

Chemical Analysis Report

NW-DIST-2017-09-26-03

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

Event Description: **ENR D WBID 548GB 738**

Request ID: **RQ-2017-09-04-48**

Customer: **NW-DIST**

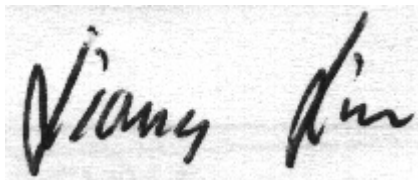
Project ID: **SMP**

Send Reports to:
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160 W Government St
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Attn: Michael King

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 12-OCT-2017 13:45

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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: TEXAR BAYOU

Collection Date/Time: 09/25/2017 11:15

Field ID: G4NW0402

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931511	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P332256	
	EPA 300.0 Rev. 2.1	Chloride	5.0E+03		mg Cl/L	P332362	
		Sulfate	700		mg SO4/L	P332365	
	SM 2120 B	Color (true)	7.2		PCU	P332278	
	SM 2320 B-97	Total Alkalinity	49	A	mg CaCO3/L	P332633	
	SM 2540 C-97	TDS	8.74E+03		mg/L	P332562	
	SM 2540 D-97	TSS	6	I	mg/L	P332590	
	SM 4500 F-C-97	Fluoride	0.56		mg F/L	P332637	
1931513	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P332539	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P332354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P332523	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P332396	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P332515	
1931515	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332273	

Ref. Method and Comment:

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

Sample Location: TEXAR BAYOU

Collection Date/Time: 09/25/2017 11:15

Field ID: G4NW0402

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931528	EPA 8321B	Sucralose**	0.090		ug/L	P332225	
	USGS O-2060-01	2,4-D	0.0024	I	ug/L	P332226	
		Diuron	0.0024	I	ug/L	P332226	
		Fenuron	0.0080	U	ug/L	P332226	
		Imidacloprid	0.015		ug/L	P332226	
		Bentazon	8.0E-04	U	ug/L	P332226	MS
		Linuron	0.0040	U	ug/L	P332226	
		Acetaminophen**	0.021	I	ug/L	P332226	
		MCPD	0.0020	U	ug/L	P332226	
		Carbamazepine**	9.0E-04	I	ug/L	P332226	
		Triclopyr**	0.0040	U	ug/L	P332226	
		Primidone**	0.0040	U	ug/L	P332226	
		Fluridone**	4.0E-04	U	ug/L	P332226	

Ref. Method and Comment:

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

Sample Location: BLACKWATER BAY WEST OF ESCRIBANO POINT

Collection Date/Time: 09/25/2017 12:20

Field ID: G4NW0401

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931512	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P332256	
	EPA 300.0 Rev. 2.1	Chloride	5.3E+03		mg Cl/L	P332362	
		Sulfate	720		mg SO4/L	P332365	

Field ID: G4NW0401

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931512	SM 2120 B	Color (true)	19		PCU	P332279	
	SM 2320 B-97	Total Alkalinity	42		mg CaCO3/L	P332633	
	SM 2540 C-97	TDS	7.96E+03		mg/L	P332562	
	SM 2540 D-97	TSS	6	IA	mg/L	P332590	
	SM 4500 F-C-97	Fluoride	0.35		mg F/L	P332637	
1931514	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P332539	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P332354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.072		mg N/L	P332523	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P332396	
	SM 5310 B-00	Organic Carbon	4.0		mg C/L	P332515	
1931516	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332273	

Ref. Method and Comment:

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

Sample Location: BLACKWATER BAY WEST OF ESCRIBANO POINT

Collection Date/Time: 09/25/2017 12:20

Field ID: G4NW0401

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931529	EPA 8321B	Sucralose**	0.065		ug/L	P332225	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P332226	
		Diuron	8.0E-04	U	ug/L	P332226	
		Fenuron	0.0080	U	ug/L	P332226	
		Imidacloprid	0.0035		ug/L	P332226	
		Bentazon	8.0E-04	U	ug/L	P332226	MS
		Linuron	0.0040	U	ug/L	P332226	
		Acetaminophen**	0.0080	U	ug/L	P332226	
		MCP	0.0020	U	ug/L	P332226	
		Carbamazepine**	7.6E-04	I	ug/L	P332226	
		Triclopyr**	0.0040	U	ug/L	P332226	
		Primidone**	0.0040	U	ug/L	P332226	
		Fluridone**	4.0E-04	U	ug/L	P332226	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for imidacloprid 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: P332256

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P332362

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: P332365

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332539

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332354

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332523

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332396

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332273

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

Reference Method: EPA 8321B
Batch ID: P332225

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P332278

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P332279

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
 Batch ID: P332633

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

Reference Method: SM 2540 C-97
 Batch ID: P332562

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P332590

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P332637

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P332515

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

Reference Method: USGS O-2060-01
 Batch ID: P332226

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: P332362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332539

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332354

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332523

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332396

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332273

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

Reference Method: EPA 8321B
Batch ID: P332225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	105		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P332633

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

Reference Method: SM 4500 F-C-97
Batch ID: P332637

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P332515

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P332226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	71.9		P	40 - 150
Acetaminophen	139		P	30 - 150
Bentazon	47.7		P	40 - 150
Carbamazepine	118		P	40 - 150
Diuron	102		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	120		P	40 - 150
Imidacloprid	97.8		P	40 - 160
Linuron	106		P	40 - 150
MCP	79.1		P	40 - 150
Primidone	100		P	40 - 150
Triclopyr	72.5		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P332362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931421	Chloride	95.5		P	90 - 110
1931433	Chloride	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P332365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931421	Sulfate	96.8		P	90 - 110
1931433	Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P332539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931370	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P332354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931115	Kjeldahl Nitrogen	101	96.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P332523

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931513	NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P332396

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931370	Total-P	91.2	91.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P332273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931515	O-Phosphate-P	98.0	99.3	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P332225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931706	Sucralose	40.2	42.5	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P332637

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931511	Fluoride	95.9	97.5	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P332515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931118	Organic Carbon	92.4	92.5	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P332226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931706	2,4-D	61.9	64.6	P/P	40 - 150
1931706	Acetaminophen	88.5	88.5	P/P	30 - 150
1931706	Bentazon	23.7	24.1	F/F	40 - 150
1931706	Carbamazepine	92.7	89.6	P/P	40 - 150
1931706	Diuron	72.1	73.7	P/P	40 - 150
1931706	Fenuron	90.0	87.9	P/P	40 - 150
1931706	Fluridone	50.4	43.2	P/P	40 - 150
1931706	Linuron	87.8	90.6	P/P	40 - 150
1931706	MCP	64.9	65.0	P/P	40 - 150
1931706	Primidone	103	102	P/P	40 - 150
1931706	Triclopyr	55.0	54.9	P/P	40 - 150

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931479	Turbidity	3.83	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931433	Chloride	7.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931433	Sulfate	16.8	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931370	Ammonia-N	0.480	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931115	Kjeldahl Nitrogen	3.28	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931513	NO2NO3-N	0.623	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931370	Total-P	0.0265	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931515	O-Phosphate-P	1.32	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P332225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931706	Sucralose	0.847	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P332278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931435	Color (true)	0.912	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P332279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931543	Color (true)	1.22	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P332633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931511	Total Alkalinity	0.498	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P332562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931470	TDS	8.16	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P332637

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931511	Fluoride	0.953	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P332515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931118	Organic Carbon	0.132	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P332226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931706	2,4-D	3.03	Spike	P	0 - 30
1931706	Acetaminophen	0.0452	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P332226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931706	Bentazon	0.719	Spike	P	0 - 30
1931706	Carbamazepine	3.23	Spike	P	0 - 30
1931706	Diuron	2.08	Spike	P	0 - 30
1931706	Fenuron	2.43	Spike	P	0 - 30
1931706	Fluridone	10.3	Spike	P	0 - 30
1931706	Imidacloprid	4.13	Spike	P	0 - 30
1931706	Linuron	3.12	Spike	P	0 - 30
1931706	MCPP	0.154	Spike	P	0 - 30
1931706	Primidone	0.775	Spike	P	0 - 30
1931706	Triclopyr	0.255	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: 1931528
Field Sample ID: G4NW0402

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	116	P	30 - 160
EPA 8321B	Carbamazepine-d10	138	P	30 - 160
EPA 8321B	Diuron-d6	93.9	P	30 - 160
EPA 8321B	Primidone-d5	129	P	30 - 160
EPA 8321B	Sucralose-d6	71.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	64.4	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	116	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	138	P	30 - 160
USGS O-2060-01	Diuron-d6	93.9	P	30 - 160
USGS O-2060-01	Primidone-d5	129	P	30 - 160
USGS O-2060-01	Sucralose-d6	71.5	P	40 - 160

Lab Sample ID: 1931529
Field Sample ID: G4NW0401

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	99.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	133	P	30 - 160
EPA 8321B	Diuron-d6	92.0	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	77.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	68.8	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	99.7	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	133	P	30 - 160
USGS O-2060-01	Diuron-d6	92.0	P	30 - 160
USGS O-2060-01	Primidone-d5	124	P	30 - 160
USGS O-2060-01	Sucralose-d6	77.5	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A79162

Included Lab Sample IDs: 1931511, 1931512

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79167

Included Lab Sample IDs: 1931515, 1931516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.6	P/P	90 - 110
O-Phosphate-P	102	101	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A79170

Included Lab Sample IDs: 1931511, 1931512

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	90 - 115
Color (true)	103	101	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79203

Included Lab Sample IDs: 1931511, 1931512

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	99.2	P/P	90 - 110
Sulfate	94.5	97.9	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79261

Included Lab Sample IDs: 1931513, 1931514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79264

Included Lab Sample IDs: 1931513, 1931514

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: A79267

Included Lab Sample IDs: 1931513, 1931514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79268

Included Lab Sample IDs: 1931513, 1931514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	102	P/P	90 - 110
Kjeldahl Nitrogen	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79299

Included Lab Sample IDs: 1931513, 1931514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	97.8	P/P	90 - 110
Total-P	99.5	98.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A79305

Included Lab Sample IDs: 1931511, 1931512

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79305

Included Lab Sample IDs: 1931511, 1931512

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

Reference Method: USGS O-2060-01

Run ID: A79376

Included Lab Sample IDs: 1931528, 1931529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.8	93.1	P/P	50 - 150
2,4-D	93.1	106	P/P	50 - 150
Acetaminophen	103	107	P/P	60 - 150
Acetaminophen	107	104	P/P	60 - 150
Bentazon	96.1	99.2	P/P	50 - 150
Bentazon	96.2	96.1	P/P	50 - 150
Carbamazepine	106	109	P/P	60 - 150
Carbamazepine	109	112	P/P	60 - 150
Diuron	102	111	P/P	60 - 150
Diuron	111	107	P/P	60 - 150
Fenuron	101	101	P/P	60 - 150
Fenuron	101	103	P/P	60 - 150
Fluridone	117	118	P/P	60 - 160
Fluridone	121	117	P/P	60 - 160
Imidacloprid	100	101	P/P	60 - 150
Imidacloprid	93.8	100	P/P	60 - 150
Linuron	103	112	P/P	60 - 150
Linuron	112	101	P/P	60 - 150
MCPP	97.0	102	P/P	50 - 150
MCPP	98.3	97.0	P/P	50 - 150
Primidone	108	103	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A79376

Included Lab Sample IDs: 1931528, 1931529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	94.0	108	P/P	60 - 150
Triclopyr	105	97.3	P/P	50 - 150
Triclopyr	97.3	97.6	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A79445

Included Lab Sample IDs: 1931528, 1931529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.5	103	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	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				3.83	
EPA 300.0 Rev. 2.1	Chloride	95.4	97.3 95.5		7.11	
	Sulfate	95.7	97.5 96.8		16.8	
EPA 350.1 Rev. 2.0	Ammonia-N	103	101 100			0.480
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	101 96.9			3.28
EPA 353.2 Rev. 2.0	NO2NO3-N	104	105			0.623
EPA 365.1 Rev. 2.0	Total-P	97.6	91.2 91.2			0.0265
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	98.0 99.3			1.32
EPA 8321B	Sucralose	105	40.2 42.5			0.847
SM 2120 B	Color (true)				0.912	
	Color (true)				1.22	
SM 2320 B-97	Total Alkalinity	102			0.498	
SM 2540 C-97	TDS				8.16	
SM 4500 F-C-97	Fluoride	97.7	95.9 97.5			0.953
SM 5310 B-00	Organic Carbon	99.8	92.4 92.5			0.132
USGS O-2060-01	2,4-D	71.9	61.9 64.6			3.03
	Acetaminophen	139	88.5 88.5			0.0452
	Bentazon	47.7	23.7 24.1			0.719
	Carbamazepine	118	92.7 89.6			3.23
	Diuron	102	72.1 73.7			2.08
	Fenuron	109	90.0 87.9			2.43
	Fluridone	120	50.4 43.2			10.3
	Imidacloprid	97.8				4.13
	Linuron	106	87.8 90.6			3.12
	MCPP	79.1	64.9 65.0			0.154
	Primidone	100	103 102			0.775
	Triclopyr	72.5	55.0 54.9			0.255

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1931511, 1931512
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1931511, 1931512
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1931511, 1931512
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1931513, 1931514
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1931513, 1931514
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1931513, 1931514
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1931513, 1931514
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1931515, 1931516
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1931528, 1931529
SM 2120 B / E31780	True Color measured at 450 nm	1931511, 1931512
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1931511, 1931512
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1931511, 1931512
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1931511, 1931512
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1931511, 1931512
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1931513, 1931514
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1931528, 1931529
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1931528, 1931529

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	09/26/2017			09/26/2017 15:39	Tanya Welborn	1931511, 1931512
EPA 300.0 Rev. 2.1	09/26/2017			09/28/2017	Julia Storbeck	1931511, 1931512
	09/26/2017			09/29/2017	Julia Storbeck	1931511, 1931512
EPA 350.1 Rev. 2.0	09/26/2017			09/29/2017	Sofia Elnemr	1931513, 1931514
EPA 351.2 Rev. 2.0	09/26/2017	09/28/2017	Adrian Shelby	10/02/2017	Tanya Welborn	1931513, 1931514
EPA 353.2 Rev. 2.0	09/26/2017			10/02/2017	Beverly Y. Sanders	1931513, 1931514
EPA 365.1 Rev. 2.0	09/26/2017	09/28/2017	Sima Feizi	10/03/2017	Lipi Saha	1931513, 1931514
EPA 365.1 Rev. 2.0 dissolved	09/26/2017			09/26/2017 15:00	Megan Treadwell	1931515
	09/26/2017			09/26/2017 15:25	Megan Treadwell	1931516
EPA 8321B	09/26/2017	09/29/2017	Hoor Shaik	10/06/2017	Juyoung Kim	1931528, 1931529
SM 2120 B	09/26/2017			09/26/2017 15:52	DeAsia Armster	1931511
	09/26/2017			09/26/2017 15:55	DeAsia Armster	1931512
SM 2320 B-97	09/26/2017			10/03/2017	Dale L. Simmons	1931511, 1931512
SM 2540 C-97	09/26/2017			09/27/2017	Yijie Li	1931511, 1931512
SM 2540 D-97	09/26/2017			09/27/2017	Yijie Li	1931511, 1931512
SM 4500 F-C-97	09/26/2017			10/03/2017	Dale L. Simmons	1931511, 1931512
SM 5310 B-00	09/26/2017			09/29/2017	Ping Hua	1931513, 1931514
USGS O-2060-01	09/26/2017	09/29/2017	Hoor Shaik	10/03/2017	Julie Michelle Frank	1931528, 1931529