334232	
		Fenuron	0.0080	U	ug/L	P334232	
		Imidacloprid	8.0E-04	U	ug/L	P334232	
		Bentazon	8.0E-04	UQ	ug/L	P335855	
		Linuron	0.0040	U	ug/L	P334232	
		Acetaminophen**	0.0080	U	ug/L	P334232	
		MCP	0.0020	UQ	ug/L	P335855	
		Carbamazepine**	4.0E-04	U	ug/L	P334232	
		Triclopyr**	0.0040	UQ	ug/L	P335855	
		Primidone**	0.0040	U	ug/L	P334232	
		Fluridone**	4.0E-04	U	ug/L	P334232	

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.

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: P334413

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P334687

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P334769

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P334731

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P335202

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335202

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334614

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334480

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334399

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

Reference Method: EPA 8321B
Batch ID: P334426

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P334404

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P334548

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

Reference Method: SM 2540 C-97
Batch ID: P334827

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P334837

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
 Batch ID: P334551

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
 Batch ID: P334863

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P334886

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

Reference Method: USGS O-2060-01
 Batch ID: P334232

Component	Result	Code	Units
Acetaminophen	0.0080	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
Primidone	0.0040	U	ug/L

Reference Method: USGS O-2060-01
 Batch ID: P335855

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 300.0 Rev. 2.1
 Batch ID: P334687

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P334769

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334731

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335202

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334480

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.4		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P334426

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

Reference Method: SM 2320 B-97
Batch ID: P334548

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

Reference Method: SM 4500 F-C-97
Batch ID: P334551

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P334863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P334886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P334232

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	89.6		P	30 - 150
Carbamazepine	114		P	40 - 150
Diuron	107		P	40 - 150
Fenuron	108		P	40 - 150
Fluridone	110		P	40 - 150
Imidacloprid	106		P	40 - 160
Linuron	110		P	40 - 150
Primidone	104		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335855

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	101		P	40 - 150
Bentazon	93.5		P	30 - 150
MCPP	94.7		P	40 - 150
Triclopyr	94.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941216	Chloride	98.0		P	90 - 110
1941238	Chloride	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941095	Ammonia-N	106	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941095	Kjeldahl Nitrogen	97.8	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1943211	Kjeldahl Nitrogen	99.7	93.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941063	NO2NO3-N	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941221	Total-P	103	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941066	O-Phosphate-P	104	98.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P334426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940829	Sucralose	88.8	97.9	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P334551

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941093	Fluoride	98.6	98.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P334886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940965	Organic Carbon	97.4	97.3	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P334232

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941073	Acetaminophen	98.3	103	P/P	30 - 150
1941073	Carbamazepine	133	136	P/P	40 - 150
1941073	Diuron	105	109	P/P	40 - 150
1941073	Fenuron	107	102	P/P	40 - 150
1941073	Fluridone	112	114	P/P	40 - 150
1941073	Imidacloprid	147	150	P/P	40 - 160
1941073	Linuron	109	114	P/P	40 - 150
1941073	Primidone	125	124	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940704	2,4-D	84.2	80.2	P/P	40 - 150
1940704	Bentazon	83.8	80.9	P/P	30 - 150
1940704	MCP	64.0	60.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P335855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940704	Triclopyr	60.1	58.3	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P334413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941062	Turbidity	0.840	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P334687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941216	Chloride	0.620	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P334769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941095	Ammonia-N	0.0924	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P334731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941095	Kjeldahl Nitrogen	3.96	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P335202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1943211	Kjeldahl Nitrogen	6.06	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P334614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941063	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941221	Total-P	5.73	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941066	O-Phosphate-P	4.84	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P334426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940829	Sucralose	9.28	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P334404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941093	Color (true)	0.557	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P334548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941093	Total Alkalinity	0.961	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P334827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941094	TDS	6.62	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P334551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941093	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P334863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942677	Fluoride	0.506	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P334886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940965	Organic Carbon	0.0855	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P334232

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941073	Acetaminophen	4.98	Spike	P	0 - 30
1941073	Carbamazepine	2.78	Spike	P	0 - 30
1941073	Diuron	3.60	Spike	P	0 - 30
1941073	Fenuron	4.64	Spike	P	0 - 30
1941073	Fluridone	1.61	Spike	P	0 - 30
1941073	Imidacloprid	1.88	Spike	P	0 - 30
1941073	Linuron	4.36	Spike	P	0 - 30
1941073	Primidone	0.498	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P335855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940704	2,4-D	4.91	Spike	P	0 - 30
1940704	Bentazon	3.52	Spike	P	0 - 30
1940704	MCP	4.91	Spike	P	0 - 30
1940704	Triclopyr	3.14	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: 1941105
Field Sample ID: G1TLHR0047-2017-04

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	142	P	30 - 160
EPA 8321B	Diuron-d6	113	P	30 - 160
EPA 8321B	Primidone-d5	128	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	40 - 160
USGS O-2060-01	2,4-D-d3	85.1	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	105	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	142	P	30 - 160
USGS O-2060-01	Diuron-d6	113	P	30 - 160
USGS O-2060-01	Primidone-d5	128	P	30 - 160
USGS O-2060-01	Sucralose-d6	100	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1941106

Field Sample ID: G1TLHR0062-2017-05

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	91.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	137	P	30 - 160
EPA 8321B	Diuron-d6	105	P	30 - 160
EPA 8321B	Primidone-d5	129	P	30 - 160
EPA 8321B	Sucralose-d6	97.9	P	40 - 160
USGS O-2060-01	2,4-D-d3	88.9	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	91.8	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	137	P	30 - 160
USGS O-2060-01	Diuron-d6	105	P	30 - 160
USGS O-2060-01	Primidone-d5	129	P	30 - 160
USGS O-2060-01	Sucralose-d6	97.9	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79927

Included Lab Sample IDs: 1941097, 1941098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	101	P/P	90 - 110
O-Phosphate-P	99.2	97.3	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A79932

Included Lab Sample IDs: 1941093, 1941094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	85 - 115
Color (true)	98.4	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A79933

Included Lab Sample IDs: 1941093, 1941094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A79980

Included Lab Sample IDs: 1941105, 1941106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	115	123	P/P	60 - 150
Sucralose	118	115	P/P	60 - 150

Reference Method: SM 2320 B-97

Run ID: A79986

Included Lab Sample IDs: 1941093, 1941094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A79986

Included Lab Sample IDs: 1941093, 1941094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	103	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79986

Included Lab Sample IDs: 1941093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80017

Included Lab Sample IDs: 1941095, 1941096

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A80039

Included Lab Sample IDs: 1941093, 1941094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	99.9	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80060

Included Lab Sample IDs: 1941095

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80077

Included Lab Sample IDs: 1941095, 1941096

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80100

Included Lab Sample IDs: 1941096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A80108

Included Lab Sample IDs: 1941094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A80108

Included Lab Sample IDs: 1941094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A80113

Included Lab Sample IDs: 1941095, 1941096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80133

Included Lab Sample IDs: 1941095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.1	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80258

Included Lab Sample IDs: 1941096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.4	103	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80527

Included Lab Sample IDs: 1941105, 1941106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.3	95.8	P/P	50 - 150
Bentazon	113	112	P/P	50 - 150
MCP	96.8	96.1	P/P	50 - 150
Triclopyr	86.6	101	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A80584

Included Lab Sample IDs: 1941105, 1941106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	94.5	97.3	P/P	60 - 150
Carbamazepine	111	109	P/P	60 - 150
Diuron	105	109	P/P	60 - 150
Fenuron	106	104	P/P	60 - 150
Fluridone	113	109	P/P	60 - 160
Imidacloprid	102	97.2	P/P	60 - 150
Linuron	109	116	P/P	60 - 150
Primidone	107	101	P/P	60 - 150

* 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		Precision SMP	MS
					LCS	
EPA 180.1 Rev. 2.0	Turbidity				0.840	
EPA 300.0 Rev. 2.1	Chloride	98.8	98.0	97.5	0.620	
EPA 350.1 Rev. 2.0	Ammonia-N	101	106	106		0.0924
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	97.8	103		3.96
	Kjeldahl Nitrogen	98.0	99.7	93.3		6.06
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	107	108	108		0.0
EPA 365.1 Rev. 2.0	Total-P	101	103	96.5		5.73
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.4	104	98.7		4.84
EPA 8321B	Sucralose	114	88.8	97.9		9.28
SM 2120 B	Color (true)				0.557	
SM 2320 B-97	Total Alkalinity	103			0.961	
SM 2540 C-97	TDS				6.62	
SM 4500 F-C-97	Fluoride	95.6	98.6	98.6		0.0
	Fluoride	96.6				0.506
SM 5310 B-00	Organic Carbon	97.1	97.4	97.3		0.0855
USGS O-2060-01	2,4-D	101	84.2	80.2		4.91
	Acetaminophen	89.6	98.3	103		4.98
	Bentazon	93.5	83.8	80.9		3.52
	Carbamazepine	114	133	136		2.78
	Diuron	107	105	109		3.60
	Fenuron	108	107	102		4.64
	Fluridone	110	112	114		1.61
	Imidacloprid	106	147	150		1.88
	Linuron	110	109	114		4.36
	MCPP	94.7	64.0	60.9		4.91
	Primidone	104	125	124		0.498
	Triclopyr	94.6	60.1	58.3		3.14

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1941093, 1941094
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1941093, 1941094
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1941095, 1941096
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1941095, 1941096
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1941095, 1941096
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1941095, 1941096
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1941097, 1941098
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1941105, 1941106
SM 2120 B / E31780	True Color measured at 450 nm	1941093, 1941094
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1941093, 1941094
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1941093, 1941094
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1941093, 1941094
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1941093, 1941094
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1941095, 1941096
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1941105, 1941106
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1941105, 1941106

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	10/30/2017			10/31/2017 16:25	DeAsia Armster	1941093, 1941094
EPA 300.0 Rev. 2.1	10/30/2017			11/02/2017	Julia Storbeck	1941093, 1941094
EPA 350.1 Rev. 2.0	10/30/2017			11/06/2017	Sofia Elnemr	1941095, 1941096
EPA 351.2 Rev. 2.0	10/30/2017	11/06/2017	Adrian Shelby	11/07/2017	Joseph Suarez	1941095
	10/30/2017	11/14/2017	Adrian Shelby	11/14/2017	Joseph Suarez	1941096
EPA 353.2 Rev. 2.0	10/30/2017			11/03/2017	Beverly Y. Sanders	1941095, 1941096
EPA 365.1 Rev. 2.0	10/30/2017	11/01/2017	Sima Feizi	11/06/2017	Lipi Saha	1941095
	10/30/2017	11/01/2017	Sima Feizi	11/07/2017	Lipi Saha	1941096
EPA 365.1 Rev. 2.0 dissolved	10/30/2017			10/31/2017 14:47	Megan Treadwell	1941098
	10/30/2017			10/31/2017 15:26	Megan Treadwell	1941097
EPA 8321B	10/30/2017	11/01/2017	Juyoung Kim	11/02/2017	Juyoung Kim	1941105, 1941106
SM 2120 B	10/30/2017			10/31/2017 14:50	Tanya Welborn	1941093
	10/30/2017			10/31/2017 15:23	Tanya Welborn	1941094
SM 2320 B-97	10/30/2017			11/02/2017	Dale L. Simmons	1941093, 1941094
SM 2540 C-97	10/30/2017			11/01/2017	Yijie Li	1941093, 1941094
SM 2540 D-97	10/30/2017			11/01/2017	Yijie Li	1941093, 1941094
SM 4500 F-C-97	10/30/2017			11/02/2017	Dale L. Simmons	1941093
	10/30/2017			11/07/2017	Dale L. Simmons	1941094
SM 5310 B-00	10/30/2017			11/06/2017	Ping Hua	1941095, 1941096
USGS O-2060-01	10/30/2017	11/01/2017	Hoor Shaik	11/04/2017	Julie Michelle Frank	1941105, 1941106
	10/30/2017	11/27/2017	Hoor Shaik	11/28/2017	Julie Michelle Frank	1941105, 1941106