

Chemical Analysis Report

NE-DIST-2017-10-05-02

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

Event Description: **Suwannee 2**
Request ID: **RQ-2017-09-11-13**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 23-OCT-2017 15:59



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: Mill Creek @ Bellamy-Alligator Rd.

Collection Date/Time: 10/04/2017 12:10

Field ID: G1NE0605 10042017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934533	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P332814	
	EPA 300.0 Rev. 2.1	Chloride	14	A	mg Cl/L	P333111	
		Sulfate	5.5	A	mg SO4/L	P333114	
	SM 2120 B	Color (true)	110		PCU	P332834	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	98		mg/L	P333145	
	SM 2540 D-97	TSS	2	U	mg/L	P333005	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P333350	
1934534	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P333236	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P333128	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P333169	
	EPA 365.1 Rev. 2.0	Total-P	0.92		mg P/L	P333211	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P333409	
1934535	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.85		mg P/L	P332849	
1934552	EPA 8321B	Sucralose**	0.010	U	ug/L	P332778	RPD
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P332779	
		Diuron	0.023		ug/L	P332779	
		Fenuron	0.0097	I	ug/L	P332779	
		Imidacloprid	8.0E-04	U	ug/L	P332779	
		Bentazon	8.0E-04	U	ug/L	P332779	MS
		Linuron	0.0040	U	ug/L	P332779	
		Acetaminophen**	0.0080	U	ug/L	P332779	
		MCP	0.0020	U	ug/L	P332779	
		Carbamazepine**	4.0E-04	U	ug/L	P332779	
		Triclopyr**	0.0040	U	ug/L	P332779	
		Primidone**	0.0040	U	ug/L	P332779	
		Fluridone**	4.0E-04	U	ug/L	P332779	

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: MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Olustee Creek @ CR 238

Collection Date/Time: 10/04/2017 10:55

Field ID: G1NE0332 10042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934530	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P332814	
	EPA 300.0 Rev. 2.1	Chloride	6.7		mg Cl/L	P333111	
		Sulfate	0.24	I	mg SO4/L	P333114	
	SM 2120 B	Color (true)	770		PCU	P332834	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	134		mg/L	P333145	
	SM 2540 D-97	TSS	2	U	mg/L	P333005	
	SM 4500 F-C-97	Fluoride	0.063	I	mg F/L	P333350	
1934531	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P333235	

Field ID: G1NE0332 10042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934531	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P333128	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P333169	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P333211	
	SM 5310 B-00	Organic Carbon	52		mg C/L	P333409	
1934532	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P332849	
1934551	EPA 8321B	Sucralose**	0.010	U	ug/L	P332778	RPD
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P332779	
		Diuron	8.0E-04	U	ug/L	P332779	
		Fenuron	0.0080	U	ug/L	P332779	
		Imidacloprid	8.0E-04	U	ug/L	P332779	
		Bentazon	8.0E-04	U	ug/L	P332779	MS
		Linuron	0.0040	U	ug/L	P332779	
		Acetaminophen**	0.0080	U	ug/L	P332779	
		MCP	0.0020	U	ug/L	P332779	
		Carbamazepine**	4.0E-04	U	ug/L	P332779	
		Triclopyr**	0.0040	U	ug/L	P332779	
		Primidone**	0.0040	U	ug/L	P332779	
		Fluridone**	4.0E-04	U	ug/L	P332779	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

USGS O-2060-01: MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Cannon Crk @ Cannon Crk Rd W CR 47

Collection Date/Time: 10/04/2017 10:30

Field ID: G1NE0617 10042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934553	EPA 8321B	Sucralose**	0.12		ug/L	P332778	RPD
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P332779	
		Diuron	8.0E-04	U	ug/L	P332779	
		Fenuron	0.0080	U	ug/L	P332779	
		Imidacloprid	0.024		ug/L	P332779	
		Bentazon	8.0E-04	U	ug/L	P332779	MS
		Linuron	0.0040	U	ug/L	P332779	
		Acetaminophen**	0.0080	U	ug/L	P332779	
		MCP	0.0020	U	ug/L	P332779	
		Carbamazepine**	4.0E-04	U	ug/L	P332779	
		Triclopyr**	0.0040	U	ug/L	P332779	
		Primidone**	0.0040	U	ug/L	P332779	
		Fluridone**	0.0032		ug/L	P332779	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Cannon Crk @ Cannon S Ward St.

Collection Date/Time: 10/04/2017 10:15

Field ID: G1NE0500 10042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G1NE0500 10042016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934536	EPA 180.1 Rev. 2.0	Turbidity	4.3	A	NTU	P332814	
	EPA 300.0 Rev. 2.1	Chloride	7.7		mg Cl/L	P333111	
		Sulfate	1.1		mg SO4/L	P333114	
	SM 2120 B	Color (true)	160		PCU	P332834	
	SM 2320 B-97	Total Alkalinity	56		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	110		mg/L	P333145	
	SM 2540 D-97	TSS	2	U	mg/L	P333007	
	SM 4500 F-C-97	Fluoride	0.064	I	mg F/L	P333350	
1934537	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P333236	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P333128	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.071		mg N/L	P333169	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P333211	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P333409	
1934538	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.031		mg P/L	P332849	
1934555	EPA 8321B	Sucralose**	0.11		ug/L	P332778	RPD
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P332779	
		Diuron	8.0E-04	U	ug/L	P332779	
		Fenuron	0.0080	U	ug/L	P332779	
		Imidacloprid	0.024		ug/L	P332779	
		Bentazon	8.0E-04	U	ug/L	P332779	MS
		Linuron	0.0040	U	ug/L	P332779	
		Acetaminophen**	0.0080	U	ug/L	P332779	
		MCP	0.0020	U	ug/L	P332779	
		Carbamazepine**	4.0E-04	U	ug/L	P332779	
		Triclopyr**	0.0040	U	ug/L	P332779	
		Primidone**	0.0040	U	ug/L	P332779	
		Fluridone**	0.0021		ug/L	P332779	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Cow Creek @ 138

Collection Date/Time: 10/04/2017 11:30

Field ID: G1NE0565

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934554	EPA 8321B	Sucralose**	0.010	U	ug/L	P332778	RPD
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P332779	
		Diuron	8.0E-04	U	ug/L	P332779	
		Fenuron	0.0080	U	ug/L	P332779	
		Imidacloprid	8.0E-04	U	ug/L	P332779	
		Bentazon	8.0E-04	U	ug/L	P332779	MS
		Linuron	0.0040	U	ug/L	P332779	
		Acetaminophen**	0.0080	U	ug/L	P332779	
		MCP	0.0020	U	ug/L	P332779	
		Carbamazepine**	4.0E-04	U	ug/L	P332779	
		Triclopyr**	0.0040	U	ug/L	P332779	

Field ID: G1NE0565

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934554	USGS O-2060-01	Primidone**	0.0040	U	ug/L	P332779	
		Fluridone**	4.0E-04	U	ug/L	P332779	

Ref. Method and Comment:
 USGS O-2060-01: MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P332814

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P333111

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P333114

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P333235

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P333236

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P333128

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P333169

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P333211

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332849

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

Reference Method: EPA 8321B
Batch ID: P332778

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P332834

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P333347

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

Reference Method: SM 2540 C-97
Batch ID: P333145

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333005

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333007

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P333409

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P332779

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
MCPD	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: P333111

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333114

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333235

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333236

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: P333128

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333169

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333211

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: P332849

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

Reference Method: EPA 8321B
Batch ID: P332778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	101		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P333347

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

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P333409

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

Reference Method: USGS O-2060-01
Batch ID: P332779

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	109		P	40 - 150
Acetaminophen	103		P	30 - 150
Bentazon	43.4		P	30 - 150
Carbamazepine	126		P	40 - 150
Diuron	116		P	40 - 150
Fenuron	96.1		P	40 - 150
Fluridone	107		P	40 - 150
Imidacloprid	98.5		P	40 - 160
Linuron	95.6		P	40 - 150
MCPP	121		P	40 - 150
Primidone	97.2		P	40 - 150
Triclopyr	125		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934533	Chloride	96.1		P	90 - 110
1934627	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934533	Sulfate	93.8		P	90 - 110
1934627	Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934534	Ammonia-N	101	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934537	Kjeldahl Nitrogen	99.9	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934534	NO2NO3-N	103	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934649	Total-P	103	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332849

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934538	O-Phosphate-P	94.7	95.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P332778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934706	Sucralose	69.3	114	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934698	Fluoride	101	101	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P333409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934486	Organic Carbon	98.8	97.6	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P332779

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934706	2,4-D	66.3	58.8	P/P	40 - 150
1934706	Acetaminophen	84.5	80.9	P/P	30 - 150
1934706	Bentazon	25.7	21.7	F/F	30 - 150
1934706	Carbamazepine	90.7	94.5	P/P	40 - 150
1934706	Diuron	76.1	79.7	P/P	40 - 150
1934706	Fenuron	82.5	90.8	P/P	40 - 150
1934706	Linuron	91.9	98.1	P/P	40 - 150
1934706	MCP	50.3	53.1	P/P	40 - 150
1934706	Primidone	105	107	P/P	40 - 150
1934706	Triclopyr	47.5	50.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934536	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934533	Chloride	0.0361	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934533	Sulfate	0.0383	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934466	Ammonia-N	0.635	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934534	Ammonia-N	0.924	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934537	Kjeldahl Nitrogen	2.06	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934534	NO2NO3-N	1.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934649	Total-P	6.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332849

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934538	O-Phosphate-P	0.870	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P332778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934706	Sucralose	30.9	Spike	F	0 - 30

Reference Method: SM 2120 B
Batch ID: P332834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934464	Color (true)	4.30	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P333347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Total Alkalinity	0.208	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P333145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934465	TDS	3.63	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P333007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934614	TSS	8.00	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Fluoride	0.482	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P333409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934486	Organic Carbon	1.11	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P332779

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934706	2,4-D	4.57	Spike	P	0 - 30
1934706	Acetaminophen	4.40	Spike	P	0 - 30
1934706	Bentazon	4.62	Spike	P	0 - 30
1934706	Carbamazepine	3.92	Spike	P	0 - 30
1934706	Diuron	3.96	Spike	P	0 - 30
1934706	Fenuron	9.55	Spike	P	0 - 30
1934706	Fluridone	4.22	Spike	P	0 - 30
1934706	Imidacloprid	2.56	Spike	P	0 - 30
1934706	Linuron	6.61	Spike	P	0 - 30
1934706	MCPP	5.30	Spike	P	0 - 30
1934706	Primidone	1.90	Spike	P	0 - 30
1934706	Triclopyr	6.44	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

Quality Assurance Report Surrogates

Lab Sample ID: 1934551
Field Sample ID: G1NE0332 10042016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	108	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.8	P	30 - 160
EPA 8321B	Diuron-d6	44.6	P	30 - 160
EPA 8321B	Primidone-d5	54.9	P	30 - 160
EPA 8321B	Sucralose-d6	85.9	P	40 - 160
USGS O-2060-01	2,4-D-d3	60.0	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	108	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	61.8	P	30 - 160
USGS O-2060-01	Diuron-d6	44.6	P	30 - 160
USGS O-2060-01	Primidone-d5	54.9	P	30 - 160
USGS O-2060-01	Sucralose-d6	85.9	P	40 - 160

Lab Sample ID: 1934552
Field Sample ID: G1NE0605 10042017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	73.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.6	P	30 - 160
EPA 8321B	Diuron-d6	56.0	P	30 - 160
EPA 8321B	Primidone-d5	87.0	P	30 - 160
EPA 8321B	Sucralose-d6	98.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	52.1	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	73.0	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	76.6	P	30 - 160
USGS O-2060-01	Diuron-d6	56.0	P	30 - 160
USGS O-2060-01	Primidone-d5	87.0	P	30 - 160
USGS O-2060-01	Sucralose-d6	98.0	P	40 - 160

Lab Sample ID: 1934553
Field Sample ID: G1NE0617 10042016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	76.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.0	P	30 - 160
EPA 8321B	Diuron-d6	58.7	P	30 - 160
EPA 8321B	Primidone-d5	80.2	P	30 - 160
EPA 8321B	Sucralose-d6	82.9	P	40 - 160
USGS O-2060-01	2,4-D-d3	62.0	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	76.2	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	85.0	P	30 - 160
USGS O-2060-01	Diuron-d6	58.7	P	30 - 160
USGS O-2060-01	Primidone-d5	80.2	P	30 - 160
USGS O-2060-01	Sucralose-d6	82.9	P	40 - 160

Lab Sample ID: 1934554
Field Sample ID: G1NE0565

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	86.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	71.0	P	30 - 160
EPA 8321B	Diuron-d6	53.8	P	30 - 160
EPA 8321B	Primidone-d5	66.2	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1934554
Field Sample ID: G1NE0565

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	80.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	64.2	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	86.1	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	71.0	P	30 - 160
USGS O-2060-01	Diuron-d6	53.8	P	30 - 160
USGS O-2060-01	Primidone-d5	66.2	P	30 - 160
USGS O-2060-01	Sucralose-d6	80.4	P	40 - 160

Lab Sample ID: 1934555
Field Sample ID: G1NE0500 10042016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	65.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.3	P	30 - 160
EPA 8321B	Diuron-d6	61.4	P	30 - 160
EPA 8321B	Primidone-d5	88.1	P	30 - 160
EPA 8321B	Sucralose-d6	78.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	60.3	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	65.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	83.3	P	30 - 160
USGS O-2060-01	Diuron-d6	61.4	P	30 - 160
USGS O-2060-01	Primidone-d5	88.1	P	30 - 160
USGS O-2060-01	Sucralose-d6	78.4	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79366
Included Lab Sample IDs: 1934530, 1934533, 1934536

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

Reference Method: SM 2120 B
Run ID: A79372
Included Lab Sample IDs: 1934530, 1934533, 1934536

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	85 - 115
Color (true)	99.2	101	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A79378
Included Lab Sample IDs: 1934532, 1934535, 1934538

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	98.9	P/P	90 - 110
O-Phosphate-P	99.3	99.3	P/P	90 - 110
O-Phosphate-P	99.7	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79473

Included Lab Sample IDs: 1934530, 1934533, 1934536

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	102	P/P	90 - 110
Sulfate	101	99.4	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A79478

Included Lab Sample IDs: 1934551, 1934552, 1934553, 1934554, 1934555

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.4	92.3	P/P	50 - 150
Acetaminophen	87.9	94.5	P/P	60 - 150
Bentazon	89.7	87.1	P/P	50 - 150
Carbamazepine	96.4	96.0	P/P	60 - 150
Diuron	94.7	94.9	P/P	60 - 150
Fenuron	94.6	94.3	P/P	60 - 150
Fluridone	107	105	P/P	60 - 160
Imidacloprid	88.3	91.5	P/P	60 - 150
Linuron	99.8	103	P/P	60 - 150
MCPP	98.1	98.6	P/P	50 - 150
Primidone	100	107	P/P	60 - 150
Triclopyr	98.2	103	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79483

Included Lab Sample IDs: 1934531, 1934534, 1934537

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79510

Included Lab Sample IDs: 1934531, 1934534, 1934537

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

Reference Method: EPA 8321B

Run ID: A79511

Included Lab Sample IDs: 1934551, 1934552, 1934553, 1934554, 1934555

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	82.7	96.1	P/P	60 - 150
Sucralose	96.1	94.8	P/P	60 - 150

Reference Method: SM 2320 B-97

Run ID: A79535

Included Lab Sample IDs: 1934530, 1934533, 1934536

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A79535

Included Lab Sample IDs: 1934530, 1934533, 1934536

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79545

Included Lab Sample IDs: 1934531, 1934534, 1934537

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.1	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79547

Included Lab Sample IDs: 1934531, 1934534, 1934537

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	104	P/P	90 - 110
Total-P	104	103	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79563

Included Lab Sample IDs: 1934531, 1934534, 1934537

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	98.2	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					0.0	
EPA 300.0 Rev. 2.1	Chloride	98.8	96.1	98.2		0.0361	
	Sulfate	96.0	93.8	95.6		0.0383	
EPA 350.1 Rev. 2.0	Ammonia-N	100					0.635
	Ammonia-N	101	101	99.3			0.924
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	99.9	96.8			2.06
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	106	103	106			1.27
EPA 365.1 Rev. 2.0	Total-P	101	103	95.6			6.55
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	94.7	95.8			0.870
EPA 8321B	Sucralose	101	69.3	114			30.9
SM 2120 B	Color (true)					4.30	
SM 2320 B-97	Total Alkalinity	103				0.208	
SM 2540 C-97	TDS					3.63	
SM 2540 D-97	TSS					8.00	
SM 4500 F-C-97	Fluoride	102	101	101			0.482
SM 5310 B-00	Organic Carbon	103	98.8	97.6			1.11
USGS O-2060-01	2,4-D	109	66.3	58.8			4.57

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
USGS O-2060-01	Acetaminophen	103	84.5	80.9		4.40
	Bentazon	43.4	25.7	21.7		4.62
	Carbamazepine	126	90.7	94.5		3.92
	Diuron	116	76.1	79.7		3.96
	Fenuron	96.1	82.5	90.8		9.55
	Fluridone	107				4.22
	Imidacloprid	98.5				2.56
	Linuron	95.6	91.9	98.1		6.61
	MCP	121	50.3	53.1		5.30
	Primidone	97.2	105	107		1.90
	Triclopyr	125	47.5	50.6		6.44

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1934530, 1934533, 1934536
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1934530, 1934533, 1934536
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1934530, 1934533, 1934536
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1934531, 1934534, 1934537
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1934531, 1934534, 1934537
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1934531, 1934534, 1934537
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1934531, 1934534, 1934537
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1934532, 1934535, 1934538
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1934551, 1934552, 1934553, 1934554, 1934555
SM 2120 B / E31780	True Color measured at 450 nm	1934530, 1934533, 1934536
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1934530, 1934533, 1934536
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1934530, 1934533, 1934536
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1934530, 1934533, 1934536
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1934530, 1934533, 1934536
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1934531, 1934534, 1934537
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1934551, 1934552, 1934553, 1934554, 1934555
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1934551, 1934552, 1934553, 1934554, 1934555

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	10/05/2017			10/05/2017 15:12	DeAsia Armster	1934530, 1934533, 1934536
EPA 300.0 Rev. 2.1	10/05/2017			10/09/2017	Julia Storbeck	1934530, 1934533, 1934536
EPA 350.1 Rev. 2.0	10/05/2017			10/11/2017	Sofia Elnemr	1934531, 1934534, 1934537
EPA 351.2 Rev. 2.0	10/05/2017	10/11/2017	Adrian Shelby	10/12/2017	Joseph Suarez	1934531, 1934534, 1934537
EPA 353.2 Rev. 2.0	10/05/2017			10/11/2017	Beverly Y. Sanders	1934531, 1934534, 1934537
EPA 365.1 Rev. 2.0	10/05/2017	10/12/2017	Sima Feizi	10/13/2017	Lipi Saha	1934531, 1934534, 1934537
EPA 365.1 Rev. 2.0 dissolved	10/05/2017			10/05/2017 14:50	Megan Treadwell	1934538
	10/05/2017			10/05/2017 15:16	Megan Treadwell	1934535
	10/05/2017			10/05/2017 15:31	Megan Treadwell	1934532
EPA 8321B	10/05/2017	10/11/2017	Juyoung Kim	10/11/2017	Juyoung Kim	1934551, 1934552, 1934553, 1934554, 1934555
SM 2120 B	10/05/2017			10/05/2017 15:21	Tanya Welborn	1934533
	10/05/2017			10/05/2017 15:49	Tanya Welborn	1934530
	10/05/2017			10/05/2017 15:50	Tanya Welborn	1934536
SM 2320 B-97	10/05/2017			10/13/2017	Dale L. Simmons	1934530, 1934533, 1934536
SM 2540 C-97	10/05/2017			10/06/2017	DeAsia Armster	1934530, 1934533, 1934536
SM 2540 D-97	10/05/2017			10/06/2017	DeAsia Armster	1934530, 1934533, 1934536
SM 4500 F-C-97	10/05/2017			10/13/2017	Dale L. Simmons	1934530, 1934533, 1934536
SM 5310 B-00	10/05/2017			10/13/2017	Ping Hua	1934531, 1934534, 1934537
USGS O-2060-01	10/05/2017	10/10/2017	Hoor Shaik	10/12/2017	Julie Michelle Frank	1934551, 1934552, 1934553, 1934554, 1934555